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## 1 Introduction

- Complement clauses can be transparent to some kinds of movement but not others. Finite complements in English are transparent to e.g. relativisation but not raising, making them *selectively opaque* to movement.
- (1) **Selective opacity of finite complement clauses to movement**
- a. The [**knife** (that) Lizzie said [<sub>CP</sub> Jini broke **t** ]] is this one. Relativisation out of CP ✓
  - b. \***Jini** seems [<sub>CP</sub> **t** broke the knife]. Raising out of CP ✗
- There are two different intuitions about the source of selective opacity, displayed in (2). Given attempts to reduce distinctions in movement to features (e.g. van Urk 2015), one might wonder whether (2b) is even required.
- (2) **Two intuitions about the source of selective opacity effects**
- a. CONTENT INTUITION: the featural content of movement dependencies matters.  
Implementable with e.g. Relativised Minimality/Attract Closest (Abels 2012; Halpert 2019)
  - b. POSITION INTUITION: the location of the final landing site of movement dependencies matters.  
Implementable with e.g. Ban on Improper Movement (e.g. Chomsky 1973, 1981; May 1979)
- In this talk I highlight the empirical value of the POSITION INTUITION, implemented with the Williams Cycle (e.g. Williams 2003, 2011) - a constraint connecting to locality of movement to its destination in the clause.
- (3) **WILLIAMS CYCLE**: The higher movement targets in the clausal spine, the more unbounded it is.
- New data from Swahili/*Kiswahili* (Bantu, East Africa) consultants: finite (CP) complement clauses are opaque to movement forming RCs without a complementiser *amba*, partly schematized below in (4).
- (4) **Schematic selective opacity effects in Swahili relatives**
- a. [ **Knife** *amba* Lizzie said [<sub>CP</sub> Jini broke **t** ]] Movement out of CP to RC edge w/ COMP ✓
  - b. \*[ **Knife** Lizzie said [<sub>CP</sub> Jini broke **t** ]] Movement out of CP to RC edge w/o COMP ✗
- The key variable in Swahili relatives: height of movement in the clausal spine (e.g. Spec CP vs. Spec TP). The signature of lower movement is a truncated RC, with effects on COMP, verbal inflection and word order.
  - A more extensive treatment is given in my dissertation (Meadows 2023), publicly available in March.

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## 2 Core Data and Background Analysis

Three types of relative clause and three corresponding long-distance locality profiles are presented.

### 2.1 Introducing Swahili relative clauses

- Relative clauses are clauses which modify noun phrases. Here are the key properties of those in Swahili:
  - RCs display a ‘relative marker’ (REL) tracking the head of the relative’s gender/number (see Appendix 1).<sup>1</sup>
  - RCs in ‘standard’ varieties optionally display a complementiser *amba*.<sup>2</sup>
  - RCs with gaps show evidence for movement from island and reconstruction effects (see Appendix 2).<sup>3</sup>
- The placement of the relative marker and presence/absence of the complementiser traditionally define three types of RC, shown in (5, 6, 7) (Ashton 1947; Barrett-Keach 1980; Vitale 1981).

#### (5) *amba* RCs

- a. Ni-li-nunua [Head kisu ] [RC *amba-cho* Jini a-li-ki-vunja t ] Object RC  
 1SG-PST-buy 7knife COMP-7REL 1Jini 1-PST-7-break  
 ‘I bought the knife that Jini broke.’ amba-REL S INFL-V
- b. Ni-li-mw-ona [Head mtu ] [RC *amba-ye* t a-li-ki-vunja kisu ] Subject RC  
 1SG-PST-1-see 1person COMP-1REL 1-PST-7-break 7knife  
 ‘I saw the person that broke the knife.’ amba-REL INFL-V O

#### (6) Type 1 *amba*-less RCs

- a. Ni-li-nunua [Head kisu ] [RC (\*Jini) a-li-*cho*-ki-vunja Jini t ] Object RC  
 1SG-PST-buy 7knife 1-PST-7REL-7-break 1Jini  
 ‘I bought the knife Jini broke.’ INFL-REL-V S
- b. Ni-li-mw-ona [Head mtu ] [RC t a-li-*ye*-ki-vunja kisu ] Subject RC  
 1SG-PST-1-see 1person 1-PST-1REL-7-break 7knife  
 ‘I saw the person that broke the knife.’ INFL-REL-V O

1. I assume that REL is equivalent to a relative pronoun. Motivation comes from formal identity certain (resumptive) pronouns (Henderson 2006; Scott 2021). Its linear position is partly the result of post-syntactic processes, cliticisation of elements violating minimality requirements. For approaches that treat REL as a complementiser, see e.g. Demuth and Harford (1999); Buell (2002); Nkonyani (2001, 2006); Pietraszko (2023).

2. The distinction between *amba/amba*-less RCs appears to be an innovation of the Swahili varieties spoken around Zanzibar Town, which were used as the basis for Standard Swahili (Russell 1992). Many dialects do not have an *amba*-strategy, but some appear to have something instead of *amba*, e.g the *-enye* strategy reported in Sheng (Shinagawa 2019).

3. In certain environment gaps are not possible, and resumptive pronouns are used instead. Some of these may not involve movement. See Scott (2021) and Appendix 3 for more details.

(7) **Type 2 amba-less RCs**

- a. Ni-li-nunua [Head kisu ] [RC (\*Jini) a-ki-vunja-cho Jini t ] Object RC  
 1SG-PST-buy 7knife 1-7-break-7REL 1Jini  
 ‘I bought the knife Jini breaks.’ V-REL S
- b. Ni-li-mw-ona [Head mtu ] [RC t a-ki-vunja-ye kisu ] Subject RC  
 1SG-PST-1-see 1person 1-7-break-1REL 7knife  
 ‘I saw the person that breaks the knife.’ V-REL O

- The core properties of the three RCs types are summarised below. We will revisit the details in §3.

RC Type	COMP	REL placement	Word Order	Object RC?	Subject RC?	Movement?
<i>amba</i> (5)	✓	COMP-REL	Free	✓	✓	✓
<i>amba-less</i> I (6)	✗	INFL-REL	Restricted	✓	✓	✓
<i>amba-less</i> II (7)	✗	V-REL	Restricted	✓	✓	✓

2.2 **Clausal complementation in Swahili**

- Before we get to long-distance movement, a brief detour into complement clauses is required.
- There are three major types (Vitale 1981), displayed in (8). These complements instantiate to varying degrees a maximal clausal spine, consistent with recent work on complementation (e.g. Wurmbrand and Lohninger 2020).<sup>4</sup>

(8) **Three types of complement clause**

- a. Lizzie a-li-{amini/sema/dhani} [CP (kwamba) Jini a-li-ki-vunja kisu chake ] **Big**  
 Lizzie 1-PST-believe/say/think COMP Jini 1-PST-7-break 7knife 7POSS  
 ‘Lizzie believed/said/thought that Jini broke her knife.’ [CP [ModP [TP [FP [VoiceP ... ]]]]]
- b. Lizzie a-li-{taka/lazimisha} [TP (\*kwamba) Jini a-ki-tengeneze kisu chake ] **Medium**  
 Lizzie 1-PST-want/force COMP Jini 1-7-repair.SBJN 7knife 7POSS  
 ‘Lizzie wanted/forced Jini to repair her knife.’ [TP [FP [VoiceP ... ]]]
- c. Lizzie a-li-{taka/onekana/maliza} [VoiceP (\*kwamba) ku-ki-tengeneza kisu chake ] **Small**  
 Lizzie 1-PST-want/seem/finish COMP INF-7-repair 7knife 7POSS  
 ‘Lizzie wanted/seemed to repair/finished repairing her knife.’ [VoiceP ... ]

4. The three sizes of clause are motivated by contrasts in morphosyntactic richness and word order possibilities. Verbs in Medium complements generally cannot bear INFL prefixes, even though subject marking is still required.

- The salient properties of these different complements are summarised below.<sup>5</sup>

Complement	Category	COMP	INFL Marking	Subject Agr	Overt Subject	Matrix Verb
<b>Big</b>	CP	✓	Full Range	✓	✓	Attitude
<b>Medium</b>	TP	✗	Restricted	✓	✓	ECM/Object Control
<b>Small</b>	VoiceP	✗	None	✗	✗	Raising/Control

### 2.3 Three long-distance locality profiles

- We are now in a position to examine contexts in which we find selective opacity effects.
- The data in (9) show us movement is possible out of small complements to form all three types of RC.<sup>6</sup>

#### (9) Cross-clausal movement out of Small (VoiceP) complements

- a. Agnes ha-hitaji [ **kiti** amba-cho a-na-taka [VoiceP ku-ki-tengeneza t ] ]  
 Agnes 1.NEG-need 7chair COMP-7REL 1-PRS-want INF-7-repair

‘Agnes doesn’t need the chair that she wanted to repair.’

amba ✓

- b. Agnes ha-hitaji [ **kiti** a-na-cho-taka [VoiceP ku-ki-tengeneza t ] ]  
 Agnes 1.NEG-need 7chair 1-PRS-7REL-want INF-7-repair

‘Agnes doesn’t need the chair that she wanted to repair.’

Type 1 amba-less ✓

- c. Agnes ha-hitaji [ **kiti** a-taka-cho [VoiceP ku-ki-tengeneza t ] ]  
 Agnes 1.NEG-need 7chair 1-want-7REL INF-7-repair

‘Agnes doesn’t need the chair that she wanted to repair.’

Type 2 amba-less ✓

- Changing the complement clause to medium size in (10), Type 2 amba-less relatives are no longer permitted.

#### (10) Cross-clausal movement out of Medium (TP) complements

- a. Agnes ha-hitaji [ **kiti** amba-cho mimi ni-na-taka [TP Jini a-ki-tengeneze t ] ]  
 Agnes 1.NEG-need 7chair COMP-7REL 1SG 1SG-PRS-want Jini 1-7-repair.SBJN

‘Agnes doesn’t need the chair that I want Jini to repair.’

amba ✓

- b. Agnes ha-hitaji [ **kiti** ni-na-cho-taka mimi [TP Jini a-ki-tengeneze t ] ]  
 Agnes 1.NEG-need 7chair 1SG-PRS-7REL-want 1SG Jini 1-7-repair.SBJN

‘Agnes doesn’t need the chair that I want Jini to repair.’

Type 1 amba-less ✓

5. It will not affect subsequent argumentation if ‘small’ complements are actually complements to restructuring predicates.

6. I have not investigated whether the choice of raising vs control predicate makes a difference here.

c. \*Agnes ha-hitaji **kiti** [ni-taka-cho mimi [TP Jini a-ki-tengeneze **t** ]]  
 Agnes 1.NEG-need 7chair 1SG-want-7REL 1SG Jini 1-7-repair.SBJN

‘Agnes doesn’t need the chair that I want Jini to repair.’

Type 2 *amba*-less ✗

- Changing the complement to the biggest size in (11) makes forming an *amba* RC the only option.<sup>7 8 9</sup>

- The absence of *kwamba* does not improve acceptability: this is not a COMP-trace effect!
- Long subject and object movement are equally restricted: this is not a subject extraction asymmetry!

(11) **Cross-clausal movement out of Big (CP) complements**

a. **Mtu** [amba-ye ni-na-amini [CP kwamba **t** a-na-fanya kazi zaidi]] ni Musa.  
 1person COMP-1REL 1SG-PRS-believe COMP 1-PRS-do work more COP 1Musa

‘The person who I believe works the most is Musa.’

amba ✓

b. \***Mtu** [ni-na-ye-amini [CP kwamba **t** a-na-fanya kazi zaidi]] ni Musa.  
 1person 1SG-PRS-1REL-believe COMP 1-PRS-do work more COP 1Musa

Intended: ‘The person I believe works the most is Musa.’

Type 1 *amba*-less ✗

c. \***Mtu** [ni-amini-ye [CP kwamba **t** a-na-fanya kazi zaidi]] ni Musa.  
 1person 1SG-believe-1REL COMP 1-PRS-do work more COP 1Musa

Intended: ‘The person I believe works the most is Musa.’

Type 2 *amba*-less ✗

- The three locality profiles are summarised in the table below.

Movement out of	Long <i>amba</i> RC	Long <i>amba</i> -less I RC	Long <i>amba</i> -less II RC
Big (CP) Complement	✓	✗	✗
Medium (TP) Complement	✓	✓	✗
Small (VoiceP) Complement	✓	✓	✓

7. This contrast holds for other embedding predicates like *-sema* ‘say’, *-dhani* ‘think’ and *-tangaza* ‘announce’.

8. Relatedly, speakers use what appears to be prolepsis (see e.g. Salzmann 2017) as a repair strategy for restrictions like those in (11). The embedding predicate may be inflected with applicative marking, and must display object marking with the relativised DP. This may be accompanied by changes in the lexical meaning of the embedding predicate. This is not possible with all embedding predicates.

(i) **Mtu** [ni-na-ye-m-amini **t** [CP kwamba **pro** a-na-fanya kazi zaidi]] ni Musa.  
 1person 1SG-PRS-1REL-1-believe COMP 1-PRS-do work more COP 1Musa

‘The person I trust works the most is Musa.’

Type 1 *amba*-less with matrix object marking ✓

9. Relatives with base-generated resumptive pronouns do not seem to display the same clause-boundedness (see Appendix 3). As suggested by the data in fn. 8, this means that *amba* RCs are not inherently more unbounded than their *amba*-less counterparts. Differences emerge under one way of establishing long-distance dependencies that Swahili has access to.

### 3 Core proposals

Three landing sites are proposed for movement in relatives. Such movement is regulated by a position-based locality condition, the Williams Cycle. A source for the Williams Cycle in terms of derivational timing is presented.

#### 3.1 Movement in relative clauses

- There are three projections, CP, TP and FP, at which movement can land in Swahili relatives.<sup>10</sup>
- The landing sites define three sizes of relative clause, similar to the sizes of complement clause.<sup>11</sup>

- (12) a. [DP [CP [NP **kisu**] [ModP [TP [FP [VoiceP ... **t** ... ]]]]]] **Big** (*amba*) RCs
- b. [DP [TP [NP **kisu**] [FP [VoiceP ... **t** ... ]]]] **Medium** (*amba*-less I) RCs
- c. [DP [FP [NP **kisu**] [VoiceP ... **t** ... ]]] **Small** (*amba*-less II) RCs

- **Support from morphosyntax:** *amba*-less I RCs have access to fewer INFL prefixes than *amba* RCs (e.g. Ashton 1947; Vitale 1981; Barrett-Keach 1980). Like Medium complements, they do not have a full INFL selection.

- Most relevantly, *amba*-less RCs lack the irrealis and counterfactual prefixes, supposed to realise Mod.<sup>12</sup>
- Absence of higher functional heads leads to reduced INFL possibilities

		Modality			Tense			Aspect				
		+A	-AI	-AII				+A	-AI	-AII		
(13)	IRR <i>nge-</i>	✓	✗	✗	PST <i>li-</i>	✓	✓	✗	IMPF <i>na-</i>	✓	✓	✗
	CTF <i>ngali-</i>	✓	✗	✗	PRS <i>na-</i>	✓	✓	✗	PFT <i>me-</i>	✓	✗	✗
					FUT <i>ta-</i>	✓	✓	✗	HAB <i>hu-</i>	✓	✗	✗

- **Support from word order:** we have already seen that *amba*-less object RCs the unrelativised subject cannot occupy a pre-verbal position (Ashton 1947; Vitale 1981; Barrett-Keach 1980).<sup>13</sup>

- In (14) the thematic subject cannot move to Spec TP, and must remain low (e.g. within VoiceP).
- Assuming Swahili has a degree of verb movement, e.g. to F, such low DPs are linearised post-verbally.
- Absence of structural positions leads to reduced word order possibilities

10. Structures with movement are presented in terms of raising derivation (Kayne 1994; Bianchi 1999) for presentational simplicity. A matching analysis (e.g. Sauerland 1998, 2003; Salzmann 2017) could be adopted instead.

11. See Liu (2024) for a different view, which does not address the issue of selective opacity. Variation in finite RC-size is not unique to Swahili - see Douglas (2016) for analysis of the English RC system along these lines.

12. These RCs also lack some *prima facie* aspect markers, the Habitual and Perfect prefixes. I hypothesise that these realise a larger span of clause structure, to somewhere above TP. More detailed morpho-semantic work is needed to flesh this out further.

13. The restrictions are actually more wide-ranging than just concerning subjects. Adverbials and objects which can be fronted to left edge of *amba* RCs cannot appear in the pre-verbal field of *amba*-less RCs.

- (14) Ni-li-nunua [DP [TP **kisu** (\*Jini) a-li-cho-ki-vunja Jini **t** ]] *amba-less RC*  
 1SG-PST-buy 7knife 1-PST-7REL-7-break Jini  
 ‘I bought the knife Jini broke.’ Pre-verbal subject ✗

### 3.2 The Williams Cycle and its effects

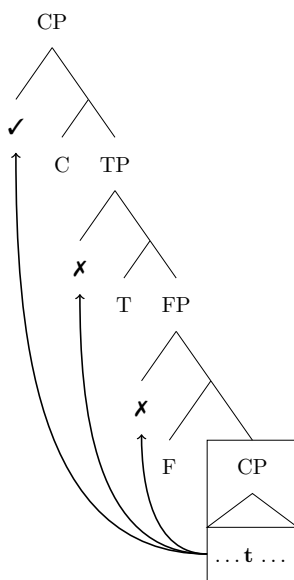
- A range of work (Williams 1974, 2003, 2011; Keine 2016, 2020; Poole 2022) has explored a connection between the structural height of movement and locality. This is informally known as the *Williams Cycle*.
  - The GBOIM below offers the tightest possible version of the connection between height and locality.

(15) **Generalised Ban on Improper Movement (GBOIM)**

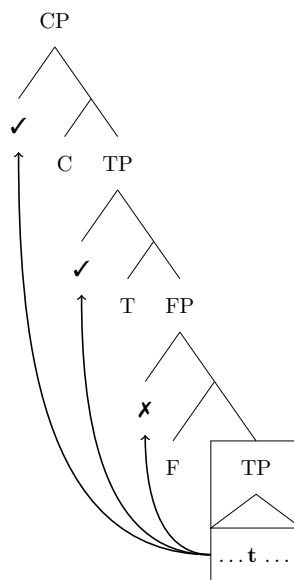
Movement to [Spec, XP] cannot proceed from [Spec, YP] or across YP, where Y is higher than X in the clausal functional sequence. Movement cannot proceed over e.g. CP to TP.

- The effect of the GBOIM is illustrated below using the clausal functional sequence assumed so far.

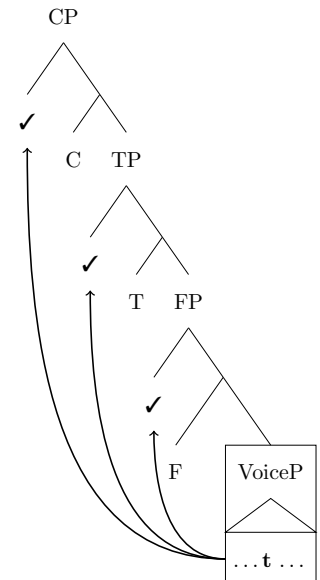
(16) **Big complement**



(17) **Medium complement**



(18) **Small complement**



- **Restrictions in *amba-less RCs*:** attempting to move lower in the fseq than the complement clause edge.
- There are several proposals for deriving some version of the Williams Cycle from more fundamental principles. They all seem to be compatible with the selective opacity effects in Swahili.
  - Conditions on Agree: Keine (2016, 2019, 2020)
  - Conditions on Merge: Müller (2014)
  - Conditions on ordering of syntactic operations: Abels (2008); Neeleman and van de Koot (2010)
  - Conditions on the timing of clausal embedding relative to movement: Williams (2003, 2011)

### 3.3 The ‘timing approach’ to deriving the GBOIM: two constraints in concert

- The first constraint (19) regulates how clausal extended projections are built in different workspaces.

#### (19) **Parallel Derivation of Main and Embedded Clauses**

The Merge of a component of clausal functional sequence applies in parallel across all workspaces.<sup>14</sup>

- Parallel Derivation has a knock-on effect for clausal embedding, summarised in (20).<sup>15</sup>

#### (20) **Consequences of Parallel Derivation**

- a. \*[<sub>VP</sub> [<sub>V</sub> think] [<sub>CP</sub> that [<sub>TP</sub> Tom [<sub>VP</sub> loves rice]]]] **Clauses not built in parallel!**
- b. Bigger clauses are embedded later in the derivation than smaller ones.

- The second constraint (21) regulates what parts of the clause a syntactic operation can affect at a given derivational stage. This is effectively the Strict Cycle/Extension Condition (Chomsky 1973, 1995).

#### (21) **Extension Requirement:** Syntactic operations can only *affect* components of the clausal extended projection at the cycle at which they are added. Each clausal FP is introduced in its own cycle.<sup>16</sup>

- The effect of (21) to ensure syntactic operations happens as soon as they can. Movement to Spec TP, for example, must happen as soon as TP becomes available. One cannot wait around until CP is present.

#### (22) **Derivational steps forbidden by (21)**

- a. TP-stage: [<sub>TP</sub> [<sub>VP</sub> DP ]]
- b. CP-stage: [<sub>CP</sub> [<sub>TP</sub> [<sub>VP</sub> DP ]]]
- c. \*Movement to SpecTP: [<sub>CP</sub> [<sub>TP</sub> **DP** [<sub>VP</sub> ~~DP~~ ]]]

#### (23) **Derivational steps permitted by (21)**

- a. TP-stage: [<sub>TP</sub> [<sub>VP</sub> DP ]]
- b. Movement to Spec TP: [<sub>TP</sub> **DP** [<sub>VP</sub> ~~DP~~ ]]
- c. CP-stage: [<sub>CP</sub> [<sub>TP</sub> **DP** [<sub>VP</sub> ~~DP~~ ]]]

- The core logic of restrictions in relatives, abstracting away from technical details, is summarised below in (24).

#### (24) **The source of the movement restrictions in a nutshell**

- a. All relevant cases involve RCs containing complements bigger than themselves.
- b. According to **Parallel Derivation**, such complements are embedded later than the rest of relative clause.
- c. By the time such embedding occurs, movement out of these complements to the RC edge is ruled out by the **Extension Requirement**.

14. This corresponds to what Williams (2003, 2011) calls the *Level Embedding Conjecture* (LEC).

15. In order to have CP complement to V under this approach, both clauses must be built to CP first. This raises important technical questions about how embedding is achieved. Poole (2022) makes explicit that such embedding needs a re-writing operation akin to Generalised Transformations (Chomsky 1957) or TAG-Substitution (Joshi et al. 1975). Meadows (2023) fleshes out this idea further.

16. A more explicit version of this constraint relies on appropriate understanding of ‘affectedness’. Defining this in right way allows us to formulate a weakened GBOIM and rule in e.g. intermediate movement through Spec vP, without generally undermining Height-Locality connections. See Meadows (2023) for details.



## 4 Limitations of alternative analyses

- To execute the Content Intuition, one might look for featural differences between the probes. This kind of logic been used by Abels (2012) and Halpert (2019) to derive selective opacity effects in Italian and Zulu respectively.

### (25) The Content Intuition (applied to Swahili relatives)

CP complements are opaque to *amba*-less relativisation because they are (defective) interveners.

- The basic logic would involve distinguishing RCs by the specification of probes driving movement, as summarised below in (26). *Amba*-less RCs would have more specified probes with more potential interveners.<sup>17</sup>

	RC Type	Probe Composition	Intervener Location	Transparent Complements
(26)	<i>amba</i>	[uREL]	-	CP, TP, VoiceP
	<i>amba</i> -less I	[uREL] [u $\alpha$ ]	C <sub>[<math>\alpha</math>]</sub>	TP, VoiceP
	<i>amba</i> -less II	[uREL] [u $\alpha$ ] [u $\beta$ ]	C <sub>[<math>\alpha</math>]</sub> , T <sub>[<math>\beta</math>]</sub>	VoiceP

- **The key problem:** The identity of the putative featural triggers/interveners [ $\alpha$ ] and [ $\beta$ ] is currently unclear.
  - All RC types can target thematic subjects and objects. [ $\alpha$ ], [ $\beta$ ]  $\neq$  [ $\varphi$ ]
  - All RC types can target definite and indefinite DPs. [ $\alpha$ ], [ $\beta$ ]  $\neq$  [D]
  - The most promising avenue would be look for differences in information structure.

At present it seems like distinctions in relative clause-size are more motivated than distinctions in featural structures. Consequently, executing the POSITION INTUITION seems more attractive than the CONTENT INTUITION.

## 5 Conclusion

- The puzzle: certain complement clauses are opaque to movement forming relatives without COMP.
- Language-specific claim: relatives without COMP are formed by movement to positions lower than CP.
- General claim: movement is regulated by the Williams Cycle, which prevents cross-clausal movement landing lower in the clausal functional sequence than any clause boundaries crossed along the way.
- In a nutshell: where you aim to end up in the clausal spine strictly determines the path to get there.
- Challenge: reconciling familiar analyses, e.g. raising-to-object, with the Williams Cycle (Appendix 4).

The interplay of clause structure and selective opacity shows us that, sometimes, **size really does matter!**

17. Notice that simply characterising probes as mixed A/ $\bar{A}$ , in the spirit of e.g. Van Urk (2015), does not illuminate the issue. One would have to explain *why* A and A/ $\bar{A}$  probing is clause-bound. This reduces to the intervention account in (26), or to something like the GBOIM.

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# Appendix

## A1 Verbal morphosyntax, agreement and relative marking

- A simplified template for the verbal complex is given below in (27) (e.g. Ashton 1947; Mpiranya 2014).<sup>18</sup>

(27) a. (NEG)-SM-INFL-(REL)-(OM)-√-(EXT)-FV

b. Ha- tu- ta- wa- imb -i -a  
 NEG- SM- INFL- OM- √ -EXT -FV  
 NEG- 1PL- FUT- 2- sing -APPL -FV

‘We will not sing for them’

- The paradigm in (28) below shows possible forms of subject and object markers.<sup>19</sup> The first two columns give the forms of personal agreement for singular and plural. The rest give exponents of the traditional noun classes.<sup>20</sup>

(28) **Agreement prefix forms**

	1st	2nd	1/2	3/4	5/6	7/8	9/10	11	15	16	17	18
SG	ni-	u-	a-	u-	li-	ki-	i-	u-	ku-	pa-	ku-	m-
PL	tu-	mu-	wa-	i-	ya-	vi-	zi-					

- The forms of the relative marker are shown in (29). Notice that no person distinctions are made in relative marking - a relativised personal pronoun triggers the animate noun classes 1/2, depending on its number value.

(29) **Relative marker forms**

	1st	2nd	1/2	3/4	5/6	7/8	9/10	11	15	16	17	18
SG	ye-	ye-	ye-	o-	lo-	cho-	yo-	o-	ko-	po-	ko-	mo-
PL	o-	o-	o-	yo-	yo-	vyo-	zo-					

- As pointed out by Henderson (2006), the form of the relative marker is identical to pronoun-like elements that appear in various contexts. Most saliently, resumptive pronouns which appear as complements to adpositions.

(30) Ni-li-mw-ona **mwanafunzi** [amba-ye u-li-onana na-\*(ye) ]

1SG-PRS-1-see 1-student COMP-1REL 1SG-PST-meet with-1RES

‘I saw the student who you met with’

Scott (2021; 19a), glossed altered

18. The extensions (EXT) are connected to argument/event structure. All Swahili verbs terminate in a vowel, the *final vowel*, which is sensitive to a number of morphosyntactic factors.

19. There a couple of places where object marking differs from subject marking, e.g. Class 1 OM is m- not a-.

20. Classes 1-10 form five pairs, which alternate in number - these are effectively five morphological genders, for different number values. Class 1/2 is the non-personal animate class, used humans and sufficiently animate animals. Classes 11-18 are a mixed bag, 11 and 15 being for abstract nouns and derived nouns respectively, whereas 16-18 are three types of locative prefix.

## A2 Evidence for movement in relatives

- There is evidence for a movement dependency linking the head of the relative to the base position. Amba and amba-less RCs are sensitive to islands (31, 32, 33) and display reconstruction effects (34).<sup>21</sup>

### (31) Adjunct Island Effects

a.\*Hawa ndio [migambo amba-o tu-na-linda msitu [ikiwa t wa-na-lipwa vya kutosha]]  
 2DEM COP.FOC 2ranger COMP-2REL 1PL-PRS-protect 3forest if 2-PRS-pay.PASS 8P enough  
 ‘These are the rangers that we protect the forest if are paid enough.’ Conditional Adjunct

b.\*Hawa ndio [migambo tu-na-o-linda msitu [ikiwa t wa-na-lipwa vya kutosha]]  
 2DEM COP.FOC 2ranger 1PL-PRS-2REL-protect 3forest if 2-PRS-pay.PASS 8P enough  
 ‘These are the rangers we protect the forest if are paid enough.’ Conditional Adjunct

### (32) Coordinate Structure effects

a.\*Na-omba u-uze mabakuli [amba-yo [ni-na-changanya rangi] na [Eric a-na-ya-remba t]] ?  
 PRS-request 2SG-sell.SBJN 6bowl COMP-6REL 1SG-PRS-mix paint and Eric 1-PRS-6-beautify  
 Intended: ‘Can you sell the bowls that I mix paint and Eric decorates?’

b.\*Na-omba u-uze mabakuli [[ni-na-yo-changanya rangi] na [Eric a-na-ya-remba t]] ?  
 PRS-request 2SG-sell.SBJN 6bowl 1SG-PRS-6REL-mix paint and Eric 1-PRS-6-beautify  
 Intended: ‘Can you sell the bowls I mix paint and Eric decorates?’

### (33) Relative Clause islands

a. \*Eric a-li-tengeneza bakuli<sub>j</sub> [amba-lo tu-li-m-kasikiria kijana yule<sub>i</sub>  
 Eric 1-PST-repair 5bowl COMP-5REL 1PL-PST-1-be.angry.at teenager 1DEM  
 [amba-ye t<sub>i</sub> a-li-li-vunja t<sub>j</sub> ]].  
 COMP-1REL 1-PST-5-break

Intended: ‘Eric repaired the bowl that we were angry at the teenager who broke.’

b. \*Eric a-li-tengeneza bakuli<sub>j</sub> [tu-li-lo-m-kasikiria kijana yule<sub>i</sub>  
 Eric 1-PST-repair 5bow 1PL-PST-5REL-1-be.angry.at teenager 1DEM  
 [amba-ye t<sub>i</sub> a-li-li-vunja t<sub>j</sub> ]].  
 COMP-1REL 1-PST-5-break

Intended: ‘Eric repaired the bowl we were angry at the teenager who broke.’

21. See Gould and Scott (2019) for more discussion about movement in amba RCs.

(34) **Reconstruction for quantifier binding**

a. [Kitabu chake cha kwanza amba-cho kila mwandishi hu-jivunia t] huwa ni kizuri chote  
7book 7POSS 7P first COMP-7REL every 1writer HAB-be.proud.of HAB.AUX COP 7nice 7all

‘His<sub>i</sub> first book that every writer<sub>i</sub> is proud of is the best of all.’

b. [Kitabu chake cha kwanza a-na-cho-jivunia kila mwandishi t] huwa ni kizuri chote.  
7book 7POSS 7P first 1-PRS-7REL-be.proud.of every 1writer HAB.AUX COP 7nice 7all

‘His<sub>i</sub> first book every writer<sub>i</sub> is proud of is the best of all.’

- As discussed in Meadows (2023) the status of this movement with respect to classic A/ $\bar{A}$ -diagnostics is currently unclear. This is due to language-specific difficulties in looking for e.g. parasitic gaps, weak crossover effects and extensions to anaphor binding domains.

**A3 Insights from resumptive pronouns**

- Resumptive pronouns are required t form possessive relatives (Barrett-Keach 1980). In (39) below the possessive pronoun *lake* is bound by the head of the relative, *kijana yule* ‘that teenager’. No gap is possible.

(35) **Resumptive possessive pronouns**

Kwa kweli ni-na-m-kasirikia kijana yule [amba-ye u-na-tengeneza gari lake].  
truly 1SG-PRS-1-be.angry.at 1teenager 1DEM COMP-1REL 2SG-PRS-repair 5car 5POSS

‘Truly, I’m angry at the teenger whose car you are repairing.’ (lit. who<sub>i</sub> you are repairing his<sub>i</sub> car)

- Relatives like these without gaps are insensitive to islands. In (36) below, the pronoun is contained within a clausal adjunct. Notice the contrast with the data in (31).

(36) **Resumptive possessive pronoun in adjunct island**

Ni-na-m-kasirikia kijana yule [amba-ye barabara i-li-kuwa i-me-fungwa  
1SG-PRS-1-be.angry.at 1teenager 1DEM COMP-1REL 9road 9-PST-1REL-AUX 9-PFT-close.PASS

[Reason Adjunct kwa sababu gari l-ake li-me-haribika ]].  
for reason 5car 5-POSS.3SG 5-PFT-break.down

‘I’m angry at the teenager who the road was closed because his car broke down.’

- Notice that the Type 1 amba-less RC (37) that forms a minimal pair with (35) is ungrammatical.

(37) \*Kwa kweli ni-na-m-kasirikia                    **kijana**    **yule** [u-na-ye-m-tengeneza    gari **l-ake**].  
 truly            1SG-PRS-1-be.angry.APPL 1teenager 1DEM 2SG-PRS-1REL-1-repair 5car 5-POSS.3SG  
 ‘Truly, I’m angry the teenager whose car you are repairing.’

- This restriction disappears once the resumptive pronoun is contained within a suitable complement clause, as we can see in (38). This is a *prima facie* exception to generalisation about the locality of amba-less RCs.

(38) Ni    nini    ki-li-m-pata                    **kijana**    **yule** [u-li-ye-sema                    kwamba    gari **l-ake**  
 FOC 7what 7-PST-1-happen.to 1teenager 1DEM 2SG-PST-1REL-say COMP 5car 5-POSS.3SG  
 li-me-haribika]?  
 5-PFT-break.down

‘What happened to that teenager whose car you said broke down?’ (lit. who<sub>i</sub> you said his<sub>i</sub> car broke down)

- However, given the lack of island sensitivity, this may constitute principled exception following from the lack of movement. One could reasonably assume that the GBOIM does not impact the locality of variable binding.
- The asymmetry between amba and amba-less RCs with respect to licensing possessive resumptive pronouns may constitute further evidence for a deep structural constraint. E.g. base-generation and short distance binding is possible from Spec CP, not Spec TP.

#### A4 Facing up to trade offs: the case of raising-to-object

- The GBOIM prevents the use of certain derivational moves that are usually assumed to be innocuous, such as raising-to-object. This involves moving out of TP to land in matrix extended VP.

(39) a. I want him to make fondue.  
 b. I want [<sub>VP</sub> him [<sub>TP</sub> ~~him~~ to make fondue]]

- It is possible in principle to model Accusative-with-Infinitive constructions using cross-clausal movement, and still maintain the GBOIM. The trick is to fiddle with clause structure a little.

(40) a. [<sub>CP</sub> [<sub>TP</sub> [<sub>FP</sub> V [<sub>GP</sub> [<sub>VoiceP</sub> ... ]]]]]  
 b. I want [<sub>GP</sub> him [<sub>VoiceP</sub> [<sub>GP</sub> ~~him~~ to make fondue]]

- One obvious hurdle for this analysis is to explain how the matrix external argument moves over the raised DP without violating the minimality constraints usually assumed to condition movement to Spec TP.
- A tricky variant of the raising-to-object problem are cases putative hyperraising-to-object, in which moved DP appears to cross a finite clause boundary. See e.g. Zyman (2018) on this phenomenon in Janitzio P’urhepecha.

- Without modifying the Williams Cycle, the hope would be that putative hyperraising-to-object involves movement no lower in the clausal fseq than the edge of embedded clause. That is, movement would be higher and complement smaller than one might initially expect.
- Other than language-specific proposals about clause structure, another tactic is to try and circumscribe the GBOIM to apply to only some kinds of movement.
- Meadows (2023) suggests that what may matter is whether movement is featurally-driven or not. Featurally-driven movement, because it involves discharging/representationally changing features, affects syntactic structure in a way that matters for the **Extension Requirement**.
- Movement that is not featurally driven, which might include intermediate movement and raising-to-object, does not matter for the Extension Requirement and would thus not be subject to the GBOIM.