Exhaustive Control as Movement: The case of Wolof

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Abstract

This paper investigates control constructions in the Niger-Congo language Wolof, which offers several insights into the phenomenon of control. First, I show that one and the same predicate can take infinitival complements of different sizes, giving additional suport to the claims in Wurmbrand 2014c, 2015; Wurmbrand and Lohninger for. Next, I present arguments in favor of Grano's (2012, 2015) claim that Exhaustive Control (EC) and Partial Control (PC) are derived via different strategies, specifically, that EC is the result of movement (Hornstein 1999 et seq.). Control in Wolof is only exhaustive, both with cross-linguistically typical EC predicates and with typical PC predicates, and, notably, all control constructions in Wolof restructure, and all control verbs are monotransitive, properties that usually characterize EC, but not PC predicates. This confirms a correlation between EC, restructuring, and monotransitivity argued for by Cinque (2004, 2006) and Grano (2012, 2015). While Cinque's and Grano's approaches treat EC predicates as functional verbs, I argue that this bundle of properties cannot be a simple consequence of monoclausal syntax and propose that movement of the subject from the infinitival into the matrix clause must be available in bi-clausal constructions as well, supporting the view that at least one type of control is derived via movement, and does not involve PRO. An additional argument for this claim comes from ditransitive verbs: I show that Wolof does not have object control, and attribute this property to the larger size of infinitival complements in ditransitive constructions, resulting in the subject movement into the higher clause being impeded.

Keywords: control, movement theory of control, exhaustive control, partial control, infinitives, clitic climbing, restructuring, Wolof

1 Introduction

Control predicates have been shown to fall into several categories, each characterized by a different set of properties. One of the main issues in the literature on infinitival complements concerns the split between those control constructions that are transparent with respect to certain clause-bound processes, and those that are not. The former have been termed *restructuring* constructions, and the class of core restructuring verbs—modals, aspectual, and motion verbs—has been shown to be largely stable cross-linguistically (Rizzi 1978; Wurmbrand 2001). A well known restructuring diagnostic is the ability of clitics that are arguments of the embedded infinitive to climb into the matrix clause, as illustrated in the Italian examples in (1), with the restructuring verb *want*. The verb *detest*, on the other hand, does not allow clitic climbing, shown in (2) (examples from Cardinaletti and Shlonsky 2004).

(1) *Restructuring*

a. Vorrei [andar**ci** con Maria]
would.want.1SG go.there with Maria
'I would want to go there with Maria.'

b. **Ci** vorrei [andare con Maria].

(2) *Non-restructuring*

a. Detesterei [andar**ci** con Maria].
would.detest.1SG go.there with Maria
'I would detest to go there with Maria.'

b. ***Ci** detesterei [andare con Maria].

Most accounts of restructuring treat restructuring constructions as monoclausal (e.g., Cinque 2004; Grano 2012, 2015), or as either monoclausal or involving a reduced (i.e., smaller than CP) infinitival complement, depending on the predicate (e.g., Wurmbrand 2001).

The second property distinguishing the two classes of predicates has to do with the identity of the embedded subject position in control constructions, and how this relates to two types of control: *Exhaustive Control* (EC), as in (3a), in which the controller exhaustively determines the referent of the controlled position, and *Partial Control* (PC), where the controlled position is interpreted as a proper superset of the controller, exemplified in (3b) (Wurmbrand 1998; Landau 1999, et seq.). Wurmbrand (1998) first observed that EC predicates are also restructuring predicates, and that PC predicates generally do not restructure.

(3) a. Frodo$_1$ tried [e$_1$ to take the ring to Mordor (*together)]. EC
b. Frodo$_1$ promised [e$_{1+}$ to take the ring to Mordor (together)]. PC

The third way in which EC/restructuring predicates differ from PC/non-restructuring predicates is that the former usually do not support finite complementation, while the latter do, as in (4). Grano (2012, 2015) uses this as an argument that the complements of EC predicates are not clausal, while the complements of PC predicates are.

(4) a. *Frodo tried [that he carried/should carry the ring to Mordor].
b. Frodo decided [that he should carry the ring to Mordor].

And finally, already Kayne (1989) notes that restructuring predicates are almost exclusively monotransitive (i.e., they do not take nominal complements in addition to the infinitival complement), leading Cinque (2004) to propose that EC/restructuring constructions are monoclausal, with those control predicates being functional instead of lexical verbs.

Against this backdrop, this paper investigates infinitival complements in the Niger-Congo language Wolof, which exhibits the following properties. First, all control predicates in Wolof allow only EC. Second, clitic climbing occurs both in those control constructions that typically restructure, as with modal and aspectual verbs, and those that cross-linguistically do not restructure, including verbs that usually take propositional complements, such as *think* and *believe*. (5a) illustrates clitic climbing with the typical restructuring/EC verb *jéem* 'try', and (5b) with *taamu* 'prefer', which is usually a PC/non-restructuring predicate.[1]

(5) *Clitic climbing in control constructions in Wolof*
a. Jéem-na=a=**ko** jënd.
try-C=1SG=3SG.OBJ buy
'I tried to buy it.'
b. Taamu-na=a=**ko** naan suba si.
prefer-C=1SG=3SG.OBJ drink morning the.SG
'I prefer to drink it in the morning.'[2]

Clitic climbing is obligatory with typical restructuring verbs, and optional with non-restructuring ones, meaning that there is still a difference between the two sets of predicates in Wolof.

The third property of EC/restructuring verbs, that they are by and large monotransitive predicates, is also the property of almost all obligatory control verbs in Wolof. Verbs that also take DP complements, as in (6), can embed non-finite complements, but those infinitives must have overt subjects, and do not pass the tests for obligatory control.

(6) *Ditransitive verbs do not involve control*
Daf-a=$\emptyset_1$ ñaan jàngalekat=am$_2$ [mu$_{1/2/3}$ dem teel].
do-C=3SG ask teacher=POSS.3SG 1SG leave early
'S/he$_1$ asked her/his teacher$_2$ that s/he$_{1/2/3}$ leave early.'

[1] Unless otherwise noted, all Wolof data were collected by the author during primary fieldwork in Saint-Louis and Ndombo Alarba, Senegal, through direct elicitation. All sentences were elicited so that speakers would be given a context, and then either asked how the target sentence would be said in Wolof (the contact language is French), or they would be given a sentence in Wolof and asked if it is appropriate in the provided context. The bulk of the data on control come from three 6-week long trips, in 2018, 2019, and 2022; some data on ditransitive predicates were collected during a 5-week trip in 2023. All of the data were initially collected from five speakers; over the four field trips, the data were additionally checked with another seven speakers. Any disagreement in judgments are noted for relevant examples.

[2] Abbreviations: GEN = genitive, INF = infinitive, IPFV = imperfective, LOC = locative clitic, OBJ = object clitic, POSS = possessive, PST = past, REFL = reflexive, VEN = venitive

Until section 4, where I discuss (apparent) object control, the claims I make about properties of control constructions are restricted to subject control with monotransitive predicates.

Finally, typical non-restructuring verbs, as *taamu* 'prefer', can embed finite complements in Wolof as well; additionally, they can all embed complements with non-controlled subjects, as in (7a). Typical restructuring predicates, e.g., *jéem* 'try', disallow this.

(7) *Non-control subjects are possible only with non-restructuring verbs*

a. Magatt taamu na=∅ [xale yi lekk teel].
Magatte prefer C=3SG child the.PL eat early
'Magatte prefered for the children to eat early.'

b. *Magatt jéem na=∅ [xale yi lekk teel].
Magatte try C=3SG child the.PL eat early
intended: 'Magatte tried for the children to eat early.'

Features of the two sets of control predicates in Wolof are summarized in Table 1. Note that the first two properties, restructuring (here exemplified with clitic climbing) and the type of infinitival subject that can occur in the infinitival complement, behave in Wolof as expected in the two groups of verbs. The values of the latter two properties, type of control and transitivity, usually characterize the restructuring class of predicates, whereas in Wolof they characterize all subject control predicates.

	Typically restructuring	*Typically non-restructuring*
Clitic climbing	obligatory	optional
Infinitival subjects	only controlled	controlled or non-controlled
Type of control	only EC	only EC
Transitivity	monotransitive	monotransitive

Table 1 Two sets of subject control predicates in Wolof

I argue here that these properties are the result of the following characteristics of control in Wolof:

(i) typical restructuring predicates take vP- or AspP-sized complements, while typical non-restructuring predicates take TP-sized complements, and
(ii) subject control in Wolof is established through movement of the subject from the embedded to the matrix clause.

Specifically, I argue that clitic climbing is obligatory out of infinitives that do not contain the inflectional layer, but optional out of infinitives that do. The relevance of the inflectional layer can be observed when infinitival complements of restructuring verbs contain Aspect, which renders clitic climbing optional, just like with non-restructuring predicates. The presence of the TP-layer is argued to be necessary to license non-controlled subjects, which is why they are impossible with restructuring predicates. Wurmbrand (2014c, 2015), Wurmbrand and Lohninger (for) extensively argue that

infinitival complements come in different sizes; the previously undescribed facts from Wolof discussed here support this.

The fact that Wolof only allows EC and that control appears to be found almost exclusively with monotransitive verbs is proposed to be the consequence of the strategy that establishes control in Wolof: movement. Specifically, I argue that Wolof supports theories according to which EC and PC are derived via different mechanisms. This mixed approach to control is advocated by Grano (2012, 2015), who, following Cinque (2004, 2006), proposes that EC involves monoclausal constructions, with control predicates actually being functional verbs in the inflectional layer of the clausal spine. These constructions consequently have only one subject, explaining why only EC is available. PC structures, in Grano's view, embed CP complements which contain PRO subjects.

Control constructions in Wolof give support for the split between the two different paths to control, as only one exists in Wolof: Exhaustive Control. Unlike Cinque/-Grano, I propose that movement of the subject from the embedded into the matrix clause occurs not only in mono-clausal, but also in bi-clausal constructions. The fact that movement is allowed from all monotransitive control constructions in Wolof also explains why clitic climbing is always possible: all infinitival complements found in subject control are smaller than a CP, and therefore movement is unempeded. Finally, I propose that ditransitive predicates take CP-sized complements, which results in the absence of control and the ban on clitic climbing, as movement is not possible out of non-wh-CPs in Wolof. This is supported by the fact that A′-movement out of infinitival complements of ditransitive verbs results in the occurrence of resumptive pronouns, which are banned in extraction from infinitival complements in subject control constructions, and in (long-distance) extraction in general. Given the absence of PC and the data from ditransitive verbs, I argue that a movement analysis of control in Wolof is superior to an analysis that makes use of PRO.

This paper is organized as follows. Section 2 discusses the syntactic characteristics of infinitival clauses in Wolof, and establishes the size of the different infinitival complements. Section 3 explores clitic climbing, and relates its properties to the size of infinitives. In section 4, I show that Wolof has only Exhaustive Control, and that this is best accounted for via a movement analysis of control. This section also shows that a movement analysis straightforwardly explains the absence of control with ditransitive verbs and restrictions on A′-movement in these contstructions. Section 5 concludes.

2 The structure of Wolof infinitives

In this section, I give the necessary background on Wolof clause structure, and then discuss the properties and structure of non-finite complements, first by investigating functional elements that can occur in infinitives, and then by comparing some properties of Wolof control constructions to those of other, well-studied languages. Based on the evidence laid out in this section, I argue that Wolof subject control predicates take complements that are either the size of a vP/AspP, or a TP.

2.1 Functional elements in Wolof infinitives

Wolof is an SVO language with a rigid word order and a rich left periphery for focused and topicalized elements. All finite indicative clauses in Wolof contain *sentence particles*, which have been argued to all be hosted by one and the same, high head (Sigma in Dunigan 1994, C in Martinović 2015, 2023a). Examples of several clause-types with different sentence particles (boxed) are given in (8).

(8) *Wolof clause types*

a. Xale yi lekk **na**=ñu gato bi.
child the.PL eat C=3PL cake the.SG
'The children ate the cake.' **Neutral affirmative**

b. Xale yi **da**=ñu lekk gato bi.
child the.PL do.C=3PL eat cake the.SG
'The children ATE the cake.' **Predicate focus**

c. Gato bi **la**=ñu lekk.
cake the.SG C=3PL eat
'It's the cake that they ate.' **Exhaustive Identification**

The notion of *finiteness* in Wolof, as is the case in primarily aspectual languages, is not tied to tense. Eventive verbs are interpreted as past tense in tenseless clauses, as in (9), and stative verbs as present tense, shown in (10). Tenseless clauses receive independent temporal interpretation only in the presence of sentence particles.[3] There is one tense morpheme, *oon*, which Bochnak and Martinović (2019) argue is an optional, plain past tense marker. Clauses which have been argued to be no bigger than a vP (Zribi-Hertz and Diagne 2003), as in (11), can be independent (i.e., unembedded) in running narratives, where they receive their temporal interpretation from context. They cannot contain inflectional morphology of any kind (tense, aspect, negation). I refer to them as *minimal clauses*.

(9) *Eventive verbs are past tense*
Lekk na=∅ tàngal.
eat C=3SG candy
'S/he ate candy.'/#'S/he's eating candy.'

(10) *Stative verbs are present tense*
Baax na=∅.
be.good C=3SG
'It's good.'/#'It was good.'

(11) *Minimal clause*
Mu lekk tàngal.
3SG eat candy
'S/he ate/eats/will eat/... candy.'

[3] For accounts of default temporal interpretation of tenseless clauses in Wolof, see Bochnak and Martinović 2019, who base their analysis on Smith and Erbaugh 2005; Smith et al. 2007; Mucha 2013.

Sentence particles therefore seem to be the only morpho-syntactic correlate of what we might call *finiteness*, to the extent that finiteness means having independent temporal interpretation. The presence of a sentence particle is also obligatory for the clause to contain negation (Njie 1978, 1982). Henceforth, I use the term *non-finite/infinitival* for embedded clauses that cannot contain the optional tense morpheme *oon* or negation, and do not contain overt sentence particles, as expanded on below, without committing to any particular notion of finiteness. Given that an optional tense morpheme does exist, I assume that a TP is projected in Wolof.

Non-finite complement clauses come in two forms. One occurs in obligatory subject control constructions and does not have an overt subject, as in (12a). The other, illustrated in (12b), has an overt subject and, as I will show in §4, does not pass the tests for obligatory control. What is important for our purposes is that an overt subject in the complement clause is obligatory whenever the matrix verb has a DP complement.

(12) *Two types of non-finite complement clauses*

a. Jéem na=nu$_1$ [__$_{1/*2}$ may miskin yi xaalis].
try C=1PL give poor the.PL money
'We tried to give money to the poor.'

b. Ñaan na=∅$_1$ yaay-am$_2$ [mu$_{1/2/3}$ may xale yi tàngal].
ask C=3SG mother-3SG.POSS 3SG give child the.PL candy
'S/he$_1$ asked his/her mother$_2$ that s/he$_{1/2/3}$ give candy to the children.'

Torrence (2005, 2013) calls complement clauses as in (12b) *subjunctive*. While I shall argue that infinitives as in (12b) are structurally distinct from those in (12a), it is important to note that these structures do not have some common properties of subjunctive mood. Subjunctives in many languages are selected by particular groups of verbs: desideratives, directives, permissive, emotives. While many of the verbs that obligatorily select complement clauses as in (12b) do fall into these groups, their crucial defining characteristic is that they also take a DP complement, in addition to the infinitival complement. Another typical property of subjunctives is that an overt pronominal subject triggers subject obviation, which does not obligatorily occur in Wolof. Finally, such clausal complements appear to be non-finite: they cannot contain the tense morpheme *oon*, and, crucially, they do not allow negation. All other non-indicative moods in Wolof can contain negation, as illustrated in optative and imperative clauses in (13) and (14).

(13) *Optative and imperative*

a. Na Omar lekk gato.
C.OPT Omar eat cake
'Let Omar eat cake.'

b. Lekk-al gato!
eat-2SG.IMP cake
'Eat cake!'

(14) *Optative and imperative negative*

a. B-u(l) ñu lekk gato.
OPT.NEG 3PL eat cake
'May they not eat cake.'

b. B-ul lekk ceeb!
IMP.NEG.2SG eat cake
'Don't eat cake!'

Negation is an affix that generally occurs on the verb (though not obligatorily—see (14b)), and NegP has been argued to be in a high position in the clause, above the TP (Torrence 2005, 2013; Martinović 2015, 2019). No clause without an overt sentence particle can contain negation (Njie 1978); the only way to express this meaning in infinitives is with the verbs *bañ* 'refuse' or *ñakk* 'lack'. This is illustrated for infinitives in a control construction in (15), and for infinitives in a non-control construction in (16).

(15) *Control infinitives cannot contain negation*

a. *Jéem na=a$_1$ [__$_1$ lekk-ul gato bi].
try C=1SG eat-NEG cake the.SG
intended: 'I tried to not eat the cake.'

b. Jéem na=a$_1$ [__$_1$ bañ [__$_1$ lekk gato bi]].
try C=1SG refuse eat cake the.SG
'I tried to not eat the cake.'
(lit. 'I tried to refuse to eat cake.')

(16) *Non-control infinitives cannot contain negation*

a. *Ñaan na=a xale yi$_1$ [ñu$_{1/2}$ lekk-ul tàngal].
ask C=1SG child the.PL 3PL eat-NEG candy
intended: *'I asked the children that they not eat candy.'*

b. Ñaan na=a xale yi$_1$ [ñu$_{1/2}$ bañ [__$_1$ lekk tangal]].
ask C=1SG child the.PL 3PL refuse eat candy
'I asked the children that they not eat candy.'
(lit. 'I asked the children that they refuse to eat candy.')

We shall see, however, that there does appear to be an additional boundary in infinitives with overt subjects, specifically, one that interferes with movement. I shall therefore argue that, while infinitives without overt subjects are always smaller than a CP, infinitives with overt subjects contain a C-head. I postpone the discussion of infinitives with overt subjects until §4.2.

Several elements can occur in non-finite clauses. One is the element *a*, usually found between the matrix and the embedded verb, as in (17a), but only if nothing interferes between the two verbs (like an embedded subject, in (17b), or an adverb, in (17c)). It is not obligatory, though speakers prefer to use it. Verbs in infinitival complements are bare – there is no special infinitival morphology in Wolof.

(17) *Morpheme* a *in infinitives*

a. Da=ma bëgg=a=togg jën.
do.C=1SG want=*a*=cook fish
'I want to cook fish.'

b. Da=ma bëgg(=*a) mu togg jën.
do.C=1SG want=*a* 3SG cook fish
'I want her/him to cook fish.'

c. Da=ma bëgg(=*a) téy(=*a) togg jën.
do.C=1SG want=*a* today=*a* cook fish

'Today I want to cook fish.'

Torrence (2013) considers *a* to be a complementizer, however, there are several arguments against this. First, as mentioned, *a* cannot occur when the embedded subject is overt, and that is precisely the context where, as I argue in §4, we have evidence for the presence of a C head. Second, it can occur in all subject control construction, even in complements of restructuring verbs that are generally agreed not to take full clausal complements, such as modals. Additionally, clitics climb out of infinitives with *a*, and C usually blocks clitic climbing (Müller 1996; Wurmbrand 2001; see details in section 3). Given its limited distribution and optionality, and the lack of any evidence of it being a syntactic head, I will assume that *a* is a linker vowel, similar to linkers in Greek and Slavic compounds (Nespor and Ralli 1996; Gouskova 2010).

The only functional element that all speakers allow in infinitives is the aspectual morpheme *di*. In finite clauses (i.e., clauses with overt sentence particles), *di*, glossed as *imperfective*, is interpreted as either present, habitual, or future, illustrated in (18);[4] an overt sentence particle is obligatory for these meanings to be available.

(18) *Imperfective aspect in finite clauses*

a. Xale yi da=ñu lekk ceebujën.
child the.PL do.C=3PL eat ceebujen
'The children ate ceebujen.'

b. Xale yi da=ñu di (>dañuy) lekk ceebujën.
child the.PL do.C=3PL IPFV eat ceebujen
'The children are eating/will eat/eat (habitually) ceebujen.'

Bochnak and Martinović (2019) argue that *di* is a future-oriented modal, so it is a good candidate for the modal WOLL. Abusch (1985) proposes that future modals *will* and *would* contain a T head (PRES or PAST), and the abstract modal WOLL which contributes posteriority. Wurmbrand (2014a) claims that WOLL is also present in future-oriented infinitives, and Jóhannsdóttir and Matthewson (2007) (see also Matthewson 2013) propose that Gitxan (Tsimshianic) gives evidence for the existence of this element, having an overt morpheme that occurs in precisely those environments where WOLL has been posited for languages like English, crucially, future-oriented infinitives. We have reason to believe, however, that *di* is not WOLL. First, in infinitives which are obligatorily future oriented, the occurrence of *di* is optional, as in (19); in fact, speakers prefer examples without *di*.

(19) di *is optional in future oriented infinitives*

Demb Faatu fasyéene-woon na=∅ (di) togg ceebujën suba.
yesterday Fatou decide-PST C=1SG IPFV cook ceebujen tomorrow
'Yesterday, Fatou decided to cook ceebujen tomorrow.'

[4]Which meaning is available depends on the structural height of *di*; see Bochnak and Martinović 2018 for details.

The morpheme *di* appears to also have aspectual meaning in infinitives; when asked to give contexts for the sentence in (20) with and without *di*, speakers usually say that using *di* means that the giving should occur regularly.

(20) di *in infinitives*
War na=ñu [(di) jox miskin yi xaalis].
must C=1PL IPFV give money the.PL money
'We must give money to the poor.'

However, the use of *di* is not obligatory even in a clearly habitual context, as (21) shows. Speakers insisted on *di* only in the non-finite complement of the verb verb *wéy* 'continue', as in (22), again apparently contributing a habitual meaning.

(21) di *not obligatory in habitual contexts in infinitives*
War na=ñu [(di) jox miskin yi xaalis bës bu nekk].
must C=1PL IPFV give poor the.PL money day C_{REL} exist
'We must give money to the poor every day.'

(22) di *obligatory in the infinitival complement of* wey *'continue'*
Astu wéy na=∅ [*(di) lekk suukar].
Astou continue C=3SG IPFV eat sugar
'Astou continued eating sugar (e.g., even after her doctor forbade it).'

And finally, *di* can also occur with predicates which force simultaneity between the matrix and embedded events, such as *jéem* 'try'.

(23) di *occurs with predicates forcing simultaneity*
Da=ma jéem (di) jox xaalis samay wayjur.
do.C=1SG try IPFV give money POSS.1PL parents
'I tried giving money to my parents.'

Given all this, I treat *di* as an Asp head in infinitives. Since *di* can occur in infinitival complements of all verbs, I argue that all infinitives can be at least as big as AspP. For typically restructuring verbs, I will show that clitic climbing distinguishes between a smaller infinitival complement, which I argue is vP-sized, and a slightly larger one, which is an AspP.

For some speakers, the morpheme *doon*, which is in finite clauses the past progressive marker (probably consisting of *di* and *oon*), can also occur in some infinitives. For the speakers I consulted, this is only possible if the matrix clause contains the optional past morpheme *oon*, making it look like a type of tense concord. However, the judgments were extremely unclear and unstabile, with both interspeaker and intraspeaker variation in which verbs allow the presence of *doon* in their complement. There was no clear pattern, and most speakers did not seem to associate any additional meaning with *doon*.[5] Whatever meaning *doon* contributes, it does not appear to parallel

[5] Only one speaker suggested a meaning difference associated with the presence of *doon*, as in (i), but no other speaker shared this intuition.

(i) Tàmbali-woon na=a doon tabax ñaari kër.
begin-PST C=1SG *doon* build two house

its meaning in non-finite clauses, where it is a past progressive. I leave *doon* aside for the time being, as it requires further research. Crucially, the optional tense morpheme *oon* cannot occur affixed onto the verb in the infinitival complements, regardless of the presence or absence of *oon* in the matrix clause.

(24) a. Jéem-(oon) na=a jox-(*oon) xaalis samay waayjur.
Try-(PST) C=1SG give-PST money POSS.1PL parents
'I tried to give money to my parents.'

b. Fasyéene-(woon) na=a jox-(*oon) xaalis samay waayjur.
decide-(PST) C=1SG give-PST money POSS.1PL parents
'I decided to give money to my parents.'

Thus far, I have argued that all control infinitives can be at least as big as an AspP, and that infinitives without overt subjects are smaller than a CP. More evidence for this will be presented in §3; in the remainder of this section I discuss how Wolof behaves with respect to some other claims made in the literature having to do with the size of control infinitives, in particular related to restructuring.

2.2 Restructuring and the size of infinitives

Restructuring is a phenomenon whereby structures that appear to be biclausal are transparent for syntactic processes that are otherwise clause-bound. It has been observed that the core class of restructuring predicates is quite stabile cross-linguistically and commonly includes modal, aspectual, motion and causative verbs. There are different accounts of the cause of restructuring phenomena. For Wurmbrand (1998, 2001), they can be the result of a variety of factors: (i) the control predicate is a lexical verb taking only a VP-sized complement, not a clause, so clause-bound processes are not impeded; (ii) the control verb is actually a functional head, so the construction is truly monoclausal (i.e., it contains only one lexical verb); (iii) the control predicate is a lexical verb taking a vP- or TP-sized complement, so some clause-bound processes are not impeded (whereas others might be). In later work, Wurmbrand argues that complement clauses fall into three classes which are determined semantically and not syntactically (i.e., there is no category/size selection); following Ramchand and Svenonius (2014), these classes are termed *Events*, *Situations*, and *Propositions* (Wurmbrand 2014b, 2015; Wurmbrand and Lohninger for). Their transparency for clause-bound syntactic operations increases from Events to Situations, but there is cross-linguistic variation in 'degrees of restructuring' depending on a variety of factors.

The majority of the arguments made for the different size of infinitives come from various syntactic processes that the infinitival complement is more or less transparent to, as extensively discussed in Wurmbrand 1998, 2001 for German. In §3 I explore the one restructuring diagnostic that exists in Wolof—clitic climbing—and argue that it supports my claims about the different sizes of infinitival clauses. Here I wish to set

'I began to build two houses.' (the addition of *doon* means that the building of the houses started, but then stopped)

up that discussion by looking at a commonly reported difference between restructuring and non-restructuring predicates, used to argue that they embed complements of different sizes. Wurmbrand (1998, 2001) proposes that the possibility to have embedded future adverbials in control structures distinguishes non-restructuring (tensed) infinitives from restructuring (tenseless) ones. The behavior of typically restructuring and non-restructuring verbs in Wolof parallels what has been reported for those verbs in other languages: predicates such as *jéem* 'try', modal and aspectual verbs, do not allow embedded future time adverbials, whereas predicates such as *bëgg* 'want', *fasyéene* 'decide', do.

(25) *Restructuring verbs cannot embed future adverbials*

a. Démb mën-oon na=a jox xaalis miskin yi (*suba).
yesterday can-PST C=1SG give money poor the.PL tomorrow
*'Yesterday I could give money to the poor (*tomorrow).'*

b. Jéem na=a démb togg ceebujën (*suba).
try C=1SG yesterday cook ceebujen tomorrow
intended: *'I tried yesterday to cook ceebujën (*tomorrow).'*

(26) *Non-restructuring verbs can embed future adverbials*

a. Démb bëgg-oon na=a jox xaalis miskin yi suba.
yesterday want-PST C=1SG give money poor the.PL tomorrow
'Yesterday I wanted to give money to the poor tomorrow.'

b. Fasyéene na=a démb togg ceebujën suba.
decide C=1SG yesterday cook ceebujen tomorrow
'I decided yesterday to cook ceebujën tomorrow.'

Wurmbrand (2014c) argues that complements of non-restructuring verbs such as *decide*, which are future-oriented infinitives, do not involve a TP, but have a wollP (see above), whereas restructuring, non-future infinitives, complements of predicates such as *try*, lack a wollP. Propositional non-future infinitives, complements of verbs such as *claim*, are at least TPs. Wurmbrand gives arguments against the presence of T[PRES] or T[PAST] in future-oriented infinitives, but Grano (2012, 2015) argues that the facts are also consistent with the presence of T[∅] (tense obtained under 'Sequence-of-Tense'). The correct analysis of the Wolof facts presented here does not depend on resolving this debate one way or another, primarily because I do not here make a distinction between non-future infinitives and propositional non-future infinitives, as most propositional and factive verbs cannot take infinitival complements in Wolof; the exception are verbs of thinking (see §4, Table 3). I therefore assume that the presence of an embedded future adverbial indicates the presence of a TP in the complement of a control predicate. A more extensive argument for the different size of infinitival complements comes from the differences in clitic climbing between different types of control constructions, and is discussed in §3.

Additional evidence often given for the claim that non-restructuring predicates take full clausal complements comes from the fact that they (i) support finite complementation, and (ii) allow overt embedded subjects. This is also the case in Wolof. First,

non-restructuring verbs generally allow both finite and non-finite complementation, whereas typical restructuring verbs do not. The contrast is illustrated in (27)-(28).

(27) *Modals cannot take finite complements*

a. War na=a [bàyyi tóx].
must C=1SG quit smoke
'I must quit smoking.'

b. *War na=a [ni di-na=a bàyyi tóx].
must C=1SG that IPFV-C=1SG quit smoke

(28) *Desideratives can take finite complements*

a. Fasyéene na=a [bàyyi tóx].
decide C=1SG quit smoke
'I decided to quit smoking.'

b. Fasyéene na=a [ni di-na=a bàyyi tóx].
decide C=1SG that IPFV-C=1SG quit smoke
'I decided that I will quit smoking.'

Second, non-restructuring verbs allow complements with overt non-controlled subjects; typical restructuring verbs do not.

(29) *No overt subject in a complement of an aspectual verb*

a. Magatt tàmbali na=∅ [jàng téere bi].
Magatte begin C=3SG read book the.SG
'Magatte began reading the book.'

b. *Magatt tàmbali na=∅ [ma jàng téere bi].
Magatte begin C=3SG 1SG read book the.SG
**'Magatte began that I read a book.'*

(30) *Overt subject in a complement of a desiderative verb*

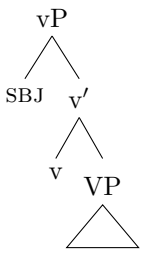
a. Mbaye taamu na=∅ [dem teel].
Mbaye prefer C=3SG leave early
'Mbaye preferred to leave early.'

b. Mbaye taamu na=∅ [ma dem teel].
Mbaye prefer C=3SG 1SG leave early
'Mbaye preferred that I leave early.'

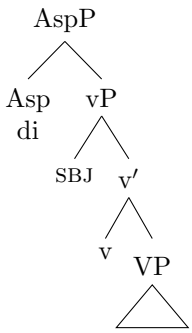
To sum up, I propose that control infinitives in Wolof come in two sizes: vP/AspP and TP. Typically restructuring verbs take vP- or AspP-sized complements, shown in (31), and typically non-restructuring verbs always take TP-sized complements, as in (32). I shall argue that infinitives with overt subjects are structurally slightly different than control infinitives; I leave them aside for now. More evidence especially for the claim that typical restructuring verbs can take either vP- or Asp-sized complements is given in §3.

(31) *Complements of restructuring verbs*

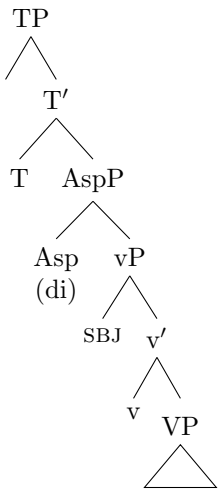
a.



b.



(32) *Complement of non-restructuring verbs*



Before moving on to the main topics of the paper, a note is in order. It is generally accepted that at least some control predicates are functional and not lexical verbs. Wurmbrand (1998, 2001) calls this *functional restructuring* and takes it to involve verbs such as modals, aspectual verbs and movement verbs (in German). Cinque (2004, 2006) and Grano (2015) take all restructuring predicates to be functional verbs. I have here discussed restructuring predicates as if they were all lexical verbs. The distinction between functional and lexical restructuring will not be crucial for us, but I briefly return to this question at the end of section 3.

3 Restructuring in Wolof

It has been noted already by Kayne (1989) that restructuring verbs are (almost) exclusively monotransitive,[6] which has led Cinque (2004) to propose that all restructuring verbs are functional heads in the inflectional layer of the clause, meaning that there is only functional restructuring. This is meant to account for more than restructuring, as restructuring verbs are also verbs that allow only Exhaustive Control (EC). Cinque therefore argues that, if all restructuring verbs are functional heads in monoclausal constructions, EC follows straightforwardly, as in that case A-movement trivially

[6] Wurmbrand (2001, 2002, 2004) notes that German appears to provide one counterexample to this otherwise cross-linguistically very robust generalization: the verb *gelingen* 'manage' allows for long passive, taken to be evidence for the highest degree of restructuring, yet the controller is its dative argument.

occurs—there is only one subject, which moves from its base-generated position to the structural subject position. Grano (2012, 2015) agrees with this, and proposes that, while all EC verbs are functional verbs, Partial Control (PC) verbs are lexical verbs that take clausal (CP-sized) complements containing a PRO.

I here agree with Cinque and Grano that Exhaustive Control is the result of A-movement: the subject moves from the infinitival complement to the matrix subject position. I depart from Cinque and Grano in arguing that this is found not only with functional, but also with lexical verbs. Specifically, I argue that subject movement in Wolof is possible from all infinitival complements of monotransitive verbs, be they functional or lexical, because they are all smaller than a CP. A movement analysis of control explains why Wolof only has EC, and will also account for the fact that predicates with DP objects do not involve control. I also diverge from Grano in proposing that infinitival complements can indeed be of different sizes, as already argued for in section §2, in line with claims made in Wurmbrand 2014c, 2015; Wurmbrand and Lohninger for. In this section I focus on clitic climbing; the movement analysis of EC is discussed in §4.

3.1 Clitics in Wolof infinitives

Clitic Climbing (CC), whereby clitics move from inside the infinitival complement to some position in the matrix clause, as in the Polish example in (33) (Bondaruk 2004, 154), is a well-known indicator of restructuring.

(33) *Clitic climbing in Polish*
Marek **ją**$_i$ zdecydował się przeczytać t$_i$.
Mark it decided REFL read.INF
'Mark decided to read it.'

Clitic climbing does not always perfectly correlate with restructuring: some languages, like Brazilian Portuguese, never allow it, in some languages it is possible from a larger number of infinitival complements, in others it is possible from a more restricted subset of infinitives (e.g., in Wurmbrand and Lohninger's terminology, in Czech CC is possible from both Event and Situation complements, in Italian only from Event complements). I will show that in Wolof, CC is obligatory from vP-sized complements, and optional from complements that contain any projection from the inflectional layer.

Wolof has Wackernagel-like clitics that obligatorily move to the highest functional head in the extended projection of the verb (Dunigan 1994). In finite clauses, this is always immediately following the position of the sentence particle, shown in (34) for a variety of clauses. Note that clitic position is independent of both the position of the verb and the position of the optional tense morpheme *oon*, which is not always affixed onto the verb, and that clitics always follow C, regardless of whether there is anything to C's left or not, as can be seen from examples in which the lexical subject to the left of C is optional. They are therefore not true second-position clitics.

(34) *Clitics in Wolof finite clauses*

a. (Xale yi) lekk-oon [na]=**ñu=ko=fi**.
child the.PL eat-PST C=3PL=3SG.OBJ=LOC
"The children/they ate it there."

b. (Xale yi) lekk-ul [∅]=**ñu=ko=fi** woon.
child the.PL eat-NEG C=3PL=3SG.OBJ=LOC PST
"The children/they didn't eat it there."

c. (Xale yi) [da]=**ñu=ko=fi** lekk-oon.
child the.PL do.C=3PL=3SG.OBJ=LOC eat-PST
"It's that the children/they ate it there."

d. Demb [la]=**ñu=ko=fi** lekk-oon.
yesterday C=3PL=3SG.OBJ=LOC eat-PST
"It's yesterday that they ate it there."

Clitics move in structures of all sizes in Wolof. For example, in minimal clauses which Zribi-Hertz and Diagne (2003) argue to be vP-sized (see §2), a locative clitic moves over the internal argument to immediately follow the verb. The order of arguments and adjuncts is otherwise rigid.

(35) *Clitics move in minimal clauses*

a. Ma gis xaj bi ci waañ bi.
1SG see dog the.SG in kitchen the.SG
'I see the dog in the kitchen.'

b. Ma gis=**fa** xaj bi.
1SG see=LOC dog the.SG
'I see the dog there.'

Clitics in Wolof can climb in all subject control constructions with monotransitive control verbs that are discussed here, which is another argument for a reduced size of all control infinitives. It has been observed that CC is blocked in the presence of an embedded CP (e.g., Wurmbrand 2001; Bondaruk 2004; Marušič 2005; Dotlačil 2007), and this is also the case in Wolof—clitics in Wolof cannot climb out of a finite clause, as in (36).[7] In general, it has been noted that CC often requires the matrix and embedded verbs to be linearly adjacent, and this has also been observed for Wolof by Gowda

[7] A reviewer notes that clitic climbing is blocked from complements which contain the preposition *ci* (the reviewer refers to it as a complementizer):

(i) a. Da=ma sonn ci lekk=ko.
do.C=1SG tired LOC eat=3SG.OBJ
'I am tired of eating it.'

b. *Da=ma=ko sonn ci lekk.
do.C=1SG=3SG.OBJ tired LOC eat

These do not appear to be clausal complements, but simple PP complements. This can be seen when the contain an overt subject, which can only be a possessor inside a possessive DP:

(ii) a. Bég na=a ci ñëw-u Astu.
happy C=1SG LOC arrival-GEN Astou
'I'm happy about Astou's arrival'

b. *Bég na=a ci Astu ñëw.
happy C=1SG LOC Astou arrive

and Wu (2020), who propose that complements of restructuring verbs are always VPs. However, clitic climbing in Wolof is also possible out of complements that contain imperfective aspect, and generally out of infinitives that have properties of TP-sized constructions, as argued above.

(36) *Clitics cannot climb out of finite complements*

a. Foog na=a ni jënd na=∅=**ko**.
think C=1SG that buy C=3SG=3SG.OBJ
'I think that s/he bought it.'

b. *Foog na=a=**ko** ni jënd na=∅.
think C=1SG=3SG.OBJ that buy C=3SG

In typical restructuring constructions with modals, aspectual verbs and implicatives,[8] clitics obligatorily climb to the matrix C, as in (37)-(39). They cannot climb just to the embedded verb.

(37) *Modals*[9]

a. War na=ñu=**leen** [jox xaalis __].
must C=1PL=3PL.OBJ give money __
'We must give them money.'

b. *War na=ñu [jox=**leen** xaalis __].

(38) *Aspectual verbs*

a. Tàmbali na=a=**ko** [tabax __].
begin C=1SG=3SG.OBJ build __
'I began building it.'

b. *Tàmbali na=a [tabax=**ko** __].

(39) *Implicatives*

a. Sàggane na=a=**leen** [indil tàngal __].
neglect C=1SG=3PL.OBJ bring candy __
'I neglected to bring them candy.'

b. *Sàggane na=a [indil=**leen** tàngal __].

I therefore take *ci*-complements to not be clausal complements, and to not involve control. The example in (i) would then be at most a nominalized VP (there are no overt nominalizers in Wolof).

[8] One group of most commonly restructuring verbs, movement verbs, does not allow clitic climbing in Wolof. Clitics only move to follow the embedded verb, as in (i).

(i) *No clitic climbing with movement verbs*

a. Ñew na=a [jox=**ko** xale yi __].
come C=1SG give=3SG.OBJ child the.PL
'I came to give it to the children.'

b. *Ñew na=a=**ko** [jox xale yi __].
come C=1SG=3SG.OBJ give child the.PL

The infinitival complement of movement verbs appears to be an adjunct (a purpose clause with the meaning *in order to...*); for example, the complementizer *ngir* 'because', 'in order to' can optionally be added to the infinitive. I leave these predicates aside here, and hypothesize that clitic climbing is blocked from adjuncts.

[9] I mark the original position of the clitic, which is by hypothesis generated in the same position as its non-clitic counterpart, with an underscore. Themes generally follow goals in Wolof, therefore theme clitics are marked as originating after goals.

Clitic climbing to the matrix C is not obligatory with desideratives, which are cross-linguistically usually non-restructuring predicates; clitics can also stay in the embedded clause, as shown in (40). (The optionality of clitic climbing is represented with curly brackets, which have a disjunctive interpretation vis-a-vis clitic position.) This suggests that there is some sort of a boundary in control constructions with desideratives that clitics are sensitive to, which is not there with typical restructuring predicates.

(40) *Clitic climbing is optional with desideratives*

a. Faatu fasyéene na=∅={**ko**} [togg={**ko**}].
Fatou decide C=3SG=3SG.OBJ cook=3SG.OBJ
'Fatou decided to cook it.'

b. Taamu na=a={**ko**} [naan={**ko**} suba si].
prefer C=1SG=3SG.OBJ drink=3SG.OBJ morning the.SG
'I prefer to drink it in the morning.'

c. Yakaar na=a={**fa**} [dellusi={**fa**} léegi].
hope C=1SG=LOC return=LOC soon
'I hope to return there soon.'

In the previous section, I proposed that typical restructuring and non-restructuring verbs in Wolof differ in the presence of a TP layer, obligatorily there in the complements of the latter group of verbs, but absent with the former. I propose that the difference in the obligatoriness of CC stems from this structural difference—it is obligatory from an infinitive that does not contain the inflectional layer, and optional from an infinitive that does. That the presence of the inflectional layer makes CC optional can be seen when the aspectual morpheme *di* occurs in complements of typical restructuring verbs, where CC is otherwise obligatory. In the presence of *di*, clitics can remain in the infinitival complement following *di*, instead of climbing to the matrix C, as in (41a). Interestingly, the acceptablity of CC in the presence of *di* appears to be at least partly a phonological matter: mono-morphemic clitics (e.g., *ko*) climb over it easier than the bi-morphemic clitic *leen*; the latter, as shown in (41b), is degraded for some speakers.

(41) *Clitic climbing optional in the presence of* di *with modal verbs*

a. War na=ñu={**ko**} [di={**ko**} jox xaalis].
must C=3SG=3SG.OBJ *di*=3SG.OBJ give money
'We must give her/him money.'

b. War na=ñu={?**leen**} [di={**leen**} jox xaalis].
must C=3SG=3PL.OBJ *di*=3PL.OBJ give money
'We must give them money.'

There seems to be a good deal of variation when it comes to CC in the presence of *di*. For example, with modal verbs, as in (41), CC over *di* is generally acceptable for all speakers (modulo the phonological effect shown in (41b)). With the aspectual verb *tàmbali* 'begin', in (42a), CC was dispreferred by some speakers, regardless of the clitic,

and allowed by others. With the aspectual verb *wéy* 'continue', no speaker allowed CC, shown in (42b).

(42) *Clitic climbing dispreferred or disallowed in the presence of* di *with aspectual verbs*

a. Xadi tàmbali na=∅={%**ko**} di={**ko**} tabax.
Khady begin C=3SG=3SG.OBJ *di*=3SG.OBJ build
'Khady began to build it.'

b. Xadi wéy na=∅={*__ko__} di={**ko**} tabax.
Khady continue C=3SG=3SG.OBJ *di*=3SG.OBJ build
'Khady continued building it.'

It is also important to note that clitics cannot dock after the imperfective *di* in non-control structures, as in (43); they must climb to C, showing that *di* examples as in (42) is indeed in the infinitival clause, and not in the matrix one.

(43) *Clitics cannot attach to* di *in non-control*

a. Da=ma=**leen** di gis.
do.C=1SG=3SG.OBJ IPFV see
'I will see them.'

b. *Da=ma di=**leen** gis.
do.C=1SG IPFV=3SG.OBJ see

With other restructuring verbs like *jéem* 'try', or *sàggane* 'neglect', all speakers allowed CC in the presence of *di*:

(44) a. Xadi jéem na=∅={**ko**} di={**ko**} tabax.
Khady try C=3SG=3SG.OBJ *di*=3SG.OBJ build
'Khady tried to build it.'

b. Xadi sàggane na=∅={**ko**} di={**ko**} tabax.
Khady neglect C=3SG={3SG.OBJ} *di*={3SG.OBJ} build
'Khady neglected to build it.'

This suggests that it is not *di* (or Asp) per se that interferes with CC, but that its presence in the infinitive introduces a syntactic boundary which makes CC optional. I will here set aside the complication that arises with aspectual verbs, acknowledging that this requires more research, and treat the optionality of CC in the presence of *di* in other typical restructuring verbs on a par with the optionality of CC with desiderative verbs, attributing it to the presence of the inflectional layer in the infinitival complement.

For the sake of completeness, (45) shows the optionality of CC with a desiderative verb in the presence of *di*.

(45) *Clitic climbing is optional with desideratives and* di
Awa fasyéene na=∅={**ko**} di={**ko**} togg.
Awa decide C=3SG=3SG.OBJ *di*=3SG.OBJ cook
'Awa decided to cook it.'

Clitic climbing patterns are summarized in (46).

(46) *Clitic climbing patterns*

a. obligatory with typically restructuring verbs,
b. optional with typically restructuring verbs in the presence of *di*,
c. optional with typically non-restructuring verbs (with or without *di*).

There are then two components of clitic climbing that an analysis needs to account for: (i) Clitics climb to the edge of some domain, and (ii) Clitics obligatorily climb in the absence of heads from the inflectional layer, and optionally climb in the presence of heads from inflectional layer in infinitives. Dunigan (1994) argues that Wolof clitics move to the highest functional head in the extended projection of the verb (in the sense of Grimshaw (1991)). In Martinović 2020 I propose that clitic movement is triggered by an EDGE feature (EF), and that every extended projection of the verb carries this feature on its highest head. I abstract away from the details of clitic movement in general, and focus only on accounting for the obligatoriness or optionality of CC.

I propose that clitics have a feature that needs to be checked by a head from the inflectional domain. Various works have attempted to formalize the intuition that the clause is divided into different domains, and that each domain is the locus of certain kinds of information/operations – for example, Grohmann's (2003) *Prolific Domains* divide the clause into the θ-domain (where theta relations are created), the ϕ-domain (where agreement properties are licensed), and the ω-domain (where discourse information is established). I propose here that clitic climbing in Wolof reveals the basic split between a TP-/AspP-sized infinitive, and a vP-sized infinitive. I adopt Grohmann's (2003) proposal that heads in each of the clause's Prolific Domains carry some feature that groups various projections into a single Prolific Domain; he calls these 'context values': |Θ|, |Φ|, |Ω|. I propose that clitics carry a feature, call it u|Φ|, that can be checked by the context value feature in the inflectional domain, |Φ|. I also propose that a clitic can only agree with |Φ| if it moves into the inflectional domain,[10] but, as we shall see presently, movement triggered by EF and the checking of u|Φ| must be independent of one another.

Let us now see how this accounts for the patterns in (46). I will leave some of the technical details vague here, as this is not a paper about cliticization. My goal here is to lay out a proposal of how CC patterns can give support for the claims I make about the size of infinitival complements in Wolof.

3.2 Clitic climbing and the size of infinitives

With restructuring verbs, if the clausal complement is vP-sized, clitics obligatorily climb to the matrix C. I propose that this roughly works in the following way. I suggested above that the highest head in the extended projection of the verb has EF, which is responsible for clitic movement. I propose that the clitic can move to any head with EF and remain there; this does not have to be the highest edge in the whole structure. However, the clitic also has an unchecked u|Φ|-feature. Therefore, the

[10]This can be captured by proposing that the clitic probes downward (Chomsky 2000, 2001; Preminger 2013), contra recent literature proposing that Agree is the result of a structurally lower Probe probing up (e.g. Zeijlstra 2012; Bjorkman and Zeijlstra 2019).

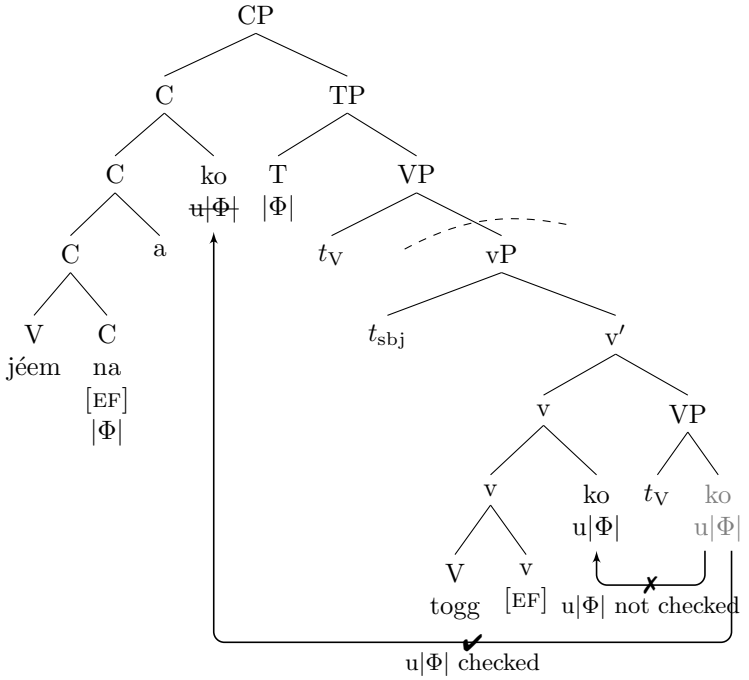
derivation in which it moves to a head with EF where it can also check u|Φ| will win out over a derivation in which the clitic moves to a head where it cannot have its u|Φ| checked.

Consider the typical restructuring predicate, *try*, as in (47), when no *di* is present and CC is obligatory. The highest head in the infinitival complement, v, has EF, but nothing in the infinitive has the |Φ| feature, so if the clitic moves just to v, u|Φ| remains unchecked. If, however, the clitic moves to the higher edge, C, then its u|Φ| is checked as well.[11]

(47) *Obligatory clitic climbing with* jéem *'try' without* di

a. Jéem na=a=ko togg=(*ko).
try C=1SG=3SG.OBJ cook=(*3SG.OBJ)
'I tried to cook it.'

b.



If, however, the infinitival complement also contains *di*, I propose that it is an AspP, meaning that it contains a head which carries the context value |Φ|. The clitic can therefore remain attached to *di*. Since this domain is transparent to the matrix clause (as there is no C in the embedded clause), EF on the matrix C can still attract the clitic. The clitic can thus occur in two positions.[12]

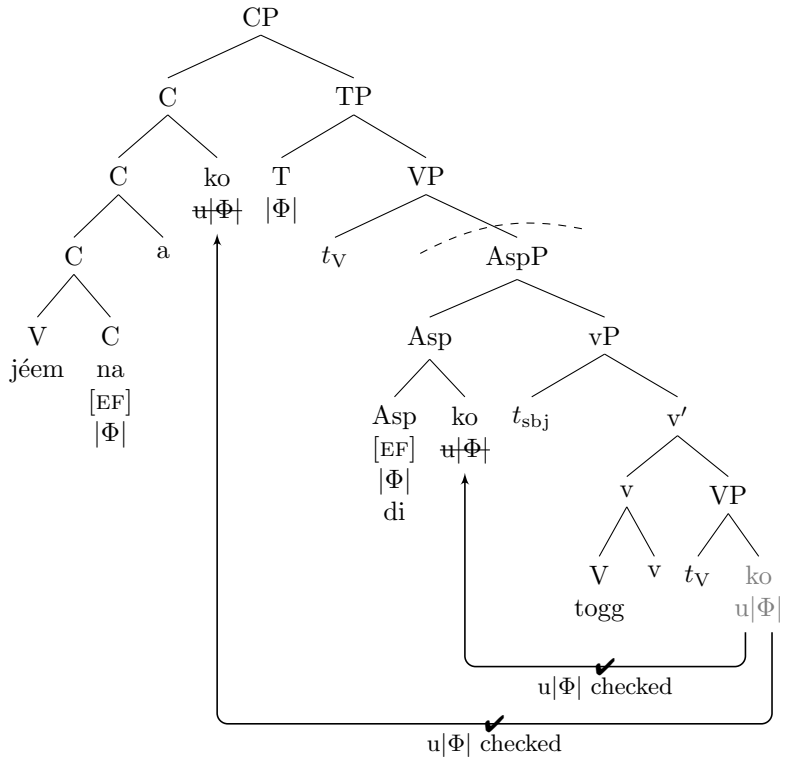
[11] I consider the C hosting sentence particles the final head in the extended projection of the verb. Wolof has a rich left periphery and a higher, embedding complementizer, which would constitute a separate domain.

[12] I represent the movement to the higher edge as happening in one fell swoop for simplicity; I do not exclude the possibility that it occurs in a cyclic fashion reminiscent of A′-movement (another kind of movement to the edge).

(48) *Optional clitic climbing with* jéem *'try' with* di

a. Jéem na=a={ko} di={ko} togg.
try C=1SG=3SG.OBJ *di*=3SG.OBJ cook
'I tried to cook it.'

b.

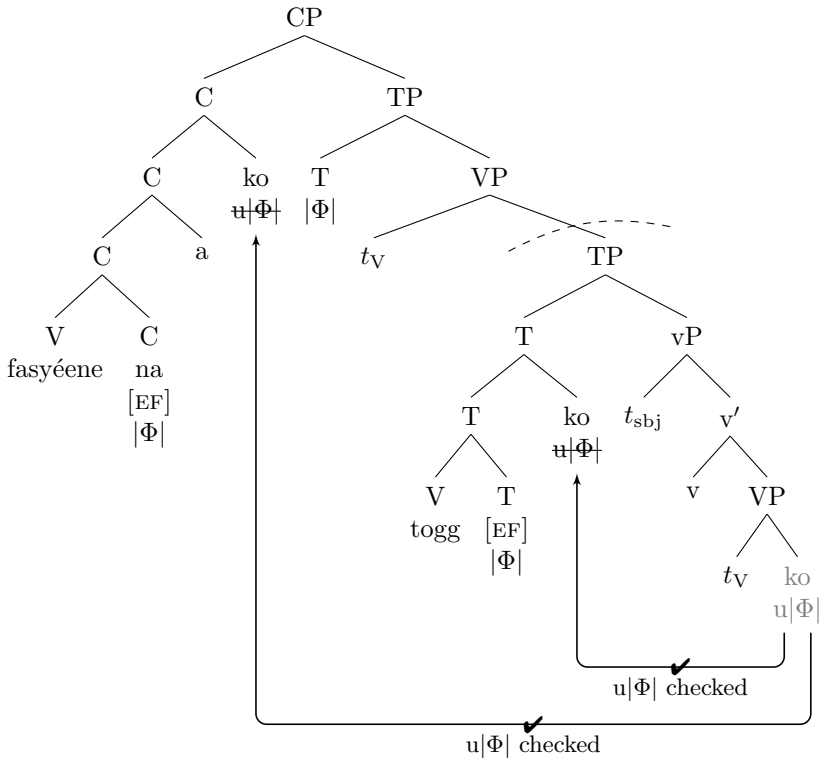


With typically non-restructuring verbs, the complement always contains the inflectional layer (whether *di* is present or not), so the clitic can always stay in the infinitival complement, but it can also be attracted by the higher EF. Note that I assume that the verb moves to T in infinitives; Wolof verbs always precede lower adverbs, both in finite clauses and in infinitives, suggesting that they always move out of the VP (see Torrence 2003, 2013; Martinović 2015, 2019, 2023a).

(49) *Optional clitic climbing with* fasyéene *'decide'*

a. Fasyéene na=a={ko} togg={ko}.
decide C=1SG=3SG.OBJ cook=3SG.OBJ
'I decided to cook it.'

b.



Finally, recall that infinitives that do not contain *di* usually contain the element *a* between the control verb and the embedded verb. Clitic climbing over *a* is obligatory, as the ungrammaticality of (50b) shows, giving evidence that it cannot be a higher functional head.

(50) *Clitics obligatorily climb over* a

a. Da=ma=**leen** bëgg=a=togg.
do.C=1SG=3PL.OBJ want=*a*=cook
'I want to cook them.'

b. *Da=ma bëgg=a=**leen** togg.
do.C=1SG want=*a*=3PL.OBJ cook

At this point the optionality of movement triggered by EF should be addressed. I have proposed that movement from the lower edge to the higher edge is optional, as long as the categorial |Φ|-feature has been checked at the lower edge as well. I propose that this is possible because EF is not a feature that needs to be checked in the same sense that an unvalued/uninterpretable feature needs to be checked; it simply attracts certain elements to the edge of the clause. (This also requires that those elements have some property that makes them susceptible to this trigger; I do not formalize this here.) We can liken the optional clitic movement to partial A′-movement, where

elements which can move to the highest A′-position stay in some lower, intermediate movement position. Incidentally, Wolof allows partial A′-movement, though only in fronting for exhaustivity, and not in questions; wh-words must always occur in the position in which they take scope. (For evidence that clauses in (51) do not involve clefting, see Martinović 2015, 2017.)

(51) *Partial A′-movement in Wolof*

a. **Gato** la=a foog ni la Aali lekk?
cake C=1SG think that C Ali eat
'It's a cake that I think Aali ate.'

b. Foog na=a ni **gato** la Aali lekk?
think C=1SG that cake C Aali eat
'It's a cake that I think Aali ate.'

Just as in A′-movement, divorcing the trigger of movement (EF) from the checking of uninterpretable features (uWh in A′-movement, u|Φ| in clitic movement) predicts that in cyclic movement, which clitic climbing in Wolof is reminiscent of, we may see one without the other. I leave the details of the optionality of clitic climbing to be fully worked out in other work, as I believe it must be considered in the context of other types of optional movement operations, especially those targeting the clausal edge.

At the end of this section, I briefly return to the tacit assumption I have been making, that all control verbs discussed in this section are lexical verbs. This is at odds with most of the literature, as functional restructuring is generally assumed to exist. While Cinque (2004) and Grano (2015) assume that *all* restructuring verbs are functional heads, Wurmbrand (2001) argues that functional restructuring verbs in German are modals, auxiliaries *be, have* and *will*, raising verbs *seem* and *promise*, motion verbs, causatives, and some perception verbs, like *see* and *hear*. In Wolof, the aspectual marker *di* can precede all control verbs, and it seems to contribute habitual meaning in infinitives, which is one of the meanings it has in finite clauses, suggesting it is one and the same element. Since one of the main claims in this paper is that all subject control constructions in Wolof, even those in which the control predicate can be reasonably argued to be a lexical verb, involve movement of the subject from the infinitival complement to the matrix clause, the answer to the question of which, if any, control predicates are functional heads is not crucial here, as those structures will trivially involve movement of the subject from its base generated position (Spec,vP) to the structural subject position (Spec,TP). I therefore leave the question of functional vs. lexical restructuring in Wolof to be resolved in future work.

In this section, I have argued that clitic climbing in Wolof supports the claim that infinitival complements with no overt subjects in Wolof are smaller than a CP, as clitic climbing is possible in all control constructions with monotransitive verbs. Additionally, I proposed an analysis of the optionality of clitic climbing with typical non-restructuring verbs and in the presence of the aspectual morpheme *di* with typical restructuring verbs, which relies on different sizes of infinitival complements: with restructuring verbs, they are either vPs or AspPs, and with non-restructuring verbs, they are TPs. Clitics must climb to the inflectional layer if there is one, which forces

them to obligatorily climb if the infinitive is vP-sized, but optionally climb if it is AspP- or TP-sized.

I the next section, I show that all subject control constructions in Wolof involve only Exhaustive Control, and propose that this supports a movement analysis of control. I also argue that the absence of control with ditransitive verbs gives additional support for a movement account.

4 Exhaustive control as movement

Thus far I have argued that the infinitival complements of monotransitive subject control predicates are smaller than a CP, and fall broadly into two groups:

1. Typically restructuring predicates, which take a vP- or Asp-sized complement, and
2. Typically non-restructuring predicates, which take a TP-sized complement.

I have shown that all constructions involving monotransitive control predicates restructure, as they all allow clitic climbing. Additionally, I have argued that clitic climbing helps us diagnose the size of infinitival complements, being obligatory with restructuring predicates if their infinitival complements do not involve the inflectional layer (specifically, AspP), but optional when they do, and being always optional with non-restructuring predicates, which always involve the inflectional layer.

One key observation about the class of restructuring predicates, first made by Wurmbrand (1998), is that, in addition to being cross-linguistically fairly stabile, it overlaps with the class of Exhaustive Control predicates, where the controller and controllee must match in all features. Predicates that cross-linguistically generally do not restructure allow Partial Control, a subtype of obligatory control, where the controller and controllee are mismatched for semantic number (Landau 2000), so that the controller is singular and the embedded predicate collective. The contrast between EC and PC predicates in English is illustrated in (52) and (53) (examples from Landau 2013, p.157).

(52) *Exhaustive Control*
We thought that...
a. *John$_1$ managed [$\_\__{1+}$ to gather at 6].
b. *The chair$_1$ began [$\_\__{1+}$ meeting without a concrete agenda].
c. *Mary$_1$ is able [$\_\__{1+}$ to apply together for a grant].
d. *It was rude of the chair$_1$ [$\_\__{1+}$ to disperse so abruptly].

(53) *Partial Control*
We thought that...
a. The chair$_1$ preferred [$\_\__{1+}$ to gather at 6].
b. Bill$_1$ regretted [$\_\__{1+}$ meeting without a concrete agenda].
c. Mary$_1$ wondered [$\_\__{1+}$ whether to apply together for a grant].
d. It was humiliating to the chair$_1$ [$\_\__{1+}$ to disperse so abruptly].

Table 2 is a condensed version of Table 2.1 in Grano 2015 (p.16), showing the empirical relationship between EC and restructuring, based on Wurmbrand 2001 and Landau 2000 et.seq.[13]

EC	ASPECTUAL	begin, continue, stop, ...	*Restructuring*
	MODAL	can, may, must, need, ...	
	IMPLICATIVE	forget, fail, dare, ...	
PC	DESIDERATIVE	want, intend	*Non-restructuring*
		refuse, prefer, decide, plan, offer, propose, ...	
	FACTIVE	regret, admit, ...	
	PROPOSITIONAL	claim, believe, tell, ...	

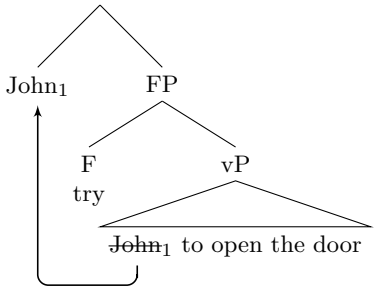
Table 2 Correlation between Exhaustive Control and Restructuring

One line of research has taken this correlation to be the result of a syntactic fact: EC constructions require full identity between the controler and the controllee, because those are one and the same syntactic element. Specifically, Cinque (2004), building on the observation that the restructuring predicates are by and large monotransitive (Kayne 1989), proposes that restructuring verbs are functional heads in the inflectional layer of the clause, and that restructuring is epiphenomenal, resulting from the monoclausality of such structures. Grano (2012, 2015) further develops this analysis, arguing that that, while EC verbs are functional verbs, PC verbs are lexical verbs that take clausal (CP-sized) complements containing a PRO. According to this view, PC is simply a property of PRO. This also accounts for the fact that non-restructuring/PC verbs can embed finite clauses, whereas restructuring/EC predicates cannot, as shown in (54).

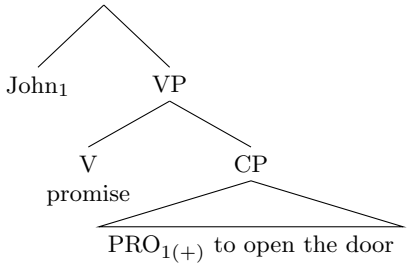
(54) a. I prefer [that Moussa leave early].
b. *I started [that Moussa leave early].

(55) and (56) illustrate Grano's analysis of EC and PC, respectively (Grano 2015, p.5).

(55) *Exhaustive Control*



(56) *Partial Control*



[13]The verb *want, intend* has mixed properties, in that it is a PC verb, but also typically restructures. This will not be relevant here; see Grano 2012, 2015 for a possible analysis.

This approach to the restructuring/EC vs. non-restructuring/PC distinction makes a prediction: if EC and restructuring are both the result of one and the same syntactic process/configuration, they should go hand-in-hand, meaning that, if we find a language where typically non-restructuring predicates restructure, we also expect that those predicates exhibit Exhaustive Control, and vice versa. This is exactly the state of affairs in Wolof.

I argue here that Grano's proposal that there are two strategies for control, one involving only one subject and resulting in EC, and the other in PC, is correct. I stay agnostic as to what the strategy for PC is, but I argue in this paper that the movement analysis advocated in Cinque (2004) and Grano (2012, 2015), and also more broadly in the Movement Theory of Control (Hornstein 1999; Boeckx et al. 2010), can explain why all control in Wolof is Exhaustive Control, and that it also has something to say about the fact that ditransitive predicates involve obligatory overt embedded subjects and do not exhibit properties of control. Additionally, that all control constructions allow clitic climbing can also be accounted for under a movement analysis: the movement of the subject is possible from all infinitival complements of monotransitive verbs in Wolof because they are smaller than the CP, which I argue is also responsible for the availability of clitic climbing in all control constructions.

In the following subsection, I show that all control in Wolof is exhaustive, and show how a movement analysis accounts for this. In §4.2, I argue that the data from ditransitive predicates support both a movement analysis of control, and the structural claims I make about infinitival complements in Wolof.

4.1 Control in Wolof

Structures without an overt subject pronoun in the non-finite complement in Wolof pass the standard control tests. Co-reference between the understood subject of the non-finite verb and the subject of the matrix verb is obligatory, and the elided controlled subject has a sloppy reading under ellipsis: (57) can only mean that Magatte's husband tried to leave early himself, not that he tried for Magatte to leave early.

(57) *Only sloppy reading under ellipsis*
Magatt$_1$ jéem na=∅ __$_{1/*2}$ dem teel, jëkër$_3$-am <jéem na=∅
Magatte try C=3SG leave early, husband-POSS.3SG try C=3SG
__$_{3/*1}$ dem teel> itam.
leave early also
'Magatte tried to leave early, her husband did too.'

Verbs like *jéem* 'try' are true control verbs; for example, they do not allow inanimate subjects, as shown in (58). The same holds for all implicative verbs, e.g., *sàggane* 'neglect', *fatte* 'forget', and also for desiderative verbs like *bëgg* 'want', etc.

(58) Jéem *'try' does not permit an inanimate subject*
#Taabal bi jéem na=∅ nekk ci biir néeg bi.
table the.SG try C=3SG be in stomach room the.SG
#'The table tried to be in the room.'

No obligatory control construction with an unpronounced embedded subject in Wolof exhibits Partial Control. Examples as in (53) are ungrammatical in Wolof, as illustrated in (59) and (60). (59a)-(59b) show that the use of *ñoomineen* 'together' requires a plural subject. In languages like English, the understood subject of the non-finite complement of a verb such as *want* can be semantically plural. This is not the case with the verb *bëgg* in Wolof, shown in (59c). Similarly, the collective predicate *daje* 'meet' in (60) requires a plural subject. (60c) shows that this cannot be the understood subject of the non-finite complement of the predicate *fasyéene* 'decide'.

(59) *No PC in Wolof*

a. Fanta ak Binta laaj na=ñu ndimbal ñoomineen.
Fanta and Binta ask C=3PL assistance together
'Fanta and Binta asked for a stipend together.'

b. *Fanta laaj na=∅ ndimbal ñoomineen.
Fanta ask C=3SG assistance together

c. *Fanta bëgg na=$\emptyset_1$ [$\_\_{}_{1+}$ laj ndimbal ñoomineen].
Fanta want C=3SG [__ ask stipend together]
intended:'Fanta wanted to ask for a stipend together.'

(60) *No PC in Wolof*

a. Borom-dëkk ak waakaw gi daje na=ñu ci juróom benn waxtu.
chief-village and villagers the meet C=3PL at five one hour
'The village chief and the villagers met at 6 o'clock.'

b. *Borom-dëkk daje na=∅ ci juróom benn waxtu.
chief-village meet C=3SG at five one hour

c. *Borom-dëkk fasyéene na=$\emptyset_1$ [$\_\_{}_{1+}$ daje ci juróom benn waxtu].
chief-village decide C=3SG [__ meet at five one o'clock]
intended:'The village chief decided to meet at 6 o'clock.'

The intended meaning in (59) and (60) can only be achieved if the subject of the non-finite complement is overt, as in (61). Such examples, however, do not involve control. Co-indexation between the matrix and embedded subjects is not obligatory, and a strict reading under ellipsis is possible – under a reading where the referents of the embedded subject pronoun *ñu* 'they' include *Moussa*, the elided clause in (61) can mean that Fatou decided as well that the same referents (Moussa + others, but not Fatou) leave early together.

(61) *Strict reading present with overt pronominal subjects*
Musaa$_1$ fasyéene na=∅ [ñu$_{1+/2}$ dem teel ñoomineen], Faatu fasyéene
Moussa decide C=3SG 3PL leave early together Fatou decide
na=∅ <[ñu$_{1+/2}$ dem teel ñoomineen]> itam.
C=3SG 3PL leave early together also
'Moussa$_1$ decided that they$_{1+}$ leave early together, and Fatou did too.'

Looking back at Table 2, Wolof makes the same distinction between typical restructuring predicates (aspectual, modal, and implicative verbs) as opposed to typical

non-restructuring predicates (desideratives and some propositional verbs): the former take only non-finite complements and control is obligatory, while the latter can also take finite complements, and non-finite complements can have a non-controlled subject. Where Wolof is interesting is that all obligatory control is only Exhaustive Control, and that clitic climbing is possible from all infinitives, even complements of verbs that generally take propositional complements, such as verbs of thinking.[14] As we have seen in the previous section, there is still a difference between typical restructuring and typical non-restructuring verbs in Wolof, in that clitic climbing is obligatory with the first class of verbs in the absence of aspect, while it is always optional with the second class of verbs. Table 3 illustrates this.

	Verb class		**Clitic Climbing**	**Complement**
EC	ASPECTUAL	begin, continue, ...	*obligatory w/o di*	*non-finite*
	MODAL	can, must, ...		
	IMPLICATIVE	forget, dare, ...		
	DESIDERATIVE	want, intend		
	THINKING	refuse, prefer, decide, ...	*optional*	*non-finite/finite*
		believe, think,...		
no C	SAYING	say, declare, deny, ...	*N/A*	*finite*
	EMOTIVE	happy, surprised, ...		*PP*

Table 3 Correlation between Exhaustive Control and restructuring in Wolof

The Cinque/Grano analysis of EC and restructuring does not directly link the two phenomena; both are seen as a consequence of monoclausality. If, however, the two phenomena are related in a more direct way—for example, if they are the result of one and the same syntactic configuration or process—then we predict that they should go hand-in-hand. This is exactly what we see in Wolof: the class of predicates that are cross-linguistically not EC/restructuring exhibit both those properties in Wolof. This is a strong argument for a structural correlation between EC and restructuring. I argue that these phenomena are not exclusively the result of monoclausality, but that they also arise in bi-clausal structures in which the subject moves from the embedded into the matrix clause. Below, I show derivations for a control construction with the typically restructuring verb *jéem* 'try', and the verb *taamu* 'prefer', which takes a TP complement and cross-linguistically generally does not restructure.

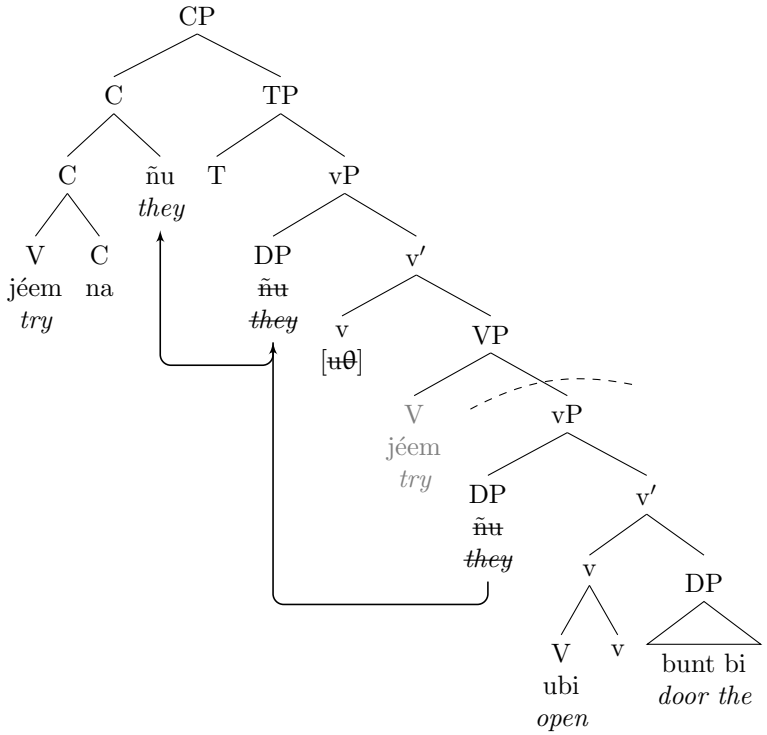
In (62a), the verb *jéem* 'try', takes a vP or an AspP as a complement; I only show the clause with a vP complement here. The embedded subject, in this case the pronominal clitic *ñu* 'they', moves from Spec,vP in the infinitival complement, to Spec,vP in the matrix clause and then cliticizes to C as all pronominal clitics do. I assume that this movement is triggered by the θ-role on v (or Voice), which I take to be a syntactic feature (Bošković and Takahashi 1998). I skip any other possible

[14] Verbs of saying take only finite complements, and emotive verbs take PP complements.

position where the subject may move to between Spec,vP and C (e.g., Spec,TP) for simplicity.[15]

(62) a. Jéem-na=ñu ubi bunt bi.
try-C=3PL open door the.SG
'They tried to open the door.'

b.



Since verbs like *try* cannot embed infinitives with non-controlled subjects, the movement of the subject from the embedded infinitive into the matrix clause is obligatory under the present analysis. In Cinque's (2004) and Grano's (2012, 2015) approach this fact follows from their treatment of all typically restructuring verbs as functional heads. In theories that do not assume this, something else must block a disjoint subject from occuring in complements of typically restructuring predicates. It has long been clear that temporal/agreement properties of the infinitival clause have something to do with the type of subject that is licensed in a particular position. It has also become clear that the standard Case-theoretic accounts of the distribution of subjects based on abstract Case, e.g., Chomsky (1981), do not hold universally. Landau (2000, 2004) proposes that tense, agreement, and the referential features of DPs determines

[15]The clause-type in (62a), with the complementizer *na*, allows only pronominal clause-internal subjects; non-pronominal subjects can only occur in the left periphery. For extensive arguments that the subject clitic in these clauses is a pronoun, and not agreement, see Martinović 2015, 2023a.

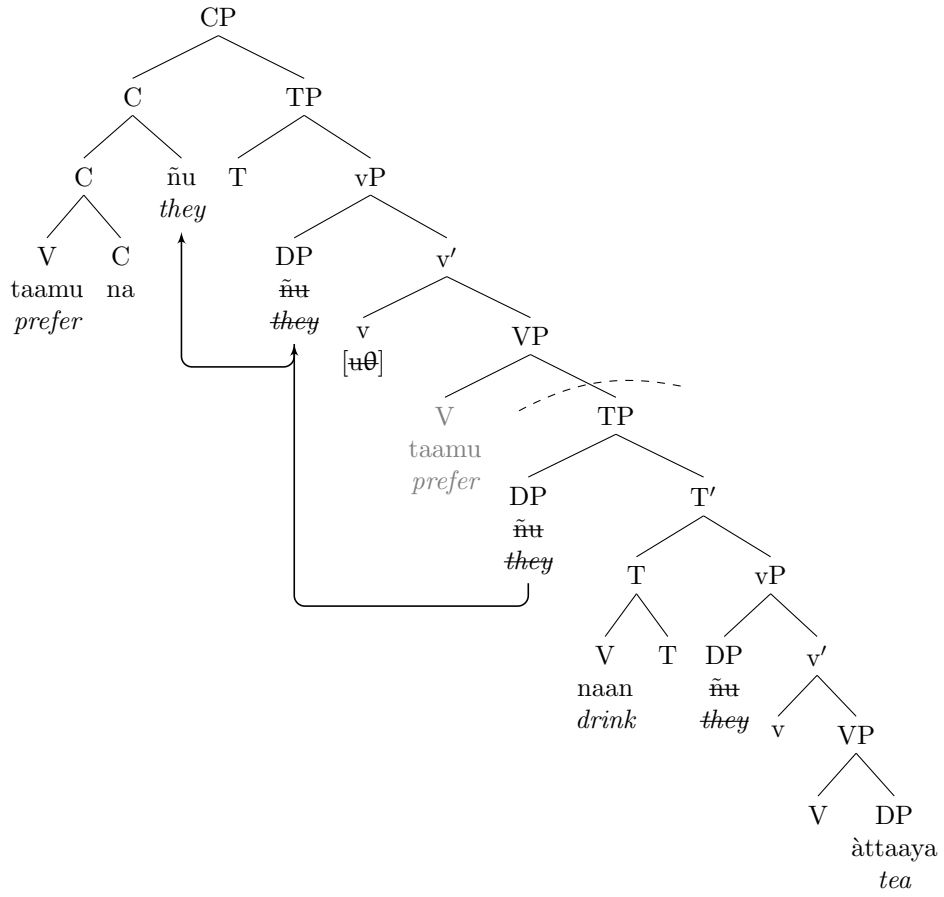
the distribution of subjects (see also Biswas 2014), and for Sundaresan and McFadden (2009) the distribution of subjects depends on the selectional requirements of the matrix predicate, with the interaction between the temporal/agreement properties and nominal reference of the embedded clause determining the properties of the embedded subject. In the present analysis, obligatory movement of the subject with restructuring predicates would ideally follow from the size of such infinitives, which I have argued not to project a TP. Specifically, I follow Nie (2020) and propose that every nominal must be licensed by abstract ϕ-agreement with the licensing head. Nie proposes that this head is Voice (Legate 2014), but crucially a Voice head that is local to T, and can inherit features of licensing and subjecthood from T or C. The presence of T/C is therefore crucial for a subject to be licensed; this may be parametrized to finite T/C in some languages (Legate 2008), but is not so in Wolof. In Martinović (2015, 2023a), I argue that T and C are bundled into one head in Wolof, and I maintain this view here for consistency. I assume that the presence of a disjoint (non-controlled) subject requires the presence of the CT head, and give evidence from A′-extraction below. Given that complements of *try*-type predicates do not independently project CT, a subject cannot be licensed in the infinitival clause, but can be if it moves into the matrix clause. Therefore, if a subject with disjoint reference is merged into the embedded vP- or Asp-sized infinitive, the derivation will fail.

Note that this proposal involves movement into a θ-position, which has been argued for independently of control (e.g., Bošković 1994, 1997; Lasnik 1995; Bošković and Takahashi 1998). I have nothing to say about this here that has not already been discussed in other proposals that analyze control as movement (e.g., Hornstein 1999; Boeckx et al. 2010), except that it is relevant for us that movement into the higher clause is specifically triggered by the θ-role on v (or Voice), and *not* by the need of the nominal to be licensed. If a disjoint subject is merged in the matrix Spec,vP of a restructuring predicate, the θ-role of the matrix v/Voice will be checked, so the derivation will fail not for that reason, but due to an unlicensed subject in the embedded vP.

Moving on to desiderative verbs, we have seen that they differ from typical restructuring verbs in several ways: they can embed finite CPs, they can embed non-finite complements with overt non-controlled (nominative) subjects, and clitic climbing is optional with them. For Grano (2012, 2015), this means that these verbs always embed CPs either with a controlled PRO as a subject, or with a disjoint subject. In the previous sections, we have seen evidence for a reduced size of all infinitives in Wolof, and I have argued that the infinitival complement of typically non-restructuring control verbs is the size of a TP. (63) illustrates the derivation of a control clause with the desiderative verb *taamu* 'prefer'. I propose that this construction involves movement of the the subject of *naan* 'drink' from the embedded Spec,TP to Spec,vP of the matrix clause (and ultimately to C).

(63) a. Taamu-na=ñu naan àttaaya.
prefer-C=3PL drink tea
'They prefer to drink tea.'

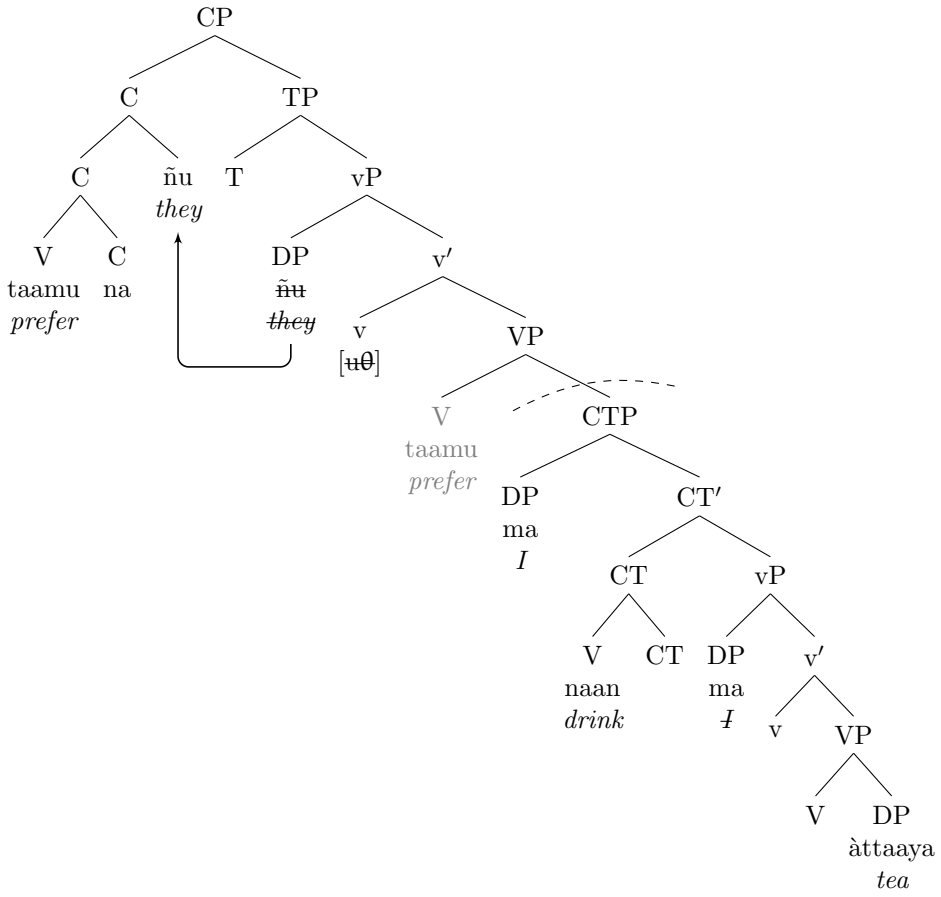
b.



Another option with lexical control verbs is External Merge of a subject into the matrix Spec,vP, as in (64). This derives the fact that desiderative predicates can embed infinitives with non-controlled subjects. I propose that a complement with a disjoint subject is slightly different, in that it contains not just a TP, but a CTP, i.e., that the licensing of the subject requires the presence of features from C as well.

(64) a. Taamu-na=ñu ma naan àttaaya.
prefer-C=3PL 1SG drink tea
'They prefer for me to drink tea.'

b.



There is evidence for this slight difference in size/feature composition of the clause with a controlled subject, and the one with a non-controlled subject. First, clitic climbing is blocked from clauses with disjoint subjects, as in (65), and we have seen that CC is in general not possible in the presence of a C head.

(65) *No clitic climbing from infinitives with subjects*

a. Da=ma bëgg [Demba togg ceebjën]
do.C=1SG want Demba cook ceebujen
'I want Demba to cook ceebujen.'

b. Da=ma bëgg [Demba togg=**ko**]
do.C=1SG want Demba cook=3SG.OBJ
'I want Demba to cook it.'

c. *Da=ma=**ko** bëgg [Demba togg]
do.C=1SG=3SG.OBJ want Demba cook

Second, there is an interesting difference in A′-extraction out of an infinitive with a controlled subject and one with a non-controlled subject, in that a resumptive pronoun occurs in the latter one, but is not allowed in the former, shown in (66). For some speakers, this resumptive pronoun is not obligatory, but it is always grammatical.

(66) *Resumption in infinitives with non-controlled subjects*

a. Lan nga bëgg lekk=(***ko**)?
what C.2SG want eat=3SG.OBJ
'What do you want to eat?'

b. Lan nga bëgg xale yi lekk=(**ko**)?
what C.2SG want child the.PL eat=3SG.OBJ
'What do you want the children to eat?'

This suggests that there is an additional boundary that movement is sensitive to when the infinitival complement contains a disjoint subject, as opposed to when the subject is controlled. I will say more about this in the following subsection, where I discuss ditransitive verbs which always require the presence of an overt infinitival subject. This reinforces the view advocated for by Wurmbrand (in the various works discussed above), that verbs do not select for a particular syntactic category: restructuring verbs can take either a vP or an AspP as a complement, and non-restructuring verbs either a TP (controlled subjects) or a CTP (non-controlled subjects).

An anonymous reviewer asks if the fact that the licensing of the subject depends on the presence of CT means that there are no small clauses in Wolof (and notes that this cannot be straightforwardly claimed for English). It is difficult to see if this prediction holds without actually knowing what the internal structure of the small clause is (i.e., if it contains some functional head that is capable of licensing the subject), and what other mechanisms might be involved in nominal licensing. For what it is worth, though, Wolof indeed does not have small clauses; there are no structures such as *'I consider Fama an excellent cook.' Consider*-type verbs embed either a full finite clause, as the verb *njort* 'believe, consider' in (67a),[16] or an infinitive which obligatorily contains the existential verb *nekk*, as in (67b).

(67) *No small clauses in Wolof*

a. Njort na=a ni Fama toggukat bu màgg la=∅.
believe C=1SG that Fama cook C_{REL} be.superior C_{Wh}=3SG
'I believe that Fama is a superior cook.'

b. Njort na=a Fama *(nekk) toggukat bu màgg.
believe C=1SG Fama be cook C_{REL} be.superior
'I believe Fama to be a superior cook.'

Before moving on to ditransitive verbs, I wish to point out an unresolved issue. Namely, obviation is obligatory in subject control with desiderative verbs, as shown in (68a): the overt subject in the infinitive cannot be co-indexed with the matrix subject. If, however, a verb like *taamu* 'prefer' can embed either a TP, out of which

[16] Copular clauses in Wolof are A′-movement structures, with the predicate in Spec,CP, and the subject topicalized and resumed (Martinović 2023b).

a subject moves to the matrix clause, or a CTP, out of which it does not, then why is the subject inside this CTP obligatorily disjoint? To preview the discussion in the following subsection, disjoint reference is not forced in ditransitives, where the embedded subject, as I will show, is not controlled, even when it is co-indexed with the matrix subject, as in (68b).

(68) *Disjoint reference forced in monotransitives, but not ditransitives*

a. Taamu na=$\emptyset_1$ [mu$_{*1/2}$ naan àttaaya].
prefer C=3SG 3SG drink tea
'S/he$_1$ prefers that s/he$_{*1/2}$ drink tea.'

b. Ñaan-na=$\emptyset_1$=ko$_2$ [mu$_{1/2/3}$ dem].
ask-C=3SG=3SG.OBJ 3SG leave
'S/he$_1$ asked her$_2$/him$_2$ that s/he$_{1/2/3}$ leave.'

Farkas (1992) notes that obviation is found in languages in which there is a *subjunctive-infinitive rivalry*, and is not found if this rivalry does not exist. This is consistent with the situation in Wolof: in structures in which both control and no control are possible, the co-referential embedded subject must be controlled and obviation is obligatory. If control is not possible, then there is no obligatory obviation. Hornstein and Martin (2001) treat this as an economy issue, proposing that obviation stems from violating "Move First" (Move over Merge; Shima 2000; Broekhuis and Klooster 2007; Chomsky 2013), which in this case means that subject raising is preferred over External Merge, and a pronoun can only be inserted if it is obviated. However, if I am correct that the structure of the infinitive with a controlled subject is slightly different from the one with a non-controlled subject, we have run into a look-ahead problem: if the embedded subject moves to the matrix clause, there is no C head bundled with T; if the embedded subject does not move into the embedded clause, the presence of a C head is obligatory to license it, and the subject also must have disjoint reference. A promising way to derive the structural difference between an infinitive which licenses an overt subject vs. the one that does not might be the derivational theory of clause size developed in Pesetsky 2021, where it is argued that every embedded clause is built as a full CP, and may be structurally reduced (through an operation that he calls Exfoliation) only as a consequence of later derivational processes, specifically, the movement of the subject into the matrix clause. This would predict that we should find exactly the situation we see in Wolof: when the subject does not move, the infinitive is slightly bigger than when it does move. I leave this issue to be worked out in future research.

We now turn to structures where control is not possible, which, I believe, provide additional support for a movement analysis of Exhaustive Control.

4.2 Ditransitives

Verbs that take DP complements present us with two issues: (i) the presence or absence of control, and (ii) the structural relationship of the infinitive to the matrix clause.

First, subjects in infinitival complements of ditransitive verbs are obligatorily overt in Wolof, whether they are coreferent with a matrix argument or not. With some verbs,

such as *dimbali* 'help' and *yey* 'convince' in (69), is it difficult to get anything but co-reference between the matrix object and the embedded subject pronoun, though for a few speakers disjoint reference in these examples can be coerced. I will show that the infinitives in these clauses are not complements, but adjuncts, so these are instances of obligatory adjunct control.

(69) *Obligatory co-reference between matrix object and embedded subject pronoun*

a. Dimbali na=a sama yaay$_1$ mu$_{1/*2}$ dem.
help C=1SG POSS.1SG mother 3SG leave
'I helped my mother to leave.'

b. Da=ma yey sama yaay$_1$ mu$_{1/*2}$ bañ=a=lekk tàngal.
do.C=1SG convince my.PL mother 3SG refuse=*a*=eat candy
'I convinced my mother to not eat candy.'

Verbs that take infinitival complements in addition to DP complements do not involve obligatory co-indexation between the matrix object and the embedded subject. An overt subject pronoun in non-finite complements of ditransitive verbs such as *ñaan* 'ask' does not pass the standard tests for obligatory control. In (70), *mu* 's/he' can be co-indexed with the subject, object, or with some contextually salient antecedent.

(70) *Non-obligatory control with* ñaan *'ask'*

Ñaan na=∅ jàngalekat$_1$ mu$_{1/2}$ dem.
ask C=3SG teacher 3SG leave
'S/he$_1$ asked the teacher$_2$ that s/he$_{1/2/3}$ leave.'

Such structures can have a strict reading under ellipsis: with the verb *tere* 'forbid' in (71), in addition to the sloppy reading of the pronoun in the elided constituent (*I didn't forbid Fatou that she herself leave*), a strict reading is possible as well (*I didn't forbid Fatou that Moussa leave*, in a context where Fatou is also in charge of Moussa in some way).

(71) *Strict or sloppy reading under ellipsis*

Da=ma tere Musaa$_1$ mu$_1$ dem, waye yey-u(l)-∅=ma Faatu$_2$
do.C=1SG forbid Moussa 3SG leave, but forbid-NEG-C=1SG Fatou
<~~mu$_{1/2}$~~ ~~dem~~>.
3SG leave
'I forbade Moussa$_1$ that he$_1$ leave, but I didn't forbid Fatou$_2$ <that she$_2$/he$_1$ leave>.'

The difference between infinitival adjuncts and complements becomes obvious when we attempt to extract an element from the infinitive. The verbs *tere* 'forbid', *aaye* 'prevent', and *ñaan* 'ask' allow this, as exemplified for 'forbid' in (72). Note the optional presence of the resumptive pronoun, already noted above (see (66)), which I return to below. Verbs that allow extraction from the infinitive are also the verbs that do not exhibit properties of obligatory control. I have therefore not found an example of obligatory object control into an infinitival complement in Wolof.

(72) *Extraction from infinitival complements is grammatical with resumption*

Lan nga tere say wayjur$_1$ ñu$_1$ lekk=(ko)?
what C.2SG forbid POSS.2PL parent 3PL eat=3SG.OBJ
'What did you forbid your parents to eat?'

All other verbs from my sample disallow extraction from the embedded clause (*dimbali* 'help', *yey* 'convince', *nax* 'deceive'), indicating that the infinitive is not a complement clause.[17]

(73) *Extraction out of infinitival adjuncts is ungrammatical*

a. *Lan nga yey sa xarit mu jënd=(ko)?
what C.2SG convince POSS.2SG friend 3SG buy=3SG.OBJ
intended: *'What did you convince your friend to buy (it)?'*

b. *Lan nga dimbali sa yaay mu togg=(ko)?
what C.2SG help POSS.2SG mother 3SG cook=3SG.OBJ
intended: *'What did you help your mother to cook (it)?'*

The following empirical picture emerges. There are several ditransitive verbs that, for the majority of speakers, require obligatory co-reference between the matrix object and the embedded pronoun, such as *dimbali* 'help', *yey* 'convince', and *nax* 'deceive'. With those verbs, A′-extraction out of the infinitival clause is ungrammatical, and it therefore appears that that those cases involve adjunct control, and not complement control. A second group of verbs, including *ñaan* 'ask', *tere* 'forbid', take infinitival complements out of which A′-extraction is grammatical, though it still involves optional resumption. Those verbs, however, do not involve control. What both sets of verbs have in common is that they require overt embedded subjects, be they obligatorily co-indexed with the matrix object or not.

I here set aside clauses in which infinitival clauses appear to be adjuncts, as whatever mechanism results in obligatory object control in those case is not available for establishing object control in infinitival complements. My main goal is to argue that a movement analysis of control (at least Exhaustive Control) can explain why ditransitive predicates embed infinitival complements with overt and non-controlled subjects.

In §4.1, I proposed that infinitives with overt subjects are structurally distinct from infinitives without overt subjects, specifically, that they embed a CTP. The evidence comes from the ban on clitic climbing and resumption in A′-extraction; the latter fact is also discussed in Fong (pear). Fong reports data that involve verbs for which extraction out of the infinitival complement is ungrammatial for all of my speakers, as they turn out to involve adjunct control, but her observation holds for the several verbs where extraction is grammatical, as in (72). A′-extraction in Wolof requires the presence of the A′-movement complementizer *(l)a*, as in (74a) (Martinović 2015, 2017), and resumption is impossible. An A′-dependency into a complement clause headed by

[17] Some speakers accept some of these examples, however, they interpret it as a matrix question, such as *'What did you do to convince your friend to buy it?'* or *'How did you help your mothere to cook it?'*. The preference is to change the question word from *lan* 'what' to *nan* 'how', in which case it becomes grammatical for all speakers.

a non-wh-C, for example *na*, requires the presence of a resumptive pronoun, as shown in (74b) (data from Torrence 2013).

(74) *A′-movement requires the complementizer* la

a. téeré bi=leen=fa xale yi wax ne [$_{CP}$ la=a=**(*ko)**
book C=3PL.OBJ=LOC child the.PL say that C_{wh}=1SG=3SG.OBJ
jënd]
buy
'the book that the children told them there that I bought'

b. téeré bi=leen=fa xale yi wax ne [$_{CP}$ jënd na=ñu=***(ko)**
book C=3PL.OBJ=LOC child the.PL say that buy C=3PL=3SG.OBJ
démb]
yesterday
'the book that the children told them there that I bought it yesterday'

The examples in (74) suggest that resumption indicates the presence of a non-wh-C, therefore resumption in A′-movement from infinitives with overt subjects, together with the ban on clitic climbing, indicates that such infinitives contain what I have been calling the CP-layer. Fong (pear) proposes that infinitives with overt subjects are ΣPs, which would be similar to Dunigan's (1994) view of what I consider complementizers, and argues that the resumptive pronoun and the overt subject pronoun are both pronounced traces of movement, though there is no analysis of why extraction out of these clauses would result in resumption. I argue instead that resumptive pronouns do not pronounce traces in Wolof; there is no movement out of CPs with a non-wh-C. This explains why there is no obligatory complement control with ditransitive verbs – if EC is movement, and movement from CPs is blocked, then control cannot be established through this path. Obligatory co-indexation in adjunct control with verbs such as *dimbali* 'help' will need to be accounted for in a different fashion.

Why would ditransitive verbs obligatorily select for a complement that is larger than a TP? I do not give a definitive answer here, but several options are discussed in the literature. For example, Kim (2010) argues that object control infinitives in Russian express deontic modality, unlike subject control infinitives, which lack deontic interpretation, and proposes that mandative verbs in Russian select for an infinitive that is a ModP; Burukina (2020) argues that mandative verbs are overt realizations of a verb of communication that embeds a silent deontic modal, which then selects a CP as a complement. Typologically closer to Wolof, it has been shown that some West African languages possess deontic complementizers (see, e.g., Aboh (2006) on Gungbe), so the C present in these infinitives could be such an element. Further research is needed to explore whether one of these analyses could be applied to Wolof. For our purposes, it is sufficient to note that infinitival complements of ditransitive verbs can independently be shown to involve a CP-like projection, making the impossibility of subject movement into a higher clause, and consequently the lack of control established through movement, expected.

In this section, I have argued that Wolof supports a movement account of Exhaustive Control. What about the second strategy, the one that in, for example English,

leads to PC? I here stay agnostic as to whether this strategy involves a PRO, or is the result of another (syntactic or maybe semantic) mechanism. In older theories, PRO was stipulated to be an idiosyncratic lexical item, with idiosyncratic properties. Recent theories of control that retain PRO consider it to be a type of a bound pronoun (e.g., Landau 2000 et seq.; Grano 2012, 2015). PRO is often viewed as part of the theoretical machinery used to account for the control phenomenon, and not a real syntactic object, and something that should therefore be dispensed with (Hornstein 1999 et seq; Culicover and Jackendoff 2006). I have here effectively argued that PRO does not exist in Wolof, as I have proposed that a movement analysis captures the properties of subject control, and the absence of object control in Wolof, better. It remains to be seen whether this is an accidental lexical gap. West African languages, which often have overt nominative subject pronouns in embedded infinitives, aprovide a perfect testing ground for different theories of control.

5 Conclusion

I make two main claims in this paper, the first concerning the structure of infinitival complements in Wolof, and the second concerning the nature of control.

First, I show that infinitival complements in Wolof come in different sizes, and that this correlates with their syntactic properties. Specifically, I argue that complements of typical restructuring verbs, such as *try*, can be either vP- or Asp-P sized, whereas complements of non-restructuring verbs, such as *prefer*, are always TPs if the subject is controlled. No monotransitive control verb takes a CP-sized complement. This is supported by the availability of clitic climbing out of all infinitives, expected if there is no C-head that would block it. That all infinitival complements can be as large as AspPs is confirmed by the ability of the imperfective morpheme *di* to occur in all infinitives, which crucially effects the obligatoriness of clitic climbing. With typical restructuring verbs, clitics obligatorily climb to the matrix C, unless *di* is present, in which case they can remain in the infinitival clause. I propose that clitics have a feature that is checked by any head in the inflectional layer, making climbing out of the infinitive into the matrix clause obligatory just in case the infinitive contains no inflectional heads. This paper thus gives additional support for arguments presented in Wurmbrand 2014c, 2015; Wurmbrand and Lohninger for, showing that infinitival complements can be of different sizes, and that restructuring is therefore a gradient property. This paper also sheds light on subject licensing in Wolof, showing that the presence of an additional functional layer, here identified as C, is necessary in order for a non-controlled subject to be licensed in an infinitival clause. Wolof gives nice evidence from A′-extraction for this structural difference, as resumptive pronouns occur in those environments, whereas they are disallowed in extraction from control infinitives.

The second main claim of this paper concerns the mechanism that leads to control. Wolof exhibits only Exhaustive Control, both in cross-linguistically typical Exhaustive Control predicates, and in those that usually allow Partial Control. Additionally, another property that goes hand-in-hand with Exhaustive Control, restructuring, is also found in all subject control constructions in Wolof, as noted above—both in those

that cross-linguistically typically restructure, and in those that do not. I have therefore argued in support of Grano's (2012, 2015) claim that the strategy for establishing Exhaustive Control differs from the strategy for establishing Partial Control. Specifically, I argued that a movement analysis of control best accounts for the properties of these constructions in Wolof. For Grano, who follows Cinque (2004), EC is the result of there being only one subject, which follows from the monoclausality of all restructuring constructions. I here argue that subject movement must be available in bi-clausal control constructions as well. A movement analysis can explain all properties of these predicates: that they exhibit only Exhaustive Control, that they allow clitic climbing (for the same reason that they allow A-movement to occur out of them, which is the absence of the CP-layer), and that only monotransitive verbs in this category allow control. Ditransitives—verbs that, in addition to the infinitival complement, also select for a nominal complement—take infinitival complements with obligatorily overt subjects, that are not controlled. I show that there is evidence that these infinitives are CP-sized, which impedes any kind of movement: A′-movement requires resumption, also noted in Fong pear (which otherwise occurs when a non-wh-C is present in the clause), and clitic climbing is banned. A movement analysis therefore derives the lack of obligatory control with ditransitive verbs.

To summarize: This preliminary exploration of control in an understudied language gives support to analyses which argue that (at least one type of) control is derived via movement, and invites a more rigorous investigation of the phenomenon of Partial Control. It may turn out that PC is not as common a phenomenon as research on mostly Indo-European languages leads us to believe. To the extent that PC is one of the stronger arguments for the existence of PRO, this should open the door to a more thorough rethinking of its role in the theory of grammar.

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