

The prosody of relative clauses in Chichewa

Laura J. Downing, ZAS, & Al Mtenje, *University of Malawi*

1 Introduction

- Chichewa (N30) is one of the three native national languages of Malawi. (The other two are ChiTumbuka and CiYao.)
- While many aspects of Chichewa are relatively well described – see, e.g., Kanerva (1990), Mchombo (2004), Watkins (1937) – complex constructions like relative clauses have not been described in detail.
- Further, while Kanerva’s (1990) study of Chichewa phrasal prosody has been reanalyzed in subsequent theories of the phonology-syntax interface (Truckenbrodt 1995, Selkirk 2000, Seidl 2001),
 - these theories have not been thoroughly tested on complex constructions like relative clauses.

Downing & Mtenje (to appear) sets out to fill these gaps. This talk expands on parts of that paper.

The goal of this talk is twofold:

- to illustrate the morpho-syntactic properties of relative clauses – section 2;
- to provide a prosodic analysis, which tests three different theories of the phonology-syntax interface – Truckenbrodt (1995), Pak (2008) and Cheng & Downing (2007, 2009) – on the relative clause data. – section 3.
 - I will show that the asymmetrical phase-edge based approach developed to account for Zulu prosodic phrasing by Cheng & Downing also best accounts for the Chichewa data.

2 Morpho-syntactic properties of relative clauses

2.1 Relative morphemes, word order within RC

Relative clauses are potentially signaled by two segmental relative markers:

- *-méné*, which occurs at the beginning of the relative clause,
- and the enclitic *-o*, which occurs at the end of the relative clause OR following the first relative *v*P-internal Phonological Phrase.

-méné and *-o* can co-occur and they can also both be omitted, as shown by the data in (1a-d); (1e) provides an example of *-o* in non-final position.¹

¹ As Nsuka-Nkutsi’s (1982) comprehensive survey of relative clause morphology in Bantu languages notes, the likely historical source of the relative pronoun, *-méné*, in Chichewa is the homophonous emphatic demonstrative: e.g., *nyumbá zi-ménee-zo* ‘those very houses’. As we can see in this example, the *-o* relative enclitic is homophonous with the remote demonstrative. (See Watkins 1937: 129 for agreement paradigms.)

In the data, right parentheses indicate prosodic phrase edges, while square brackets highlight the head plus relative clause complex; evidence for the prosodic phrasing include penult vowel length and tonal alternations (compare, e.g., the length and tone of the penult vowel of the first word in (1a) vs. (1b)):

(1)

(a) with *-mene* only

[**m-balá** *i-méné* í-ná-bá n-dalámá z-àángá) i-ku-tháawa).
 CL9-thief CL9-REL 9SUBJ-PST1-steal CL10-money CL10-my 9SUBJ-PROG-run.away
 ‘The thief who stole my money is running away.’

(b) with *-o* only

[**m-baálá**) í-ná-bá n-dalámá z-angáa-yo) i-ku-tháawa).

(c) with both *-mene* and *-o*

[**m-balá** *i-méné* í-ná-bá n-dalámá z-angáa-yo) i-ku-tháawa).

(d) omitting both *-mene* and *-o*

[**m-baálá**) í-ná-bán-dalámá z-àángá) i-ku-tháawa).

(e) with *-mene* and non-final *-o*

[**a-lendó** *a-méné* á-ná-mú-óná Bándaa-wo) dzuulo)
 CL2-visitor CL2-REL 2SUBJ-PST1-1OBJ-see CL1.Banda-CL2.REL yesterday
a-piítá).
 2SUBJ/PERF-go
 ‘The visitors who saw Banda yesterday have gone.’

2.2 Relativization out of different positions, use of resumptive OM

The examples in (1) are of subject relatives: i.e., the head of the relative clause is the subject of the relative clause.

Other positions can also be freely relativized,

- with the same relative morphemes;
- with the same canonical SVO word order in the relative clause as in main clauses *except in possessive relatives*.
- Indirect object relatives, including some non-human, generally require resumptive Object Marking on the relative verb.

(2) Direct object relatives

(a) **m-waná** wá sùkúlú a-ná-lémba [káláta i-méné m-phunzitsi
 CL1-child CL1.of CL9.school 1SUBJ-PST2-write CL9.letter CL9-REL CL1-teacher
á-ná-weléenga) kwá á-nyúuzi).

1SUBJ-PST2-read for CL2-newspaper

‘A student wrote the letter which the teacher read for the newspaper.’

(b) [káláta i-méné m-phunzitsi á-ná-weléenga) í-ma-néná m-fúumu).

CL9.letter CL9-REL CL1-teacher 1SUBJ-PST2-read 5SUBJ-HAB-criticize CL9-chief

‘The letter which the teacher read criticizes the chief.’

(3) Indirect object relatives – note resumptive OM

- (a) [**mw-aná a-méné Bándá á-ná-mu-pátsá m-pháatso)**
 CL1-child CL1-REL CL1.Banda 1SUBJ-PST2-1OBJ-give CL9-gift
a-ku-mú-thókòózá).
 1SUBJ-PROG-(1OBJ-)thank
 ‘The child who Banda gave gifts to thanks him.’
- (b) **a-ná-kwíyá ndí [m-phunzitsi a-méné a-lendó**
 2SUBJ-PST2-get.angry with CL1-teacher CL1-REL CL2-visitor
á-ná-mu-gulíla zóováala)].
 2SUBJ-PST2-1OBJ-buy.for CL10.clothes
 ‘They got angry at the teacher for whom the visitors bought clothes.’
- (c) [**sukúlú i-méné a-lendó á-ná-i-pátsá ma-búuku)** **i-li**
 CL9.school CL9-REL CL2-visitor 2SUBJ-PST2-9OBJ-give CL6-book 9SUBJ-is
ku-Zoómbá).
 LOC-Zomba
 ‘The school that the visitors gave the books to is in Zomba.’

(4) IO possessive relative – note resumptive possessive and word order

- [**M-tsikána a-méné njingá yáké mú-ná-bweréeka)**
 CL1-girl CL1-REL CL9.bike CL9.her you.plSUBJ -PST2-borrow
w-a-ngo-dútsá pompaano).
 1SUBJ -PERF-just-pass by recently
 ‘The girl whose bicycle you borrowed just walked past.’

(5) Head of RC is locative, temporal, instrumental or adjunct – note, no resumptive morpheme

- (a) [**Tsikú li-méné mw-aná wángá á-ná-baadwá)** **ndi-ná-gwíra**
 cl5.day cl5-rel cl1-child cl1.my 1SUBJ-PAST-be born I.SUBJ-PAST.HAB-catch
ntchiito) m'-maáwá).
 cl9.work in-morning
 ‘On the day my child was born I worked in the morning.’
- (b) [**M'-méné á-ma-imbírá nyimbó iiyi)** **zí-ma-ndi-kumbútsá**
 in-rel 1SUBJ-HAB-sing cl9.song cl9.this 10SUBJ-HAB-me.OBJ-remind
mu-dzi wáanga.)
 cl3-village cl3.my
 ‘The way she sings this song reminds me of my home village.’
- (c) [**Sitoló i-méné mú-nga-gulé má-búukhu)** **i-li pafúpi**
 cl9.store cl9-rel you.pl.SUBJ-can-buy cl6-book 9SUBJ-be near
ndí-pókwéléra ma-báasi.)
 with-where.catch cl6-bus
 ‘The shop where you can buy books is next to the bus stop.’
- (d) [**Chi-fukwá chi-méné á-ná-bwéléra kuuno)** **chi-ku-ndí-dándaúlítsa.)**
 (cl7-reason) cl7-rel 1SUBJ-PST-come here 7SUBJ-PROG-me.OBJ-worry
 ‘The reason that she came here for worries me.’

- (e) [**N-dówá i-méné tí-ma-tungírá maádzí) y-a-onongeéká.)**
 cl9-bucket cl9-rel we.SUBJ-HAB-fetch with cl6.water 9SUBJ-PERF-be damaged
 ‘The bucket with which we fetch water has broken.’

2.3 Similarity in form of restrictive, free, non-restrictive and clefted RCs

Other relative clause constructions have similar morpho-syntax (see Downing & Mtenje, to appear, for details):

- same relative morphemes in same positions; use of OM;
- relative morphemes are often optional (except in non-restrictives).

However, note difference in the prosody – more on this in section 3:

- clefts and non-restrictive relative clauses phrase separately from their heads;
- as you have probably noticed, all RCs are followed by a prosodic phrase break.

(6) *Subject headless (free) relative*

- (a) [**a-méné á-ná-mu-óná Báanda) dzuulo) a-piítá.)**
 (CL2-REL) 2SUBJ-PST2-1OBJ-see CL1.Banda yesterday 2SUBJ.PERF-go
 ‘The ones who saw Banda yesterday have gone.’

(7) *Subject cleft*

- Q: [**a-méné á-ná-gulá nyama y-ówóola) ndi ndàání?)**
 (CL1-REL) 1SUBJ-PST2-buy CL9.meat CL9.of-spoiled (COP) CL1.who
 ‘Who bought the spoiled meat?’ [lit., ‘The one who bought the spoiled meat is who?’]
 A: **ndi m-fúmú yá í-ngóono) ([i-méné í-ná-gulá nyama**
 COP CL9-chief CL9.of CL9-young (CL 9-REL) 9SUBJ-PST2-buy CL9.meat
y-ówóola)].
 CL9.of-spoiled
 ‘It’s the young chief who bought the spoiled meat.’

(8) *Subject non-restrictive relative*

- a-Báanda) [a-méné á-ná-gulá nyama y-ówóola) á-ma-khálá**
 CL2-Banda CL2-REL 2SUBJ-PST2-buy CL9.meat CL9.of-spoil 2SUBJ-HAB-live
pa-fúpí ndí m-siika.)
 LOC-close to CL3-market
 ‘Mr. Banda, who bought the spoiled meat, lives near the market.’

2.4 Some morpho-syntactic puzzles

- When is an object marker required/preferred in the relative verb phrase?
 - IO relative always? – NO, see instrumental relative in (5e)
 - only human IOs? – NO, see (3c)
 - only IO relative – NO, also found with human DO relatives:

- (9) **Galú wá-m-kúlu:-yo) a-ná-lúma [m-balá**
 cl1.dog cl1.of-cl1.big-cl1.that 1SUBJ-PST2-bite cl9.thief
i-méné tí-ná-yí-pírikítsá ndí kú-yí-gwírá.)
 cl9-rel we.SUBJ-PST2-9.OBJ-chase and INF-9.OBJ-catch
 ‘That big dog bit the thief who we chased and caught.’

- Prosody of optional *-méné*

(10) *Restrictive RC – no phrase break with -méné; can omit it*

(a) [a-lendó a-méné á-ná-mú-óná Báanda) dzuulo] a-piítá.
 CL2-visitor CL2-REL 2SUBJ-PST1-1OBJ-see CL1.Banda yesterday 2SUBJ.PERF-go

BUT – omitting *-méné* requires a phrase break!

(b) [a-leéndó) á-ná-mú-óná Báanda) dzuulo] a-piítá.

‘The visitors who saw Banda yesterday have gone.’

(11) *Non-restrictives – cannot omit -méné and preceding phrase break required*

(a) a-leéndó) [a-méné á-ná-mú-óná Báanda-wo) dzuulo]
 CL2-visitor CL2-REL 2SUBJ-PST1-1OBJ-see CL1.Banda-(CL2.REL) yesterday
 a-piítá).

2SUBJ.PERF-go

(b) *a-leéndó) [á-ná-mú-óná Báanda-wo) dzuulo] a-piítá).

‘The visitors, who saw Banda yesterday, have gone.’

The problem here is to explain why simply omitting *-méné* in a restrictive relative clause changes the prosodic phrasing, as there is no obvious difference in the syntactic structure.²

To understand this problem better, need to know more about how syntax conditions prosodic phrasing in Chichewa.

This is the topic of the next section.

3 Prosodic analysis

3.1 Basic facts of Chichewa phonological phrasing in simple clauses

Chichewa is a tonal language, like most Bantu languages (Kisseberth & Odden 2003).

As demonstrated in Kanerva (1990) and Bresnan & Kanerva (1989), the realization of lexical and grammatical High tones is conditioned by phonological processes which take the Phonological Phrase as their domain.

Kanerva (1990) argues that two main factors define the parse into Phonological Phrases: syntax and focus:

- Syntax determines the prosodic phrasing under neutral (or broad) focus.

In the analyses of Bresnan & Mchombo (1987), Bresnan & Kanerva (1989), Kanerva (1990) and Mchombo (2004), **sentences (S) in Chichewa have three main XP subconstituents –**

- an optional **subject NP**,
 - an obligatory **VP** = the verb and all its complements,
 - and an optional **topic NP**
 - which can be freely ordered.
- Each of these three constituents is parsed into its own Phonological Phrase.

² I would like to thank the audience members at the workshop for proposing two possible explanations for this phrasing. One is that, without the phrase break, a relative clause which omits *-méné* is often identical to a non-relative clause. The prosodic break serves to identify the string following the head as a relative. The other is that omitting *-méné* in fact gives a non-restrictive interpretation to the following relative, to match the similarity in phrasing with non-restrictives. More research is required to decide between these proposals.

(12) Subject, Topic and VP are minimal XPs

(a) (Subj) (VP) – Kanerva (1990: 102, fig (112))

(fiisi) (a-na-dyá m-káango).

CL1.hyena 1SUBJ-PST1-eat CL3-lion

‘The hyena ate the lion.’

(b) (Subj) (VP) (Top) – (Kanerva 1990: 107, fig (123b))

(mwaána) (a-na-m-pézá kú-dáambo) (gaálu).

CL1.child 1SUBJ-PST1-1OBJ-find LOC-CL5.swamp CL1.dog

‘The child found it at the swamp, the dog.’

(c) (Top) (VP) (Subj) – (Kanerva 1990: 102, fig (110c))

(a-leenje) (zi-ná-wá-luuma) (njúuchi).

CL2-hunter 10SUBJ-PST2-2OBJ-bite CL10 bees

‘The hunters, they bit them, the bees [did].’

Kanerva (1990) demonstrates that minimal XPs and Phonological Phrase edges do not always coincide, however.

- Both complements of the verb in a [V DP XP] verb phrase are parsed with the verb into a single Phonological Phrase.
- We do not find a phrase break after the first XP complement when the entire VP is in broad focus:

(13) VPs containing two verbal complements

(a) ([V XP XP]) (Kanerva 1990: 98, fig. (101a))

([a-na-ményá nyumbá ndí mw-áála]).

s/he-PST1-hit CL9. house with CL3-rock

‘S/he hit a house with a rock.’

(b) (Subj) ([VP]) Kanerva (1990: 103, fig (114b))

(mwaána) ([a-na-pézá galú kú-dáambo]).

CL1.child 1SUBJ-PST1-find CL1.dog LOC-CL5.swamp

‘The child found the dog at the swamp.’

(c) (Subj)([VP]) Kanerva (1990: 103, fig. (114a))

(mfúumu) ([i-na-pátsá mwaná zóóváala]).

CL9.chief 9SUBJ-PST1-give CL1.child CL10.clothes

‘The chief gave the child clothes.’

(d) ([V XP XP])

(ma-kóló [a-na-pátsá mwaná ndalámá zá súkúulu]).

CL6-parent 6SUBJ-PST1-give CL1.child CL10.money CL10.of CL9.school

‘The parents gave the child money for school.’

(e) ([V XP XP])

(ma-kóló [a-na-pátsíra mwaná ndalámá zá mú-longo wáake]).

CL6-parent 6SUBJ-PST1-give CL1.child CL10.money CL10.of CL1-sister CL1.her

‘The parents gave the child money for her sister.’

This is the essential problem to be accounted for in any analysis of Chichewa prosodic phrasing:

- Why is it that subject and topic DPs are each (often) parsed into their own Phonological Phrase – suggesting that AlignXP or Match XP is highly ranked in Chichewa;
- YET DPs internal to VP are NOT parsed into their own Phonological Phrase – in violation of AlignXP or Match XP? (That is, the Phonological Phrase which includes the

VP is bigger than we expect because there is no phrase break following the first complement of the verb.)

- AlignXP (Truckenbrodt 1995, 1999) and Match XP (Selkirk 2009) are constraints which are satisfied when Phonological Phrase edges and XP edges coincide.

3.2 Three approaches to phonological phrasing optimizing: (S) (_{VP}V XP XP) (Topic)

3.2.1 Truckenbrodt (1995, 1999, 2005, 2007)

Truckenbrodt (1995, 1999) reanalyzes Kanerva's (1990) data, formalizing Selkirk's (1986, 1995, 2000) End-based approach to phonological phrasing in terms of Optimality Theory (OT) Alignment constraints (McCarthy & Prince 1993).

He proposes that the following constraints, ranked in the order given, optimize the phrasing illustrated in the preceding section:

(14)

- (a) AlignR(FOCUS element, PhP):
Align the right edge of each focus element [XP] with the right edge of a Phonological Phrase (PhP).
- (b) WRAP XP: An XP_{max} is contained in a (single) PhP.
That is, a maximal XP cannot be split into more than one PhP.
- (c) ALIGNR(XP, PP): Align the right edge of each XP with the right edge of a PhP.

- The basic asymmetric Edge-based alignment constraint ALIGNR (14c) optimizes aligning the right edge of each XP with the right edge of a Phonological Phrase: (S) (V XP) (XP)
- WRAP (14b) optimizes parsing each maximal XP into a single Phonological Phrase.
- **Ranking WRAP above ALIGNR (14c) optimizes parsing an entire maximal VP into a single Phonological Phrase and penalizes a phrase break after each VP-internal XP complement:**
 - (S) ([V XP XP])
 - * (S) ([V XP] (XP))
- WRAP has the effect of minimizing the number of prosodic phrases that a maximal XP is parsed into, allowing VP to be parsed as a single Phonological Phrase.

3.2.2 Pak (2008); Selkirk (2009)

Phase-based syntax provides a new way of thinking about the relation between syntax and prosodic phrasing:

- phases – vP and CP – define ‘cyclic’ spell-out domains which can map symmetrically to prosodic domains;
- phases also provide a new type of constituent edge for prosodic domains to align with.

Pak (2008) exploits the first possibility in accounting for the domain of what she calls High Tone Anticipation (HTA) in Luganda.

According to Pak, the domain for HTA is equivalent to the domains parsed into Phonological Phrases in Chichewa:

- subjects DPs and Topics form a separate prosodic domain from the verb and its complements, which are parsed together into a single prosodic domain.

Her proposal:

- subjects and topics occur in Spec, CP.
- this leaves the verb and its complements in the spell-out domain of CP:
[_{CP} Subj ([_{C'} V XP XP])] (very simplified)
 - That is, the verb and all its complements are parsed together into a separate prosodic domain from subjects and topics because they occur together in a syntactic spell-out domain which excludes subjects and topics.
- As Selkirk (2009) points out, this proposal could be formalized as the symmetrical Edge-based constraint, MATCH-CLAUSE:
 - both edges of the clause coincide with the edges of an Intonation Phrase.

3.2.3 Cheng & Downing (2007, 2009)

Cheng & Downing (2007, 2009) and Downing & Mtenje (to appear) also crucially refer to phases, proposing that in Zulu and Chichewa, Phonological Phrase breaks

- asymmetrically coincide with the right edges of syntactic phases – vP and CP:
 - [_{CP} **Subj** [_{vP} V XP XP]] (very simplified)

This proposal, though, optimizes phrasing the subject with the VP (vP), and, indeed, this is commonly found in Al Mtenje's variety of Chichewa.

- See (13d, e), for example.

To account for the data where the subject is followed by a phrase break, we propose that the subject is topicalized, adjoined to CP – see (15), below.

- Note the similarity in the syntactic structure and prosodic phrasing of topicalized subjects and non-restrictive relative clauses (see (8) and (11), above, for examples of non-restrictive relative clauses).

(15)

- (a) Topicalized subject: [Topic] ([_{CP}
(b) Non-restrictive relative: [_{DP} head N] ([_{DP-REL} [_{CP}

Following Cheng & Downing (2007, 2009), we appeal to the argument (complement)–adjunct distinction which work like Chen (1987) has shown can play a role in conditioning prosodic phrasing to account for the similarity in phrasing.

Adopting typical X-bar theoretic terminology (see Jackendoff 1977, Chomsky 1981, among others), the difference between an adjunct and a complement rests upon the fact that:

- an adjunct is not syntactically selected by a head, while a complement is.

There are two constructions in which CPs are selected:

- a sentential complement selected by a verb,
- and a restrictive relative clause.

These two contrast with other CPs, which are not selected:

- e.g., non-restrictive relative clauses,
- other adjunct clauses
- and CPs following left-dislocated topics.

To sum up, in this analysis:

- the general ‘match’ between prosodic phrases and syntactic phrases is asymmetrical:
 - the right edge of phrases and phrases always match;
 - the left edge of phrases and phrases only match when the phrase is not selected by what precedes it.

3.3 Testing the approaches on Chichewa relative clause prosody

Relative clauses provide an ideal testing ground for these theories, as they each make very distinct predictions about the optimal prosodic phrasing:

- WRAP (Truckenbrodt 1995, 1999) predicts that the VP should be parsed into a single Phonological Phrase no matter how internally complex it might be:
 - that is, relative clause modifying the first XP complement within VP should have no effect on prosodic phrasing; entire maximal VP is optimally WRAP-ed.
- MATCH-CLAUSE (Pak 2008, Selkirk 2009) predicts that
 - relative clauses should be preceded and followed by a prosodic phrase break, *iff* a relative clause contains a CP (as is usually assumed), as each CP spell-out domain symmetrically coincides with a prosodic phrase.
- ALIGNR-PHASE/ALIGNL-NON-SELECTED PHASE (Cheng & Downing 2007, 2009; Downing & Mtenje, to appear) predicts that
 - all relative clauses should be followed by prosodic break,
 - but only non-restrictive relatives (non-selected) should be preceded by a prosodic break; restrictive relatives (selected) should not be.

The facts support asymmetrical alignment of prosodic phrases and phrases:

- when relative clauses are within the first verbal complement in a [_{VP} V DP XP] constituent
 - they are consistently followed by a prosodic phrase break, even though this phrase break violates WRAP.
 - they are never preceded by a prosodic phrase break, even though MATCH-CLAUSE predicts a break:

(16)

(a) (m-waná wá súkúlú [_{VP} a-ná-lémba [_{DP} káláta i-méné m-phunzitsi
 CL1-child CL1.of CL9.school 1SUBJ-PST2-write CL9.letter CL9-REL CL1-teacher
 á-ná-welénga]) [_{PP} kwá á-nyúuzi]).

1SUBJ-PST2-read for CL2-newspaper

‘A student wrote [the letter which the teacher read] for the newspaper.’

cf.

(b) (m-waná wá súkúlú [_{VP} a-ná-lémba [_{DP} káláta] [_{PP} kwá á-nyúuzi])).
 CL1-child CL1.of CL9.school 1SUBJ-PST2-write CL9.letter for CL2-newspaper
 ‘A student wrote the letter for the newspaper.’

(c) (**ma-kóló** [_{VP} **a-na-pátsíra** [_{DP} **mwaná a-méné á-ná-wa-chezéera**]
 CL6.parent 6SUBJ-PST1-give CL1.child CL1-REL 1SUBJ-PST2-6OBJ-visit
 [_{DP} (**ndalámá zá mú-longo wáake**)]).
 CL10.money CL10.of CL1-sister CL1.her
 ‘The parents gave [the child who visited them] money for her sister.’ – cf. (13e)
 cf.

(d) (V XP XP) - cf. (16c)
 (**ma-kóló**) **a-na-pátsíra mwaná ndalámá zá mú-longo wáake**).
 CL6-parent 6SUBJ-PST1-give CL1.child CL10.money CL10.of CL1-sister CL1.her
 ‘The parents gave the child money for her sister.’

(e) (**ti-ku-gáníza kutí m-nyamatá** [_{VP} **á-pézá** [_{DP} **galú a-méné**
 we-PROG-think that CL1-boy 1SUBJ.FUT-find CL1.dog CL1-REL
á-ná-mu-sowéetsa] [_{PP} **ku-dáambo**])).
 1SUBJ-PST2-1OBJ-lose LOC-CL5.swamp
 ‘We think the boy will find [the dog which he lost] in the swamp.’ – cf. (13b)
 cf.

(f) (Subj) (VP) Kanerva (1990: 103, fig (114b)) – cf. (16d)
 (**mwaána**) (**a-na-pézá galú kú-dáambo**).
 CL1.child 1SUBJ-PST1-find CL1.dog LOC-CL5.swamp
 ‘The child found the dog at the swamp.’

Pak (2008) acknowledges this problem:

- Her analysis incorrectly predicts that relative clauses form a separate domain for HTA from a preceding main clause in Luganda.
- To account for this phrasing, she proposes that in Luganda, relative clauses are reduced clauses and so do not contain a CP. Their phrasing is then like other reduced clauses (e.g., infinitival complements).
- Only non-reduced embedded clauses, like *think/say* clauses, form a separate HTA domain.

Proposing that relative clauses in Chichewa are reduced clauses would not save the analysis:

- As Kanerva (1990) and our work shows, all embedded complement clauses, including of *think/say* clauses, phrase with what precedes.
- This phrasing cannot be accounted for by proposing that all embedded clauses are reduced clauses.
- Note that this phrasing follows straightforwardly from the ALIGNR-PHASE analysis:
 - the first prosodic phrase break always aligns with the first right phase edge.

(17) Embedded and recursive (relative) clauses (underlined)

- (a) ([_{CP} [_{CP} **mu-nthu a-méné á-ná-bweréká** [_{CP} **búkhú li-méné ndí-ná-gulá**
CL1-man CL1-REL 1SUBJ-PST2-borrow CL5.book 5-REL 1-PST2-buy
ku-Lilongwe]]] (w-a-pita ku-Mzúuzu**)).
LOC-Lilongwe 1SUBJ-PERF-leave LOC-Mzuzu
‘The man who borrowed the book which I bought in Lilongwe has moved to Mzuzu.’**
- (b) (**ti-ku-fúná** [_{CP} **sitóló i-méné í-ma-gulítsá** [_{CP} **n-sápáto zi-méné**
we-PROG-look.for CL9.shop CL9-REL 9SUBJ-HAB-sell CL10-shoes CL10-REL
**zí-ma-chokérá ku-Mangochi]]]).
10SUBJ-HAB-come.from LOC-Mangochi
‘We are looking for the shop which sells shoes which come from Mangochi.’**
- (c) ([_{CP} [_{CP} **mu-nthu a-méné á-ná-néná** **kutí m-balá i-ná-bá**
CL1-man CL1-REL 1SUBJ-PST1-say that CL9-thief 9SUBJ-PST2-steal
ndaláama)] (a-ná-thaawa**)).
CL10.money 2SUBJ-PST2-run.away
‘The man who said that the thief stole some money ran away.’**
- (d) ([_{CP} **mu-nthu a-na-néná** **kutí m-balá i-méné í-ná-bá**
CL1-man 1SUBJ-PST1-say that CL9-thief CL9-REL 9SUBJ-PST1-steal
ndaláama)] **i-na-tháawa)).
CL10.money 9SUBJ-PST1-run.away
‘The man said that the thief who stole the money ran away.’**
- (e) Kanerva (1990: 117)
(Mavúuto) ([_{VP} a-ku-gáníza **kutí mw-alá úu-gwa.]])**
cl1.Mavuto 1SUBJ-PRES-think that cl3-rock 3SUBJ-fall
‘Mavuto thinks that the rock will fall.’

4 Conclusion

To sum up,

- Morpho-syntactically, Chichewa relative clauses are straightforward:
 - all relative clause types can contain the same relative morphology;
 - a noun playing any role can be relativized.
- Topics for future investigation here include the distribution of resumptive marking in the relative clauses, and why omitting *-méné* has an effect on prosodic phrasing.
- Prosodically, Chichewa relative clauses are also straightforward:
 - all relative clause types are followed by a prosodic break;
 - only non-restrictive relatives (and clefts) – i.e., non-selected CPs – are preceded by a prosodic break.
 - These generalizations hold true of other embedded clause types.
- This straightforward prosody falls out from an asymmetric phase-based analysis, aligning the right edge of a Phonological Phrase with the right edge of a syntactic phase.
- It is problematic for non-phase based approaches (like Truckenbrodt 1995) or symmetrical phase based approaches (like Pak 2008).

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