On the structural differences of *kó*- and *yúukó*-clauses in Kirundi and Kinyarwanda*

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1 Introduction

- **Focus of the talk:** the distribution of two complementizers introducing finite embedded clauses in Kirundi and Kinyarwanda (Great Lakes Bantu): *kó* and *yúukó*, which are reported to be interchangeable in reference grammars.

(1) Keezá yavuze **kó** / **yúukó** Kagabo azá kuza.
Keezá a-a-vuze **kó** **yúukó** Kagabo a-zá ku-za
Keeza 1s-PST-say.PFV COMP COMP Kagabo 1s-come 15/INF-come
'Keeza said that Kagabo will come.'

- **Empirical claim**: *kó* and *yúukó* are not in free variation. In this talk, I specifically focus on their acceptability in the adjunct position.

- **Proposal**: Complementizer *yúukó* is structurally complex. It consists of a Content operator, a preposition, an augment and the complementizer *kó*. This assumption is then shown to explain the properties of the distribution of *yúukó*-clauses.

- **Theoretical consequences**: the structure of *yúukó*-clauses correlates with the recent views on the composition of the embedded clauses (Bondarenko, 2022; Elliott, 2020). It also adds to our understanding of the properties of embedded clauses in Bantu.

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2 Background

- Kirundi and Kinyarwanda are Bantu languages spoken in Burundi and Rwanda, as well as adjacent territories of Tanzania, Democratic Republic of the Congo and Uganda. The two languages are mutually intelligible and form the Rwanda-Rundi dialect continuum.

- **Disclaimer**: I started my research on this topic with the data from Kirundi; due to this, the majority of the data in the paper is from Kirundi. The data from Kinyarwanda is identical to the data from Kirundi in the aspects crucial to my analysis.

- In this section, I am going to present some of the data that are going to be relevant in the discussion of the decomposition of the complementizer *yúukó*.

- Kirundi and Kinyarwanda nouns in citation form consist of an augment (V-), a noun class prefix (CV-, N- or null) and a noun stem.

(2) a. umugoré
u-mu-goré
AUG-1-woman
'woman'

b. igikeré
i-ki-keré
AUG-7-frog
'frog'

c. izúuba
i-∅-zúuba
AUG-5-sun
'sun'

- The semantics of the augment vowel is still unclear at this point (see Halpert, to appear for a cross-Bantu overview); in Kirundi and Kinyarwanda, it seems to be related to the referentiality of the nominal.

- Kirundi and Kinyarwanda have 16 noun classes, with each of them associated with specific semantic content and grammatical number. Noun class plays an important role, determining agreement on the verb and modifier concord.

(3) Umuhuúngu arabóonye igikeré kiníni.
u-mu-huúngu a-ra-bóonye i-ki-keré ki-níni
AUG-1-boy 1S-DJ-see.PFV AUG-7-frog 7-big
'The boy saw a big frog.'

- Nominal arguments can either merge with the verb on their own or via the preposition *na*. The two options are in complimentary distribution; that is for arguments in each specific position only one of the options is attested.
- Subjects and objects merge as "bare" nouns. They cannot be merged with a preposition.

(4) **Mucó** yarungikiye **amashurwe** **Keezá**.
Mucó a-a-rungik-ir-ye **a-ma-shurwe** **Keezá**
Muco 1S-PST-send-APPL-PFV **AUG-6-flower** **Keeza**
'Muco sent flowers to Keeza.'

- Preposition *na* introduces nouns in a number of other positions such as agent of passive (5a) and possessors (5b). Note, that in the latter case the preposition also agrees in class with the head noun.

(5) a. Ingoma iravúzwa **na** **Mizero** unó muúsi.
i-n-goma i-ra-vúg-i-u-a **na** **Mizero** unó mu-úsi
AUG-9-drum 9S-DJ-play-CAUS-PASS-FV **PREP** **Mizero** DEM 3-day
'The drum is played **by Mizero** today.'

b. Naráboonye akayaabu **k**'úmugabo.
n-a-ra-boonye a-ka-yaabu **ki-a** ú-mugabo
1SG.S-PST-DJ-see.PFV AUG-7-cat **7-PREP** AUG-1-man
'I saw the **man's** cat.'

- I assume that the prepositions in (5a) and (5b) are identical elements despite their morphological differences; see Appendix 2 for the empirical evidence.

3 Embedded clauses in Kirundi and Kinyarwanda

- In Kirundi and Kinyarwanda, finite embedded clauses may be introduced by either the complementizer *kó* or the complementizer *yúukó*.

(6) a. Keezá yavuze kó / yúukó Kagabo azá kuza.
Keezá a-a-vuze kó yúukó Kagabo a-zá ku-za
Keeza 1S-PST-say.PFV COMP COMP Kagabo 1S-come 15/INF-come
'Keeza said that Kagabo will come.'

b. Keezá arazi kó / yúukó Kagabo azá kuza.
Keezá a-ra-zi kó yúukó Kagabo a-zá ku-za
Keeza 1S-DJ-know COMP COMP Kagabo 1S-come 15/INF-come
'Keeza knows that Kagabo will come.'

- In many contexts, the two complementizers are in free variation; many speakers also share the judgement that the two elements are generally interchangeable.
- However, in my fieldwork, I found some prominent differences between the two complementizers. In this talk, I am going to focus more on one of them (see Section 4.4 for the discussion of the other distributional difference between the two clauses).
- Specifically, only *kó*-clause can be used as a *because*-clause on its own.

(7) a. Maawe araampana [**kó** / ***yúukó** ndiíye iboombo].
maawe a-ra-m-pana **kó** **yúukó** n-ra-iíye i-boombo
my.mom 1S-DJ-1SG.O-punish COMP COMP 1SG.S-DJ-eat.PFV 5-candy
'My mom is angry at me because I ate the candies.' Kirundi

b. Mama araza kuumpana [**kó** / ***yúukó** nariíye
mama a-ra-za ku-m-paha **kó** **yúukó** n-a-riíye
mother 1S-DJ-come 15/INF-1SG.O-punish COMP COMP 1SG.S-PST-eat
boombo].
boombo
candy
'My mom is angry at me because I ate candies.' Kinyarwanda

- In the next section, I will show how this asymmetry between the two clauses follows from their composition.

4 Proposal

4.1 Semantics of the embedded clauses

- The classical Hintikkan semantics of attitude verbs (Hintikka, 1969) suggests that they select for a proposition as their object (8b). Under this approach, embedded clauses denote propositions (8c).

(8) a. I believe that this conference is held in Toronto.
b. $[\![\text{believe}]\!] = \lambda p \lambda x. \forall w' [w' \in \text{Dox}_x(w) \rightarrow p(w') = 1]$
c. $[\![$ that this conference is held in Toronto $]\!] = \lambda s.$ this conference is held in Toronto in s

- This approach to the semantics of matrix verbs and clausal complements has been revised in more recent work like Elliott (2020) and Bondarenko (2022).

- They adopt a neo-Davidsonian approach (Castañeda, 1967, a.o) according to which all arguments are severed from the verb and are introduced by functional projections.

- Under this approach, attitude predicates are simple predicates of events or states, with the content and holder of the attitude introduced separately.

(9) ⟦ believe ⟧ = λs.believe(s)

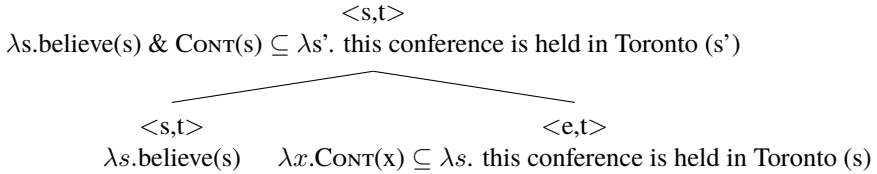
- Embedded clauses, then, need to have a different semantics to be able to combine with matrix verbs. One line of proposals (Bondarenko, 2022; Elliott, 2020; Kratzer, 2016; Moulton, 2015) suggests that embedded clauses denote sets of contentful individuals, as in (10).

(10) ⟦ that this conference is held in Toronto ⟧ = λx.CONT(x) = λs. this conference is held in Toronto in s

  - Under the semantics in (10), the thematic relation between the complement clause and the predicate is included in the complement clause itself.
  - I will refer to clauses with the denotation parallel to the one in (10) as CONTENT-CPs.

- The embedded clause then combines with the embedding predicate in via Predicate Modification, as shown in (11).

(11)



- While the embedded clause is of type <e,t>, and the embedding predicate is of type <s,t>, this step is possible under the assumption that there is no model-theoretic type distinction between individuals and events/states (Elliott, 2020; Lasersohn, 2013).

- Under this approach, complement clauses do not act as regular nominal arguments to verbs; instead, they modify the event argument of the verb.

Proposal preview

I adopt the view that (most) complement clauses are CONTENT-CPs. However, I propose that in Kirundi and Kinyarwanda, there are two ways of for a clause to become such.

- for *kó*-clauses, this denotation is achieved via type-shifting from propositions to contentful individuals.
- *yúukó*-clauses, on the other hand, inherently include CONTENT predicate in their structure, and are thus always CONTENT-CPs; this in turn limits their distribution.

4.2 Semantics of *kó*-clauses

- I argue that the crucial piece of data about *kó*-clauses is their ability to occur as adjunct of matrix verbs as in (12a).

- I propose that this is possible due to *kó*-clauses inherently expressing propositions of type <s,t>. Since they are the same semantic type with a regular sentence, they are able to be composed with the matrix predicates via Predicate Modification in constructions like (12a).

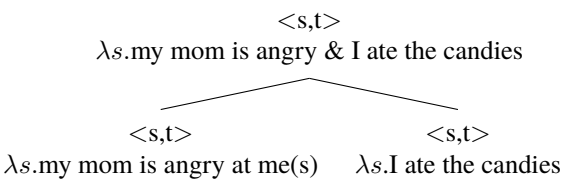
  - *kó*-clause in (12a) is interpreted as an adjunct and not an a matrix clause due to its embedded morphological marking (see Appendix 3).
  - following Bochnak and Hanink (2022), I also suggest that the "reason"-interpretation of *kó*-clauses arises pragmatically.

(12) a.

Maawe	araampana	[**kó**	ndiíye	iboombo]
maawe	a-ra-m-pana	**kó**	n-ra-iíye	i-boombo
my.mom	1s-DJ-1SG.O-punish	COMP	1SG.S-DJ-eat.PFV	5-candy

'My mom is angry at me because I ate the candies.' Kirundi

b.



- If *kó*-clauses are of type <s,t>, then, following the assumption about the semantic of clausal complements, there needs to be an extra step to convert the clause into a predicate of contentful individuals so it could merge with the matrix verbs.

- I propose that this is done via the type-shifting operator F_{PROP} proposed in Bochnak and Hanink (2022) for Washo clauses.

(13) a. Keezá yavuze kó Kagabo azá kuza.
Keezá a-a-vuze kó Kagabo a-zá ku-za
Keeza 1s-PST-say.PFV COMP Kagabo 1s-come 15/INF-come
'Keeza said that Kagabo will come.'

b. <s,t>
λs.say(s) & CONT(s) $\subseteq \lambda s'$. Kagabo will come (s')

<s,t> <e,t>
λs.say(s) TYPE SHIFT: F_{PROP}
λx.CONT(x) $\subseteq \lambda s$. Kagabo will come (s)

<s,t>
λs. Kagabo will come (s)

4.3 Semantics of *yúukó*-clauses

4.3.1 The internal structure of *yúukó*

- I propose that complementizer *yúukó* is morphologically complex and has a preposition and an augment inside of it. This is illustrated in (14).

(14) yúukó
y-a u-kó
AGR-PREP AUG-COMP
'that'

- The evidence for the presence of the preposition in the structure of *yúukó* comes from the complimentary distribution of *y-* with other prepositions.
  - In (15a), the preposition *na*, introducing the agent of passive, obligatorily replaces *y-*, yielding the element *núukó*.
  - In (15a), *y-* is obligatorily replaced by the agreeing preposition element *za*.

(15) a. Kagabo yátangaajwe [**n'úukó** Keezá
Kagabo a-á-tangaaj-u-e **na** **u-kó** Keezá
Kagabo 1s-PST-surprise-PASS-FV PREP AUG-COMP Keeza
yakozé icuúmba cíiwé].
a-a-kóze i-ki-uúmba ki-íiwé
1s-PST-work.PFV AUG-7-room 7-POSS.3SG
'Kagabo was surprised that Keeza cleaned her room.' Kirundi

b. Abageenzi bampaaye impanuuro [**zúukó**
a-ba-geenzi ba-mpaaye i-n-panuuro **z-a** **u-kó**
AUG-2-friend 2s-give.PFV AUG-10-advice 10-PREP AUG-COMP
nokwimúka].
n-o-kwimúka
1SG.S-COND-move
'My friends gave me pieces of advice that I should move.' Kirundi

- We also see that there is a vowel appearing between the preposition and the complementizer *kó*. I propose that this is an augment vowel, which appears to satisfy the selectional requirements of the prepositional head (see Appendix 4 for further phonological arguments for the presence of the augment in the structure of *yúukó*).

4.3.2 The role of the preposition

- To understand the role of the prepositional head in *yúukó* we must go on a small tangent about the role of prepositions in general. (16) presents the contexts where we see the preposition appear in Kirundi and Kinyarwanda.

(16) a. Agent of passive

Ingoma iravúzwa **na** Mizero unó muúsi.
i-n-goma i-ra-vúg-i-u-a **na** Mizero unó mu-úsi
AUG-9-drum 9s-DJ-play-CAUS-PASS-FV **PREP** Mizero DEM.3 3-day
'The drum is played by Mizero today.'

b. Comitative argument

Umugóre yatambanye **n'**úmugabo.
u-mu-goré a-a-tamb-an-ye **na** u-mu-gabo
AUG-1-woman 1s-PST-dance-COM-PFV **PREP** AUG-1-man
'A woman danced with a man.'

c. Instrumental argument

Nduguruye umuryango **n'**úrupfunguruzo.
n-ra-ugurur-ye u-mu-ryango **na** ú-ru-pfunguruzo
1SG.S-DJ-open-PFV AUG-1-door **PREP** AUG-11-key
'I opened the door with the key.'

d. Possessor

Naráboonye akayaabu **k'**úmugabo.
n-a-ra-boonye a-ka-yaabu **k-a** ú-mugabo
1SG.S-PST-DJ-see.PFV AUG-7-cat **7-PREP** AUG-1-man
'I saw the man's cat.'

e. Second conjunct

Mucó **na** Kéezá baratwéenze.
Mucó **na** Kéezá ba-a-ra-twéenze
Muco **PREP** Keeza 2s-PST-DJ-laugh.PFV

'Muco and Keeza laughed.'

- While for other Bantu languages similar elements have been proposed to be simple Case-lisencors, in Morgunova (2023) I show for Kirundi that this account fails to explain the wide distribution of the preposition.
- Instead, I propose that the poly-functionality of the preposition aligns with the recent discussion of the semantic similarity between oblique cases/adpositions, discussed in details by Franco and Manzini (2017).
- Franco and Manzini (2017) propose that oblique cases/adpositions share a common semantic core and have the meaning of elementary predicates expressing a zonal inclusion.

(17) a. ⟦ the children **of** the woman ⟧ = the children ⊆ the woman
b. ⟦ the woman **with** children ⟧ = the woman ⊇ the children

- Morgunova (2023) proposes that this semantics can account for all the uses of the preposition in Kirundi.

(18) ⟦ na ⟧ = ⊆

4.3.3 Against a silent noun in the structure of *yúukó*

- Assuming that *y-* is a preposition, we must also explain its morphological form. We see that the form of the preposition is different from *na*. It thus looks more similar to the agreeing preposition AGR-*a* that appears in possessive constructions (19).

(19) inká **ya** Yohanni
i-n-ká **i-a** Yohanni
AUG-9-cow 9-PREP Yohani
'Yohani's cow'

- However, if *y-* represents an agreeing preposition, we need to establish which element controls its agreement.
- One could suggest that it agrees with a silent noun; this would make it parallel to possessive constructions where the prepositions agrees with the head noun.

(20) [$_{DP}$ ∅$_{D}$ [$_{CP}$ *yúuko* TP]]

- However, this idea faces some challenges. In particular, we see that in subject position, *yúukó*-clauses trigger class 8 subject agreement on the verb, which has a form *bi-*.

(21) [Yúukó abaansi bazoza] **vy**ari vyaanditse ku ruhome.
yúukó a-ba-aansi ba-zo-za **bi**-a-ri bi-aanditse ku ru-home
that AUG-2-enemy 2s-FUT-come **8s**-PST-COP 8s-write.PFV on 11-wall
'That the enemies were coming was written on the wall.'

- This could lead us to postulate that the silent noun inside the structure of the complementizer is of class 8. However, in that case the complementizer should exhibit concord of the class 8 form and would have the form *bwúukó*.

(22) bi- + u-ko = bwúukó
8 AUG-COMP 8.COMP

- It's also not possible to postulate the presence of a silent noun of another class, as this would predict that *yúukó*-clauses in subject position would not trigger class 8 agreement.

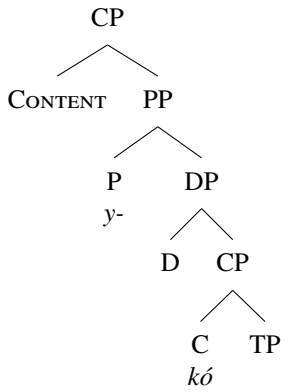
As the agreement on the verb does not match the form of the preposition in the complementizer *yúukó* I reject the idea that the preposition agrees with a silent noun (see further arguments against the presence of a silent noun in Appendix 5).

4.3.4 Proposal

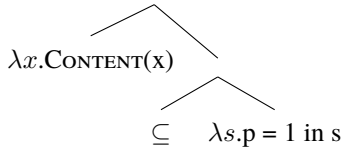
- Instead, I propose that the form of the preposition in *yúukó* is due to its agreement with a silent CONTENT head. As CONTENT is not a real noun and does not have any class features, the agreement on the complementizer *yúukó* fails. Thus, the form of *y-* reflects the 'default' agreement.[1]
- Crucially, in this structure the role of the preposition is identical to its function elsewhere; it establishes the relation of inclusion between the CONTENT function and the embedded proposition.
- This is a welcome result as we see the relationship between the CONTENT predicate and the embedded proposition arbitrarily postulated in the semantics of complementizers in languages like English and German. In Kirundi and Kinyarwanda, however, it is **overtly** realized by a preposition.

[1] The form of the preposition in *yúukó* could indicate that the default agreement is realized as *a* or *i*; both of these vowels are attested as default in the verbal and nominal domains respectfully. At the moment, I do not know how to distinguish between those two options, and leave this question for further research.

(23)



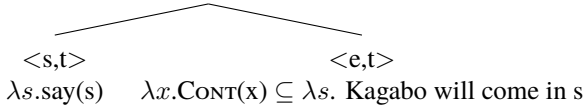
(24) λx.CONTENT(x) $\subseteq$ λs.p = 1 in s



- The presence of the CONTENT predicate in the structure of *yúukó* implies that these clauses can act as complements to matrix verb without a type-shifting operator. The composition then uses Predicate Modification to combine the verb with the *yúukó*-clause.

(25) a. Keezá yavuze yúukó Kagabo azá kuza.
Keezá a-a-vuze yúukó Kagabo a-zá ku-za
Keeza 1s-PST-say.PFV COMP Kagabo 1s-come 15/INF-come

b. <s,t>
λs.say(s) & CONT(s) $\subseteq$ $\lambda s'$. Kagabo will come in s'



- The more complex structure of *yúukó*-clauses also makes their distribution more restricted compared to that of *kó*-clauses. In particular, the presence of the CONTENT function in the structure of *yúukó* rules out its interpretation as an adjunct to a predicate.

4.4 Emotive factives

- The second difference between the two clauses concerns their distribution under emotive factive verbs.
- For some speakers, some matrix verbs do not take *yúukó*-clauses as their complements.[2]

(26) Umwigíisha yaakunze **kó** / ***yúukó** yavuzé iki kiintu.
u-mu-igíisha a-a-kuunze **kó** **yúukó** u-a-vuze iki ki-ntu
AUG-1-teacher 1s-PST-like COMP COMP 2SG.S-PST-say DEM.7 7-thing
'The professor liked that you mentioned this fact.' Kirundi

(27) Mutesi yiicuza **kó** / ***yúukó** umuryáango wé yiimúkiye
Mutesi a-iicuza **kó** **yúukó** u-mu-ryáango wé i-a-imukiye
Mutesi 1s-regret COMP COMP AUG-3-family 3SG.POSS 3s-PST-move.PFV
muri Kanada.
muri Kanada
to Canada
'Mutesi regrets that her family moved to Canada.' Kinyarwanda

Table 1. Selectional restrictions in Kirundi

Take *kó* and *yúukó*	**Only take *kó***
kuvúga 'say'	*kwéemera* 'believe'
kubwiira 'tell'	*kuryóoherwa* 'find.good'
kwiibaza 'think'	*kuryóoha* 'be good'
gukeeka 'suspect'	*kubabaza* 'hurt, be sad'
-zi 'know'	*gutangaaza* 'surprise'
kwuumva 'hear'	*gukúunda* 'like'
kwuubuka 'discover'	
kwaanka 'hate'	
gushiima 'appreciate'	

[2] In Kirundi, I noticed significant speaker variation on this datapoint; for some speakers, no matrix verbs show selectional restrictions on *yúukó*-clauses.

Table 2. Selectional restrictions in Kinyarwanda

Take *kó* and *yúukó*	**Only take *kó***
kuvuga 'say'	*kubabaza* 'hurt'
-zi 'know'	*gutungura* 'surprise'
kwishima 'be happy'	*gutera ubwooba* 'scare'
gutekereza 'think'	*kwanga* 'hate'
kwizera 'believe'	*kwicuza* 'regret'
kuvumbura 'discover'	*kwiibuka* 'remember'

- The group of the verbs that impose the selectional restrictions on *yúukó*-clause semantically resembles **emotive factive** verbs.
  - These are verbs that, like other factives, presuppose the truth of their complements, while additionally expressing the emotional stance of the attitude holder towards the embedded proposition.
- I propose that the incompatability of *yúukó*-clauses with emotive factives (*like, hate, regret*, etc.) follows from the specific semantics of such predicates.
- Djärv (2019) proposes that emotive factives introduce a specific presupposition different from that of doxastic factives like *know*; in particular, emotive factives presuppose that the complement of the embedded factives is **given** (i.e. it has an antecedent in the discourse) (Schwarzschild, 1999).

(28) (modified from Karttunen, 1971)

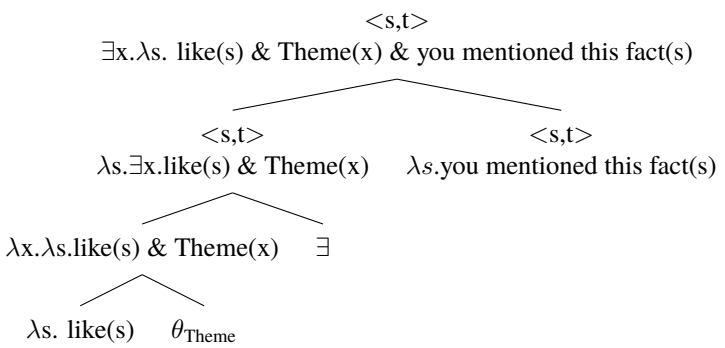
a. If I **realize** later that I haven't told the truth, I'll confess it. $\not\rightsquigarrow$ p

b. If I **regret** later that I haven't told the truth, I'll confess it. $\rightsquigarrow$ p

- This presupposition in turn may trigger certain selectional restriction; for instance, for English and other Germanic languages, Djärv (2019) shows that it limits the complements of emotive factives to anaphoric DPs.
- Bondarenko (2020) analyzing a similar phenomenon in Barguzin Buryat proposes that the pre-existent requirement of some verbs on their complement follows from the verb selecting for a **Theme θ-head**. In other words, under this approach, the givenness presupposition is due to the Theme θ-role.
- I propose that the presupposition associated with emotive factives in Kirundi and Kinyarwanda is formalized by them obligatory selecting for the Theme θ-head.
  - As *yúukó*-clauses are associated with their own θ-role, which does not match the semantics of emotive factives, they cannot merge with those verbs as arguments.
  - *kó*-clauses, on the other hand, can still merge as adjuncts to the verb, as they can denote simple propositions. In this case, the θ-role of the emotive factives simply gets existentially closed.

(29) a. Umwigíisha yaakunze **kó** yavuzé iki kiintu.
u-mu-igíisha a-a-kuunze **kó** u-a-vuze iki ki-ntu
AUG-1-teacher 1S-PST-like COMP 2SG.S-PST-say DEM.7 7-thing
'The professor liked that you mentioned this fact.' Kirundi

b.



5 Summary

- In this talk, I discussed two complementizers appearing in Kirundi and Kinyarwanda: *kó* and *yúukó*. I showed that there exist differences in their distribution which have not been noticed earlier.
- I proposed that *yúukó* is a multimorphemic element, featuring the CONTENT predicate, a preposition, an augment and the complementizer *kó*. This structure explains why the distribution of *yúukó*-clauses is more limited than the distribution of *kó*-clauses.
- This talk adds to our understanding of complement clauses in general, as well as specifically in Bantu languages — a topic, which requires much more research given the extensive variety of complementizer-like elements in Bantu.
- Kirundi and Kinyarwanda also resemble other Bantu languages in some specific points. For instance, Diercks (2013) shows that agreeing complementizers are banned as complements of emotive factive verbs; however, the nature of this ban in unclear.
- Common restriction on the distribution of complementizers in different Bantu languages thus could (and should) be analyzed together; in the future, I hope to continue this work and extend it to other Bantu languages.

Abbreviations

Kirundi orthography generally corresponds to the IPA with the exception of <c>= /tʃ/, <j>= /dʒ/, <sh >= /ʃ/, and <y>= /j/. Tone and vowel length are not usually written in orthography, so long vowels are marked by doubling the vowel letter, high tones are marked with an acute accent <á>, and contour tones are marked as sequences of high and low tones.

1–16	noun class	COP	copula	PASS	passive
1SG	1st person singular	DEM	demonstrative	PFV	perfective
2SG	2nd person singular	DJ	disjoint	PL	plural
APPL	applicative	FUT	future	POSS	possessive
AUG	augment	FV	final vowel	PREP	preposition
CAUS	causative	INF	infinitive	PST	past tense
COM	comitative	NEG	negation	S	subject
COMP	complementizer	O	object		

References

Bochnak, M. R., & Hanink, E. A. (2022). Clausal embedding in Washo: Complementation vs. modification. *Natural Language & Linguistic Theory*, *40*(4), 979–1022.

Bondarenko, T. (2020). Factivity from pre-existence: Evidence from Barguzin Buryat. *Glossa: a journal of general linguistics*, *5*(1).

Bondarenko, T. (2022). *Anatomy of an Attitude*. Massachusetts Institute of Technology.

Castañeda, H.-N. (1967). Comments on Donald Davidson's 'The logical form of action sentences'. In N. Resher (Ed.), *The logic of decision and action* (pp. 104–112). University of Pittsburgh Press.

Diercks, M. (2013). Indirect agree in Lubukusu complementizer agreement. *Natural Language & Linguistic Theory*, *31*(2), 357–407.

Djärv, K. (2019). *Factive and assertive attitude reports*. University of Pennsylvania.

Elliott, P. D. (2020). *Elements of clausal embedding*. UCL (University College London).

Franco, L., & Manzini, M. R. (2017). Instrumental prepositions and case: Contexts of occurrence and alternations with datives. *Glossa: a journal of general linguistics*, *2*(1).

Halpert, C. (to appear). The Augment. In *The Oxford Handbook of Bantu Linguistics*. Oxford University Press.

Hintikka, J. (1969). Semantics for Propositional Attitudes. In D. J. H. J. W. Davis & W. K. Wilson (Eds.), *Philosophical logic* (pp. 21–45). Reidel.

Karttunen, L. (1971). Implicative verbs. *Language*, 340–358.

Kratzer, A. (2016). Evidential moods in attitude and speech reports. *Talk given at the 1st Syncart Workshop (University of Siena*.

Lasersohn, P. (2013). *Plurality, conjunction and events*. Springer Science & Business Media.

Morgunova, K. (2023). Nominal licensing in Kirundi: No case for Case. *Ms.* https://morgunova-katya.github.io/files/morgunova_2023_kirundi_case.pdf

Moulton, K. (2015). CPs: Copies and compositionality. *Linguistic Inquiry*, *46*(2), 305–342.

Pietroski, P. M. (2000). On explaining that. *The Journal of philosophy*, *97*(12), 655–662.

Schwarzschild, R. (1999). GIVENness, AvoidF and other constraints on the placement of accent. *Natural language semantics*, *7*(2), 141–177.

Appendix 1. Class markers

Class	Pron	Nom	Sbj	Obj	Class	Pron	Nom	Sbj	Obj
1	-u-	-mu-	a-	-mu-	9	-i-	-n-	i-	-yi-
2	-ba-	-ba-	ba-	-ba-	10	-zi-	-n-	zi-	-zi-
3	-u-	-mu-	u-	-wu-	11	-ru-	-ru-	ru-	-ru-
4	-i-	-mi-	i-	-yi-	12	-ka-	-ka-	ka-	-ka-
5	-ri-	-ri-/-i-	ri-	-ri-	13	-tu-	-tu-	tu-	-tu-
6	-a-	-ma-	a-	-ya-	14	-bu-	-bu-	bu-	-bu-
7	-ki-	-ki-	ki-	-ki-	15	-ku-	-ku-	ku-	-ku-
8	-bi-	-bi-	bi-	-bi-	16	-ha-	-ha-	ha-	-ha-

Appendix 2. Identity between prepositions in verbal and nominal phrases

- In this talk, I assume that the preposition *na* is identical with the preposition AGR-*a* appearing in possessive phrases despite the difference in their morphological form.
- One piece of evidence that *na* and AGR-*a* are the same element comes from the tonal patterns we observe in the phrases headed by them.
- Both *na* and *-a* trigger the appearance of the high tone on the first vowel of the complement nominal, which is shown in (30).

(30) a. Naráboonye umugabo.
n-a-ra-boonye u-mu-gabo
1SG.S-PST-DJ-see.PFV AUG-1-man
'I saw a man.'

b. Natambanye n’**ú**mugabo.
n-a-tamb-an-ye na u-mu-gabo
1SG.S-PST-dance-COM-PFV PREP AUG-1-man
‘I danced with a man.’

c. Naráboonye akayaabu k’**ú**mugabo.
n-a-ra-boonye a-ka-yaabu ki-a ú-mu-gabo
1SG.S-PST-DJ-see.PFV AUG-7-cat 7-PREP AUG-1-man
‘I saw the man’s cat.’

- Further on, the morphological form of AGR-*a* is also dependent on the category of its complement, much like the form of *na* is.
- If the dependent of a preposition is a locative phrase or an infinitive, the preposition takes the form of AGR-*ó* rather than AGR-*a* (31a)-(31b).

(31) a. inyoóta **yó** kwiíga
i-ny-oóta **i-ó** ku-iíga
AUG-9-desire **9-PREP** 15/INF-learn
‘desire to learn’

b. umuhuúngu **wó** mu gihúgu caanje
u-mu-huúngu **u-ó** mu ki-húgu ki-aanje
AUG-1-boy **1-PREP** in 7-country 7-1SG.POSS
‘a boy from my country’

- We see that this is similar to how the preposition *na* changes to *nó* when its complement is a locative phrase or an infinitive (32a)-(32b).

(32) a. Numiwe **nó** / ***na** mu cuúmba ca Kéezá.
n-a-umi-u-e **no** **na** mu ki-uúmba ki-a Keezá
1SG.S-PST-astonish-PASS-PFV **PREP** **PREP** in 7-room 7-PREP Keezá
‘I was shocked by the insides of Keeza’s room.’

b. Narabihiwe **nó** / ***na** kuba muri Montreal.
n-a-ra-bihi-u-e **no** **na** ku-ba muri Montreal
1S-PST-DJ-annoy-PASS-PFV **PREP** **PREP** 15/INF-be in Montreal
‘I was annoyed by being in Montreal.’

Appendix 3. Embedded clause morphology

- Both *kó-* and *yúukó-* clauses share a number of certain morphosyntactic features, that are generally characteristic of the embedded clauses.
- First, embedded clauses are marked with a high tone that appears on the second mora of the verbal stem.

(33) a. Yohaáni **anyaruka**.
Yohaáni a-**nyaruka**.
John 1.s-go.fast
‘John goes fast.’

b. Ndáazi kó / yúukó Yohaáni **anyarúka**.
N-rá-zi kó yúukó Yohaáni a-**nyarúka**.
1SG.S-DJ-know COMP COMP John 1s-go.fast
‘I know that John goes fast.’

c. Ndáazi umuhuúngu **anyarúka**.
N-rá-zi u-mu-huúngu a-**nyarúka**.
1SG.S-DJ-know AUG-1-boy 1s-go.fast
‘I know a boy who goes fast.’

- Matrix and embedded predicates also differ in the negation marker that appear on the predicate.

(34) a. Umuhuúngu **nt**asoma caane.
u-mu-huúngu **nti**-a-soma caane.
AUG-1-boy **NEG**-1s-read a.lot
‘The boy doesn’t read a lot.’

b. Ndáazi kó / yúukó umuhuúngu a**da**somá.
n-rá-zi kó yúukó u-mu-huúngu a-**ta**-somá
1SG.S-DJ-know COMP COMP AUG-1-boy 1s-**NEG**-read
‘I know that the boy doesn’t read.’

c. Ndáazi umuhuúngu a**da**somá.
n-rá-zi u-mu-huúngu a-**ta**-somá
1SG.S-DJ-know AUG-1-boy 1s-**NEG**-read
‘I know a boy who can’t read.’

Appendix 4. The form of the augment vowel in *yúukó*

- I propose that there is a augment vowel inside the complementizer *yúukó*. However, in nouns, the augment vowels are short and do not bear tone; in *yúukó*, the augment vowel is long and has a falling tone.
- This is in fact expected if we look at the phonology of nouns under the preposition *na*. As shown in Appendix 2, the preposition *na* triggers the appearance of a high tone on the augment of its complement noun.
- However, there are additional phonological patterns that apply to a subset of nouns. Namely, in case when the noun root has a high tone on the first mora, the augment vowel also gets lengthened.

(35) a. Naráboonye umwáana.
n-a-ra-boonye u-mu-áana
1SG.S-PST-DJ-see.PFV AUG-1-child
'I saw a child.'

b. Natambanye n'**úu**mwáana.
n-a-tamb-an-ye na u-mu-áana
1SG.S-PST-dance-COM-PFV PREP AUG-1-child
'I danced with a child.'

- Since the complementizer *kó* is also high-tone, we expect similar pattern to arise in *yúukó*.

Appendix 5. Both clauses are CPs

- Both *kó* and *yúukó*-clauses have the structural status of CP, and not DP; thus the existing differences cannot be explained by their category.
- First, there is also no differences between the two clauses with respect to extraction.

(36) a. Niindé Mucó yavúze [**kó** __ yaboónye Keezá]?
ni ndé Mucó a-a-vúze **kó** a-a-boónye Keezá
COP who Muco 1s-PST-say.PFV that 1s-PST-see.PFV Keeza
'Who did Muco say that saw Keeza?'

b. Niindé Mucó yavúze [**yúukó** __ yaboónye Keezá]?
ni ndé Mucó a-a-vúze **yúukó** a-a-boónye Keezá
COP who Muco 1s-PST-say.PFV that 1s-PST-see.PFV Keeza
'Who did Muco say that saw Keeza?'

- Compare this with the data about extraction from DPs; for example, possessor extraction is impossible in Kirundi.

(37) a. Naguze [inká ya Kéezá].
n-a-guze i-n-ká i-a Keezá
1SG.S-PST-buy.PFV AUG-9-cow 9-PREP Keeza
'I bought Keeza's cow.'

b. Waguze [inká ya ndé]?
u-a-guze i-n-ká i-a ndé
2SG.S-PST-buy.PFV AUG-9-cow 9-PREP who
'Whose cow did you buy?'

c. *Niindé waguze [inká ya __]?
ni-ndé u-a-guze i-n-ká i-a
COP-who 2SG.S-PST-buy.PFV AUG-9-cow 9-PREP
'Whose cow did you buy?'

d. *Ni ya ndé waguze [inká __]?
ni i-a ndé u-a-guze i-n-ká
COP 9-PREP who 2SG.S-PST-buy.PFV AUG-9-cow
'Whose cow did you buy?'

- The second argument concerns the interpretation of the embedded clauses under the verb *explain*. Pietroski (2000) notes that under the verb *explain*, DPs and CPs get interpreted differently.

(38) a. Angela explained [$_{DP}$ the fact that Boris resigned]. *explanandum*
b. Angela explained [$_{CP}$ that Boris resigned]. *explanans*

- All speakers report that both *kó*- and *yúukó*-clause can only be interpreted as *explanans*; thus they both pattern as CPs (39a). To express the *explanandum* reading, the speakers prefer to use the construction with the word *igituma* 'reason' (39b).

(39) a. Mucó yasiguúye kó / yúukó umwiígiisha
Mucó a-a-siguúye kó yúukó u-mu-iígiisha
Muco 1s-PST-explain.PFV COMP COMP AUG-1-teacher
ataajé.
a-ta-a-jé
1s-NEG-PST-come.PFV
1. 'Muco explained that the teacher is absent.'
*2. 'Muco explained why the teacher is absent.'

b. Mucó yasiguúye igitúma umwiígiisha
Mucó a-a-siguúye i-ki-túma u-mu-iígiisha
Muco 1s-PST-explain.PFV AUG-7-reason AUG-1-teacher
ataajé.
a-ta-a-jé
1s-NEG-PST-come.PFV
'Muco explained why the teacher is absent.'

Appendix 6. Evidence for the CONTENT operator from nominal modification

- Bondarenko (2022), Elliott (2020), and Moulton (2015) argue that certain nouns, like *idea* and *though* denote entities that have some propositional content associated with them. Due to that, they require their clausal complement to denote contentful entities as well.
- In Kirundi, both *kó* and *yúukó*-clauses (which agree with the head noun) can combine with content nouns; this shows that both of them can be CONTENT-CPs.

(40) Hari iciiyumviiro **kó** **/ cúukó** inzooya
ha-ri i-ki-iiyumviiro **kó** **/ ki-a** **u-kó** i-n-zooya
16-COP AUG-7-idea **COMP** **7-PREP** **AUG-COMP** AUG-10-baby
zitegérezwa kwóonswa.
zi-tegérez-u-a ku-óonswa
10s-oblige-PASS-FV 15/INF-feed
'There is an idea that babies must be breastfed' Kirundi

- However, in Kinyarwanda, the speakers show preference to use *yúukó* in this construction. This is predicted, as the use of *yúukó* allows the speakers to avoid the computationally complex type shifting.

(41) Igitekerezo cy'úukó abagóre batatwara imodoka
i-ki-tekerezo ki-a u-kó a-ba-góre ba-ta-twara i-modoka
AUG-7-idea 7-PREP AUG-COMP AUG-2-woman 2s-NEG-drive 5-cat
n'ubugoryi.
ni u-bu-goryi
COP AUG-14-stupidity
'The idea that women can't drive a car is stupid.' Kinayrwanda

Appendix 7. *Yúukó* is not parallel to agreeing complementizers

- In my talk I propose that the form of *yúukó* is due to the (lack of) agreement with the CONTENT operator. However, could it be agreeing with another nominal instead?

- A number of Bantu languages, such as Lubukusu, exhibit complementizer agreement where a declarative-embedding complementizer shows full ϕ-feature agreement (gender, number, and person) with the subject of the matrix clause (Diercks, 2013).

(42) a. **Ba-ba-ndu** ba-bol-el-a Alfredi **ba-li** a-kha-khil-e.
2-2-people 2s-said-APPL-FV 1Alfred 2-COMP 1s-FUT-conquer
'The people told Alfred that he will win.'

b. **Alfredi** ka-bol-el-a ba-ba-ndu **a-li** ba-kha-khil-e.
1Alfred 1s-said-AP-FV 2-2-people 1-that 2s-FUT-conquer
'Alfred told the people that they will win.'

- In Kirundi and Kinyarwanda, however, the form of *yúukó* is not dependent on the features of either matrix or embedded subject. In (43) we see that the form of *yúukó* does not change if the subject of either matrix (43a) or embedded clause (43b) is not a 3 person singular individual.

(43) a. Ndazi yúukó Keezá yatsiinze amatóora.
n-ra-zi yúukó Keezá a-a-tsiinze a-ma-toora
1SG.S-DJ-know COMP Keeza 1s-PST-win.PFV AUG-6-election
'I know that Keeza won the election.'

b. Mubwiire yúukó ntarí buuzé.
mu-bwiire yúukó n-ta-rí buuzé
1.O-tell.IMP that 1SG.S-NEG-COP miss
'Tell him that I will not come.'