

THE PROSODY OF RUTOORO ADNOMINALS*

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1 Introduction

- Rutooro is one of only a few Bantu languages in which tone is no longer lexically contrastive. Bickmore and Clemens (2016) demonstrate that a High (H) tone marks the penultimate syllable of the φ -phrase.
- While the φ -phrase is the domain for tonal phenomena across the family, we have identified a previously unattested pattern in the prosody of DPs:
 - In some cases, the head noun is phrased with its modifier(s).
 - Other times, the head noun is phrased independently.
- We argue that the distribution of H tones serves as a diagnostic for whether an adnominal is generated in a DP-internal or external position.
- Reduced object RCs with overt subjects are a special case:
 - The head of a reduced object RC bears an unexpected H, while the subject is all-L despite the fact that it is a self-contained XP.
 - Prominent theories of the syntax-prosody interface offer no obvious solutions to this puzzle.
- We pursue an account in which the attested phrasing repairs a prosodic ambiguity that could otherwise point to unintended constituency.

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1.1 Language background

- Rutooro (E/J.12), also known as Tooro, is a Bantu language with approx. 850,000 speakers mostly in Western Uganda (Simons and Fennig 2017).
- Previous work includes a dictionary (Shigeki 2007), a brief article on tone (Kaji 2008), and a Runyoro-Rutooro grammar (Rubongoya 1999).
- Our data come from a 28-year-old native speaker of Rutooro, from Fort Portal, Uganda, who travels between Albany, New York and Fort Portal.
- Rutooro at-a-glance:
 - Rutooro is a highly agglutinative, polysynthetic language.
 - 19 of Bantu's 22 numbered noun classes are attested in Rutooro, and they are indicated by a prefix.
 - There are separate classes for singular and plural nouns; certain plural classes correspond to more than one singular class (1)-(2):

(1) a. e-ri-iso
AUG-C5-eye
'eye'
b. a-ma-iso
AUG-C6-eye
'eyes'

(2) a. o-ku-tu
AUG-C15-ear
'ear'
b. a-ma-tu
AUG-C6-ear
'ears'

- Rutooro has rich nominal concord (3):

(3) e-**bi**-tabu **bi**-taano **by**-aange **by**-oona **bi**-nu
 AUG-C8-book C8-my C8-five C8-all C8-this
 ‘all five of these books of mine’

- The subject’s noun class is also represented on the predicate (4):

(4) A-**ba**-ana **ba**-chuumb-ir ee-ki-huro.
 AUG-C2-child C2-cook-PRF AUG-C7-meal
 ‘The children cooked the meal.’

- Most tense/aspect markers are prefixal (see (4) for an exception).
- The final vowel (FV) is a suffixal mood marker that distinguishes between subjunctive and indicative.
- The augment (AUG) is a harmonizing vowel indicating a certain degree of functional structure.
- SVO is a common word order, although arguments are often dropped and focused constituents typically occur in postverbal position, indicated by a H tone on the verb.

1.2 Prominence

- Words in isolation are pronounced with prominence on the penultimate syllable, which we refer to as a H tone and mark with an acute accent.

(5) a.	ku- sóm -a C15-read-FV ‘to read’	d.	Ba-ka-haand ík -a. 3PL-PST-read-FV ‘They wrote.’
b.	e-ki-sumur ú zo AUG-C7-key ‘key’	e.	a-ka-tuung ú ro AUG-C12-onion ‘onion’
c.	mp ó ra slowly ‘slowly’	f.	ki-r ú ungi C7-good ‘good’

- The distribution of H tones is nontrivial in phrasal contexts:
 - Although (6-a) and (6-b) are segmentally identical, the H tone distinguishes between a possessed nominal and a copular clause.

(6) a. o-mw-aana mu-**cé**ke ▶
 AUG-C1-child C1-SLENDER
 ‘the slender child’
 b. O-mw-**á**ána mu-**cé**ke. ▶
 AUG-C1-child C1-SLENDER
 ‘The child is slender.’

- When larger sentences are examined, it is possible to find nearly any combination of all-L and H-marked words:

(7) a. Nii-n-j-a kw-eend-a ba-taandik-e
 1SG.SM-PROG-go-FV C15-want-FV 3PL.SM-start-FV
 ku-som ee-**bi-tá**bu.
 C15-read AUG-C7-book
 ‘I am going to want that they start to read the books.’
 b. **Í**ijo a-**bá**-ána b-**ó**óna ba-ku-**sóm**-a
 yesterday AUG-C2-child C2-all 3SG.SM-PST-read-FV
 m**ú**ú-n-ju.
 LOC-C9-house
 ‘Yesterday all the children read in the HOUSE.’

1.3 Today’s Plan

- In the remainder of the talk, we examine the distribution of H-tones in three syntactic contexts:
 1. Matrix clauses
 2. Nominals phrases
 3. Relative clauses
- Based on these data, I will argue that
 - Rutooro exhibits a strong correspondence between XPs and φ -phrases.
 - The distribution of H-tones in Rutooro thus serves as a reliable diagnostic for syntactic structure.
 - ➡ Prosodic structure that is nonisomorphic with the underlying syntax is the result of a need to repair a prosodic ambiguity.

Plan: □ Matrix clauses • □ Nominals • □ RCs • □ Prosodic ambiguity

2 Distribution of H in matrix clauses

- H marks the right edge of a prosodic unit we take to be the φ -phrase:
 - Must be larger than the prosodic- ω , because not all words bear a H in phrasal contexts (7-a)
 - Must be smaller than the ι -phrase, because every word in a clause *can* bear a H tone, given the right context (7-b)
 - Tonal phonology phenomena across the family are sensitive to the φ -phrase (e.g. Bemba, Chaga, Chimwiini, Kimatuumbi, Luganda, Xitsonga, and many many others).
- In this section, we...
 - look at the distribution of H in simple matrix clauses
 - provide an explicit syntactic structure for these clauses
 - conclude that there is a reliable correspondence between XPs and φ -phrases in Rutooro.

2.1 Subjects vs. objects

- In intransitive clauses, the subject and the verb each bear a H tone.

(8) a. A-ba-lími) φ ba-ka-kór-a) φ
AUG-C2-farmer C2.SM-PST-work-FV
 ‘The farmers worked.’

b. Kajúúmba) φ a-irúk-a) φ
Kajumba 3SG.SM-run-FV
 ‘Kajumba runs.’
- The same H-tone distribution appears in cases of object drop: the subject (if one is pronounced) and the verb are each marked H.

(9) a. Tu-ka-sóm-a) φ
1PL.SM-PST-read-FV
 ‘We read them.’

b. Kajúúmba) φ a-raa-gúr-a) φ
Kajumba 3SG.SM-FUT-buy-FV
 ‘Kajumba will buy them.’
- In transitive sentences with overt objects, the verb surfaces as all-L and the object is marked H.

- (10) a. Tu-ka-som ee-bi-tábu) φ
1PL.SM-PST-read AUG-C8-book
 ‘We read the books.’
- b. Kajúúmba) φ a-raa-gur ee-n-káito) φ
Kajumba 3SG.SM-FUT-buy AUG-C10-shoe
 ‘Kajumba will buy shoes.’

- The verb and a single object are phrased together; subjects are separated from predicates by a φ -phrase boundary.

2.2 Multiple postverbal XPs

- In ditransitive clauses, both objects occur at the edge of a φ -phrase—again, diagnosed by the H on their penult.

- (11) a. A-ba-lími) φ ba-ka-h oo-mw-áán) φ
AUG-C2-farmer C2.SM-PST-give AUG-C1-child
ee-by-ookúlya) φ
AUG-C8-food
 ‘The farmers gave the child food.’
- b. A-ba-somésa) φ ba-k-olek a-bá-ána) φ e-mí-ti) φ
AUG-C2-teacher C2.SM-PST-show AUG-C1-child AUG-C4-tree
 ‘The teachers showed the children the trees.’

- The same pattern is found in the applicative construction, where the direct object and the applicative object each bear a High tone.

- (12) a. A-báá-ntu) φ ba-ka-som-er aa-ba-isíki) φ
AUG-C2-person 3PL.SM-PST-read-APPL AUG-C2-girl
e-bi-tábu) φ
AUG-C8-book
 ‘The people read the books to the girls.’
- b. A-ba-záíre) φ ba-ku-leet-er oo-mw-áána) φ
AUG-C2-parent 3PL.SM-PROG-bring-APPL AUG-C1-child
e-bi-yúni) φ
AUG-C8-yam
 ‘The parents are bringing the yams for the children.’

- Clauses in which the verb is followed by an adjunct, e.g. a locative phrase (13) or an adverb (14), pattern in the same way as clauses in which the verb is followed by an argument: the verb surfaces as all-L and each constituent that follows is marked with a H.

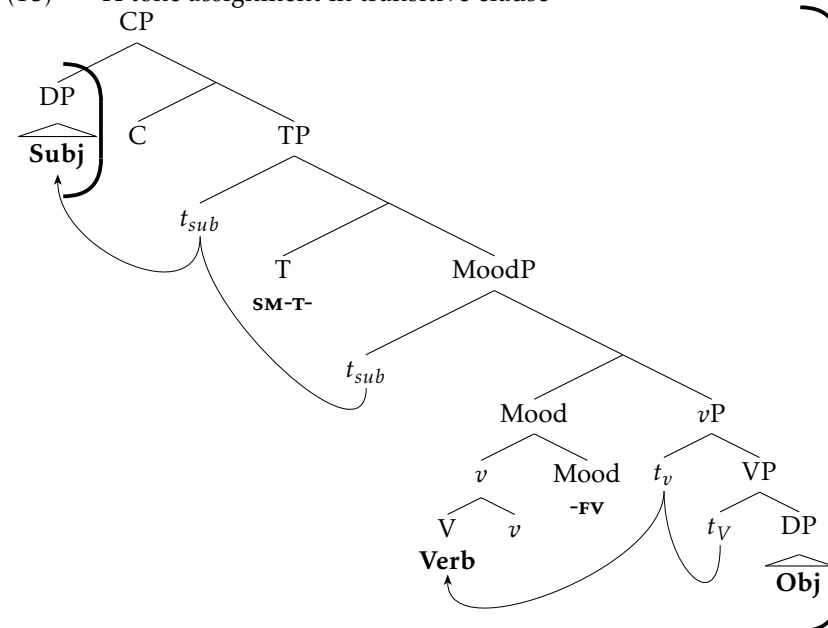
- (13) a. Ba-ka-byaam-a múú-nju) φ
3PL.SM-PST-sleep C18-house
'They slept in the house.' (Far Past)
- b. A-ba-záire) φ ba-ka-vog-a matóka) φ
AUG-C2-parent 3PL.SM-PST-drive-FV car
ha-Sabííti) φ
C16.LOC-Sunday
'They drove the car on Sunday.'
- (14) a. Ba-ka-haandika-a mpóra) φ
3PL.SM-PST-write-FV slowly
'They write slowly.'
- b. A-báá-ntu) φ ba-som ee-bi-tábu) φ ku-rúúngi) φ
AUG-C2-person 3PL.SM-read AUG-C8-book C17-well
'The people read the books well.'

- In sum, a High tone marks the penultimate syllable of each post-verbal element, but not the verb that precedes them.

2.3 Preliminary analysis

- The distribution of H in 1-, 2-, and 3-place predicates, and clauses with adverbial and locative modifiers, comprises strong evidence for substantial overlap between prosodic and syntactic structure in Rutooro.
 - In all of these examples, nominal phrases, locative phrases, and adverbs, all of which are phrasal, bear a penult H.
 - The verb is all-L, unless it is at the right edge of the maximal projection it heads, as in intransitives or cases of a pro-dropped object.
- The right edges of φ -phrases correspond to the right edges of a maximal projections in the syntax.

(15) H tone assignment in transitive clause



- A few assumptions from Bantu syntax:
 - The verb root X^0 -raises to MoodP, which hosts the final vowel (FV) and introduces the external argument (e.g. Buell 2005; Cheng and Downing 2012; Halpert 2015; Julien 2002; Zentz 2016).
 - In matrix SVO clauses the subject is a topic located in CP (e.g. Bresnan and Mchombo 1987; Cheng and Downing 2009; Downing and Hyman 2015; Henderson 2006; Lesholo 2002; Zentz 2016).
- Given what we have seen so far, multiple accounts are possible:
 - An EDGE-BASED approach (Selkirk 1986, 1995, 2000; Truckenbrodt 1995, 1999, 2007) would i) create φ -phrase boundaries at the right edge of XPs and ii) assign prominence to their penults.
 - A MATCH THEORY account (Selkirk 2011; Elfner 2012, 2015; Itô and Mester 2013; Clemens 2014) would i) assume complete correspondence between XPs and φ -phrases, and ii) analyze the intonational contour of the φ -phrase as all-L, except the penult.

Plan: Matrix clauses • Nominals • RCs • Prosodic ambiguity

3 Parallels in the nominal domain

- There are two types of adnominal phrases based on the distribution of H tones and constituent order:
 - The head noun and **type 1** modifiers, which are always postnominal.
 - The head noun bears its own H when it combines with **type 2** modifiers, which optionally occur before or after the head noun.
- In this section, we...
 - look at the distribution of H in DPs with non-clausal modifiers, and
 - provide an explicit syntactic analysis for these clauses that mirrors what we find in the clausal domain.

3.1 Group 1: No H on the noun

- Possessed nouns do not bear a H tone; a phrase-final High tone occurs only on the possessor:

- (16) a. e-n-kaito z-ááŋge)φ
AUG-C10-shoes C10-1SG
'my shoes'
- b. e-by-ookulya by-áítu)φ
AUG-C8-food C8-1PL
'our food'
- (17) a. e-ki-tabu ky-a Kajúúmba)φ
AUG-C7-book C7-AUG Kajumba
'Kajumba's book'
- b. e-by-ookuly by' oo-mu-lími)φ
AUG-C8-food C8 AUG-C1-farmer
'The farmer's food'

- The same pattern occurs with numerals:

- (18) a. e-bi-tabu bi-sátu)φ
AUG-C8-book C8-three
'three books'

- b. a-ba-ana ba-tááno)φ
AUG-C2-child C2-five
'five children'

- The nominal head is part of the same phonological phrase as the quantifiers 'many' and 'another':

- (19) a. e-bi-tabu bí-íngi)φ
AUG-C8-book C8-many
'many books'
- b. e-ri-iba líí-ndi)φ
AUG-C5-dove C5-another
'another dove'

- The head noun phrases with adjectives:

- (20) a. e-ki-tbu ki-rúúngi)φ
AUG-C7-book C7-good
'the good book'
- b. o-muu-ntu mu-bí)φ
AUG-C1-person C1-bad
'the bad person'

- As in the verbal domain, if multiple nominal modifiers follow the verb, they each have their own prominence:

- (21) a. e-bi-tabu by-ááŋge)φ bí-íngi)φ
AUG-C8-book C8-1SG C8-many
'many books of mine'
- b. e-ma-iba ma-sátu)φ má-ndi)φ
AUG-C6-dove C6-three C6-another
'another three doves'

3.2 Group 2: H on the noun

- The universal quantifier and demonstratives can precede or follow the head noun. In either position, the noun is marked with a H tone:

- (22) a. e-bi-tábu)φ by-óóna)φ
AUG-C8-book C8-all
'all books'

- (23) b. by-óona) φ e-bi-tábu) φ
C8-all AUG-C8-book
'all books'
- a. e-ki-tábu) φ kí-nu) φ
AUG-C7-book C7-this
'this book'
- b. kí-nu) φ e-ki-tábu) φ
C7-this AUG-C7-book
'this book'
- Certain modifiers from Group 1 can occur with an augment vowel, in which case the head noun bears a H tone.
- (24) a. e-bi-tábu) φ e-by-áánge) φ
AUG-C8-book AUG-C8-1SG
'my books/the books which are mine'
- b. a-bá-ána) φ a-ba-tááno) φ
AUG-C2-child AUG-C2-five
'five children/the children which are five [in number]'
- c. e-bi-tábu) φ e-bi-sátu) φ
AUG-C8-book AUG-C8-many
'many books/the books which are many [in number]'
- Note that these examples are alternatively translated as restrictive relative clauses, and so we set them aside until Section 4.
- The generalization from the previous section that *High tones serve as a diagnostic for φ -phrase boundaries, which in turn correspond to the edges of syntactic XPs* allows us to explain why nominal heads belong to the same φ -phases as their modifiers in some cases, but not in others.
- The distribution of H in the first group resembles verb phrases with internal arguments and low adjuncts:
 - Like internal arguments and low adjuncts, Group 1 adnominals are postnominal and the first one phrases with the noun.
 - Group 1 adnominals must be located inside of the XP in which the nominal head is pronounced, so that the head noun is not located at the right edge of an XP.
 - With respect to the distribution of H tones, the second group patterns like clausal subjects
 - Like subjects (which can be post-posed and never¹ phrase with the verb), Group 2 adnominals can surface before or after the noun.
 - Group 2 adnominals must be located above the position where the nominal head is pronounced, so that the head noun can end up at the right edge of an XP.

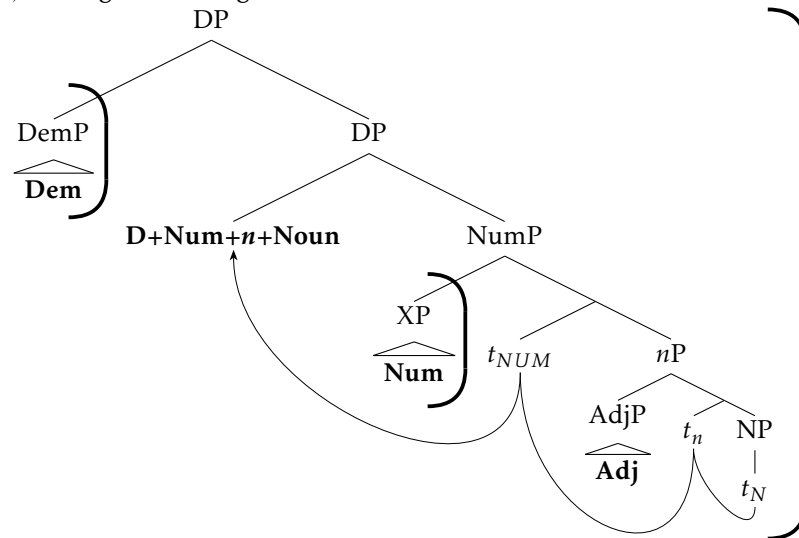
3.3 Accounting for the distribution of H

- Groups 1 and 2 *almost* perfectly correspond to the distinction between weak (e.g. those that contain numerals, 'many', 'another') and strong (e.g. those that contain demonstratives, 'all', 'the other') nominals.
- Examples (16) - (17) show that possession is a bit anomalous.
 - The distribution of weak and strong DPs in combination with the existential supports the distinction (Milsark 1974):

- (25) a. Ha-roho e-bi-tabu bi-satu h'-a-me-eza.
C16.LOC-EXIST AUG-C8-book C8-three C16-AUG-C9-table
'There were three books on the table.'

¹Well, see Section 4.

(26) High tone assignment in DPs



► The syntax and H tone assignment in (26) is both consistent with what we saw in (15) and Carsten’s (2000,2008) account of the Bantu DP.

3.4 Testing predictions

- At this point we have seen the following patterns in DPs
 - Weak NPs
 - * **Noun** NUM)φ
 - * **Noun** NUM)φ ADJ)φ
 - Strong NPs
 - * dem)φ **Noun**)φ
 - * **Noun**)φ dem)φ
- When we combine the two types of modifiers, we get the following:
 - dem)φ **Noun** NUM)φ ADJ)φ
 - **Noun** NUM)φ ADJ)φ dem)φ

- It also follows from our analysis that strong determiners cannot surface between the noun and an internal modifier:

(27) (bí-nu) e-bi-tabu bi-sátu (#bí-nu) bi-shááka (bí-nu)
 C8-this aug-C8-book C8-three C8-this C8-new C8-this
 ‘these three new books’

Plan: ☑ Matrix clauses • ☑ Nominals • ☐ RCs • ☐ Prosodic ambiguity

4 Relative Clauses

- Clausal modification also comes in two types, according to their prosody:
 - The head of the relative clause does not bear a H tone when it is modified by a reduced relative clause (cf. weak NPs).
 - The head noun bears its own H tone when it is modified by a full relative clause (cf. strong NPs).
- In this section, we again explain whether or not a noun phrases independently according to attachment height relative to the head.

4.1 Full relative clauses

- Full relative clauses in Rutooro are similar to Luganda (Pak 2007) and Ikalanga (Letsholo 2009), with respect to their morphological and syntactic properties (cf. Henderson 2006).
- Verbal template for full relative clauses:
 - **Subject RCs:** AUG-SUBJCM-NEG-T-Root-FV
 - **Object RCs:** AUG-OBJCM-SUBJCM-NEG-T-Root-FV
- Other noteworthy syntactic properties:
 - No subject-verb inversion in RCs, as found in related languages.
 - RCs show the lower negative marker found in embedded clauses.
 - Both restrictive and nonrestrictive readings are possible.

- In full subject RCs, the head is marked with a H tone. In (28) a matrix clause is compared to a full subject RC.

- (28) a. A-báá-ntu) φ ba-sóm-a) φ
 AUG-C2-people C2-read-FV
 ‘People read.’
 b. a-báá-ntu) φ [_{RC} a-ba-sóm-a)] φ
 AUG-C2-people AUG-C2-read-FV
 ‘people who read’

- Full object RCs exhibit the same pattern:

- (29) e-bi-tábu) φ [_{RC} a-báá-ntu) φ e-bi-ba-sóm-a)] φ
 AUG-C8-book AUG-C2-people AUG-C8-C2-read-FV
 ‘the books that people read’

- Reasons to treat full RCs as CPs:

- In full RCs, the subject’s class marker is represented on the verb, which we take to be agreement between the subject and T⁰.
- Full object RCs show class agreement with object head, which we take to represent agreement between *Op* and C⁰.
- High adverbs appear between the subject and the verb in full object RCs, as they can in matrix clauses where SVO subjects are CP topics.

- (30) a. A-báá-ntu) φ íjjo) φ ba-sóm-a e-bi-tábu) φ
 AUG-C2-people yesterday C2-read-FV AUG-C8-book
 ‘the people read books yesterday.’
 b. e-bi-tábu) φ [_{RC} a-báá-ntu) φ íjjo) φ
 AUG-C8-book AUG-C2-people yesterday
 e-bi-ba-sóm-a)] φ
 AUG-C8-C2-read-FV
 ‘the books that the people read yesterday.’

- Like nominal heads modified by strong determiners, the heads of full RCs are at the right-edge of a φ -phrase boundary.

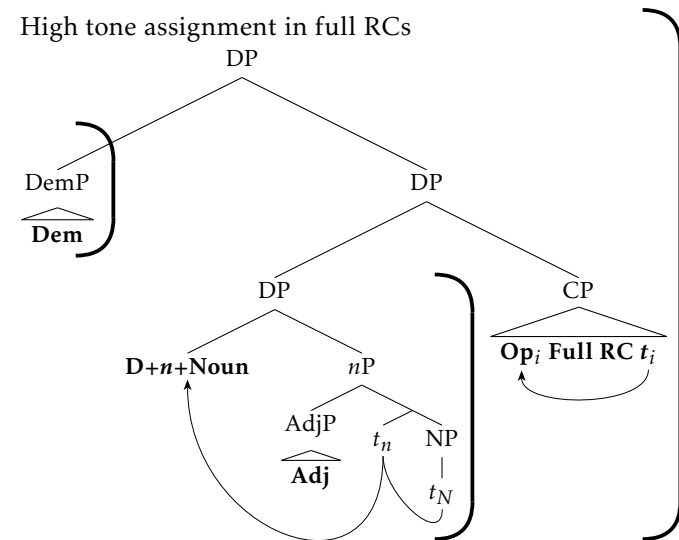
- This prosodic similarity can be captured by attaching the RC above the XP in which the RC head is pronounced.

- We adopt a matching analysis of RC formation:

- * Raising analyses of RCs are incompatible with head-movement in the DP domain

- * There is no evidence of movement in either type of RCs (see also Pak 2007 for Luganda).

- (31) High tone assignment in full RCs



- This analysis also easily explains why high determiners can precede or follow the relative clause or precede the head.

- (32) (bá-nu) φ a-baa-ntu ba-sátu) φ (bá-nu) φ [_{RC}
 C2-this AUG-C2-people C2-three C2-this
 a-ba-sóm-a)] φ (bá-nu) φ
 AUG-C2-read-FV C2-this
 ‘those three people who read’

4.2 Reduced relative clauses

- Verbal template for reduced relative clauses:

- **Subject RCs:** (*AUG)-SUBJCM-NEG-T-Root-FV
- **Object RCs:** (*AUG-ObjCM)-SUBJCM-NEG-T-Root-FV

- Other noteworthy properties:

- Still no subject-verb inversion in reduced RCs

- Reduced RCs have a low negative marker as well
- In reduced relative clauses, only the restrictive reading is possible.

- In reduced subject RCs, the head is not marked with a H tone. In (33) a matrix clause is compared to a reduced subject RC.

- (33) a. A-báá-ntu) φ ba-sóm-a) φ
 AUG-C2-people C2-read-FV
 ‘People read.’
 b. a-baa-ntu [RC ba-sóm-a)] φ
 AUG-C2-people C2-read-FV
 ‘people who read’

- Object RCs exhibit the same pattern:

- (34) a. e-bi-tabu [RC ba-ku-sóm-a)] φ
 AUG-C8-book C2-PROG-read-FV
 ‘the books they are reading’

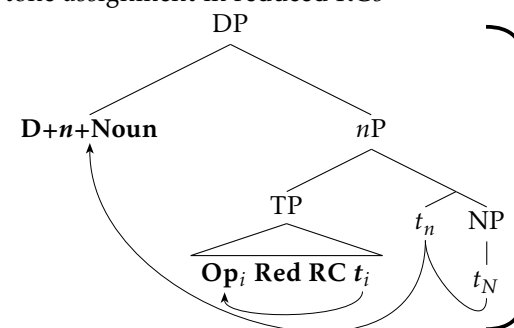
- Reasons to treat reduced RCs as TPs:

- Reduced RCs have tense markers and the subject’s class marker is represented on the verb, i.e. the RC projects as high as TP.
- Reduced object RCs do not show class agreement with object head.
- High adverbs cannot appear between the subject and the verb in reduced object RCs, as they can in matrix clauses and full RCs.

- Like nominal heads modified by demonstratives and other weak determiners, the heads of reduced RCs are not at the right-edge of a φ -phrase.

- This prosodic similarity can be captured by attaching the RC internal to XP in which the RC head is pronounced.

- (35) High tone assignment in reduced RCs



- This analysis also captures the fact that high determiners cannot precede the relative clause in reduced RCs (while they could in full RCs).

- (36) (bá-nu) φ a-baa-ntu ba-satu (*bá-nu) φ [RC
 C2-this AUG-C2-people C2-three C2-this
 ba-sóm-a)] φ (bá-nu) φ
 AUG-C2-read-FV C2-this
 ‘those three people who read’

4.3 A sticking point

- In reduced object RCs with overt subjects, the head bears a H tone, but the subject of the RC does not.

- (37) o-mw-áána) φ [RC a-ba-limi ba-ta-góonz-a)] φ
 AUG-C1-child AUG-C2-farmer C2-NEG-like-FV
 ‘the child that the farmers don’t like’

- This is unexpected, because the head of a reduced RC does not usually bear a H tone and subjects typically *do*.

- While this sinks in, let’s listen to some examples:

- Simple matrix clause ►

- (38) a-báá-ntu) φ ba-ka-som e-bi-tábu) φ
 AUG-C2-person C2-PST-read AUG-C8-book
 ‘The people read the books.’

- Full object relative *pro* subject ▶

(39) e-bi-tábu) φ [_{RC} e-bi-ba-ka-som-ére)] φ
 AUG-C8-book AUG-C8-C2-PST-read-PRF
 ‘the books that they read’

- Reduced object relative *pro* subject ▶

(40) e-bi-tabu [_{RC} ba-ka-som-ére)] φ
 AUG-C8-book AUG-C8-C2-PST-read-PRF) φ
 ‘the books they read’

- Full object relative overt subject ▶

(41) e-bi-tábu) φ [_{RC} a-báá-ntu) φ e-bi-ba-ka-som-ére)] φ
 AUG-C8-book AUG-C2-person AUG-C8-C2-PST-read-PRF
 ‘the books that people read’

- Reduced object relative overt subject ▶

(42) e-bi-tábu) φ [_{RC} a-baa-ntu ba-ka-som-ére)] φ
 AUG-C8-book AUG-C2-person AUG-C8-C2-PST-read-PRF
 ‘the books people read’

Plan: Matrix clauses • Nominals • RCs • Prosodic ambiguity

5 Towards a solution

- In reduced object relative clauses, we have found an XP that is *not* marked with a H tone, and an X⁰ that *is* marked with a H tone even though it is not at the right edge of a φ -phrase. We have two choices:

1. Take another look at the syntax of reduced relative clauses.
2. Reconsider how H tone is assigned.

- ▶ For now, I’ll focus on #2.

5.1 Boundary suppression

- We might say that there are—for some unknown prosodic reason—no boundaries allowed before reduced RCs.

- On one hand this would simplify the syntactic account of relative clauses: we could say that full and reduced RCs attach at the same place, the only syntactic difference is their size.

- However, we would lose the parallel between clausal and non-clausal modification and an explanation for the distribution of high determiners in combination with RCs.

- An empirical shortcoming of this approach is that there is at least one instance of a H tone preceding a reduced relative: when the subject of the reduced object RC is modified.

(43) a. e-bi-tábu) φ a-baa-ntu ba-sátu) φ ba-ku-sóm-a) φ
 AUG-C8-book AUG-C2-person C2-three C2-PROG-read-FV
 ‘the books three people are reading’
 b. e-bi-tábu) φ a-ba-ana b’o-mu-lími) φ
 AUG-C8-book AUG-C2-child C2-AUG-C1-farmer
 ba-ku-sóm-a) φ
 C2-PROG-read-FV
 ‘the books the farmer’s children are are reading’

- ▶ This type of constraint would be both difficult to motivate and inconsistent in its application.

5.2 Phases

- It is worth considering whether the domain for H tone assignment is larger than φ -phrases corresponding to XPs.
- One domain larger than XP, but not as large as CP, would be the phase. Prosodic work that has made use of the notion of phases includes Dobashi (2003); Ishihara (2003, 2007); Kahnemuyipour (2009); Kratzer and Selkirk (2007); Pak (2007, 2008).

- Perhaps there is no boundary on the subject in a reduced object RC, because the subject is not separated from the rest of the clause by a phase head (as the reduced RC projects only to TP).

- In contrast, there is a boundary on the subject in a full object RC, because the subject is in CP, separated from the rest of the RC by a phase head, namely C^0 .

- An empirical shortcoming of this approach is that H tones surface on subjects associated with clauses even smaller than TP:

- (44) a. Ni-tw-ii-j-a kw-eend o-mu-lími) φ
 PRES-1PL.SM-come-FV C15-want AUG-C1-farmer
 a-yaamb-e Kajúúmba) φ
 3SG-help-FV Kajumba.
 ‘We are going to want the farmer to help Kajumba.’
- b. Ni-ny-eend-a Kajúúmba) φ a-taandik-e ku-yaamb
 PRES-1SG.SM-want-FV Kajumba 3SG-start-FV C15-help
 oo-mu-lími) φ
 AUG-C1-farmer
 ‘I want Kajumba to start to help the farmer.’

- Since both objects in 3-place predicates bear an H tone, DPs would be phases on this account. However, subjects, whether they are located in vP , TP, or CP, have the same functional structure as objects.
- While DPs are natural phases, it is unclear why adverbs and adjectives should be phase heads. Recall that arguments and adjuncts behave similarly with respect to their prosodic characteristics.
- In short, the relevant prosodic domain is probably not the phase.

5.3 Ambiguous Parse

- Let’s restate the problem:
 - The head of a reduced RC does not bear a H tone, except in reduced object RCs with overt subjects.
 - Subjects always bear a H tone, except in reduced object RCs with overt subjects.
- In other words, we find an H where we do not expect one and we lack an H where we *do* expect one, and the context for both problems is reduced object RCs with overt subjects.

- What we expect:

- (45) e-bi-tabu [_{RC} a-báá-ntu) φ ba-ka-som-ére)] φ
 AUG-C8-book AUG-C2-person AUG-C8-C2-PST-read-PRF
 ‘the books people read’

- What we find:

- (46) e-bi-tábu) φ [_{RC} a-baa-ntu ba-ka-som-ére)] φ
 AUG-C8-book AUG-C2-person AUG-C8-C2-PST-read-PRF
 ‘the books people read’

- One observation about nominal phrases in the examples we’ve seen is that immediately adjacent DPs are always separated by a φ -phrase boundary, except when the second DP modifies the first.
- Two adjacent DPs in a possessive:

- (47) a. e-ki-tabu ky-a Kajúúmba) φ
 AUG-C7-book C7-AUG Kajumba
 ‘Kajumba’s book’
- b. e-by-ookuly by’ oo-mu-lími) φ
 AUG-C8-food C8 AUG-C1-farmer
 ‘The farmer’s food’

- Two adjacent DPs in a ditransitive:

- (48) a. A-ba-lími) φ ba-ka-h oo-mw-áán) φ
 AUG-C2-farmer C2.SM-PST-give AUG-C1-child
 ee-by-ookúlya) φ
 AUG-C8-food
 ‘The farmers gave the child food.’
- b. A-ba-somésa) φ ba-k-olek a-bá-ána) φ e-mí-ti) φ
 AUG-C2-teacher C2.SM-PST-show AUG-C1-child AUG-C4-tree
 ‘The teachers showed the children the trees.’

- Because left edges are unmarked in Rutooro, (NOUN NOUN) φ RC) φ strings can either represent

1. (NOUN ((NOUN) φ RC)) φ
2. ((NOUN NOUN) φ RC) φ

► The question that I'd like to pursue at this point is whether H tones are such a reliable indicator of constituency, that a $\text{NOUN NOUN})\varphi \text{RC})\varphi$ string must somehow be prosodically disambiguated, so that it does not point to an unintended constituency.

- One way to do that would be to shift the problematic H tone to the head of the reduced relative clause (cf. 43).
- The prosody would no longer be isomorphic with the syntax, but constituency would nonetheless be clear.

- A proposal along these lines would have to avoid disallowing the attested phrasing of embedded (possibly nominalized) infinitives, like (49), in which the subject of *ayaambe* 'help' has the same prosodic marking as it would if it were the object of *kweenda* 'want.'

(49) Ni-tw-ijj-a kw-eend o-mu-lími) φ a-yáámbe-e) φ
 PRES-1PL-COME-FV C15-want AUG-C1-farmer 3SG-help-FV.
 'We are going to want the farmer to help.'

- Perhaps the important difference is that the subject in (49) is part of a phrase that is embedded under *kweenda* 'want', whereas the subject of a reduced object relative is not embedded under the object head.

Plan: ☐ Matrix clauses • ☐ Nominals • ☐ RCs • ☐ Prosodic ambiguity

6 Wrapping up

- We've looked at the distribution of H tones in Rutooro in a variety of syntactic contexts, and have found striking parallels between the the verbal and nominal domains.
- For the majority of these data, H tones mark the right-edges of φ -phrases, which reliably correspond to the right-edges XPs.
- Yet, there remains at least one structure that resists obvious explanation.
- I've sketched the beginning of a proposal that would treat the anomalous prosodic structure of reduced object relative clauses with overt subjects as an attempt to unambiguously represent the underlying syntactic constituency of the phrase.

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