Reassessing relative clauses in Kirundi

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1 Introducing the puzzle: agreement in Kirundi relative clauses

- Across the Bantu family, it is common for subject relative clauses to display 'anti-agreement effects' (AAEs), specifically when the relativized subject is a singular human (for Lubukusu (Diercks 2009, 2010), Nande (Schneider-Zioga 2000, 2007), Abo (Burns 2013), and Bemba (Cheng 2006; Henderson 2007, 2009, 2013)).

    - ***u-*** is used to mark singular human subjects in subject relative clauses
    - ***a-*** is used to mark singular human subjects everywhere else

- Past analyses attribute this 'alternative' agreement to the Ā-movement typically associated with relativization (see, e.g., Cheng 2006; Henderson 2013; Baier 2018), adding additional qualifications to account for its subject-only distribution (e.g., locality, anti-locality, strong chair repair, criterial freezing, etc.).

- In Kirundi, however, agreement differs between the headed and headless versions of relative constructions.

(1)   U-mugabo **a**-ra-garuka.
AUG-1man 1SM.A-DJ-return
'The man will return (later today).' (Matrix)

    a.   Ndâzi [u-mugabo **a**-garúka].
I.know AUG-1man 1SM.A-return
'I know the man who will return.' (Headed)

    b.   Ndâzi [u-**u**-gáruka].
I.know AUG-1SM.U-return
'I know the one who will return.' (Headless)

- If headless relative clauses (HRCs) are just relatives with phonologically null heads, we would not expect them to differ in Ā-movement; the underlying structure of both types of relative clauses should be the same.

- Beyond agreement morphology, the headless forms display a variety of other 'alternative' characteristics → what if Kirundi HRCs are derived differently than headed relative clauses?

- <u>**Proposal 1**</u>**: headless relative clauses are high deverbal nominalizations, with no Ā-movement.**

- Though this explains why headless relatives pattern differently in agreement from headed ones, it doesn't explain why headed relative clauses and matrix clauses pattern together. . .

    - Headless relative clauses   → no Ā → *u-*
    - Headed relative clauses   →   Ā   → *a-*
    - Matrix clauses   → ??? → *a-*

- **Proposal 2: anti-agreement is everywhere! (or, matrix subjects undergo Ā-movement too).**

  ⇒ *a-* is the result of anti-agreement, driven by Ā-movement

  ⇒ All subjects undergo Ā-movement to license subject-verb agreement

(2)   Ā-movement and (anti-)agreement in Kirundi subject relatives

Clause Type	Ā?	Agreement
Standard	✓	*-a*
Headed Relative	✓	*-a*
Headless Relative	✗	*-u*

- In the rest of this talk, I will provide initial evidence to support these proposals, as well as avenues for future research, and flag major implications.

  Plan for today
  §2 Empirical review: Kirundi relative clauses
  §3 Proposal 1: HRCs are nominalizations
  §4 Proposal 2: standard subjects undergo Ā-movement
  §5 Implications & next steps

2   Empirical review: Kirundi relative clauses

2.1   Context on Kirundi

- Kirundi is an Eastern Bantu language, classified as Zone J (Interlacustrine/Great Lakes) (Bastin 2003). It is spoken by 12.5 million speakers in the country of Burundi where it is the national language.

- Kirundi is part of a dialect continuum with Kinyarwanda (the national language of Rwanda) and smaller contiguous language communities in Tanzania, Uganda, and the Democratic Republic of Congo.

- Like most Bantu languages, Kirundi is polysynthetic and highly agglutinative.

- Nouns are composed of an initial "augment" vowel, a noun class marker, and a root:

(3)   AUGMENT − CLASS PREFIX − ROOT

- Following Ndayiragije et al. 2012, the augment is located in D and is tied to general definiteness. Phonologically, its features copy over from the vowel of the noun class marker.

- The noun class marker is generally accepted to be a categorizing *n* head with gender and number features (Kramer 2014, 2015; Carstens 2008; Fuchs and van der Wal 2021).

- Gender (noun class) denotes broad semantic categories.

(4)   Variation in noun class with the root *-ntu*

Noun Class	Singular	Plural
People (1/2)	*u-mu-ntu* 'person'	*a-ba-ntu* 'people'
Things (7/8)	*i-ki-ntu* 'thing'	*i-bi-ntu* 'things'
Diminutive (12/13)	*a-ka-ntu* 'small thing'	*u-du-ntu* 'small things'
Non-tangible (14)	*u-bu-ntu* 'humanity'	
Places (16)	*a-ha-ntu* 'place'	*a-ha-ntu* 'places'

- Verbs in Kirundi obligatorily display subject-verb agreement expressing number and gender/person.

(5)   a.   N-a-bón-ye   i-gi-tabo.
           1SG.SM.A-PST-read-PFV AUG-7-book
           'I read a book (yesterday).'
      b.   U-mu-gabo a-tēk-a   u-mu-ceri.
           AUG-1-man 1SM.A-cook-IPFV AUG-3-rice
           'The man cooks rice.'

- Tone can be lexical (*umuryāngo* 'family' vs. *umuryângo* 'door') or grammatical (*nasomye* 'I read (earlier today)' vs. *nasómye* 'I read (before today)' (Ntahokaja 1994, 162)).

2.2   Relative Clauses in Kirundi

- Kirundi has three constructions that are typically translated with relative clause readings: 1) headed relative clauses, 2) headless relative clauses, and 3) light-headed relative clauses.

- Note that Kirundi has no overt relative complementizer so relative clauses are distinguishable primarily by tone and word order.

2.2.1   Headed relative clauses (*a-*, H.DEP)

- Headed relative clauses resemble those in English, outside of the lack of an overt complementizer.

(6)   Relatives in Object Position
      a.   Ndakûnda [**umugabo** ____ **a**-tēká   umuceri].
           I.like   1man   t   1SM.A-cook[H.DEP] 3rice
           'I like the man (who) cooks rice.'   (Subject Relative)
      b.   Ndakûnda [**umuceri** umugabo **a**-tēká   ____].
           I.like   3rice   1man   1SM.A-cook[H.DEP] t
           'I like the rice (that) the man cooks.'   (Object Relative)

(7)   Relatives in Subject Position
      a.   [**Umugabo** ____ **a**-tēká   umuceri] a-ra-garuka.
           1man   t   1SM.A-cook[H.DEP] 3rice   1SM-DJ-return
           'The man (who) cooks rice will return.'   (Subject Relative)
      b.   [**Umuceri** umugabo **a**-tēká   ____] u-ra-ryôha.
           3rice   1man   1SM.A-cook[H.DEP] t   3SM-DJ-is.delicious
           'The rice (that) the man cooks is delicious.'   (Object Relative)

- Key properties:

  ⇒   *a*-agreement for 3s subjects
  ⇒   dependent-clause tonal pattern in which a high tone (H.DEP) appears on the second syllable of the verb root

2.2.2   Headless relative clauses (*u-*, H.HRC)

- On the surface, HRCs are composed of an augment, a pronominal prefix, and a verbal projection.

(8) a. Ndakûnda [u-**u**-têka   umuceri].
   I.like   1SM.U-cook^{H.HRC} 3rice

   'I like the (person who) cooks rice.'   (Object position)

b. [U-**u**-têka   umuceri] a-ra-garuka.
   1SM.U-cook^{H.DEP} 3rice   1SM.A-DJ-return

   'The (person who) cooks rice will return.'   (Subject position)

- Key properties:

  ⇒ *u*-agreement for 3s subjects
  ⇒ HRC tonal pattern in which a high tone (H.HRC) falls on the first syllable of the verb root
  ⇒ no object HRCs
  ⇒ clause-bound
  ⇒ subject marker denotes the semantic category of the null head

2.2.3 Light-headed relative clauses (*a*-, H.DEP)

- Though headless object relatives are prohibited, a similar reading can be derived from a light-headed relative clause in which a basic nominal suffix hosts the features of a relativized null object.

(9) a. Ndakûnda [**u-u-ó**   umugabo **a**-tēká   ____].
   I.like   AUG-1-NOM 1man   1SM.A-cook^{H.DEP} t

   'I like the thing that the man cooks.'   (Object position)

b. [**I-bi-ó**   umugabo **a**-tēká   ____] bi-ra-ryôha.
   AUG-8-NOM 1man   1SM.A-cook^{H.DEP} t   8SM.A-DJ-is.delicious

   'The things that the man cooks are delicious.'   (Subject position)

- This form is also required for long-distance headless subject relatives.

(10)   Long distance relatives

a. Ndakûnda [**u-u-ó**   tūzí   [kó   ____ **a**-tēká   umuceri]].
   I.like   AUG-1-NOM we.know COMP t   1SM.A-cook^{H.DEP} 3rice

   'I like the person (who) we know cooks rice.'   (Subject relative)

b. Ndakûnda [**i-bi-ó**   tūzí   [kó   umugabo **a**-tēká   ____]].
   I.like   AUG-8-NOM we.knowCOMP DEM.DIST 1man   1SM.A-cook^{H.DEP} t

   'I like the things (that) we know that that man cooks.' (Object relative)

- Using a light head for a subject headless relative is illicit.

(11)   *Ndakûnda [**u-u-ó**   ____ **u/a**-tēká   umuceri].
   I.like   AUG-1-NOM   1SM.U/1SM.A-cook^{H.DEP} 3rice

   'I like (the person) who cooks rice.'   (*u*-agreement)

- Key properties:

  ⇒ *a*-agreement.for 3s subjects
  ⇒ H.DEP tonal pattern
  ⇒ headless object relatives and long-distance headless relatives

- Outstanding question: why is a light-headed subject not allowed in same clause relative?

4

3 Proposal 1: HRCs are nominalizations

- Examining the full paradigm of relative clauses above, clear patterns appear in correlation with agreement.

(12)   Properties of Kirundi relative constructions

u-	*a-*
headless	(light-)headed
H.HRC	H.DEP
clause-bound	long-distance
only subject	subject/object

- While both construction types show relativization-like dependencies, the properties of *u*-constructions do not *obviously* support an Ā-construction.

    1. only the highest nominal is targeted
    2. *u*-constructions cannot be long distance (a very basic test of Ā-movement)
    3. the null subject is a regular nominal, not a *wh*-element or relative pronoun

- What's more, the distribution of agreement morphemes shows that all other typically Ā-constructions use *a*-agreement, not *u*-agreement.

(13)   Distribution of agreement/concord morphemes

a-	*u-*
matrix clauses	obj. markers
dependent clauses	demonstratives
adjunct clauses	quantifiers
cleft/*wh*-constructions	possessives
headed relatives	pronouns
light-headed relatives	HRCs

- Following Newman (in review), I propose that Kirundi HRCs are relative clauses that lack Ā-movement.

- Newman (in review) argues for the need to disassociate the descriptive label "relative clause" from the theoretical concept Ā-dependency, suggesting that a "relative clause" is "any kind of modification of an NP which contains an extended projection of a verb root", regardless of Ā-movement.

- In English, this exists with a clause like *the girl-stinging bee* which targets the highest nominal, is clause-bound, and lacks overt *wh*-morphology (like Kirundi HRCs).

(14)   non-Ā relative clause
    a.   the [___ girl-stinging] bee
    b.   *the [bee ___-stinging] girl

- This analysis also applies well to relative-like constructions that have been categorized as 'relative nominals' or 'deverbal nominalizations' in the past (see, e.g., Harley 2020; Toosarvandani 2014, respectively).

- In both past analyses, the highest argument is gapped, resulting in a nominalization that describes that individual, but each proposes a slightly different semantics.

    - Toosarvandani 2014 analyzes the gap as a null PRO abstracted over by the λ-operator found in nominalizations: NP_i $[_{rel\text{-}clause}...PRO_i]$

- Harley 2020 asserts that the nominalizer denotes an identity function; therefore, below it, a λ-operator moves from spec-VoiceP to spec-AspP, creating a predicate of entities by λ-abstraction over AspP: nP_i $[_{rel\text{-}clause}\ldots \emptyset_i \ldots t_i]$

- For now, I follow Toosarvandani 2014 in arguing that there is a null PRO denoting the subject in Kirundi HRCs. Because we see the effects of gender/number agreement on the verbal projection, I presume that there is something more substantial than $\emptyset$ being introduced by Voice.

4 Proposal 2: *a-* is anti-agreement

- Assuming, as argued, that HRCs are not Ā-constructions but headed relative clauses are, and following past work that links AAEs to Ā-features, let's entertain the idea that *all* instances of *a*-agreement (as seen in headed relative clauses) are the result of Ā-constructions.

- After all, as noted in (13), repeated here as (15), standard SVO clauses pattern with all other Ā-constructions in subject agreement.

(15)   Distribution of agreement/concord morphemes

a-	*u-*
matrix clauses	obj. markers
dependent clauses	demonstratives
adjunct clauses	quantifiers
cleft/*wh*-constructions	possessives
headed relatives	pronouns
light-headed relatives	HRCs

- <u>Main implication: matrix clauses are Ā-constructions!</u>

4.1 *a-* is more marked than *u-*

- Looking at noun class morphology in Kirundi, the *a-* morpheme is actually an outlier.

(16)   Class Morphology

Class	1	2	3	4	5	6	7	8	9	10	...
Nom.	mu	ba	mu	mi	ri	ma	ki	bi	n	n	
Pronom.	u	ba	u	i	ri	a	ki	bi	i	zi	
Subj.	<u>**a**</u>	ba	u	i	ri	a	ki	bi	i	zi	
Obj.	mu	ba	wu	yi	ri	ya	ki	bi	yi	zi	

- We actually expect *u-*, not *a-*, for class 1 subject agreement.

- The *a-* form is phonologically unexpected; all other variation is the result of the systematic loss of a nasal onset or the formation of a glide to avoid vowels in hiatus.

4.2 Matrix clauses involve Ā movement

- Many Bantu languages exhibit 'surprising' patterns of A-movement and agreement, such as hyperactivity (Carstens et al. 2010; Carstens 2011).

- While past analyses have endeavored to situate these properties within an A-context, the data presented in Kirundi motivates a re-assessment within an Ā-context.

$\Rightarrow$ Can Bantu's special subject constructions be explained by Ā and not A-movement?

$\Rightarrow$ Proposal: all subjects, or phrases that end up in the pre-verbal subject position, must undergo Ā-movement to this position in order to license agreement on the verb.

– In some cases, this is already being done! $\rightarrow$ focus, cleft constructions, etc.

4.2.1 Hyperactivity

- Various arguments and adjuncts can trigger agreement on the verb and occupy canonical subject position.

- To explain why Bantu has access to A-movement options that do not exist in Indo-European languages, Carstens (2011) provides an analysis driven by the ubiquitous morphology of Bantu gender. However, a potentially simpler account may emerge from placing all subject agreement within the context of Ā-movement. For now, I will present examples of Kirundi's participation in Bantu hyper-activity and leave further analysis for later.

- Kirundi possesses all three common examples of hyperraising: subject-object inversion, transitive expletive constructions (TECs), and locative inversion.

(17)   A-**ba**-ntu   **ba**-ra-soma i-gi-tabu.
AUG-2-people 2SM-DJ-read AUG-7-book
'The people read the book.'

   a.   Iki   **gi**-tabu **gi**-soma   a-ba-ntu.
this 7-book 2SM-read AUG-2-people
'The people read THIS book.'   (S-O inversion)

   b.   **Ha**-ra-soma   igitabu abāntu.
16SM-DJ-read 7book   2people
'The people read THE BOOK.'   (TEC)

(18)   Mu Bweru **ha**-ra-tég-ye   cane.
in   Bweru 16SM-DJ-is.flat-PFV very
'In Bweru (it) is very flat.'   (Locative inversion; Nshemezimana and Bostoen 2017, 408)

4.2.2 Relative clause statements

- Kirundi also possesses an interesting ambiguity between matrix clauses and relative clauses that has not been documented formally (to my knowledge).

- Relative clauses can be used interchangeably (as utterances) with matrix clauses (19).

(19)   a.   Umuhǔngu a-ryāma   cāne.
boy   3SG.SM.A-sleep a.lot
'The boy sleeps a lot.'

   b.   Umuhǔngu a-ryamá   cāne.
boy   3SG.SM.A-sleep[H.DEP] a.lot
'The boy sleeps a lot.'

5   Implications & next steps

5.1   Summary

- Unlike other Bantu relative clauses that have been studied, Kirundi relative clauses do not display the same (anti-)agreement effects across both headed and headless relative clauses.

- This variation throws a wrench in past analyses of the agreement patterns as resulting from Ā-movement.

- In order to account for this pattern, I made two proposals:

  1. Kirundi headless relative clauses are actually nominalizations with no movement; they are therefore not Ā-constructions.
  2. Headed relative clauses *do* display anti-agreement effects, as do all standard clauses in which subjects license agreement on the verb.

- The agreement puzzle can therefore be explained as a distinction between Ā- and non-Ā-constructions.

- This proposal successfully accounts for the syntax and morphology of relative clauses, and presents a interesting path forward for re-assessing the structure and agreement mechanisms of matrix clauses, particularly in the domain of Bantu hyper-activity (and other related properties).

5.2 Theoretical implications

- Relative clauses do not need to be Ā-constructions. So-called relative nominals provide evidence for expanding the definition of relative clauses cross-linguistically.

- Inversely, subject-verb agreement can be driven by Ā-movement.

- Additional research into the nominalization of verbs/adjectives can contribute to the typology of modification strategies.

5.3 Other Kirundi implications

- Tone: if both matrix and headed relatives are Ā-constructions, tone does not pattern with Ā-movement; instead, it may pattern with phrase categories: IP, ModP, and NomP.

- Other modifiers: Kirundi possesses other modifiers that exhibit *u*-agreement and can be nominalized with the augment, suggesting that HRCs are not limited to <u>verbal</u> nominalizations.

(20)   Possessives

    a.   umwâna   wanje
           u-mu-ana u-a-nje
           AUG-1-child 1-POSS-me
           'my child'

    b.   uwânjé
           u-u-a-nje
           AUG-1-POSS-me
           'mine'

(21)   Other

    a.   abâna   bândi
           a-ba-ana   ba-ndi
           AUG-2-child 2-other
           'the other children'

    b.   abaándi
           a-ba-ndi
           AUG-2-other
           'the others'

5.4 Cross-linguistic implications

- In Kinyarwanda, subject headed relative clauses pattern like HRCs in terms of agreement and (perhaps!) tone (Zorc and Nibagwire 2007, 203). In other words, subject relatives display *u*-agreement and H.HRC tone.

(22) Ba-ra-garuka.
2SM-DJ-return
'They will return.' (Matrix)

   a. umwáana u-**gá**ruka
      1child   1SM-return[H.HRC]
      'a child who is going to return (Subj. Headed Relative)

   b. a-<u>ba</u>-**gá**ruka
      AUG-2SM-return[H.HRC]
      'those who are going to return.' (Subj. Headless Relative)

- Other dependent clauses still exhibit H.DEP tone.

(23) Yambwiiye kó   ba-ga**rú**ka.
He.told.me comp 2SM-return[H.DEP]
'He told me that they are going to return.'

(24) Summary of Kirundi and Kinyarwanda tone and subject marker by clause type

Clause Type	Rundi	Rwanda	Rundi	Rwanda
Matrix	L	L	*a-*	*a-*
Dependent	H.DEP	H.DEP	*a-*	*a-*
Object (Light-)Headed Relative	H.DEP	H.DEP	*a-*	*a-*
Subject (Light-)Headed Relative	H.DEP	H.HRC	*a-*	*u-*
Relative Nominal	H.HRC	H.HRC	*u-*	*u-*

- If we extend my proposal, we would assume that Kinyarwanda headed relative clauses are in fact some form of nominal modifier and not movement-driven Ā-constructions.

- If true, we should expect them to pattern differently than their Kirundi counterparts in diagnostics, etc.

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