Chapter 1

Pronouncing PRO in Wolof

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In Wolof, control clauses differ in whether or not the embedded PRO subject is pronounced. In some control clauses, the subject is phonologically null, as expected, while in others, it is an overt pronoun. The main questions that arise are then: why do control clauses in this language differ in the phonological realization of PRO? Which control theory is compatible with such realization? I suggest that control clauses where the subject is an overt pronoun project a ΣP which 'impedes' movement. Assuming that control is derived by movement, I model the pronounced PRO as the partial residue of movement that has been impeded. Control clauses with a null subject, in turn, are restructured.

1 Introduction

Obligatory control is a phenomenon whereby the subject of an embedded clause, which is usually nonfinite, is null and coindexed with a matrix argument; the latter can be a subject or an object. The embedded null subject is indicated below as 'PRO'.[1]

(1) a. Sindhu$_1$ tried [PRO$_{1/*2}$ to eat natto].
b. Lasha convinced Sindhu$_1$ [PRO$_{1/*2}$ to eat natto].

The phonological nullness of PRO is usually obligatory:

(2) a. * Sindhu tried [Anna/she to eat natto].
b. * Lasha convinced Sindhu [Anna/she to eat natto].

[1]For an overview on control phenomena and theories, see Landau (2013).

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Based on the phonological nullness of PRO, we can divide control theories in the following way:

(3) *Control theory typology*
   a. Inherent theories: phonological nullness is an inherent property of either PRO or of the control clause.
   b. Derivational theories: the phonological nullness of PRO is acquired during the derivation.
   c. Arbitrary theories: there is no necessary relationship between the syntax and semantics and PRO and its phonological realization. It can be null, but it does not have to be.

In inherent theories, the embedded subject of control clauses is null either because this is a property of the lexical item PRO or because there is no space in such clause for a subject. In Chomsky (1981), for instance, PRO must be null because this is the only way for this DP to vacuously satisfy the Case Filter.

(4) *Case Filter*
*NP, where NP has a phonetic matrix but no case. (Chomsky 1981)

In Wurmbrand (1998: et seq.), control can be obtained via restructuring, a phenomenon whereby embedded nonfinite clauses can have a truncated structure. This truncation can be so extreme that the embedded clause may not accommodate a subject. The phonological nullness of PRO is then trivially caused by the absence of a subject.

(5) *Restructuring analysis of (1a)*
Sindhu tried [$_{VP}$ to eat natto].

In derivational theories, in turn, PRO does not start out phonologically null. This property is a consequence of some independent process or principle that occurs during the course of the derivation. For the Movement Theory of Control (Hornstein 1999), there is no PRO per se, nor is there a dedicated control module. Rather, control reduces to raising and the embedded subject of a control clause is null because this is the residue of movement of a DP (the controller) through multiple thematic positions.

(6) *MTC analysis of (1a)*
[Sindhu tried [$_{TP}$ <Sindhu> to [$_{vP}$ <Sindhu> eat natto]]]
0

In other words, for the MTC, the phonological nullness of PRO reduces to the rules that regulate linearization. Notably, the residue of movement is usually null.

A prediction that emerges from this analysis is that, if some independent factor prevents a lower copy from being deleted, the embedded subject in control clauses can be pronounced. Lee (2003) shows that this is the case in copy control in San Lucas Quiaviní Zapotec.[2]

(7) *San Lucas Quiaviní Zapotec*

R-càà**a**'z **Lia Paamm** [g-ahcnèe **Lia Paamm** Gye'eihlly].
HAB-want FEM Pam [IRR-help FEM Pam Mike]

'Pam wants to help Mike.'
(Lee 2003: (62), adapted)

Lee's proposal is that the embedded instance of *Lia Paamm* is a fully pronounced copy of movement.

(8) *Lee's MTC analysis of (7)*
[**Lia Paamm** wants [$_{TP}$ **Lia Paamm** to [$_{vP}$ <Lia Paamm> help Mike]]]
0

More generally, then, in derivational theories of control, it is in principle possible for PRO to be pronounced.

Lastly, for arbitrary theories, the phonological nullness of PRO is an accidental property. In principle, nothing in the syntactic derivation of control clauses or in their semantics prevents PRO from being phonologically overt. One example of such a theory is McFadden & Sundaresan (2018), where all there is is a minimal pronoun whose behavior as obligatory control PRO, arbitrary PRO, or dropped *pro* depends on the environment where it occurs.[3]

[2] See also backwards control (Polinsky & Potsdam 2002).

[3] McFadden & Sundaresan (2018) focus on the syntactic properties of PRO. This theory is *compatible* with PRO's with different phonological properties, though I believe extra work would be required to predict when PRO is an overt.

Against this background, we can turn to control in Wolof (Niger-Congo; Senegal). The complement clause of verbs like *jéem* 'try' is headed by a bare verb. The subject of that verb is interpreted as the matrix subject.[4]

(9) a. Xadi jéem-na togg ginaar.
Xadi try-NA.3SG cook chicken
'Xadi tried to cook chicken.'

b. Maymuna fas-na jàng taalif b-i.
Maymuna want-NA.3SG read poem CM.SG-DEF
'Maymuna wants to read the poem.'

As is expected from the discussion above, an overt pronoun is prohibited.

(10) a. * Xadi jéem-na **mu** togg ginaar.
Xadi try-NA.3SG 3SG.SUBJ cook chicken
Lit.: 'Xadi tried she to cook chicken.'

b. * Maymuna fas-na **mu** jàng taalif b-i.
Maymuna want-NA.3SG 3SG.SUBJ read poem CM.SG-DEF
Lit.: 'Maymuna wants she to read the poem.'

Wolof also has constructions where the embedded subject is an overt pronoun, instead of being phonologically null.

(11) a. Dimbali-na-a a-b xale **mu** jàng téere b-i.
help-NA-1SG INDEF-CM.SG child 3SG.SUBJ read book CM.SG-DEF
'I helped a child read the book.'

b. Dimbali-na-a a-y xale **ñu** jàng téere b-i.
help-NA-1SG INDEF-CM.PL child 3PL.SUBJ read book CM.SG-DEF
'I helped some children read the book.

[4]Unless otherwise stated, all Wolof data was collected by the author in partnership with three consultants, native speakers of Wolof from Senegal. All data presented was checked with the three consultants via online elicitations.

Such a pronoun is obligatory, at least in the Wolof dialect surveyed here.[5] [6]

(12) a. * Dimbali-na-a a-b xale jàng téere b-i.
help-NA-1SG INDEF-CM.SG child read book CM.SG-DEF
Int.: 'I helped some child read the book.'

b. * Dimbali-na-a a-y xale jàng téere b-i.
help-NA-1SG INDEF-CM.PL child read book CM.SG-DEF
Int.: 'I helped some children read the book.'

(13) illustrates the same facts with the verb *yey* 'convince'.

(13) Yey-na-a Isaa rekk *(mu) bind a-b taalif.
convince-NA-1SG Isaa only *(3SG.SUBJ) write INDEF-CM.SG poem
'I convinced only Isaa to write a poem.'

Given these data, we may ask the following questions:

(14) a. What governs the pronunciation of the subject of control clauses in Wolof?
b. When the controlled subject is pronounced, why is it a pronoun?
c. Can the pronounced PRO in Wolof help tease apart control theories with respect to the phonological properties of PRO (see typology in (3))?

[5] The alternative without a pronoun was either judged outright ungrammatical by the consultants I worked with or were accompanied by comments such as "some speakers talk like this, but this is not standard". However, see data in Dione (2019), where the pronoun is descriptively optional. As we are going to see below, the overtness of the embedded subject in *dimbali* control correlates with other properties (e.g. impossibility of clitic climbing and obligatoriness of resumptive pronoun under *Wh*-movement). The opposite set of properties obtains with subject control, where the embedded subject is null. It would be interesting to check whether these properties dovetail in the same way in Dione's data.

[6] The data presented in this paper would lead one to believe that the relevant distinction is one between subject and object control, the former disallowing overt pronominal subjects and the latter requiring them. However, that this is not the relevant criterion is suggested by occurrence of a pronoun in interrogative control clauses, where the controller is a subject:

(1) Sàmba ak Roxaya xam-na-ñu k-an la-y-**ñu**-fa àndal.
Sàmba with Roxaya know-NA-3PL CM.SG-who FOC.OBJ-IMPF-3PL=LOC invite
'Sàmba and Roxaya know who to invite there.'

Due to logistical complications, a full incorporation of interrogative control data into the present analysis is still outstanding.

The questions in (14) can only be asked if sentences like (11) are indeed instances of control. The presence of the overt pronoun in the embedded clause makes them not look like true cases of control, given that PRO is usually phonologically null. In §3, we apply standard tests for control (e.g. *de se* reading, sloppy reading under ellipsis, bound reading) and conclude that this overt pronoun is a bound variable, just like obligatory control PRO. In §4, we bring back the sentences without a pronounced subject in (9b) and (10b) and compare them with clauses with a pronounced PRO. Specifically, we will see how these clauses differ with a pronounced subject with respect to Ā-resumption (i.e. the occurrence of a resumptive pronoun marking a position a phrase Ā-moved from) and clitic climbing: control clauses with a pronounced PRO require Ā-resumption and prohibit clitic climbing, while control clauses with a null PRO have the opposite behavior regarding the same properties. In §5, I propose an analysis where the clausal complement of predicates like *dimbala* 'help' and *yey* 'convince' is a ΣP that impedes movement.

(15) [$_{CP}$ [I helped a child [$_{\Sigma P}$ **she** to [$_{vP}$ <a child> read the book]]]]

A-movement to a further θ-position (resulting in control) or Ā-movement across ΣP leaves behind a resumptive pronoun. The resumptive pronoun is a partially pronounced copy in a movement chain (Van Urk 2018).

This analysis captures why a pronounced PRO and Ā-resumption dovetail in the same construction. Furthermore, it rounds out the typology of control as A-movement that is expected from the Copy Theory of Movement.

2 Morphosyntactic properties of the pronounced PRO

Before we investigate the control properties of constructions like (11) above, we examine the basic morphosyntactic properties of the pronoun that occur in them. Such a pronoun is obligatory, it is a subject or nominative pronoun and cannot be accusative and, finally, it cannot be replaced with a full DP.

The pronoun that occurs in the construction under investigation here comes from the subject or nominative paradigm (the rightmost column in the table below):

Table 1: The pronominal system of Wolof

	Object clitics	**Oblique pronouns**	**Subject markers**
1SG	ma	man	(m)a
2SG	la	yaw	nga/ya
3SG	ko	moom	Ø/(m)u
1PL	ñu	ñoom	ñu
2PL	leen	yeen	ngeen/yeen
3PL	leen	ñoom	ñu

(adapted from Zribi-Hertz & Diagne 2002: (29))

This pronoun cannot be replaced with its accusative counterpart.

(16) a. * Dimbali-na-a a-b xale=**ko** jàng téere b-i.
help-NA-1SG INDEF-CM.SG child=3SG.ACC read book CM.SG-DEF
Int.: 'I helped some child read the book.'

b. * Dimbali-na-a a-y xale=**leen** jàng téere b-i.
help-NA-1SG INDEF-CM.PL child=3PL.ACC read book CM.SG-DEF
Int.: 'I helped some children read the book.

Lastly, it cannot be replaced with a lexical DP, regardless of whether or not it contains a pronoun coindexed with the matrix antecedent.[7]

(17) a. * Dimbali-na-a a-b xale **yaay=am** jàng téere
help-NA-1SG INDEF-CM.SG child mother=POSS.3SG read book
b-i.
CM.SG-DEF
Int.: 'I helped some child for his mother to read the book.'

b. * Dimbali-na-a a-b xale **Roxaya** jàng téere b-i.
help-NA-1SG INDEF-CM.SG child Roxaya read book CM.SG-DEF
Int.: 'I helped some child for Roxaya to read the book.

Having surveyed the basic morphosyntatic properties of the pronoun that occurs in the construction investigated here, we now turn to its semantic properties. We shall see that it behaves like a bound variable, a signature property of the subject of control clauses.

[7] A reviewer asks whether the pronounced PRO could be replaced with a full copy of the controller. This is indeed a relevant question and is a gap in the data I currently have. I hope to be able to fill this gap in the future.

3 Bound variable properties of the embedded pronoun

The pronoun that occurs in the subject postion of the clause subcategorized by verbs like *yey* 'convince' and *dimbala* 'help' in Wolof passes several standard tests employed to identify bound variables. The data examined in this section thus support the claim that such a pronoun behaves like control PRO despite the fact that it is pronounced. We will compare the behavior of this pronoun with the behavior of dropped subjects in Wolof; the former behaves like a bound variable, while the latter behaves like a free variable.

The first hint that the constructions investigated are instances of control comes from the fact that there is no idiom preservation in *dimbali* sentences.

(18) Sa jaan wàcc-na.
POSS.2SG snake descend-NA.3SG
'Your snake descended.'
'You did what you had to do.'

(19) a. Isaa dimbali-na sa jaan j-i **mu** wàcc.
Isaa help-NA.3SG POSS.2SG snake CM/SG-DEF 3SG descend
'Isaa helped your snake descend.'
#'Isaa helped you do what you had to do.'

b. Isaa wax-na sa jaan j-i **mu** wàcc.
Isaa tell-NA.3SG POSS.2SG snake CM.SG-DEF 3SG descend
'Isaa told the snake to descend.'
#'Isaa told you do what you had to do.'

The pronoun in the constructions investigated here systematically contrast with pronominal subjects of finite clauses. The latter are also unpronounced, though presumably because they are dropped arguments.

First, obligatory control PRO should be obligatorily coreferent with a local and c-commanding antecedent, which acts as its controller. A dropped subject in Wolof can have its interpretation established in the discourse.

(20) Bu dee **Mareem**$_k$ moom, njiit l-i dafa foog-oon ne ***pro***$_k$
BU DEE Mareem 3SG.OBL boss CM.SG-DEF DAFA think-PST COMP 3SG
dafa-y xalamal Roxaya.
DAFA-IMPF praise Roxaya

'As for Mareem, the boss thought that she praised Roxaya.'

The pronoun that occurs in *dimbala* sentences, however, cannot.

(21) # Bu dee **Mareem** moom, *pro* dimbali-na-a Mbaye **mu** bind
BU DEE Mareem 3SG.OBL 1SG help-NA-1SG Mbaye 3SG.SUBJ write
a-b taalif.
INDEF-CM.SG poem
Lit.: 'As for Mareem, I helped Mbaye for her (Mareem) to write a poem.'

Interestingly, a speaker consulted offered (22) as a correction to (21). In (22), the matrix subject was dropped to accommodate the reference of the discourse-salient *Mareem*.

(22) Bu dee **Mareem**$_k$ moom, ***pro***$_k$ dimbali-na Mbaye mu bind
BU DEE Mareem 3SG.OBL 3SG help-NA.3SG Mbaye 3SG write
a-b taalif.
INDEF-CM.SG poem
'As for Mareem, she helped Mbaye write a poem.'

Second, the antecedent of a dropped subject can be a higher subject or object.

(23) a. ***pro***$_k$ Wax-na-a Mbaye [ne ***pro***$_k$ jot-na-a a-b
1SG say-NA-1SG Mbaye [COMP 1SG receive-NA-1SG INDEF-CM.SG
leetar].
letter]
'I told Mbaye that I received a letter.'

b. *pro* Wax-na-a **Mbaye**$_k$ [ne ***pro***$_k$ jot-na a-b
1SG say-NA-1SG Mbaye [COMP 3SG receive-NA.3SG INDEF-CM.SG
leetar].
letter]
'I told Mbaye that he received a letter.'

Conversely, the antecedent of the embedded pronoun in control sentences with a pronounced PRO must be the matrix object (i.e. it cannot be the matrix subject).[8]

[8] JJ Lim correctly points out that the intended meaning may be itself ill-formed. It is also suggested that *convince* is used instead. I hope to be able to do this in the future.

(24) a. * ***pro***$_k$ Dimbali-na-a Sàmba **ma**$_k$ togg ginaar g-i.
1SG help-NA-1SG Sàmba 1SG cook chicken CM.SG-DEF
Lit.: 'I helped Sàmba for me to cook the chicken.'

b. *pro* Dimbali-na-a **Sàmba**$_k$ **mu**$_k$ togg ginaar g-i
1SG help-NA-1SG Sàmba 3SG.SUBJ cook chicken CM.SG-DEF
'I helped Sàmba cook the chicken.'

Finally, the antecedent must c-command the pronounced pronoun:

(25) a. Dimbali-na-a [$_{DP}$ rakk-u Roxaya ak Faatu]$_k$ **mu**$_k$ jàng
help-NA-1SG [sister-LNK Roxaya with Faatu] 3SG.SUBJ read
téere b-i.
book CM.SG-DEF
'I helped [Roxaya and Faatu]'s sister read the book.'

b. * Dimbali-na-a [$_{DP}$ rakk-u Roxaya ak Faatu$_k$] **ñu**$_k$ jàng
help-NA-1SG [sister-LNK Roxaya with Faatu] 3PL.SUBJ read
téere b-i.
book CM.SG-DEF
Int.: 'I helped [Roxaya and Faatu]'s sister, so that Roxaya and Faatu would read the book.'

These data also show that the number of the antecedent and that of the pronoun must match.

Besides differing from dropped subjects, pronouns in *dimbala* sentences also behave like bound variables, just like control PRO (Landau 2013). That obligatory control PRO is a bound variable can be diagnosed by properties such as (i) Obligatory coreference, (ii) Obligatory sloppy reading under ellipsis, (iii) Obligatory *de se* interpretation.

As a bound variable, obligatory control PRO should yield only sloppy readings under VP ellipsis. This is exactly what we find in Wolof.

(26) Bu dee Isaa moon, wax-na-a Kumba mu jàng a-b téere,
BU DEE Isaa 3SG.OB say-NA-1SG Kumba 3SG.SUBJ read INDEF-CM.SG book
waaye wax-u-ma Roxaya < mu jàng a-b téere >.
but say-NEG-1SG.SUBJ Roxaya 3SG.SUBJ read INDEF-CM.SG book
'As for/According to Isaa, I told Kumba to read a book, but not Roxaya.'
a. I didn't tell Roxaya for her (= Roxaya) to read the book.

b. * I didn't tell Roxaya for Kumba to read the book.

c. * I didn't tell Roxaya for Isaa to read the book.

(27) Yey-na-a sama yaay mu jënd kër g-u
convince-NA-1SG POSS.1SG mother 3SG.SUBJ buy house CM.SG-COMP
bees, wayee yey-u-ma sama baay.
new but convince-NEG-1SG POSS.1SG father
'I convinced my mother to buy a new house, but not my father.'

a. I didn't convince my father for him to buy a new house.

b. * I didn't convince my father for my mother to buy a new house.

Furthermore, in attitude contexts, obligatory control PRO should be obligatorily interpreted *de se* (relative to its controller). This is also what we find in Wolof.

(28) Maryam wax-na Kadeer mu dem.
Maryam say-NA.3SG Kadeer 3SG.SUBJ leave
'Maryam told Kadeer to leave.'

a. # Maryam is hosting a party. She hears that a certain waiter named Kadeer is being a nuisance. Maryam tells the nearest waiter '
'Kadeer has to go." Unbeknownst to her, she's talking to Kadeer.

b. Maryam is hosting a party. She hears that a certain waiter named Kadeer is being a nuisance. Maryam tells Kadeer "You have to go."

(29) Faatu dafa yey Kadeer, mu noppi.
Faatu do.3SG convinced Kadeer 3SG shut.up
'Faatu convinced Kadeer to shut up.'

a. # Suppose Faatu listens with Kadeer to a recording of a speech. The speaker in the recording is Kadeer himself, although he is not aware of that (Kadeer had a cold at the time of the recording so his voice is unrecognizable). After a while, Faatu feels she has had enough and wants to put an end to it. She says: "This dude should shut up". Kadeer agrees.
(context adapted from Landau 2015)

b. Faatu and Kadeer are arguing. Faatu tells Kadeer: "You should shut up." Kadeer agrees.

A free pronoun, contrastively, does not have to be interpreted *de se*:

(30) … Maryam ak Roxaya wax-na-ñu Kadeer ne *pro* war-na
Maryam with Roxaya say-NA-3PL Kadeer COMP 3SG should-NA.SG
jënd oto b-u bees.
buy car CM.SG-COMP new
'Roxaya and Maryam told Kadeer that he should by a new car.'

a. Maryam and Roxaya work in an office where park spaces are labeled with the car owner's name. The car parked on the space labeled 'Kadeer' is in bad shape. During an office party, they are talking to some worker they don't know. They comment to him

'Kadeer should buy a new car'. Embarrassingly, it turns out the person they are talking to is Kadeer himself. As I am recounting this incident to you, I say …

b. Maryam and Roxaya work selling cars. They see a car pulling up. The car is in bad shape. A guy gets out of the car. It is their friend Kadeer, who came to the car dealership where they work for a quick visit. They tell him: 'You should buy a new car'. As I am recounting this incident to you, I say …

Finally, a bound reading can also be witnessed with antecedents headed by *only* and *no*.

(31) # I hate Kadeer. I am throwing a party and am inviting my students to it. But I tell each of them that Kadeer is not invited, and therefore if they come they shouldn't bring Kadeer along with them. Kadeer was very sad because:[9]

Wax-u-ma b-enn ndongo mu ñëw ci baal b-i.
say-NEG-1SG CM.SG-one student 3SG.SUBJ come PREP party CM.SG-DEF
'I told no student to come to the party.' (Lit.: I didn't tell a student to come to the party.)

(32) Yey-na-a Isaa rekk mu bind a-b taalif.
convinced-NA-1SG Isaa only 3SG.SUBJ write INDEF-CM.SG poem
'I convinced only Isaa to write a poem.'

a. # I have three students, Faatu, Kumba, and Isaa. I am trying to get them to express themselves in verse, which they are not used to.

[9] Thank you to Itai Bassi for providing the context for this sentence!

Faatu and Isaa are enthusiastic about acquiring new abilities, so they accepted the assignment. Kumba, however, refused to do it.

b. I have three students, Faatu, Kumba, and Isaa. I am trying to get them to express themselves in verse, which they are not used to. Isaa is enthusiastic about acquiring new abilities, so he accepted the assignment. Faatu and Kumba, however, refused to do it.

In sum, Even though there is an overt pronoun in sentences like those in (11), these constructions can be classified as instances of obligatory control. The data examined in this section show that these pronouns are bound variables, just like obligatory control PRO in a language like English. In other words, in some control sentences, Wolof has instance of a pronounced PRO, which occurs as an overt pronoun in control clauses subcategorized by verbs like *yey* 'convince', *dimbala* 'help', and *wax* 'tell'.

4 The size of control clauses in Wolof

We just established that the pronoun in *dimblali* sentences is a bound variable, just like obligatory control PRO. An obvious question to ask now is, why Wolof has what can be described as an overt PRO. In order to answer this question, it may be useful to compare both types of control clauses in Wolof introduced in §1. To recall, in sentences headed by a verb like *dimbala* 'help', a subject pronoun is obligatory in the embedded clause (33). I contrast, in a sentence headed by a verb like *jéem* 'try, the same pronoun is prohibited and the embedded subject is necessarily null (34).

(33) Dimbali-na-a a-b xale *(**mu**) jàng téere b-i.
help-NA-1SG INDEF-CM.SG child *(3SG.SUBJ) read book CM.SG-DEF
'I helped a child read the book.'

(34) Xadi jéem-na (***mu**) togg ginaar.
Xadi try-NA.3SG (*3SG.SUBJ) cook chicken
'Xadi tried to cook chicken.'

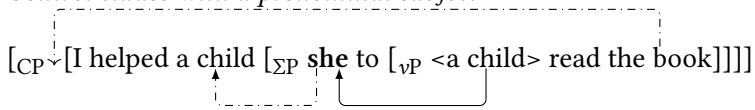
This difference dovetails with other properties, as summarized in the table below. Control clauses with a obligatory pronominal subject require resumption of an Ā-moved element, while disallowing clitic climbing. Control clauses with an obligatory null subject have exactly the opposite behavior.

Table 2: Dovetailed properties of different types of control clauses

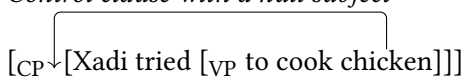
Main verb	Pronounced PRO	Ā-Resumption	Clitic climbing
Dimbala, wax, yey	✓	✓	*
Jéem, fas	*	*	✓

In order to account for these facts, I propose that control clauses with a pronominal subject and those with a null subject differ in size and, furthermore, that the former makes movement more difficult, though not impossible. An overt pronoun is a correction effect that results from the attempt to cross it.

(35) *Control clause with a pronominal subject*



(36) *Control clause with a null subject*



This analysis of control sentences with a pronounced PRO is inspired by Lee's (2003) analysis of copy raising. This is desirable because there are empirical similarities between Wolof control sentences with a pronounced PRO and copy control in San Lucas Quiaviní Zapotec.

4.1 Clitic climbing

Control clauses in Wolof differ with respect to clitic climbing. In control clauses where the subject is an overt pronoun, a clitic must stay inside embedded clause. In control clauses with a null subject, it must climb into the matrix clause. The latter observation has already been made by Gowda & Wu (2020); Martinović (2021). As also observed by Martinović (2021), this difference suggests that subject control clauses can be analyzed in terms of restructuring (Wurmbrand 1998: et seq.).

For starters, clitics in Wolof cannot climb into the matrix clause from an embedded finite clause.

(37) a. Gis-na-a sama xarit ci xewam b-i.
see-NA-1SG POSS.1SG friend PREP wedding CM.SG-DEF
'I saw my friend at his wedding.'

b. Gis-na-a=**ko** ci xewam b-i.
see-NA-1SG=OBJ.3SG PREP wedding CM.SG-DEF
'I saw him at his wedding.'

c. Mareem xalaat-na [ne gis-na-a=**ko** __ ci
Mareem think-NA.3SG [COMP see-NA-1SG=3SG.ACC PREP
xewam b-i].
wedding CM.SG-DEF]
'Mareem thinks I have seen him at his wedding.'

d. * Mareem xalaat-na=**ko** [ne gis-na-a __ ci
Mareem think-NA.3SG=OBJ.3SG [COMP see-NA-1SG PREP
xewam b-i].
wedding CM.SG-DEF]
Int.: 'Mareem thinks that I saw him in his wedding.'

In control clauses with a pronominal subject, the clitic must stay inside the control complement.

(38) a. Kadeer dimbali-na Mareem mu jënd=**ko**.
Kadeer help-NA.3SG Mareem 3SG.SUBJ buy=3SG.ACC
'Kadeer helped Mareem buy it.'

b. * Kadeer dimbali-na=**ko** Mareem mu jënd __.
Kadeer help-NA.3SG=3SG.ACC Mareem 3SG.SUBJ buy
Int.: 'Kadeer helped Mareem buy it.'

(39) illustrates the same fact for the verb *yey* 'convince'.

(39) Jàngalekat b-i yey-na{*=**ko**} ndongo y-i
teacher CM.SG-DEF convince-NA.3SG=3SG.ACC student CM.PL-DEF
ñu bind{=**ko**}.
3PL.SUBJ write=3SG.ACC
'The teacher convinced the students to write it.'

However, in control clauses with a null subject, clitic climbing is obligatory.

(40) a. Maymuna fas-na jàng taalif b-i.
Maymuna want-NA.3SG read poem CM.SG-DEF
'Maymuna wants to read the poem.'

b. * Maymuna fas-na jàng=**ko**.
Maymuna wantNA.3SG read=3SG.ACC
Int.: 'Maymuna wants to read it.'

c. Maymuna fas-na=**ko** jàng __.
Maymuna want-NA.3SG=3SG.ACC read
'Maymuna wants to read it.'

In order to account for these facts, I propose that control clauses with a null subject are restructured. This has already proposed by Gowda & Wu (2020); Martinović (2021). Following Wurmbrand's (1998) definition, restructured clauses are severely truncated, that is, they lack functional projections usually found in clauses, including a layer where subjects are base-generated. The fact that the subject is null in restructured clauses thus follows trivially from the fact that there is no subject syntactically represented in them. The fact that these clauses are truncated also explains why a clitic can only find an appropriate host in the matrix clause.

By the same reasoning, control clauses with an overt subject cannot be as severely restructured. They must be bigger than clauses with a null subject, so that clitic climbing is blocked.

4.2 Resumptive pronoun with Ā-movement

Another difference between control clauses in Wolof has to do with Ā-resumption, the occurrence of a clitic pronoun in the position where some phrase Ā-moves from.

If Ā-movement, instantiated by *Wh*-movement and clefting, proceeds from a control clause with a pronominal subject, a resumptive pronoun occurs obligatorily, marking the position the *Wh*-phrase moved from.

(41) a. K-an la jàngelekat b-i dimbali ndongo
CM.SG-who FOC.OBJ teacher CM.SG-DEF help student
l-i dimbali mu nataal=*(**ko**)?
CM.SG-DEF help 3SG.SUBJ draw=3SG.ACC
'Who did the teacher help the student draw?'

b. L-an la jàngalekat b-i yey ndongo
CM.SG-what FOC.3SG teacher CM.SG-DEF convince student
y-i ñu bind=*(**ko**)?
CM.PL-DEF 3PL.SUBJ write=3SG.ACC
'What did the teacher convince the students to write?'

(42) Ginaar g-i la Maymuna dimbali Roxaya mu
chicken CM.SG-DEF OBJ.FOC.3SG Maymuna help Roxaya 3SG
togg*(=**ko**).
cook*(=3SG.ACC)
'The chicken, Maymuna helped Roxaya cook.'

In contrast, in control clauses where the subject is null, a resumptive pronoun is prohibited under the same circumstances.

(43) a. * K-an la Roxaya d-oon jéem a nataal=**ko**?
CM.SG-who FOC.OBJ Roxaya IMPF-PST try INF draw=3SG.ACC
Int.: 'Who did Roxaya try to draw?'

b. K-an la Roxaya d-oon jéem a nataal?
CM.SG-who FOC.OBJ Roxaya IMPF-PST try INF draw
'Who did Roxaya try to draw?'

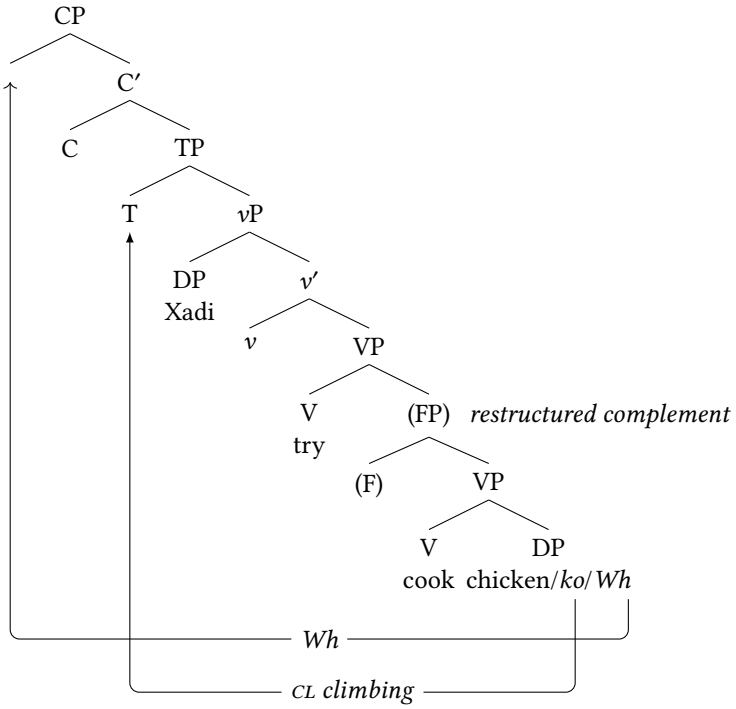
(44) Ginaar g-i la Maymuna fas yéene togg(*=**ko**).
chicken CM.SG-DEF OBJ.FOC.3SG Maymuna want want cook(*=3SG.ACC)
'The chicken, Maymuna wanted to cook.'

5 Analysis

In the previous section, we saw that, in control clauses where the subject is obligatorily pronominal, Ā-resumption is obligatory, while clitic climbing is banned. In control clauses where the subject is obligatorily null, the opposite state-of-affairs obtains. A question that arises at this juncture is how to *relate* these properties.

As briefly mentioned above, I propose that control clauses where the subject is null are restructured. The same proposal has already been made by Gowda & Wu (2020) and Martinović (2021).

(45) Xadi jéem-na togg ginaar.
Xadi try-NA.3SG cook chicken
'Xadi tried to cook chicken.'



In the representation above, the pre-verbal DP *Xadi* is base-generated inside the matrix clause. The embedded clause, being truncated, lacks a subject position. For an analysis of the interpretation of sentences with a restructured nonfinite complement, see e.g. Grano (2015).

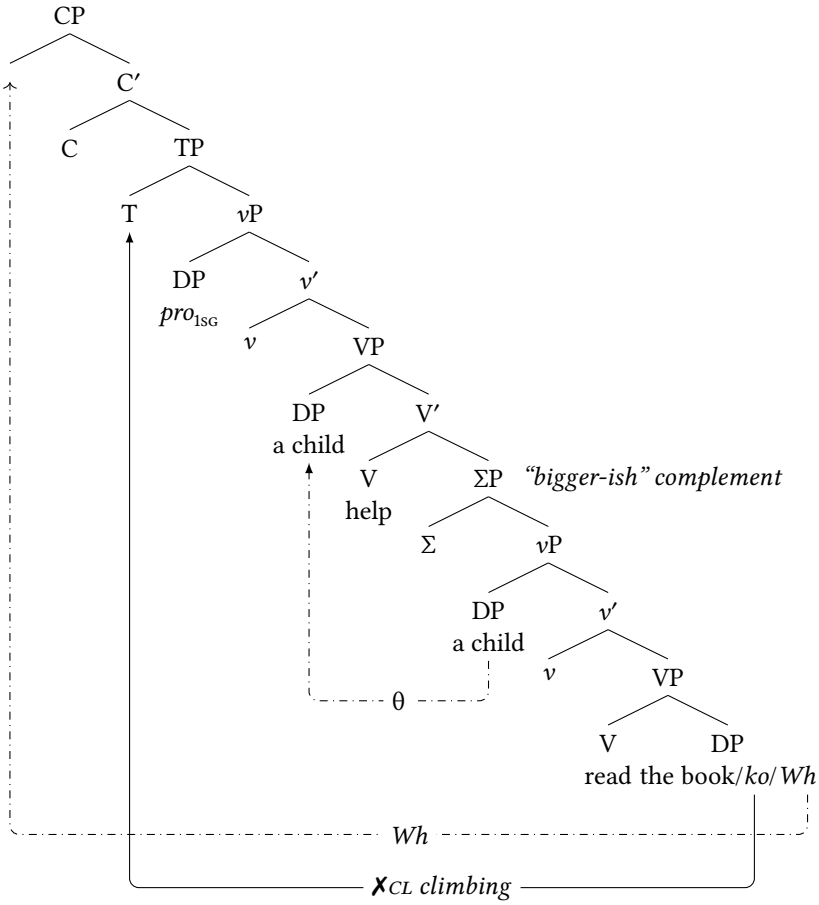
Clitic climbing is obligatory because the only functional projection that can host the clitic is in the matrix clause. Additionally, there is no Ā-resumption because the embedded clause is so small, it could not impede Ā-movement. The subject is obligatorily null because there is not enough space for a subject.[10]

By contrast, in control sentences where the embedded subject is pronominal, the complement clause is a ΣP, which is bigger than a restructured clause. ΣP is stipulated to impede different types of movement.[11]

[10] Alternatively, the embedded clause is restructured and MTC-style A-movement (Hornstein 1999) does not leave any overt residue (Martinović 2021).

[11] For the moment, I do not have a more precise label for the control clauses with a pronounced

(46) Dimbali-na-a a-b xale **mu** jàng téere b-i.
help-NA-1SG INDEF-CM.SG child 3SG.SUBJ read book CM.SG-DEF
'I helped a child read the book.'



Clitic climbing is not possible because ΣP impedes movement. It is likewise not an appropriate host for a clitic, presumably because it is phonologically null. The subject is an overt pronoun as a corrective effect of ΣP impeding A-movement through different thematic positions (Hornstein 1999).[12] Ā-resumption is a cor-

PRO. It could well be simply a CP. I keep the unspecified ΣP to reflect the current stage of the research, which also lacks a precise formalization for the intended "impediment" of movement resorted to in the present analysis and imposed by ΣP.

[12] Martinović (2021) has already proposed a movement analysis for subject control in Wolof, though the author rejects that the structures analyzed here as control clauses with a pro-

rective effect of the same type: ΣP impedes Ā-movement.[13]

That control clauses with a pronominal subject are bigger is further supported by binding facts. A more deeply embedded pronoun in these clauses can be coindexed with the matrix subject.[14]

(47) a. Maymuna$_k$ wax-na Roxaya mu xool=ko$_k$.
Maymuna say-NA.3SG Roxaya 3SG see=3SG.OBJ
'Maymuna told Roxaya to look at her.'

b. Maymuuna$_k$ yey-na Roxaya mu xool=ko$_k$.
Maymuna convince-NA.3SG Roxaya 3SG see=3SG.OBJ
'Maymuna convinced Roxaya to look at her.'

This interpretive possibility suggests that the embedded clause is a binding domain that excludes the subject. Binding domains, in turn, are usually taken to be bigger structures which contain a subject and which are impervious to syntactic relationships like government.

5.1 Towards a formalization of pronounced PRO in Wolof

As just mentioned, I propose that there is an overt pronoun as a corrective effect of crossing ΣP, which impedes movement. An analysis of the overtness of PRO as a consequence of the difficulty of A-movement (in the Hornstein 1999 sense) has already been proposed for copy control in SLQ Zapotec by Lee (2003).

But why exactly is a pronoun pronouced in the embedded clause? I propose that the overt pronoun is a partially pronounced copy (Van Urk 2018). More

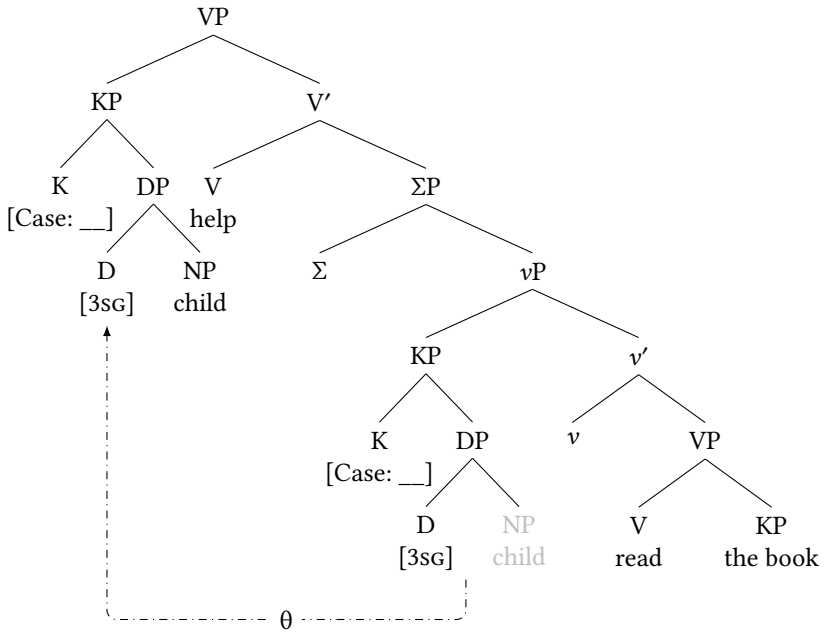
nounced PRO should be so analyzed. This cannot be the conclusion taken from §3.

[13] A reviewer correctly asks why ΣP blocks clitic climbing, while permitting, but "impeding" phrasal A and Ā-movement. At the moment, I can offer some speculations to address this important question. It is possible that relevant distinction is between head movement like clitic climbing and phrasal movement like A-movement into a further thematic position and Ā-movement of a DP. *Why* this should be the case, however, is not something I am presently able to answer. Alternatively, it is possible that clitics require a functional projection to be hosted (assuming head movement of the verb into this functional projection) and ΣP is an appropriate host. As such, it could be the case that ΣP does not impede clitic climbingper se; rather, the clitic does not need to climb into the matrix clause because it has found an appropriate host within ΣP.

[14] These data also indicate that what is taken here as a pronoun that is a pronounced PRO is indeed a pronoun and not an agreement prefix. The latter is not expected to be relevant for binding, so it would not help in delimiting the embedded clause as a binding domain. A true pronoun, on the other hand, can be the subject that defines a binding domain.

precisely, I assume that nouns have a complex structure where person features are represented at D. In partially pronounced copies, NP is deleted, but D survives. The exponence of D is a pronoun.

(48)



Finally, I assume that [Case: _] in the lower, embedded copy of the controller (i.e. PRO) remains unvalued throughout the derivation and is exponed as unmarked nominative case (Preminger 2014). This is why the pronounced PRO in Wolof is a subject/nominative pronoun.

An advantage of the analysis proposed is that it relates Ā-resumption and the overtness of the PRO in Wolof control sentences with a pronounced PRO: both are resumptive pronouns that emerge as a corrective effect to the movement impediment imposed by ΣP. It seems undesirable to treat the co-occurrence of these properties in the same construction (Wolof control sentences with a pronounced PRO) as coincidental. Likewise, it allows for Wolof control to be related to copy control, as it is found in San Lucas Quiaviní Zapotec. In the analysis proposed here and that proposed by Lee (2003) for San Lucas Quiaviní Zapotec, the pronounced PRO (a subject pronoun in Wolof, a full copy in Zapotec) is the residue of "impeded movement".

6 Discussion and outlook

This project is motivated by the questions in (14). According to the analysis put forward here, there is a difference between control clauses on Wolof because they have different sizes. The PRO in control clauses subcategorized for by verbs like *dimbala* or *yey* is pronounced because it is a residue of movement that has been impeded.

With respect to how the phonological properties of PRO are derived in this analysis, it is of the derivational type, thus further bolstering this category. Specifically, I assumed a MTC (Hornstein 1999 et seq.). framework This type of theory can account not only for the pronunciation of PRO in Wolof control, but crucially, for why it correlates with Ā-resumption. As we are going to see below, the present analysis also rounds out the typology of control as movement and relates it to the typology of Ā-movement.

However, it cannot be the case that PRO is always inherently null, as inherent theories would have it, given control sentences with a pronounced PRO in Wolof. Arbitrary theories, in contrast, do offer some flexibility in the pronunciation of PRO. However, they may fail to capture the correlation between a pronounced PRO and Ā-resumption. A general question that can be asked about is why, to the best of knowledge, PRO is silent in the majority of languages. This is not expected if phonological nullness is an arbitrary property.

Beyond these questions, the analysis put forth here also rounds out the typology of the realization of the subject of control clauses, as expected from the movement theory of control and the copy theory of movement. Starting with Ā-movement, the copy theory of movement predicts the existence of four linearization possibilities.

(49) *Only higher copy is pronounced (English)*

What did Yuwei eat < what > for breakfast?

(50) *Lower copy is pronounced (covert* Wh*-movement; Mongolian)*

< yu > Bat **yu** id-sen be?
Bat what eat-PST Q

'What did Bat eat?'

(51) *Multiple copy pronunciation (German)*

Wem glaubst du **wem** deine Eltern vertrauen?
who.DAT believe you who.DAT your parents trust
'Who do you think your parents trust?'

(52) *Lower copy is partially pronounced (pronoun copying; Dinka)*

Yè **kɔ̂ɔc-kò** cɻ̈i Bôl **ké** tɻ̈iŋ?
be.3SG people-which PRF.OV Bol.GEN 3PL see.NF
'Which people has Bol seen?'
(Van Urk 2018: (12c))

In control derived by movement, we see exactly the same four possibilities, with Wolof, as analysed here, being an instance of the a partial pronunciation of the lower copy, analogous to the Dinka Ā example (52).

(53) *Only higher copy is pronounced (English)*

Lasha convinced **Sindhu** [< Sindhu > to eat natto].

(54) *Lower copy is pronounced (backwards control; Tsez)*

< kidbā > [**kidbā** ziya bišra] yoqsi.
[girl.ERG cow.ABS feed.INF] began
'The girl began to feed the cow.'
(Polinsky & Potsdam 2002: (2))

(55) *Multiple copy pronunciation (copy control; SLQ Zapotec)*

R-càà'z **Lia Paamm** [g-ahcnèe **Lia Paamm** Gye'eihlly].
HAB-want FEM Pam [IRR-help FEM Pam Mike]
'Pam wants to help Mike.'
(Lee 2003: (62), adapted)

(56) *Lower copy is partially pronounced (Wolof)*

Dimbali-na-a **a-b** **xale mu** jàng téere b-i.
help-NA-1SG INDEF-CM.SG child 3SG.SUBJ read book CM.SG-DEF
'I helped a child read the book.'

In sum, Wolof control sentences with a pronounced PRO is exactly as expected if we assume the copy theory of movement and couple it with the movement theory of control and, thus, provide further support for this theory.

Pronounced PRO's have also been documented in Bùlì (Sulemana 2021) and Mandarin Chinese (Li 2021). In both languages, the pronounced PRO coexists with a null counterpart, similarly to what was shown here in Wolof. Sulemana's and Li's findings and the findings in this paper are strikingly similar, in that the pronounced PRO can be demonstrated to occur in clauses that bigger than the clauses where the null PRO occurs. This generalization is also supported by the fact that, in Romance languages, in Hungarian (Szabolcsi 2009), and Tamil (Sundaresan 2010), the pronounced PRO is associated with focus. Assuming that focus also requires a more complex left periphery, the generalization seems to be that a pronounced PRO correlates with a more complex clausal structure. Future work on the phonological realization of control PRO should take this generalization into account. Likewise, the fact that pronounced PRO is possible, but, in the overwhelming majority of cases, null, is need of an explanation.

Abbreviations

CM = class marker, COMP = complementizer, DEF = definite, FOC = focus, IMPF = imperfective, LNK = linker, NA = sentential particle for neutral sentences (*na*), NEG = negation, OBJ = object, OBL = oblique, PL = plural, POSS = possessive, PREP = preposition, PROG = progressive, RECIP = reciprocal, REFL = reflexive, SG = singular, SUBJ = subject

Acknowledgements

Many thanks to S. M. Ndao, A. B. Sow, and S. Sène, whose partnership was essential in this project. Thank you also to Keny Chatain for helping me with some French translations. I also thank two anonymous ACAL proceedings reviewers and JJ Lim whose comments led improvements in this paper. Likewise, I have benefited from presenting this work at MIT, Yale, NELS 53, ACAL 53, PLC 46, and ConSOLE 30. All errors are, of course, my own. The data presented here was collected online between June and August, 2021 (financed by the Ken Hale Fund, MIT Linguistics) and between January and February, 2022. Thank you also to Mouhamadou Deme for putting me in contact with Ndao and thank you to Izabela Jordanoska for putting me in contact with Deme. I first became interested in control sentences with a pronounced PRO when working with L. Touré.

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