

Reason and Result in Kinyamulenge

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We today report on on-going work investigating **causal dependencies** between clauses:

- *Reason-clauses*: Adverbial clauses that provide a “reason” for the eventuality/situation in the main clause (\approx *because*)
- *Result-clauses*: Adverbial clauses that provide a “result” of the eventuality/situation in the main clause (\approx *so that*)

Recent work illustrates that there are complex issues concerning *perspective* in reason-clauses (and by extension result-clauses) (Charnavel, 2019) (See also Karttunen 1971; Dowty 1979; Stephenson 2007).

Main claims

We evaluate this work looking at Kinyamulenge, a dialect of Kinyarwanda (Bantu).

Kinyamulenge appears to lexicalize a predicted distinction in one locus of perspective in reason/result clauses.

- The complementizer *kó* indicates attitudinal perspective of the speaker.
- The complementizer *ngo* indicates perspective of an event participant—not necessarily the speaker.

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- 2 Language background
- 3 Data: reason clauses
- 4 Data: result clauses
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Kinyamulenge I

Kinyamulenge is a “dialect” of Kinyarwanda (JD 61 kin) spoken in South Kivu DRC. It is mutually intelligible with Kinyarwanda and Kirundi (as well as the “dialects” Kinyabwisha and Rufumbira).

Banyamulenge are heavily oppressed in DRC, considered outsiders in the region, though they have lived there for centuries.

Very little formal documentation, given its dialect status (but see Zorc and Nibagwire (2007); Nassenstein (2016) for comparative observations)

The data today was collected in Kansas, working with a native speaker who represents a sizable (>100) number of resettled Banyamulenge refugees from DRC in Kansas.

Kinyamulenge II



South Kivu

Democratic Republic of Congo

Kinyamulenge exhibits typical Bantu properties:

- SVO, but information structure plays a major role in word order.
- Extensive noun class system
- Extensive verbal morphology (“extensions”)
- Multiple tenses, aspects

(1) Paul a-za-tek-er-a Maria i-hene
Paul 1SM-FUT-cook-APPL-FV Maria 9NC-goat
'Paul will cook goat for Mary.'

Reason clauses

The situation/eventuality of the **main clause** is construed as causally dependent on a **reason clause**.

(2) John went to the hospital **because** Mary was sick

reason clause



main clause

Reason clauses come in different “flavors,” depending on the temporal overlap between the clauses (Dowty, 1979). This doesn't appear to affect the data below.

Reason clauses in Kinyamulenge I

Basic reason clauses in Kinyamulenge involve the optional subordinator *kuvera* 'because' and the complementizer *kó*.

- (3) *Yohana ya-gi-ye kwaa mu-ganga (kuvera) kó Maria*
John 1SM-go-ASP to 3NC-hospital because COMP Maria
ya-ra-rwa-iy-a
1SM-PRES-be.sick-ASP-FV
'John went to the hospital because Mary is sick.'

The adverbial clause may precede or follow the main clause.

Reason clauses in Kinyamulenge II

Reason clauses may also be headed by the complementizer *ngo*, which indicates that only the subject of the main clause believes the adverbial clause to be true.

- (4) *John heard that Maria is sick, so he decided to visit her in the hospital. But everyone knows Mary was never sick; she was just faking.*

Yohana ya-gi-ye kwaa mu-ganga ngo Maria

John 1SM-go-ASP to 3NC-hospital COMP Maria

ya-ra-rwa-iy-e

1SM-PRES-be.sick-ASP-SBJV

'John went to the hospital because Mary is sick.'

Note that *ngo* appears to require some other modal element in the adverbial clause, either subjunctive mood (indicated with final *-e*), or an overt modal verb.

Reason clauses in Kinyamulenge III

Because *ngo*-clauses serve to “distance” the speaker from the adverbial clause, they are compatible with continuations that in which the speaker denies the truth of the adverbial clause. *Kó* clauses on the other hand commit the speaker to a belief in the adverbial clause.

(5) ... ariko nti-ya-ra-rwa-iye
but NEG-1SM-PRES-be.sick-ASP
'... but she's not sick'

- felicitous after *because_{ngo}* *Mary is sick*.
- infelicitous after *because_{kó}* *Mary is sick*.

Clauses which can only reflect speaker-oriented epistemic knowledge (*since*-clauses; Charnavel 2017) may only appear with *kó*.

- (6) **Maria a-shobor-a kuba a-ri oMunyamulenge**
Mary 1SM-MOD-FV COP 1SM-COP Munyalenge,
kó/*ngo a-vug-a iKinyamulenge
COMP 1SM-speak-FV Kinyamulenge
'Mary must be Munyamulenge, since she speaks
Kinyamulenge.'

Result clauses

The situation/eventuality of a **result clause** is construed as causally dependent on the **main clause**.

(7) **John went to Kigali, so that he could talk to Mary.**

main clause



result clause

Like reason-clauses, result-clauses also come in different “flavors” (see e.g., Meier 2001, 2003; Schmidtke-Bode 2009).

(Note that here we’re only interested in *finite* result clauses, and put aside nonfinite result clauses, e.g., “purpose/rationale/telic clauses”; Whelpton 1995)

Result clauses in Kinyamulenge I

Basic result clauses in Kinyamulenge involve the optional subordinator *kugira* 'so that' and the complementizer *ngo*.

- (8) *Yohana ya-shir-ye kompyuta mu=i-somero (kugira)*
John 1SM-put-ASP computer in=9NC-library so.that
ngo muri wese a-shobor-a ku-yi-koresh-a
COMP every 1.person 1SM-MOD-FV 15NC-9OM-use-FV
'John put the computer in the library so that everyone can use it.'

(8) illustrates a typical use of a result clause in describing the intentions of a volitional entity in the main clause.

Result clauses in Kinyamulenge II

In the absence of such a volitional entity, the complementizer *kó* may also head a result clause.

- (9) *kompyuta i-ri mu=i-somero kó muri wese*
computer 9SM-COP in=9NC-library COMP 1person every
a-shobor-a ku-yi-koresh-a
1SM-MOD-FV 15NC-9OM-use-FV
'The computer is in the library so that everyone can use it.'

Result clauses in Kinyamulenge III

Alternations as in (10) again suggest that the difference between *kó* and *ngo* is one of “perspective.”

- (10) *Maria ya-rus-ye* *kó/ngo y-iig-{a,e}*
Mary 1SM-be.tired-ASP COMP 1SM-study-FV
'Mary is so tired that she cannot study.'

- With *kó*, this is an observation about Mary; she has completely stopped studying.
- With *ngo*, this is an observation about Mary's mental state; she doesn't want to study.

NB: The result clause does not actually contain any overt negation—a fact that we cannot currently explain.

Observation #1: Usage

- Reason clauses : *kó* is preferred, but *ngo* is possible.
- Result clauses : *ngo* is preferred, but *kó* is possible.

Observation #2: Meaning

- *kó* \rightsquigarrow speaker-belief
- *ngo* \rightsquigarrow someone else's belief

Our analysis ultimately aims to capture these two observations, and at the same time pave the way for uses of *kó* and *ngo* outside of reason-/result-clauses.

Charnavel (2019): Reason-clauses involve two perspectival loci.

(11) [Main clause . . . [Adverbial clause *j because* [*l* . . .]]]

- The **causal judge** *j* evaluates the causal dependency between the two clauses. In root clauses, the causal judge must include the speaker (that is, the closest attitudinal center), and may include an event participant.
- The **logophoric center** *l* evaluates the attitudinal content of the *because*-clause. The logophoric center may be the speaker (the closest attitudinal center), an event participant, or both.

For instance, an epistemic modal in the adverbial clause may force local construal of the attitudinal content.

(12) Liz left the party because things might have spiraled out of control. (Charnavel, 2019, 394)

- **Causal judge** of (12) = the speaker and Liz
- **Logophoric center** of the *because*-clause = Liz

Application to Kinyamulenge I

Applied to Kinyamulenge, the choice of complementizer is simply sensitive to who is included in the **logophoric center** *I*.

(13) [Main clause ... [Adverbial clause *j* because [*I* *kó/ngo* ...]]]

- *kó* → logophoric center includes the speaker (that is, the closest attitudinal center).
- *ngo* → logophoric center is bound by a main clause event participant.

Application to Kinyamulenge II

We define a “modal complementizer” which displays perspective-based allomorphy.

(14) For some logophoric center l , $[[\text{COMP}]] = \lambda P \lambda w.$

$\forall w' \in \text{DOX}_{l,w}, P(w') = 1$

- a. COMP is realized as *kó* when l is bound by the closest attitude center.
- b. COMP is realized as *ngo* when l is bound by an event participant.

(Cf. Kratzer 2006; Moulton 2009; Elliott 2017)

Application to Kinyamulenge III

We further define two clausal connectives, REASON and RESULT. Both are evaluated relative to a causal judge (cf. Stephenson 2007)

- (15) a. $\llbracket \text{REASON} \rrbracket^j = \lambda P \lambda Q \lambda w$. According to j 's relevant knowledge, the reason that $Q(w) = 1$ is that $P(w) = 1$.
- b. $\llbracket \text{RESULT} \rrbracket^j = \lambda P \lambda Q \lambda w$. According to j 's relevant knowledge, the result of $Q(w) = 1$ is that $P(w) = 1$

- REASON has allomorphs *kuvera* and \emptyset
- RESULT has allomorphs *kugira* and \emptyset

(We will have nothing to say below about the causal judge.)

Application to Kinyamulenge IV

Reason-clauses:

- (16) *Yohana yagiye kwaa muganga* [*j* REASON [/ *kó/ngo Maria*
John went to hospital COMP Maria
yararwaiye]]
was.sick

'John went to the hospital because Mary is sick.'

- a. *kó*: According to the speaker's and John's relevant knowledge, the reason that John went to the hospital in w is that, $\forall w' \in \text{Dox}_{Spkr+John,w}$, Mary is sick in w'
- b. *ngo*: According to the speaker's and John's relevant knowledge, the reason that John went to the hospital in w is that, $\forall w' \in \text{Dox}_{John,w}$, Mary is sick in w'

Subjunctive mood I

Our analysis as is suggests that the adverbial clause is always evaluated relative to a doxastic modal base—clearly insufficient for result clauses, which often express the intentions or desires of an individual.

Subjunctive mood II

We believe this additional meaning can be attributed to the noted presence of subjunctive mood (or some other modal element) in result clauses.

- (18) John ya-gi-ye i=Kigali ngo **a-vug-an-e**
John 1SM-go-ASP LOC=Kigali COMP **1SM-speak-RCP-SBJV**
na Maria
with Mary

‘John went to Kigali so that he could speak with Mary.’

Following some recent work on the meaning of subjunctive, we say that subjunctive mood imposes an ordering on a set of beliefs, ranking some worlds higher than others along some additional parameter (e.g., desires) (Mari and Portner, 2018; Portner and Rubinstein, 2020)

Observation #1: Usage

- Reason clauses : *kó* is preferred, but *ngo* is possible.
 - Result clauses : *ngo* is preferred, but *kó* is possible.
- ↪ Reason-clauses correlate with *kó* if their typical usage involves reasoning on the part of the speaker.
- ↪ Result-clauses correlate with *ngo* if their typical usage involves describing the motivations of an event-participant.

Observation #2: Meaning

- *kó* \rightsquigarrow speaker-belief
- *ngo* \rightsquigarrow someone else's belief

\rightsquigarrow This meaning distinction is hard-wired into the meaning of the complementizers:

- *kó* is anchored to an attitude center.
- *ngo* is anchored to an event participant.

Pro 1: Shifted belief

Like Charnavel, we find that reason-clauses may exhibit a perspectival shift in embedding contexts. In (19), *kó* can reflect only Bill's belief that Mary is sick.

- (19) Bill ya-tekerek-ye *kó* John ya-gi-ye kwaa mu-gaanga
Bill 1SM-think-ASP COMP John 1SM-go-ASP to 1SM-doctor
kó Maria ya-ra-rwa-ye
COMP Maria 1SM-PRES-be.sick-ASP
'Bill thinks that John went to the hospital because Mary was sick.'

Pro 2: Selected embedded clauses I

Broadly, *kó* and *ngo* alternate as the head of selected embedded clauses as well, and reflect a similar distinction.

- (20) Maria a-zi {ko,ngo} na-gi-ye i=Kigali
Maria 1SM-know COMP 1SM.PST-go-PRF LOC=Kigali
'Mary knows that I went to Kigali.'

Speaker comment:

- With *kó*: I'm in Kigali and Mary knows it
- With *ngo*: Mary thinks I'm in Kigali, but I'm not.

Pro 2: Selected embedded clauses II

Importantly, the alternation does not reflect factivity *per se* (Özyıldız, 2017). Both complementizers are available under anti-factive verbs, like possibility modals.

- (21) bi-ra-shobok-a kó/ngo Johana a-ri kuri=restora
8SM-PRES-MOD-FV COMP John 1SM-COP LOC=restaurant
ya Maria
9.LNK Mary

'It's possible that John is at Mary's coffeeshop.'

- With *kó*, it's a higher probability, rather than a 50/50 possibility
- with *ngo*, it's just a 50/50 possibility.

Con: Evidential use of *ngo*

As a complete explanation for *kó* and *ngo*, the above account is insufficient. The issue is that *ngo* has a secondary (productive) use as a hearsay/reportative/indirect evidential.

- (22) *ngo* Maria ya-gi-ye i=Kigali
COMP Maria 1SM-go-ASP LOC=Kigali
'(I heard that) Mary went to Kigali'

This use shares with *ngo* above “speaker-distancing,” but it’s not clear how this could be derived from a local dependency. (This overlap in meaning is found across the related Bantu languages, even among non-cognate forms; Givón and Kimenyi 1974; Botne 1997, 2020; Nassenstein 2016)

Conclusion

Kinyamulenge provides support for the idea that reason- and result-clause involve multiple perspectival loci, as argued in Charnavel (2019).

We also find that the (attitudinal) perspective in the adverbial clause can be shifted depending on the complementizer that is chosen.

Two avenues for future work:

- The role of *kó* and *ngo* heading selected clauses \rightsquigarrow a more complete formal account.
- The micro-typological comparison: *kó* and *ngo* take on slightly different meanings in closely related languages.

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