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MARTINA MARTINOVIĆ

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ABSTRACT

This thesis is a study of the Wolof clausal periphery, focusing on the morphosyntax of the two layers commonly identified as CP and TP. It has long been noted that C and T are not completely independent of one another, but share a host of properties. The Wolof clausal periphery is highly relevant for the advancement of our understanding of the C-T link, as Wolof clauses contain overt *sentence particles* – complementizer-like elements argued to encode various information-structural properties of utterances, which interact in various ways with the elements traditionally thought to occupy the TP-layer.

The dissertation is organized in two parts. The first part, consisting of chapters 3-6, shows that most of Wolof clause-types can be reduced to two syntactic structures: one in which a verb raises to C (V-raising), the lexical subject is obligatorily in the left periphery, and the clause-internal subject can only be a pronominal C-oriented clitic. The other clause type, N-raising, contains an A′-moved XP in Spec,CP, the verb does not raise to C, and a clause-internal subject may be a full DP. I argue this difference to be the result of the fact that all features traditionally associated with C and T start out as a single head, which may either remain unified (in V-raising), or be split into two heads (in N-raising). The features on the head in question are internally geometrically organized, and must be checked in a fixed hierarchical order. When a feature cannot be checked (because it is not the highest in the complex head and the element with the goal feature is already in a higher position, having moved there to check another feature, or because the element with the goal feature has nowhere to move to), the part of the head which is dominated by this feature's node moves up and reprojects, thus creating new c-command relations. I show how an increased understanding of the syntactic manipulation of elements smaller than the word can elucidate previously puzzling syntactic differences.

The second part of the dissertation (chapters 7-8), still focusing on the Wolof clausal periphery, investigates the interaction of the syntactic and the morphological (post-syntactic) component of the grammar. I make an argument for a much more interactive syntax-morphology interface

than is commonly assumed, by allowing for outputs of the post-syntactic component to be fed back into syntax and participate in further operations. Assuming this architecture of the syntactic component, I take a detailed look at the CP-layer of the N-raising clause-type, which exhibits two different A′-extraction effects that surface with two different variants of C: one which shows a type of the *that*-trace effect, and the other which shows agreement in φ-features. These two structures, in the previous literature treated as syntactically distinct, are argued to be identical, and their differences to be a case of allomorphy, brought about through the interaction of syntactic processes, specifically agreement, and a constraint imposed by the post-syntactic module – a version of the Doubly-Filled-COMP Filter grounded in a morphological Obligatory Contour Principle. Illustrating how post-syntactic processes can influence the surface form of the CP-layer, I provide a unified syntactic analysis for two constructions in Wolof which, apart from the surface shape of C and its specifier, do not exhibit any syntactic or semantic differences.

The main contribution of the dissertation is a demonstration of how a more refined view of both syntactic elements smaller than the word (i.e. features) and of morphology and its interaction with better understood syntactic processes offers a new way of approaching surface variation in the syntactic component. One of the conclusions of this approach is that discourse features, such as focus, are not needed to account for the apparently diverse Wolof clause typology, but that their surface properties can to a large extent be explained as a result of the interaction of two modules of the grammar: the syntactic one, with its independently motivated processes such as agreement and movement, and the morphological one, operating post-syntactically and modifying the final output of syntax via its own set of principles and constraints. I ultimately show that syntax is cross-linguistically very uniform, even if we look at a strongly discourse-configurational language such as Wolof.

LIST OF GLOSSING CONVENTIONS

*	ungrammatical construction
%	dialectal variation
1	first person
2	second person
3	third person
ACC	accusative
APPL	applicative
BEN	benefactive
CM	class marker
COP	copula
DEF	definite
DEM	demonstrative
DIST	distal
FUT	future tense
FR	free relative complementizer
GEN	genitive
HABIT	habitual aspect
IMPF	imperfective aspect
INDEF	indefinite
INT	interrogative complementizer
LOC	locative
NEG	negation
OBJ	object clitic
P	preposition
PAST	past tense
PERF	perfective aspect
PL	plural
POSS	possessive
PROX	proximal
Q	interrogative particle
STR	strong pronoun

CHAPTER 1

INTRODUCTION

1.1 Overview

This thesis is a study of the clausal periphery of the Niger-Congo language Wolof, focusing on the morphosyntax of the two layers commonly identified as CP and TP. It has long been noted that C and T are not completely independent of one another, but share a host of properties. Strong evidence comes from languages (e.g. Irish and some Bantu languages, such as Kinande and Lubukusu) in which C exhibits features traditionally associated with T, such as φ-features and Tense. Even in languages like English, there is evidence of a link between C and T: finite and infinitival Ts are selected by different complementizers, and the lack of a finite C results in the lack of φ-features on T and its inability to license a nominative subject. All this has lead to various formal implementations of the relationship between C and T, most recently in the form of a theory of *Feature Inheritance*, according to which all formal features are generated only on phase heads and appear on lower heads only derivationally, by being passed down (Chomsky 2005, 2008; Richards 2007, 2011), or are shared between the two heads (Fortuny 2008; Ouali 2008).

The Wolof clausal periphery is highly relevant for the advancement of our understanding of the C-T link. Namely, Wolof clauses contain overt *sentence particles* – complementizer-like elements which are thought to encode various information-structural properties of utterances. The presence of a sentence particle is obligatory in order for the clause to contain tense/aspect markers (Njie 1982) or negation (Zribi-Hertz and Diagne 2003), which directly points to a link between the CP- and the TP-layer. The descriptive and generative literature identify up to a dozen of these elements, however, a careful inspection of their morphosyntactic properties reveals that most of the sentence particles can be divided into two groups: those in which a verbal element is located in the same head as the particle, which I term V-raising clauses, and those in which an A′-moved nominal occupies its specifier, the N-raising clauses. The two clause types have different morphosyntactic

properties, which point to a novel way of viewing the relationship between C and T, contributing to this long-standing question.

In addition to affording new insights into the properties of this layer of syntactic structure, Wolof sentence particles in N-raising clauses also open a window into the details of the morphosyntax of *wh*-movement. Namely, the CP-layer in *wh*-movement in Wolof shows several morphosyntactic effects—a type of the *that*-trace effect, complementizer agreement in φ-features, and cyclic marking of *wh*-movement—which do not surface simultaneously, but appear to be distributed between two different *wh*-movement constructions. I show, however, that the syntax of those constructions is identical, with their differences being the result of the interaction of syntax and morphology, the latter being understood as the post-syntactic component of the grammar, as, for example, in the framework of Distributed Morphology. In a theory of the syntax-morphology interface in which the post-syntactic component of the grammar is a module with its own principles and constraints, the phonological reflection of syntactic structure is complicated and the expected output of syntactic derivations can be obscured, creating the appearance of syntactic distinctions where there in fact are none. The operations of the post-syntactic component are no less constrained than those of the syntactic component; it is the interaction of the two that creates the appearance of disorder. This view is defended at length by Arregi and Nevins (2012), who attribute morphological processes to universal or language-specific markedness constraints in the post-syntax. The investigation of the interaction of the syntactic and the post-syntactic component in this dissertation further argues in favor of such an approach.

And finally, throughout this dissertation, I make an argument for a much more interactive syntax-morphology interface than is commonly assumed. By investigating two phenomena in Wolof, one having to do with suffixation patterns of inflectional morphology, and the other with long-distance *wh*-movement, I show that, in certain circumstances, we need to allow for some post-syntactic processes to be followed by syntactic operations. This is not an entirely novel idea; phenomena in which syntactic operations seem, to a certain extent, to depend on morphological

facts, have been identified in the literature, leading to proposals of either moving a syntactic process into post-syntax (e.g. agreement in Bobaljik 2008), or by treating post-syntax as part of syntax proper (e.g. the reanalysis of head movement in Matushansky 2006). I propose that syntax is divided into submodules, post-syntax being one of them, and that some of those submodules apply cyclically, at the points of the merger of phase heads. This makes it possible to account for interface phenomena in a new way – by allowing for outputs of the post-syntactic component to be fed back into syntax and participate in further operations.

In the remainder of this introductory chapter, I outline two puzzles related to the Wolof clausal periphery: the syntactic differences between V-raising and N-raising clauses in §1.2, and the two N-raising structures in §1.3. Section 1.4 addresses data which speak to a need for new way to look at the syntax/post-syntax interface. Finally, in section 1.5 I outline the remaining chapters of the dissertation, with a brief sketch of the analysis in each of them.

1.2 C and T in two Wolof clause-types

Most Wolof clauses with sentence particles can be reduced to two types, which I call V-raising and N-raising clauses. They are exemplified in (1) and (2), with their respective sentence particles written in bold face.

(1) *V-raising clause*

a. (Xale yi$_i$) lekk-**na**-ñu$_i$ céeb.
(child DEF.PL) eat-C$_V$-3PL rice
"The children ate rice."

b. *Lekk-**na** xale yi céeb.
eat-C$_V$ child DEF.PL rice

c. *Xale yi lekk-**na** céeb.
child DEF.PL eat-C$_V$ rice

(2) *N-raising clause*[1]

a. Céeb l-**a** xale yi lekk.
rice *l*-C$_N$ child DEF.PL eat
"It is rice that the children ate."

b. Céeb l-**a**-ñu lekk.
rice *l*-C$_N$-3PL eat
"It is rice that they ate."

There are three syntactic differences between V-raising and N-raising clauses. In V-raising clauses,

1. I translate this particular clause-type with an English cleft. These structures, however, are not syntactic clefts, but monoclausal A′-movement constructions.

as in (1), the verb is located to the left of the sentence particle *na*. The lexical subject is also to the left of the sentence particle (and to the left of the verb), and it is optional. And finally, there is an obligatory subject pronominal clitic right-adjacent to the sentence particle. In N-raising clauses, the verb is below the sentence particle, with an XP to its left; this can be any phrase – in (2), it is the object of the clause. Crucially, in this clause-type, the lexical and the pronominal subject are in complementary distribution in the same position in the clause. In (2), where the object is located to the left of the sentence particle, either the lexical subject or the subject pronoun are to its right.

V-raising clauses do not look like they have a CP-layer, in fact, based on (1), we would be tempted to classify Wolof as a null-subject language with subject-verb agreement. Familiarizing ourselves with the morphosyntax of sentence particles, however, forces us to classify *na* as a member of this class, meaning that we also must allow for the verb to have moved to the same position. The question is – what then is the status of the lexical subject to the left of C, and of the element encoding its φ-features, *ñu*, to the right of C? The situation becomes more complex when we take into account the N-raising clause in (2), which presents a different picture. Namely, the lexical subject and the element we may be tempted to identify as agreement in V-raising clauses are in complementary distribution, in what appears to be the traditional subject position below C. The element encoding the φ-features of the subject, *ñu*, here appears to be a regular pronoun.

I argue that the superficial description of the two clause-types is very much on the right track: V-raising clauses have one high functional projection, whose head combines the features of both C and T. Since C and T are not separate projections in V-raising clauses, I argue that there is no position for the subject in which it could get nominative case. Wolof, however, has pronominal C-oriented clitics, which, due to their syntactic properties, can get into a position where they are assigned case. Therefore the only type of clause-internal subject allowed (and obligatory) in V-raising clauses is a pronominal one.

N-raising clauses, on the other hand, have separate C and T projections, resulting in a more traditional-looking clause – there is a higher head with an overt complementizer, and a moved

nominal in its specifier, and a lower one, with a place for the subject, which is now in a position where it can be assigned nominative case. N-raising clauses can therefore have a clause-internal lexical subject.

I derive the difference between V-raising and N-raising clauses by assuming that C and T in fact start out as a single head, which either stays unified, or splits, depending on purely syntactic circumstances.

Finally, there is a third clause-type which appears to have both V-raising and N-raising characteristics. Those are clauses with nominal predicates, which I term NPred clauses, exemplified in (3). In these sentences, the nominal predicate is located to the left of the sentence particle *la*, which surfaces in N-raising clauses (see (2)). On the other hand, the clause-internal subject can only be a pronominal clitic, just as in V-raising clauses (as in (1)).

(3) *NPred clauses*

a. Xale yi sàcc l-a-ñu.
child DEF.PL thief *l*-C_N-3PL
"The children are thieves."

b. *Sàcc l-a xale yi.
thief *l*-C_N thief DEF.PL

c. *Xale yi sàcc l-a.
child DEF.PL thief *l*-C_N

I propose that these clauses have a split C and T, just like questions, but that movement of the subject to the case position is blocked by the movement of the predicate NP to that position, making it again impossible for the lexical subject to obtain nominative case, allowing only a derivation in which the subject is a pronominal clitic.

1.3 C in N-raising clauses

The second puzzle related to the CT system in Wolof arises in N-raising clauses, which involve *wh*-movement of an XP (a nominal or a PP) to the left of the sentence particle (Dunigan 1994; Torrence

2005, 2012a). They can surface in two types of seemingly distinct structures, as in questions in (4) and (5).

(4) a. *Subject question with (l)a*
K-an **a** gis Musaa?
CM-Q C_N see Moussa
"Who saw Moussa¿"

b. *Object question with (l)a*
K-an **l-a** Musaa gis?
CM-Q *l*-C_N Moussa see
"Who did Moussa see?"

(5) a. *Subject question with* CM-*u*
K-u gis Musaa?
CM-C_N see Moussa
"Who saw Moussa?"

b. *Object question with* CM-*u*
Y-u Musaa gis?
CM.PL-C_N Moussa see
"What(pl) did Moussa see?"

The differences between the two constructions are the following. In (4) the sentence particle shows a subject/non-subject asymmetry – it surfaces as *a* in subject extraction, and as *la* in non-subject extraction. It is also preceded by an overt nominal. In the examples in (5), the sentence particle shows φ-feature agreement, but there is no overt question word to its left. Furthermore, the particle *(l)a* occurs cyclically, in intermediate clauses in long-distance extraction, like the Irish *wh*-complementizer *aL* (McCloskey 2001, 2002):

(6) *Cyclicity in A′-movement in Wolof*
K-an **l-a**-ñu gëm ni **l-a** Musaa xalaat ni **l-a** Aali gis?
CM-Q *l*-C_N-3PL believe that *l*-C_N Musa think that C_N Ali see
"*Who do they believe that Musa thinks that Ali saw?*"

The most interesting fact about the two N-raising constructions is their distribution. Only one of the two structures is grammatical in most *wh*-movement constructions (relative clauses, Exhaustive Identification structures, comparatives); they are both, however, allowed in questions (as illustrated with the above examples), with no difference in meaning. Most of the literature treats the two structures as syntactically distinct (e.g. Kihm 1999; Torrence 2005, 2012a). I argue for the oposite: that they are, in fact, identical, and that their surface differences result from the interaction of the syntactic and the morphological component, with morphology being treated as

part of the post-syntactic module of the grammar (as in the framework of Distributed Morphology).

1.4 The structure of the syntactic component of the grammar

There are several phenomena in Wolof which suggest a much more interactive view of the interface between syntax and post-syntax, requiring some outputs of the post-syntactic component to be returned into syntax and further participate in the derivation. Here I present one of them, the suffixation of the perfective morpheme *oon* onto the verb in V-raising sentences, shown in (7).

(7) *The perfective* oon *in V-raising*

a. Lekk-**oon**-na-ñu ko.
eat-PERF-C_V-1PL 3SG.OBJ
"We had eaten it."

b. Lekk-**ul**-∅-ñu (> lekkuñu) ko **woon**.
eat-NEG-C_V-1PL 3SG.OBJ PERF
"We hadn't eaten it."

In (7a), *oon* appears to be a suffix on the verb and is raised together with the verb to the left of the sentence particle. In (7b), in the presence of negation, the perfective morpheme does not suffix onto the verb but stays clause-internal, while the verb moves to the left of the sentence particle (Dunigan 1994; Torrence 2003). It appears that head movement of the verb can skip a head and violate the Head Movement Constraint (Travis 1984) in one case, but not in the other, or that *oon* is sometimes a head a other times a phrase. I propose that we can understand the peculiar behavior of *oon* if we consider the possibility that a phase head can first trigger Spell-Out of its complement, and then syntactic movement out of it. I show that, in (7a), the phrasal perfective marker *oon* is in such a structural relationship with the verb, that they undergo morphological merger when the phase head CT is merged. CT then attracts the verb, which moves as a complex head together with *oon*. In (7b), however, I claim that the verb and *oon* cannot undergo morphological merger at the moment of Spell-Out, due to a higher position of the verb, resulting in *oon* being spelled out

in situ and not moving on with the verb to CT. I show that a similar case occurs in long-distance *wh*-movement, where the shape of the CTP-layer depends on the timing of Spell-Out and syntactic movement from the spelled out phase.

1.5 Outline of the dissertation

The chapters of the dissertation, after Chapter 2 which presents the basic facts on Wolof, are thematically organized in two parts. The first part tackles the analysis of V-raising and N-raising clauses, and comprises chapters 3-6. The second part is concerned with the interaction of syntax and post-syntax in verb movement and A′-movement, and contains chapters 7 and 8. In the remainder of this chapter, I briefly summarize their content.

Chapter 2 gives an overview of the basic facts of Wolof grammar. It introduces sentence particles and discusses the basic properties of the two clause-types central to this thesis. In this chapter, I also discuss the status and position of pronominal and lexical subjects in Wolof, showing that pronominal subjects are indeed pronouns and cannot be treated as agreement. I also offer an analysis of cliticization of weak pronominals in Wolof, proposing that Clitic Movement applies late in the derivation, after all features of the clausal head (CT) have been checked, as a result of the *Clitic Placement Condition*, which requires them to be adjoined to the sister of the highest functional head in the clause. In structures with sentence particles, this is right below CT.

Chapter 3 presents the formal framework for head-splitting. I propose that there are two types of functional Probe-features on a head, Type 1 [F*] and Type2 [F°] features, each with their own conditions on checking. Crucially, all features are hierarchically organized on a head in a type of a feature-geometry, where each feature is contained in its own node. Only the highest unchecked feature is ever accessible to the head, so feature-checking proceeds in a strict order (Manetta 2006; Georgi and Müller 2010; Müller 2010). Type 1 features are crucial in head-splitting. They are checked by an element with a matching Goal-feature in their head's c-command domain, which must move either to the head or to its specifier. If a feature cannot be checked because it was not

the highest feature in the hierarchy, and the element with a matching goal feature is already in its head's specifier (having been attracted to check a higher feature), or because the element with a matching feature has nowhere to move into (e.g. the specifier of the head is already occupied), the node dominating all unchecked features may split off and adjoin to a higher position, thereby creating a new c-command domain and new positions for movement. This leads to the creation of two functional projections out of one.

Chapters 4 and 5 apply this system to explain the syntactic differences between V-raising and N-raising clauses in Wolof, discussed in §1.2 of this chapter. Specifically, features of the C and the T head in Wolof are generated on a single head. All features in V-raising clauses can be satisfied on that head, however, due to the fact that nominative case is assigned by CT under local c-command (locality here being defined as a minimality condition, i.e. the absence of an intervening head), the lexical subject, which moves to Spec,CTP to check an EPP* feature on CT, can never receive nominative case, violating a requirement that nominative case must be assigned to one XP in a finite clause. Wolof, however, has pronominal clitics which move to adjoin to the sister of CT via Clitic Movement. In this position, pronominal clitics satisfy the locality requirement and can receive nominative case. This is why V-raising clauses have obligatory clause-internal pronominal subjects.

In N-raising clauses, on the other hand, the CT head gets split at the point where the Type 1 Wh*-feature must be checked. If the subject of the clause has a matching Wh-feature, it will have already moved to Spec,CTP, to satisfy the higher EPP* feature on CT. It is therefore no longer in the c-command domain of CT, and Wh* cannot be checked. This triggers head-splitting, during which the part of CT which contains Wh* (and other unchecked features) splits-off and remerges by adjoining to CTP. Form there, it c-commands the subject and can attract it to its specifier. If a non-subject phrase carries the Wh-feature, it will have nowhere to move to, once attracted by Wh* on CT, since the subject always moves first to satisfy EPP* (under the assumption that Wolof does not allow for two specifier positions). This again triggers head-splitting, resulting once more in two

separate projections. Crucially, the fact that the split occurs after the subject moves to Spec,CTP, is why it is able to receive nominative case from the higher part of the CT head which now c-commands it. For that reason, N-raising clauses do not have obligatory clause-internal pronominal subjects.

In addition to showing how the CT split happens in N-raising clauses, Chapter 5 also discusses the subject/non-subject asymmetry that occurs in A′-movement in Wolof. I closely follow the analysis by Pesetsky and Torrego (2001), who propose the English *that*-trace effect to be in fact a T-to-C asymmetry, resulting from C's need to check a T-feature. In their analysis, this is either accomplished by T-to-C movement (resulting in the occurrence of *that*, which they claim is an instance of T that has moved to C), or by the subject which carries nominative case. Under the assumption that nominative case is a checked T-feature on D, we can understand why the subject and *that* are in complementary distribution in long-distance A′-movement in English. Wolof's *a/la*-asymmetry is akin to the *that*-trace effect, in that an element always occurs in CT (*l*-), unless a subject is in Spec,CTP. I slightly modify Pesetsky & Torrego's analysis and propose the occurrence of *l*- to be the result of the *Tense C-command Condition*, which requires T to c-command all other functional material in the clause. When the subject is in Spec,CTP (or when the verb is in CT in V-raising clauses), this requirement is satisfied. However, in object extraction it is not, therefore the T node from the CT head (by hypothesis positioned low and therefore not c-commanding all functional heads) splits-off and adjoins to CT, surfacing as *l*-. This leads me to conclude that head-splitting can have various triggers, and that it is performed in such a way as to satisfy its trigger.

In Chapter 6, I tackle the structure of sentences with nominal predicates (NPred clauses), which are interesting for several reasons. First, there are two structures in which NPred clauses can surface. One structure contains a copula, the other one does not. Clauses with a copula can be V-raising clauses, but only if negation is present in the structure. They can also be N-raising clauses if the subject is A′-moved to Spec,CTP. If, however, there is no negation, or if the predicate has

the Wh-feature (i.e. if the clause is a predicate question), NPred clauses look like a combination of a V-raising and an N-raising sentence. The nominal predicate is located in the specifier of the CT head that occurs in N-raising clauses, suggesting that head-splitting took place. On the other hand, the clause-internal subject can only be a pronominal clitic, and the lexical subject must be left-dislocated, if present. Interestingly, a *wh*-question about the predicate has the exact same form as an affirmative predicational clause (and not, as one might expect, as an N-raising clause with a copula). I propose an analysis in which neutral predicational NPred sentences are in fact clauses in which the predicate has a Wh-feature, based on an analysis of these sentences proposed in Klecha and Martinović (forthcoming).

The final two chapters, 7 and 8, are concerned with the details of the interaction of syntax and post-syntax. Chapter 7 explores the behavior of inflectional morphology and verb movement inside the inflectional layer (below CT), as described in §7.2. I argue that phenomena like this favor a more interactive relationship between different submodules of syntax, post-syntax being one of them, such that narrow syntactic processes (Merge, Agree, feature-triggered Move) take place until a phase head is merged. The phase head has functional features of its own that need checking and might trigger syntactic movement out of its complement; it also, however, acts as a trigger of Spell-Out, during which post-syntactic processes such as Impoverishment and morphological merger take place. Those two operations—Spell-Out and the checking of the phase-heads features—can occur in either order, which is parametrized for a particular language. This results in phenomena in which post-syntactic operations can feed syntactic operations in a higher phase. Syntax and post-syntax apply cyclically, until a clausal head (here CT) is merged. At that level, there can be requirements placed on the clausal level, which may trigger other operations. I identify such conditions in Wolof: the *Nominative Case Condition*, requiring that one element in the clausal domain have nominative case, the *Tense C-command Condition* (Laka 1990), requiring that a Tense feature c-command all functional heads in the clause, the *Clitic Placement Condition*, requiring pronominal clitics to adjoin to the sister of the complement of the highest functional head

in the clausal domain, and the *Free Relative Topicalization Condition*, active in specificational pseudoclefts and requiring the free relative to be topicalized. Throughout the dissertation, I show that these processes happen very late, and furthermore, that some of them satisfy one another. Specifically with respect to subject clitics, I show that they must be allowed to move in narrow syntax, triggered by a feature of a head, but also that they have to move again, at a late stage, to satisfy the *Clitic Placement Condition*. Since the *Nominative Case Condition* can be satisfied by a subject clitic, it must also apply very late in the derivation.

Chapter 8 addresses the puzzle of two A′-movement constructions, with surface differences in the CTP-layer. I argue that both structures have the same syntax, and that their differences are post-syntactic. Namely, if we inspect the layer hosting the sentence particle and the moved nominal, we can observe that the φ-feature surfaces only in one position – either on the nominal (in the examples above as a class marker on the question word), or as class agreement on the sentence particle. I propose this to be the key to understanding the surface properties of the two types of structures. Specifically, I propose that a type of a Doubly-Filled-COMP Filter (Chomsky and Lasnik 1977) is at play, based in a morphological Obligatory Contour Principle, which prohibits adjacent identical φ-features and triggers a post-syntactic repair: either the φ-feature from the sentence particle, or the whole phrase that moves to its specifier, is deleted. Since in most constructions the deletion of the phrase is blocked by a Recoverability condition, those structures only surface with the sentence particle *(l)a*, which does not exhibit φ-feature agreement. In questions, however, the *wh*-phrase is completely recoverable from the features on the complementizer, resulting in the observed optionality between the two structures. This treatment offers a unified view of all *wh*-movement constructions in Wolof, which, aside from the superficial distinctions in the surface form of the CP-layer, show no other differences.

Chapter 9 concludes with an overview of major claims and avenues for future research.

CHAPTER 2

THE CLAUSAL STRUCTURE OF WOLOF

2.1 Introduction

This chapter gives an overview of the basic features of Wolof grammar, and then discusses three elements of Wolof clause structure crucial for the topics addressed in the remainder of the dissertation. The first are sentence particles, complementizer-like elements occurring in every tensed clause in Wolof. They are at the center of the dissertation, and the purpose of this chapter is to introduce their basic properties. Next, I discuss the position and status of lexical and pronominal subjects in relation to the sentence particles, which establishes the clause structure I assume in the remainder of the dissertation. And finally, I discuss the status of all pronominal elements, which in Wolof are divided into a strong and a weak set, and give a description of their distribution and an analysis of the cliticization of weak pronouns.

The structure of the chapter is as follows. In section 2.2, I discuss several features of Wolof grammar: word order, phonological processes, the noun class system, and the determiner system. I limit my discussion to only those elements of the grammar that are necessary for the understanding of the morphophonological and morphosyntactic processes in the Wolof CTP-layer in general. Other elements of the grammar, such as the verbal morphology and the tense/aspect system, are discussed in detail as they become relevant throughout the remainder of the dissertation.

In §2.3, I present data on *sentence particles*: seemingly distinct complementizer-like elements which occur in finite clauses in Wolof and appear to encode various information-structural properties. I show that sentence particles can be divided into two groups – those that can be followed only by a pronominal clause-internal subject, and those can also be followed by a clause-internal lexical subject. In this chapter, I provide arguments for a unified syntactic status of sentence particles, as heads of a CTP. In Chapters 4 and 5, I offer an analysis of the syntactic differences between the two groups of particles.

Sections 2.4, 2.5, and 2.6 take a closer look at the position and status of *subject markers* and *lexical subjects* in Wolof. Subject markers are morphemes carrying subject φ-features that occur right-adjacent to sentence particles, except in a few well-established cases, often forming a tight morphophonological bond with them. In §2.4, I argue, following Dunigan (1994) and Russell (2006), that subject markers are not agreement morphemes, but pronominal elements. Their position and behavior, together with the position of sentence particles, gives support for the clause structure I am advocating in this dissertation. In a particular clause-type, subject markers obligatorily occur clause-internally, and lexical subjects must be located in the left periphery. A detailed analysis of this phenomenon is offered in Chapter 4. Subject markers are a type of weak pronouns/clitics in Wolof, clustering with other pronominal elements to the right of CT (except, as mentioned, in a few well-understood cases). Section 2.5 explores the mechanism of the cliticization of weak pronouns, as subject cliticization plays a vital role in the analysis of different Wolof clause-types. In §2.6, I briefly justify the position I assume lexical subjects occupy in Wolof clauses. Section 2.7 concludes the chapter.

2.2 The basics

Wolof is a member of the West-Atlantic branch of the Niger-Congo family, spoken principally in Senegal, the Gambia, and Mauritania by approximately 4 million first language speakers.[1] It has a number of dialects, which differ to various extents phonetically, lexically, morphologically and syntactically (Sauvageot 1965). A large portion of the data in this dissertation comes from my own fieldwork conducted in the city of Saint-Louis (Ndar) in the north of Senegal in March-May 2014, and from urban fieldwork conducted in Chicago and Paris between 2010 and 2015, mostly with two speakers from Dakar.[2] When data from other sources is used, this is clearly stated.

1. Source: Ethnologue, June 2015.

2. The two Dakar speakers are in their late 50s, and I have found their variety of Wolof to be almost entirely consistent with that of speakers from Saint-Louis. The variety of Wolof spoken by some younger speakers from Dakar that I interviewed tends to differ to a greater degree, and I consider it to be a different dialect.

Wolof is not used in government administration or education, but it is the lingua franca of Senegal, and overwhelmingly present on radio, television, and in popular music. Its orthography was standardized in 1974 using the Latin alphabet. I have found most inhabitants of Saint-Louis to almost exclusively speak Wolof amongst themselves. There is lot of borrowing from French, and a certain amount of code switching between Wolof and French, the official language, but I have not noticed it to be particularly pervasive in Saint-Louis.[3]

As other Atlantic languages, Wolof has typical head-initial characteristics: SVO word order, prepositions, post-nominal relative clauses, and the possessum preceding the possessor (Torrence 2012a). The functional morphology is suffixing. Wolof also possesses other characteristics of languages from this group: a noun class system, grammatically conditioned consonant mutation, and rich verbal morphology. In the following sections, I discuss Wolof's phonology, the noun class system, and the determiner system. We need to understand two basic phonological process, which participate in determining the surface shape of Wolof morphemes: vowel harmony and vowel coalescence. The manifestation of the noun class morphology is relevant for the understanding of φ-feature agreement in the CP-layer. Since noun class affiliation is not marked on nominals, but on the members of the D category, we also take a closer look at the determiner system of Wolof.

2.2.1 Phonology

Wolof has nine short vowels (see Ka 1994 for an elaborate discussion), shown in Figure in 2.1:

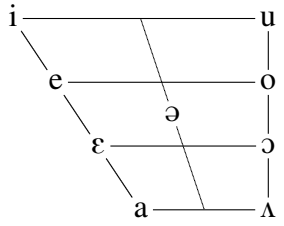


Figure 2.1: Wolof short vowels

3. This could partly be due to the conscious effort of speakers to use *Wolof bu xóót*—'deep Wolof'—when speaking to me and in front of me. The amount of code switching is also, of course, related to the level of education.

Out of the vowels in the chart in 2.1, seven have long counterparts, as in Table 2.1 (Torrence (2012a) also includes a long /əə/ (p.10), and notes that it is rare; I have not heard it from my principal consultants). The vowels are represented orthographically as in Table 2.2 (Torrence 2012a, 10). Long vowels are orthographically represented as double vowels.

/ii/	/uu/
/ee/	/oo/
/ɛɛ/	/ɔɔ/
/aa/	

Table 2.1: Wolof long vowels

Vowel	Symbol	Vowel	Symbol
/i/	i	/ʌ/	a
/e/	é	/ɔ/	o
/ɛ/	e	/o/	ó
/ə/	ë	/u/	u
/a/	à		

Table 2.2: Orthographic representation of Wolof vowels

Wolof consonants are represented in Table 2.3, following Ka (1994) and Torrence (2012a). All consonants except for the prenasalized stops can also be geminates. Torrence places the uvular and the glottal fricative in parentheses and notes that he has not noticed them in the speech of his consultants, and my findings correspond to his.

	Labial	Alveolar	Palatal	Velar	Uvular	Glottal
Stop	p b	t d	c ɟ	k g	q	
Nasal	m	n	ñ	ŋ		
Prenasalized	mb	nd	nj	ng		
Fricative	f	s		x	(χ)	(h)
Trill		r				
Approximant			j	w		
Lateral approximant		l				

Table 2.3: Wolof consonant chart

Orthographically, the voiced palatal stop /ɟ/ is represented as 'j', and the palatal approximant /j/ as

'y'. In the remainder of the dissertation, I use the orthographic representation of all Wolof sounds.

Two main phonological processes concerning Wolof vowels are ATR-based vowel harmony and vowel coalescence. I give a brief overview of them, as they participate in determining the shape of phonological words and are crucial for determining their morphological composition. The mechanism of vowel harmony is not entirely clear; though it is active inside prosodic words, and is therefore expected to be instrumental in determining their boundaries (which is especially useful in advancing our understanding of cliticization), it can also affect elements long-distance. Especially important is vowel coalescence, which acts to obscure the boundaries between sentence particles and elements to their left and right, especially the subject markers.

Table 2.4 divides vowels into ATR counterparts. High [+ATR] vowels /i/ and /u/ do not have [-ATR] counterparts, and the non-high [-ATR] vowel /à/ lacks a [+ATR] counterpart. The remaining vowels alternate as illustrated in the Table:[4]

-ATR	+ATR
i	∅
u	∅
∅	à
a	ë
o	ó
e	é

Table 2.4: Vowel harmony vowels in Wolof

Within a root, only vowels belonging to the same harmonic set can occur. Harmony is generally described as progressive (left-to-right) (Ka 1988), and the vowels of suffixes and clitics harmonize with the ATR category of root vowels (Ka 1994), illustrated in the examples in (1) from Torrence (2012a, 11). In (a), the verb *lekk*, the perfective morpheme *oon* and the second plural subject marker all have [-ATR] vowels, while in (b) the verb *dóór* with an [+ATR] vowel causes the vowels in the perfective morpheme and the subject marker to harmonize with it.

4. Vowels with no counterparts behave differently in triggering/blocking harmony. The specifics are not relevant for our purposes; see Sy 2005.

(1) *Vowel harmony in Wolof*

a. Lekk-oon-ngeen.
eat-PERF-C_V.2PL
"You (pl) ate."

b. Dóór-óón-ngéén.
hit-PERF-C_V.2PL
"You (pl) hit."

It is, however, not only the vowels of clitics and suffixes that agree in the [ATR] feature; vowel harmony can extend throughout an entire XP, encompassing different prosodic words, as in complex *wh*-phrases in (2), where the vowel in the question word harmonizes with the vowel of the noun.

(2) *Vowel harmony inside XPs*

a. [+ATR] [+ATR]
Gën góór l-a Aali gis?
which man *l*-C_N Ali see
"Which man did Ali see?"

b. [-ATR] [-ATR]
Jan jaan l-a Aali gis?
which snake *l*-C_N Ali see
"Which snake did Ali see?"

It is not uncommon for phonological processes to apply at phrase level, and Wolof is not particularly unusual in this respect. What does spark interest in Wolof vowel harmony, is that is seems to also occur long-distance, across syntactic phrases, as noted by Sy (2005), who calls this *ultra long-distance [ATR] agreement*, shown in (3). In these examples, a noun is modified by a relative clause, and a demonstrative pronoun occurs at the edge of the relative clause.

(3) *Ultra long-distance vowel harmony in Wolof (Sy 2005, 13)*

a. [-ATR] [+ATR] [-ATR]
xaj b-u réy b-ale
dog CM-C_N be.big CM.-DEM.DIST

"that big dog"

b. [+ATR] [-ATR] [+ATR]
béy w-u weex w-ëlé
goat CM-C_N be.white CM.-DEM.DIST
"that white goat"

Interestingly, the vowels in the demonstrative pronoun CM-*ale* seem to agree in the [ATR] feature with the relativized noun, across the relative clause. Sy (2005) takes these data to indicate that Wolof vowel harmony is subject to syntactic restrictions, specifically, that it can occur at different levels of representation, between elements that are at some point in a local relationship, even if they are then separated by movement. Regardless of the analysis of such cases, they show that vowel harmony is therefore not a reliable test for prosodic wordhood, which is especially relevant for the analysis of cliticization in §2.5.

Vowel coalescence occurs between adjacent vowels. Based on Ka (1994), Torrence (2012a, 11), and my own findings, Table 2.5 provides an incomplete list of vowel coalescence rules.

[i]	+	[ə]	→	[ee]		[u]	+	[ɛ]	→	[oo]
[u]	+	[ə]	→	[oo]		[u]	+	[a]	→	[oo]
[e]	+	[ə]	→	[ee]		[ɛ]	+	[ɔ]	→	[ɛɛ]
[ɛ]	+	[ə]	→	[ɛɛ]		[ɛ]	+	[a]	→	[ɛɛ]
[o]	+	[ə]	→	[oo]		[i]	+	[ɛ]	→	[ee]
[ɔ]	+	[ə]	→	[ɔɔ]		[i]	+	[a]	→	[oo]
[a]	+	[ə]	→	[aa]						

Table 2.5: Vowel coalescence rules

In all the examples, I give both the underlying form of the morphemes, and the surface form, after the application of coalescence rules.

2.2.2 Noun classes

As other West-Atlantic languages, Wolof has noun classes, with eight singular, two plural, a diminutive singular class (homophonous with the singular *s*-class), and a collective class (ho-

mophonous with the singular *j*-class), listed in Table 2.6 (McLaughlin 1997, 3). Class marking is not morphologically realized on the noun (which is atypical of Niger-Congo languages), but on determiners and various other pronominal elements.

Singular			
k-class	nit	ki	'the person'
b-class	tëgg	bi	'the blacksmith'
g-class	kër	gi	'the house'
j-class	jigéén	ji	'the woman
l-class	ngunu	li	'the chicken coop
m-class	picc	mi	'the bird'
s-class	ndaw	si	'the young woman'
w-class	waasintoor	wi	'the fish scale'
Plural			
y-class	ja	yi	'the markets'
ñ-class	nit	ñi	'the people'

Table 2.6: Wolof noun classes

Diminutivization involves consonant mutation, and diminutive nouns belong to the *s*-class (e.g. *buur bi* 'the king' → *mbuur si* 'the little king').

The singular *k*- class and its corresponding plural *ñ*- class have only a few members: *nit* 'person' and *këf* 'thing' belong to both the singular and the plural class in question, and depending on the speaker, the nouns *jigéen* 'woman', *góor* 'man' and *gaa* 'people' can also take the *ñ*- plural. All other plural nouns are always in the *y*- class.

The retention of noun classes is one of the characteristics of 'deep Wolof', and speakers often point it out. In urban areas, especially Dakar, many nouns are moving into the default *b*-class.

2.2.3 The determiner system

As mentioned in the previous section, noun class affiliation in Wolof is encoded on the members of the determiner class. Wolof is mostly a head-initial language, however, it has a mixed determiner system, with the indefinite determiner preceding the noun, and the definite determiners following

the noun. The determiners consist of a class marker CM, and a vowel which, in addition to definiteness, also encodes proximity, with *i* being used for a definite proximal entity, and *a* for a definite distal one, as illustrated in (4).

(4) *Wolof definite determiners*

a. góór g-**i**
man CM-DEF.PROX
"the man that is close"/"the man recently mentioned"

b. góór g-**a**
man CM-DEF.DIST
"the man that is far"/"the man mentioned a while ago"

The vowel in the indefinite determiner is either *u* or *a* (depending on the dialect), and it precedes the class marker. The indefinite determiner is often omitted.

(5) *Wolof indefinite determiner*

(**u/a**-g) góór
INDEF-CM man
"a man"

The understanding of the determiner system is relevant in the analysis of relative clauses in Chapter 8, §8.5.

2.3 Sentence particles

This section and section 2.4, which discusses subject markers, pronominal elements encoding the φ-features of the subject, are crucial for the analysis presented in Chapters 4, 5 and 6. In these sections I show that there are two fixed syntactic positions in Wolof finite clauses—the CT head[5] and the position right-adjacent to it—always occupied by the same elements: a sentence particle and a subject marker. This establishes the core of the clausal structure which I defend in the

5. I explain the label I choose for this head, CT, later in this section.

remainder of the dissertation.

All finite sentences in Wolof contain a high projection which hosts what appear to be a variety of complementizer-like elements. My view of the class of elements which I call *sentence particles* broadly follows Dunigan's (1994) analysis, who considers them to belong to the same category. They are considered to encode various types of information-structural properties, usually having to do with focus. Structures with three different particles and the differences in meaning of the clauses in which they appear are illustrated in (6).

(6) *Sentence particles*

a. Lekk-**na**-ñu gato bi.
eat-C_V-3PL cake DEF.SG
"They ate the cake."

b. **Da**-ñu lekk gato bi.
do.C_V-3PL eat cake DEF.SG
"It's that they ate the cake."/"They EAT the cake."

c. Gato bi l-**a**-ñu lekk.
cake DEF.SG *l*-C_N-3PL eat
"It's the cake that they ate."

Sentence particles are in complementary distribution with one another and pronominal clitics behave uniformly with respect to them. Dunigan therefore considers all sentence particles to occupy the same position in the clause, which she defines as the Sigma Phrase (Laka 1990), that takes a TP as a complement (Dunigan 1994, 42). I assume a similar basic structure, except that I treat particles as low complementizers hosted by the CT head.[6] Wolof also possesses a higher embedding complementizer *ni*, which can co-occur with any of the sentence particles, as in (7):

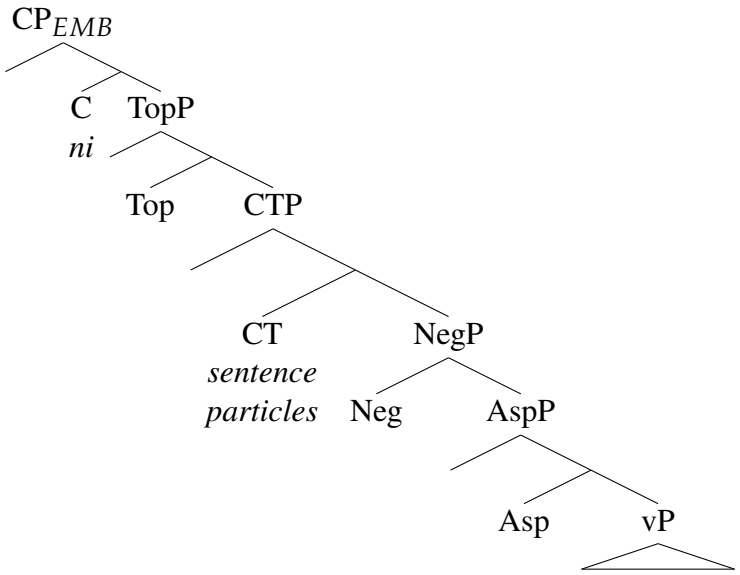
(7) *Embedding complementizer* ni

Gëm-na-ñu **ni** Aali gis-na-∅ Musaa.
believe-C_V-3PL that Ali see-C_V-3SG Moussa
"They believe that Ali saw Moussa."

6. In a split-CP structure proposed by Rizzi (1997), it would be closest to FinP.

The tree in (8) shows the basic structure which I justify throughout this chapter, and assume in the remainder of the dissertation. CT is a head that combines the features of C and T, and, as we shall see, is sometimes realized as a single head, and sometimes split into two heads. The two inflectional projections below CT are NegP and AspP. I address the details of the inflectional layer in Chapter 7. I place the embedding complementizer in a higher C head.

(8) *Wolof clause structure*



Not all clause-types in Wolof contain the CTP-layer; however, its presence is obligatory in order for the sentence to contain temporal/aspectual markers (Njie 1982), or negation (Zribi-Hertz and Diagne 2003). Clauses without sentence particles must be in a context in which they can acquire their temporal reference, or directly preceded by a temporal adverbial phrase. In the literature, such clauses are referred to as *propositions with zero aspect* (Sauvageot 1965), *minimal propositions* (Church 1981), *narrative propositions* (Dialo 1981; Robert 1991), or *f-deficient propositions* (Zribi-Hertz and Diagne 2003). I use the term *minimal clause* for this type of sentence.

(9) *Minimal clause* (Zribi-Hertz and Diagne 2003, 10)
Xale yi lekk ceeb bi.
child DEF.PL eat rice DEF.SG
"Et les enfants de manger le riz." (*"And the children eat rice."*)

Minimal clauses usually occur in running narrative contexts, especially in story-telling, or in proverbs. These clauses are independent, but they cannot contain any functional morphology, such as tense/aspect marking, or even negation:

(10) *Minimal clause cannot contain functional morphology* (Zribi-Hertz and Diagne 2003, 10)

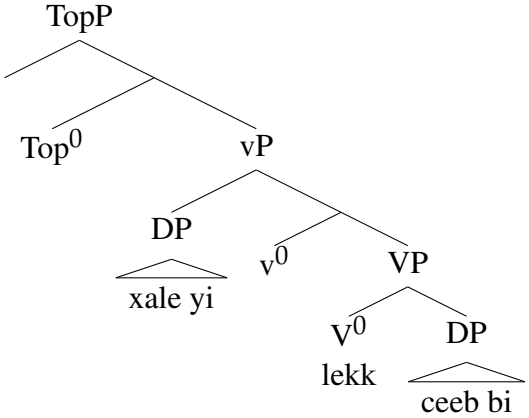
a. *Xale yi lekk-oon ceeb bi.
child DEF.PL eat-PERF rice DEF.SG

b. *Xale yi di lekk ceeb bi.
child DEF.PL IMPF eat rice DEF.SG

c. *Xale yi lekk-ul ceeb bi.
child DEF.SG eat-NEG rice DEF.SG

Due to the fact that minimal clauses cannot contain any functional morphology, Zribi-Hertz and Diagne (2003) treat them as *v*Ps, as in (11), and I adopt this proposal. Minimal clauses can optionally have a topicalized phrase giving it a spatio-temporal frame of reference, or this can be specified in the preceding discourse.

(11) *The structure of minimal clauses*



In a matrix clause, if any functional morphology is to occur, a CT seems to be obligatory.

There are clause-types which do not have overt sentence particles, expressing different modal categories, for example, embedded clauses that are complements of predicates of desire, command, wish, etc., which Torrence (2012a) terms *subjunctive*. These clauses can contain some functional morphology, such the imperfective auxiliary *di*. This dissertation is restricted to indicative clauses which do have overt sentence particles.

Traditionally, most sentence particles have been considered distinct from one another (Dunigan 1994; Torrence 2005, 2012a; Russell 2006), due to the fact that they appear to encode different information-structural properties of utterances. Moreover, except in Dunigan 1994, they are generally not considered to occupy the same position in the clause. In this dissertation, I argue that both of these assumptions are incorrect. I show that sentence particles fall into two groups, and that the distinct surface properties of the particles boil down to two syntactic processes, each of which occurs in one but not the other group – verb movement to CT (V-raising), or A′-movement of an XP to Spec,CTP (N-raising). Chapters 4, 5 and 6 give a detailed analysis of these two syntactic processes and their consequences; in this section, I give an overview of sentence particles and their syntactic characteristics.

The crucial syntactic difference between V-raising and N-raising structures has to do with the acceptability of a lexical subject to the right of the complementizer. V-raising CT is obligatorily followed by a subject marker,[7] and the optional lexical subject is to the left of the verb that moves to CT. With N-raising CT, there is no such restriction. The syntactic characteristics of the two types of structures are summarized in Table 2.7:

V-raising	**N-raising**
verb in CT	no verb in CT
lexical subject in Spec,CTP	A′-moved DP in Spec,CTP
subject below CT must be pronominal	subject below CT can be lexical

Table 2.7: Syntactic characteristics of V-raising and N-raising clauses

7. Subject markers are CT-oriented pronominal clitics. I give a detailed analysis of pronominal cliticization in §2.5.

In this dissertation, I reduce sentence particles to one of these two types, and argue the different surface properties of sentence particles result from morphophonological and morphosyntactic processes in the CTP-layer. In the following sections, I examine the syntactic properties of the two groups of particles. Table 2.8 contains the form, a descriptive name (mostly referring to the information-structural properties of particular structures), and description of the use of V-raising and N-raising particles. In optative clauses, which express a wish or a desire of the speaker, no element aside from the complementizer is located in the CTP domain. They allow a lexical subject below CT. I only briefly discuss these clauses in the conclusion, in Chapter 9.[8]

	Particle	**Name**	**Use**
V-raising	*na*	Declarative	A neutral affirmative clause. The entire clause is new information. No subconstituent is in focus.
	∅	Negative	A neutral negative clause. The entire clause is new information. No subconstituent is in focus.
	a	Predicate focus	Focus on predicate or predicate and complement of a clause; explanation.
N-raising	*a*	Subject focus	Subject exhaustively identified.
	l-a	Non-subject focus	Non-subject exhaustively identified.
	a	Presentative	Ongoing actions, current states, with the subject in focus.
	u/a/i	Relative	Relative clause.
No raising	*na*	Optative	Wish or desire of speaker.

Table 2.8: The form and use of sentence particles

8. For a more extensive table with examples and other clause-types, see Torrence 2012a, 30-31.

2.3.1 Structures with obligatory pronominal subjects

There are two clause types in which a verb immediately precedes the sentence particle – one with an information-structurally neutral reading (affirmative and negative), and one which is felicitous in context requiring verb or predicate focus, as summarized in Table 2.8 (henceforth *Neutral* and *Predicate Focus* clauses). Speakers feel the Predicate Focus sentences to offer an explanation of sorts, and they are commonly referred to as *explicatives* in the descriptive literature. When asked to translate a Predicate Focus sentence outside of context, my speakers usually preface the clause with *C'est que ...* "It's that/because..."; I use this translation throughout the thesis. In Neutral clauses, the lexical verb or the imperfective auxiliary *di*, if present, occur in CT, and the sentence particle surfaces as *na* or ∅, depending on the absence or presence of negation (respectively). In Predicate Focus clauses, the main verb and the auxiliary stay below CT, and the sentence particle *a* is preceded by *d-*/*daf-*. Examples are given in (12)-(14). Sentences in (a) contain a lexical subject, which can only be to the left of CT, with the subject marker obligatorily right-adjacent to CT. The lexical subject can also be omitted, as examples in (b) illustrate, while (c) and (d) respectively show that the subject marker is obligatory, and that the lexical subject cannot be located to the right of CT.

(12) *Neutral affirmative clause*

a. Xale yi lekk-na-ñu céeb.
child DEF.PL eat-C_V-3PL rice
"The children ate rice."

b. Lekk-na-ñu céeb.
eat-C_V-3PL rice
"They ate rice."

c. *Lekk-na xale yi céeb.
eat-C_V child DEF.PL rice

d. *Lekk-na-ñu xale yi céeb.
eat-C_V-3PL child DEF.PL rice

(13) *Neutral negative clause*[9]

a. Xale yi lekk-u(l)-∅-ñu céeb.
child DEF.PL eat-NEG-C_V-3PL rice
"The children didn't eat rice."

b. Lekk-u(l)-∅-ñu céeb.
eat-NEG-C_V-3PL rice
"They didn't eat rice."

c. *Lekk-u(l)-∅ xale yi céeb.
eat-NEG-C_V child DEF.PL rice

d. *Lekk-u(l)-∅-ñu xale yi céeb.
eat-NEG-C_V-3PL child DEF.PL rice

(14) *Predicate focus clause*

a. Xale yi da-ñu lekk céeb.
child DEF.PL do.C_V-3PL eat rice
"It's that the children ate rice."

b. Da-ñu lekk céeb.
do.C_V-3PL eat rice
"It's that they ate rice."

c. *Da xale yi lekk céeb.
do.C_V child DEF.PL eat rice

d. *Da-ñu xale yi lekk céeb.
do.C_V-3PL child DEF.PL eat rice

I propose these sentence types to contain one and the same CT head, which triggers either the raising of a verbal head, or the insertion of a dummy verb *def* 'do' in CT. Their defining characteristic is the obligatory presence of a subject marker right-adjacent to CT, and the position of the lexical subject to the left of CT. In section 2.6, I argue this position to be Spec,CTP. The obligatory doubling of the subject below CT in discussed in detail in Chapter 4. The morphophonological realization of CT is a matter of post-syntax – see Chapter 8.

That a verb raises to CT in Neutral affirmative and negative clauses seems fairly obvious, especially considering the behavior of functional morphology, which is carried along with the

9. Negation in Wolof is sometimes treated as a verbal suffix, and sometimes as a sentence particle in the literature. I analyze it as a suffix. For details, see Chapter 7. The parentheses around the consonant 'l' in the negative morpheme indicate that it is not pronounced.

verb, as illustrated in (15). The verb moves to CT in (a), the verb and the perfective morpheme in (b), the imperfective morpheme in (c), and the imperfective and perfective morpheme in (d).[10]

(15) *V-raising and functional morphology*

a. Xale yi **lekk**-na-ñu ceeb.
child DEF.PL eat-C_V-3PL rice
"The children ate rice."

b. Xale yi **lekk-oon**-na-ñu ceeb bi.
child DEF.PL eat-PERF-C_V-3PL rice DEF.SG
"The children ate the rice (a long time ago)."

c. Xale yi **di**-na-ñu lekk ceeb bi.
child DEF.PL IMPF-C_V-3PL eat rice DEF.SG
"The children will eat the rice."

d. Xale yi **d(i)-oon**-na-ñu lekk ceeb bi.
child DEF.PL IMPF-PERF-C_V-3PL lekk rice DEF.PL
"The children were eating the rice."[11]

In Predicate Focus clauses, however, it is not obvious that any element raises to CT: the sentence particle appears to be *da/daf* (depending on the person), and the main verb, *di*, and all the functional morphology always stay below CT:

(16) *The main verb and* di *do not raise in Predicate Focus*

a. Xale yi **da**-ñu lekk ceeb.
child DEF.PL do.C_V-3PL eat rice
"It's that the children ate rice."

b. Xale yi **da**-ñu **di** (>dañuy) lekk ceeb.
child DEF.PL do.C_V-3PL IMPF eat rice
"It's that the children are eating rice."

c. Xale yi **da**-ñu lekk-**oon** ceeb.
child DEF.PL do.C_V-3PL eat-PERF rice
"It's that the children ate rice (a long time ago)."

d. Xale yi **da**-ñu **d(i)-oon** lekk ceeb.
child DEF.PL do.C_V-3PL IMPF-PERF eat rice

10. The presence of negation slightly complicates things, as in that case the perfective morpheme is not suffixed onto the verb. For details, see Chapter 7.

11. The parentheses around the vowel 'i' of the imperfective morpheme indicate that it is not pronounced.

"It's that the children were eating rice."

I however propose that Predicate Focus and Neutral clauses have the same syntax, and that predicate focus also contains a verb in CT. This is not a new idea. Church (1981), crediting Senghor (1963) for this insight, relates the third singular form of the complementizer+subject-clitic complex in predicate focus, *dafa*, to the verb 'do', *def*. He notes that this link is clearer in some Wolof dialects, in which the 3*rd* singular form is *def-a*. Torrence (2012a) follows the same analysis. I adopt this proposal and consider Predicate Focus clauses to involve *do*-support – the insertion of *def* 'do', to satisfy the same requirement which is satisfied by verb-raising in neutral clauses. Since *def* is inserted directly into CT, it cannot pick up any functional morphology.

Clauses with obligatorily pronominal subjects therefore have one feature in common – they contain a verb in CT: either the lexical verb or the imperfective auxiliary *di*, or the auxiliary verb *def* 'do'.

2.3.2 Structures with no obligatory pronominal subject

N-raising clauses—subject and non-subject Exhaustive Identification clauses (EI-clauses), Presentative clauses, and relative clauses—do not have obligatory pronominal subjects below CT. The lexical and the pronominal subject in those clauses are in complementary distribution and occur in the same slot in the clause.[12] The only way for both the subject pronoun and the lexical subject to co-occur in N-raising clauses is for the lexical subject to be left-dislocated and interpreted as a topic.

In non-subject EI-clauses and object relatives, the lexical subject and the pronominal one are clause-internal, to the right of CT.

12. This is not entirely true, since subject pronouns are clitics, and occur below the highest CT head. "Same slot" here means either clause-internally, below CT, or in Spec,CTP.

(17) *Non-subject EI*

a. Musaa l-a **xale yi** gis.
Moussa *l*-C_N child DEF.SG see
"It is Moussa that the child saw."

b. Musaa l-a-**ñu** gis.
Moussa *l*-C_N-3PL see
"It's Moussa that they saw."

c. Xale yi, Musaa l-a-**ñu** gis.
child DEF.PL Moussa *l*-C_N-3PL see
"The children, it's Moussa that they saw."

(18) *Object relative clause*

a. jigéén j-i **Aali** sopp
woman CM-C_N.DEF Aali love
"the woman that Ali loves."

b. jigéén j-i **mu** sopp
woman CM-C_N.DEF 3SG love
"the woman that s/he loves."

In subject EI and Presentative clauses, either the lexical subject or a subject pronoun is located in Spec,CTP.[13] Neither can occur to the right of CT.

(19) *Subject EI*

a. **Ayda**-a dem.
Ayda-C_N go
"It's Ayda who went."

b. **Mu**-a (>moo) dem.
3SG-C_N go
"It's her/him who went."

c. **Ayda** mu-a (>moo) dem.
Ayda 3SG-C_N go
"Ayda, it's her who went."

13. In §2.4, I argue that the pronominal element in Spec,CP is not the clitic, but a strong pronoun. Subject clitics can only occur in a special position right-adjacent to C. See §2.4 and §2.5 for details.

(20) *Presentative clauses* (Church 1981, 54)

a. Faal-a-ngi dem.
Fall-C_N-*ngi* leave
"Here is Fall who is leaving."/"Fall is leaving."

b. {Mu-a-ngi/mi-ngi/mu-ngi} dem.
3SG-C_N-*ngi*/3SG.C_N-*ngi*/3SG.C_N-*ngi* leave
"Here he is leaving."/"He is leaving."

c. Faal {mu-a-ngi/mi-ngi/mu-ngi} dem.
Fall 3SG-C_N-*ngi*/3SG.C_N-*ngi*/3SG.C_N-*ngi* leave
"Fall, here he is leaving."/"Fall, he is leaving."

Presentative clauses are not well understood. They contain the element *ngi* right-adjacent to the sentence particle, and are usually interpreted as the present progressive. They have the further effect of pointing out the subject (Dunigan 1994); my consultants commonly begin the translation of these clauses with *voici* or *voilá*. When a pronoun is contained in Spec,CTP, there is dialectal variation as to the form of that pronoun (e.g. *mu/mi* in (20)).

Torrence (2012a) has examples of non-subjects also being able to occur in Spec,CTP in Presentative clauses:

(21) *Non-subject Presentative clause* (Torrence 2012a, 31)
Gato b-à-ng-ii xale yi di lekk.
cake CM-*ngi*-LOC child DEF.PL IMPF eat
"It's the cake that the children are eating."

I have not encountered such structures, however, it appears that they behave as other N-raising clauses with respect to the distribution of the lexical subject – it can occupy a position below CT, and does not co-occur with a pronoun. Since the function of the element *ngi* is not well understood, and by extension also the structure of Presentative clauses, I leave them out of the discussion.

The difference between V-raising and N-raising clauses is very clear. In the former, the lexical subject and the subject pronoun are on the opposite sides of CT. The pronominal subject right-adjacent to CT is obligatory, and the lexical subject can optionally occur on the left of CT. In

the latter, the lexical and the pronominal subject are either in complementary distribution clause-internally (to the right of CT), or in Spec,CTP, in which case a subject clitic cannot occur to the right of CT.

2.3.3 Optatives

A clause-type worth mentioning are Optative clauses, in which no element raises to CT. The sentence particle in these clauses is homophonous to the CT in neutral clauses and surfaces as *na*. In terms of the distribution of subjects, they behave as N-raising clauses and can have clause-internal lexical subjects.

(22) *Optative sentence*

a. Na **xale yi** xaar.
C child DEF.PL wait
"Let the children wait."

b. Na-**ñu** xaar.
C-3PL wait
"Let them wait."

c. Xale yi na-**ñu** xaar.
child DEF.PL C-3PL wait
"The children, let them wait."

I mostly disregard Optative clauses in this dissertation, as their understanding requires a better handle on the expression of different modal categories in Wolof. For a tentative proposal regarding their analysis, see Chapter 9.

2.3.4 Summary

In this section, I presented data showing that indicative sentences with sentence particles can be divided into two groups, depending on the ability of the lexical subject to occur below CT. Crucially, the syntactic environment of all sentence particles is identical. Specifically, in all clauses in which

the subject does not A′-move to Spec,CTP, pronominal subjects are right-adjacent to CT, both in V-raising and in N-raising clauses. I therefore argue that all sentence particles are located in the same projection, a CT head. The main difference between the two clause-types is in the distribution of the lexical subjects compared to subject pronouns. In V-raising clauses, lexical subjects can only be to the left of CT, and must be doubled by a pronominal subject to the right of CT. In N-raising clauses, lexical and pronominal subjects are in complementary distribution either to the right, or to the left of CT, depending on whether the subject moves to Spec,CTP or not.

Thus far, I have taken for granted that subject markers are pronominal elements, even though they are strikingly similar to agreement in V-raising clauses, in which the lexical subject occurs to the left of the sentence particle. In the following section, I provide evidence for treating them as pronominal elements, and not agreement.

2.4 The status and position of subject markers in Wolof

The status of subject markers in Wolof is a somewhat controversial question in the literature. As seen in the previous section, in V-raising structures in Wolof a subject marker obligatorily occurs right-adjacent to the sentence particle. It is therefore often assumed that subject markers are agreement morphemes. However, we have also seen that there are constructions, here termed N-raising clauses, in which the subject marker and the lexical subject are in complementary distribution either in a position following the sentence particles, or immediately preceding it. There are two possible analyses. Subject markers could be agreement morphemes, in which case we need to explain why agreement is obligatory when the verb raises to CT, but impossible when it is below CT. Torrence (2005, 2012a) seems to consider subject markers to be agreement morphemes, but does not directly address the question of their complementary distribution with clause-internal lexical subjects. I am pursuing an analysis which treats subject markers are pronominal elements, as

claimed by Dunigan (1994) and Russell (2006).[14]

I present severals pieces of evidence for this claim. First, in 2.4.1 I show that Wolof subject markers, together with object and locative pronouns, belong to the set of weak pronouns/clitics, as opposed to strong pronouns, as discussed in Cardinaletti and Starke 1999, and pattern as expected under a pronominal analysis. In 2.4.2, I show that subject markers are in complementary distribution with lexical subjects in N-raising clauses, and given their consistent syntactic position in N-raising and V-raising clauses with respect to other clitics, discussed in 2.4.3, I argue for a uniform analysis of subject markers in all Wolof clauses.

2.4.1 Strong and weak pronouns

Personal and locative pronouns in Wolof have a *strong* and a *weak* paradigm, exemplified in Table 2.9 and Table 2.10. Locative weak forms have the same proximal/distal distinction as determiners.[15] Strong pronouns are not distinguished by case, while weak pronouns differ in form for subjects and objects.

	Strong	*Weak subject*	*Weak object*
1SG	man	ma	ma
2SG	yow	nga	la
3SG	moom	mu	ko
1PL	ñun	nu	nu
2PL	yeen	ngeen	leen
3PL	ñoom	ñu	leen

Table 2.9: Strong and weak personal pronouns in Wolof

Wolof pronouns are similar to pronouns in Romance and South Slavic languages, in that they surface as strong only in particular positions – in coordination, when focused, dislocated, and as

14. The third option, according to which the subject markers are pronominals in some cases and agreement markers in others has also been explored, by Zribi-Hertz and Diagne (2002).

15. There are two forms of locative markers, one with the consonant *f-* and the other one with *c-*. The difference between the two in their pronominal use is not entirely clear to me. *Ci* is also the form of the only real preposition in Wolof, and it also functions as a partitive clitic.

Strong	*Weak*
foofu	fa/fi
coocu	ca/ci

Table 2.10: Strong and weak locative pronouns in Wolof

complements of prepositions (Cardinaletti and Starke 1999). Otherwise, pronouns are weak and, if a sentence particle is present, they surface immediately to the right of CT in the order *subject* > *object* > *locative*.

Cardinaletti and Starke (1999) establish a tripartite division of pronouns—strong, weak and clitics—based on their morphophonological and distributional properties. They argue that phonological form reflects syntactic structure, and that phonologically more complex forms have more functional projections. Strong forms, which are 'bigger', contain more functional structure which can check features. Deficient forms, on the other hand, lack those projections, so they must move to certain functional projections to check their unchecked features. Whether this is a correct analysis of weak and strong pronouns is not relevant for our present purposes. I use some of Cardinaletti and Starke's diagnostics to demonstrate the weak/strong distinction in Wolof, which supports a pronominal analysis of Wolof subject markers.

Morphological complexity

Cardinaletti and Starke (1999) tie the syntactic deficiency of pronouns to their morphophonologically reduced structure. Pronouns in Wolof do indeed show a difference in morphophonological complexity. *Strong*, or *independent pronouns* (Ka 1994; Church 1981), do not show case distinctions, and are argued by Sauvageot (1965), Church (1981), and Njie (1982) to be bimorphemic. In particular, it is pointed out that the non-second person forms all end in nasals, and that, when regular phonological processes of the language are unraveled, the strong pronouns seem to consist of the weak pronoun and a suffix *-(a)n/m*. Torrence (2012a) also notices that strong pronouns fall

into the *mi*-noun class, as shown in (23), where a topicalized pronoun occurs with what looks like a determiner. He proposes that strong pronouns contain a determiner, and have the morphological structure as in Table 2.11.[16]

(23) *Strong pronoun with a determiner* (Torrence 2012a, 55)
Yow m-i, di-na-a-la gis.
2SG.STR CM-DEF.SG IMPF-C_V-1SG-2SG.OBJ see
"You, I will see you."

	Pronoun		*Det*		*Surface form*
1SG	ma	+	n	→	man
2SG	ya/yo	+	∅	→	yow
3SG	mu	+	am	→	moom
1PL	nu	+	n	→	ñun
2PL	ya + een	+	∅	→	yeen
3PL	ñu	+	am	→	ñoom

Table 2.11: The morphological structure of strong pronouns in Torrence 2012a, 55

Weak pronouns, given in Table 2.12, show nominative and accusative case distinctions, and are, for the most part, smaller in size compared to strong pronouns. Except in the second person singular and plural, the weak subject pronouns appear to be identical to the first syllable of the strong pronouns.

Focus, dislocation, coordination

In languages that Cardinaletti and Starke survey, strong pronouns, weak pronouns and clitics differ in their distribution. In particular, only strong pronouns can be focused with focus particles such as *only* and *even*; deficient pronouns cannot be focused. Similarly, only strong pronouns can be dislocated or coordinated. I examine each of these distributional contexts in turn.

16. He also notices that strong pronouns in Pulaar, a language related to Wolof, have a very similar morphological structure, where all but the 3rd person pronouns are transparently composed of a weak subject pronoun and a final nasal (Torrence, 2012a, 55).

	Subject pronoun	*Object pronoun*
1SG	ma	ma
2SG	nga	la
3SG	mu	ko
1PL	nu	nu
2PL	ngeen	leen
3PL	ñu	leen

Table 2.12: Weak personal pronouns in Wolof

In Wolof, exhaustively identified arguments A′-move to Spec,CTP. At first glance, EI of pronouns appears to differ between subjects and objects. An object pronoun in Spec,CTP can only surface in its strong form, as shown in (24). This is predicted by Cardinaletti and Starke (1999). In case of subject extraction, it appears that the weak version of the pronoun surfaces in Spec,CTP, as in (25), contrary to what we expect.

(24) *A′-extraction of object pronoun*

a. Ñoom l-a Usmaan gis.
3PL.STR *l*-C_N Oussman see
"It's them who Oussman saw."

b. *Leen l-a Usmaan gis.
3PL.STR *l*-C_N Oussman see

(25) *A′-extraction of subject pronoun*

a. Ñu-a gis Usmaan.
3PL-C_N see Oussman.
"It's them who saw Oussman."

b. *Ñoom-a gis Usmaan.
3PL.STR-C_N see Oussman.

The asymmetry between subject and object pronouns in extraction is, however, only apparent. An important clue comes from 2*nd* person singular and plural, where there is no phonological similarity between weak and strong pronouns (see Table 2.11 and Table 2.12). In case of second person subject extraction to Spec,CTP, the pronoun does not surface in its weak form, as *nga/ngeen*, but as the first syllable of the strong form, *ya*, in singular, and as the full strong pronoun *yeen* in the plural.

(26) *2nd person subject pronouns in Spec,CTP*

a. Ya-a gis Usmaan.
2SG.STR-C_N see Oussman
"It's you(sg) who saw Oussman."

b. *Nga-a gis Usmaan.
2SG-C_N see Oussman

c. Yeen-a gis Usmaan.
2PL.STR-C_N see Oussman
"It's you(pl) who saw Oussman."

d. *Ngeen-a gis Usmaan.
2PL-C_N see Oussman

Given these examples, I propose that Spec,CTP is a position in which only strong pronouns can surface in Wolof, and that subject pronouns in Spec,CTP are reduced versions of the strong forms. Another argument in favor of this analysis are pronouns in fragment answers. Fragments have been argued to have full sentential structures, to account for their propositional character. Merchant (2004) proposes that the fragment moves to the specifier of a left-peripheral head, with the TP elided. There is evidence that this leftward movement has the properties of focus movement (Brunetti 2003; Arregi 2010), and fragment answers in Wolof, which can be followed by the complementizer *(l)a*, support this analysis (for more details on the derivation of Wolof fragment answers, see Chapter 6, §6.5). Only strong pronouns can be fragment answers, regardless of whether or not they are followed by the complementizer *(l)a*, and regardless of their grammatical relation.

(27) *Pronouns as fragment answers*

a. K-an-a gis Aali?
CM-Q-C_N see Ali
"Who saw Ali?"

b. Man.
1SG.STR
"Me".

c. *Ma.
1SG

d. Man (l)-a.
1SG.STR *l*-C_N

"It was me."

e. *Ma-(l)-a.
1SG-*l*-C_N

The data from fragment answers suggests that the form of the pronoun that surfaces in fragment answers is indeed the strong form, which becomes reduced in subject extraction, in the specifier of *a*, when the CTP-layer is followed by overt material.

The next environment to be investigated are dislocated positions. Left-dislocation of DPs in Wolof is very salient; speakers often left-dislocate multiple DPs, which are resumed by clause-internal weak pronouns. Right dislocation is also possible, though somewhat rarer (Torrence 2012a). With respect to dislocation, Wolof pronouns behave in line with Cardinaletti and Starke's observation: only strong forms can occur in dislocated positions, as shown in (28).

(28) *Dislocated pronouns*

a. Ñoom, ñu-a (>ñoo) lekk ceeb bi.
3PL, 3PL-C_N eat rice DEF.SG
"Them, they ate the rice." (Zribi-Hertz and Diagne 2002, 845)

b. *Ñu, ñu-a (>ñoo) lekk ceeb bi.
3PL, 3PL-C_N eat rice DEF.SG

c. Gis-na-a-léen démb, ñoom.
see-C_V-1SG-3PL.OBJ yesterday 3PL
"I saw them yesterday, them." (Torrence 2012a, 76)

d. *Gis-na-a-léen démb, ñu.
see-C_V-1SG-3PL.OBJ yesterday 3PL

Finally, strong pronouns can be coordinated with each other, and with lexical DPs, as in (29). They can be either the first or the second conjunct in a coordinate DP (Torrence 2012a).

(29) *Pronouns in coordination* (Torrence 2012a, 48)

a. Gis-na-ñu Isaa ak man.
see-C_N-3PL Isaa with 1SG.STR
"They saw Isaa and me."

b. Gis-na-ñu man ak Isaa.
see-C_N-3PL 1PL.STR with Isaa

"They saw me and Isaa."

Torrence (2012a) gives data which appear to show that a weak pronoun can also be coordinated with a lexical DP, though it can only be the first conjunct in such a coordinate structure. The clue to the identity of these pronouns again comes from 2*nd* person. If the first conjunct could be a weak pronoun, we would expect it to surface as *nga/ngeen* in the second person; it does not – it surfaces as the first syllable of the strong pronoun in the singular, *ya*, and as the whole strong pronoun *yeen* in the plural (Torrence 2012a, 47). This is therefore identical to the case of apparent weak pronouns in Spec,CP in subject extraction – a strong pronoun can optionally be reduced in coordinate DPs, when it precedes the conjunction *ak*.

The distribution of nominal elements in Wolof

In the languages surveyed by Cardinaletti and Starke (1999), strong pronouns have the same distribution as lexical DPs, meaning that a strong pronoun can occupy every position that a full DP can occupy. This is not the case in Wolof. In particular, strong pronouns cannot occupy an argument position inside the CTP (the lower Spec,CTP or complement of V). There is no such restriction on lexical DPs. Weak pronouns behave as special clitics and, if they can, move to adjoin to the sister of the highest functional projection in the clause. For details of the analysis of cliticization, see §2.5. Table 2.13 summarizes the distribution of strong pronouns, weak pronouns, and lexical DPs.

	Left dislocated	*Spec,CP*	*Right-adjacent to C*	*Spec,TP*	*In situ*
Lexical DP	✓	✓	*	✓	✓
Strong	✓	✓	*	*	*
Weak	*	*	✓	*	✓

Table 2.13: The distribution of lexical DPs, strong pronouns and weak pronouns

In this section, I have presented a general description of Wolof pronouns, in order to support the claim that subject markers are pronominal elements, and not agreement morphemes. I have shown that Wolof has a strong and a weak pronoun paradigm, as discussed in Cardinaletti and Starke

1999, and that the distribution of the two pronoun types in Wolof follows the general findings from other languages. This supports an analysis according to which subject markers are weak pronouns. The following two sections bring more empirical evidence for this claim, by showing them to be in complementary distribution with lexical subjects, and to be consistently positioned with respect to other clitics.

2.4.2 Complementary distribution with lexical subjects

Section §2.3 showed that there are two types of indicative constructions in Wolof. In V-raising clauses, the subject marker follows the sentence particle and the lexical subject, if present, obligatorily precedes it. In N-raising clauses, the subject marker and the lexical subject occur in the same position – either following the particle, or directly preceding it, in case of subject movement. Crucially, in the latter construction type, the lexical subject and the subject pronoun are in complementary distribution, and can co-occur only if the lexical subject is in a left-dislocated (topicalized) position. The relevant examples are repeated in (30) and (31), with the lexical subject underlined, and the subject marker in bold face.

(30) *Subject marker and lexical subject in V-raising clauses*

a. Xale yi lekk-na-**ñu** céeb.
child DEF.PL eat-C_V-3PL rice
"The children/They ate rice."

b. *Lekk-na xale yi céeb.
eat-C_V child DEF.PL rice

c. *Lekk-na-**ñu** xale yi céeb.
eat-C_V-3PL child DEF.PL rice

(31) *Subject marker and lexical subject in N-raising clauses*

a. Xale yi Moodu l-a-**ñu** gis.
child DEF.PL Modu *l*-C_N-3PL see
"The children, it's Modu that they saw."

b. Moodu l-a xale yi gis.
Modu *l*-C_N child DEF.PL see

"It's Modu that the children saw."

c. *Moodu l-a-**ñu** xale yi gis.
Modu *l*-C_N-3PL child DEF.PL see

Subject markers and lexical subjects are in complementary distribution in (31), following CT. I take this as evidence that the subject marker in N-raising clauses is a pronoun. Comparing (31) to (30), we can see that the subject marker is in the same position in the two clause types – right-adjacent to CT. If we wish to pursue a unified analysis of subject markers in N-raising and V-raising clauses, these two facts taken together give evidence that the subject marker is a pronoun in V-raising clauses as well.

2.4.3 Occurrence within the clitic complex

Objects and PPs in Wolof can also be weak pronouns, like subject markers, and they all behave as clitics (see next section for details), clustering to the right of the sentence particle (Russell 2006) in clauses with a CTP-layer. The subject marker occurs as the first element inside this clitic complex, both in V-raising clauses, and in N-raising clauses, illustrated in (32).

(32) *CT-oriented clitic cluster in Wolof*

a. Xale yi lekk-na-**ñu**-ko-fa.
child DEF.PL eat-C_N-3PL-3SG.OBJ-LOC.DIST
"The children ate it there."

b. Musaa l-a-**ñu**-ko-fa jox.
Moussa *l*-C_N-3PL-3SG.OBJ-LOC.DIST give
"It's Moussa that they gave it to there."

In Chapter 7 I show that verbs in Wolof raise out of the VP, and move through intervening heads, picking up functional affixes (e.g. negation and the perfective aspect). The crucial observation is that the verb moves over the subject marker and the other pronouns, and the order of the clitics is preserved. This supports the claim that weak pronouns are not heads in the functional spine, since they are skipped by head movement.

Weak subject pronouns are clitics (Dunigan 1994; Russell 2006), and they often form phonological units with sentential particles, to the extent that their underlying form cannot always be retrieved. They appear in their basic form in constructions without sentence particles (Ka 1987):[17]

	Singular	*Plural*
1	ma	ñu
2	nga	ngeen
3	mu	ñu

Table 2.14: Subject markers in Wolof (Ka 1987)

Table 2.15 gives an overview of subject marking paradigms with different clausal particles. The main difference from the basic forms is that the 3*rd* person singular is always null when following a sentence particle, and the 1*st* person singular loses the initial consonant *m* in non-subject EI-structures and Neutral clauses.

	Predicate focus (*def* + *a* + SM)	*Non-subject EI* (*l-a* + SM)	*Neutral* (*na* + SM)
1SG	d-a-ma	l-a-a	na-a
2SG	d-a-nga	∅-nga	na-nga
3SG	daf-a-∅	l-a-∅	na-∅
1PL	d-a-ñu	l-a-ñu	na-ñu
2PL	d-a-ngeen	∅-ngeen	na-ngeen
3PL	d-a-ñu	l-a-ñu	na-ñu

Table 2.15: Weak subject pronouns and sentential particles

2.4.4 Summary

This section has argued that subject markers are weak pronouns, and not agreement markers. First, their distribution with respect to the strong pronouns of the language follows expected patterns

17. Ka lists the first person plural pronoun as *nu*. In the Dakar variety of Wolof, the first and third person plural have the same form, *ñu*. I have found a good amount of variation between my consultants in Saint-Louis. In this dissertation, I use *ñu* in 1*st* person singular.

found in other languages. Second, they are in complementary distribution with lexical subjects, and third, the cluster with object and locative clitics in the same position and in the same order, regardless of clause-type.

In the following section, I give an analysis of the cliticization of weak pronouns.

2.5 Cliticization of weak pronouns

Weak pronouns in Wolof behave like special clitics in the sense of Zwicky (1977), and they are analyzed as such in Dunigan 1994, Torrence 2005, and Russell 2006, albeit in different ways. The position of weak pronouns in Wolof depends on the presence of functional projections. In finite clauses with sentence particles, all clitics immediately follow CT, in the order as in (33). They form a cluster, and no element can interfere between any of them. The position of clitics in various types of finite clauses is exemplified in (34)-(36) (from Russell 2006, 155/156).

(33) *Ordering of weak pronouns in Wolof*

subject pronoun $>$ object pronoun $>$ locative pronoun

(34) *Weak pronouns in a neutral clause*
Anta ak Binta lekk-na-**ñu**-**ko**-**fa**.
Anta with Binta eat-C_V-3PL-3SG.OBJ-LOC.DIST
"Anta and Binta ate it there."

(35) *Weak pronouns in a predicate focus clause*
Anta ak Binta da-**ñu**-**ko**-**fa** lekk.
Anta with Binta do.C_V-3PL-3SG.OBJ-LOC.DIST eat
"It's that Anta and Binta ate it there."

(36) *Weak pronouns in a non-subject exhaustive identification clause*
Anta ak Binta ceeb l-a-**ñu**-**ko**-**fa** jox.
Anta with Binta rice *l*-C_N-3PL-3SG.OBJ-LOC.DIST give
"Anta and Binta, it's rice that they gave him/her there."

These examples show that all clitics are in a fixed position in finite clauses, regardless of the structure of the CTP-layer – in (34) and (35), a verb is located in CT and the lexical subject occupies Spec,CTP,[18] whereas in (36) the object DP is in Spec,CTP, the verb is clause-internal, and the lexical subject is in a left-dislocated position.

The clitic cluster is in a position higher than the lexical subject, as noted by Russell (2006), which for her is Spec,TP,[19] as in the example in (37), a counterpart of (36) with a lexical subject instead of a subject pronoun. In this case, the lexical subject follows the clitic cluster, which is still right-adjacent to CT.

(37) *Clitics are higher than clause-internal lexical subject*
Ceeb l-a-**ko-fa** **Anta ak Binta** jox.
rice *l*-C_N-3SG.OBJ-LOC.DIST Anta and Binta give
"It's rice that Anta and Binta gave him/her there."

Positioning of the weak pronouns in a cluster immediately to the right of CT is reminiscent of 2*nd* position (Wackernagel) cliticization, and is obligatory in clauses with a sentence particle; however, this position itself is not what licenses them. They can occur in minimal clauses, which, following Zribi-Hertz and Diagne (2002), I consider to be *v*Ps (see §2.3), and in that case, the subject pronoun is preverbal, the object one postverbal. Strong forms of the pronouns cannot be found in these positions.

(38) *Weak pronouns in minimal clauses* (Zribi-Hertz and Diagne 2002, 847, 849)
a. Xale yi gis Musaa.
child DEF.PL see Moussa
"So the children see Moussa."
b. **Ñu** gis **ko**.
3PL see 3SG.OBJ
"So they eat it."

18. See the following section for evidence for the position of the lexical subject in V-raising clauses.

19. In my analysis, this position is in the specifier of the lower part of a split CT head in clauses in which splitting occurs.

c. *Ñoom gis moom.
3PL.STR see 3SG.STR

It may seem that weak pronouns in (38b) are in situ, but double-object constructions show that this is not the case. As in English when the Goal is not a PP, in Wolof double-object constructions the Goal must precede the Theme (Zribi-Hertz and Diagne 2002, 853):

(39) *Double-object construction in Wolof: Goal > Theme* (Zribi-Hertz and Diagne 2002, 852)

a. Xale yi wan-na-ñu Aram ceeb bi.
child DEF.PL show-C_V-3PL Aram rice DEF.PL
"The children have shown Aram the rice."

b. *Xale yi wan-na-ñu ceeb bi Aram.
child DEF.PL show-C_V-3PL rice DEF.PL Aram

Double object constructions are of course also possible in minimal clauses. If in that case the Theme is a weak pronoun, it cannot stay in situ, following the Goal DP; it must immediately follow the verb, as in (40a). In that case, it is ambiguous between a Theme and a Goal.

(40) *Object clitics in double-object constructions in minimal clauses* (Zribi-Hertz and Diagne 2002, 853)

a. Xale yi wan **ko** Aram.
child DEF.PL show 3SG.OBJ Aram
(i) *"So the children show Aram to him/her."*
(ii) *"So the children him/her/it to Aram."*

b. *Xale yi wan Aram **ko**.
child DEF.PL show Aram 3SG.OBJ

This shows us that Wolof pronouns do not move from their base-generated positions only when there is a CT. More clarity on the issue comes from non-finite clauses with aspect morphology. In (41), the object pronoun obligatorily follows the past imperfective *d(i)-oon* in an infinitival embedded clause.

(41) *Object clitic in non-finite clause with* d(i)-oon (Zribi-Hertz and Diagne 2002, 853)

a. Aram gis-oon-na-∅ [xale yi d(i)-oon-**ko** lekk].
Aram see-PERF-C_V-3SG [child DEF.PL IMPF-PERF-3SG.OBJ eat]
"Aram had seen the children eating it."

b. *Aram gis-oon-na-∅ [xale yi d(i)-oon lekk **ko**].
Aram see-PERF-C_V-3SG [child DEF.PL IMPF-PERF eat 3SG.OBJ]

The data from minimal clauses and non-finite clauses with aspect morphology suggest that the clitic always targets some position in the clause. In minimal clauses, this position is immediately following the verb, as evidenced by double-object constructions. In non-finite clauses with aspectual morphology, it is immediately following the aspect morpheme. I propose the following condition on the placement of weak pronouns in Wolof:

(42) *Clitic Placement Condition*

A weak pronoun is adjoined to the sister of the highest functional projection in its phase.

Crucially, this is only applicable to clitics that are below that projection, as evidenced by the preverbal position of the subject pronoun in the minimal clause in (38b).[20]

20. The situation is slightly more complex when only the imperfective morpheme *di* is present in non-finite clauses. There is conflicting evidence as to the clitic position in non-finite clauses when both the subject and the object are pronominal. If there is no aspect morphology, as expected, the object pronoun follows the verb:

(i) *Clitics in non-finite clauses*

a. Fanta wax-na-∅-la [nga way way bi].
Fanta tell-C_V-3SG-2SG.OBJ [2SG sing song DEF.SG]
"Fanta told you to sing the song."

b. Fanta wax-na-∅-la [**nga** way **ko**].
Fanta tell-C_V-3SG-2SG.OBJ [2SG sing 3OBJ]
"Fanta told you to sing it."

c. *Fanta wax-na-∅-la [**nga-ko** way].
Fanta tell-C_V-3SG-2SG.OBJ [2SG-3OBJ sing]

In my data, if *di* is present, the object clitic is actually found right-adjacent to the subject clitic, and not to *di*:

(ii) *Object clitic in non-finite clause with* di

a. Fanta wax-na-∅-la [nga-di (>ngay) way way bi].
Fanta tell-C_V-3SG-2SG.OBJ [2SG-IMPF sing song DEF.SG]
"Fanta told you to keep singing the song."

This is, more or less, the analysis of Wolof cliticization advocated by Dunigan (1994), who proposes that the clitics move to the highest functional head in the extended projection of the verb, excluding projections above SigmaP, which is where she considers sentence particles to be located.[21] A similar condition is proposed by (Ouhalla 1989, 178, 190) to account for clitic placement in Berber, where they seem to universally appear on the highest affixal head in a construction (the Wh-complementizer, the negative morpheme, or the Tense morpheme or the verb).

Unlike Dunigan (1994), I propose that clitics are phrases (Kayne 1975), as argued in Russell 2006. Furthermore, I propose that weak pronouns can participate in feature-driven syntactic movement during the syntactic derivation, and that the *Clitic Placement Condition* applies at a late stage, though still in the syntactic component. Evidence for the fact that weak pronouns move as regular phrases do is presented in Chapter 5, §5.4 where the subject pronoun is shown to be able to satisfy the EPP-feature on CT. According to the subdivisions in the syntactic component that I propose and discuss in further detail in Chapter 7, there is a late stage in syntax, which occurs after the highest functional head has satisfied all its requirements (i.e. checked all its features). I propose that, at that point, various conditions may apply to the clause as a whole, the *Clitic Placement Condition* being one of them. All the weak pronouns then move to adjoin to the sister of the highest

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b. Fanta wax-na-∅-la [**nga**-**ko**-di (>koy) way].
Fanta tell-C_V-3SG-2SG.OBJ [2SG-3OBJ-IMPF sing]
"Fanta told you to keep singing it."

c. *Fanta wax-na-∅-la [**nga**-di (>ngay) way **ko**].
Fanta tell-C_V-3SG-2SG.OBJ [2SG-IMPF sing 3OBJ]

Dunigan (1994, p.197), however, shows data in which the object clitic follows *di*.

(iii) Gis-na-a xale bi [mu di (>muy) **ko** lekk.
see-C_V-1SG child DEF.SG [3SG IMPF 3SG.OBJ eat]
"I saw the child eating it."

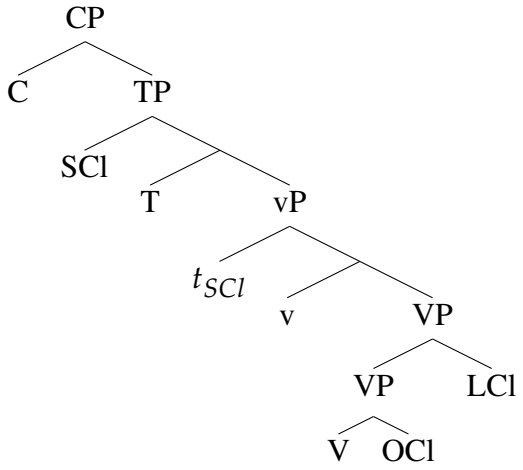
Dunigan's thesis is on Gambian Wolof, so it is possible that this is a case of dialectal variation. At this point, I do not have enough data to address this question.

21. For Dunigan, clitics are heads, so she has to assign special status to the highest head in the extended projection, as well as to the clitic, by assigning them a particular value, F_{max}, and proposing that the clitic can only move to the projection which has the same value, which exempts it from the strictly local nature of head movement.

functional projection in the clause. I refer to this special type of movement as Clitic Movement and show how it applies in the remainder of this section.

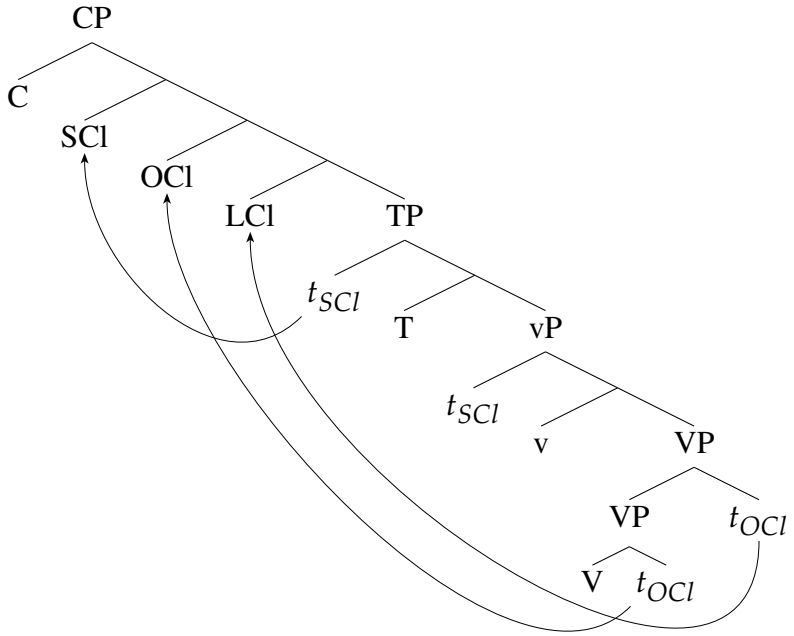
The structure of a sentence with subject, object, and locative clitics before Clitic Movement is represented in (43). For simplicity, I represent the clausal periphery in the traditional way, as consisting of a CP and TP. This will be amended in the following chapters, but is not relevant for the analysis of cliticization. The subject clitic (SCl) has moved to Spec,TP to check a feature on T, and the object clitic (OCl) and the locative clitic (LCl) are in their base-generated positions, as a complement of V and an adjunct to VP, respectively.

(43) *Clause structure with clitics*



The order of the clitics is fixed: SCl $>$ OCl $>$ LCl. In oder to derive this, I adopt Russell's (2006) solution, and propose that SCl moves first, and then OCl and LCl tuck in below it (Richards 1997, 1999).

(44) *Subject, object and locative clitics move via Clitic Movement*



This is similar to Russell's (2006) proposal. In her analysis, weak pronouns move to Spec,TP. In oder to account for the fact that they precede lexical subjects when they are in Spec,TP (see (37)), Russell posits another movement, prosodically driven, through which the clitics adjoin above TP. The departure from Russell's analysis is crucial for my account of V-raising clauses, as I argue that they do not have separate CP and TP projections, though the clitics are positioned to the right of CT. Furthermore, I assume that minimal clauses do not have a CTP-layer, and, as we have seen, the object clitic still moves to the right of the verb.

Finally in this chapter, I discuss the position and status of lexical subjects in V-raising clauses, in which a subject clitic is the only allowed clause-internal subject, and a lexical subject optionally occurs to the left of CT.

2.6 The status of pre-CT lexical subjects

This chapter is devoted to justifying certain elements of the clause structure I assume in the remainder of the dissertation. One part of this is understanding the position of pre-CT lexical subjects in

clauses in which CT is obligatorily followed by a subject marker, which I have argued is a pronominal element. This means that, in the presence of a lexical subject, V-raising clauses appear to have two subjects, i.e. that something akin to Clitic Doubling or Clitic Left-Dislocation (CLLD) takes place. I address the details of this phenomenon in Chapter 4; in this section I attempt to establish the position of the lexical subject in V-raising clauses.

One possibility is that all lexical subjects to the left of CT are left-dislocated/topicalized. DPs can certainly be left-dislocated in Wolof, and receive topical interpretation as noted by Russell (2006). Such DPs must be resumed by pronouns, as is the case with the topicalized object DP in the N-raising clause in (45). These phrases are base-generated in the left periphery, by hypothesis in Spec,TopP.

(45) *Topicalized DPs are resumed by pronouns in N-raising clauses* (Russell 2006, 127)

a. Fas wi, ma-a-ko jënd.
horse DEF.SG 1SG.STR-C_N-3SG.OBJ buy
"The horse$_i$, it's me who bought it$_i$."

b. *Fas wi ma-a jënd.
horse DEF.SG 1SG.STR-C_N buy

Lexical subjects can also be topicalized in N-raising clauses. The sentence in (46a) has a focused object, moved to the higher Spec,CTP (commonly known as Spec,CP). The subject follows the clausal particle, and is by hypothesis located in the lower Spec,CTP (commonly known as Spec,TP). If the lexical subject is topicalized, as in (46b), the subject marker must follow the sentence particle.

(46) *Subjects to the left of CT co-occur with subject pronouns*

a. Ceeb l-a xale yi lekk
rice *l*-C_N child DEF.PL eat
"It's rice that the children ate."

b. Xale yi, ceeb l-a-ñu lekk
Child DEF.PL rice *l*-C_N-3PL eat
"The children$_i$, it's rice that they ate."

c. *Xale yi ceeb la lekk
Child DEF.PL rice *l*-C_N eat

Lexical subjects to the left of CT in N-raising clauses can freely change order with other topics, suggesting that they are indeed topicalized, as in (47).

(47) *Topics can change order in N-raising clauses*

a. Ceeb bi Maryam ag Xhadi ñu-a (>ñoo) ko lekk
rice DEF.SG Maryam and Xhadi 3SG.STR-C_N 3SG.OBJ eat
"The rice$_j$, [Maryam and Xhadi]$_i$, it's them$_i$ who ate it$_j$."

b. Maryam ag Xhadi ceeb bi ñu-a (> ñoo) ko lekk
Maryam and Xhadi rice DEF.SG 3SG.STR-C_N 3SG.OBJ eat
"[Maryam and Xhadi]$_i$, the rice$_j$, it's them$_i$ who ate it$_j$."

In V-raising clauses, the same can happen – a lexical subject in the left periphery can be topicalized, as shown in (48), where it can change order with the topicalized object DP.

(48) *Topics can change order in V-raising clauses*

a. Ceeb, xale yi da-ñu jox ko leen
rice child DEF.PL do.C_V-3PL give it them
"Rice$_i$, the children$_j$, it's that we gave it$_i$ to them$_j$."

b. Xale yi, ceeb, da-ñu jox ko leen
child DEF.PL rice do.C_V-3PL give it them
"The children$_j$, rice$_i$, it's that we gave it$_i$ to them$_j$."

All that the data so far show is that DPs can be topicalized in Wolof, in both V-raising and N-raising structures. In my experience, such DPs are usually followed by a pause, and require the topicalized DP to have been previously mentioned. The same is not necessarily true of lexical subjects in V-raising structures, though. The sentence in (49) can be uttered in an out of the blue context, and the DP *the children* is not followed by a pause.

(49) *Lexical subjects in V-raising structures are not topics*
Xale yi lekk-na-ñu ceeb.
child DEF.PL eat-C_V-3PL rice
"The children ate rice."

A more convincing piece of evidence that there is a difference between pre-CT lexical subjects in V-raising clauses and topicalized DPs comes from bare quantifiers, which are usually assumed not to be able to occur in topic position (Rizzi 1986, 1997). Russell (2006) shows that in Wolof bare quantifiers can appear as sentence-initial subjects (50a), but not as topics (50b):

(50) *Bare quantifiers can be to the left of C in V-raising*
a. Kenn$_i$ gis na-$\emptyset_i$ Maryam.
someone see C_V-3SG Maryam
"Someone$_i$ saw Maryam."
b. *Kenn$_i$ Maryam$_j$ gis na-$\emptyset_j$ ko$_i$.
someone Maryam see C_V-3SG him/her
intended: *"Someone$_i$, Maryam$_j$, she$_j$ saw him/her$_i$."*

As expected, bare quantifiers cannot precede elements that A′-move to Spec,CTP (Rizzi 1997):

(51) *Bare quantifiers cannot precede Spec,CP*
*Kenn$_i$ lan l-a-$\emptyset_i$ jënd?
someone what *l*-C_N-3SG buy
intended: *"Someone, what did s/he buy?"*

I propose that there is a non-topical position for lexical subjects in Spec,CTP in V-raising clauses. I shall argue in Chapter 4 that this is a non-case position, and that subject DPs are base-generated there in order to satisfy the EPP-feature of CT.

2.7 Conclusion

This chapter offered an overview of those elements of Wolof grammar crucial for the understanding of the discussion in the remainder of the dissertation. We reviewed phonological processes which

will help us correctly analyze the morphosyntactic make-up of the CP-layer. The discussion of the position of sentences particles, subject markers and lexical subjects established the key elements of the clausal structure.

First, I claim that sentence particles are complementizer-like elements located in a low CT head. I show that they fall into two groups, depending on the syntactic properties of the clauses in which they occur. In V-raising clauses, the sentence particle is preceded by a verb, contains a lexical subject in Spec,CTP, and an obligatory clause-internal pronominal subject. In N-raising clauses the verb is not in CT, an A$'$-moved element occupies the specifier of the particle, and the clause-internal subject may be lexical or pronominal.

Second, I argue that subject markers are pronominal elements and not agreement markers, based on their complementary distribution with lexical subjects in N-raising clause. I advocate a uniform treatment between subject markers in N-raising and V-raising clauses, due to their consistent position to the right of CT in both clause types and inside the clitic complex, independent of the position of the verb which raises to CT in V-raising and stays below CT in N-raising clauses. I furthermore illustrated that Wolof also has a strong pronominal paradigm, and that subject markers, together with weak object and locative pronouns, behave as weak pronouns/clitics according to the diagnostics established in Cardinaletti and Starke 1999.

I propose that weak pronouns obligatorily move late in the syntactic component via Clitic Movement, in order to satisfy the *Clitic Placement Condition* which requires them to adjoin to the sister of the complement of the highest functional head inside the clause.

Finally I also addressed the position of the lexical subject in V-raising clauses, and given the availability of a bare quantifier to the left of CT in the neutral V-raising clause, I propose that the lexical subject is located in Spec,CTP in V-raising clauses.

CHAPTER 3

THE CT-SYSTEM: FEATURE CHECKING AND HEAD-SPLITTING

3.1 Introduction

This chapter presents the framework in which I analyze Wolof clause-types in the three chapters to follow. It is concerned with the morphosyntactic structure of the layer which usually hosts a complementizer head and commonly has an A′-element in its specifier, and the layer which usually has a Tense head, shows subject agreement and hosts a nominative subject (an A-element) in its specifier. Since Chomsky (1986), we call these two layers the CP and the TP or InflP, respectively.[1] The two heads are often assumed to be somehow connected; for example, finite Cs only select for finite Ts, φ-features of T are sometimes also found on C, C sometimes appears to be the locus of Tense, etc. My goal in this chapter is to capture the connection between C and T, which has been a matter of long-standing discussions in the field, in a novel way, combining insights from work concerning the syntactic consequences of the C-T relationships, and exciting newer lines of research which explore how syntax manipulates elements below word-level, in particular syntactic features.

Specifically, I propose that the C-T connection stems from the fact that the features of these two heads are in fact generated on a single head, and are in the course of the derivation distributed over two heads, something that has been proposed by Chomsky (2005, 2007, 2008), and developed in various directions by employing the mechanism of Feature Inheritance (e.g. Fortuny 2008; Miyagawa 2010; Ouali 2008; Richards 2007, 2011). It has long been noted that languages differ as to which morphosyntactic features are found in their own functional projections, and which ones are bundled on a single functional head (e.g. Rizzi 1996, Thráinsson 1996, Bobaljik and Thráinsson 1998, Fortuny 2008). I build on insights and achievements of these various lines of research, and implement the idea that heads can stay compact or split into multiple heads as being of a purely

1. Obviously, there are many differences between the properties of C and T in a variety of languages. This is meant to be a generalization of some of the common characteristics of the C and T head and elements in their projections.

morphosyntactic origin, resulting from the head-internal featural geometry and the details of the syntactic mechanism of feature checking. Evidence for this approach comes from viewing two Wolof clause-types, V-raising and N-raising, as another instance of the C-T link, which I discuss in detail in Chapters 4 and 5, showing how the syntactic differences between the two clause types fall out from analyzing the C-T complex as staying unified in some cases, while being split into two projections in other cases. Chapter 6 analyzes copular sentences with nominal predicates (NPred sentences), which at first sight seem puzzling because they exhibit both V-raising and N-raising properties. I show that this is easily derived in the proposed framework.

This chapter is organized as follows. In section 3.2 I discuss empirical evidence for the C-T link and a particular theoretical proposal aimed at explaining its origin. I then show how Wolof also provides evidence for this link, but with data which suggest a different explanation for the connection between the two heads. In §3.3, I present the formal details of my analysis. Section 3.4 concludes.

3.2 The C-T link

The link between the complementizer layer and the inflectional layer has long been a point of discussion in generative grammar. As Rizzi (1997) points out, "It is a traditional observation that the choice of the complementizer reflects certain properties of the verbal system" (p.238), in particular, Tense and φ-features. In English, for example, a finite T is only selected by the complementizers *that*/*whether*/*if*, and a non-finite T must occur with *for*/*whether* (Chomsky and Lasnik 1977); an infinitival T in raising/ECM constructions, which by hypothesis lacks C, also lacks φ-features; such T head cannot license nominative case on the subject DP. Much more striking evidence for the connection between C and T comes from languages in which features traditionally associated with T occur on C, such as the φ-features and Tense. In the following sections, I briefly review the type of data usually used as evidence for a deeper connection between C and T, and a particular theoretical proposal which is meant to capture this connection – Feature Inheritance. I then show

how Wolof also provides support for the generalization that there is a link between C and T, but with quite different-looking data, warranting a new approach.

3.2.1 Empirical evidence for the C-T link

There is ample evidence that φ-features are in some languages located on C. A well known example are West Germanic languages, in which the φ-features of the subject are present on both T and C,[2] usually referred to as Complementizer Agreement (CA). It takes different forms in different languages – in some, the agreement on C and that on T are morphologically identical, in others the two instances of agreement differ, and the verb's agreement morpheme depends on its position in the clause (Zwart 1993; Weiss 2005). (1) is an example of identical agreement on C and T.

(1) *Morphologically identical agreement on C and T* (Weiss 2005, 154)

a. *Bavarian*
wenn-**sd** will-**sd**
if-2SG want-2SG
"if you want"

b. *East Franconian*
waal-**n** mer graad besamn sen-**n**
because-1PL we at.the.moment together are-1PL
"because we are together at the moment"

The phenomenon of CA has always been taken as evidence of a strong connection between C and T. There are, however, languages in which φ-features that occur on C are not identical to those on the T it selects, as, for example, in A′-extraction in the Bantu language Kinande. The complementizer[3] in Kinande establishes agreement in φ-features (realized as noun class marking), with the element in its specifier (Schneider-Zioga 1995, 1996, 2000, 2007), shown in (2a) and (2b). The verb (T) agrees with its local subject.

2. This usually does not happen in all persons, but is restricted, often to only 2*nd* person singular.

3. Schneider-Zioga (2007) analyzes this particle as a focus marker; for the present purposes, this is not relevant.

(2) *φ-agreement in C in A′-movement in Kinande* (Schneider-Zioga 1995, p.71)

a. aBahI **BO** Yosefu a-langIra?
who.2 C.2 Joseph.1 AGR.1-saw
"Who did Joseph see?"

b. IyOndI **yO** Yosefu a-langIra?
who.1 C.1 Joseph.1 AGR.1-saw
"Who did Joseph see?"

Another inflectional feature often associated with C is Tense. Already Den Besten (1977/1981) proposed that C is a Tense position, and that a [+Tense] C is realized as *that* or *if/whether*, and a [-Tense] C as *for/whether*. The connection between Tense and C is made especially often in V2 languages, where Tense in C is commonly named the trigger of V-to-C movement (e.g. Platzack 1986). Some languages make this link between the Tense in C and T explicit: in Irish, for instance, the complementizer is marked as being [±past] (Chung and McCloskey 1987).

(3) *Tense in C in Irish* (McCloskey 2001, 75)

a. Creidim **go** gcuirfidh sí isteach ar an phost.
I-believe C put.FUT she in on the job
"I believe that she'll apply for the job."

b. Creidim **gu-r** chuir sí isteach ar an phost.
I-believe C.PAST put she in on the job
"I believe that she applied for the job."

There are other elements traditionally associated with the inflectional (T) system that can be found on complementizers, such as negation and mood markers. For a comprehensive overview of the empirical evidence for the C-T link, see Fortuny 2008.

3.2.2 Feature Inheritance

There are various possibilities for capturing the observation that C and T have a deeper connection, and in the last decade, there have been several attempts to develop a mechanism of *Feature Inheritance* (FI). Chomsky (2005, 2008) and Richards (2007, 2011) develop an implementation of the

insight that C and T are linked which relies on a uniform characterization of phase heads (C and *v*) as a locus of all uninterpretable features, which appear on other heads only derivatively, through FI. In other words, Tense and φ-features are not inherent properties of T, but are passed on to T from C. The motivation for FI is slightly different for Chomsky and Richards, but both proposals rely on the idea that uninterpretable features (aside from Edge features, which must receive a special status in this theory) cannot be valued (and presumably also morphologically surface) on C.[4] There seems, however, to be plenty of counter-evidence for this claim, coming from languages in which the φ- or the T-feature does surface on C, as in West Germanic, Kinande and Irish. While the West Germanic case could maybe be handled with some sort of a copying mechanism, which duplicates T's features on C (see e.g. Fuß 2004 on Bavarian), there are other instances of φ-features on C that would not conform to such an analysis.[5] A quite striking case is the Bantu language Lubukusu, where φ-feature agreement surfaces both on the verb, and on the complementizer, with the complementizer agreeing not with its local subject, but with the subject of the higher clause, which Diercks (2013) calls *indirect agreement*. The two sets of φ-features—the one on C and the one on T—therefore appear to be completely independently valued. It is difficult to see how analyses which ban the valuation of agreement features on C could account for these phenomena.

Another approach for capturing the C-T link is proposed in Fortuny (2008), who explores how the syntactic component orders grammatical categories and generates hierarchies. His monograph is an ambitious reassessment of some of the principles and assumptions of the derivational syntactic theory, and their conceptual motivation, with the ultimate goal to show that they are unmotivated and can be dispensed with in a framework such as the Minimalist Program. One of the central issues under scrutiny is the FI mechanism meant to capture the properties of C and T mentioned above. Fortuny proposes that C and T (for him Infl) are polarities of the same feature,

4. The theoretical reasoning behind this assumption is not relevant for our purposes.

5. There is also evidence that even in West Germanic it is not always the same bundle of features that occurs on C and T; see Haegeman and van Koppen 2012 on agreement with coordinated subjects in Limburgian and agreement with external possessors in West Flemish.

[±clause-typing], forming a discontinuous featural pattern. Infl-like features often introduce semantic distinctions that are orthogonal to (i.e. independent of) the [±clause-typing] distinction. This forces Infl-like features which are being introduced into the discontinuous template '[+clause typing]$_C$ ... [-clause typing]$_{Infl}$', to be merged in both poles. For Fortuny, the agreement relation observed between C and Infl is just a manifestation of inserting Infl-like features in two poles of a discontinuous template.[6] This dispenses with any type of mechanism such as FI, which would spread features from one head to another one, but attributes this effect to the discontinuous status of [clause typing] on C and Infl. The biggest benefit of Fortuny's theory is the attempt to use this framework to capture the observation that sometimes morphosyntactic features are realized on one head, and other times spread over multiple projections (Rizzi 1996, Thráinsson 1996, Bobaljik and Thráinsson 1998). He proposes this to be the result of tension between two principles of the grammar. One is a natural languages' preference for semantically devoted positions, yielding cartographic patterns (or, as Fortuny calls them, analytic syntactic patterns). The other is a type of a principle of structure minimization, which requires as many features as possible to be matched using the smallest span of structure. As a result of this principle, syncratic patterns can emerge, where one head performs multiple functions, resulting in anticartographic effects. For example, Fortuny proposes that, if φ-features on T can be matched by a richly inflected verb, Spec,TP becomes available as an A$'$-position as is not used to match φ-features, but can be used to match peripheral (π) features, such as topic and referential features, which obviates the need for a higher head.[7] Since all features are shared between the two heads (but do not have to be matched on both), syntax has the option of matching them in only one position, if possible.

While I find Fortuny's theory insightful, especially when it comes to the implementation of the fact that languages differ with respect to the amount of structure that functional features are distributed over, it involves a stipulation that all features would always be present on both the

6. Something along these lines has been proposed before (Stowell 1981; Rochette 1988; Drubig 2001).

7. He claims this is the case in Catalan.

C and the T head. In the following section, I present very different type of data from Wolof, which challenges this assumption, sheds new light on the C-T relationship, and calls for a different approach.

3.2.3 The C-T link in Wolof

Wolof does not offer traditional evidence for the C-T link. Its φ-feature agreement is never overt in the inflectional domain (below the sentence particle/complementizer), as extensively argued in Chapter 2, but can overtly be observed only on the sentence particle in a subset of A′-movement constructions: *wh*-questions with no overt question word, and relative clauses (Torrence 2005, 2012a,b). The example in (4) illustrates φ-agreement in a question (a), a relativized definite proximal DP (b), and a relativized definite distal DP.[8]

(4) *φ-agreement in C in Wolof*

a. **K**-u gis Aali?
CM-C_N.INDEF see Ali
"Who saw Ali?"

b. xale **y**-i gis Aali
child CM.PL-C_N.DEF.PROX see Ali
"the (proximal) children that saw Ali"

c. xale **b**-u gis Aali
child CM.SG-C_N.DEF.DIST see Ali
"the (distal) child that saw Ali"

This is similar to φ-agreement in C in some Bantu languages, such as Kinande and Lubukusu, and not a particularly helpful contribution to the collection of data on the C-T link. However, I argue that Wolof provides a novel type of evidence that C and T are connected. This can be deduced even from surface descriptions, which report that, in order to have any sort of tense specification in the clause, the presence of a sentence particle (by hypothesis a member of the complementizer

8. In Chapter 8, I argue that there is always φ-feature agreement in Wolof, but that it only surfaces in some constructions due to post-syntactic processes.

class; see Chapter 2, §2.3) is obligatory (Njie 1982; Zribi-Hertz and Diagne 2003). This could be explained as a selectional restriction, as in English. I however argue that Wolof provides much more conclusive evidence of a C-T link; in fact, that it shows not only that C and T are connected, but that their features in fact start out as one complex head.

Recall from Chapter 2, §2.3 that Wolof has two main indicative clause-types: those in which a verb raises to the sentence particle, the subject is to its the left and is obligatorily doubled by a clause-internal pronominal clitic, and those in which a nominal is A′-moved to the specifier of the sentence particle, the verb does not raise to it, and the clause-internal subject can be a lexical DP. The characteristics of V-raising and N-raising clauses are repeated in 3.1.

V-raising	**N-raising**
verb in C	no verb in C
lexical subject in Spec,CP	A′-moved DP in Spec,CP
subject below C must be pronominal	subject below C can be lexical

Table 3.1: Syntactic characteristics of V-raising and N-raising clauses

Let us more closely examine a neutral V-raising clause in (5) and an Exhaustive Identification N-raising clause in (6). At first glance, V-raising clauses do not look like they have a separate C and T layer, in fact, based on this clause alone, one could classify Wolof as a null-subject language with φ-feature agreement in T. One look at a sentence with A′-movement, however, presents an entirely different picture – the lexical subject and the element we were tempted to identify as agreement in V-raising clauses are in complementary distribution, in what appears to be the traditional subject position below C, indicating that we should rather consider this element a subject pronoun, and not an agreement marker.

(5) *Neutral affirmative clause*

a. (**Xale yi**) lekk-na-**ñu** céeb.
child DEF.PL eat-C_V-3PL rice
"The children/They ate rice."

(6) *Non-subject Exhaustive Identification*

a. Musaa l-a {**xale yi/ñu**} gis.
Moussa *l*-C_N child DEF.PL/3PL see
"It is Moussa that the child saw."

I argue in the remainder of this thesis that this surface description of Wolof V-raising and N-raising clauses is actually quite accurate – V-raising clauses contain one high functional head, which combines the features ascribed to C and T, while N-raising clauses are more traditional-looking sentences with two separate projections corresponding to what we call C and T. The curious behavior of lexical subjects and subject clitics in the two clause-types is tied to the way nominative case is assigned by this high functional head, which I refer to as CT.

In the following section, I spell out the details of the formalism that ultimately derives the difference between clauses such as the ones in (5) and (6). Chapters 4, 5, and 6 are devoted to demonstrating how this formalism is applied to three Wolof clause-types: V-raising clauses, N-raising clauses, and NPred clauses.

3.3 Head-internal geometry and head-splitting

In this section, I lay out the mechanism which I propose derives the V-raising clause type, in which are all features are checked on one head, and the N-raising and the NPred type, in which they are distributed over two heads. I propose a derivational model, in which features are strictly hierarchically ordered, and the splitting occurs in cases where a feature cannot be checked, because it is not the highest in the complex head, and the head does not c-command its goal which has already moved due to a hierarchically higher trigger, or because there is no available position for its goal to move into. When this occurs, the part of the head containing this feature's node may move to a higher position, creating new c-command relations and a new specifier position, thus yielding what we traditionally observe as C and T separation.

First, I adopt the standard assumption that there are two types of features: (i) features that

trigger syntactic operations such as agreement and movement because they must be checked by forming a relationship with an element that carries (ii) a matching feature. I refer to the former as **Probe-features**, and the latter as **Goal-features** ([F^+]). I propose that there are two types of Probe-features on heads, listed in (7):

(7) *Probe feature-types*

a. **Type 1** Probe-features [F*] on X are checked (i) by agreement and movement of Y/YP with a matching Goal-feature [F^+] such that X c-commands Y/YP, or (ii) by base-generation of a Y/YP with [F^+] in Spec,XP or adjoined to X.[9] Type 1 features are deleted after they are checked, meaning that they are completely removed from the syntactic representation.

b. **Type 2** Probe-features [F°] on X are checked by Y with a matching Goal-feature [F^+] such that Y c-commands X, under the locality condition defined in (8). Type 2 features are not deleted after they are checked, and can participate in subsequent syntactic derivations within their own clause under the right conditions.

(8) *Locality Condition for Type 2 feature-checking*

A Type 2 Probe-feature F° on a head X is checked by a Goal-feature F^+ on a head Y, such that Y c-commands X and there is no head Z such that Z c-commands X and Y c-commands Z.

The Locality Condition as defined here is akin to proper head-government (Chomsky 1986). The definition in (9) is from Rizzi 1990, 25, which departs from Chomsky's definition of government in that it includes non-lexical heads Agr and T (INFL).

9. Specific conditions under which elements can be base-generated to check Type 1 features are discussed in Chapter 4.

(9) *Head-government*

X head-governs Y iff

(i) a. X is a head

b. X m-commands Y

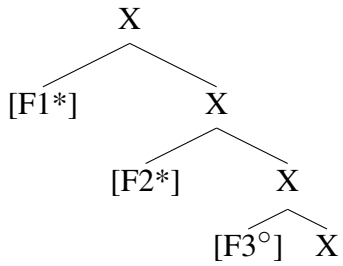
(ii) X $\in$ [$\pm$ V, $\pm$ N], Agr, T

(iii) a. no barrier intervenes

b. Relativized Minimality is respected

Probe-features on a head are hierarchically organized in a type of a feature-geometry, in which each feature is realized as a separate node. The two feature-types are illustrated in (10). [F1*] and [F2*] are Type1 features, and [F3°] is a Type2 feature.

(10)



All features are checked in a strict order, determined by the head-internal geometry. Note that the structural conditions on feature checking are placed on the head containing all the features, and not on the node where a particular feature is located. The head probes for elements with matching features, based on the accessibility condition in (11). The only feature accessible to the head and capable of triggering operations at any time is the highest feature in the hierarchy.

(11) *Feature Accessibility Condition*

An unchecked feature F*/F° on a head X is accessible to syntactic operations only if F*/F° is the highest unchecked feature in the hierarchy.

In (10), the head X has access to [F1*], probes for an element with a matching Goal-feature in

its head's c-command domain, and attracts it to either X or Spec,XP, depending on its bar-level. [F1*] is checked and deleted. [F2*] becomes accessible, X probes for an element with a matching feature and triggers its movement to X or Spec,XP. Then the head searches for an element with a matching feature that c-commands it and satisfies the locality requirement in (8) to check the Type 2 [F3°] feature.

Another condition I place on features are circumstances of their *visibility*, which concerns Type 2 checked features and Goal features, which are not deleted after being checked. I propose that a feature must be visible in order to be accessible to the head (for further syntactic operations), and it is visible to the head only if it is the highest feature in the hierarchy.

(12) *Feature Visibility Condition*

A feature F on a head X is visible if F is the highest feature in the hierarchy.

The condition in (12) will be discussed in more detail in Chapter 4; it plays no role in the formal analysis presented in this chapter.

In addition to Probe-features, a head may, of course, also contain Goal-features. I propose that they are accessible at any point in the derivation by another head for feature-checking purposes, though they may still be contained in a particular node. In Wolof, I shall propose that such features are contained in the lowest nodes of the complex CT head.

The feature system I propose is in several ways similar to the system in Georgi and Müller (2007, 2010) and Müller (2010). They propose the existence of two types of features: subcategorization features, which are involved in structure-building and trigger external Merge, and probe features, which trigger Agree under c-command. Their subcategorization features either have θ-roles mapped onto them, or play a role in structure-building operations that involve functional categories. My Type 1 and Type 2 features would both be a type of a probe feature in a system such as the one in Georgi and Müller 2007, 2010 and Müller 2010. I do not include subcategorization features in my model, as they are not directly relevant for the present topic, but their checking

could not be assimilated to either that of Type 1 or Type 2 features, since subcategorization features need to be able to create both complements and specifiers.

A further difference from the system I propose and that of both Georgi and Müller and the nowadays more common systems with the uninterpretable/interpretable distinction (e.g. Chomsky 1995; Pesetsky and Torrego 2001, 2007) is in the direction of the operation Agree. The original definition of Agree states that a probe searches for a goal in its c-command domain, meaning that agree can only proceed DOWNWARD (Chomsky 2000, 2001; see also, among others, den Dikken 1995; Polinsky and Potsdam 2001; Preminger 2013). This view of agreement has been extensively challenged, proposing that a goal can also (or only) be higher than the probe, resulting in UPWARD agree (Merchant 2006, 2011; Bjorkman 2011; Wurmbrand 2012a,b, 2014; Zeijlstra 2012; Bjorkman and Zeijlstra 2014, 2015). In my system, movement-triggering Agree is initiated by Type 1 features and proceeds downward, i.e. the probe c-commands the goal. Type 2 features do not trigger movement, but initiate Agree only with a goal that c-commands them, in an instance of upward agreement (Merchant 2011). This points to a crucial difference between the two feature types in their role in syntax.

First, by assuming the existence of upward Agree under a strict locality condition proposed in (8), we invite the question of what occurs if such a condition is not satisfied. Does the derivation crash, or is the valuation of Type 2 features optional? I principally propose that the latter is the case, following Preminger (2011) who extensively argues that agreement in φ-features may fail, without causing a derivational crash. In Wolof we do not observe this in φ-agreement, but I shall argue that we observe it in agreement with Tense. Type 1 feature checking is, on the other hand, obligatory. This is due to the fact that Type 1 features trigger movement, and are as such similar to Georgi and Müller's (2007, 2010) and Müller's (2010) subcategorization features, in that they are involved in the building of the syntactic structure. Type 2 features, on the other hand, are not, though their valuation might be required by independent principles.

Another question we might ask is how we can tell that a particular feature is ever valued without

triggering movement, if it is valued by a higher goal. The idea that a probe agrees with a higher goal is crucially tied to proposals that, at least for some agreement relationships to be established, the Spec-Head configuration is necessary (e.g. Koopman 1996, 2005; Chung 1998). This is usually handled by assuming that one and the same feature triggers agreement and movement. In Wolof, however, we have no evidence of, for example, φ-agreement between the subject and the verb (T), but the subject does move out of its base position.[10] The only instance of agreement in φ-features occurs in a subset of A′-movement constructions, between the head hosting the sentence particle, and the A′-extracted phrase (not necessarily the subject). I shall therefore propose that φ is a Type 2 feature, never triggering movement, but only agreeing if there is an available goal that locally c-commands it.

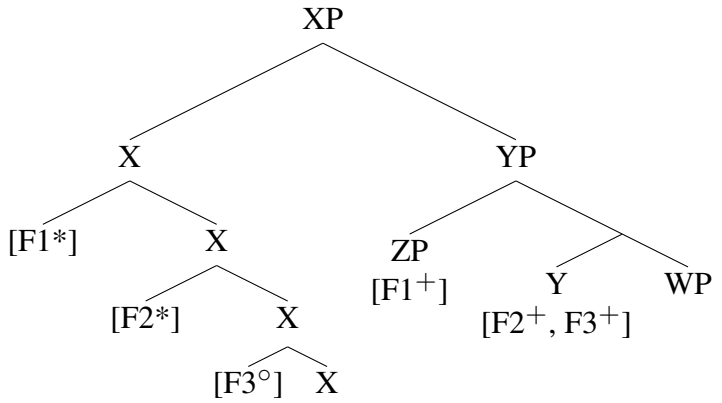
An important part of the feature-system that I propose is that Probe features on a head are hierarchically ordered. The hierarchical ordering of features is not a novel idea and has been explored in various works. Georgi and Müller (2007, 2010) and Müller (2010) assume that their subcategorization features and probe features form strictly ordered stacks on a head and must be 'discharged' hierarchically, by invoking the same type of accessibility restriction that I propose – only features that are on top of a feature stack are accessible. Another proposal of hierarchical feature ordering is made by Manetta (2006, 2011), who posits that features on a head have internal organization. First, they are grouped into bundles, and then those bundles form ordered stacks. Each bundle is valued in a single Probe-Goal interaction. The difference between these models and the one I propose is that I assume that features are hierarchically organized as terminal nodes of a complex head.[11] This has the advantage of affording a natural way for a part of the head to be split off and moved to a higher position, which is how I propose the C-T system is formed. The remainder of this section develops the details of this proposal.

10. This is the case in N-raising clauses, discussed in Chapter 5. In Chapter 4 I argue that the lexical subject is base-generated in the left periphery.

11. Geometrical organization of features has been proposed, though in a more complex form, in Harley and Ritter 2002.

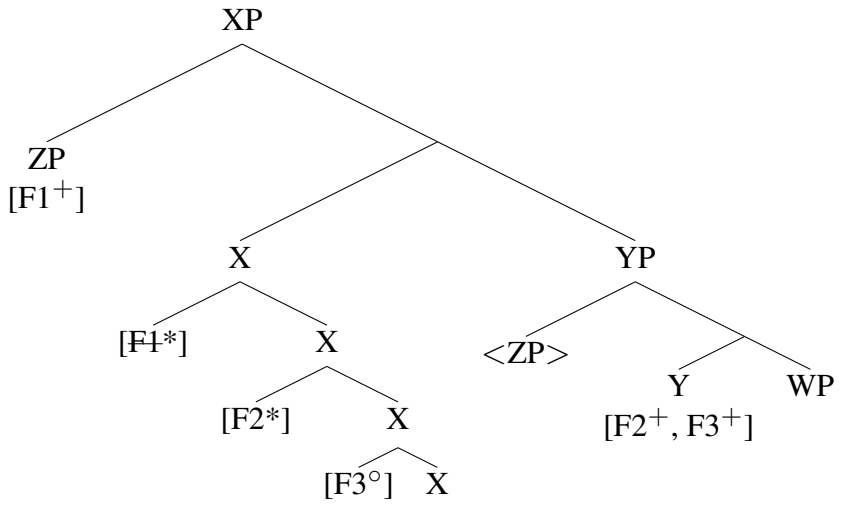
Consider a hypothetical structure in (13). Here, the head X has two Type 1 features that need to be checked by an element with a matching feature, which has to move into the head or specifier of XP, [F1*], and [F2*], and one Type 2 feature, [F3°] which is to be valued by an element with a matching feature that locally c-commands it.

(13)



The highest feature in the geometrical head X, [F1*], is accessible to the head, which probes its c-command domain, agrees with and triggers movement of the element with the matching feature, ZP to Spec,XP, as in (14). [F1*] is checked and deleted.

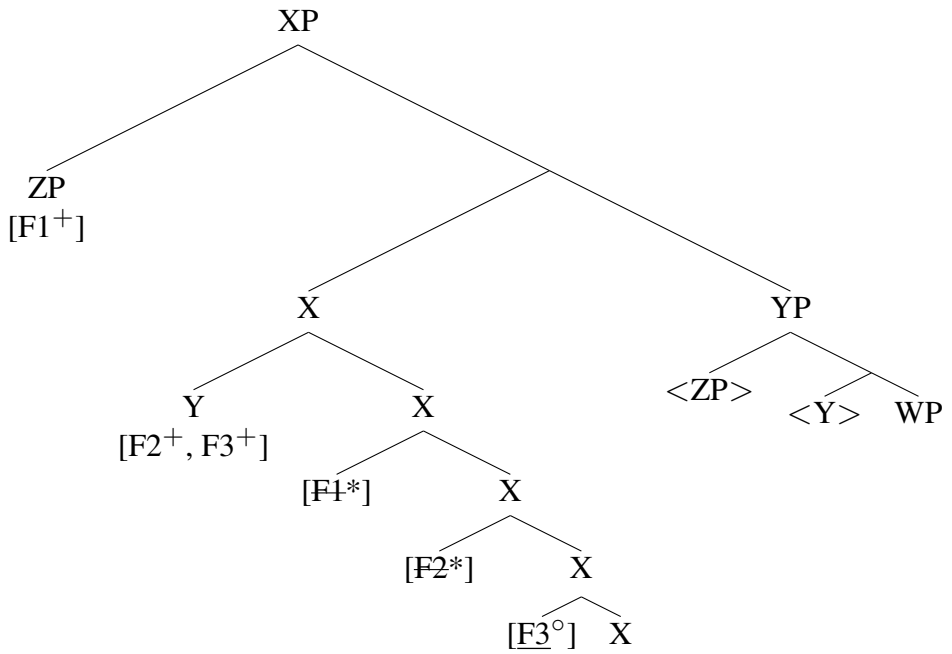
(14)



The next feature in the hierarchy, [F2*], becomes available to the head, which probes its c-command domain for an element with a matching feature and finds the head Y, initiates Agree

and triggers its movement. Y moves as a head[12] and adjoins to the highest X node, as in (15).

(15)



The next available feature becomes the Type 2 feature [F3°], which is checked by a c-commanding element with a matching feature. As Y also carries the Goal-feature for [F3°], [F3°] can be checked on X in (14). It is, however, not deleted, but may be used in further derivations. Notationally, I make the distinction between checked Type 1 and Type 2 features by crossing out a checked and deleted Type 1 feature, and underlining a checked (but not deleted) Type 2 feature.

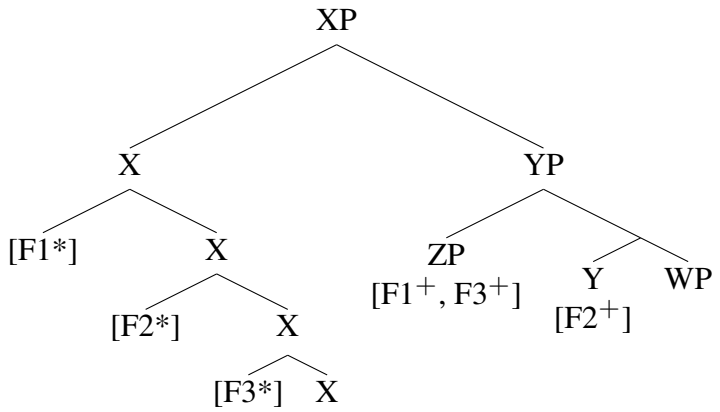
In a case in which all features of a head can be valued, as in the example above, the head stays compact. We shall see that this has observable consequences in Wolof, which gives evidence for the system I am proposing.

What happens, then, if at some point in the derivation a Type 1 feature cannot be checked? I explore two conditions under which this could arise, and the consequences. Consider another hypothetical structure, as in (16). Here, the head X has three Type 1 features that need to be

12. I here adopt the traditional distinction between head movement and phrasal movement, ignoring for the purposes of this dissertation the issues surrounding head movement in Minimalism. For the details of the various problems and solutions see e.g. Surányi 2005; Matushansky 2006; Vicente 2007. This means that the difference between head movement and phrasal movement must be coded elsewhere, as it does not in any way follow from the proposed system.

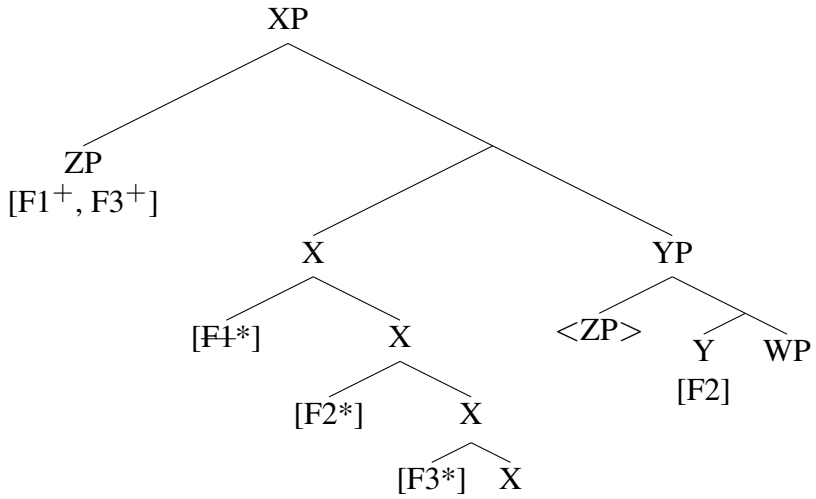
checked by an element with a matching feature, which has to move into the head or specifier of XP: [F1*], [F2*], and [F3*].

(16)



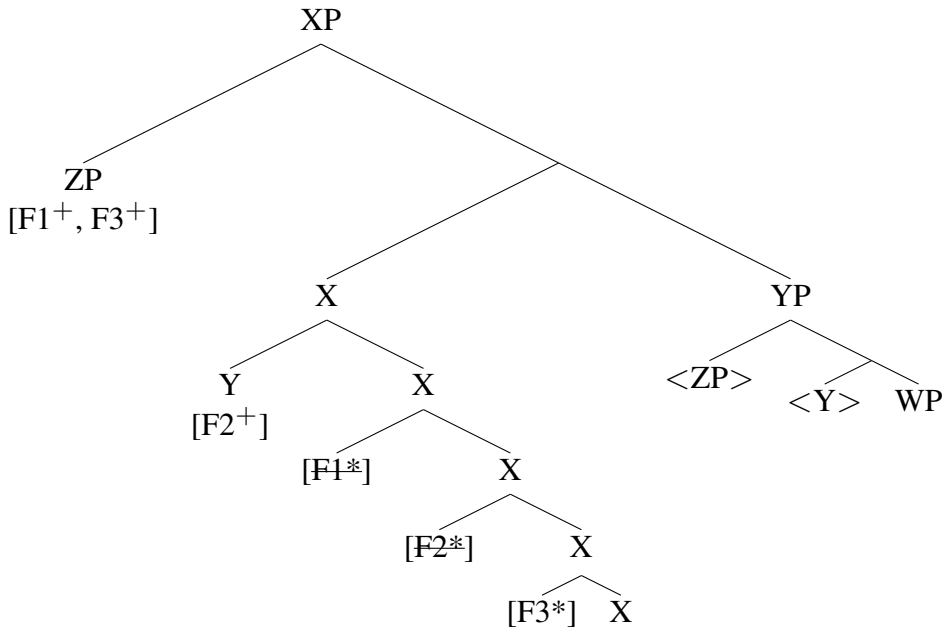
The derivation proceeds as follows. [F1*] triggers a search for the closest element with the matching [F1^{+}] in X's c-command domain. X finds ZP in Spec,YP, initiates Agree with it and triggers its movement to Spec,XP, as in (17).

(17)



Next, X initiates a search for an element with an [F2^{+}] Goal-feature, to check [F2*], finds the head Y, agrees with it and triggers its movement to X, as in (18), where Y adjoins to X.

(18)



There remains one more Type1 feature that needs to be valued, [F3*]. X probes for an element with a matching feature, however, none are present in its c-command domain, as ZP with [F3^{+}] is now located in Spec,XP, having been attracted there in the process of checking [F1*].[13] I propose that, in such a case, where a feature cannot be checked because it does not c-command its goal, the process of *head-splitting* may take place, as defined in (19).

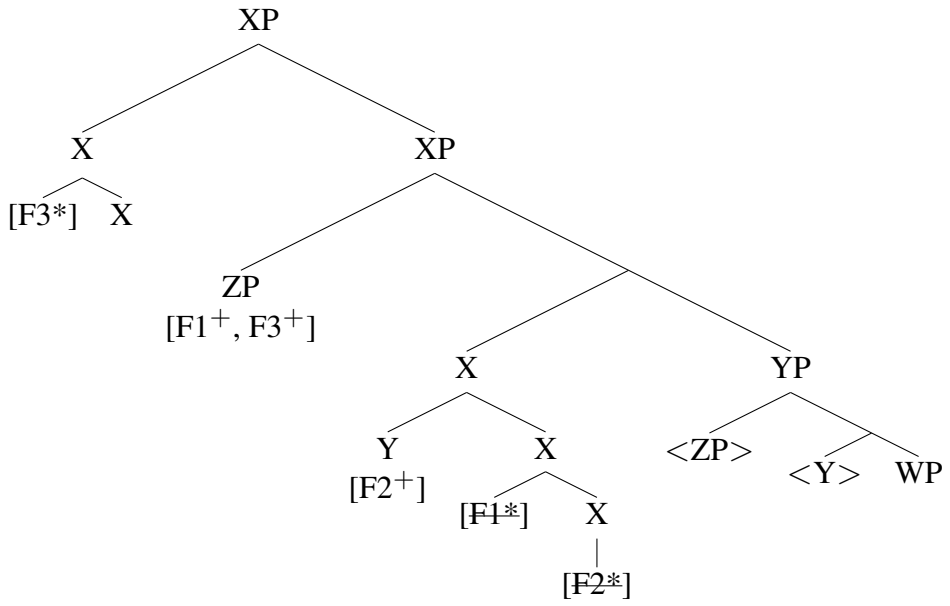
(19) *Head-splitting*

The smallest projection of the head X that dominates all unchecked features splits off and moves to a higher position, adjoining to XP.

The application of (19) is illustrated in (20).

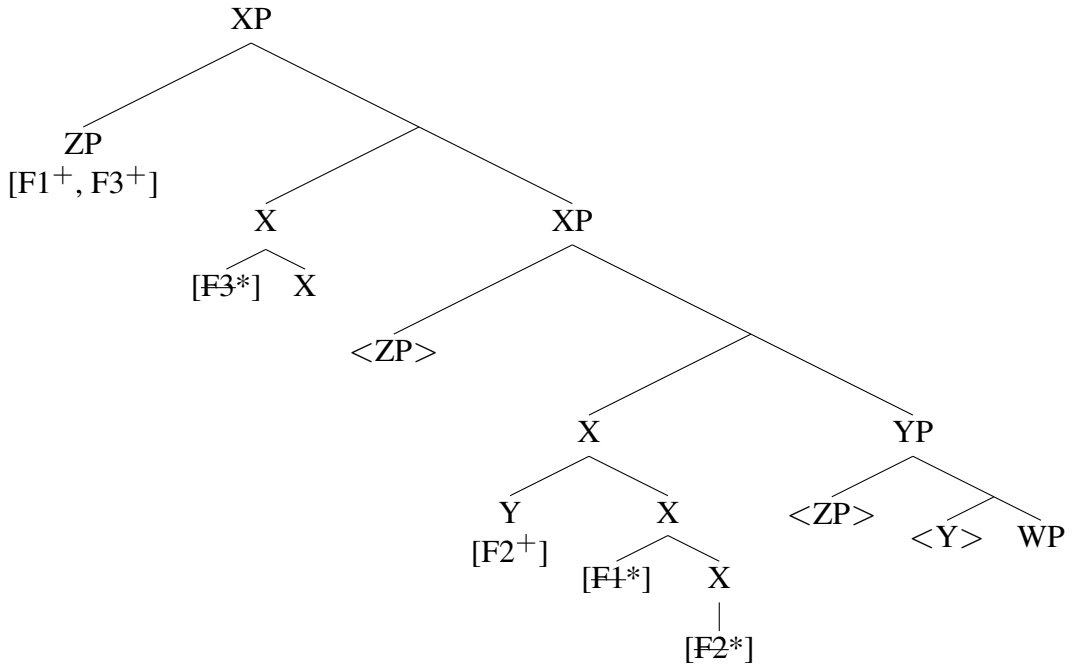
13. In the system that I propose, lower copies/traces of movement cannot check features.

(20)



[F3*] is now again in a position where it c-commands the element with a matching [F3$^+$] – ZP, so it can agree with it and trigger its movement to its specifier, as in (21).

(21)

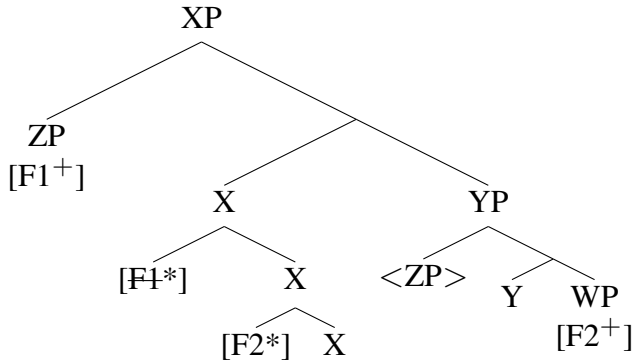


One condition for head-splitting is the unavailability of the element with the Goal-feature in the c-command domain of the head with the Type 1 Probe-feature. In that case, head-splitting creates

a new c-command domain.

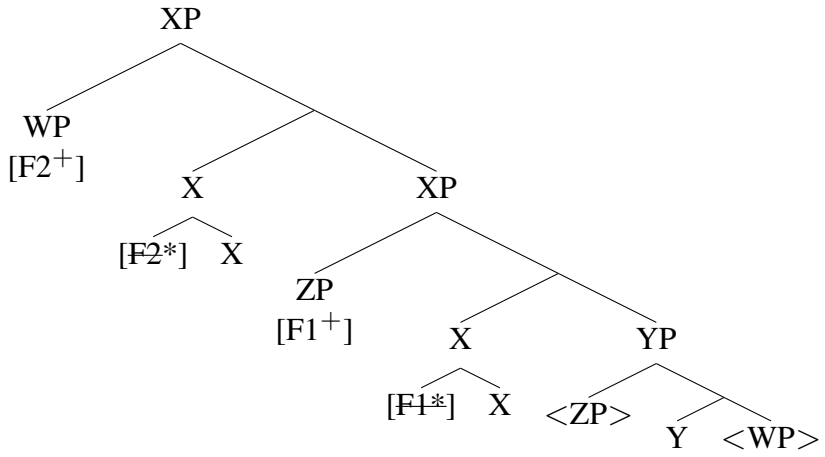
A second condition under which head-splitting may occur is if the element with the Goal-feature has nowhere to move to. Consider the structure in (22). The head X has two Type 1 features, and their matching features are both on a phrasal category. First, ZP moves to Spec,XP to check [F1*].

(22)



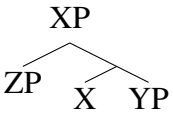
The next feature to be checked is [F2*], which also must find an element with a matching Goal-feature in X's c-command domain, and trigger its movement. This element is WP, which would need to move to Spec,XP. This position, however, is occupied, and consequently, under the hypothesis that at least some heads (or possibly languages) do not allow for multiple specifier positions, WP's movement is blocked, leaving [F2*] unchecked. This can again trigger head-splitting, allowing for [F2*] to move up and create a new specifier position for WP to move into, as in (23).

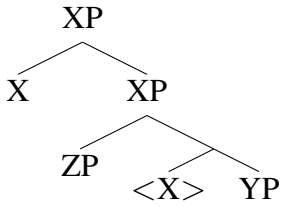
(23)



The system I propose is a version of head reprojection, a mechanism in which an entire head moves out of its original position, and then remerges with its projection by taking it as a complement, as in (24):

(24) *Head reprojection*

a. 

b. 

My proposal follows closely that of Georgi and Müller (2010), who use head reprojection as a mechanism to create a c-command domain for feature-checking purposes. They follow Haider (2000, 2005), who proposes a similar mechanism motivated by subcategorization features, in the derivation of VP-shells.[14] Georgi and Müller derive reprojection by invoking a special type of a probe feature that may accompany a subcategorization feature and trigger movement of a head in order to be checked under c-command; they call these *Münchhausen features*. Similarly to my proposal, they argue that, if a feature cannot be checked under c-command because it is not topmost in its stack, and it happens to be a Münchhausen probe, it moves out of its projection and remerges with it, projecting anew, allowing it to create a new c-command domain. Reprojection is also used by Surányi (2005), who proposes to reanalyze head movement as head reprojection ('root merger'), in order to avoid various problems that arise in minimalism with the concept of head movement.

Reprojection provides a natural way of deriving head-splitting, if we allow for only parts of heads to reproject. This is the novelty of my approach, made possible by the geometrical organization of a head's Probe-features. A question we may want to ask at this point is how this system would derive the data from, for example, West Germanic and Kinande, in which we do see φ-features appear on both the C and the T head. It can be imagined that in such languages the

14. Haider proposes that VP-shells are not introduced by functional categories (CAUS-V, VOICE-V, APPL-V), but arise when the verb raises out of its base position due to the need to discharge its subcategorization features.

features that are duplicated are not geometrically organized, but are organized in a manner closer to that proposed in Georgi and Müller 2010, causing entire heads to reproject. Since this is not the case in Wolof, I do not directly address this question in my dissertation.

3.4 Conclusion

This chapter investigates the much debated connection between heads traditionally called C and T, and presents data from Wolof which suggest that their features are sometimes bundled on one head, and other times split over two heads. This is not a situation specific to C and T, but has been long noted to be a point of cross-linguistic variation in the inflectional domain. Since in Wolof the same features do not appear to be present on both C and T, I propose a novel mechanism to derive the above observation. This chapter presents only the formal elements of the analysis, which is applied to Wolof clause-types in the following two chapters.

I propose the existence of two types of features: Probe-features, which must be checked in a particular type of a relationship with an element with matching Goal-features. Type 1 Probe-features search for an element with a matching feature in their c-command domain, and trigger (head or phrasal) movement, and Type 2 features are checked by a c-commanding head with an element with a matching Goal-feature, such that no other head intervenes between the two heads. Probe-features are organized hierarchically on a head, and must be checked in a strict order. If a particular feature cannot be checked, because it is not the top-most feature, and the element carrying the matching Goal-feature is no longer in its c-command domain (because it moved as part of the checking process of a higher feature), or because it has no position to move into, the smallest projection of the head that dominates all unchecked features may split off and move to a higher position, creating new c-command relations and positions for elements with Goal-features to move into. In the following three chapters, I show how this system derives the two clause-types in Wolof: the V-raising type, in which C and T stay compact, as a single head, and the N-raising type, in which the head is split, yielding the traditional C and T division.

The system proposed in this chapter builds on similar analyses that investigate conditions under which features are realized over varying spans of syntactic structure (e.g. Fortuny 2008), and proposals that use head reprojection as a structure-building mechanism (e.g. Georgi and Müller 2010). The novelty in my system is that, if features are organized hierarchically, only parts of heads may reproject, creating multiple projections which do not have matching features.

CHAPTER 4

V-RAISING AND UNSPLIT CT

4.1 Introduction

The main topic of this chapter is the application of the system presented in Chapter 3 to account for the syntax of V-raising sentences. Together with Chapters 5 and 6, this part develops the central argument of the thesis: that the properties of the C-T system in Wolof show that the C-T link is of a particular nature, namely, that the two heads traditionally called C and T in fact start out as a single head, which, under particular circumstances, remains compact in Wolof.

We take a close look at clauses in which a verb raises to CT, which I call V-raising clauses.[1] The data presented in Chapter 2 illustrate three crucial properties that differente them from N-raising clauses, summarized in Table 4.1. First, in V-raising clauses the verb is located in the highest head, which also hosts the sentence particle. Second, the optional lexical subject is located to the left of the verb-C-clitic complex. And third, there is an obligatory clause-internal pronominal subject, immediately adjacent to the sentence particle, in the form of a CT-oriented clitic.

V-raising	**N-raising**
verb in CT	no verb in CT
lexical subject in Spec,CTP	A′-moved DP in Spec,CTP
subject below CT must be pronominal	subject below CT can be lexical

Table 4.1: Syntactic characteristics of V-raising and N-raising clauses

In Chapter 2, I present arguments for placing the lexical subject in Spec,CTP, and not in a left-dislocated/topic position, mostly due to the fact that a bare quantifier is allowed as a pre-CT lexical subject. Under the assumption that bare quantifiers cannot be left-dislocated (Rizzi 1986, 1997), there must be another position for the subject nominal in the left periphery. I repeat the relevant data for Neutral clauses in (1) and (2).

1. "V-raising" is somewhat of a misnomer since one clause-type involves *do*-support – the verb *def* 'do' is inserted directly into CT. I use the term "V-raising" for convenience.

(1) *Neutral sentences*

a. (**Xale yi**) Lekk-na-**ñu** céeb.
child DEF.PL eat-C_V-3PL rice
"(The children)/They ate rice."

b. *Lekk-na **xale yi** céeb.
eat-C_V child DEF.PL rice

c. *Lekk-na-**ñu xale yi** céeb.
eat-C_V-3PL child DEF.PL rice

d. ***Xale yi** lekk-na céeb.
child DEF.PL eat-C_V rice

(2) *Bare quantifier can be the subject in a Neutral sentence*
Kenn lekk-na-∅ céeb.
someone eat-C_V-3SG rice
"Someone ate rice."

The second type of V-raising structures are Predicate Focus clauses, in which *do*-support occurs instead of verb raising (see Chapter 2, §2.3.1). As in neutral sentences, the pre-CT lexical subject can be a bare quantifier. The data are repeated in (3) and (4).

(3) *Predicate Focus clause*

a. (**Xale yi**) da-**ñu** lekk céeb.
child DEF.PL do.C_V-3PL eat rice
"It's that the children ate rice."

b. *Da **xale yi** lekk céeb.
do.C_V child DEF.PL eat rice

c. *Da-**ñu** **xale yi** lekk céeb.
do.C_V-3PL child DEF.PL eat rice

d. *Xale yi da lekk céeb.
child DEF.PL do.C_V eat rice

(4) *Bare quantifier can be the subject of a Predicate Focus clause*
Kenn daf-a-∅ lekk céeb
someone do-C_V-3SG eat rice
"It's that someone ate rice."

In this chapter, I show how the analysis proposed in Chapter 3 derives the structure of V-raising clauses. Specifically, I argue that Neutral sentences and Predicate Focus sentences involve an unsplit CT head. The requirement for the clause-internal subject to be pronominal is related to the mechanism of Case assignment and the requirement for some nominal to bear nominative case in a finite clause.

The chapter is organized as follows. Section 4.2 lays out the feature structure of the CT head in V-raising structures, and briefly discusses the motivation behind each feature. In §4.3, I discuss Neutral and Predicate Focus clauses, in which a verbal head is located in CT. Section 4.4 concludes.

4.2 The feature structure of CT in Wolof

I propose the CT head in V-raising structures in Wolof to have the following relevant features:

(5) *Features of CT in Wolof V-raising clauses*

(i) EPP*

(ii) Pred*

(iv) φ°

(v) T^{+}

EPP* is a Type 1 Probe-feature, traditionally used to capture the observation that certain heads always have specifiers; specifically, that there is an overt subject, at some point in the derivation, in Spec,TP. It attracts the closest nominal to the specifier of its head. It was first proposed by Chomsky (1982) as a feature that operates in synax ("Every clause must have a subject"), however, its exact status and even existence have been a matter of much debate over the years (for overviews of questions raised by the EPP and different proposals to make it less stipulatory, see, for example, Bošković 2002 and Landau 2007). In the Minimalist Program, Chomsky (1995) defines the EPP

as a strong D-feature on T, triggering subject raising or expletive insertion in Spec,TP.[2]

There have been many attempts to reduce the EPP to other phenomena, which either cluster with the EPP, or are meant to explain its effect and make it superfluous (e.g. Case theory, as in Grohmann et al. 2000 and Bošković 2002, or PF requirements, as in Holmberg 2000, Bobaljik 2002, Landau 2007, and others). There have also been semantic approaches to the EPP, though due to the fact that the EPP can be satisfied by semantically empty elements—expletives—these analyses usually include a non-semantic element. Rothstein (1983), for example, argues that EPP effects are tied to the elusive notion of *predication*, a requirement that predicates be saturated, however, she must concede that this is a syntactic condition on a semantic category (predicates).

Despite all attempts to do away with the EPP, there still is no clear and comprehensive way to accomplish this. Acknowledging all the unresolved questions related to the EPP, in this dissertation, I use it in its most traditional sense – as a requirement for a head to have a nominal phrase for a specifier. In that light, I adopt Chomsky's (1995) proposal that EPP is a D* feature on CT, and continue using EPP for notational convenience. In my analysis, the EPP does not appear to be parasitic on another feature, such as the φ-feature or the Wh-feature, nor does it follow from the theory of Case assignment that I adopt, as shall become clear throughout the presentation of the analysis. Whatever its nature, under the division of labor between syntax and post-syntax that I assume, and the strictly derivational character of my analysis, EPP in Wolof does need to be treated as a feature that operates in syntax.

Pred* is also a Type 1 Probe-feature; I hold it responsible for verb raising to CT. In some analyses, especially of V2 languages, the feature that performs this function is a Tense feature (e.g. Den Besten 1989). In the feature system that I propose, this would require the head that is the locus of Tense (see below) to also have a Probe T* feature, and for a lexical head, the verb, to have a Goal T^{+} feature. It seems, though, that we would want to say is the exact opposite – that it is the CT head that has a Goal T^{+} feature, and the verb, if it is entering in any kind of an agreement

2. There are also proposals that other elements can check the EPP, for example a verb inflected for φ-features that raises to T, as in Alexiadou and Anagnostopoulou 1998.

relationship with CT, then needs to have a Probe-feature.[3] Furthermore, in a particular type of a copular sentence, in which there is no verbal copula, it can be shown that Tense is not what triggers the raising of a nominal predicate (for a detailed discussion, see Chapter 6). I therefore posit a Pred*-feature as the trigger of V-raising to CT. It is important to note that I do not use Pred* as a feature that is involved in the establishing of predication, whatever we take that to mean. It is here used as a morphosyntactic feature which triggers the raising of the highest element that has a matching [Pred^{+}] feature. I am stipulating that every verbal head has a [Pred^{+}] feature.[4]

φ° is a Type 2 Probe-feature, checked by an element with a matching feature that locally c-commands it, as proposed in Chapter 3, and repeated here in (6):

3. Comparing this to the system with interpretable/uninterpretable features, this would mean that, for example a φ-feature on CT is uninterpretable and is checked by an element with an interpretable φ-feature, while on the other hand the T-feature on CT is interpretable, but is still triggering raising of the verb, which by hypothesis has an uninterpretable T-feature. Pesetsky and Torrego (2007) try to address this issue by adding another dimension to features, in addition to interpretability – being valued or unvalued. This results in a four-way feature distinction: uninterpretable valued, interpretable valued, uninterpretable unvalued, and uninterpretable valued, with unvalued (instead of uninterpretable) features now being able to act as probes. My system, which has different types of Probe-features, that can look for a goal both downward and upward, seems to me to be simpler.

4. It is not clear if other types of predicates also have this feature. Nominal predicates are discussed at length in Chapter 6. Wolof does not appear to have an adjectival class – adjectives behave just as verbal heads (Church 1981; McLaughlin 2004). They can occur in both Neutral and Predicate Focus clauses, as in (i). I have found the meaning difference between the two clause-types to be more subtle with stative predicates than with eventive ones; speakers often offer both (i-a) and (i-b) as an out-of-the-blue utterance, though when pressed, they say that (b) is 'more of an explanation'.

(i) a. Fanta rafet-na-∅.
Fanta be.pretty-C_V-3SG
"Fanta is pretty."

b. Fanta daf-a-∅ rafet.
Fanta do-C_V-3SG be.pretty
"Fanta is pretty."

PP-predicates occur in Presentative clauses, as in (ii), which are briefly mentioned in Chapter 2, §2.3.2. They do not raise, but occur in a structure that is probably more complex, as the CT head *a* is followed by an element *ngi*, which is not well understood.

(ii) Téere-a-ngi ci taabal bi.
book-C_N-*ngi* LOC table DEF.SG
"A book is on the table."

(6) *Locality condition for Type 2 feature-checking*

A Type 2 Probe-feature F° on a head X is checked by a Goal-feature F^{+} on a head Y, such that Y c-commands X and there is no head Z such that Z c-commands X and Y c-commands Z.

This feature is never realized as agreement on the verb in Wolof; we only see it in a subset of A'-movement constructions, as agreement in noun class with the A'-extracted element, on the highest functional head. I argue in Chapter 8 that the reason for the absence of overt φ-agreement in most clauses in Wolof is a post-syntactic constraint prohibiting adjacent φ-features, but that the fact that it surfaces under particular, well-defined circumstances, suggests that it is always present in Wolof syntax. In case of a split CT, in N-raising clauses, we can see that the EPP and φ are distinct features: φ-agreement shows up on the higher part of the split CT head, while the subject still moves to the specifier of the lower part of the CT head.

The Tense node is commonly seen as the locus of semantic tense interpretation (e.g. Chomsky 1957; Emonds 1976, 1978; Pollock 1989). In my system, this means that the CT head possesses a Goal T^{+}-feature. This feature checks Type 2 Probe-features ([T°]), which I propose every verbal head has, as well as the subject DP, in the form of unchecked nominative case.[5] I furthermore follow Laka (1990) and propose that there is a specific condition on the position of Tense, in that it must c-command all other functional material in the clause, as stated in (7).[6]

(7) *Tense C-command Condition (TCC)*

T is visible to an element that c-commands all other functional heads in the clause.

5. By subject, I mean the element by hypothesis base-generated in Spec,*v*P.

6. Laka's precise formulation is the following:

(i) *Laka's Tense c-command condition*
Tense must c-command at S structure all propositional operators of the clause.

The formalization of the condition relies on the condition on feature visibility, repeated in (8):

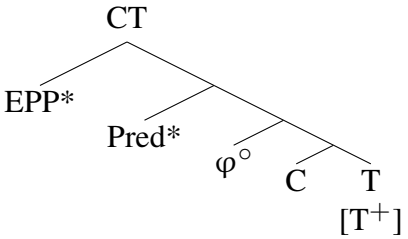
(8) *Feature Visibility Condition*

A feature F is visible to the head X if F is the highest feature in the hierarchy.

A similar condition has been suggested to be involved in V-to-C movement in V2 languages, (e.g. in analyses which describe V2 as 'Move Tense'; Den Besten 1978; Evers 1982; Koster 2005). As I mentioned in the justification of the Pred*-feature, Wolof sentences with nominal predicates suggest that Tense is not the trigger of V-raising in Wolof; see Chapter 6 for details. The TCC is addressed in more detail in Chapter 5, where it is used to explain a subject/non-subject asymmetry (similar to the *that*-trace effect) in A′-extraction.

The internal feature geometry of CT is represented in (18). EPP*, Pred*, and φ° are contained in hierarchically organized nodes in the CT head. The final nodes contain Goal-features, or any other feature that the complex head may have, e.g. clause-typing features. These features are not hierarchically organized but are bundled together on two nodes – C-related features in one node, and T-related ones in another. I propose that T^{+} is one of these features.[7] Goal-features are accessible at any point in the derivation to a head with a Probe-feature, but if a Goal-feature is to be visible to its own head, it must be the highest feature in the hierarchy.

(9) *Feature geometry of CT in Wolof*



In the following section, I give detailed derivations of Neutral and Predicate focus clauses in Wolof.

7. Other possible features in C and T are not relevant for the present purposes.

4.3 Verbal predicate raising

In this section, I show how the system detailed in Chapter 3 and in the previous section derives three properties of V-raising clauses: (i) a verb is located in the highest functional head (ii) a lexical subject is in the specifier of this head, and (iii) a subject clitic obligatorily occurs to the right of this head. Another fact to explain is that the lexical subject in these clauses can be a *pro*. We inspect Neutral clauses and Predicate Focus clauses.

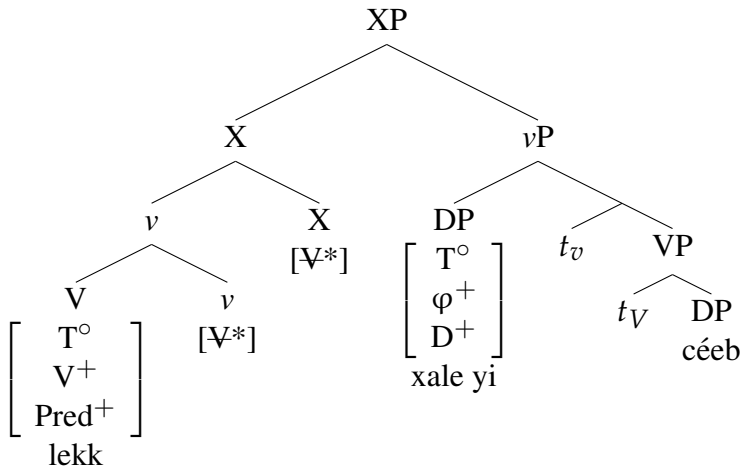
4.3.1 Neutral clauses

The structure of the sentence in (10), before the merger of the CT head, is shown in (10b). I assume that the verb raises through all the heads of the inflectional layer, triggered by a Type 1 V*-feature, to the highest functional head, which CT takes as a complement. For a justification of this assumption and detailed derivations of verb movement through the inflectional layer, see Chapter 7. For ease of exposition, I label this head XP in this section.

(10) *Neutral V-raising clause*

a. (**Xale yi**) Lekk-na-**ñu** céeb.
child DEF.PL eat-C_V-3PL rice
"(The children)/They ate the rice."

b.



I proposed in the Introduction to this chapter that every verbal head and the subject DP have a Type 2 [T°] feature, to be checked by CT.[8] The presence of T° on a verbal head is fairly straightforward to motivate, if we assume that verbs in some way associate with Tense. As for T°'s presence on the subject DP, I follow Pesetsky and Torrego (2001) and propose that nominative case is in fact a T-feature on D. Heads associated with Tense (or finiteness) are traditionally assumed to be nominative case assigners; this formalization unifies the assignment of nominative case with other types of feature-checking, by positing a Probe-feature on the D that must be checked by a Goal-feature on another element. For more on the association of Tense and nominative case, see Chapter 5.[9]

The locality condition placed on Type 2 feature-checking ensures that T° probes can only be checked in specific positions – when they are either the head or the specifier of the projection taken as a complement by the head with the matching T^{+}-feature. We shall see how this is relevant in nominative case assignment later in this section and in Chapter 5.

The next step in the derivation of (10) is the merger of CT, with the feature structure proposed in (9). When CT is merged, the T° feature on V can be checked, as it is now c-commanded by CT. In order for the locality condition in (6) to be satisfied, we must assume that *v* and X do not count as interveners. Since the complex head X is created by head movement of first V to *v*, and then *v* to X, I assume that it is X that in facts counts as the probe. Given the fact that T° is the highest unchecked feature, (with V* in *v* and X having been checked), it is the next available feature to X.

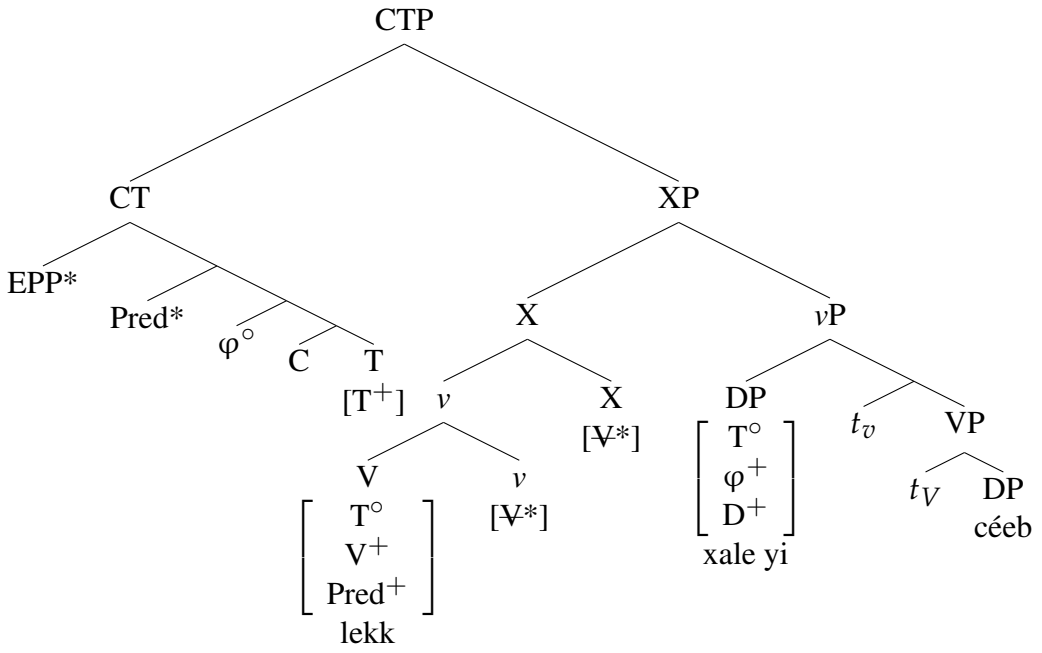
It is important to note that, at this point, T° on the subject DP is not checked, as V does count as an intervener between CT and the subject DP.[10]

8. I assume that the features are hierarchically organized on D and V as well. Since the only Probe-feature relevant for our purposes is T°, I do not represent their hierarchical organization but show them as a feature stack.

9. I am not concerned with the assignment of accusative case in this dissertation.

10. This also means that the checked T°-feature on V cannot act as a goal. I assume this to be the case with all checked features, however, I shall propose that checked Type 2 features, which do not delete until the end of the cycle, can under specific conditions satisfy some requirements placed on syntactic representations, such as the TCC.

(11)



As laid out in detail in Chapter 3, the Probe-features on CT are checked by an element with a matching Goal-feature, according to the order imposed by their hierarchical organization and in accordance with the *Feature Accessibility Condition*, repeated in (12):

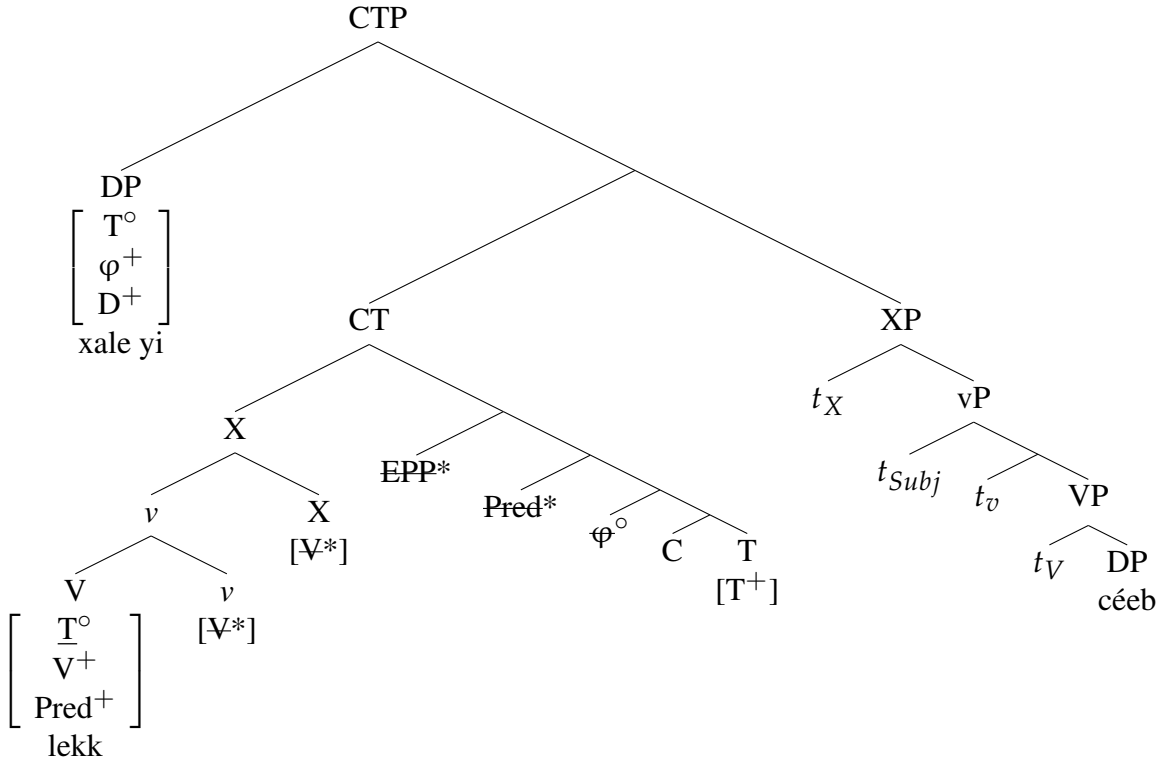
(12) *Feature Accessibility Condition*

An unchecked feature F*/F° on a head X is accessible to syntactic operations only if F*/F° is the highest unchecked feature in the hierarchy.

First, CT has access to the Type 1 EPP* feature and needs to check it. I proposed that Type 1 features can be satisfied in two ways – either by movement of an element with a matching feature from their head's c-command domain to the specifier of the head or the head itself, or by base-generation of an element in one of the two positions. I argue that in V-raising clauses the lexical subject DP is not base-generated in Spec,*v*P, but in Spec,CTP. However, in order to understand why this is the case, I show a derivation in which the EPP* is satisfied by the movement of a lexical subject from Spec,*v*P. We shall then minimally amend the derivation to base-generate the lexical subject in Spec,CTP.

After EPP* attracts the subject DP, and gets checked by a D^{+} Goal-feature, CT next probes for an element to check the Type 1 Pred* feature, and attracts the verb to adjoin to CT. Finally, the φ-feature on CT can also get checked by the subject DP, which c-commands CT and satisfies the locality condition in (6). The tree in (13) shows the structure after these three steps have taken place.

(13)



I have proposed that the TCC (in (7)) requires that Tense c-commands all other functional material in the clause. The effects of this condition will only become evident in N-raising clauses, where I propose it to be the cause of a subject/non-subject asymmetry we observe in A′-extraction. I propose that in Neutral V-raising clauses the TCC is satisfied by virtue of X having moved and adjoined above CT, containing a checked T°-feature as the highest visible feature, as per the condition on feature visibility, repeated in (14).

(14) *Feature Visibility Condition*

A feature F on a head X is visible if F is the highest feature in the hierarchy.

Under the structure proposed in (13), the checked T°-feature in X is the highest visible feature in CT, therefore c-commanding all other functional material in the clause. It is important to note that the checked φ-feature in CT is also a Type 2 feature, and therefore not deleted. The T^{+}-feature in the lowest node in CT therefore does not satisfy the TCC – it is not the highest feature in the hierarchy. I argue in Chapter 5 that this forces the T-node to raise and adjoin to CT, when there is no other element that can satisfy the TCC.

The internal feature geometry of the CT head and the proposal of how Type 1 and Type 2 features are valued explains why the CT head in V-raising clauses is not split, deriving the fact that a lexical subject does not occur below CT in these sentences. (13) is, however, not the final structure of a neutral V-raising clause; we have seen that these clauses have an obligatory subject clitic right-adjacent to the CT head:

(15) *Neutral V-raising clause has an obligatory subject clitic*

Xale yi Lekk-na-*(**ñu**) céeb bi.
child DEF.PL eat-C_V-3PL rice DEF.SG
"The children ate the rice."

I propose that the occurrence of the subject clitic is related to the following requirement:

(16) *Nominative Case Condition*

Nominative case must be assigned to some nominal element in every finite clause.

The locality condition on the checking of Type 2 features requires them to be checked by a local c-commanding head. The subject DP and CT are at no point in the derivation in such a configuration. Before movement to Spec,CTP, the subject is not local enough to CT to have its [T°] checked; after movement, the case-assigner no longer c-commands it. I therefore propose that the derivation in

which a lexical subject is generated in Spec,*v*P always crashes.

The alternative is to generate a weak pronoun in Spec,*v*P. Recall from Chapter 2 that weak pronouns are clitics, which move via a special type of movement, which I termed Clitic Movement, to adjoin to the sister of the complement of the highest functional head in the CTP domain (see Chapter 2, §2.5 for details). This happens to be the position that satisfies the locality requirement for Type 2 feature-checking, enabling a pronominal subject to have its T°-feature checked. I propose this to be the reason why V-raising clauses can only have a pronominal clause-internal subject.[11]

11. There is a similar phenomenon occurring in French Complex Inversion constructions. In the sentences in (i), there is a full DP subject preceding the verb, and a subject clitic following the verb. As in Wolof, the preverbal subject can be a quantifier, meaning it is not in a dislocated position. Such structures are only available in questions in French.

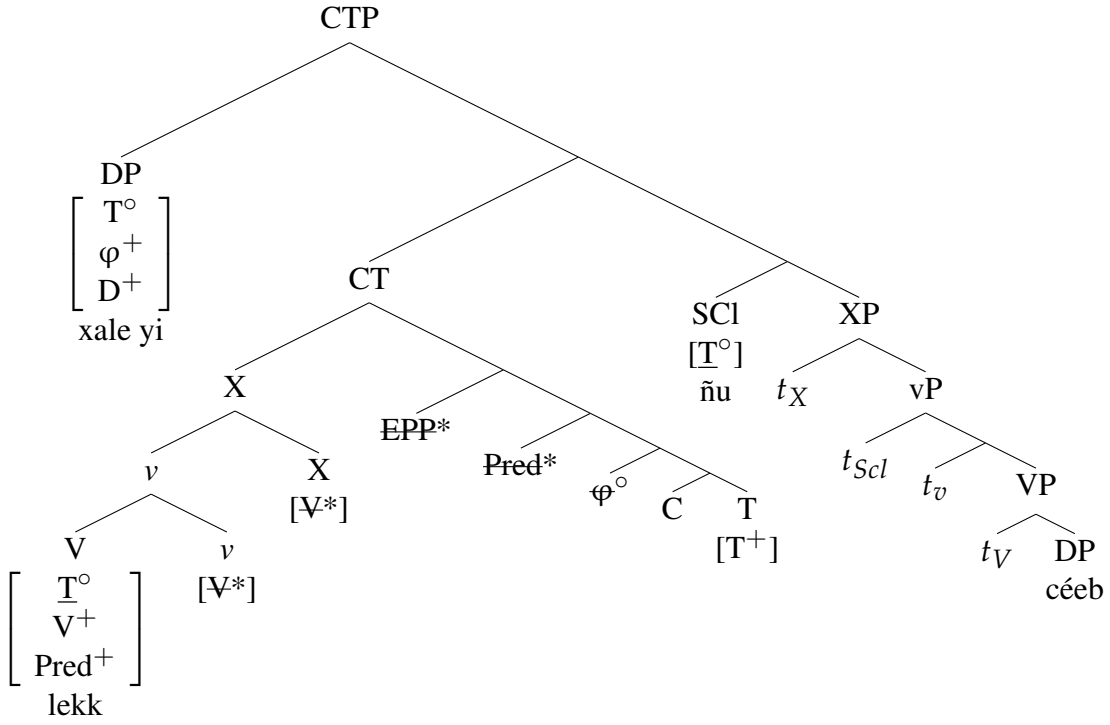
(i) *Complex Inversion in French* (Rizzi & Roberts 1996, p.91)

a. Quel livre Jean a-t-il lu?
which book John has-*t*-he read
"Which book has John read?"

b. Personne n'est-il venu?
no-one isn't-he come?
"Didn't anyone come?"

Rizzi and Roberts (1989/1996) also tie these constructions to case, though with slightly different assumptions. They propose that sentences as in (i) are clauses with two subjects (the clitic generated in Spec,TP and the DP in Spec,VP). They assume that T in French can only assign nominative case to the left, so if the verb stays in T, the subject in Spec,VP cannot receive case, and such sentences never surface. The raising of the verb to C, however, makes two operations possible: (i) the lexical subject can move to its left (since it follows the *wh*-word, they propose that it adjoins to C′) and be assigned nominative case there and (ii) the subject clitic can receive case through incorporation into C (Baker 1988).

(17) *Pronominal clitic can get nominative case*



What is important to note here is that I take the *Nominative Case Condition* to apply very late in the derivation, though still in the syntax. Consequently, Clitic Movement must also occur late.[12] I also consider the TCC to apply at the same stage, which I elaborate on in Chapter 5. I give a detailed description of the different stages that I assume take place during a syntactic derivation in Chapter 7. For now, I propose that the TCC, the *Condition on Clitic Placement* and the *Nominative Case Condition*, apply at the clausal level, when the CT head has satisfied all its requirements (i.e. checked all its features).

What, then, is the status of the lexical subject in Spec,CTP? I propose it to be base-generated there, in order to satisfy the EPP*. This nominal can only be the subject, i.e. it can only bind the pronominal subject-clitic. I propose the following condition on the DP in Spec,CTP.

12. That this is the case will become clearer when we look at N-raising clauses, which give evidence for the fact that a weak pronominal subject also moves when triggered by the Type 1 EPP* feature. Clitic Movement therefore has to apply late, in order not to bleed feature-triggered movements in narrow syntax.

(18) *Condition on DP in Spec,CTP*

The DP in Spec,CTP of V-raising clauses binds the highest pronominal element in the clause.

Since the subject pronoun is always obligatory in V-raising clauses, it is the only element that the DP in Spec,CTP can bind. This also explains why no other nominal element from the clause can move to Spec,CTP to satisfy the EPP. The evidence that both further supports the claim that Spec,CTP exists as a position for subject DP, and the claim that this DP must be the lexical subject, comes from the type of element that can occupy this position. An important difference between Spec,CTP in V-raising clauses and the clause-internal subject position in N-raising clauses is that, in addition to being occupied by overt lexical DPs, it can also be empty. If the EPP* must obligatorily be checked, what performs this function in (19)?

(19) *Spec,CTP in V-raising can be empty*
Lekk-na-**ñu** céeb bi.
eat-C_V-3PL rice DEF.SG
"They ate the rice."

I take (19) to mean that a subject in Spec,CTP can be a *pro*. I propose that *pro* has the same distribution as a strong pronoun, otherwise only found in A′-positions (left-dislocated or the specifier of CT in A′-movement) and as the complement of the preposition *ci*, never in an A-position (see Chapter 2, §2.4.1). It is difficult to determine whether a strong pronoun co-indexed with a subject clitic to the left of CT in V-raising clauses is in a left-dislocated position or in Spec,CTP (since Spec,CTP can be null). However, if *pro* is taken to pattern with strong pronouns, we can explain its ability to occupy Spec,CTP if we assume that this is not an A-position and as such is not assigned nominative case. However, ff some version of (20) is active, it follows that the nominal must also receive case.

(20) *Case Filter* (Chomsky and Lasnik 1977; Vergnaud 1977/2008)

Every lexical NP must be assigned Case.

It has been proposed that, in cases in which a DP cannot be assigned abstract case—for example, when it is left-dislocated—it receives default morphological case (e.g. Anagnostopoulou et al. 1997; Legate 2008). Since there is no overt case-marking in Wolof, I do not address the question of default case in Wolof here. I do take this as evidence that T° can remain unchecked. This must be the case also when there are multiple verbal heads in the clause. If Type 2 features are checked under the proposed strict locality condition, any lower verb's T° will not be checked. Preminger (2011) proposes that the same is true of φ-features – the failure to check them does not lead to a derivational crash. Since in my system φ° is also a Type 2 feature, his proposal can be naturally extended to encompass T°.

Finally, we also want to have proof that the nominal in Spec,CTP can only be the lexical subject, meaning that it can only be co-indexed with the pronominal subject clitic. Namely, if we claim that a DP is base-generated in Spec,CTP, there is nothing technically preventing it from being co-indexed with, say, an object clitic. Consider the example in (21). Any nominal can be topicalized in Wolof, and is resumed by a clause-internal clitic.

(21) *Topicalized object DP with an overt lexical subject*
Xale yi_i, kenn$_j$ gis-na-$\emptyset_j$ leen$_i$.
child DEF.PL someone see-C_V-3SG 3PL.OBJ
"The children, someone saw them."

Since both left-dislocated topics and non-topical lexical subjects are doubled by a clause-internal pronominal clitic, and since lexical subjects can be omitted, how can we determine that the object DP *xale bi* 'the child' in (22) is not in Spec,CTP?

(22) *Object DP to the left of CTP*
Xale bi_i gis-na-ñu ko_i.
child DEF.SG see-C_V-3PL 3SG.OBJ

"The child, they saw it."

I have taken the fact that a bare quantifier can occur in Spec,CTP as proof for the existence of a non-topical position for nominals in the left periphery. In order to test whether only a DP co-indexed with the lexical subject can occur in this position, we can attempt to co-index a quantifier with an object clitic. The example in (23) shows a sentence in which the lexical subject is absent, and the subject clitic is in 3*rd* person plural. The only element that could double the quantifier *kenn* 'someone' is the 3*rd* singular object clitic *ko*.

(23) *Object DPs to the left of CTP cannot be a bare quantifier*
*Kenn$_i$ gis-na-ñu ko$_i$.
someone see-C$_V$-3PL 3.SG.OBJ
intended: *"They saw someone." (lit. "Someone they saw him/her.")*

This sentence, however, is ungrammatical, showing that a bare quantifier co-indexed with the clause-internal object clitic cannot occupy Spec,CTP. Spec,CTP is therefore a position which can only be occupied by a DP that binds the subject pronominal clitic.

In the following section, we turn to Predicate Focus clauses, which differ from Neutral clauses in the verb that is located in CT: instead of verb-raising, I propose that Pred* in Predicate Focus clauses is checked via *do*-support.

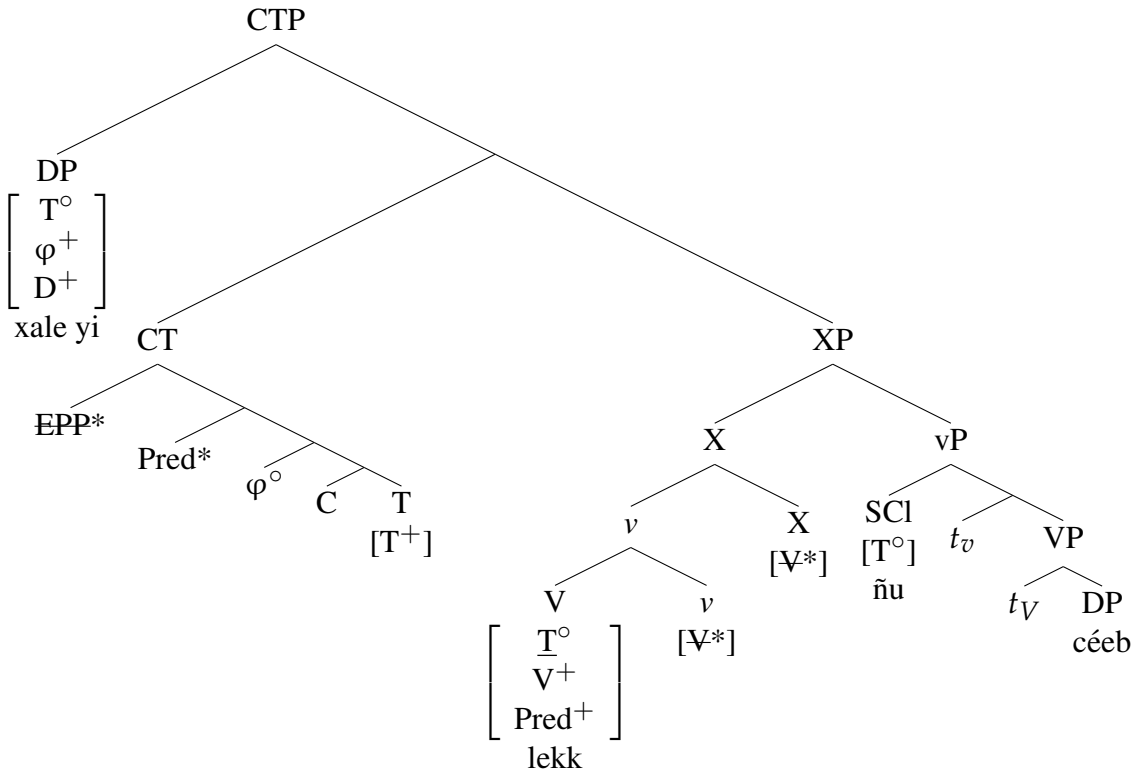
4.3.2 Predicate Focus clauses

In Predicate focus, the verb, together with any verbal functional morphology, remains clause-internal. As argued in Chapter 2, in these clauses the verb *def* 'do' occurs in CT, in a type of *do*-support, as in (24).

(24) *Predicate focus clause*
(**Xale yi**) da-**ñu** lekk céeb.
child DEF.PL do.C$_V$-3PL eat rice
"It's that the children ate rice."

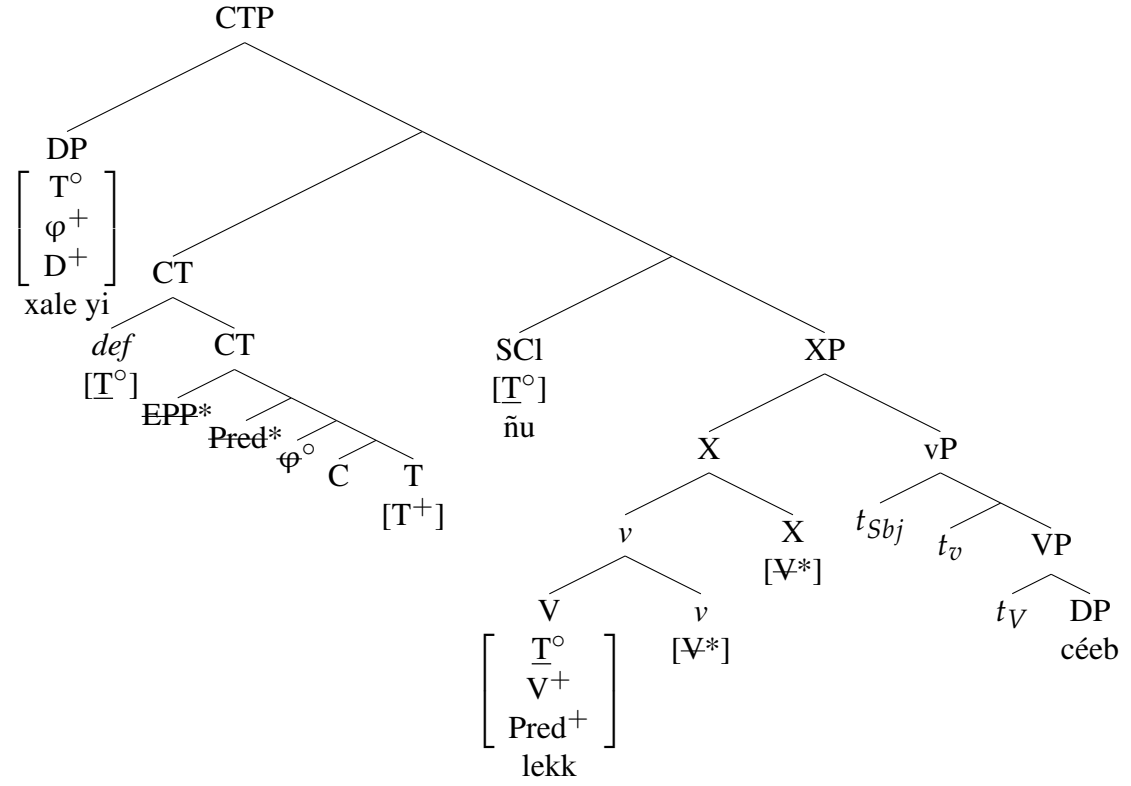
The structure of the clause at the moment of the merger of CT is identical to the one in Neutral clauses, and, as in Neutral clauses, a DP is generated in Spec,CTP to check EPP*.

(25)



Next, Pred* must be checked. In addition to attracting the verb, I propose that in Wolof it can also be checked via *do*-support – by inserting the dummy verb *def* 'do' into CT. I propose that *def* gets adjoined to CT, as in (26). Its T°-feature can be checked by T^{+} in CT, since the locality condition on Type 2 feature-checking is satisfied: CT c-commands *def*, and there is no head intervening between them. φ° on CT is next checked by the DP in Spec,CTP. The TCC and the NCC are both satisfied in the same way as in Neutral clauses: the dummy verb *def* takes care of the TCC, and the subject pronoun moves via Clitic Movement to adjoin to XP, where it can have its T°-feature checked and receive nominative case.

(26) *Final structure of a V-raising clause with* do*-support*



The analysis proposed in this chapter crucially rests on the assumption that CT in Wolof V-raising clauses remains compact because all of its features and the requirements placed on the clause may be checked while keeping CT unified. One of these requirements is the assignment of nominative case to some nominal in the clause, formalized in the NCC. It seems that the only reason V-raising clauses in Wolof felicitously converge is the availability of pronominal subject clitics, which raise to a position in which they can receive nominative case. The next question on our minds then must be – what would Wolof look like if it did not have clitics, and nothing could satisfy the NCC? We can stipulate that this would trigger head-splitting, with part of the CT head responsible for the assignment of nominative case, or perhaps the whole head, would reproject in order to c-command the nominal in Spec,CTP. Now, if head-splitting is already available, why is subject cliticization the preferred, in fact, the only way to satisfy the NCC? For now, I can stipulate that some type of an economy condition prefers for the largest amount of features and conditions to be satisfied in the smallest amount of structure, similar to the one proposed in (Fortuny, 2008,

117):

(27) *Maximize Matching Effects Principle*

Match as many features as possible using the smallest span of structure.

Such a principle would prefer the use cliticization to satisfy the NCC, than head-splitting. The definitive answer to this question will have to involve the testing of the various components of the proposed system and its predictions on other languages.

4.4 Conclusion

I investigated V-raising sentences in Wolof, which exhibit three properties not found in N-raising sentences. First, the verb is located in the head that hosts the sentence particle, a complementizer-like element by hypothesis situated in a high C-like head. Second, the lexical subject cannot be below the sentence particle, but is located to the left of the verb-C complex. And third, an obligatory pronominal subject clitic occurs clause-internally, immediately to the right of the sentence particle. I argue that V-raising clauses contain one high functional head, CT, which combines features commonly distributed between C and T: two Type 1 features, EPP* and Pred*, which must be checked by an element in the c-command domain of CT that must move to its specifier or adjoin to it, and φ°, a Type 3 feature, checked by an element that locally c-commands it, locality being defined as the absence of an intervening head between the head with the Probe-feature and the head with the Goal-feature. All of CT's features can be checked on CT, which leads to it staying compact. The obligatory occurrence of a pronominal subject clitic is the result of the mechanism of nominative case assignment, and the *Nominative Case Condition*, which requires that some nominal in a finite clause be assigned case. Following Pesetsky and Torrego (2001), I propose that nominative case is a Type 2 T°-feature on D, which must be checked by CT (which carries T^{+}), such that CT locally c-commands D. I propose that such relationship is never established between the lexical subject and the CT – when in situ, the lexical subject is divided from CT by other func-

tional projections, and when to the left of CT, it is not c-commanded by it. Therefore, a derivation in which a lexical subject is generated in Spec,*v*P always crashes. If, however, a weak pronoun is generated in Spec,*v*P, it raises via Clitic Movement and adjoins to the sister of the complement of the highest functional projection, which is just below CT. This position satisfies the requirement for nominative case assignment, and a pronominal clitic can thus receive nominative case. A lexical DP subject or a strong pronoun (which includes *pro*) is base-generated in Spec,CTP to check EPP*.

CHAPTER 5

HEAD-SPLITTING IN N-RAISING CLAUSES

5.1 Introduction

Chapter 4 shows how a particular implementation of the insight that C and T share a deep connection, in an analysis according to which C and T start out as a single head, explains syntactic properties of V-raising clauses, in which there is no apparent division between the two heads and all their properties seem to be bundled in one functional projection. In this chapter, I show how the same framework derives a different clause-type, in which the traditional division between the two heads is observed. We discuss N-raising clauses,[1] in which an XP (a nominal or a PP) A′-moves to the specifier of the sentence particle.[2] I offer an answer to two questions related to N-raising clauses. The first has to do with their syntactic structure, compared to V-raising clauses. The crucial difference between the two clause types is in the availability of a lexical subject below the sentence particle, i.e. the CT head. If the A′-extracted nominal is a non-subject, as in (1) and (2), the clause-internal subject may be either a lexical subject or a subject clitic. Both cannot occur simultaneously clause-internally. When the subject is the A′-moved element, either a lexical subject or a strong pronoun (see Chapter 2, §2.4.1) are located in the specifier of the A′-movement complementizer, shown in (3). Again, no clause-internal subject clitic occurs. In neither subject nor non-subject extraction does the verb precede the sentence particle.[3]

(1) *Non-subject Exhaustive Identification*

a. Musaa l-a xale yi gis.
Moussa *l*-C_N child DEF.SG see

1. As *V-raising*, *N-raising* is also not the most precise term, as it is not only nominals but also PPs that may move to Spec,CTP. Again, I use *N-raising* for convenience.

2. Evidence that N-raising clauses involve A′-movement is discussed in Chapter 8.

3. Examples (1)-(3) show that there are two different sentence particles that occur in N-raising clauses, *(l)a* and CM-*u*. In this Chapter, I ignore this and focus on the structure of clauses with *(l)a*. In Chapter 8 I argue extensively that all N-raising clauses have the same syntax, and that any surface differences in the form of the sentence particle is to be attributed to post-syntactic processes.

"It is Moussa that the child saw."[4]

b. Musaa l-a-ñu gis.
Moussa *l*-C_N-3PL see
"It's Moussa that they saw."

(2) *Object relative clause*

a. jigéén j-i Aali sopp
woman CM-C_N.DEF.PROX Aali love
"the woman that Ali loves."

b. jigéén j-i mu sopp
woman CM-C_N.DEF.PROX 3SG love
"the woman that s/he loves."

(3) *Subject Exhaustive Identification*

a. Ayda-a dem.
Ayda-C_N go
"It is Ayda who went."

b. Mu-a (>moo) dem.
3SG.STR-C_N go
"It is her/him who went"

N-raising clauses include *wh*-questions, structures in which a DP is exhaustively identified (EI-structures), and relative clauses.[5] In Chapter 8 I discuss evidence for a unified syntactic analysis of these structures in Wolof. In this chapter, I focus on demonstrating that N-raising clauses are examples of the traditional C-T separation, using EI-structures as examples, and show how the system I propose in Chapter 3 derives their surface structure and accounts for the differences with respect to V-raising clauses.

The second property of a subset of N-raising clauses that I address in this chapter is that the sentence particle *(l)a* exhibits a subject/non-subject asymmetry – it surfaces as *a* in subject extrac-

4. I translate Wolof EI-structures as English clefts, due to the fact that this is the closest corresponding meaning. Wolof EI-structures, however, are not syntactic clefts, but monoclausal A′-movement constructions. I discuss their syntax at length in Chapter 8 and provide evidence for the syntax I assume in this chapter.

5. Another N-raising clause-type are presentative clauses, mentioned briefly in Chapter 2, §2.3. Since there is reason to believe that these structures are more complex, I do not discuss them here and leave their analysis for future work.

tion, as in (4a), and as *la* in non-subject extraction, in (4b). This sentence particle occurs cyclically in long-distance A′-movement, like *aL* in Irish (McCloskey 2001, 2002). Crucially, the asymmetry is local: as can be seen from (5), it only occurs at the bottom of the dependency, on the sentence particle local to the extraction site.

(4) a. *Subject focus with (l)a*
Aali **a** (>Aalee) gis Musaa
ali C_N see Moussa
"*It is Ali who saw Moussa.*"

b. *Non-subject focus with (l)a*
Musaa **l-a** Aali gis
Moussa *l*-C_N ali see
"*It is Moussa who Ali saw.*"

(5) *Long-distance extraction with (l)a*
Aali **l-a**-a gëm ni **l-a** Musaa xalad ni mu-**a** (>moo) leen gis
Ali *l*-C_N-1SG believe that *l*-C_N Moussa think that 3SG.STR-C_N 3PL.OBJ see
"*It is Ali who I believe that Moussa thinks saw them.*"

Chapter 8 analyzes the morpho-syntactic properties of A′-movement constructions in detail. In this chapter, I only discuss the subject/non-subject asymmetry and relate it to the *Tense C-command Condition*, which requires an element with a T-feature to c-command all functional projections within its clause. I propose that *l-*, which precedes the sentence particle *a* in non-subject extraction, is the instantiation of a T-feature, which rises to fulfill the TCC. My analysis is closely related to Pesetsky and Torrego's (2001) analysis of the English *that*-trace effect, which they consider to be an instance of T-to-C movement, and is a modified analysis proposed in Martinović (2013).

I start the chapter by laying out the details of Pesetsky & Torrego's analysis of the *that*-trace effect in English in section 5.2. I then propose a modification of the analysis, maintaining its basic insight – that the subject and *that* in English, and the subject and *l-* in Wolof, appear to be performing the same function. In §5.3, §5.4, and §5.5, I discuss subject extraction, non-subject extraction, and long-distance extraction, with the goal of showing (i) how the system proposed in Chapter 3 derives syntactic structure of N-raising clauses, and (ii) how the TCC, in combination with Pesetsky & Torrego's proposal, derives the morphosyntactic details of the subject/non-subject asymmetry in Wolof. The chapter is concluded in section 5.6.

5.2 The *that*-trace effect in Pesetsky & Torrego (2001)

Pesetsky and Torrego (2001) (henceforth P&T) offer a unified analysis of the T-to-C asymmetry and the *that*-trace effect in English, that rests on two assumptions: (i) T-to-C movement is motivated by an uninterpretable T feature ([*u*T]), with an EPP feature, on C, and (ii) Nominative case is [*u*T] on D. The relevant principles for their analysis are the following:

(6) *Attract Closest X* (adapted from Chomsky 1995)

If a head K attracts X, no constituent Y is closer to K than X.

(7) *Head Movement Generalization*

The movement from a complement to the nearest head is always realized as head movement.

(8) *Economy Condition*

A head H triggers the minimum number of operations necessary to satisfy the properties (including EPP) of its uninterpretable features.

The key data that they base their account on is the T-to-C asymmetry illustrated in (9), and schematized in (10) (the schema shows the structures before T-to-C has taken place):

(9) *T-to-C Asymmetry*

a. What did Mary buy?

b. *What Mary bought?

c. *Who did buy the book? (unless *did* is focused)

d. Who bought the book?

(10) a. [$_C$ *u*T, *u*Wh] [$_{TP}$ [Mary, *u*T] T [$_{VP}$ bought what]] (9a)-(9b)

b. [$_C$ *u*T, *u*Wh] [$_{TP}$ [who, *u*T] T [$_{VP}$ bought the book]] (9c)-(9d)

In (10), the nominative subject is already attracted to Spec,TP by T's need to check its uninterpretable φ-features. [*u*T] on the subject is also marked for deletion by agreement with [*i*T] on T; however, P&T assume that this feature may remain undeleted until the end of the CP cycle, and therefore be accessible to further operations. P&T explain the lack of T-to-C movement in subject extraction (9d), and its occurrence in object extraction (9a) in the following way. C bears [*u*Wh] and [*u*T], with an EPP feature.[6] In (10a), the closest element that bears a *Wh*-feature is *what*, but both the nominative subject and the TP (which carry [*u*T]/[*i*T]) are closer to C than *what*, so one of them must move first, per Attract Closest. Attracting the TP results in head movement of T to C, due to the Head Movement Generalization, and the object A′-moves to delete C's uninterpretable *Wh*-feature. C is thus forced to delete its uninterpretable features in two separate operations.[7]

Turning to (10b), TP and its nominative specifier both count as the closest constituent to C, so, in principle, C can choose to delete its [*u*T] feature by attracting TP (realized as head movement), or by attracting the specifier. If it attracts T, it deletes just one of its two uninterpretable features. If, on the other hand, it attracts the nominative phrase, both [*u*T] and [*u*Wh] can be deleted in one step, since the phrase in Spec,TP has both features. The Economy Condition prevents unnecessary movement from take place, and bans T-to-C.

P&T extend this analysis to account for the *that*-trace effect in English, which is similar to the T-to-C asymmetry in that in both cases subject extraction prevents a word from occurring in C, that is found there when non-subjects are extracted. To account for the effects in (11), P&T claim that *that* is not C, as is usually assumed, but an instance of T that has moved to C.

(11) *The* that-*trace effect in English*

a. Who did John say will buy the book?

b. *Who did John say that will buy the book?

6. P&T consider EPP to be a subfeature of uninterpretable features, responsible for the cases in which the operation Move accompanies Agree.

7. I return later to their explanation of the ungrammaticality of (9b).

The reason why (11b) is not possible is the same one that prevents T-to-C in sentences like (9c): the nominative *wh*-phrase deletes both [*u*T] and [*u*Wh] on C (shown in (12a)), so the Economy Condition prevents T-to-C from occurring (as in (12b)).

(12) a. Who$_i$ did John say [$_{CP}$ *t*-[*who, +wh, uT*]$_i$ [C, ~~*u*T~~, ~~*u*Wh~~] [$_{IP}$ *t*-who$_i$ will$_j$ buy the book]]?

b. *Who$_i$ did John say [$_{CP}$ *t*-[*who, +wh, uT*]$_i$ [$_T$ that]$_j$+[C, ~~*u*T~~, ~~*u*Wh~~] [$_{IP}$ *t*-who$_i$ will$_j$ buy the book]]?

It follows that when the extracted element is not the subject, *that* should be optional, since in those cases, both the TP and its specifier (the nominative subject) bear a [*u*T] feature, and both are equally close to C. This is precisely what we find in long distance object extraction:

(13) What did Sue say [$_{CP}$ (that) Mary will buy]?

Under this account, the optionality of *that* in embedded declaratives, as in (14), is also expected. Furthermore, since a declarative C does not bear [*u*Wh], economy considerations are not important. This is why both (14a) and (14b) are possible.

(14) a. Mary thinks that Sue will buy the book.

b. Mary thinks Sue will buy the book.

If C has the option of deleting its [*u*T] either by attracting the subject or by attracting the TP in (14), the question arises why this is not possible in object extraction in matrix questions, i.e., why both (15a) and (15b) are not well-formed:

(15) a. What did Mary buy?

b. *What Mary bought?

P&T claim that this is in fact a possibility, but that in English this happens to have consequences on interpretation. According to their analysis, if a C with [*u*Wh] has a non-*wh*-phrase as a specifier, the clause is interpreted as an exclamative. This is illustrated by examples that support exclamative interpretation, as in (16):

(16) a. *What a silly book did Mary buy!

b. What a silly book Mary bought!

This predicts that it should not be possible to form an exclamative if the moved *wh*-phrase is the nominative subject – if the closest constituent that carries *u*T and *u*Wh is the same phrase, no non-*wh*-phrase can move to Spec,CP, and the exclamative interpretation will be unavailable. This is the pattern we find:

(17) *What a silly person just called me on the phone!

I adopt the following ideas from P&T. First, I assume that a nominative DP has a Type 2 T° feature that must be checked. As proposed in Chapter 3, this feature stays visible after being checked (unlike Type 1 features, which are immediately deleted). This means that, just as in P&T's analysis, the DP carrying the nominative case and any other element carrying a checked T-feature (including the T-feature itself) would, not taking into account independent restrictions, be able to satisfy any requirement involving the T-feature. I propose one such requirement to be the *Tense C-command Condition*, which needs the T-feature to c-command all other functional heads in its clause. Since only the highest checked feature in the hierarchy is visible to the head (as per the *Feature Visibility Condition*), the T-feature has to be the highest checked feature in the head to satisfy the TCC. Since the φ-feature (which also remains visible after being checked) is always higher in the hierarchy than the T-feature in the CT head in Wolof, either an element with the T-feature or the T-feature itself has to be in the position from which it is visible to CT. I argue the TCC to be the source of the *a/la*-asymmetry in Wolof – specifically, that *l-* is the instantiation of the T-

feature that has moved and adjoined to CT when no other element containing the T-feature satisfies the TCC. Since *l-* only does not surface in case of local subject extraction, we can conclude that, in that case, the subject itself satisfies the TCC, by virtue of having nominative case – a checked T°-feature on D.

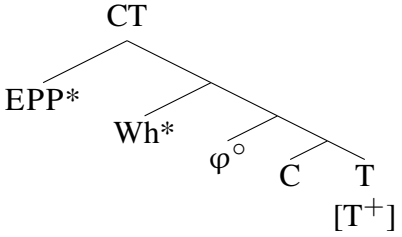
In the following three sections, I explore subject extraction, non-subject extraction, and long-distance extraction, and show (i) how the system proposed in Chapter 3 leads to head-splitting in N-raising, and (ii) how the TCC results in the *a/la* asymmetry in Wolof.

5.3 Subject extraction

I begin by investigating the case in which the element carrying the Wh^{+}-feature is the subject. The internal feature geometry of CT in N-raising is represented in (18). At this point, I am introducing a stipulation which I do not elaborate on further in this Chapter, but address in Chapter 6: that CTs with a Wh*-feature do not have a Pred*-feature. In other words, in clauses in which a nominal with a Wh^{+}-feature is located in Spec,CTP, the verb does not raise to CT. In N-raising clauses, we cannot really tell where the verb is, since it moves to the highest projection below CT in all clauses (see Chapter 7), so this assumption has no bearing on the analysis in this chapter. However, it will allow us to make sense of the data on clauses with nominal predicates (NPred sentences), discussed in the following chapter.

EPP*, Wh* and φ° are contained in hierarchically organized nodes in the CT head, just as in V-raising.

(18) *Feature geometry of CT in N-raising in Wolof*

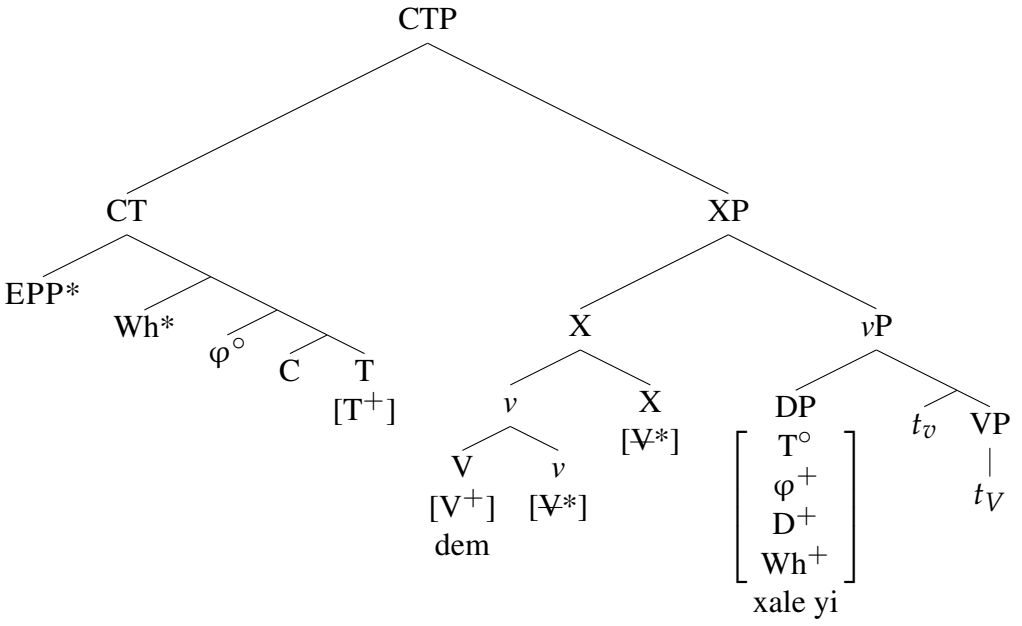


I argue that N-raising clauses are a case of a split CT, due to two observations. First, the verb does not precede the sentence particle, as it does in V-raising clauses, and second, a subject pronominal clitic does not obligatorily occur after CT. Under the analysis in which the pronominal clitic occurs due to the lack of local c-command between the case-assigning head CT and the subject, resulting in the inability of a lexical subject to obtain case, I conclude that subject extraction data suggest that the subject DP in N-raising is able to receive nominative case. This means that there has to be a specifier position directly below the CT head, to which the subject could raise and get case. I propose this position to be the specifier of the lower part of the split CT head. The details of the derivation are as follows. First, (19b) shows the structure of (19) at the moment when the CT head is merged.[8] As in V-raising clauses, the verb moves through the inflectional layer to the highest functional head, here represented as XP.

(19) *Subject extraction in Exhaustive Identification*

a. Xale yi-a (>yee) dem.
child DEF.PL-C_N leave
"It's the children who left."

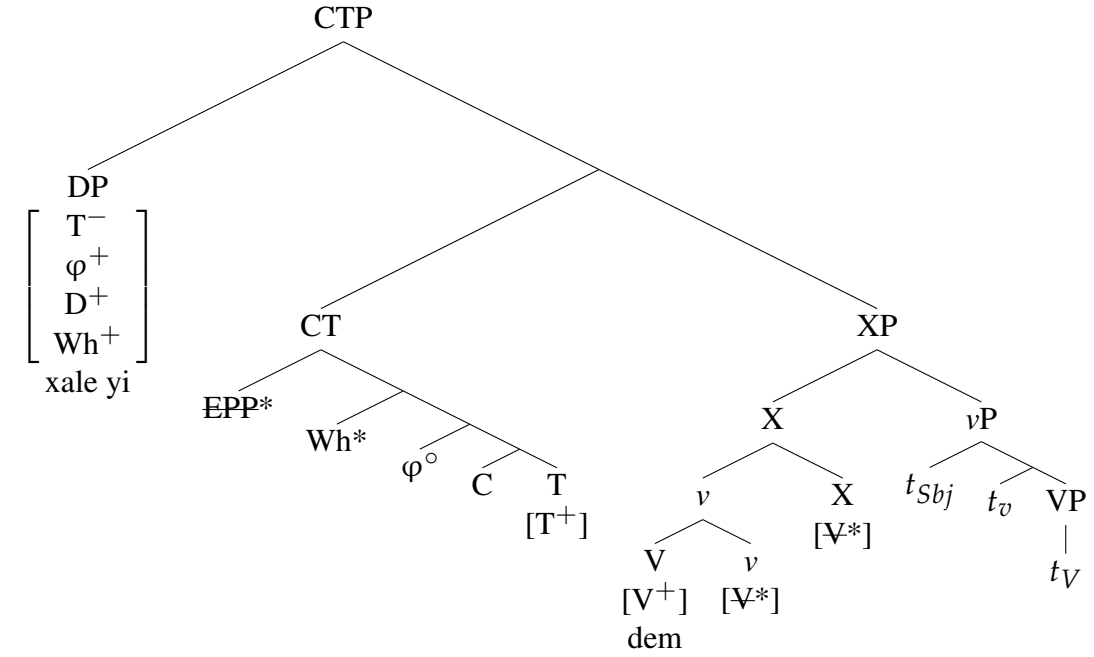
b.



8. I omit features that are not relevant, such as T° and $Pred^{+}$ from V.

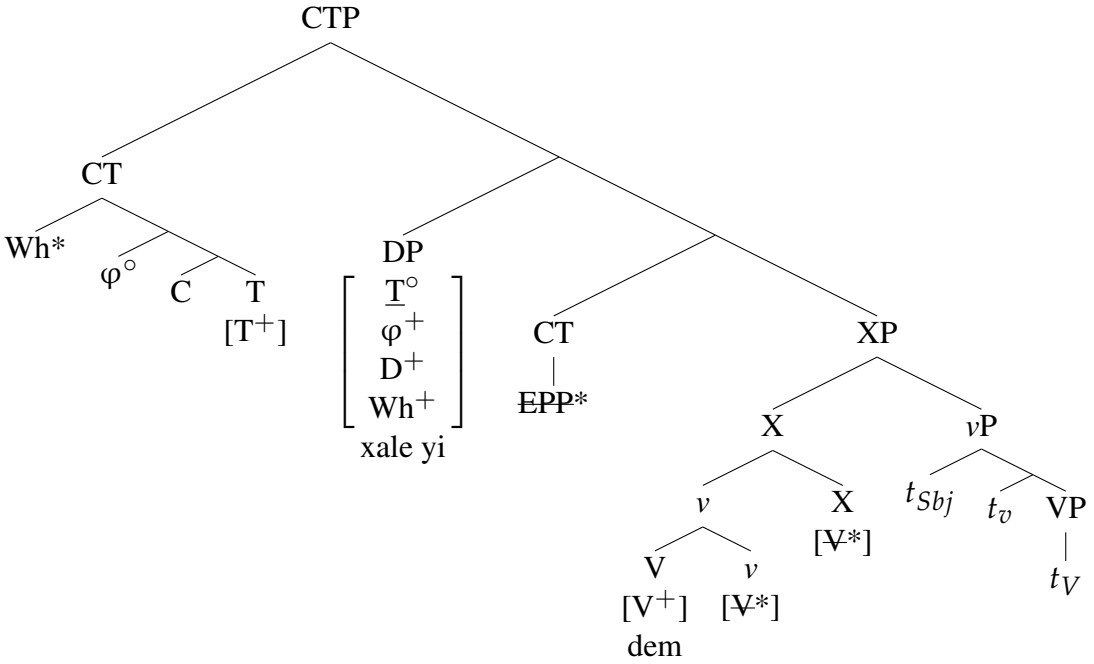
The first steps in subject extraction are the same as in non-subject extraction. EPP* is again the first feature that must be checked, and it attracts the closest nominal, which is the subject DP, to Spec,CTP. This also happens to be the nominal with the Wh^{+}-feature, however, in the hierarchical organization of features that I propose, Wh* cannot be automatically checked on CT.

(20) *The subject moves to Spec,CTP for* EPP*



The Type 1 Wh*-feature on CT searches for a Wh^{+}-element in its c-command domain. Since the DP with the Wh-feature is the subject, already located in Spec,CTP where it moves for EPP*, Wh* no longer c-commands it. I propose this to be the trigger of head-splitting. The node above Wh* splits off, moves up, and adjoins to CTP, forming a new head and a new c-command domain, as shown in (21).

(21) *CT splits*



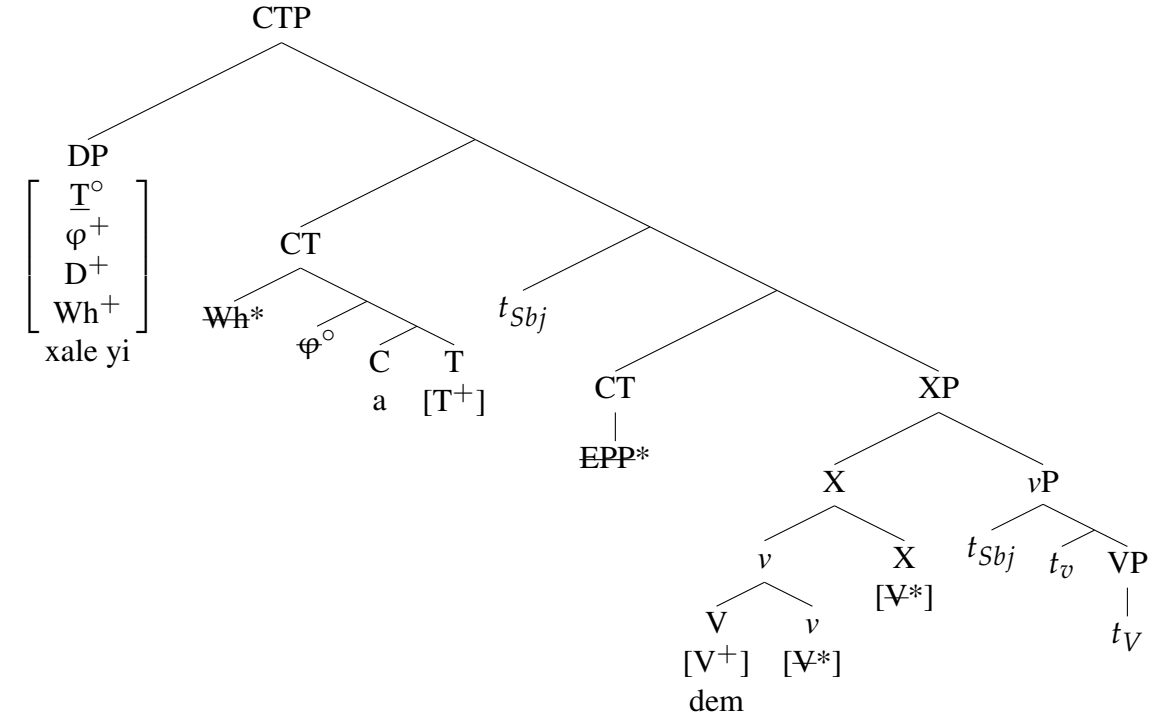
At this point, two operations happen. First, the lexical subject in the specifier of the lower CT head can have its T° feature checked, under the condition in which Type 2 features are checked, repeated here:

(22) *Locality condition for Type 2 feature-checking*

A Type 2 Probe-feature F° on a head X is checked by a Goal-feature F+ on a head Y, such that Y c-commands X and there is no Z such that Z c-commands X and Y c-commands Z.

This means that the lexical subject now has nominative case. Second, Wh* is in a position to probe again for a Wh+-element. It finds the subject DP, and triggers its movement to Spec,CTP. The Type 2 φ°-feature on CT can now also be checked, by the lexical subject in Spec,CTP.

(23) *The subject moves to Spec,CTP for* Wh*



The key part of this derivation for the understanding of the subject/non-subject asymmetry is the role of the subject in satisfying the TCC. In V-raising clauses, the element with a checked T-feature high enough to satisfy the TCC is the verb, adjoined to CT. In N-raising clauses, the verb does not raise to the higher CT, therefore the TCC is not satisfied. The T^{+}-feature in the CT head is too low to be visible. Even though the Type 1 Wh* feature is deleted, the φ-feature is still higher.[9] I propose, however, that the subject phrase in Spec,CTP satisfies the TCC, due to the fact that it carries nominative case, which is a checked T°-feature. In the following section, I propose that, in the absence of subject movement to the specifier of the higher CT, the T-part of the complex CT-head must split off and adjoin to the top of CT.

In Chapter 4 I argue that only a pronominal subject can be generated in Spec,*v*P in V-raising clauses, due to the fact that a lexical subject is never in the structural position in which it could receive nominative case. In N-raising clauses, a lexical subject gets case when the CT splits and

9. We know that φ is left-adjacent to C thanks to N-raising clauses in which the sentence particle exhibits φ-feature agreement in noun class, as, for example, in relative clauses in (2). I discuss φ-feature agreement in CT at length in Chapter 8.

moves into a position from which it locally c-commands it. We would expect a weak pronoun to be equally acceptable in Spec,*v*P in N-raising clauses, since subject clitics can always get nominative case – they move by Clitic Movement and adjoin to the sister of the highest functional projection inside the CT. In case of CT splitting, this position is between the two CTP projections. In subject extraction, however, a weak pronominal subject is not possible. As argued in Chapter 2, pronouns in the higher Spec,CTP of N-raising clauses are always members of the strong paradigm. I therefore propose that weak pronouns cannot be merged in Spec,*v*P in N-raising subject-extraction clauses, because of the restriction on the distribution of pronominal elements in Wolof – only members of the strong paradigm can surface in A′-positions, and clitics must surface as sisters of the complement of the highest functional projection. We shall see that subject clitics are perfectly felicitous in non-subject extraction clauses.

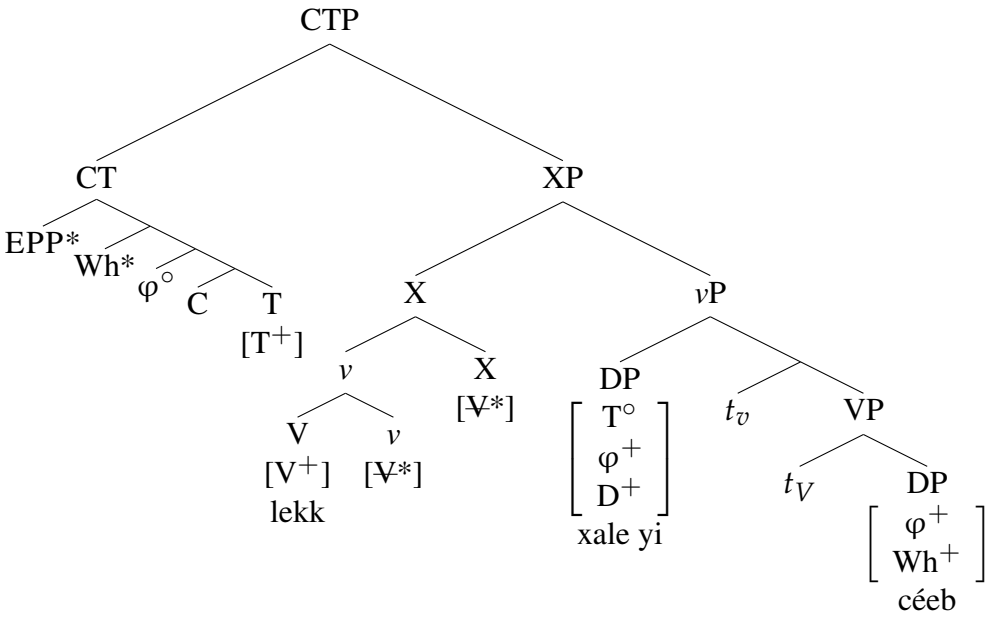
5.4 Non-subject extraction

The sentence particle in non-subject A′-extraction clause differs from the one in subject extraction, in that it is obligatorily preceded by *l-*. I propose *l-* to be the exponent of the T-node of the CT head, which moves and adjoins to CT in order for the TCC to be satisfied. The details of the derivation as are follows.

The tree in (24b) shows the structure of the sentence in (24a), in the moment in which the CT head is merged into the structure.

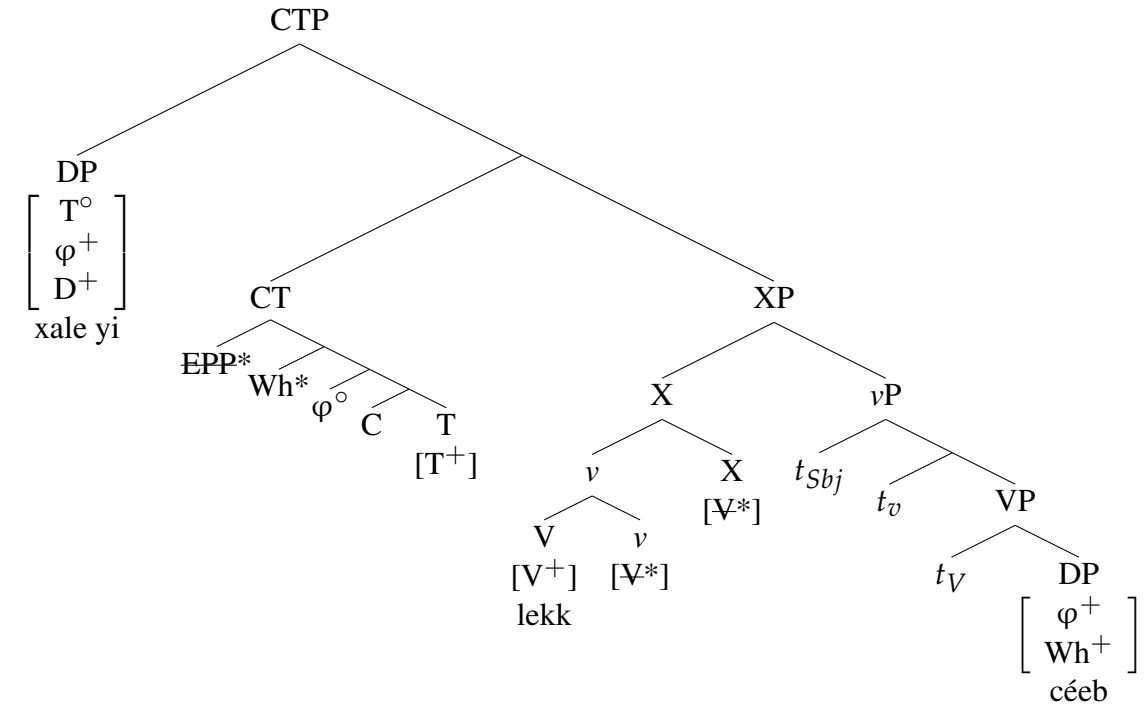
(24) a. Céeb l-a xale yi lekk.
rice *l*-C_N child DEF.PL eat
"It's rice that the children ate."

b.



First, EPP* attracts the subject DP to Spec,CTP.

(25) *The subject moves to Spec,CTP for* EPP*



The next feature that must be checked is Wh*. It finds the object DP with a matching feature, which would have to move to Spec,CTP. The resulting structure would be the one in (28), however, this

is not a grammatical sentence in Wolof.[10] Recall that Pesetsky and Torrego (2001) argue that such clauses, in which both an object DP and a subject DP move to Spec,CP, are grammatical in English, but only with a very specific interpretation – an exclamative one. Therefore such sentences are only felicitous if they support an exclamative interpretation; (26b) does not, but (27b) does.

(26) a. What did Mary buy?

b. *What Mary bought?

(27) a. *What a silly book did Mary buy!

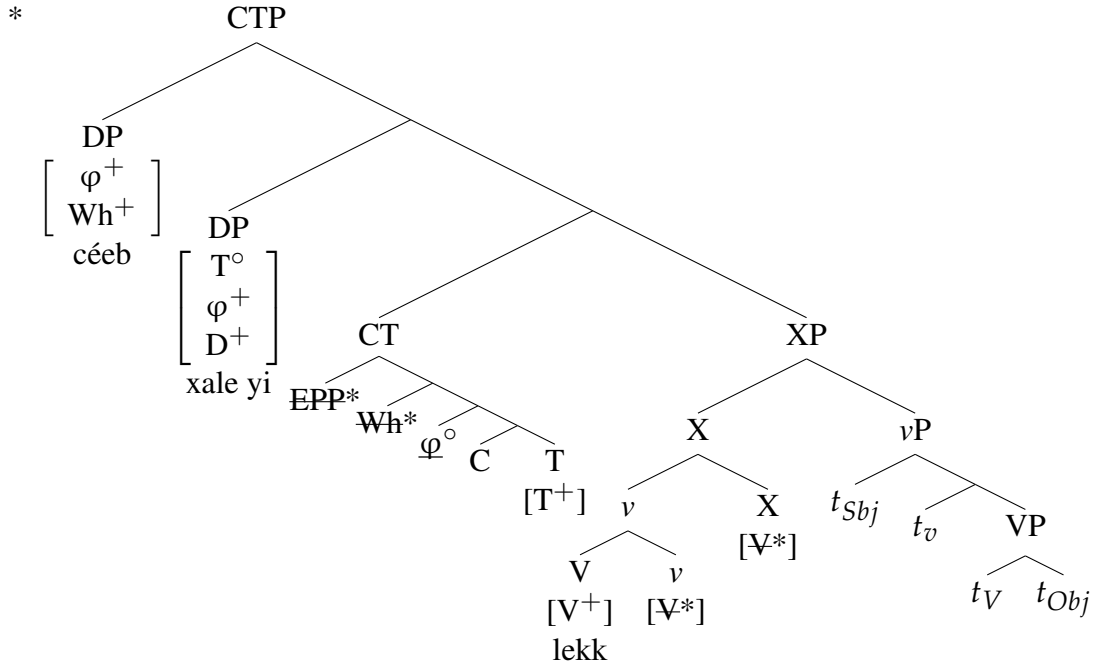
b. What a silly book Mary bought!

There are no equivalent constructions in Wolof that would allow for two elements to move to Spec,CTP. I conclude this to mean that CT (or possibly any head) in Wolof allows only for one specifier position.[11]

10. The object DP could possibly also tuck in under the subject DP (à la Richards 1997, 2001); that is also not a grammatical sentence in Wolof.

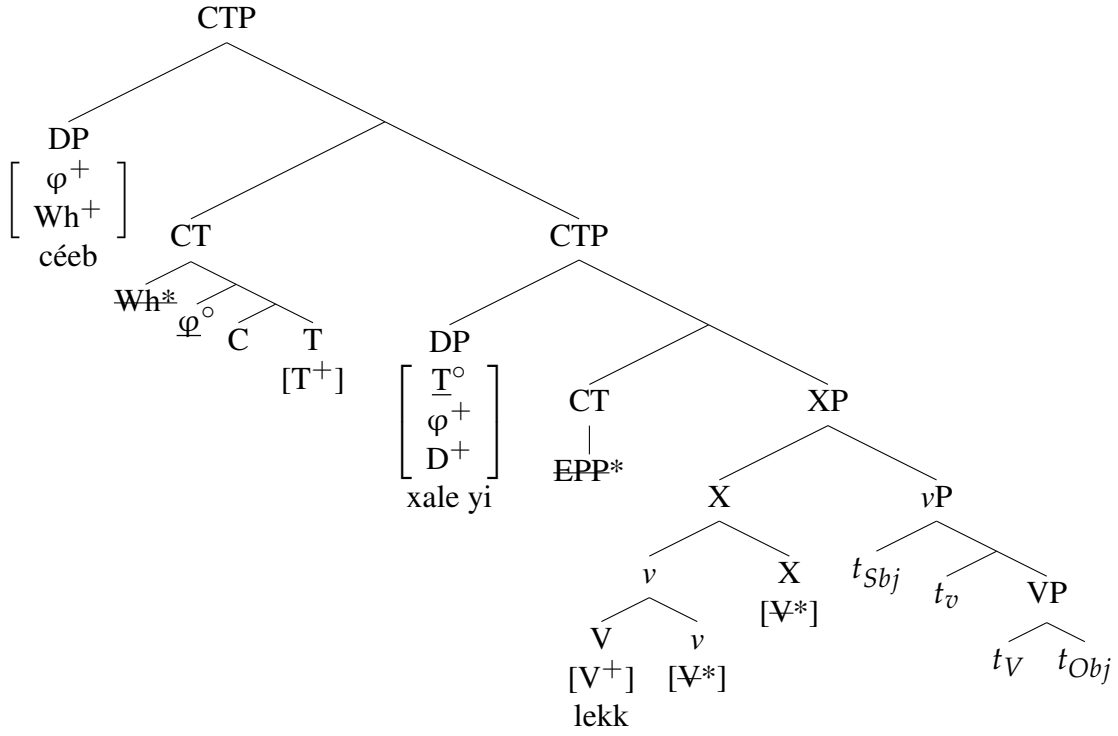
11. Another problem with the structure in (28) under my analysis is that, even if two specifier positions were allowed, the subject could not receive nominative case, so a clause-internal pronominal subject would be obligatory, as in V-raising clauses.

(28) *CT does not allow for two specifier positions*



Since Wh* cannot be checked by attracting the object DP as in (28), the same thing happens as in subject extraction – the smallest projection of the head that dominates all unchecked features splits off and moves to a higher position, adjoining to CTP, as in (29). This opens up a new specifier position, allowing Wh* to attract the object DP to its specifier. The φ°-feature on CT is also checked by the moved object DP. Finally, the subject DP in Spec,CTP can now also receive nominative case, being locally c-commanded by the split off part of CT, which contains T^{+}.

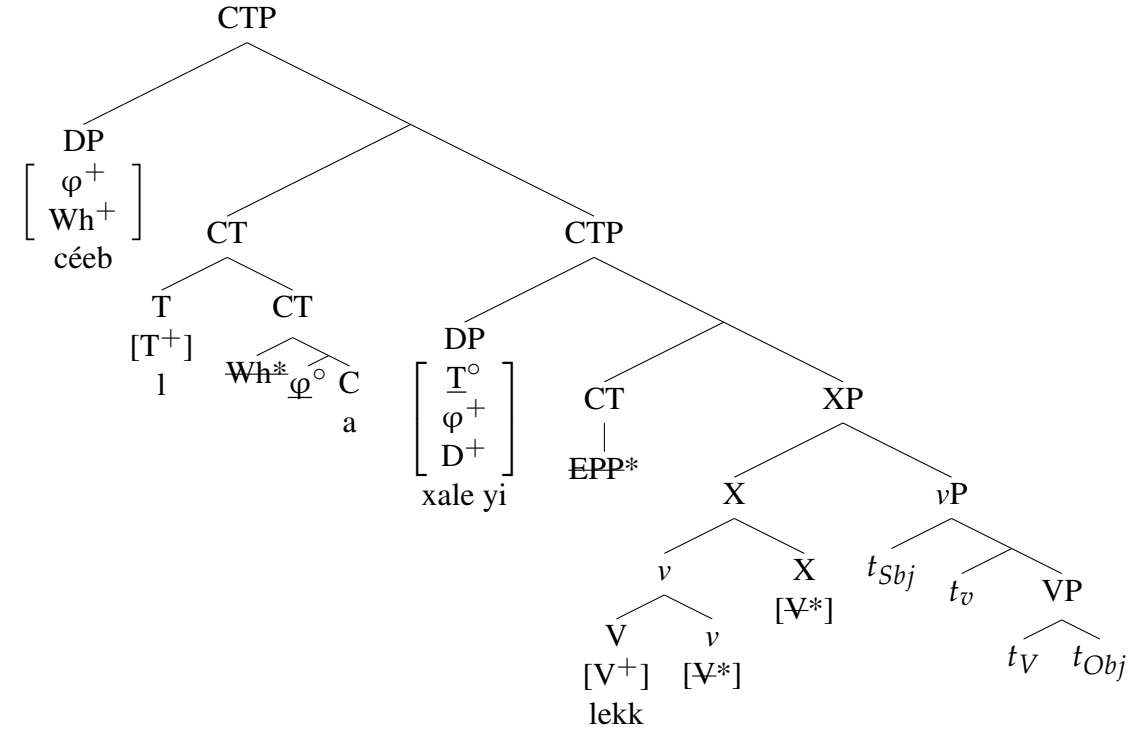
(29) *CT splits to create another specifier position for the* [+Wh] *element*



The remaining element to explain is *l-* to the left of the sentence particle in non-subject extraction as opposed to subject extraction. I suggested it to be related to the TCC. Namely, in (29) T does not c-command all functional features in the clause – it is below the checked φ°-feature, which is not deleted and thus visible to the head. The object DP does not carry nominative case, and therefore does not have a checked T-feature.[12] As in subject extraction, the verb cannot do the job either, not having moved to CT. I propose that, in this case, the T-node in the complex CT head moves and adjoins to the head. This makes it available to CT, which thus becomes the highest element with a T-feature, satisfying the TCC, as in (30):

12. I do not address accusative case assignment here, but stipulate that it does not involve the checking of a T°-feature.

(30) *T moves to c-command all functional material in the clause*



The movement of the T-node is another instance of head-splitting, triggered by the TCC. As proposed, the TCC applies very late in the derivation, but still at the point when it can trigger syntactic movement (see Chapter 7). Notice, however, that head-splitting in (30) is different from head-splitting triggered due to the inability of a Type 1 feature to be checked: the latter one adjoins to CTP, while this one results in a shorter movement, adjoining to CT. I am treating head-splitting as an operation that has a trigger—the inability of a feature to be checked, or a condition placed on the CTP—and as such, I assume that it occurs so that the condition which triggers it is satisfied.

This analysis of the subject/non-subject asymmetry differs minimally from Pesetsky and Torrego 2001 and Martinović 2013, in that the movement of the T-feature does not occur from a lower head, but is the result of feature reorganization inside a complex head. This still allows for P&T's version to be applicable to languages in which the T-feature is located in a lower head. The motivation for the movement of T to the highest functional head differs between my account and that of P&T; while they argue this to be the result of an uninterpretable T feature on C, in my analysis

it is due to a principle requiring Tense to c-command all functional projections in the clause. Both assumptions seem equally stipulative to me. P&T's base the presence of [*u*T] on C on their version of *Attract Closest* principle, which states not only that if a head X attracts an element with a feature F, the closest element with the appropriate feature has to move, but that only the closest instance of anything can move. This means that, if any feature on C (or any other head, for that matter) attracts anything but its complement, it also has to attract its complement. Only in that case can other elements from the clause move (following Richard's *Principle of Minimal Compliance*[13]). This is not applicable to my analysis, as I propose that it is the hierarchical order of Type 1 features on a head that determines the order in which elements with matching features move, and not their closeness to the probing head. What the two analyses have in common is capturing the intuition that subject/non-subject asymmetries are related to C and T, and the connection between them.[14]

The subject in non-subject extraction clauses can be a pronominal clitic, as shown in (31).

(31) *Pronominal subject in non-subject extraction*
Céeb l-a-ñu lekk.
rice *l*-C_N-3PL eat
"It is rice that they ate."

This example shows us that a weak pronoun can (and must) move as any other phrase, since in the example in (31) it must have been the element that first moved to satisfy the EPP*. This suggests that Clitic Movement applies late in the derivation, after movement triggered by Type 1 features.

13. Simplified from Richards (1997): Once an instance of movement to α has obeyed a constraint on the distance between source and target, other instances of movement to α need not obey this constraint.

14. Various analyses of subject/non-subject asymmetries in different languages capture them as some type of agreement between elements in the CP-layer and the TP-layer; e.g. see Chung 1998 on Wh-agreement in Chamorro, and Henderson 2013 on anti-agreement in Bantu.

5.5 Long-distance extraction

The final piece of data related to the *a/la*-asymmetry is on long-distance extraction, in which the sentence particle *(l)a* occurs cyclically, in every embedded sentence along the extraction path. This is straightforwardly explained by assuming that the extracted element passes through the higher Spec,CTP of each embedded clause, as has been extensively argued for based on similar evidence from languages such as Irish (McCloskey 2001, 2002). The example in (32) illustrates the extraction of an embedded exhaustively identified object, and (33) the extraction of an embedded subject in Wolof.

(32) *Long-distance object extraction*
Aali **l-a**-a gëm ni **l-a** Musaa xalad ni **l-a** xale yi gis.
Ali *l*-C_N-1SG believe that *l*-C_N Moussa think that *l*-C_N child DEF.SG see
"I believe that Moussa thinks that it's Ali who the children saw."

(33) *Long-distance subject extraction*
Aali **l-a**-a gëm ni **l-a** Musaa xalad ni *(mu)-**a** gis xale yi.
Ali *l*-C_N-1SG believe that *l*-C_N Moussa think that 3SG.STR-C_N see child DEF.PL
"I believe that Moussa thinks that it's Ali who saw the children."

In addition to giving evidence for cyclicity of A′-movement, the example in (33) shows two more things. First, the *a/la*-asymmetry is present only at the local extraction site – in case of subject extraction, only the most embedded sentence particle surfaces as *a*; all its higher instances are preceded by *l*-, as if a non-subject had been extracted, which in fact is the case for each higher clause, since it is not the local subject of the clause that is being extracted, but the element located in Spec,CTP of the lower clause. Locality is a hallmark property of subject/non-subject asymmetries; it is always only the extraction of the local subject that causes the effect. The second thing to notice is that a pronoun obligatorily occurs in the position of the subject trace at the local extraction site. This is not the case in non-subject extraction in (32) – the most embedded Spec,CTP does not

obligatorily contain a pronoun.[15]

P&T's explanation for the locality of the *that*-trace effect lies in the life-span of features. For them, nominative case is an uninterpretable T feature on D. Once checked by T, this feature can act as an interpretable feature, but only for the duration of the particular cycle. Once the phase in which [*u*T] is checked has ended (i.e. has been Spelled-Out), the uninterpretable feature must be deleted.[16] Consequently, nominative case of the subject can check [*u*T] only on its local C; in every higher clause, something else must check [*u*T] of the C of that clause. In P&T's system, that is either T-to-C movement, or the movement of the local subject (resulting in the optionality of *that*; see §5.2 of this chapter). In Wolof, we know this not to be possible – only *l-* can precede *a* in higher clauses; the local subject of those clauses cannot be raised to Spec,CTP. I propose to explain the locality effect as a result of two factors. First, the TCC requires an element with the T-feature to c-command all other functional material in the clause. In this chapter, I have argued that this can either be the subject, or, in case of non-subject extraction, the T-feature itself, if it moves to the top of the hierarchy in the complex CT head. I have also proposed that in non-subject extraction the subject cannot move to Spec,CTP instead of the T-feature raising inside the complex CT head, due to the fact that Wolof does not allow for two specifier positions. This accounts for the subject/non-subject asymmetry at the local extraction site, under the assumption that the embedded CTs are featurally identical to matrix CTs. We also need to offer an explanation for the absence of the asymmetry effect in each higher CT. I borrow the explanation from P&T and propose that checked Type 2 features only remain visible in their own clause. Once a subject is attracted by the higher CT, its checked T°-feature can no longer satisfy the TCC in the higher clause.

I illustrate this with the derivation of a clause with long-distance subject extraction in (34). (35) shows the final structure of the embedded clause, in which the derivation proceeds in the same way

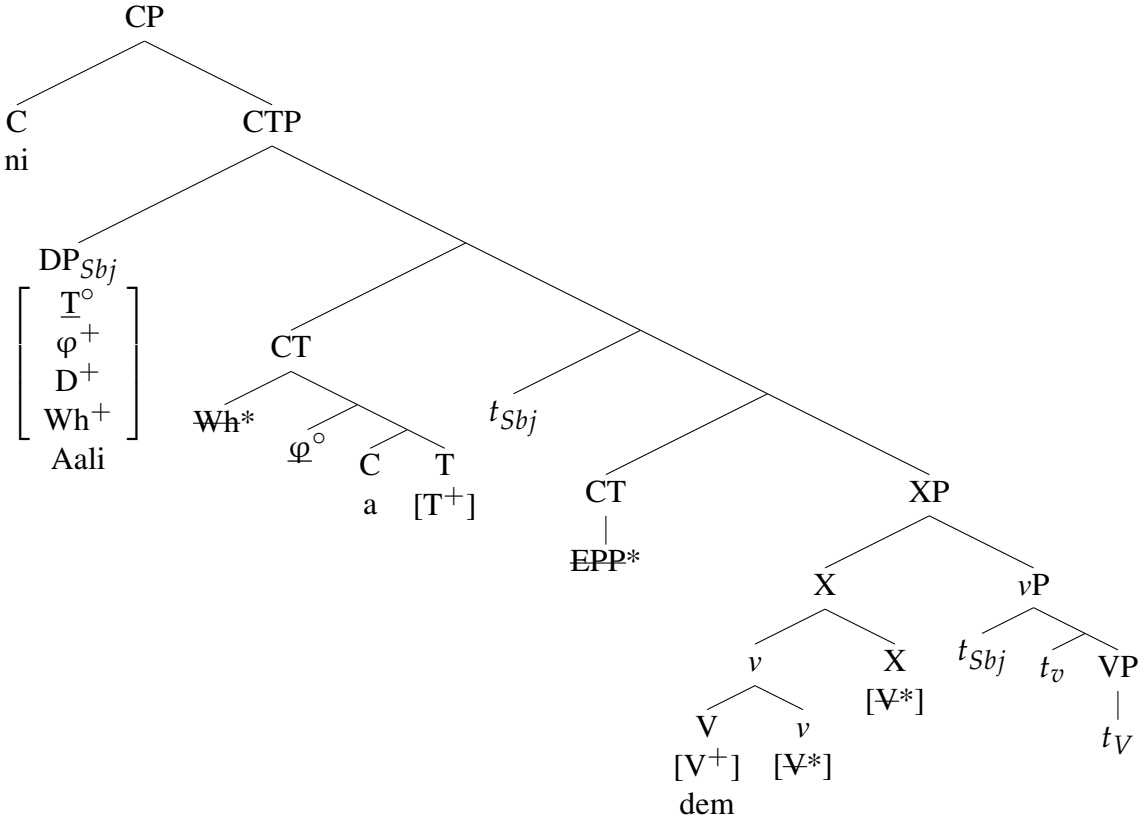
15. A strong pronoun can occur in every specifier position, however, I believe it is in that case a topic – speakers usually put a pause between the pronoun and *la*.

16. Chomsky (2000, 2001) proposes that uninterpretable features are illegible to the semantic component and therefore need to be deleted during the syntactic derivation, which happens through their valuation via Agree.

as already described in §5.3. The subject is first attracted by EPP*. The next feature, Wh*, does not find an element with Wh^{+} in its c-command domain, since the subject is already in Spec,CTP. As a result, head-splitting ensues, enabling two things. First, the subject has its T° feature checked by the c-commanding CT head, receiving nominative case, and second, Wh* is now in a new c-commanding relation, allowing it to attract the subject to the specifier of the higher CT. The subject also checks φ° on CT, and thanks to its checked T°, it can satisfy the TCC.

(34) Aali **l-a** Usmaan gëm ni *(mu)-**a** dem.
Ali *l*-C_N Oussman believe that 3SG.SBJ-C_N leave
"*Oussman believes that it's Ali who left.*"

(35) *Derivation of the embedded clause*

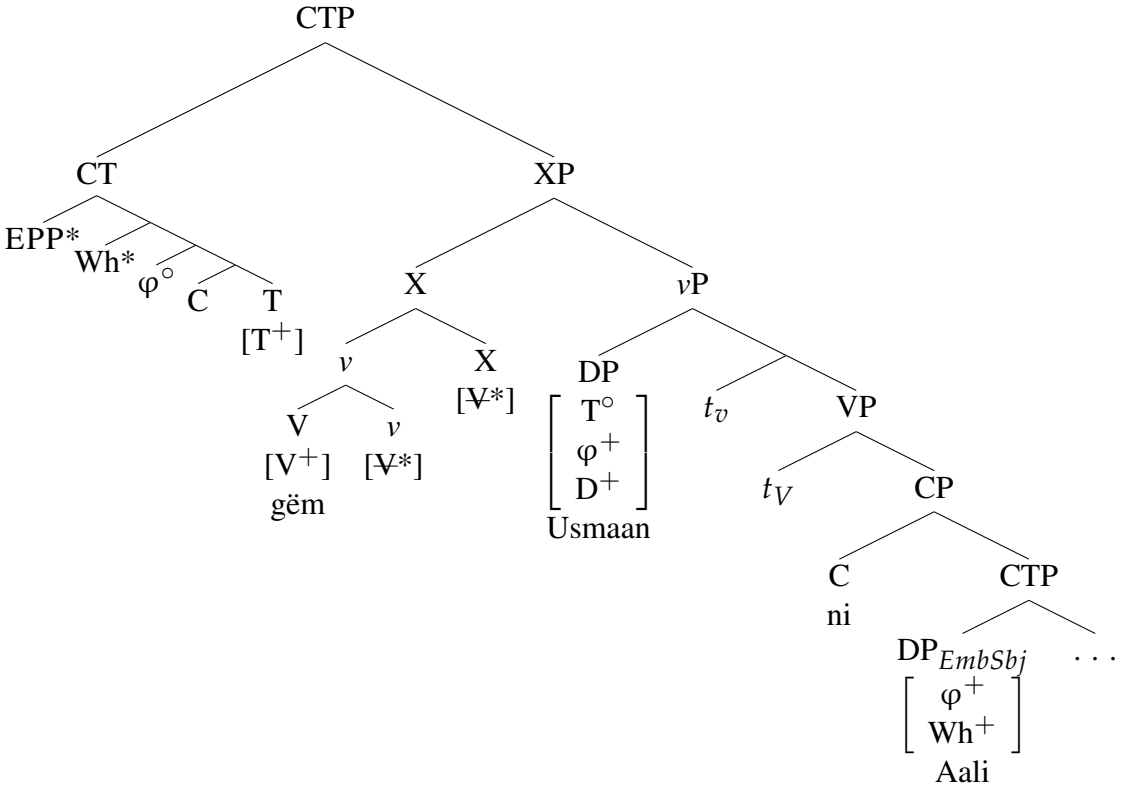


The derivation in the matrix clause of (34), repeated in (36), proceeds as in the case of non-subject extraction, since the subject of the embedded clause behaves as a non-subject in the higher clause.

The structure at the moment of the merger of the matrix CT is given in (37).

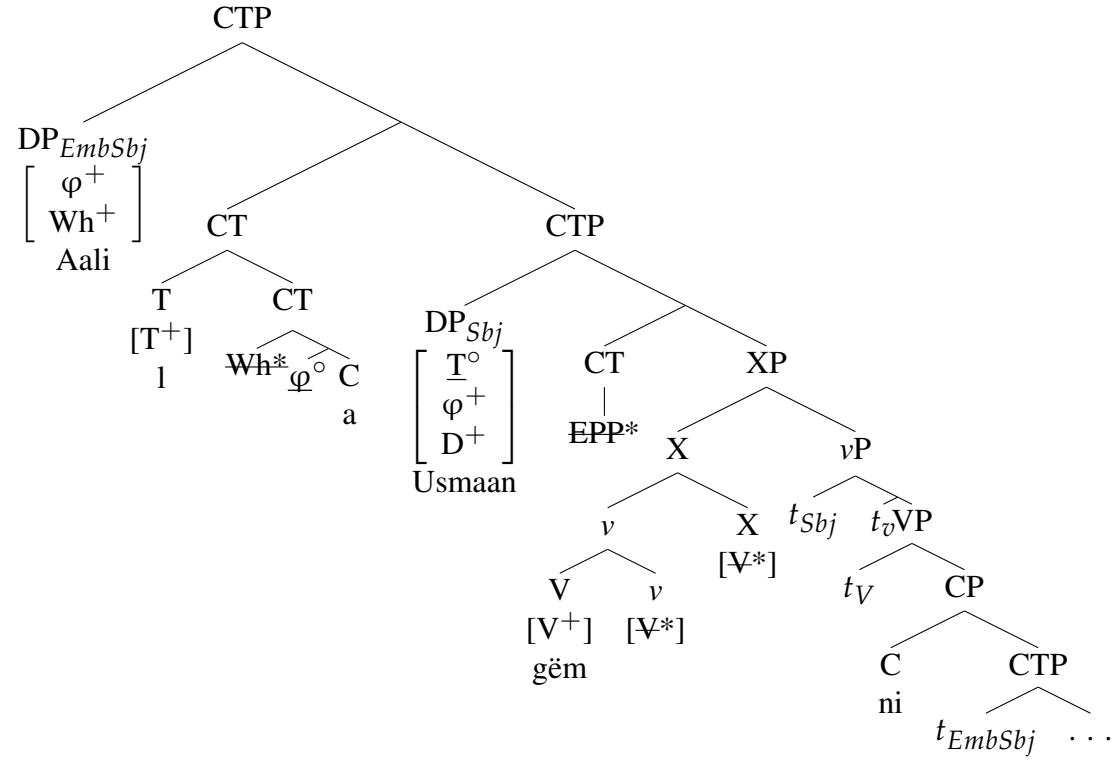
(36) Aali **l-a** Usmaan gëm ni *(mu)-**a** dem.
Ali *l*-C_N Oussman believe that 3SG.STR-C_N leave
"*Oussman believes that it's Ali who left.*"

(37)



The subject is first attracted to Spec,CTP by EPP*. Wh* attracts the subject of the embedded clause, in the embedded Spec,CTP, which, however, has nowhere to move to, due to the ban on two specifier positions. This causes CT to split, creating another specifier to which the embedded subject can move, also checking φ°. Since its checked T° feature is not visible in this cycle, the TCC is not satisfied. The T node inside the CT head therefore raises and adjoins to CT, as described in §5.4, surfacing as *l-*. The final structure of the matrix clause is shown in (38).

(38) *The derivation of the matrix clause*



Finally, we must say something about the occurrence of a subject pronoun *mu* in lieu of the extracted subject in the embedded clause in (34)/(36). This is the only case of resumption in Wolof A′-extraction, and I propose that it does not occur for syntactic reasons, but to provide a host for the sentence particle *a*, which is a clitic and cannot stand on its own. I argue that the subject pronoun in case of long-distance subject extraction is a Spell-Out of the trace of A′-movement. Similar proposal is made by Engdahl (1985) for resumptive pronouns in Swedish, which are extremely limited, occurring only in the subject position of tensed clauses next to lexical complementizers. Engdahl argues that these pronouns behave like *wh*-traces and should thus be analyzed in terms of a mechanism that spells out an A′-trace. Hoekstra (1995), in investigating the occurrence of resumptive pronouns in preposition stranding in some German dialects also argues that these pronouns are phonologically motivated trace spell-outs, occurring only before postpositions beginning with a vowel. I propose that, in Wolof, *a* cannot stand on its own, but must attach to an element to its left. One question that needs to be addressed is why it cannot attach to

the embedding complementizer *ni*. I have not systematically explored this proposal, but according to my data, speakers commonly place a pause after *ni*. I therefore propose that *ni* and *a* are in separate prosodic domains. I propose that the trace of the subject is pronounced (in the form of a pronoun) in order to provide a host for the sentence particle.

5.6 Conclusion

In this chapter, I argued that N-raising clauses in Wolof have a split CT head, resulting in a structure with the traditional distinction between a higher head (C), hosting a *wh*-element, and a lower head (T), with the structural subject in its specifier. This accounts for the key difference between V-raising and N-raising clauses – the obligatory pronominal clause-internal subject in V-raising clauses, due to the fact that there is no position in which a lexical subject can get case (while a pronoun can do so by cliticizing below CT), and the availability of a clause-internal lexical subject in N-raising, due to the fact that CT splits, and gets into a position from which it can assign case to the subject in the specifier of the lower CT. I proposed head-splitting to be the result of one of two situations that occur in the course of the derivation. In subject extraction clauses, at the moment when Wh* searches for an element with the Wh^{+}-feature in its c-command domain, the subject DP is already located in Spec,CTP, and is therefore not visible to CT. Head-splitting creates a new c-command domain, and Wh* can now find the subject DP. In non-subject extraction, due to the fact that the subject first moves to Spec,CTP to check EPP*, and under the hypothesis that CT allows for only one specifier position, the object with the Wh^{+}-feature has nowhere to move to. Wh* can again not be checked, and head-splitting ensues, creating a new specifier position.

I also provided an account of the subject/non-subject asymmetry in Wolof, relying on the analysis of the *that*-trace effect in English in Pesetsky and Torrego 2001 and the Wolof subject/non-subject asymmetry in Martinović 2013, who propose to treat this phenomenon as a T-to-C asymmetry. They argue that the complementizer *that* is an instance of T that has moved to C movement, triggered by the presence of an uninterpretable T feature on C, which is, in case of subject extrac-

tion, deleted by the moved subject itself, under the assumption that nominative case is [*uT*] on D. I similarly argue that *l*-, which must precede the sentence particle *a* in non-subject extraction, is the exponent of T, which moved from its low position in the complex CT head to adjoin to it. I slightly modify P&T's and my previous account, grounding this movement in the *Tense C-command Condition*, which requires Tense to c-command all functional material in the clause. Under the feature system I propose, in which only the highest visible feature is accessible to the head (*Condition on Accessibility*), T is too low to satisfy TCC in its base position. This triggers its movement to the top of CT, where it is available to the CT head. Just in case the local subject is the element carrying the Wh^{+} feature, consequently ending up in the higher Spec,CTP, it can satisfy the TCC due to the fact that it carries nominative case, which is a checked T° feature on D, as proposed by P&T. Checked Type 2 features are only visible in their own clause, which is why the subject/non-subject asymmetry is local: the subject can only satisfy the TCC in the most embedded clause in long-distance extraction. In every higher clause, it behaves as a non-subject, requiring for T-raising to occur. This results in *l*- surfacing in every higher CT.

CHAPTER 6

THE SYNTAX OF CT WITH NOMINAL PREDICATES

6.1 Introduction

Copular sentences contain two constituents often connected with a copular verb. In this chapter we only deal with copular sentences in which the main constituents are two nominals, which I refer to as NPred sentences.[1] The syntax and semantics of copular sentences is a big topic in linguistics, as many of their properties are puzzling. I do not directly deal with most questions usually addressed by research on copular sentences,[2] but focus on Wolof-particular peculiarities of NPred sentences, showing how they fit into and inform the analysis presented thus far.

Clauses with nominal predicates in Wolof present a puzzle. An information-structurally neutral predicational sentence, as in (1), appears to have properties of both N-raising and V-raising structures. On the one hand, it contains the sentence particle *la*, which occurs in N-raising clauses, in non-subject A′-extraction, as we have seen in Chapter 5. On the other hand, the predicate DP is the nominal located in the specifier of the particle, and the clause-internal subject is obligatorily a pronoun, just as it is in V-raising and quite unlike what we have seen in N-raising clauses. An optional lexical subject is located to the left of the predicate DP, again, as in V-raising clauses. The exact same structure is used if the predicate DP is a *wh*-word and the NPred clause a predicate question, as in (2).

(1) *Affirmative NPred sentence*
(Xale yi) sàcc l-a-ñu.
child the.PL thief *l*-C_N-3PL
"(The children)/They are thieves."

(2) *Predicate question NPred sentence*
(Xale yi) l-an l-a-ñu?
child the.PL CM-Q *l*-C_N-3PL
"What are the children/they?"

1. For a descriptive overview and a discussion of some information-structural properties of NPred sentences in Wolof, see Martinović 2015, forthcoming.

2. For an excellent overview of various issues in the syntax and semantics of copular sentences, see Mikkelsen 2005.

There is another type of NPred sentence, which looks like an ordinary N-raising subject-extraction clause: the subject DP is located in the specifier of the sentence particle *a*, and the remainder of the clause is below CT. This is the case when the subject DP has a Wh^{+} feature, as, for example, in the subject question in (3), or a subject EI-structure, in (4). An important difference between the clauses in (1)-(2) and those in (3)-(4) is in the presence of another element in the latter: *di*, which in sentences with verbal predicates functions as an imperfective auxiliary, but here appears to function as a copular verb.

(3) *NPred subject question*
Kan-a di (>kanay) sàcc?
who-C_N COP thief
"Who is a thief?"

(4) *NPred subject EI-structure*
Usmaan-a di (> Usmaanay) sàcc.
Oussman-C_N COP thief
"It's Oussman who is a thief."

Di cannot occur in neutral affirmative predicational sentences (i.e. there is no variant of (1) that contains *di*), however, if negation is present, a neutral predicational NPred sentence looks just like an ordinary V-raising clause – the copula with the negation is in Spec,CTP, the clause-internal subject is obligatorily pronominal, and the optional lexical subject is to the left of CT:

(5) *Negative predicational copular sentence*
(Xale yi) d(i)-u(l)-∅-ñu sàcc.
child DEF.PL COP-NEG-C_V-3PL thief
"(The children)/They are not thieves."

There are therefore three syntactic structures in which copular clauses occur: a regular V-raising clause with a verbal head *di* and an obligatory clause-internal subject clitic (SCl), a regular N-raising clause, also containing the copula *di* and with no obligatory SCl, and a clause with mixed V-raising/N-raising properties (NP_{Pred}-raising), with no copula, but with an obligatory SCl. The V-raising clause is only used in a neutral context, in the presence of negation. The N-raising clause requires an element other than the predicate DP to have a Wh^{+}-feature. N_{Pred}-raising is used in a neutral affirmative context or when the predicate DP is questioned or contrastively focused. The

three clause-types and their syntactic and distributional characteristics are summarized in Table 6.1.

	V-raising	**N-raising**	**N_{Pred}-raising**
Properties	*di* SCl	*di* –	– SCl
Distribution	Neutral negative	non-Pred Wh-clause	Pred Wh-clause Neutral affirmative

Table 6.1: Possible structures and distribution of NPred clauses

I make the following claims in this chapter. First, I argue that there are two types of predicational clauses in which the two nominal constituents are contained: one which contains a copula, that yields V-raising and N-raising NPred clauses, and one in which a type of predicate inversion happens, with the predicate DP raising above the subject DP, that results in the N_{Pred}-raising clause. I propose that this construction is only available if the predicate DP has a Wh^{+} feature.

The main claim defended in this chapter is that copular sentences with a nominal predicate present evidence for the proposal made in Chapter 5 – that Pred* and Wh* are two sides of the same feature, one present in structures in which a verbal predicate is in CT, and the other in structures in which a nominal predicate is in CT. I propose that, in clauses with lexical verbs, turning a nominal into a predicate (by attracting it to Spec,CTP with Wh*) results in Exhaustive Identification (EI) of the moved constituent, as in (6).[3]

(6) *Non-subject EI-structure*
Ceeb l-a Moussa lekk.
rice *l*-C_N Moussa eat
"It's rice that Moussa ate."

3. There are A′-movement clauses in which this does not happen, such as relative clauses, so an additional feature may be involved in differentiating relative clauses from EI clauses and NPred clauses. I claim that this additional feature does not influence the syntactic shape of A′-movement constructions, and do not concern myself with it here. For more on the surface structure of different N-raising clauses, see Chapter 8.

Attracting a nominal predicate in NPred clauses to the very same position, the Spec,CTP of *la*, as in (1), yields an information-structurally neutral sentence. Placing EI arguments, *wh*-words, and nominal predicates in the same syntactic position is not unique to Wolof; the same phenomenon is observed in Hungarian, the quintessential discourse-configurational language. This position is traditionally tied to focus (Horvath 1986, 1995, 2007; Brody 1990, 1995; É. Kiss 1998, etc.), however, not every element found there must be semantically focused. There are therefore proposals to tie EI to predication in Hungarian (É. Kiss 2005, 2006; Wedgwood 2003, 2005). This dissertation is not concerned with developing a semantic account; I rely on the analysis proposed in Klecha and Martinović (forthcoming) for unifying EI and nominal predication in Wolof.

The reason why a V-raising clause can only be used when negation is present in the clause is a mysterious one and do not have a principled explanation at this point. I stipulate a constraint that prevents the copula *di* from being felicitous if raised to CT, unless it is accompanied by negation. The alternative is to use CT with a Wh*-feature, which generates a structure with the same interpretation, due to the fact that EI is in fact predication.

The chapter is organized as follows. In section 6.2, I briefly elaborate on the idea that Wh* and Pred* are two sides of the same feature. I present the main points of the analysis in Klecha and Martinović (forthcoming), which accounts for the parallels between NPred sentences and N-raising sentences. I do not at this point propose a unified semantic analysis that would extend to V-raising sentences. In §6.3 I illustrate how these assumptions allow us to make sense of the three structures for NPred sentences presented in the introduction. Sections 6.4 and 6.5 discuss other types of NPred sentences: specificational and equatives, and pseudoclefts and fragment answers, respectively. I show how my analysis addresses new puzzles that these different clause-types introduce. Section 6.6 concludes.

6.2 Wh* = Pred*

This chapter shows that we can make sense of the data from NPred sentences by adopting the stipulation that Wh* and Pred* are two sides of the same feature, which I proposed in Chapter 5. In this section, I focus on one phenomenon relating predication to *wh*-movement common in the so-called discourse-configurational languages such as Hungarian and Wolof – the fact that EI arguments and nominal predicates occupy the same syntactic position, also the landing site for *wh*-words.

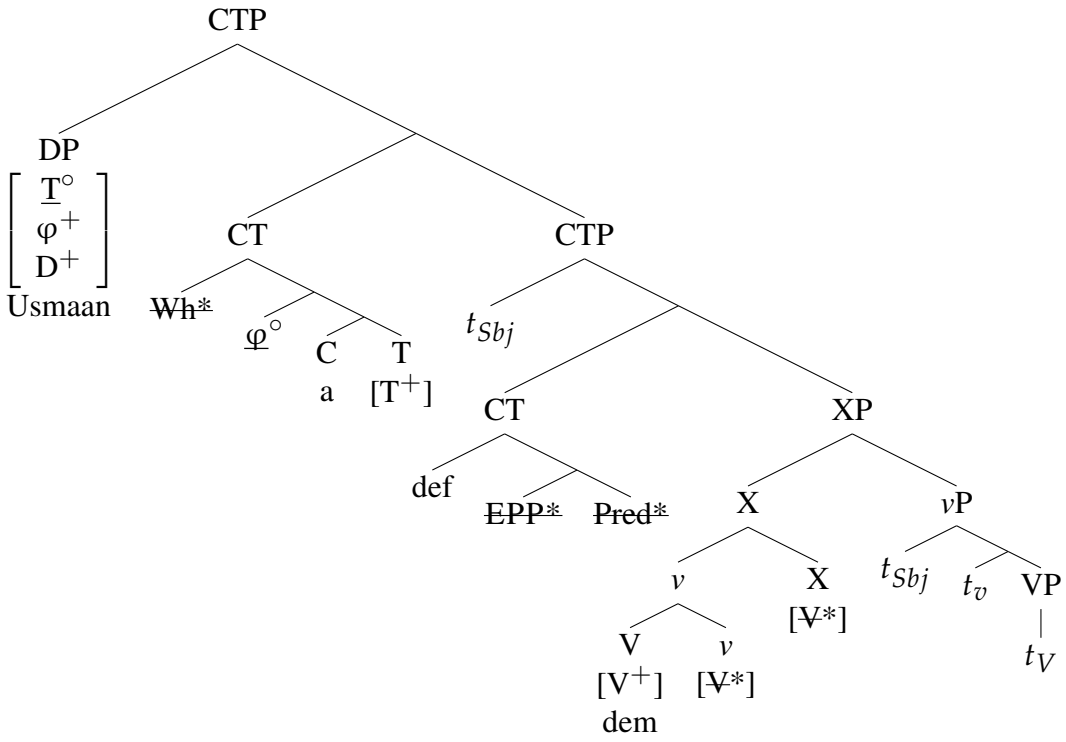
At this point, the idea that Wh* and Pred* are two sides of the same feature is a stipulation, partly due to the fact that, in Wolof, we simply cannot tell whether the verb raises to the lower CT head in cases of CT splitting, because the verb seems to raise very high in all clauses (see Chapter 7). Furthermore, in my analysis the CT split is related solely to the presence of the Wh* feature. Since we do not have evidence for verb movement in the presence of Wh*, positing that it does not take place makes for simpler derivations. One piece of data which may speak in favor of this is that *do*-support is not available in N-raising clauses, which we may expect if it is an available mechanism for satisfying the Pred* feature. (7) should then be grammatical.[4]

(7) *Do-support not available in N-raising*

a. *Usmaan-a def dem.
Oussman-C_N do go
intended: *"It's Oussman who WENT."*

4. It is, of course, entirely possible that (7) is excluded for a different reason, such as the incompatibility of EI and predicate focus (which is the interpretation that *do*-support yields).

b. *



This idea is also tangentially related to the claim made for mainland Scandinavian V2 languages, that the verb does not raise to T in non-V2 contexts, i.e. when it does not raise to C (e.g. Vikner 1994, 1995) . Translated to my analysis, this would mean that the structure in which the verb raises to the highest functional head and the structure in which it does not differ in the availability of the trigger for V-raising, Pred*, present in the former, but absent in the latter construction.

This, of course, is not enough to proclaim with certainty that Pred* and Wh* are two sides of the same feature, and in this dissertation, it remains mostly a stipulation. It is also important to stress that the A′-movement we are concerned with is the one which results in EI, available in the so-called discourse-configurational languages, such as Wolof and Hungarian, but not available in, for example, English. There is therefore probably a difference between languages which only form questions and relative clauses with A′-movement, and those which, additionally, use the same syntactic structure for EI. The discussion in this section is limited to Wolof, to structures in which A′-movement results in EI. That is, I assume that Wh* and Pred* are in complementary

distribution in Wolof in general, but I also assume that there is something, possibly a feature, that distinguishes relative clauses from questions, EI-structures and NPreds. This feature, however, as I extensively claim in Chapter 8, is not in any way involved in the realization of the surface structure of A′-movement constructions.

EI marking in the literature is usually related to a specialized syntactic position (e.g. É. Kiss 1998; Torrence 2013b) and a syntactic feature on a head which triggers movement of the EI-ed constituent (such as a focus feature in Horvath 1986, 1995; Brody 1990, 1995 or the Exhaustive Identification operator in Horvath 2007). What throws a wrench in such an analysis are cases of nominal movement to the 'exhaustifying' position which are not accompanied by exhaustive interpretation. For example, in Hungarian, a textbook case of a discourse-configurational language, the position where EI constituents are found is to the left of a tensed verb (e.g. Szabolcsi 1981). If a nominal remains below the verb, it can be intonationally focused, but in that case there is no EI. This is shown in (8).

(8) *Exhaustive identification in Hungarian* (Onea 2009, 53)

a. Péter [Marit]$_F$ szereti.
Peter Mary.ACC loves
"Peter loves Mary (and no one else)."

b. Péter szereti [Marit]$_F$.
Peter loves Mary.ACC
"Peter loves Mary (and possibly someone else as well)."

However, elements other than exhaustively focused nominals are found in the pre-verbal position as well (for an exhaustive overview, see Wedgwood 2003), most notably non-verbal predicates:

(9) *Hungarian nominal predicate* (Hegedűs 2013, 61)
János *orvos* lesz.
John doctor will.be
"John will be a doctor."

We have seen that the same is true in Wolof, the difference being that the syntactic position in

which both EI arguments and nominal predicates are found is Spec,CTP:

(10) *EI non-subject is in Spec,CTP of* la
Golo$_i$ l-a xale yi gis.
monkey *l*-C$_N$ child DEF.PL see
"It's a monkey that the children saw."

(11) *Nominal predicate is in Spec,CTP of* la
Xale yi *ndongo* l-a-ñu.
child DEF.PL student *l*-C$_N$-3PL
"The children are students."

A few proposals in the literature have discussed a link between predication and exhaustivity,[5] specifically concerning Hungarian. É. Kiss (2005, 2006) offers an informal discussion, proposing that exhaustivity is not encoded in the grammar, but is the result of *specificational predication* – the exhaustive reading arises when a constituent raised to the predicate position is a definite or a specific indefinite noun phrase. She follows reasoning expressed by Huber (2000), who argues that in specificational sentences the predicate implies that its specification of the individuals that make up the set denoted by the subject is exhaustive. Kiss does not formalize these ideas. Wedgwood (2003) terms the position immediately preceding the tensed verb the position of *main predication* and offers an analysis in the framework of dynamic syntax, proposing that exhaustivity is a pragmatic effect.

In Klecha and Martinović (forthcoming), we address the semantics of EI N-raising clauses and NPred clauses in Wolof and propose a unified analysis for the two structures. We argue that the exhaustive meaning is encoded by the attracting head itself, in the form of an iota operator which binds the trace of movement. It does not result from making the extracted phrase in any way exhaustive, but in making the complement of the attracting head unique. This exhaustivity is essentially neutralized in cases like predication, because the remnant of movement already denotes

5. A link has also been proposed to exist between focusing and predication. Since the notion of *focus* is not universally defined, I do not discuss this literature.

a singleton; thus making it unique is not informative. We analyze the CT hosting *(l)a* as having a semantics whereby the unique individual satisfying the property denoted by its complement (the CTP containing the trace of movement) has the property denoted by its specifier (the moved nominal). EI results from the moved nominal being a referential expression. This analysis essentially translates (12) and (13) as (14) and (15), respectively.

(12) *Exhaustive Identification*
Musaa l-a-ñu gis.
Moussa *l*-C_N-3PL see
"It's Moussa who they saw."

(13) *Nominal predication*
Jangalëkat l-a-ñu.
teacher *l*-C_N-3PL
"They are teachers."

(14) The unique individual they saw has the property of being Moussa.

(15) The unique individual identical to them has the property of being a teacher.

Thus the exhaustivity imparted in (12) is neutralized in (13) because the property being exhaustified (the property of being a plurality identical to them) is already a singleton.

I do not develop the ideas in Klecha and Martinović further, but leave this for future work. For the details of the semantic analysis, see the original paper. In the remainder of this chapter, I show how the assumption that N-raising and NPred clauses are syntactically and semantically identical—i.e. that the Wh* feature in those clauses is what attracts the DP predicate to Spec,CTP—help us understand the structure and distribution of NPred sentences in Wolof.[6]

6. That nominal predicates and EI elements occupy the same position is actually also true of a language like English. A neutral copular sentence in English has the DP predicate as the complement of the copula *be*, as in (ia). If we wish to exhaustively identify an argument, we have at our disposal a specificational copular sentence, as in (ib), which is also the first clause in a bi-clausal cleft, as in (ic). A specificational sentence by definition places exhaustivity onto the complement of the copula (see Higgins 1979 and all subsequent work on this topic).

(i) a. John is a **student**.
b. The student is **John**.
c. It is **John**, who is a student.

One difference between English on the one hand and Hungarian and Wolof on the other is in the position in which this type of predication is accomplished. In English it is the complement of *be*; in Hungarian and Wolof it is an A′-position to which elements are moved. The fact that in Wolof this position happens to be in the CTP-layer, where in neutral

6.3 Predicational NPred sentences

In this section I present an analysis for the three NPred clause-types discussed in the introduction, giving an explanation for their syntactic and distributional properties, repeated in Table 6.2.

	V-raising	**N-raising**	**N_{Pred}-raising**
Properties	*di* SCl	*di* –	– SCl
Distribution	Neutral negative	non-Pred Wh-clause	Pred Wh-clause Neutral affirmative

Table 6.2: Possible structures and distribution of NPred clauses

I start with N-raising clauses, as they are the most orderly behaved.

6.3.1 Subject N-raising NPred clauses

NPred clauses in which the subject has the Wh^{+} feature have the form that we expect: they look like regular N-raising sentences with a subject in Spec,CTP. The copula *di* is obligatory, and it behaves just like a verb in N-raising clauses, by taking on inflectional affixes (for details on the behavior of inflectional morphology, see Chapter 7).

(16) *N-raising NPred clause*

a. Xale yi-a di (>yeei) sàcc.
child DEF.PL-C_N COP thief
"It's the children who are thieves."

b. Xale yi-a (>yee) d(i)-oon sàcc.
child DEF.PL-C_N COP-PERF thief
"It's the children who were thieves."

c. Xale yi-a (>yee) d(i)-ul sàcc.
child DEF.PL-C_N COP-NEG thief

clause-types verbs move as well, may point to a broader generalization, having to do with the position in which a language positions predicates. This is complex topic, which I hope to address in future research.

"It's the children who aren't thieves."

Stative predicates in Wolof normally receive a present tense interpretation with no overt aspectual morphology (see Chapter 2). If *di* is added to a sentence with a stative predicate, it invariably results in a future tense reading:

(17) *Stative predicates in Wolof* (Torrence 2012a, 25-26)

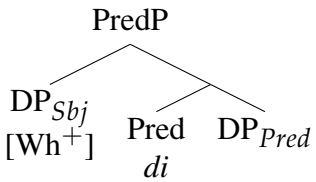
a. Tiit-na-a.
be.afraid-C_V-1SG
"I am afraid."

b. Di-na-ñu mer.
IMPF-C_V-3PL be.angry
"They will be angry."

In NPred sentences, *di* does not result in future tense, as evidenced by the example in (16a). It also does not result in past progressive when combined with the perfective marker *oon* (in (16b)), which is its meaning in clauses with lexical verbs and no nominal predicates (again, for details see Chapter 7). I therefore assume in this dissertation that *di* plays a double role in Wolof: as an imperfective auxiliary, and as a copular verb.[7]

I propose that the two nominals in an N-raising NPred sentence are generated in an asymmetrical predicational clause (e.g. Williams 1984; Chomsky 1988; den Dikken 1997, 2006 and others), with the copula *di* as the Pred head, as in (18). Some element in N-raising clauses must have a Wh^+ feature, and in this clause-type it can only be the subject DP.

(18)

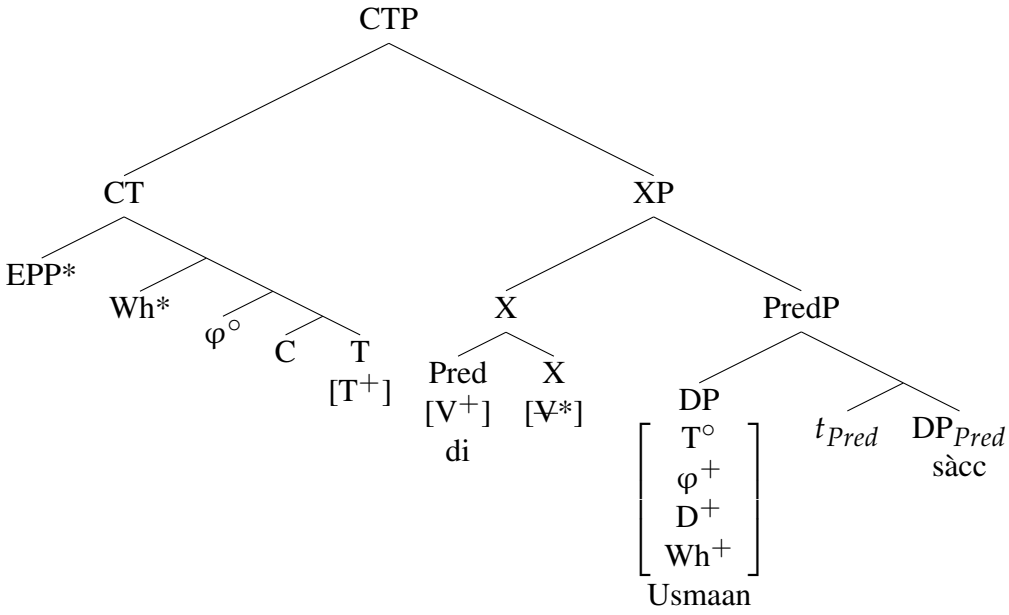


7. I do not go into the details of the possible connection between the two, nor am I at this point concerned with providing a unified analysis for these two roles of *di*. This is left for future work.

The sentence in (19a) has the structure in (19b) at the moment of the merger of the CT head.

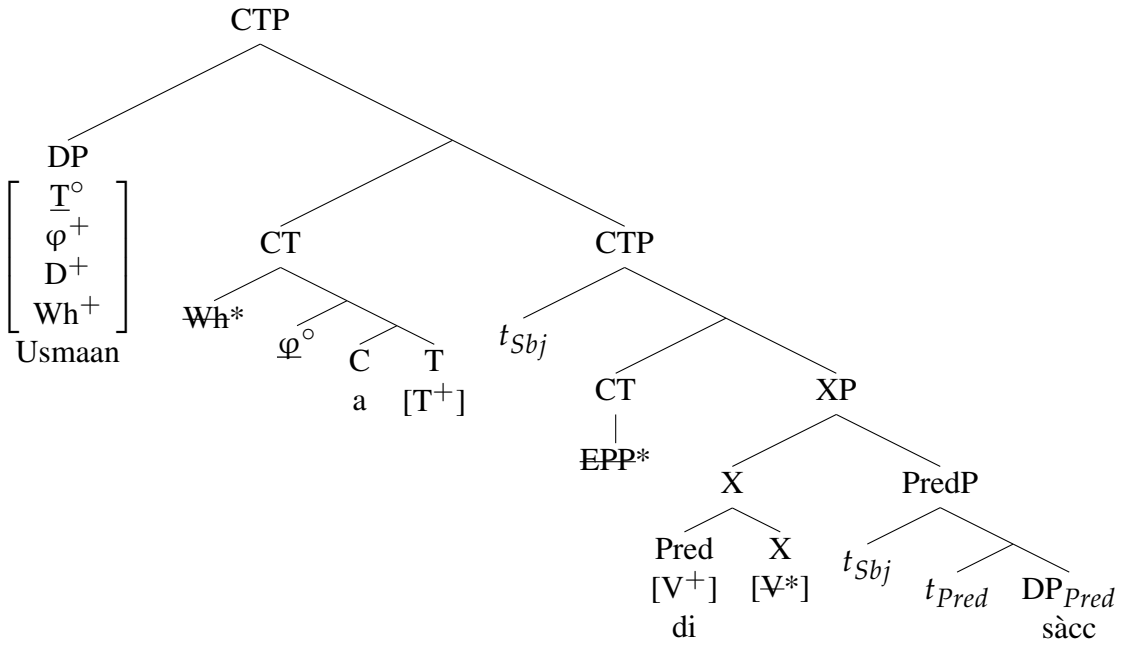
(19) a. Usmaan-a di (>kanay) sàcc.
Oussman-C_N COP thief
"It's Oussman who is a thief."

b.



The derivation proceeds just as those in Chapter 5. CT attracts the closest nominal to Spec,CTP to satisfy the EPP* to Spec,CTP. After the EPP* is checked, the next feature that needs to be satisfied is Wh*; however, this being the subject DP which is already in SpecCTP, it is no longer in CT's c-command domain. Head-splitting ensues, and the smallest projection that dominates all unchecked features in CT moves up and remerges with CTP. At that moment, the subject's T° feature is checked, resulting in the subject receiving nominative case. It is then attracted by Wh* and moves again to the higher Spec,CTP, where it can also check φ°. The TCC is also satisfied, by the subject's checked T° feature. The final structure is given in (20).

(20)



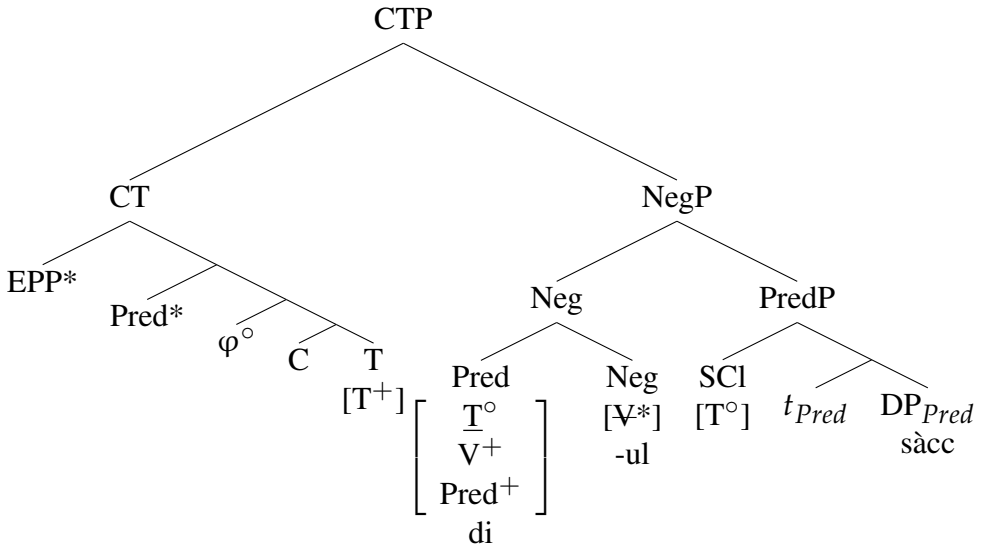
The derivation of an N-raising subject extraction NPred clause follows the pattern we have seen in other N-raising clauses. In this derivation, the subject was the element with the Wh$^+$ feature, and the CT merged in this clause also has a Wh*. What about a PredP in which the CT does not have Wh*, but Pred*? Such a CT can have the PredP I proposed in this section, but only if negation is present in the clause. We look at these clauses in the next section.

6.3.2 V-raising NPred clauses

Neutral V-raising NPred clauses are possible only in the presence of negation, which is a suffix, contained in a projection below CT (for details, see Chapter 7). They have all the properties of regular V-raising clauses: the copula *di* and negation are in CT, the clause-internal subject is obligatorily pronominal, and the optional lexical subject is to the left of CT. The structure of the sentence in (21a) at the moment of CT merger is given in (21b). The verb moves to Neg, and in a position to have its Type 2 T° feature checked. As in other V-raising clauses, the subject in Spec,*v*P can only be a weak pronoun, since only such a subject can get nominative case and satisfy the NCC (see Chapter 4 for details).

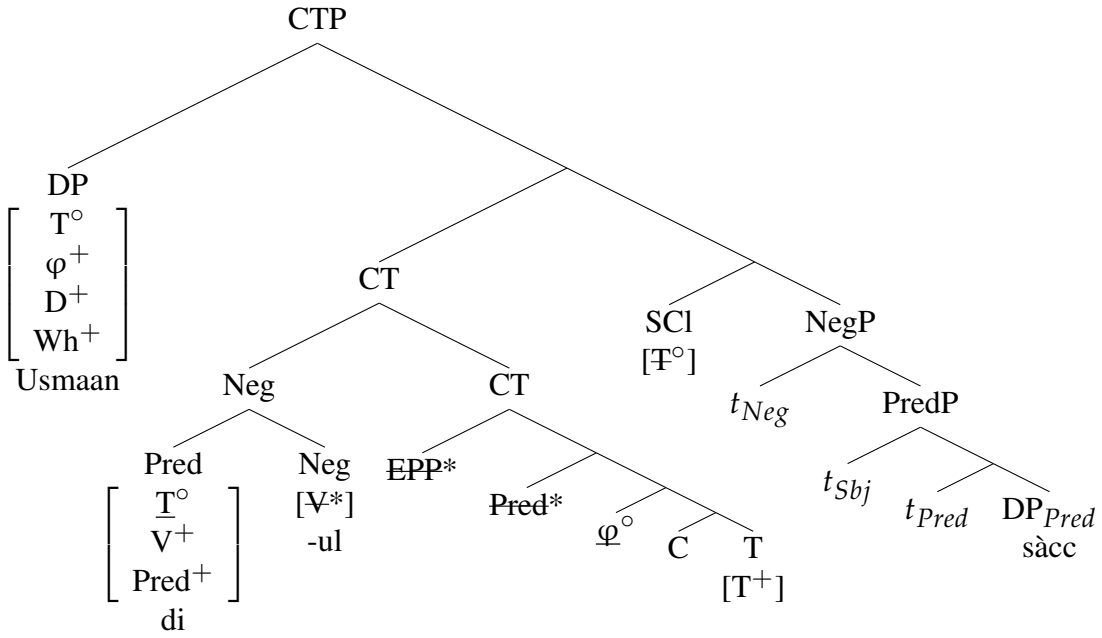
(21) a. Usmaan d(i)-u(l)-∅-∅ sàcc.
Oussman COP-NEG-C_V-3SG thief
"Oussman is not a thief."

b.



The derivation proceeds in an orderly fashion. A DP is base-generated in Spec,CTP to check EPP*, and Neg, together with the verb, moves to CT to check Pred*. φ° is also checked by the DP in Spec,CTP. The TCC is satisfied by the checked T° on the verb, and the subject clitic moves via Clitic Movement and adjoins to NegP, where it has its T° feature checked.

(22)



The puzzle with V-raising NPred structures is that they cannot be used without negation – a sentence in which only *di* is located in CT is ungrammatical:

(23) Di *cannot raise to CT without negation*
*Xale yi di-na-ñu sácc.
child DEF.PL COP-C_V-3PL thief
"The children are thieves."

Without negation, *di* can only raise to CT if there is another copular verb in the clause, the existential verb *nekk*. Such a clause, however, receives future tense interpretation, so it appears that, in that case, *di* has its more common role of an imperfective marker, as this is the standard way to form future tense in Wolof.[8]

(24) *NPred sentence in future tense*
Xale yi di-na-ñu nekk sàcc.
child DEF.PL IMPF-C_V-3PL exist thief
"The children will be thieves."

At this point, I do not have an explanation for this peculiar restriction. There are several possible paths to explore, none of which are entirely satisfactory. We might say that, in affirmative sentences, *di+na* (the sentence particle) are grammaticalized as the future tense, in which case there must be another verb in the clause. This is not really compatible with the derivational approach such as the one I am pursuing, at least not without additional stipulations. We may also say that, due to the fact that neutral NPred clauses can be formed in a different way, which is described in the following section, there is a preference not to have two structures with the same meaning, so one is filtered out. This is, however, hardly how we usually see language work; we are used to seeing multiple constructions expressing the same meaning, and it is difficult to claim that in one instance this would result in the ungrammaticality of one of the constructions, instead of just a

8. Speakers say that *nekk* can be used interchangeably with *di* in all sentences in which *di* functions as a copula, though I have never spontaneously elicited it.

frequency effect.

I leave the ungrammaticality of an affirmative V-raising NPred sentence as a puzzle to be addressed in future work. In the following section, I show the derivation of N_{Pred}-raising clauses which I claim always have predicate DP with a Wh^{+} feature, and give support for the claim that Pred* and Wh* are two sides of the same feature. This explains why N_{Pred}-raising clauses can fill the gap created by the ungrammaticality of an affirmative V-raising NPred clause.

6.3.3 NP_{Pred}-raising clauses

N_{Pred}-raising clauses are puzzling in several ways. First, they appear to combine N-raising and V-raising properties. They surface with the N-raising sentence particle *la*, but they forbid a clause-internal lexical subject, and only allow a pronominal one, as in V-raising clauses. Now, the analysis I presented so far does not necessarily force us to conclude that the presence of *la* implies that we are dealing with a split CT, and consequently with a clause in which CT has a [Wh*] feature. Recall from N-raising chapter that *l-* is analyzed as the T-node from the complex CT head, which splits off and adjoins to CT in order to satisfy the TCC, when no other element with a T-feature c-commands all other functional projections in the clause. It could, therefore, be argued that N_{Pred}-raising clauses are just regular V-raising clauses without a verbal copula, and that the predicate DP, which raises to Spec,CTP, does not have a Type 2 T° feature (unlike verbal heads) and can therefore not satisfy the TCC, triggering T-splitting inside the CT. There are two reasons to discard this idea. First, an N_{Pred}-raising clause has two meanings, as shown in (25): a neutral one, and one in which the predicate DP carries contrastive focus. Contrastive readings are associated with EI structures in Wolof, which are N-raising clauses, with a Wh*-feature in CT.[9]

9. I have treated exhaustivity as a phenomenon separate from that of focus, as it is done in some recent works on the topic (e.g. Horvath 2007), mostly because the notion of focus is still not well defined and understood. Furthermore, as illustrated in this chapter, at least in languages such as Wolof and Hungarian EI does not always result in focus. Contrastive focus often seems to overlap with exhaustivity (Percus 1997; É. Kiss 1998), and this is also the case in Wolof: all EI-structures are also felicitous in a context in which the A'-extracted element is contrastively focused, moreover, there is no other way to achieve contrastive focus in Wolof but to use an EI structure. It has been argued that contrastive focus is a pragmatic phenomenon (e.g. Zimmermann 2007), which then might be superimposed on EI

(25) *N_{Pred}-raising NPred clause*
Xale yi sàcc l-a-ñu.
child DEF.PL thief *l*-C_N-3PL
(i) *"The children are thieves."*
(ii) *"The children are THIEVES." (not MURDERERS)*

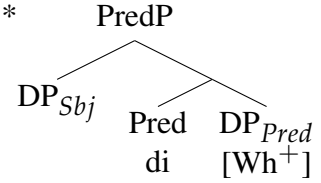
The second clue that all N_{Pred}-raising clauses involve a CT with [Wh*] are predicate questions, which have the exact same structure as affirmative predicational sentences, as in (26).

(26) *Predicate question N_{Pred}-raising clause*
Xale yi l-an l-a-ñu?
child DEF.PL CM-Q *l*-C_N-3PL
"What are the children?"

Again, this is a departure from the expected shape of an N-raising non-subject question, which would be as in (27). The question in (26), like a V-raising question, has an obligatory pronominal subject.

(27) *Expected predicate NPred question*
*L-an l-a xale yi di?
CM-Q *l*-C_N child DEF.PL COP
intended: *"What are the children?"*

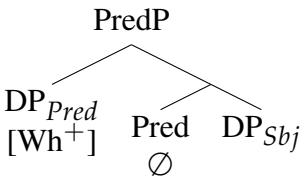
In light of the empirical evidence presented in this section, I propose that a predicate DP with a Wh^+-feature is ungrammatical in the context of *di*. This bans the following PredP:

(28) *


in languages such as Wolof (and Hungarian). I therefore assume that an EI syntactic structure is needed for contrastive focus.

Furthermore, I argue that the unavailability of a clause-internal lexical subject in N_{Pred}-raising clauses lies in the fact that the predicate DP raises both to satisfy the EPP*, and then to satisfy Wh*, after head-splitting. This leaves the lexical subject without the ability to obtain nominative case, and just as in V-raising clauses, forces the clause-internal subject to be a pronoun. All this means that the predicate DP must be higher than the subject DP, if it is to be attracted by EPP*. I therefore propose that the structure of a PredP in which the predicate DP has [Wh^+] is as follows:

(29)



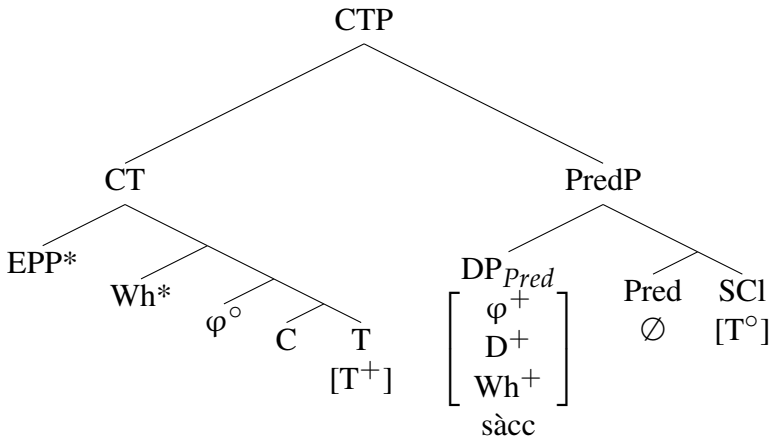
Den Dikken (2006) argues that the syntactic predication relation, while always asymmetrical, is non-directional, meaning that a Pred head (which he calls a 'relator') can have the subject in its specifier and the predicate as its complement, but that it can also be the other way around, with the predicate in its specifier and the subject as its complement. I adopt this proposal, and stipulate that the Pred head *di* can only take a non-Wh DP_{Pred} as its complement, as in N-raising NPreds and negative V-raising NPreds, while the null Pred head can only take a Wh^+ DP_{Pred} as its specifier, as in (29). The reason behind this distribution shall remain unexplained in this dissertation. However, once we adopt it, together with the proposal about the equivalence of EI and nominal predication laid out in §6.2, we can make sense of the distribution of N_{Pred}-raising NPred clauses. The remainder of this section is dedicated to elaborating on the details of the analysis.

I propose that an information-structurally neutral affirmative predicational sentence as in (30a) has the structure as in (30b). The predicate DP, in addition to the Wh^+ feature, also has a D^+ feature, and φ-features. The subject in these clauses can only be pronominal; the reason for this will become clear throughout the derivation.

(30) *Neutral affirmative NPred sentence*

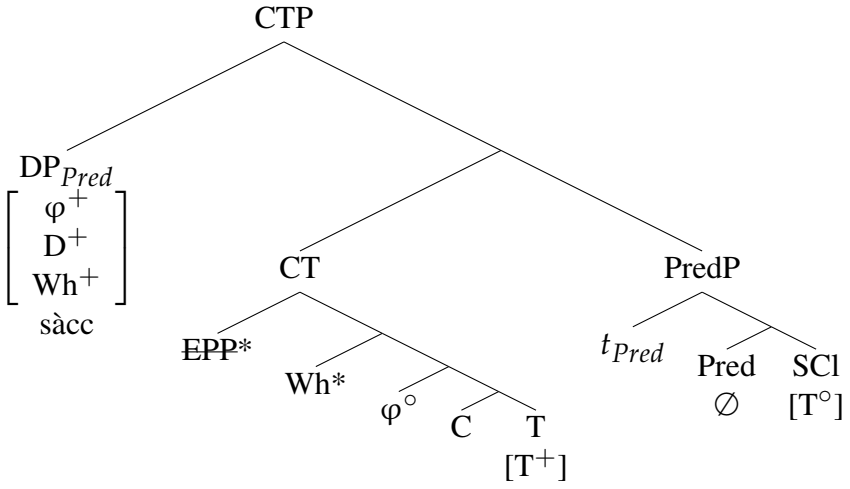
a. Musaa sàcc l-a-∅.
Moussa thief *l*-C_N-3SG
"Moussa is a thief."

b.



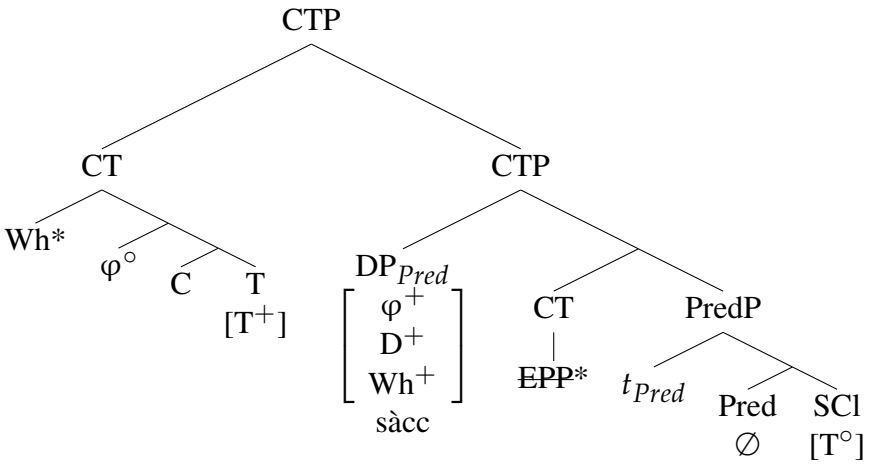
The checking of CT's features proceeds in the defined way. EPP* attracts the closest nominal to its specifier; in this case, it happens to not be the subject, but the predicate DP.

(31)



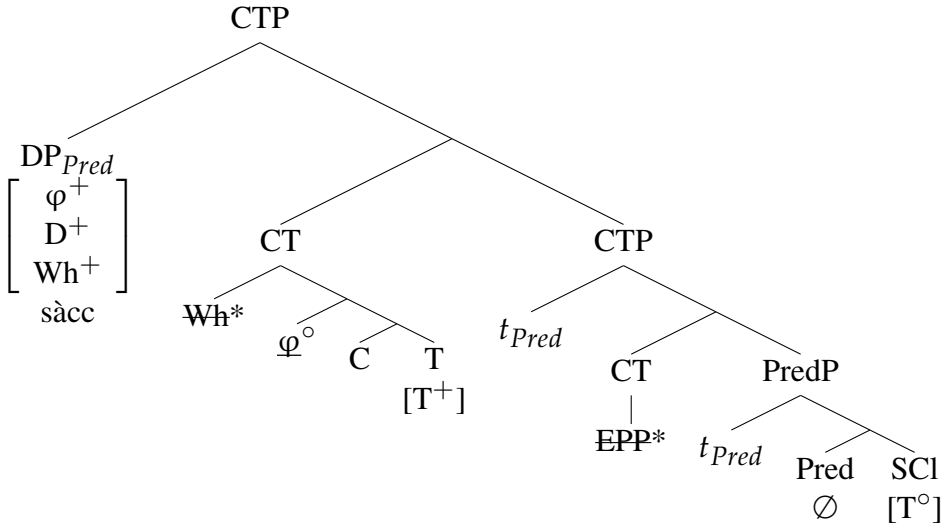
Next, Wh* needs to be checked, so CT searches its c-command domain for an element with a matching feature. That element is the predicate DP, already in Spec,CTP and therefore no longer in the search domain of CT. Just as in N-raising clauses, the node dominating Wh* may raise and adjoin to CTP, creating a new head and a new c-command domain, as shown in (32):

(32)



Wh* can now attract the element with the matching feature, which is the predicate DP, that also values φ° on CT.

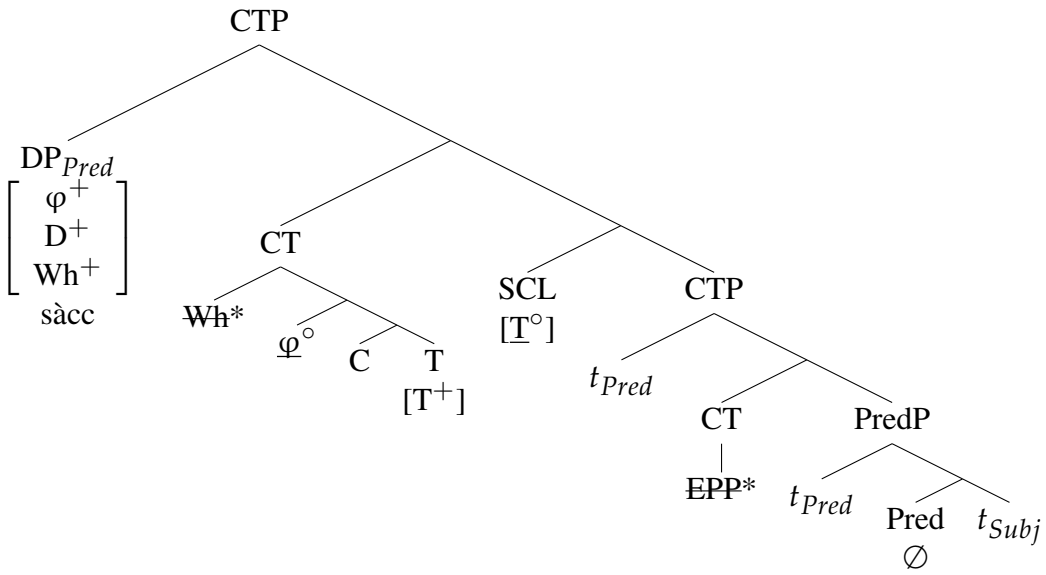
(33)



The next question to be clarified is why the subject in these sentences can only be a pronoun. The answer seems fairly straightforward. According to the rules of Type 2 feature-checking, the DP subject cannot have its T° checked in situ, and in these clauses it is never raised to the position where it could receive nominative case, since the predicate DP satisfies the EPP* on CT. The structure with a lexical subject will therefore never converge. If, however, a weak pronoun is merged in the position of the subject of PredP, it behaves as any other clitic and raises via Clitic Movement to a position below the higher CT head. As in the case of other V-raising structures, the

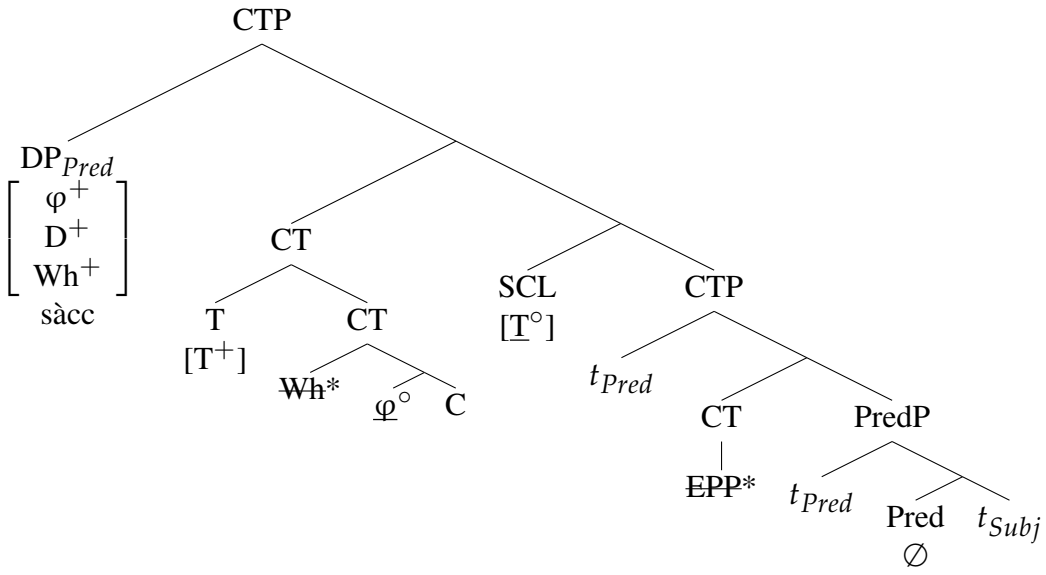
subject clitic gets nominative case in this position.

(34)



This gets us the correct word order and explains the obligatoriness of a subject clitic in N$_{Pred}$-raising clauses. One last thing to address is the occurrence of *l-* preceding the sentence particle. In non-subject N-raising clauses, its presence is attributed to the TCC, which requires an element with T to c-command all functional projections in the clause (see Chapter 5, §5.4). In the CT in (34), according to the *Feature Visibility Condition*, T is not visible to the head since it is not the highest feature in the hierarchy – it is c-commanded by a checked φ$^{\circ}$-feature. The TCC therefore triggers head-splitting, and the T-node moves to adjoin to CT. This rests on the assumption that the predicate DP does not carry T$^{\circ}$.

(35)



This derivation does not say anything about the status of the lexical subjects in N_{Pred}-raising clauses. In V-raising sentences, in which the subject is obligatorily pronominal, I argued that the lexical subject is in Spec,CTP and not left-dislocated, as it can be a bare quantifier. In N_{Pred}-raising, Spec,CTP is already occupied, and I also posited that CT in Wolof does not allow for two specifier positions – this is what forces head-splitting in non-subject N-raising clauses (see Chapter 5, §5.4). That should leave us with only one option – the lexical subject in N_{Pred}-raising should only be able to be left-dislocated. This means that a bare quantifier should not be possible as a subject in these clauses. This prediction is confirmed; (36) is ungrammatical.

(36) *Bare quantifier cannot be the subject in NPred sentences*
*Kenn sàcc l-a-∅.
someone thief *l*-C$_N$-3SG
intended: *"Someone is a thief."*

I propose that the lexical subject in affirmative NPred sentences is base-generated in the specifier of TopP, and co-indexed with the clause-internal pronominal subject.

And finally, *wh*-questions in which the question word is the DP predicate also have this structure (see example (26)). I take this to be evidence for the structural equivalence between affirmative

and interrogative NPred predicational clauses, and as an argument in favor of my proposal for the complementary distribution between Wh* and Pred* in Wolof. Namely, if we add Pred* to these structures, nothing changes, except that we get another reprojection – after EPP* attracts NP_{Pred}, Pred* would have to reproject in order to be able to attract it, after which Wh* would again have to reproject in order to attract it once more. Although we technically do not have evidence that this does not happen, this vacuous reprojection does not get us anything, and consequently we can stipulate that Pred* does not play a role in the raising of the nominal predicate, and really only attracts verbal heads.

6.3.4 Summary

In this section, I offered an explanation for the properties and the distribution of three types of predicational NPred sentences, specifically addressing the unexpected behavior of NPred clauses with the copula *di*, which cannot be raised to CT unless negation is present in the clause, creating an interesting gap in the distribution of NPred sentences. Adopting the assumption that Exhaustive Identification is a type of predication makes it possible for us to understand the fact that a clause in which the predicate DP is raised to the specifier of the sentence particle *la*, otherwise an EI position, results in neutral interpretation, making it possible for an N_{Pred}-raising structure to be used both for questions, in contrastive focus contexts, and as a neutral affirmative predicational sentence.

In the following section, I turn to other types of copular sentences and show how the analysis developed so far accounts for their structure.

6.4 Other copular sentences

Starting with the seminal work by Higgins (1979), several different types of NPred sentences have been proposed in the literature, with different syntactic, semantic, and information-structural properties. Thus far our attention has focused on predicational sentences; in this section, we take a

brief look at two other types of NPred clauses, specificational sentences and equatives, illustrated in (37) and (38).

(37) *Specificational NPred sentence*
Bindëkat bi Musaa l-a-∅.
writer DEF.SG Moussa *l*-C_N-3SG
"The writer is Moussa."

(38) *Equative NPred sentence*
Clark Kent-a di (>Kentay) Superman.
Clark Kent-C_N COP Superman
"Clark Kent is Superman."

An interesting feature of these two sentence-types is the structures they can occur in. Specificational sentences can only surface as N_{Pred}-raising clauses, with the predicate nominal in Spec,CTP, an obligatory clause-internal lexical subject, and no overt copula. Equative sentences on the other hand can only take the form of N-raising clauses, with the subject nominal in Spec,CTP and the copula *di*. In this section, I show how this follows naturally from the proposed analysis.

6.4.1 Specificational NPred clauses

Specificational sentences are a matter of much debate and disagreement in the literature, centering around the syntactic and semantic properties of the two nominal constituents. It is claimed that the crucial difference between predicational and specificational sentences is in the type of the structural subject,[10] which is referential in predicational, and non-referential in specificational sentences (Higgins, 1979; Heggie, 1988; Declerck, 1988; Mikkelsen, 2005). In the English example in (39), a referential expression (a name) is in the usual predicate position, while the pre-copular nominal is convincingly claimed not to be referential, but rather a property (Mikkelsen 2005) or an individual

10. In English, that would be the pre-copular DP. In Wolof, it is the subject clitic co-indexed with a DP in the left periphery.

concept (Romero 2005; Arregi et al. 2013).[11]

(39) *Specificational copular sentence*

[$_{N1}$ The captain] is [$_{N2}$ Jean-Luc Picard].

The biggest point of disagreement with respect to the syntax of specificational sentences is the connection between their underlying and surface structure, since it appears that the subject DP and the predicate DP have swapped places around the copula. A popular syntactic analysis of this clause type is one that employs *predicate inversion* or *predicate raising* – an operation in which the predicate is raised over the subject and ends up occupying either the canonical subject position, or some position in the left-periphery (for various implementation of this analysis, see Williams 1983; Heggie 1988; Heycock 1991, 1992; den Dikken 1995; Moro 1997; Mikkelsen 2005; den Dikken 2006).[12]

Specificational clauses in Wolof have the same structure as neutral predicational sentences, as shown in (37). The assumptions about the derivation of Wolof clauses lead us to stipulate that a PredP exists in which the predicate nominal, obligatorily carrying a Wh^{+} feature, is merged higher than the subject nominal, repeated here in (40).

11. Mikkelsen (2005) uses various tests to elucidate the difference between predicational and specificational subjects, one of which is the contrast in pronominalization pattern of the subject in these two sentence types:

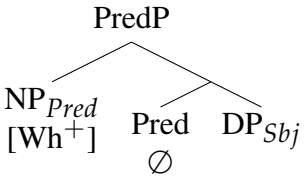
(i) a. The tallest girl in the class is Swedish, isn't {**she**/*it}? [Predicational]
b. The tallest girl in the class is Molly, isn't **it**? [Specificational]

Specificational subjects are pronominalized with the impersonal pronoun *it* in tag questions, unlike predicational subjects, pronominalized with a personal pronoun. Mikkelsen thus argues that specificational subjects are properties, of type $< e,t >$. A different view is advocated in Romero 2005: the subject of specificational sentences is an individual concept (of type $< s,e >$). Her claim is, among other, based on the same pronominalization pattern discussed in Mikkelsen 2005: tag questions in the concealed question in (iib) (which she considers to be individual concepts) and the specificational sentence in (iia) uses the same (inanimate) pronoun *it*:

(ii) a. The girl who caused the trouble wasn't Mary. **It**/*She was Jane.
b. John guessed the winner of the Oscar for best actress before I guessed **it**/*her.

12. There are also opponents of this approach, mostly invoking problems of the semantic nature – that a semantic predicate should not be able to occupy the subject position (e.g. Rothstein 2001)

(40)

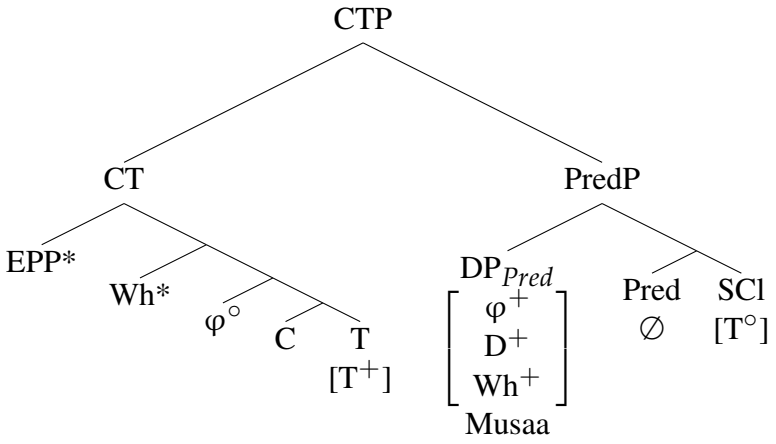


Seeing how specificational sentences have the same structure as predicational sentences, with the referential DP is Spec,CTP, we must assume that they are derived in the same way, meaning that the structure of the clause in (41a) is as in (41b) at the moment of the merger of CT.

(41) *Specificational sentence in Wolof*

a. Bindëkat bi Musaa l-a-∅.
writer DEF.SG Moussa *l*-C$_N$-3SG
"The writer is Moussa."

b.



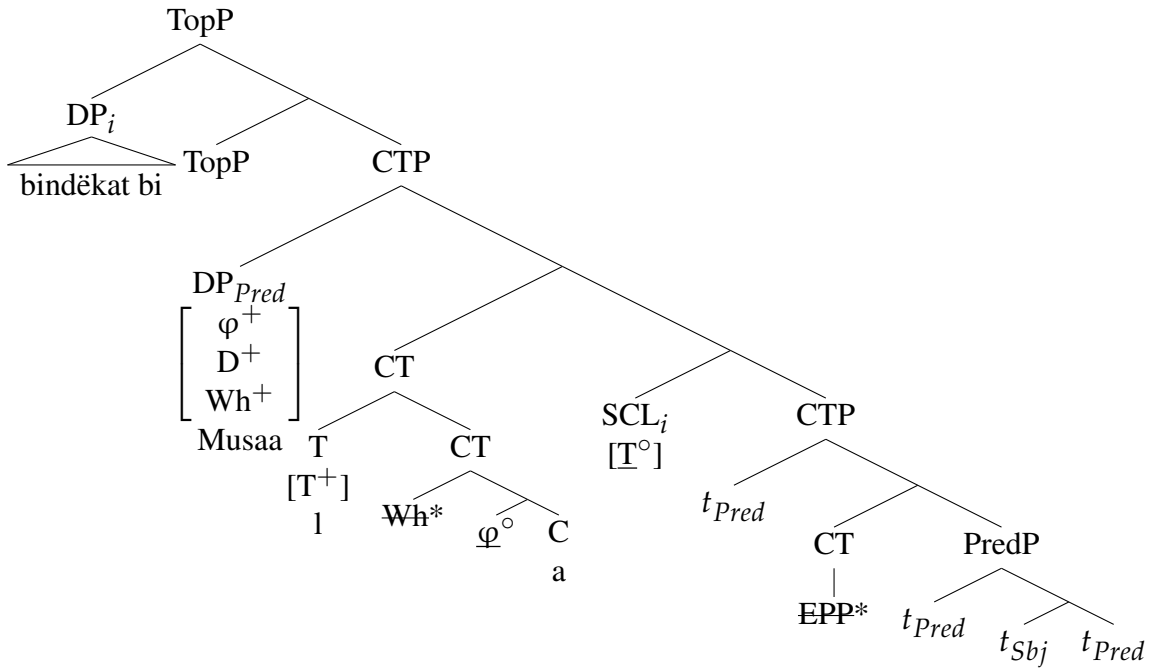
The difference between a specificational sentence in Wolof, such as the one in (41a), and an N-raising predicational sentence, in which the subject DP has the Wh^{+} feature, as in (42), makes it clear that there must be a distinction between an EI subject of a predicational clause, and the referential expression in the specificational clause, which is also exhaustively identified. While the former behaves as the structural subject in Wolof, the latter behaves as a structural predicate.

(42) *Exhaustively identified subject in a Wolof NPred sentence*
Usmaan-a di (>Usmaanay) bindëkat bi.
Oussman-C$_N$ COP writer DEF.SG
"It is Oussman who is the writer."

The conclusions to be drawn from this are complex. On the one hand, Wolof data seems to speak against an analysis in which the referential expression in a specificational clause is the underlying subject, since it structurally patterns with nominal predicates. On the other hand, the analysis I proposed for Wolof neutral predicational sentences in a sense assimilates nominal predicates to the referential expressions in specificational clauses, which are by definition exhaustively identified. One could therefore say that nominal predicates in Wolof are always specificational predicates, in that they obligatorily have a Wh^{+} feature and end up in a position commonly reserved for EI elements (see É. Kiss 2006 for a similar conclusion with respect to Hungarian). The lack of exhaustivity effect in neutral predicational clauses is the result of how I proposed the EI reading is generated – not by a feature or mechanism that applies to the EI element itself, but to the other constituent in the clause (the complement of CT), making it a unique individual. In predicational clauses, this other constituent is a referential expression, which is already unique, so the EI effect is neutralized. In specificational clauses, on the other hand, it is not a referential expression; the DP *bindëkat bi* 'the writer' in (41a) does not pick out an individual in the real world. Making it unique therefore does result in EI of the element in Spec,CTP, in this case the DP denoting the individual Moussa.

The derivation of the specificational clause proceeds in the same way as of a NP_{Pred}-raising clause. I do not go through the details of the derivation here, but give the final structure in (43).

(43)



6.4.2 Equative NPred clauses

Equative copular sentences contain two referential expressions as their main constituents, as in the example in (44).

(44) *Equative copular sentence*

[$_{N1}$ Clark Kent] is [$_{N2}$ Superman]

An interesting property of equative clauses in Wolof is that they cannot have the N$_{Pred}$-raising structure of predicational and specificational sentences, and can only surface as N-raising clauses with the subject in Spec,CTP.

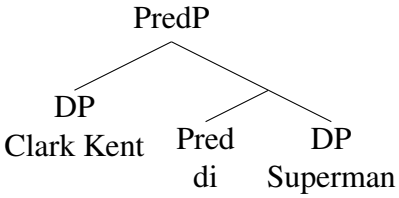
(45) *Wolof equative NPred clause*

a. Clark Kent-a di (>Kentay) Superman.
Clark Kent-C$_N$ COP Superman
"Clark Kent is Superman."

b. *Clark Kent Superman l-a-∅.
Clark Kent Superman *l*-C$_N$-3SG

I propose this to be due to the fact that neither of the two nominals in an equative functions as a predicate. Since the PredP necessary to derive N_{Pred}-raising clauses must have a predicate nominal with a Wh^{+}-feature in the specifier of a null copula, the lack of a predicate prohibits this structure, allowing only a PredP with the copula *di*, as in (46).

(46) *PredP in equative sentences*



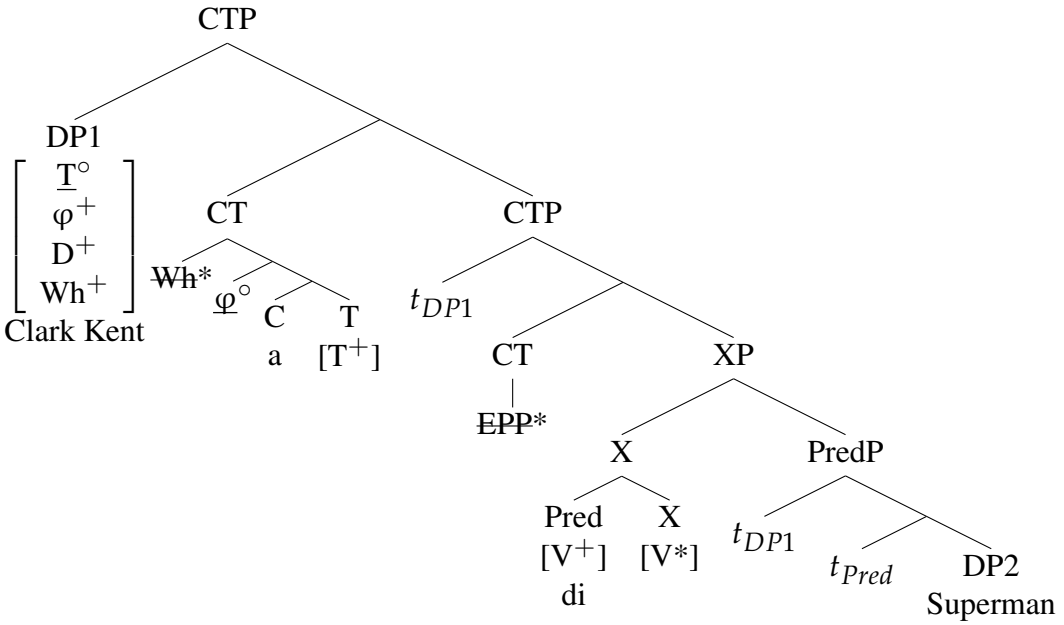
This restriction has nothing to do with the referentiality or definiteness of the DP, though. We have seen in specificational clauses that a referential DP can function as a predicate. The same is true of equatives, if a context can be created in which one of the referential DPs can be interpreted as denoting a property. For example, the sentence in (47) is felicitous, if it means that Moussa is in some salient way like Youssou N'Dour, most likely that he sings as well as him, or that he imitates him in singing.

(47) *NP_{Pred}-raising equative sentence*
Musaa Yusu Nduur l-a-∅.
Moussa Youssou N'Dour *l*-C_N-3SG
"Moussa is (like) Youssou N'Dour (in some salient way)."

Given that a structure with *di* in CT is ungrammatical in the absence of negation (see §6.3.3), again, the only option is to use a structure in which one of the DPs in SC has a Wh^{+} feature, and in the case of the PredP with *di*, the only option is for it to be the subject. The structure of an equative sentence therefore looks exactly like the structure of an EI sentence or a subject question. The final structure of the sentence in (48a) is in (48b).

(48) a. Clark Kent-a di (>Kentay) Superman.
Clark Kent-C_N COP Superman
"Clark Kent is Superman."

b.



Just as in neutral predicational sentences, the EI effect is neutralized, because the complement of the CT head already denotes a unique individual.

6.4.3 Summary

In this section we explored specificational and equative NPred sentences. Specificational clauses are structurally identical to neutral predicational NPred clauses, which further supports the analysis proposed for N_{Pred}-raising clauses – that they have underlying PredP structures in which the predicate nominal has a Wh^+-feature, and that this nominal must be higher than the subject DP.

Equatives, on the other hand, can only take the form of subject N-raising clauses. This is attributed to the fact that neither of the two DPs in an equative clause can function as a predicate, therefore neither of them can be contained in a PredP in which the predicate has a Wh^+-feature. They can therefore only be contained in a PredP with the copula *di*.

6.5 Fragment answers and specificational pseudoclefts

Finally in this chapter, we look at a type of a copular sentence which presents another puzzle for the analysis established so far, specifically with respect to the subject/non-subject asymmetry discussed in Chapter 5. In EI clauses, the subject/non-subject asymmetry is always observable – the exponent of C is always *a* in case of subject extraction, and *la* in non-subject extraction. The same is true in NPred clauses explored in this chapter. An interesting puzzle concerning this phenomenon arises in fragment answers, in which the asymmetry seems to disappear. The sentences in (49) are both possible answers to both a question about the subject, and a question about an object: *"Who saw Musa?"* and *"Who did Musa see?"*.[13]

Fragment answers in Wolof

(49) a. Usmaan-**a**.
Oussman-C_N
"Oussman."

b. Usmaan **l-a**.
Oussman *l*-C_N
"Oussman.'

Fragment answers have been convincingly claimed to have fully sentential syntactic structures subject to ellipsis, in order to account for their semantically propositional character (see Merchant 2004 and the references therein for details). The examples in (49a) and (49b) are in line with such analyses, since the occurrence of the sentence particle implies the presence of a full structure containing the extraction site. Merchant (2004) proposes an analysis of fragment answers which assumes movement of the fragment to a left-peripheral position – similar to the movement of the *wh*-phrase in sluicing – with the clause itself elided. There is evidence that this leftward movement has the properties of focus-related movement (Brunetti 2003; Arregi 2010). Examples in (49a) and (49b) support this claim, as it seems reasonable to assume that the underlying structure of these fragment answers are full sentential structures – the Exhaustive Identification structures analyzed in Chapter 5. This, however, creates a puzzle, since both *a* which occurs in subject extraction, and *la*, only present what the extracted element is not a (local) subject, are allowed in a fragment

13. An answer without the sentence particle is also grammatical.

answer, regardless of whether the fragment is the subject or the object (or any other non-subject constituent) of the non-elided structure. Why is *la* allowed if the fragment is the subject of the underlying sentence, and why is *a* possible if the fragment is the object?

The answer comes from a type of a copular sentence, a specificational pseudocleft construction in Wolof, in which we observe the same pattern, as shown in the examples in (50):

(50) *Subject/non-subject asymmetry absent in specificational pseudoclefts*

a. Ñ-i lekk tangal yi xale yi **l-a/ a**
CM.PL-C_N eat sweets DEF.PL child DEF.PL *l*-C_N/C_N
"Who ate the sweets were the children."

b. L-i xale yi lekk tangal yi **l-a/a**
CM-C_N child DEF.PL eat sweets DEF.PL *l*-C_N/C_N
"What the children ate were the sweets."

Clefts have been argued to be the source of sluicing in Japanese (Merchant 1998), and Spanish and Brazilian Portuguese (Rodrigues et al. 2009). To my knowledge, pseudoclefts have not been claimed to be the source of any type of ellipsis in any language. In Wolof, given the parallelism between fragment answers and pseudoclefts, it is reasonable to argue that the fragment answers in (49a) and (49b) are pseudoclefts in which the free relative is elided.

Pseudoclefts are usually classified as a type of a copular sentence, with a free relative (FR) as one of the constituents, and a DP as the other.[14] A parallel is often drawn between specificational copular sentences, as in (51), and specificational pseudoclefts, as in (52), and they are commonly

14. Concerning the status of the *wh*-clause in pseudoclefts, there are two possibilities, and both have been extensively argued for: (i) that the *wh*-clause is a question, and these types of pseudoclefts are question-answer pairs (den Dikken et al. 2000; Schlenker 2003; Romero 2005), and (ii) that the *wh*-clause is a free relative (Akmajian 1979; Heycock and Kroch 1999; den Dikken et al. 2000; Caponigro and Heller 2007). In English, *wh*-words and relative pronouns have the same form, but Wolof distinguishes *wh*-words that introduce interrogatives (class marker followed by *-u*) and free relatives (class marker followed by *-i*). Caponigro and Heller (2007) show that a specificational pseudocleft (which exhibits Principle A connectivity) allows only for the free-relative complementizer (examples (i)-(iii) taken from Caponigro and Heller 2007). I therefore treat the *wh*-clause in Wolof as a free relative.

(i) *Embedded Interrogative*
Yëg-na-∅ [***l-i/ l-u** Móodu gën-ë bëgg].
find.out-C_V-3SG CM-FR/CM-INT Modou surpass-*a* like
"She found out what Modou likes most."

considered to be structurally equivalent.

(51) *Specificational copular sentence in English*

[$_{DP}$ My most valued possession] is [$_{DP}$ this book].

(52) *Specificational pseudocleft in English*

[$_{FR}$ What I value most] is [$_{DP}$ this book].

Both clause types are usually defined as having a constituent that contains a *variable* (the pre-copular constituent in the above examples), a constituent that exhaustively identifies the *value* of the variable (the post-copular constituent) (Higgins 1979; Akmajian 1979; Blom and Daalder 1977).[15] At first glance, specificational NPred sentences and pseudoclefts in Wolof also have parallel structures, as they do in English, with two important differences – specificational copular sentences do not exhibit the absence of the subject/non-subject asymmetry, and pseudoclefts do not seem to have a clause-internal subject clitic. Compare (53) and (54).

(53) *A/la asymmetry absent in specificational pseudoclefts*

Ñ-i sàcc tangal yi xale yi {**l-a/a**}-*ñu.
CM.PL-C$_N$ steal sweets DEF.PL child DEF.PL *l*-C$_N$/C$_N$-3PL
"Who(pl) stole the sweets were the children."

(54) *A/la asymmetry present in specificational NPred sentences*

Sàcc yi xale yi {**l-a/*a**}-ñu.
thief DEF.PL child DEF.PL *l*-C$_N$/C$_N$-3PL

(ii) *Free Relative*

Bañ-na-∅ [**l-i/*l-u** Móodu gën-ë bëgg].
hate-C$_V$-3SG CM-FR/CM-INT Modou surpass-INF like
"She hates what Modou likes most."

(iii) *Specificational pseudocleft*

[**l-i/*l-u** Móodu gën-ë bëgg] bopp-am l-a.
CM-FR/CM-INT Modou surpass-INF like head-POSS.3SG *l*-C$_N$
"What Modou likes most is himself."

15. For a detailed overview of the properties and different analyses of pseudoclefts, see den Dikken 2001.

"The thieves are the children."

Concerning the absence of the subject clitic in pseudoclefts, it could also be said that the FR, which would be the element co-indexed with the clitic, is always 3*rd* person singular, and since this clitic is null when attached to a sentence particle (see Chapter 2, §2.4), we cannot really tell if it is there or not. I argue against this and propose that the subject clitic is absent in specificational pseudoclefts, showing how this follows from the analysis which accounts for the lack of the *a/la* asymmetry in these clauses.

I also propose that the Wolof data point to a fundamental difference between specificational NPred clauses and specificational pseudoclefts. Namely, as mentioned in §6.4.1, a popular analysis of specificational sentences in general states that they involve *predicate inversion* – a process in which the underlying predicate of the sentence ends up in the position usually occupied by the subject. One argument in favor of such an analysis has always been the apparent *reversibility* of the two constituents around the copula in both sentence types in English (Declerck 1988; den Dikken et al. 2000; den Dikken 2001):

(55) *Reversibility in specificational copular sentences*

a. [$_{DP}$ My most valued possession] is [$_{DP}$ this book].

b. [$_{DP}$ This book] is [$_{DP}$ my most valued possession].

(56) *Reversibility in specificational pseudoclefts*

a. [$_{FR}$ What I value most] is [$_{DP}$ this book].

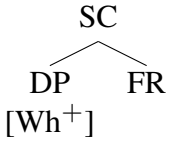
b. [$_{DP}$ This book] is [$_{FR}$ what I value most].

In Wolof, both major constituent in N$_{Pred}$-raising clauses are in the left periphery, and there is no overt copula, so the English-type reversibility does not exist. I argue, however, that the absence of the *a/la* asymmetry in specificational pseudoclefts is proof that those clauses do in fact possess this property, and that it straightforwardly follows from an analysis applying predicate inversion.

At the same time, the absence of this effect in specificational NPred sentences is an argument against predicate inversion in those clause-types. Namely, the form of the sentence particle signals whether the element A′-moved to Spec,CTP is the structural subject or not – in my analysis, it tells us whether it was the element first attracted to CT to check the EPP*, and consequently assigned nominative case by the split off part of the complex CT head. If the sentence particle in an N_{Pred}-raising clause can surface either as *a* or as *la*, we must conclude that either of the two major constituent can be attracted to Spec,CTP to check EPP*, and that either of them can be assigned case. Under the assumption that it is always the closest nominal that moves, we are lead to conclude that the FR and the DP are equidistant from CT in Wolof specificational pseudoclefts, but since only the DP can raise to the highest CTP (attracted by Wh*), *l-* will surface if the element first raised to satisfy the EPP is the FR. This points to different underlying structures of specificational pseudoclefts and specificational NPred clauses in Wolof. I develop the details of the analysis in the remainder of this section.

I propose that the two major constituents in a specificational pseudocleft—the FR and the DP—are contained in a symmetrical small clause, as in (57), and that neither constituent is predicated of the other (Akmajian 1979; Heycock and Kroch 1999). Additionally, as in specificational NPred clauses, the DP, which eventually ends up in the specifier of the sentence particle, has a Wh^{+}-feature.

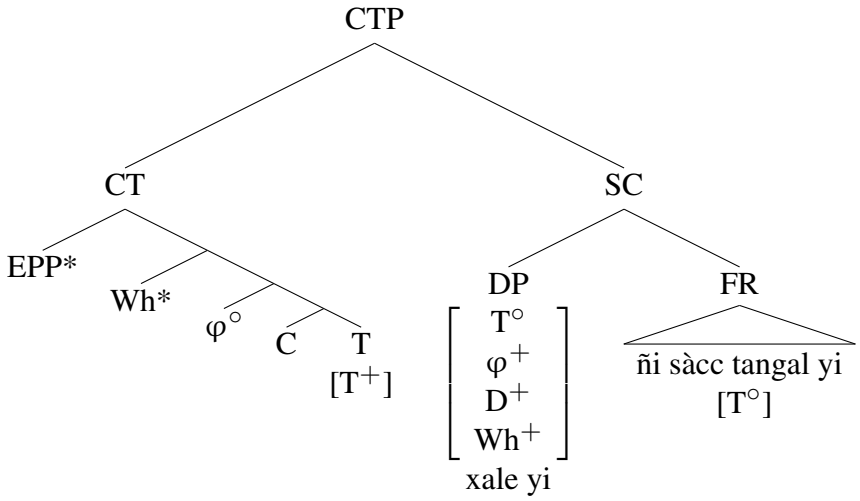
(57) *Small clause in a pseudocleft*



When the CT looks to check its EPP* feature, both constituents in the small clause are equidistant from it, so either can move to Spec,CTP. Furthermore, I propose that either can be assigned nominative case. Let us first look at a derivation in which the DP moves to Spec,CTP. I show that in this case, the sentence particle surfaces as *a*. The sentence in (58a) has the structure in (58b).

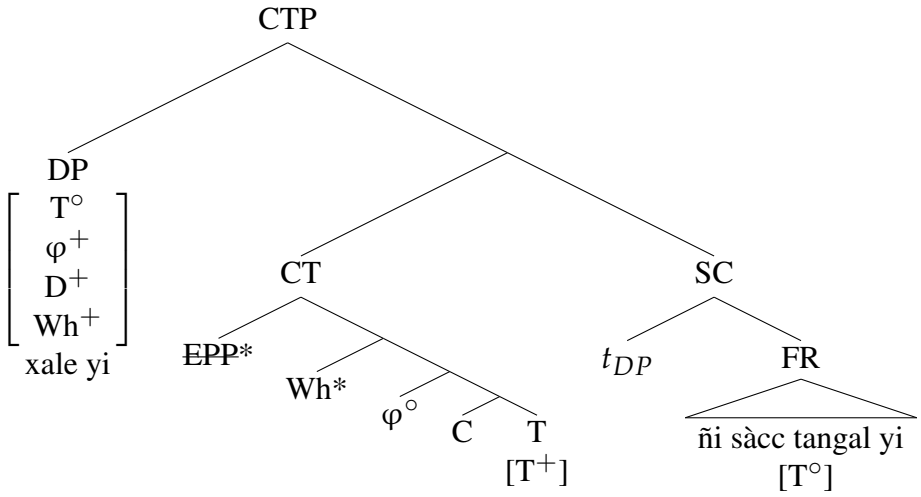
(58) a. [$_{FR}$ Ñ-i sàcc tangal yi] [$_{DP}$ xale yi] **a.**
[CM.PL-C_N steal sweets DEF.PL] [child DEF.PL] C_N
"Who(pl) stole the sweets were the children."

b.



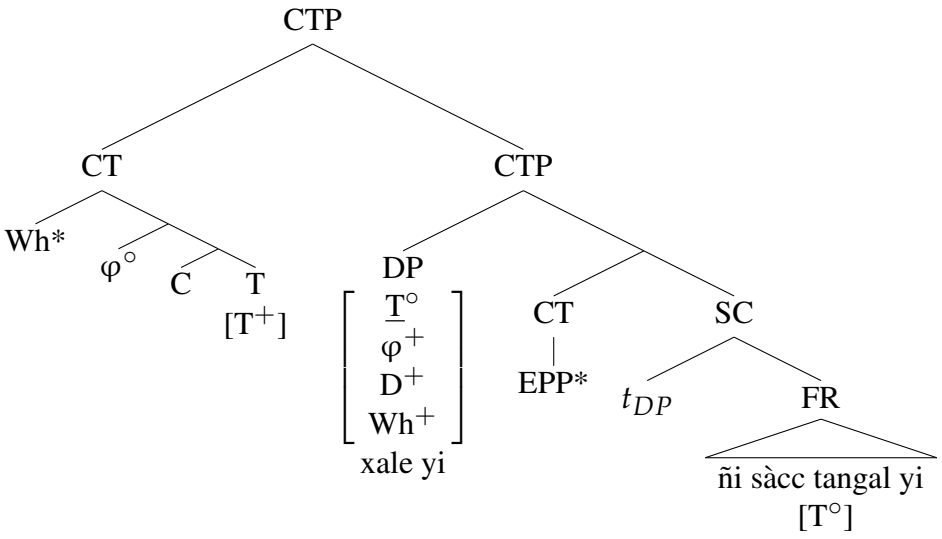
In order to check its EPP*-feature, CT attracts the DP to Spec,CTP, as in (59).

(59)



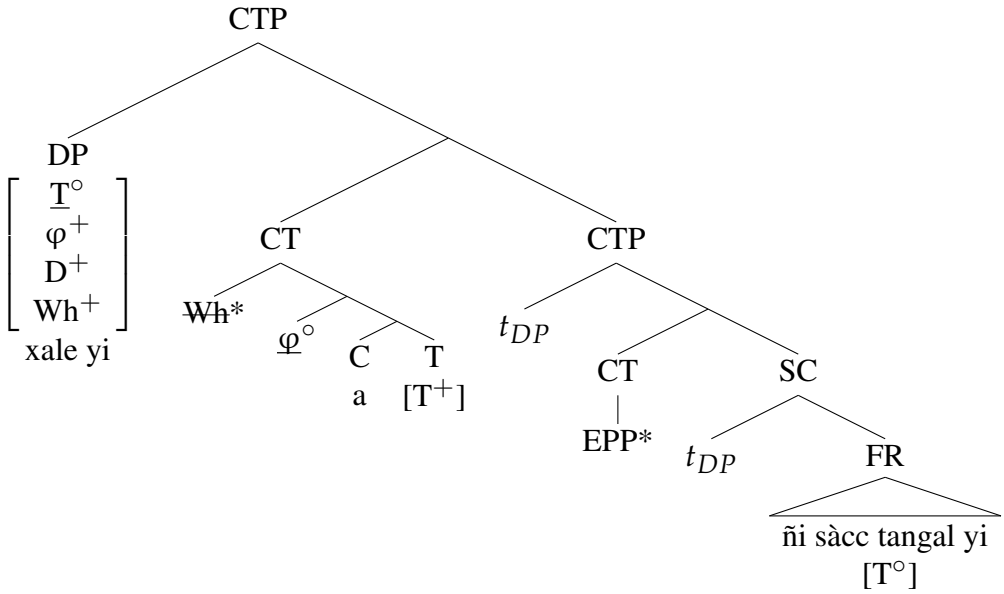
Next, CT needs to check its Wh* feature, however, the element with Wh^+ is already in its specifier. Since Type 1 features must be checked by an element with a matching feature in their head's c-command domain, the DP in Spec,CTP cannot be accessed by the head. Head-splitting is triggered, and the part of the head containing all unchecked features moves and adjoins to CTP. At this point, the DP in the specifier of the lower CT has its T°-feature checked, getting nominative case.

(60)



In the next step, DP moves again to check Wh*. φ° on CT also gets checked, as in (61). Since the DP has a checked T-feature, the TCC is satisfied, and there is no further splitting inside the CT head. The sentence particle surfaces as *a*.

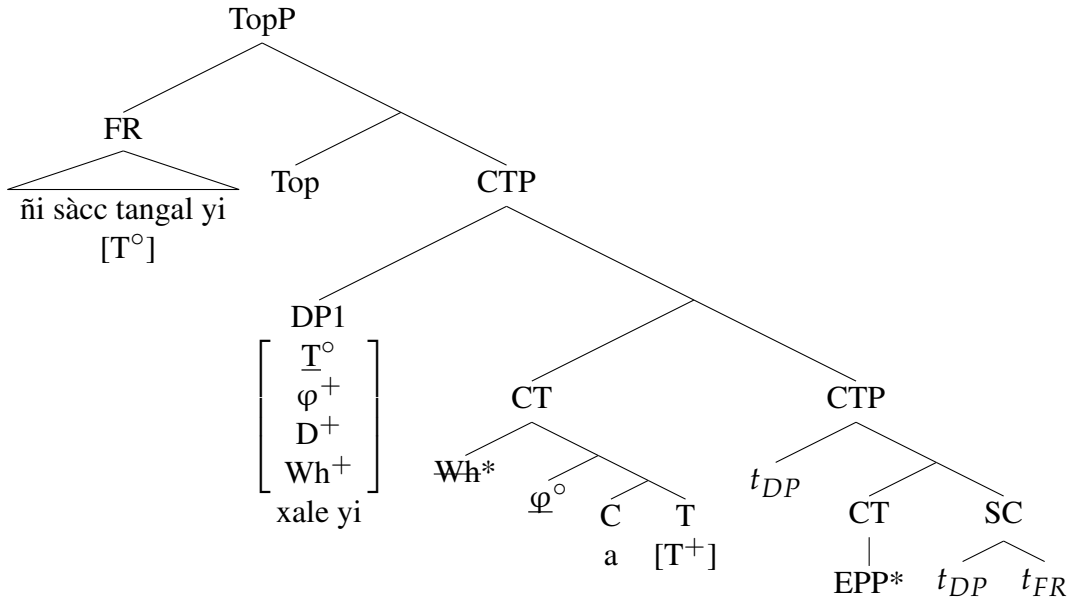
(61)



The structure in (61) is, however, not the final form of the Wolof specificational pseudocleft. The FR must be to the left of the CTP. In V-raising and in NP_{Pred}-raising clauses this phenomenon was always related to the inability of the subject to obtain nominative case, and was accompanied by an obligatory clause-internal pronominal subject clitic. I argue that the reason for the left-dislocation

of the FR in specificational pseudoclefts is different. First, I proposed that one element in the clause does get nominative case, the DP first raised by EPP* and then by Wh*. We have strong reason to believe this to be the correct interpretation of the facts, since in all cases when a local nominative DP lands in the highest Spec,CTP, no *l-* precedes the sentence particle. I therefore argue that left-disclocation of the FR occurs for a different reason, one that disallows it to remain clause-internal. I stipulate it to be requirement for the FR to be topicalized (for convenience, I refer to it as the *Free Relative Topicalization Condition*), which applies at the clausal level, at the same derivational stage as the TCC, the NCC and the CPC.[16] I propose that the FR moves to Spec,TopP as a final step in the derivation of this clause, as in (62).

(62)

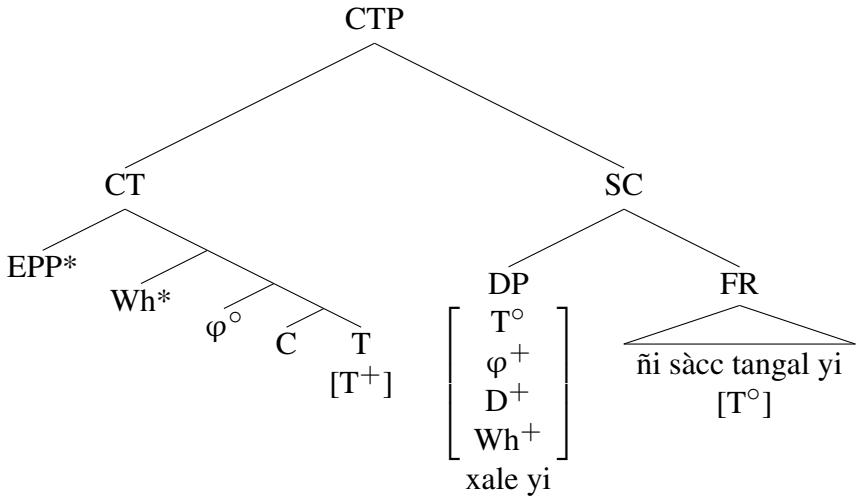


Let us not turn to the derivation of a structure in which the sentence particle surfaces as *la*. I show that this can be explained if we assume that the Wh^+ DP does not get nominative case, and consequently cannot satisfy the TCC. The structure of the sentence in (63a) is given in (63b).

16. The topicalization of the FR feels like an information-structural requirement, so it is possible that information-structure can have limited interaction with syntax at the level at which clausal conditions are satisfied. I leave this question for future research.

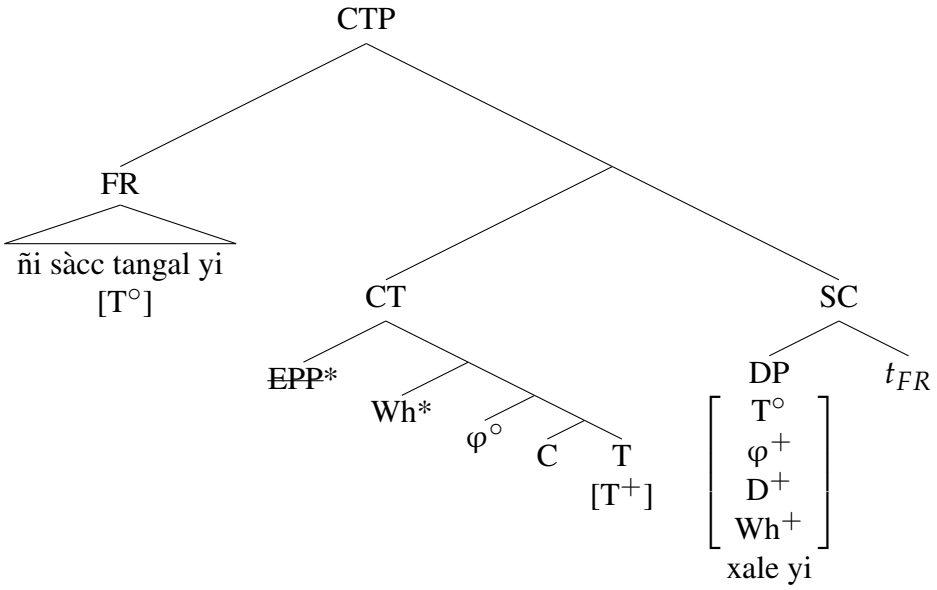
(63) a. [$_{FR}$ Ñ-i sàcc tangal yi] [$_{DP}$ xale yi] *l*-**a**.
[CM.PL-C$_N$ steal sweets DEF.PL] [child DEF.PL] *l*-C$_N$
"Who(pl) stole the sweets were the children."

b.



First, CT needs to check its EPP* feature. In this case, it attracts the FR to its specifier to check EPP*. It has this option because the FR and the DP are equidistant from it.

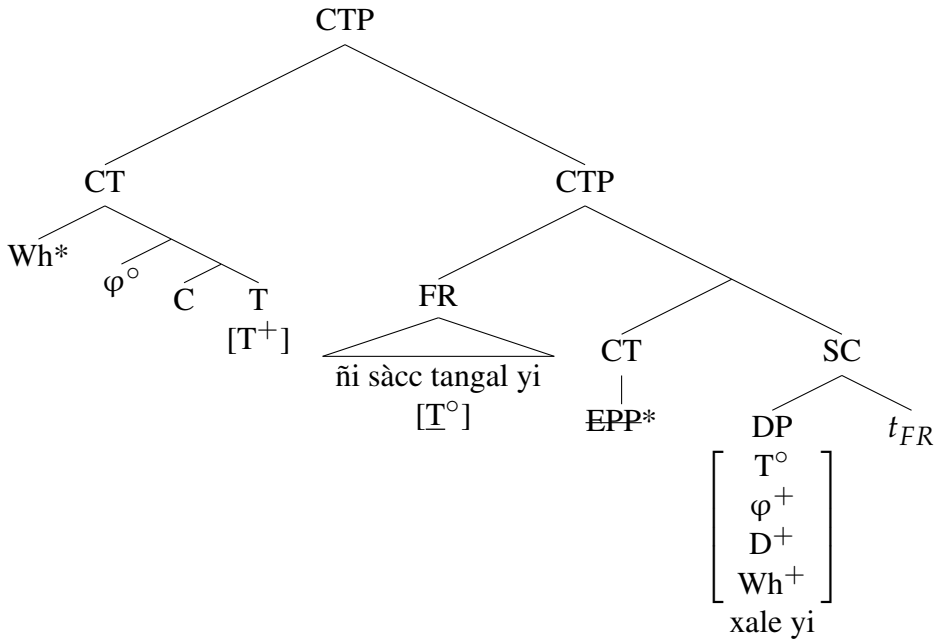
(64)



CT next needs to check Wh*, which would involve the movement of the DP to Spec,CTP. This position, however, is occupied, and under the assumption that Wolof does not allow for two specifier position (see Chapter 5, §5.4), head-splitting again presents itself as a solution. Once the portion

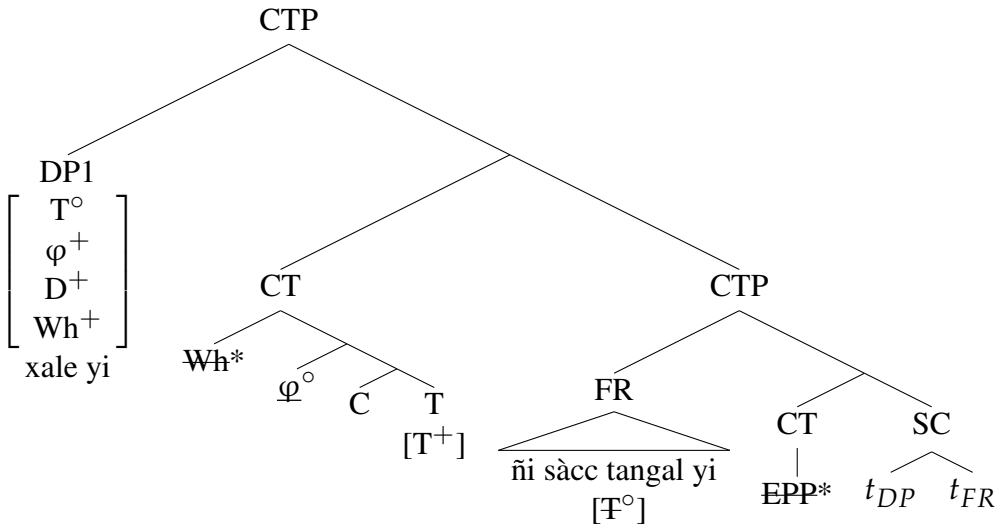
of the CT with all unchecked features splits off and merges with CTP, as in (65), the free relative in Spec,CTP can have its T°-feature checked. This satisfies the *Nominative Case Condition*.

(65)



CT then attracts the DP to check Wh*. φ° also gets checked.

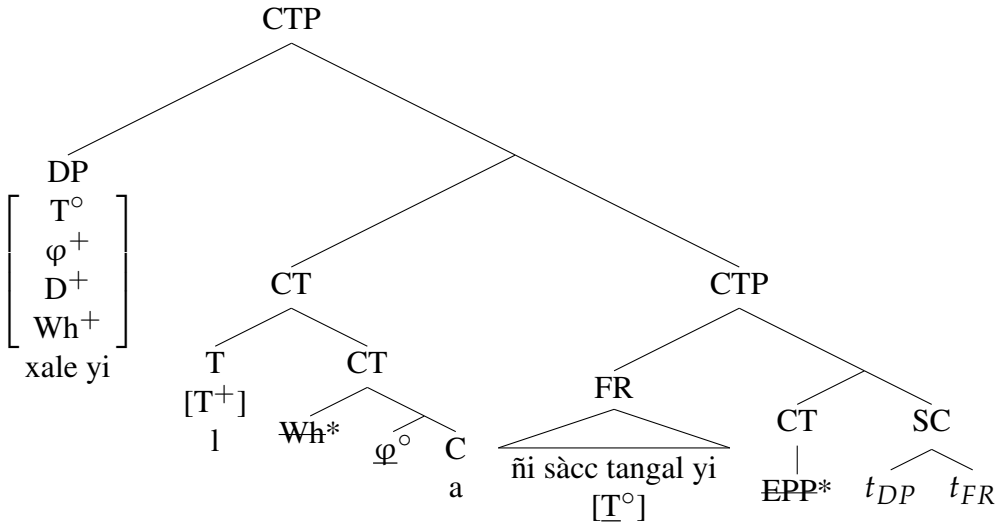
(66)



The difference between this derivation and the previous one is that the DP attracted by Wh* does not have nominative case – it never had its T° checked. This means that it cannot satisfy the TCC.

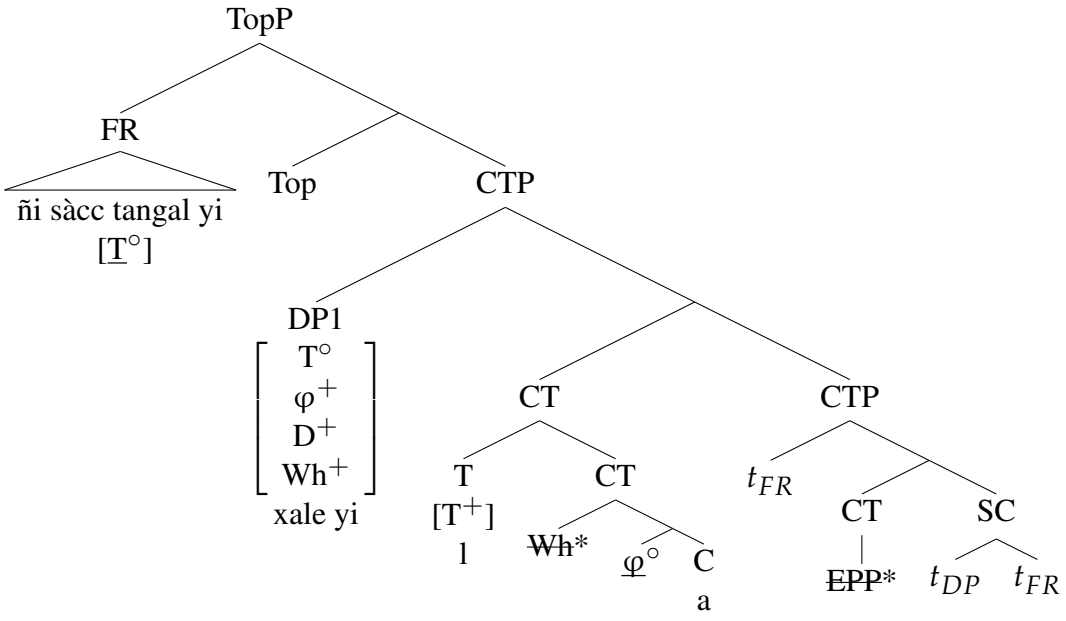
As in other cases of non-subject extraction, this means that another instance of splitting must take place inside the CT – the T-node, invisible to the head because it is c-commanded by the checked φ-feature, must raise and adjoin to CT. This makes it visible and makes CT the element with the T-feature that c-commands all other functional material in the clause and satisfies the TCC.

(67)



And finally, the FR again cannot surface clause-internally, but, due to the *Free Relative Topicalization Condition*, moves to Spec,TopP.

(68)



Unlike in English, pseudoclefts in Wolof do not exhibit surface reversibility, because (i) the CT layer is always present, attracting the DP which in these clauses carries a Wh^{+}-feature, and (ii), because the free relative seems to be able to surface only in the topic position. However, if my analysis is on the right track, it is not the case that specificational pseudoclefts in Wolof are not reversible (i.e. that both constituents cannot occupy the structural subject position), it is only that the surface constituent order is not reversible. Wolof presents an interesting case in which the underlying subject can be either the DP or the FR, but this is not reflected in the surface order. Rather, the property of being reversible is retrievable from the version of the complementizer – *a* implies that the structural subject is the DP, and *la* that it is the FR.

At the end, let us briefly return to the structure with which we started this section – fragment answers. As proposed, the parallel between them and specificational pseudoclefts in the absence of the subject/non-subject asymmetry suggests that fragment answers are specificational pseudoclefts with a covert free relative, as in (69).

(69) *Fragment answer is a pseudocleft with an elided FR*
~~[$_{FR}$ k-i Musaa gis]~~ Aali **a/l-a**
~~[$_{FR}$ CM-C$_N$ Moussa see]~~ Ali C$_N$/*l*-C$_N$
"~~Who Moussa saw was~~ Ali"

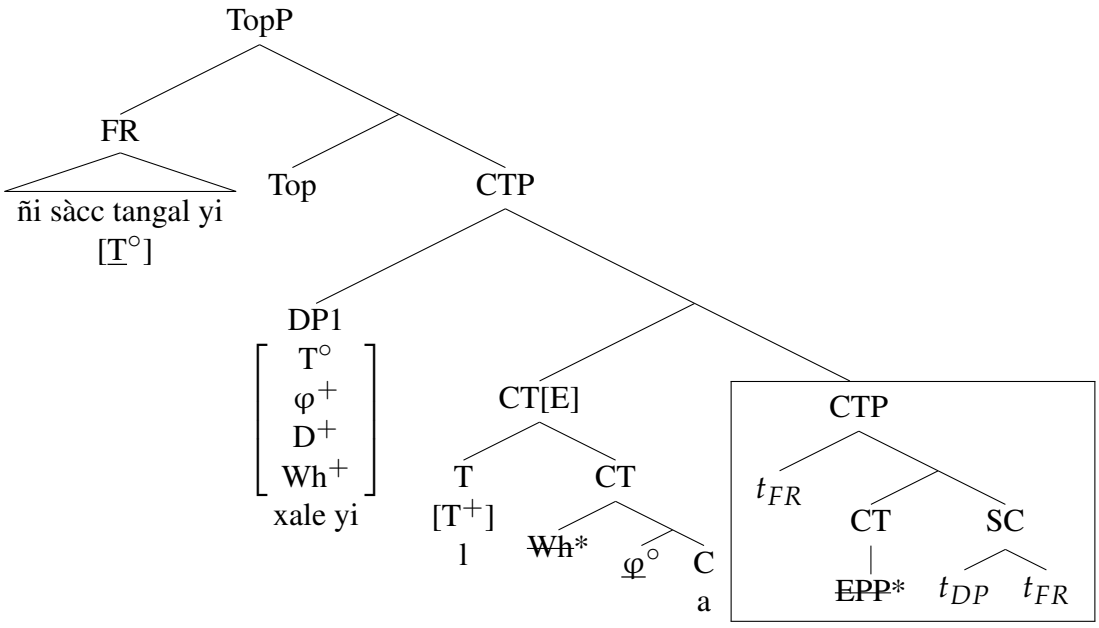
There are two options for the deletion of the FR in pseudoclefts: (i) it is deleted after it has moved to Spec,TopP, or (ii) the whole constituent containing the FR is elided before topicalization. The first operation would be akin to Topic Drop, the second to Ellipsis.

Topic Drop is known from languages such as Chinese and German (Huang 1984; Cardinaletti 1990). In Chinese, nominals can be deleted in topic position across discourse under identity with a topic in a preceding sentence. In German subjects, objects or adjuncts that have moved to the first position in the sentence can be omitted if linked to an antecedent in the immediately preceding discourse. The element in the topic position is then a *pro*.

The second option is that the deletion of the free relative in fragment answers involves Ellipsis.

In this specific case, it would be a type of sluicing, triggered by an [E] feature on the higher CT (Merchant 2001):

(70)



There are two issues to be addressed in relation to this type of an analysis. The first is the Sluicing-COMP Generalization (Merchant 2001), which states that no non-operator material may apper in COMP in sluicing configurations. The second is the relationship between ellipsis and movement, as in this case, ellipsis could only happen if the free relative does not move to Spec,TopP.

Deviations from the Sluicing-COMP Generalization have already been noted in the literature. For example, van Craenenbroeck and Lipták (2006) propose the type of sluicing in a language depends on the type of *wh*-movement it exhibits. Namely, if the overt syntax of *wh*-movement coincides with that of other operator material e.g. (focus, *is*-phrases, universal quantifiers), sluicing is also allowed with these other types of operators. They give example from sluicing in *is*-phrases in Hungarian, in which the head is spelled out, in addition to the remnant in its specifier.

Support for an Ellipsis analysis of fragment answers comes from the examples of sluicing in Wolof. First of all, speakers in general do not like sluicing, and their judgments vary as to the acceptability of a sluiced clause. At this point I do not have enough data to determine the source

of variation in judgments. The examples I present here were offered by one speaker, and judged as acceptable by other speakers.

(71) *Sluicing in Wolof*

a. Am-na-∅ k-u ma nara and-al sinema, wante xam-u(l)-∅-ma k-an
have-C_V-3SG CM-C_N 1SG intend go-with movies but know-NEG-C_V-1SG CM-Q
l-a/a.
l-C_N/C_N
"I intend to go to the movies with someone, but I don't know who."
(lit: "There is someone who I intend to go to the movies with, but I don't know who.")

b. Am-na-∅ k-u woote ci telefoon bi, wante xam-u(l)-ma k-an
have-C_V-3SG CM-C_N call LOC phone DEF.SG but know-NEG-C_V-1SG CM-Q
l-a/a.
l-C_N/C_N
"Someone called on the phone, but I don't know who."
(lit: "There is someone who called on the phone, but I don't know who.")

As in specificational pseudoclefts and fragment answers, the remnant in sluicing can also contain the overt sentence particle, which, just as the other two structures, does not exhibit the *a/la* asymmetry. This suggests that an ellipsis analysis might be the right approach for the derivation of fragment answers in Wolof.

The question of the complementary distribution of movement of the FR and ellipsis can be handled by a *Salvation by Deletion* approach. It has been shown that some island violations can be repaired via ellipsis (Fox and Lasnik 2003; Merchant 2004) in the following manner. *Wh*-movement targets every intermediate maximal projection. Intermediate traces of island-escaping XP are defective, marked with *. If ellipsis does not eliminate all structures that contain *, PF cannot interpret the object, but if it does, the derivation is saved. Applying this to the present case, we can propose that there is a requirement for the FR to be topicalized (akin to the *Clitic Placement Condition*), active at the late stage in the derivation. Failure to topicalize it means that this condition is not satisfied, and the structure crashes. Ellipsis deletes the structure containing the FR, crucially before the stage at which the condition is active, removing the need to satisfy it.

This is only a tentative proposal, and more work on sluicing in Wolof is needed in order to better understand the phenomenon and its applicability to the derivation of fragment answers.

6.6 Conclusion

This chapter investigated copular sentences with nominal predicates (NPred structures) in Wolof, which present interesting puzzles for the analysis of V-raising and N-raising constructions.

First, NPred clauses can contain a copula *di*, which acts as a verbal head. As such, we would expect them to behave orderly, and surface as V-raising structures or N-raising structures, depending on the they of CT they are merged with (the one with Pred* or the one with Wh*). This is only partially the case. N-raising NPred structures are available, as expected, but only if the element carrying the Wh^{+} feature is the subject. A V-raising NPred clause is only grammatical if it contains negation, meaning that there is no affirmative V-raising NPred sentence. The two gaps—for an N-raising predicate question and a V-raising affirmative clause—is filled by a clause-type we have not seen thus far – N_{Pred}-raising structures, which combine V-raising and N-raising properties. In these clauses, the nominal predicate is located in the specifier of the N-raising sentence particle *la*, but the clause-internal subject is obligatorily pronominal, as in V-raising. Crucially, both neutral affirmative clauses, sentences with contrastive focus on the predicate, and predicate question clauses surface in this construction.

We can understand this peculiar fact by adopting the assumption that Pred* and Wh* in Wolof are two sides of the same feature. Namely, Wolof N-raising clauses discussed in Chapter 5 involve Exhaustive Identification of the A'-extracted nominal in the specifier of *la*. The same position is occupied by *wh*-phrases, but also by nominal predicates in a neutral (non-EI) reading. A similar phenomenon is observed in other discourse-configurational languages, most notably Hungarian. I therefore propose, following Klecha and Martinović (forthcoming), that Exhaustive Identification is in fact a type of predication (suggested also in É. Kiss 2005, 2006), and that the EI-effect results from a particular semantics of the sentence particle *(l)a*, which imposes uniqueness on its comple-

ment. When the complement is a proposition and the specifier a referential expression, this results in an EI-effect, but when the complement is already a unique individual, the EI-effect is neutralized. This explains the overlap between neutral predicational clauses, sentences with contrastive focus on the predicate, and predicate questions.

The interesting syntactic properties of N_{Pred}-raising structures are explained in a purely syntactic way. They are formed with a PredP in which the nominal predicate DP, with an obligatory Wh^{+} feature, occupies the specifier of a null copula, therefore being the highest nominal in the clause. When CT needs to satisfy EPP*, it does not attract the subject DP, but the predicate, therefore blocking the subject from ever reaching a case position. As in V-raising clauses, this forces the clause-internal subject to be a pronominal clitic, as it can obtain case via Clitic Movement, as described in detail in Chapter 4.

This chapter also discusses other types of copular sentences. Specificational clauses only have the form of N_{Pred}-raising structures, and equatives of N-raising structures. The structure of specificational sentences, which contain an exhaustively identified referential expression and a definite description which is not referential, further supports the claim that Wh^{+} elements in N_{Pred} clauses are predicates. Namely, since they have the same form as neutral N_{Pred}-raising clauses, and since the element ending up in the specifier of *la* is EI-ed (as is always the case in specificational clauses), we can draw another parallel between Exhaustive Identification and predication.

In equatives, neither of the two DPs is predicated of the other, so they only form a PredP with a copula *di*. Seeing how an affirmative V-raising clause is not grammatical, the only option for equatives is to surface as N-raising clauses.

And finally in this chapter, I show interesting data from fragment answers and pseudoclefts, which both contain the N-raising sentence particle *(l)a* which, however, does not exhibit the subject/non-subject asymmetry as it commonly does in N-raising and N_{Pred}-raising constructions. Specificational pseudoclefts are another type of copular sentence, commonly equated with specificational copular clauses. I show, however, that this is not the correct approach for pseudoclefts in

Wolof, and that their properties suggest that they have a different underlying structure. I propose that the two constituents of a pseudocleft, a DP (containing a Wh^{+} feature, as it is also EI-ed and always moves to the specifier of *(l)a*) and a free relative (FR), are contained in a symmetrical small clause, in which neither constituent is predicated of the other one. This makes it possible for CT to check its EPP* feature by attracting either the DP or the FR. If the DP moves to Spec,CTP, it can be assigned nominative case after Wh* triggers head-splitting of the CT. When it moves again to the higher Spec,CTP, it can satisfy the TCC (due to the fact that its nominative case it a checked T°-feature). If, on the other hand, the FR moves to Spec,CTP to check EPP*, when the CT splits its Wh* feature attracts the DP. Not having been assigned nominative case, this DP cannot satisfy the TCC, which forces the T-node inside the CT to raise and adjoin to CT, surfacing as *l-* (as described in detail in Chapter 5). Specificational pseudoclefts in Wolof therefore possess the property of *reversibility*, however, it is not expressed in the surface order of their constituents, but in the optionality of *l-* in CT.

Fragment answers, which show the same lack of the subject/non-subject asymmetry, are argued to be specificational pseudoclefts with a covert FR, contributing to the data on the sources of fragment answers cross-linguistically.

CHAPTER 7

THE MORPHOSYNTAX OF V-MOVEMENT

7.1 Introduction

In this chapter and in Chapter 8 we are changing gears and taking a turn from the topic in the first part of the dissertation to a slightly different, but still closely related subject matter. We are still interested in processes related to the CTP layer(s), but now we shall focus on the details of the morphosyntax, specifically, on the interaction between syntactic and morphological (post-syntactic) processes.

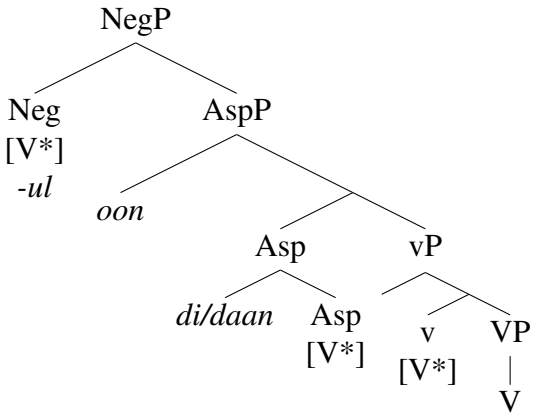
In this chapter, I explore verb movement inside the inflectional layer (below the CT head), and its interaction with movement of the verb to CT in V-raising clauses, with two goals. First, the analysis I propose further justifies the clause structure I assume in this dissertation and deepens our understanding of the role of the CT head in the building of the syntactic structure. Second, the behavior of the inflectional morphology in Wolof sheds light on the interaction of syntactic and post-syntactic (morphological) processes, and leads to a view of their interface which is much more interactive than assumed in strictly modular approaches. Specifically, I propose that the syntactic component is composed of submodules, one of them being the narrow syntactic one, and another the post-syntactic one. I propose that these two submodules apply cyclically, allowing for the post-syntactic component to feed syntax. One piece of evidence for this view comes from this chapter; another one is discussed in Chapter 8, §8.6.

Previous research notes that the verb raises fairly high in Wolof. In Dunigan (1994) and Russell (2006) the verb commonly raises at least to T, while Torrence (2003, 2005, 2012a) proposes a fairly complex system with both V-movement and VP-remnant movement, with the height of the V(P) movement depending on various factors, primarily clause type. It seems uncontroversial that verbal heads always raise, however, given the CT system advocated in this dissertation, I argue that they do not always raise all the way to CT, but to the highest functional head below CT. The first part of

the claim—that in some clauses the verb does not raise to CT, as a result of the absence of Pred*—is proposed in Chapter 5, and defended in Chapter 6. In this section, I am mostly concerned with the clause structure below CT and how the role of CT as a phase head (that triggers Spell-Out, i.e. post-syntactic processes) interacts with the behavior of inflectional morphology.

There are three verbal heads that raise in Wolof: V, a complement to *v*, which hosts the lexical verb, the imperfective auxiliary *di*, and the past habitual auxiliary *daan*, generated above the *v*P. I situate both *di* and *daan* in the head of Asp. There are three heads that trigger verb raising: *v*, Asp, and Neg. I capture this with a Type 1 V*-feature on the inflectional heads. When only the lexical verb is present, it raises to the highest inflectional head present in the structure. When *di* or *daan* are present as well, I propose that they are inserted in Asp, and further raise to the highest functional head;[1] however, there is evidence that the lexical verb still moves out of the VP, in all clause-types. I argue that in the latter case, it moves to *v*. The behavior of the lexical verb and the imperfective auxiliary indicates that all heads in the part of the structure that I refer to as the *inflectional layer*, shown in (1), trigger head movement. AspP hosts three morphemes: the imperfective auxiliary *di* or the past habitual *daan* in Asp, and the perfective morpheme *oon* in Spec,AspP.

(1) *Wolof inflectional layer*



1. In addition to *do*-support discussed in the previous chapter, this is another example of external Merge satisfying a Type 1 feature on a head.

In this chapter, I discuss evidence for the structure proposed in (1). I start the chapter by sketching the structure of the syntactic component that I advocate in section 7.2. In §7.3, I give an overview of the verbal morphology in the inflectional layer, and present arguments for their syntactic status as either heads or phrases. In §7.4, I discuss the position of the two verbal heads that raise inside the inflectional layer: V, hosting the lexical verb, and Asp, hosting the auxiliaries *di*/*daan*. Section 7.5 investigates the status of two inflectional morphemes, the perfective morpheme *oon* and the negative morpheme *-ul*. In §7.6 the ordering of verbal heads and inflectional morphology is shown in different clause types, and §7.7 offers an analysis that accounts for their behavior. Section 7.8 concludes.

7.2 The structure of the syntactic component

I argue for a syntactic component that has internal structure, consisting of ordered submodules, some of which apply in a cyclic fashion. I propose that there are three derivational stages in syntax, in which different types of operations apply. First, there is **narrow syntax**, in which basic operations such as Merge and structure-building Move occur. When a phase head is merged, it triggers the second stage, **post-syntax**, in which the complement of the phase-head is spelled out. I follow the general approach taken in Distributed Morphology, which considers morphological processes to take place in this component, such as m-merger, morphological dissimilation,[2] Impoverishment, and Vocabulary Insertion. The derivation continues with the building of the higher phase, again with the stage of narrow syntax, followed by post-syntax. The cyclic application of the two stages continues until the clausal phase-head is merged, here the highest CT, which is the domain of certain **clausal conditions**. In Wolof, I propose these conditions to be the *Tense C-command Condition*, the *Nominative Case Condition*, the *Clitic Placement Condition*, and the *Free Relative Topicalization Condition*, which can trigger further syntactic operations, when all

2. In Chapter 8, I argue for a dissimilation constraint to be active at this stage in the Wolof grammar, militating against two adjacent φ-feature. I term this constraint OCP_{φ}.

requirements of the clausal head have been satisfied. Table 7.1 represents the proposed structure of the syntactic component.

Syntactic subcomponent	**Trigger**	**Operations**
Narrow syntax	functional features	Merge, Agree, Move
Post-syntax	phase heads	m-merger, Impoverishment, VI, etc.
Clausal Conditions Domain	clausal head	Move, dislocation, etc.

Table 7.1: The structure of the syntactic component

This type of architecture is in agreement with the view of morphology as in effect being a part of syntax, while still assuming that there is a separate submodule responsible for word formation (e.g. Ackema and Neeleman 2004, 2007). The crucial innovation that I am proposing is in the function of the PHASE HEAD, which plays two roles. As any other head, it has functional features it needs to have checked. But it also triggers Spell-Out of its complement, which encompasses all post-syntactic processes. If we do not impose a pre-determined order on these two operations performed by the head, we predict that we could have two types of languages, or even two types of interactions between syntax and post-syntax in one and the same language. In one case, the phase head first satisfies its requirements (i.e. checks its features), and then triggers Spell-Out of its complement. We can however also imagine that the phase head triggers Spell-Out of it complement first, and then continues with narrow syntactic processes in which its features are checked, which may involve attracting elements from inside its complement, which is already spelled out. Possible orderings of syntactic subcomponents is illustrated in Table 7.2.

In this chapter and the following one, I claim that Wolof gives evidence for the existence of the latter type of interaction between narrow syntax and post-syntax. I give two examples to support this claim. The first is presented in this chapter, in the analysis of verb movement in the inflectional layer and the interaction of verb movement to CT and the behavior of inflectional morphology. The second example is found in Chapter 8, §8.6, in the discussion of the morphosyntax of embedded CT heads in long-distance A′-movement.

In the remainder of this section, I discuss the details of the morphosyntax of the Wolof inflec-

Trigger	**Syntactic subcomponent**	
NON-PHASE HEADS	NARROW SYNTAX	
PHASE HEAD	1 NARROW SYNTAX 2 POST-SYNTAX	1 POST-SYNTAX 2 NARROW SYNTAX
NON-PHASE HEADS	NARROW SYNTAX	
PHASE HEAD	1 NARROW SYNTAX 2 POST-SYNTAX	1 POST-SYNTAX 2 NARROW SYNTAX
CLAUSAL HEAD	1 NARROW SYNTAX 2 POST-SYNTAX 3 CLAUSAL OPERATIONS	1 POST-SYNTAX 2 NARROW SYNTAX

Table 7.2: Possible orderings of syntactic subcomponents

tional layer.

7.3 Verbal morphology

The temporal and aspectual properties of the Wolof verbal system have been extensively studied, especially in the descriptive literature.[3] The temporal interpretation of verbs in Wolof is quite complex, and depends on verb type and sentence particle choice. With most sentence particles, in the absence of overt tense/aspect morphology, Wolof eventive verbs have a past tense, and stative verbs a present tense interpretation.[4] (2) and (3) show V-raising Neutral sentences, in which the main verb raises to CT, and Predicate Focus sentences, in which *do*-support occurs and the verb *def* 'do' raises to CT.

(2) *Eventive verb in Neutral and Predicate Focus clauses*

a. Xale yi lekk-na-ñu jën.
child DEF.PL eat-C_V-3PL fish

3. For both descriptive and generative discussions of tense and aspect in Wolof, see, for example, Mangold 1977; Robert 1991; Dunigan 1994; Moore 2000; Torrence 2003, 2005.

4. The exception is the presentative particle *a-ngi*, which usually results in a present progressive interpretation. As mentioned in Chapter 2, the syntactic structure of Presentative clauses is not well understood and I do not discuss them here.

"The children ate fish."

b. Xale yi da-ñu lekk jën.
child DEF.PL do.C_V-3PL eat fish.
"(It's that) The children ate fish."

(3) *Stative verb in neutral and predicate focus clauses*

a. Xale yi bëgg-na-ñu jën.
child DEF.PL want-C_V-3PL fish
"The children want fish."

b. Xale yi da-ñu bëgg jën.
child DEF.PL do.C_V-3PL want fish.
"(It's that) The children want fish."

Temporal/aspectual properties are encoded by morphemes *di/-y*, *oon*, and *daan/daaw*. *Di* is an auxiliary verb with a variety of uses. In clauses which also contain a main verb, it expresses present progressive, habitual or future with eventive verbs (depending on the context and whether it raises to CT or not), and future with stative verbs. In neutral clauses, it raises to CT. When it stays below CT, it cliticizes onto the clitic complex following the complementizer and surfaces as *-y* (the glide [j]).[5]

(4) *Eventive verb with* di

a. Xale yi **di**-na-ñu lekk jën.
child DEF.PL IMPF-C_V-3PL eat fish
"The children will eat fish."

b. Xale yi da-ñu **di** (> dañuy) lekk jën.
child DEF.PL do.C_V-3PL IMPF eat fish.
"(It's that) The children are eating fish/eat fish/will eat fish."

(5) *Stative verb with* di

a. Xale yi **di**-na-ñu bëgg jën.
child DEF.PL IMPF-C_V-3PL want fish
"The children will want fish."

5. *Di* also shows up as a copular verb in clauses with nominal predicates, as discussed in Chapter 6. At this point, I do not understand the connection between the two uses of *di*—as imperfective aspect and copula—very well. I therefore treat them as distinct lexical items in this dissertation.

b. Xale yi da-ñu **di** (> dañuy) bëgg jën.
child DEF.PL do.C_V-3PL IMPF want fish.
"(It's that) The children will want fish."

Another temporal/aspectual morpheme is *oon*. Used with an eventive verb, it puts the action in a distant past, or implies that the action is completed and that it has no connection to the present; when used with a stative predicate, it means that the state no longer holds of the subject (Dunigan 1994; Torrence 2012a). In structures in which there is no other inflectional morphology, it is found suffixed onto the main verb, and raises with it to CT in neutral clauses.

(6) *Eventive verb with* oon

a. Xale yi lekk-**oon**-na-ñu jën.
child DEF.PL eat-PERF-C_V-3PL fish
"The children had eaten fish."

b. Xale yi da-ñu lekk-**oon** jën.
child DEF.PL do.C_V-3PL eat-PERF fish.
"(It's that) The children had eaten fish."

(7) *Stative verb with* oon

a. Xale yi bëgg-**oon**-na-ñu jën.
child DEF.PL want-PERF-C_V-3PL fish
"The children wanted fish."

b. Xale yi da-ñu bëgg-**oon** jën.
child DEF.PL do.C_V-3PL want-PERF fish.
"(It's that) The children wanted fish."

If both *di* and a lexical verb are present in the structure, *di* is the element that takes on other suffixes. When *oon* suffixes onto *di*, it results in a past progressive meaning with eventive verbs. There is dialectal variation in whether neutral clauses allow the raising of *d(i)-oon* to CT, shown in (8a).[6] For some of my speakers, such structures are degraded, for others, they are grammatical. They are also overwhelmingly reported in the literature as grammatical (e.g. in Dunigan 1994;

6. The parentheses around the vowel 'i' of the auxiliary indicate that it is not pronounced when *oon* is suffixed onto it.

Torrence 2003; Russell 2006). If *d(i)-oon* remains clause-internal, as in the Predicate Focus clause in (8b), it is grammatical for all speakers.

(8) *Eventive verb with* di *and* (w)oon

a. %Xale yi **d(i)-oon**-na-ñu lekk jën.
child DEF.PL IMPF-PERF-C_V eat fish
"The children were eating fish."

b. Xale yi da-ñu **d(i)-oon** (> doon) lekk jën.
child DEF.PL do.C_V-3PL IMPF-PERF eat fish
"(It's that) The children were eating fish."

Wolof also uses a special morpheme to express past habitual meaning – *daan*.

(9) *Eventive verb with* -aan

a. Xale yi **daan**-na-ñu lekk jën.
child DEF.PL PAST.HABIT-C_V-3PL eat fish
"The children used to eat fish."

b. Xale yi da-ñu **daan** lekk jën.
child DEF.PL do-C_V-3PL PAST.HABIT eat fish
"(It's that) The children used to eat fish."

In many varieties of Wolof, particularly in urban environments, *d(i)-oon* and *daan* have been neutralized to *doon*; for those speakers, sentences in (8) are ambiguous between a past progressive and a past habitual meaning. This is true for around half of my consultants, and I suspect it to be the reason for the dialectal variation in the acceptability of (8a).[7] In this dissertation, I assume that *daan* is another morpheme that can be merged into Asp.[8]

7. Several speakers who do not accept (8a) commented that someone who says that, really should have said (9a).

8. *Daan* is probably also bimorphemic. In subordinate temporal and conditional clauses, *-aan* can be suffixed onto the main verb:

(i) -aan *in a conditional clause*
Su ma am-ul-aan mburu, mbiskit l-a-a daan lekk.
C.if 1SG have-NEG-HABIT bread cookie *l*-C_N-1SG PAST.HABIT eat
"If I wouldn't have bread, it's cookies that I would eat."

The final element in the inflectional layer is negation. The negative morpheme *-ul* in Wolof is a suffix. It attaches onto the main verb, the imperfective auxiliary *di*, or the past habitual *daan*, shown in the following examples:

(10) *Negation is a suffix on the verb*

a. Xale yi lekk-**u(l)**-∅-ñu jën.
child DEF.PL eat-NEG-C_V-3PL fish
"The children didn't eat fish."

b. Xale yi da-ñu lekk-**ul** jën.
child DEF.PL do.C_V-3PL eat-NEG fish
"It's that the children didn't eat fish."

(11) *Negation is a suffix on* di

a. Xale yi d(i)-**u(l)**-∅-ñu lekk jën.
child DEF.PL IMPF-NEG-C_V-3PL eat fish
"The children won't eat fish."

b. Xale yi da-ñu di-**ul** (> dul) lekk jën.
child DEF.PL do.C_V-3PL IMPF-NEG eat fish
"It's that the children aren't eating fish/don't eat fish/won't eat fish."

(12) *Negation is a suffix on* daan

a. Xale yi **daan-ul**-∅-ñu lekk jën.
child DEF.PL PAST.HABIT-C_V-3PL eat fish
"The children didn't use to eat fish."

b. Xale yi da-ñu **daan-ul** lekk jën.
child DEF.PL do.C_V-3PL PAST.HABIT-NEG eat fish
"It's that the children didn't use to eat fish."

Torrence (2012a) also reports that *-aan* can in certain cases occur as a suffix on the verb (p.27):

(ii) Tusuur ma togg-al-aan Isaa dibi.
always 1SG cook-BEN-HAB.PAST Isa dibi
"I always used to cook Isa dibi."

In clauses we are concerned with in this dissertation—Neutral and Predicate focus V-raising clauses, and Exhaustive Identification, *wh*-questions and relative clauses in N-raising—I have not found *-aan* to be allowed as a suffix on the main verb. I therefore treat it as a single morpheme, and leave a detailed investigation of its status for future research.

Before looking more closely at the interaction of inflectional morphology, I show evidence for the position of verbal heads inside the inflectional layer of the clause. This is the purpose of the following section.

7.4 Verb movement inside the inflectional layer

There are several reasons to believe that the verb in Wolof always raises out of the VP. The classical test for diagnosing verb movement and its position in the structure is the position of low adverbs, which by hypothesis attach somewhere above the VP and thus distinguish between a low position of the verb, as in the English example in (13), and a high position, as in the French example in (14) (Pollock 1989, 367):[9]

(13) *Adverb precedes the verb in English*

a. John often kisses Mary.

b. *John kisses often Mary.

(14) *Adverb follows the verb in French*

a. Jean embrasse souvent Marie.
John kisses often Mary
"John often kisses Mary."

b. *Jean souvent embrasse Marie
John often kisses Mary

Just as adjectival modification, adverbial modification in Wolof takes the form of a reduced relative clause. The relative clause can occupy a position at the end of the sentence, or between the verb and the object. Crucially, the adverbial relative clause cannot precede the verb, as shown in (15). I demonstrate this with Predicate Focus clauses, in which no clause-internal verbal element raises to CT. The position of the adverbial relative with respect to the verb is the same in N-raising

9. Other tests for determining the position of the verb are not applicable: negation, as we have seen, is suffixal in Wolof, and A-movement cannot strand floating quantifiers. Wolof also does not allow for VP ellipsis.

clauses.

(15) *Low adverbial element in Wolof*

a. Musaa daf-a-∅ jàng téere bi **b-u** **gaaw**.
Moussa do-C_V-3SG read book DEF.SG CM-C_N be.quick
"It's that Moussa read the book quickly."

b. Musaa daf-a-∅ jàng **b-u** **gaaw** téere bi.
Moussa do-C_V-3SG read CM-C_N be.quick book DEF.SG
"It's that Moussa read the book quickly."

c. *Musaa daf-a-∅ **b-u** **gaaw** jàng téere bi.
Moussa do-C_V-3SG CM-C_N be.quick read book DEF.SG

This suggests that the verb in Wolof is outside of the VP, even when no inflectional morphology (that could be responsible for its raising) is present, under the assumption that the adverbial relative adjoins to VP. In fact, the verb seems to be outside the VP even in the presence of the imperfective auxiliary *di*, which in that case hosts all the inflectional morphology:

(16) *Verb is always above the VP in Wolof*

a. Musaa daf-a-∅ d(i)-ul jàng téere bi **b-u** **gaaw**.
Moussa do-C_V-3SG IMPF-NEG read book DEF.SG CM-C_N be.quick
"It's that Moussa isn't reading the book quickly."

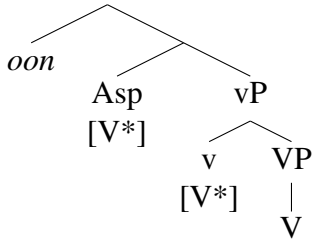
b. Musaa daf-a-∅ d(i)-ul jàng **b-u** **gaaw** téere bi.
Moussa do-C_V-3SG IMPF-NEG read CM-C_N be.quick book DEF.SG
"It's that Moussa isn't reading the book quickly."

c. *Musaa daf-a-∅ d(i)-ul **b-u** **gaaw** jàng téere bi.
Moussa do-C_V-3SG IMPF-NEG CM-C_N be.quick read book DEF.SG

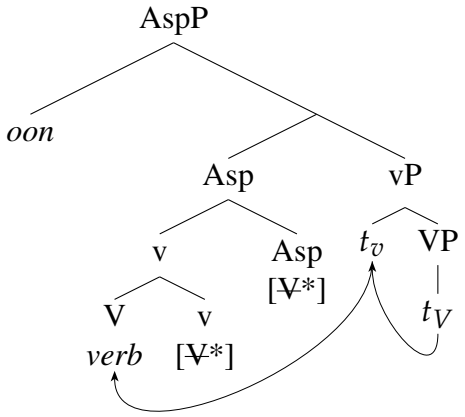
The lexical verb, then, is always in a position above the VP. If it is the only verbal head present in the clause, it raises from V through all heads up to the highest functional head. The trees in (17) illustrate the raising of the lexical verb to Asp, in an affirmative clause.

(17) *Verb raising to Asp in Wolof*

a.

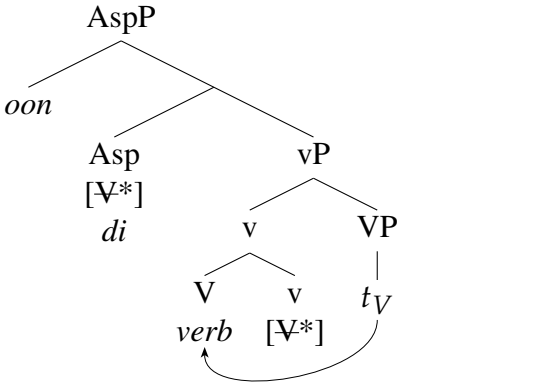


b.



If both the lexical verb and the imperfective auxiliary *di* are in the structure, *di* is merged in Asp, and V moves to *v*. This is shown in (18).

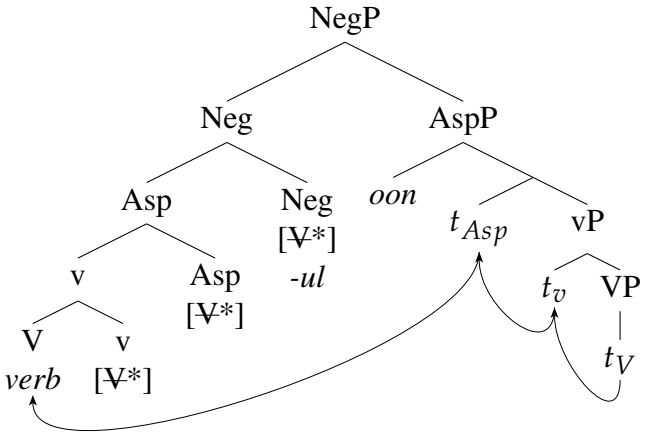
(18) *Verb raising to* v *and* di *insertion in* Asp



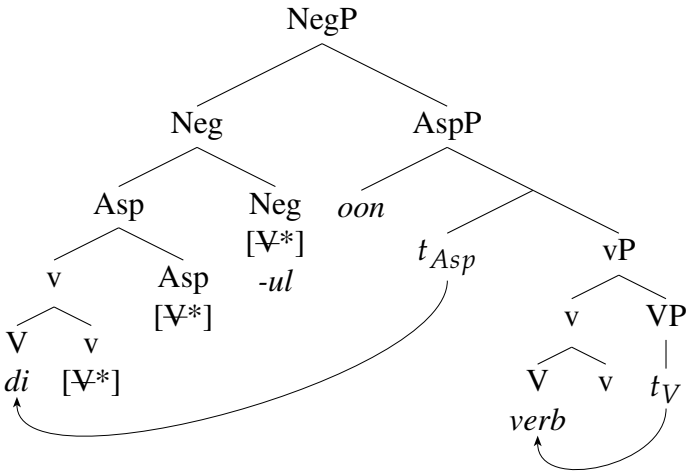
In the structures proposed in (17) and (18), *oon* is higher than both the verb and *di*, however, we have seen that it always follows the highest verbal head. I provide an analysis that accounts for the order of the verb and the auxiliary with respect to *oon* in §7.7.

In negative sentences, Neg is the highest functional head, so both the main verb and *di* raise to Neg. In the latter case, the main verb raises to *v*.

(19) *Verb raising to* Neg



(20) Di *raising to* Neg



Thus far I have assumed that the perfective morpheme *oon* is phrasal, and not a head, and that it is found in the specifier of AspP, whereas the negative morpheme *-ul* is a head. The following section provides empirical evidence for this claim.

7.5 The status of *oon* and *-ul*

There are two pieces of evidence for the phrasal status of *oon*. First, when *oon* cooccurs with negation, it follows it. I propose that negation occurs higher in the structure than *oon*, occupying

the Neg head, and that the verb, *di*, or *daan* move up to Neg. Under the hypothesis that head movement cannot skip heads (Head Movement Constraint, Travis 1984), the fact that *oon* does not precede negation means that it is not a head. Examples in (21) illustrate this in predicate focus clauses.

(21) oon *follows negation*

a. Xale yi da-ñu lekk-**ul-oon** jën.
child DEF.PL do.C_V-3PL eat-NEG-PERF fish
"(It's that) The children hadn't eaten fish."

b. Xale yi da-ñu d(i)-**ul-oon** lekk jën.
child DEF.PL do.C_V-3PL IMPF-NEG-PERF eat fish
"(It's that) The children weren't eating fish."

c. Xale yi da-ñu daan-**ul-oon** lekk jën.
child DEF.PL do.C_V-3PL PAST.HABIT-NEG-PERF eat fish
"(It's that) The children hadn't used to eat fish."

The second piece of evidence for the phrasal status of *oon* comes from neutral clauses with negation, in which the main verb raises to CT. In that case, negation raises with the verb, but *oon* remains clause-internal, as in (22).

(22) oon *does not always raise to CT*
Xale yi lekk-**u(l)**-∅-ñu **woon** jën.
child DEF.SG eat-NEG-C_V-3PL PERF fish
"The children hadn't eaten fish."

(22) indicates that *oon* is not a head, otherwise we would expect it to always be picked up by the raising verb, and carried to CT, as is the case with negation in (22). It is, however, suffixed onto the verb in the absence of negation and raises with it to CT (see, for example, (6)-(7)). I argue this to be the result of the fact that *oon* is not an affix, but a clitic, which can find itself attached to a verbal head under a particular condition, which I elaborate on in §7.7.

The difference between the morphosyntactic status of *oon* and *-ul* is most evident in the only clause-type which does not have a verbal head: clauses with nominal predicates (NPred clauses).

When no verbal head is present in the structure, *oon* can still occur; *-ul*, on the other hand, cannot. I attribute this to the fact that *-ul* is an affix that must attach to a verb. No such requirements are placed on *oon*. NPred clauses are discussed in detail in Chapter 6.

(23) *NPred clause with* oon *and* -ul

a. Sàmba ndongo l-a-∅ woon.
Samba student *l*-C_N-3SG PERF
"Samba was a student."

b. *Sàmba ndongo l-a-∅-wul.
Samba student *l*-C_N-3SG-NEG
intended: *"Samba isn't a student."*

Based on the evidence presented in this section, I argue that *oon* is phrasal, and *-ul* a head. Furthermore, I shall show that *oon* is a clitic, whereas *-ul* is a verbal suffix. I present the details of the analysis of their morphosyntactic behavior in the remainder of this section.

7.6 The ordering of the verbs and inflectional morphology

In this section, we explore the ordering of the verb and verbal morphology in Wolof, and their behavior in instances of verb raising and *do*-support. The crucial data are presented in (24), and have to do with the inconsistent behavior of the morpheme *oon* in clauses in which either the main verb or *di* raise to CT. Raising of a verbal element to CT occurs in neutral affirmative clauses and negative clauses, with the sentence particle surfacing as *na* in the former, and as ∅ in the latter case. In affirmative clauses, the main verb carries *oon* with it to CT, as in (30a). When negation is present, *oon* remains below CT, as in (30b), following the subject and the object clitic.

(24) *Verb raising to CT*

a. Lekk-**oon**-na-ñu ko.
eat-PERF-C_V-1PL 3SG.OBJ
"We had eaten it."

b. Lekk-**ul**-∅-ñu (> lekkuñu) ko **woon**.
eat-NEG-C_V-1PL 3SG.OBJ PERF

"We hadn't eaten it."

I have found clauses in which *di* raises to CT with *oon* or both *oon* and *-ul* to elicit mixed judgments. The literature reports that, in the past progressive, *d(i)-oon* can also raise to CT in the presence of negation: sentences in (25) are from Torrence (2003), and Russell (2006) reports the same pattern, in (26). Around half of my consultants reject these sentences as ungrammatical.

(25) *The ordering of verbal affixes in Torrence 2003*

a. D(i)-**oon**-na-a dem.
IMPF-PERF-C_V-1SG go
"I was leaving."

b. D(i)-**oon-u(l)**-∅-ma dem.
IMPF-PERF-NEG-C_V-1SG go
"I was not leaving."

(26) *The ordering of verbal affixes in Russell 2006, p.227, 230*

a. Nappkat yi d(i)-**oon**-na-ñu jaay jën bi.
fisherman DEF.PL IMPF-PERF-C_V-3PL sell fish DEF.SG
"The fishermen were selling the fish."

b. Nappkat yi d(i)-**oon-u(l)**-∅-ñu jaay jën bi.
fisherman DEF.SG IMPF-PERF-NEG-C_V-3PL sell fish DEF.SG
"The fishermen were not selling the fish."

The data above indicate that, in some varieties of Wolof, *oon* behaves differently, depending on whether *di* is present or absent in the structure – it is not carried along to CT with the verb, but it is with *di*. I believe, however, that this is not the correct analysis. First, there is one very important thing to notice about the ordering of *oon* and *-ul* in (25) and (26) – the perfective morpheme and negation are in reverse order, compared to their clause-internal order in clauses with past progressive meaning, as in (27). The ordering, however, matches the ordering of negation and the past habitual *daan* in dialects that have retained the difference, shown in (28).

(27) *Ordering of negation in past progressive*
Xale yi da-ñu **d(i)-ul-oon** lekk jën.
child DEF.PL do.C_V-3PL IMPF-NEG-PERF eat fish
"(It's that) The children weren't eating fish."

(28) Daan *raising to CT*

a. **Daan**-na-ñu ko lekk.
PAST.HABIT-C_V-1PL 3SG.OBJ eat
"I used to eat it."

b. **Daan-u(l)**-∅-ñu (> daanuñu) ko lekk.
PAST.HABIT-NEG-C_V-1PL 3SG.OBJ eat
"I didn't use to eat it."

Given the variation in the acceptability of examples such as (25) and (26) that I have encountered, and the change I have found is taking place concerning the neutralization between the past progressive and the past habitual, I suspect that (25) and (26) are in fact examples of *daan* neutralized to *doon*. I leave the explanation of the ungrammaticality of the past progressive *d(i)-oon* raised to CT for some speakers aside, as it does not seem likely to me to be of syntactic origin.[10] I restrict my analysis to the dialect in which the neutralization has not happened, and the raising of the past progressive *d(i)-oon* to CT is not grammatical.[11] In those dialects, the past progressive in a Neutral clause is expressed with the sentence in (29), which is ambiguous between a distant past and a past progressive.

(29) *Verb* + oon *ambiguous in verb raising to CT*
Lekk-u(l)-∅-ñu ko woon.
eat-NEG-C_V-3PL OBJ.3SG PERF
"I was not eating it./I didn't use to eat it."

10. I do not have more to say about this issue at the moment. One reason why I believe that it might not be a syntactic problem is because the acceptability of the past progressive in EI constructions, in which all of the verbal material is clause-internal, is also severely degraded for the same consultants. At this point, I do not have enough data to investigate this interesting puzzle further.

11. This is the dialect of my two most reliable consultants, and I have found their judgments on these data to be clear and consistent.

To summarize, the data I shall provide an account for are those in (24), repeated below. What crucially needs to be explained is the behavior of *oon* in the absence and presence of negation in verb raising to CT in (30).

(30) *Verb raising to C*

a. Lekk-**oon**-na-ñu ko.
eat-PERF-C_V-1PL 3SG.OBJ
"We had eaten it."

b. Lekk-**ul**-∅-ñu (> lekkuñu) ko **woon**.
eat-NEG-C_V-1PL 3SG.OBJ PERF
"We hadn't eaten it."

7.7 Suffixation and m-merger of inflectional morphology

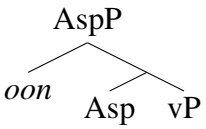
In this section I spell out the details of verb raising through the inflectional layer, up to CT, focusing on the peculiar behavior of the perfective marker *oon*.[12] I argue that *oon* is an enclitic, located in Spec,AspP. I propose that it undergoes morphological merger (m-merger; Marantz 1988; Embick and Noyer 2001; Matushansky 2006) with Asp at the moment of Spell-Out. Specifically, if a verbal head occupies Asp, *oon* occurs to its right, appearing as a suffix.[13]

12. The seemingly peculiar behavior of *oon* is discussed in Dunigan 1994 and Torrence 2003, who both attempt to explain the apparent violation of the Mirror Principle and the Head Movement Constraint. Dunigan (1994) handles the issue by allowing *oon* to occupy two positions in the clause – either it is in T, or adjoined to TP (in cases with negation). That way, in the latter case, the verb skips over *oon*. Torrence (2003) considers *oon* to be a head located in T. In order to derive the diference between clauses in which it behaves as a suffix on the verb and raises to CT, and those in which it is left behind by the verb, he proposes that the former are derived by head movement of the verb, and the latter by remnant movement of the VP. I do not discuss the details of Torrence's analysis, because the clause structure that I assume is significantly different from the one he proposes. For Torrence, subject clitics are agreement morphemes, located above the NegP, which is above the TP (which hosts *oon* as a head). In these clause-types, Torrence does not assume a projection hosting sentence particles either, but considers the sentence particle in affirmative clauses, *na*, to be part of the subject agreement morpheme.

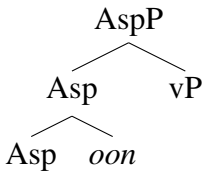
13. The reversal of the order between *oon* and Asp can be the result of a post-syntactic proces such as *lowering* or *local dislocation* as proposed in Embick and Noyer 2001, which occurs due to the enclitic status of *oon*.

M-merger of oon *and* Asp

(31) a.



b.



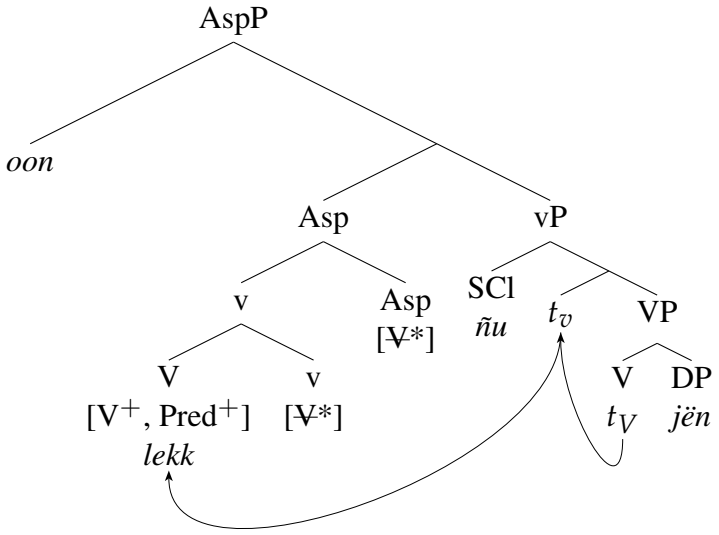
If a verbal head is located in Asp, in any subsequent movement operations of the verbal head, *oon* is carried along with the verbal head. If there is no element in Asp, *oon* remains in AspP. It is eventually pronounced as a unit with the preceding prosodic word.[14] I assume that this is determined in a separate, phonological module, as in not a part of syntax.

Let us start with the derivation of the affirmative Neutral clause in which the verb with the perfective *oon* raises to CT, as in (32). The tree in (33a) shows the movement of the verb inside the inflectional layer, to Asp, and (33b) the merger of the CT head. I propose that CT is a phase head, something that is commonly assumed for C, and as such, that it triggers the Spell-Out of its complement – here AspP. This results in m-merger of *oon* and Asp.

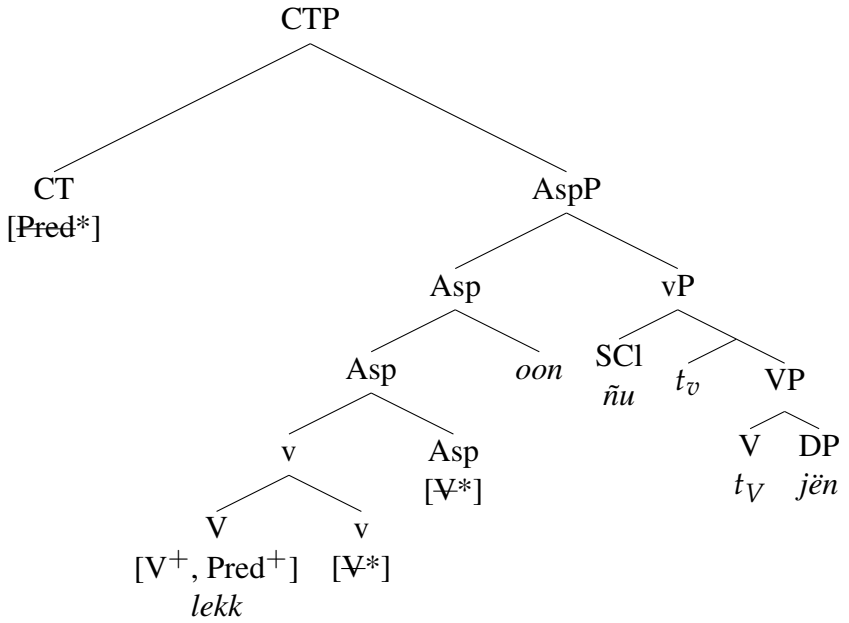
(32) Lekk-oon-na-ñu jën.
eat-PERF-C_V-1PL fish
"We had eaten fish."

14. *Di*, in fact, behaves in the same way, and if no element is suffixed onto it, it leans onto the preceding prosodic word and surfaces as the glide [j].

(33) a.



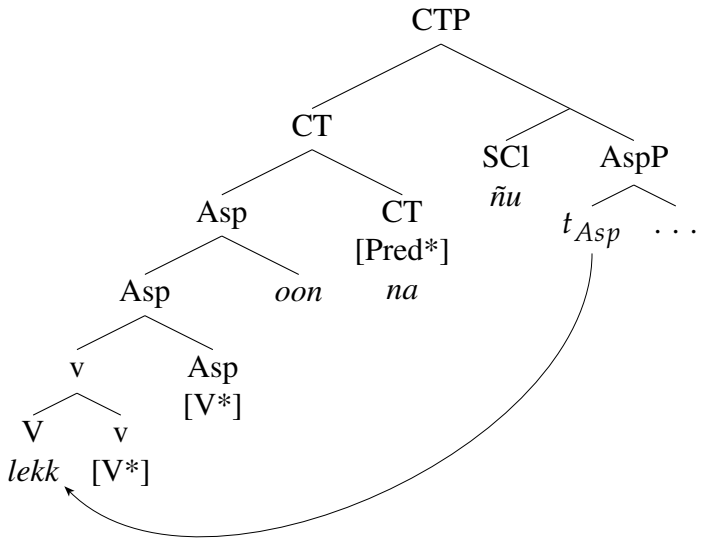
b.



In the final step, the whole Asp head moves to CT, triggered by [Pred*].[15] The subject clitic cliticizes below CT, via Clitic Movement, due to the *Clitic Placement Condition* (see Chapter 2, §2.5).

15. Other featural details of the CT head are omitted here for simplicity. See Chapter 4.

(34)

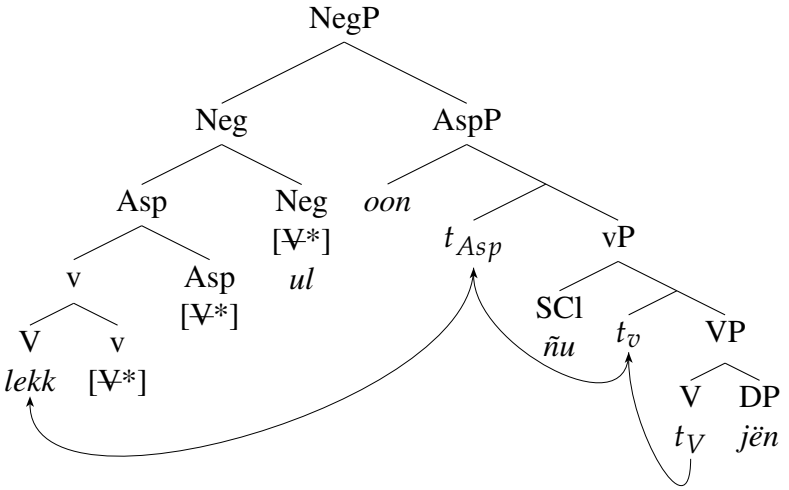


Let us now see what happes in clauses with negation, where the perfective morpheme *oon* does not get carried on to CT, but remains below CT, following the subject clitic. The derivation of (35) proceeds in the following manner. The verb raises trough every head in the inflectional layer to Neg, as in (36a). In (36b), the CT head is merged and triggers Spell-out of NegP. Since the complex head with the verb is no longer in Asp, but has moved on to negation, *oon* is not merged with it.[16]

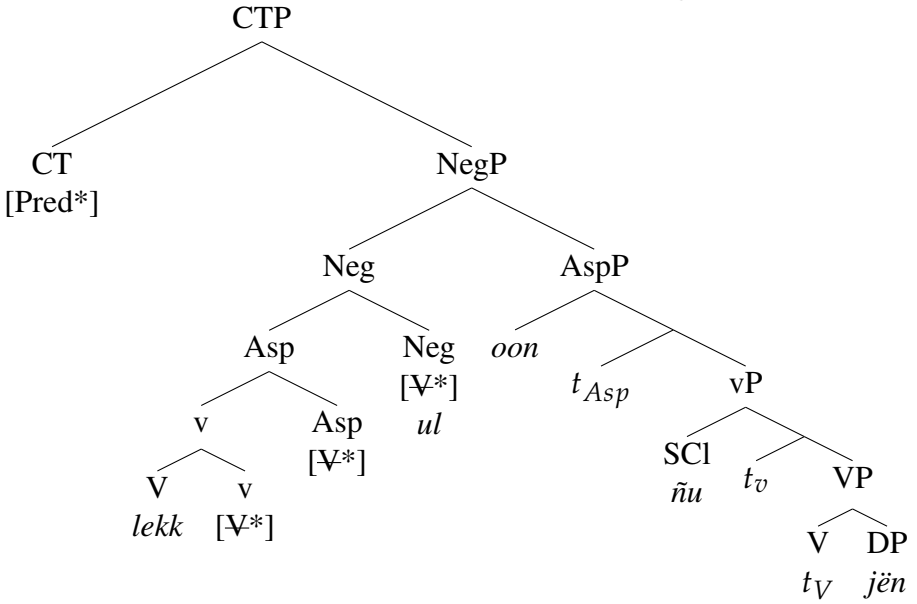
(35) Lekk-u(l)-∅-ñu (> lekkuñu) woon jën.
eat-NEG-C_V-3PL PERF fish
"They hadn't eaten fish."

16. I leave *oon* in Spec,AspP, but it can also be m-merged with the trace of Asp. This detail is irrelevant.

(36) a.

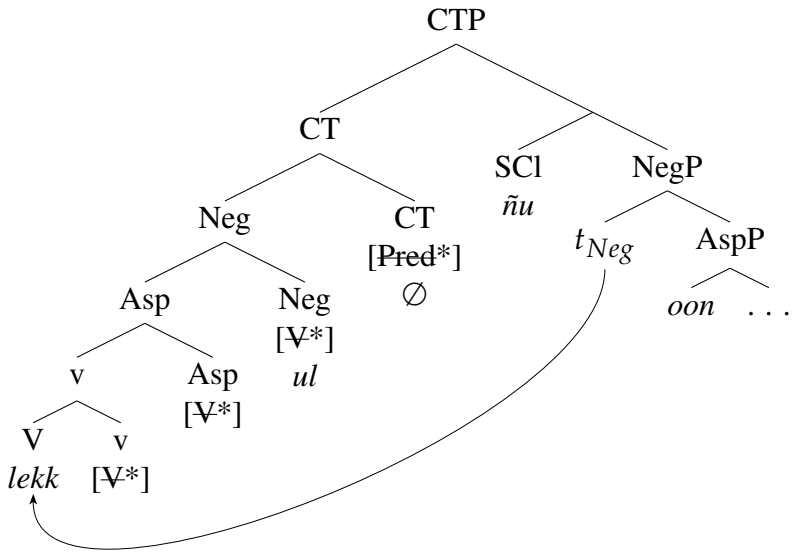


b.



When the verb is further attracted to CT and the whole Neg head moves, *oon* remains in Asp. That is why it follows the subject clitic, onto which it eventually cliticizes.

(37)

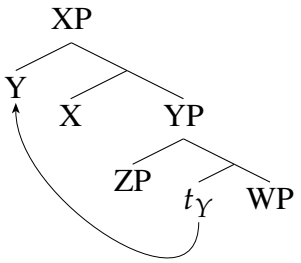


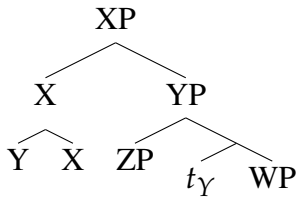
The key to this analysis is a particular assumption I am making about the order of operations in the syntax and post-syntax. Namely, I am proposing that Spell-Out, a part of post-syntax, can feed further syntactic operations – in this case, that syntactic movement can happen out of a spelled out domain. This is a crucial assumption in my analysis, as it allows us to treat the perfective morpheme *oon* in a unified way in all constructions – as a phrase in Spec,AspP. In that way, we can understand why it is skipped by head movement when there is a Neg head present.

Although the idea that post-syntax can feed operations in narrow syntax is not a standard assumption of how syntax and post-syntax interact, similar things have been proposed in the literature. As an attempt to address various theoretical issues that arise in minimalism related to the operation of head movement as adjunction to a head, Matushansky (2006) proposes to reanalyze head movement as movement into a specifier position followed by m-merger, which she explicitly situates in the morphological component.[17] Her proposal of how head movement works is represented in (38).

17. In fact, she proposes that certain instances of cliticization are m-merger operations, specifically Romance clitics, which she proposes are located in Spec,TP and subsequently m-merge with T.

Matushansky's head movement + m-merger

(38) a. 

b. 

Since heads can move more than once, Matushansky must assume a strong cyclic view of syntax, according to which each newly merged node is a phase (p.95), involving Merge and Spell-Out. This means that, in her system, Spell-Out necessarily feeds further syntactic movement.

Conversely, it has also been suggested that some traditional syntactic operations are in fact part of post-syntax. For example, Bobaljik (2008) proposes that accessibility for subject-verb agreement is dependent on the rules of morphological case assignment, which are independently shown to be post-syntactic, meaning that agreement in φ-features would also need to be post-syntactic.

The existence of phenomena which need a more interactive relationship between syntax and post-syntax is evident; I propose a solution that treats syntax and post-syntax as two submodules of the same module, which apply cyclically, with phase-heads as the triggers of their cyclic application.

7.8 Conclusion

In this chapter I gave an overview of the verbal inflectional morphology and verb movement throughout the inflectional layer in Wolof, with the analysis focusing on the peculiar behavior of the perfective morpheme *oon* in constructions in which the verb raises to CT (V-raising clauses), depending on the presence of the negative suffix *-ul*. When there is no negation in V-raising clauses, *oon* appears suffixed onto the main verb or the imperfective auxiliary *di* (the grammaticality of the latter being dialect-dependent) which raises to CT. If negation is present, *oon* does not suffix

onto the V-Neg complex head when it raises to CT, but remains clause-internal. I argue that this gives evidence for a particular architecture of the syntactic component of the grammar and for the interaction between its two submodules – the narrow syntactic and the post-syntactic one.

Specifically, I propose that the syntactic structure is built via narrow syntactic operations (e.g. Merge, Move, Agree) until the merger of a phase head, which has two roles. On the one hand, it participates in the further building of the structure, meaning that it has its own functional features to check via Agree and Move. On the other hand, it sends its complement to Spell-Out, which triggers the onset of post-syntactic processes. The novelty of the architecture of syntax proposed in this chapter lies in the ordering of these two operations performed by the phase head. The more common assumption is that syntactic processes apply first, with the Spell-Out following, and that no further movement is permitted from the spelled out domain, but only from the phase edge. I propose that the reverse order of these operations is possible as well—with the Spell-Out preceding the checking of the phase head's features—and that the behavior of the Wolof perfective aspect marker *oon* gives evidence for this claim.

Considering *oon* to be a phrase located in Spec,AspP, I propose that it m-merges with the Asp head during Spell-Out, which, as all heads in the inflectional layer in Wolof, has a V*-feature requiring a verbal element to move to it or be merged in it. If a verbal element is present in Asp during Spell-Out triggered by CT, *oon* is m-merged with it and consequently moves to CT. If, however, negation is present, it is located in the head of NegP, which is above AspP, and the highest verbal head obligatorily moves to it. When CT merges and triggers Spell-Out, *oon* cannot m-merge with the verb, because the latter is no longer located in Asp, but in Neg. As a result, *oon* is not carried along with the verb to CT but remains clause-internal.

The following chapter elaborates on this idea further, showing how cyclic A$'$-movement in Wolof gives further support for this view of the grammar. Moreover, Wolof provides evidence for the existence of both orderings of operations performed by the phase head.

CHAPTER 8

THE MORPHOSYNTAX OF A′-MOVEMENT

8.1 Introduction

This chapter investigates the details of the morphosyntax of the highest CTP-layer in N-raising clauses, which hosts the overt exponent of CT (i.e. the sentence particle) and has an A′-moved element in its specifier. We have discussed one N-raising clause type in detail in Chapter 5: constructions in which the sentence particle surfaces as *(l)a*, in EI-structures and *wh*-questions, as in (1).

(1) a. *Subject question with (l)a*
K-an **a** gis Musaa?
CM-Q C_N see Moussa
"Who saw Moussa."

b. *Object question with (l)a*
K-an **l-a** Musaa gis?
CM-Q *l*-C_N Moussa see
"Who did Moussa see?"

There is another type of A′-movement construction, in which the layer which hosts the sentence particle and the A′-moved element in its specifier has a different surface appearance. First, the sentence particle surfaces as CM-*u*, agreeing in φ-features (in the form of a class marker) with the extracted element. Furthermore, unlike sentences with *(l)a*, structures with CM-*u* always have an empty specifier. Questions with CM-*u*, equivalent in meaning to those in (1), are exemplified in (2).

(2) a. *Subject question with* CM-*u*
K-u gis Musaa?
CM-C_N see Musa Moussa
"Who saw Moussa."

b. *Object question with* CM-*u*
Y-u Musaa gis?
CM.PL-C_N Musa see
"What(pl) did Musa see?"

When comparing these two question types with V-raising clauses, it is the structure with CM-*u* that appears to be the odd man out: first and foremost, it exhibits overt φ-feature agreement, something that we do not see with any other sentence particle. Second, we shall see the vowel

of the sentence particle has three allomorphs, depending on definiteness and proximity of the extracted phrase – features also not encoded with any other sentence particle.

The two structures are in near-complementary distribution – simple *wh*-questions can occur with both CM-*u* and *(l)a*, but relative clauses are compatible only with the former, and EI-structures, comparatives, NPred sentences and *wh*-questions with complex *wh*-phrases with the latter of the two sentence particles. The two types of structures are traditionally considered to also be syntactically distinct – the one containing *(l)a* is often treated as a type of a cleft, the one with CM-*u* as a regular A′-movement construction (Torrence 2005 and his subsequent work). In this chapter, I present evidence in favor of an analysis that treats both structures as syntactically identical. I argue that their surface differences are the result of post-syntactic processes, specifically, a type of a Doubly-Filled-COMP Filter, rooted in a morphological Obligatory Contour Principle prohibiting adjacent identical φ-features, and a post-syntactic repair which deletes either the offending feature in CT, or a phrase containing it in Spec,CTP. The OCP is active in all spec-head configurations in Wolof, and the specific conditions of the repair result in the deletion of the φ-feature in the CT head in all structures, V-raising and N-raising alike, except those with CM-*u*. I argue that in that particular case, the post-syntactic deletion targets the phrase in Spec,CTP, due to Recoverability conditions placed on deletion. This analysis explains the distribution of the two allomorphs of CT in N-raising, and gives a unified analysis of the syntax and post-syntax of all sentence particles in Wolof.

The chapter is organized as follows. Section 8.2 presents empirical evidence in favor of treating structures with CM-*u* and *(l)a* as syntactically identical. In §8.3, I give the basic analysis of the CM-*u*/*(l)a* allomorphy in *wh*-questions. Section 8.4 accounts for the exclusive occurrence of *(l)a* in exhaustive focus constructions. I tackle the question of the obligatoriness of CM-*u* in relative clauses in §8.5, and the shape of the intermediate CT heads in long-distance movement in §8.6. I briefly address the pronunciation of CT in V-raising clauses in section 8.7. Section 8.8 concludes the chapter.

8.2 The syntax of A′-extraction in Wolof

In this section, we inspect the properties of the two types of A′-movement constructions in Wolof in more detail. (3) repeats examples of constructions discussed at length in Chapter 5. The sentence particle surfaces as *(l)a*, exhibiting a subject/non-subject asymmetry, analyzed as a result of the *Tense C-command Condition*, requiring the T-feature to c-command all other functional material in the clause. In N-raising clauses, this requirement can be satisfied in two ways: either with the nominative subject occupying the highest specifier (due to the fact that nominative case is a T-feature), in which case CT surfaces as *a*, or by the T-feature itself raising and adjoining to the highest CT node, which surfaces as *l-* preceding *a*.

(3) a. *Subject question with (l)a*
K-an **a** gis Musaa?
CM-Q C_N see Moussa
"Who saw Moussa."

b. *Object question with (l)a*
K-an **l-a** Musaa gis?
CM-Q *l*-C_N Moussa see
"Who did Moussa see?"

Additionally, *(l)a* occurs in every CT position along the path of A′-movement, shown in (4).

(4) *Cyclicity in A′-movement in Wolof*
K-an **l-a**-ñu gëm ni **l-a** Musaa xalaat ni **l-a** Aali gis?
CM-Q *l*-C_N-3PL believe that *l*-C_N Musa think that C_N Ali see
"*Who do they believe that Musa thinks that Ali saw?*"

The sentence particle in the second A′-movement structure type does not exhibit the asymmetry, but shows overt φ-feature agreement (in the form of noun class marking) with the extracted phrase, as in (5). Comparing (3) and (5) reveals another crucial difference between the two structures: an overt specifier in the former and a null one in the latter construction.

(5) a. *Subject question with* CM-*u*
K-u gis Musaa?
CM-C_N see Musa Moussa
"Who saw Moussa."

b. *Object question with* CM-*u*
Y-u Musaa gis?
CM.PL-C_N Musa see
"What(pl) did Musa see?"

Wh-questions with CM-*u* can be posed about subjects, objects, locatives, manners, and instrumentals, as long as the question corresponds to one simple *wh*-phrase (*who, what, how*) (Torrence 2005, 2012b). The CM-*u* complementizer can be formed with any of the thirteen noun class markers, requiring the answer to contain an item from that noun class.

Both CM-*u* and *(l)a* can also occur in embedded questions:

(6) *Embedded Wh-questions with* CM-u *and* (l)a

a. Laaj-na-a Musaa [**k-u**-ñu gis].
ask-C_V-1SG Moussa [CM-C_N-3PL see
"I asked Moussa who they saw."

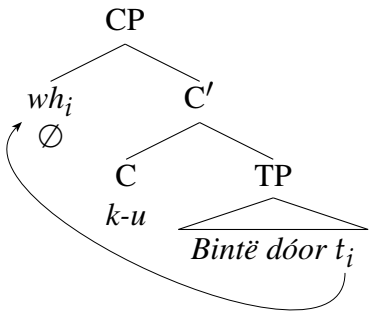
b. Laaj-na-a Musaa [k-an **l-a**-ñu gis].
ask-C_V-1SG Moussa [CM-Q *l*-C_N-3PL see
"I asked Moussa who they saw."

Compared to other sentence particles, CM-*u* is different – if exhibits φ-feature agreement, which no other particle does, and the vowel part of the sentence particle is not an invariant *a* (as it is in other particles), but has three exponents, depending on the definiteness and proximity of the extracted phrase: *-u* for indefinite, *-i* for definite proximal, and *-a* for definite distal. Agreement in φ-features on CM-*u* may suggest that it is a type of a question word, due to its similarity with the question word CM-*an*, which occurs in questions with *(l)a*, and due to the fact that the definite and proximal marking is almost identical to such marking on determiners. However, Torrence (2005, 2012a,b) presents extensive evidence in favor of treating CM-*u* as a complementizer that has a null *wh*-phrase in its specifier, as in (7). Dunigan (1994) also treats CM-*u* as one of the sentence particles.

(7) *The syntax of* CM-*u* (Torrence 2012b, p.1157-1158)

a. K-u Bintë dóor?
CM-C_N Binta hit
"Who did Binta hit?"

b.



I follow Torrence in considering CM-*u* to be a complementizer, however, I attribute the obligatorily empty specifier to post-syntactic deletion, and not to a selectional property of CM-*u*. I do not discuss all of Torrence's evidence for treating CM-*u* as a complementizer; the interested reader is directed to Torrence 2005, 2012a,b. My goal here is to establish a syntactic parallel between constructions with CM-*u* and *(l)a* in support of an analysis according to which the two structures have the same syntax.

A crucial observation about structures with CM-*u* and *(l)a* is that they are for the most part in complementary distribution; they both occur in *wh*-questions, as in (3) and (5), but only one sentence particle is allowed in all other A′-constructions. Their distribution is summarized in Table 8.1. In this chapter, I limit my discussion to *wh*-questions as examples in which both variants are possible, EI-structures are representatives of constructions which can only contain *(l)a*, and relative clauses, which can only contain CM-*u*. NPred clauses are investigated in more detail in Chapter 6, and I do not discuss the syntax of comparatives here. However, I do assume that the CTP-layer which hosts *(l)a* and its specifier is identical in all these sentence types, and that the analysis of its surface structure extends to all clauses.[1]

The purpose of the discussion in this section is two-fold: to show that alternative explanations, which would attribute distinct syntax to the two structures, are not corroborated by data, and to highlight the equivalent syntactic behavior of structures with CM-*u* and those with *(l)a*. The biggest argument ultimately comes from the main analysis presented in section 8.3, which shows that adopting the claim that CM-*u* and *(l)a* have the same syntax allows us to account for their

1. Specifically, that structures with *(l)a* always have a non-deletable DP in Spec,CTP.

		(l)a	CM-**u**
HIGHEST CT	**wh-questions**	√	√
	Exhaustive Identification	√	*
	comparatives	√	*
	Double-DP copular clauses	√	*
	relative clauses	*	√
INTERMEDIATE CT		√	*

Table 8.1: The distribution of CM-*u* and *(l)a*

distribution in different A′-movement constructions.

In the remainder of this section, I first give an overview of the evidence presented in Torrence 2005, 2012a, showing that both structures involve A′-movement. I then addresses the semantic equivalence of the structures with CM-*u* and *(l)a*. This dismisses the possibility that CM-*u* and *(l)a* are syntactically distinct, in particular, that constructions with *(l)a* are clefts. Next, I discuss pied-piping data, which show that the *wh*-phrase can pied-pipe a preposition with both allomorphs, suggesting their syntactic equivalence, but that pied-piping of other material (which must be overt) is only possible with *(l)a*, pointing to the fact that the two structures differ in which material they allow to be overt in Spec,CTP. And finally, data from long-distance extraction gives strong support to *(l)a* being an A′-movement complementizer, on a par with CM-*u*.

8.2.1 Structures with CM-*u and (l)a both involve A′-movement*

Torrence (2005, 2012a) shows that constructions with CM-*u* and those with *(l)a* both involve A′-movement. Frist, they both exhibit island effects, illustrated in (8) (examples (a) and (b) from Torrence 2012a, p.111):

(8) *Adjunct island in a relative clause and object EI*

a. Gis-na-a Bintë [laata ñu jox téere yi xale bi].
see-C_V-1SG Binta [before 3PL give book DEF.PL child DEF.SG]
"I saw Binta before they gave the books to the child."

b. *téere$_i$ y-i ma gis Bintë [laata ñu jox t_i xale bi]
book CM-C_N.DEF.PROX 1SG see Binta [before 3PL give *t* child DEF. SG]

"the books that I saw Binta before they gave the child"

c. *L-an l-a-a gis [laata ñu jox t_i xale bi]
what *l*-C_N-1SG see [before 3PL give *t* child DEF. SG]
"What did I see before they gave the child?"

Next, both constructions exhibit reconstruction effects. Wolof has no word corresponding to reflexive pronouns in English (*myself, yourself, etc.*), but uses a genitive construction *X's head* (Torrence 2012a, p.117-118):

(9) *Reflexive in Wolof*
Gis na-ñu seen bopp.
see C_V-3PL POSS.3SG head
"They saw themselves"[2]

The reflexive interpretation is subject to Principle A:

(10) *Reconstruction effects in a relative clause and object focus*

a. [nataal-u bopp-am$_i$] b-i Isaa$_i$ sàcc
[picture-GEN head-POSS.3SG] CM-C_N.DEF.PROX Isaa steal
"the picture of himself that Isaa stole"

b. Seen bopp$_i$ l-a xale yi$_i$ gis.
POSS.3PL head *l*-C_N child DEF.PL see
"It's themselves that the children saw."

And finally, Torrence uses a Wolof-specific movement test, which involves the distribution of the applicative suffix *-al* to show that both constructions involve A′-extraction. This suffix alternates with the preposition *ak* 'with', which cannot be pied-piped or stranded. The suffix obligatorily substitutes the preposition in instances of A′-movement (Torrence 2012a, p.112).

(11) *The applicative suffix in A′-extraction in Wolof*

a. Jàngalekat yi daje na-ñu *(ak) Isaa.
teacher DEF.PL meet C_V-3PL with Isa

2. The litteral reading *"The children saw their head(s)"* is also available.

"The teachers met with Isa."

b. K-an l-a jàngalekat yi daje-*(el)?
CM-Q *l*-C_N teacher DEF.PL meet-APPL
"Who did the teachers meet with?"

c. jàngalekat y-i Isaa daje-*(el)
teacher CM-C_N.DEF.PROX Isaa meet-APPL
"the teachers that Isaa met with"

These tests show that both constructions involve A′-movement. This of course does not automatically mean that they are syntactically equivalent. I present empirical arguments in favor of this approach in the following sections.

8.2.2 Semantic equivalence of CM-*u and (l)a*

When a language has multiple syntactic strategies for forming ex-situ *wh*-questions, it is common for one of the resulting structures to be a cleft or a pseudocleft.[3] In fact, a common analysis in the literature is precisely that Wolof structures with *(l)a* are clefts (Kihm 1999; Torrence 2005, 2013a,b). The data, however, do not support this. In particular, *wh*-questions with *(l)a* do not exhibit properties of clefts. First, there are no semantic differences between structures with *(l)a* and those with CM-*u* in *wh*-questions, the construction in which they can both occur. Specifically, questions with *(l)a* are not associated with a non-cancelable existential presupposition, as is the case with clefts (Prince 1978). Second, all positions in which *(l)a* occurs cannot be associated with Exhaustive Identification (focusing), also a hallmark of a cleft construction (Percus 1997; É. Kiss 1998). Third, there is no evidence to support a bi-clausal analysis of structures with *(l)a*, a crucial property of clefts. And finally, in *wh*-questions, there is no difference in which constituents are found in questions with CM-*u* and which in questions with *(l)a*, something we often do see in languages that employ multiple syntactic strategies for forming *wh*-questions.

3. Many Indo-European languages have cleft questions, English and French being among them. Austronesian languages, for example, have cleft- and pseudocleft-questions, in addition to *wh*-fronting (see e.g. Potsdam 2009) and *wh*-in-situ. I am not aware of an ex-situ *wh*-question strategy aside from simple A′-movement that does not involve clefting or pseudoclefting.

We begin by comparing the semantic properties of structures with *(l)a* to those of clefts in French and English. Consider the difference between French cleft-questions and in-situ questions. The cleft question carries a non-cancelable existential presupposition, seen from the infelicity of the question-answer pair in (12), that there exists something that the person does in life. Since *nothing* cancels such a presupposition, it is not a felicitous answer to (12a). The in-situ strategy, in (13), does not exhibit the same effect – the existential presupposition can easily be canceled (Shlonsky 2012, 248):

(12) *Cleft question in French*

a. C'est quoi que tu fais dans la vie?
it's what that you do in the life
"What is it that you do in life?"

b. #Rien.
"Nothing."

(13) *In-situ question in French*

a. Tu fais quoi dans la vie?
you do what in the life
"What do you do in life?"

b. Rien.
"Nothing"

In Wolof, neither the question with *(l)a* nor the question with CM-*u* are associated with a non-cancelable existential presupposition; both (14a) and (15a) can felicitously be answered with *"Nothing"*:

(14) *Wh-question with (l)a*

a. L-an **l-a** Musaa gis?
CM-Q C_N Musa see
"What did Moussa see?"

b. Dara.
"Nothing."

(15) *Subject question with* CM-*u*

a. **L-u** Musaa gis?
CM-C_N Moussa see
"What did Moussa see?"

b. Dara.
"Nothing."

Similarly, in the English cleft question in (16) the existential presupposition (that there exists someone that Moussa saw) cannot be canceled, making the insertion of a presupposition suspender

(Horn 1972), such as *if anyone*, infelicitous. In a non-cleft *wh*-question in (17) this effect is not observed:

(16) *Cleft wh-question*

a. Who was it that Moussa saw?

b. #Who was it, if anyone, that Moussa saw?

(17) *Conventional wh-question*

a. Who did Moussa see?

b. Who, if anyone, did Moussa see?

In Wolof, the existential presupposition can be canceled via insertion of *if anyone* both in questions with *(l)a* and in those with CM-*u*:

(18) *Canceling the existential presupposition in la-question*

a. K-an l-a Musaa gis?
CM-Q *l*-C_N Moussa see
"Who did Moussa see?"

b. K-an, s-u di-ee (>dee) am-na-∅ kenn, l-a Musaa gis?
CM-Q CM-C_N IMPF-*ee* have-C_V-3SG someone, *l*-C_N Moussa see
"Who, if anyone, did Moussa see?"

(19) *Canceling the existential presupposition in u-question*

a. K-u Musaa gis?
CM-C_N Moussa see
"Who did Moussa see?"

b. S-u di-ee (>dee) am-na-∅ kenn, k-u Musaa gis?
CM-C_N IMPF-*ee* have-C_V-3SG someone, CM-C_N Moussa see
"If anyone, who did Moussa see?"

Semantic differences between structures with CM-*u* and *(l)a*, that we would expect to see if one of the constructions was a cleft, are not found in Wolof.

Another property of cleft constructions is Exhaustive Identification of the clefted constituent

(Percus 1997; É. Kiss 1998). As we have seen, some A′-movement constructions with *(l)a* are indeed associated with EI. It has therefore been claimed in the literature that *(l)a* is a focus marker (Dunigan 1994; Russell 2006). The syntactic parallel between focus constructions and questions is not uncommon. It has been observed that languages which have a designated EI position tend to move their *wh*-phrases to that position as well, as is the case in Hungarian (Horvath 1986; É. Kiss 1998), and comparatives, which obligatorily contain *(l)a*, are also claimed to involve focusing (Reglero, 2006; Merchant, 2009). If this were the complete list of environments in which CM-*u* and *(l)a* occurred, one might claim that *(l)a*, in addition to having a Wh-feature, also has a focus/exhaustivity feature associated with it, triggering A′-movement of the focused constituent to its specifier, and that CM-*u* is the *elsewhere* A′-movement complementizer. The approach I take to Exhaustive Identification in this dissertation does not allow for such an analysis. In Chapter 6 I argue that EI is a type of predication, which in languages such as Hungarian and Wolof results in a variety of elements, including EI-ed arguments as well as information-structurally neutral nominal predicates, occurring in a designated syntactic position. This position is neither consistently a position for EI-ed element, nor a position for focused elements. The fact that these information-structural effects overlap with a particular syntactic operation does not mean that they trigger it.[4] Furthermore, *(l)a* obligatorily occurrs in every intermediate CT position between the extraction and the final landing site, as we shall see in the following section, which makes it difficult to argue that it is in some way involved in clefting.[5]

Another crucial property of clefts is bi-clausality. Evidence of bi-clausality includes a copular verb in the higher clause, an expletive subject, and relativizers/complementizers which usually occur in relative clauses in the language.[6] The distribution of the copula *di* in Wolof is complex,

4. This is not to say that C_N could not have additional features, some type of a focus feature amongst them. The claim I am making is that the presence of any additional features on C_N is not what determines the distribution of the two sentence particles. In other words, *(l)a* is not the Spell-Out of a head which always carries a particular feature, but the Spell-Out of a head in a particular morpho-syntactic environment.

5. But see Torrence (2013b) on a proposal for successive-cyclic clefting in Wolof.

6. See, for example, Potsdam (2009) and Potsdam and Polinsky (2011) for tests of bi-clausality of A′-movement constructions in Austronesian languages.

as shown in Chapter 6, so its absence in A′-movement constructions with *(l)a* cannot be taken as evidence against their bi-clausality. Wolof also does not have an overt expletive. It does, as we have seen, have a sentence particle that is always overt in relative clauses. The sentence particle normally occurring in relative clauses, CM-*u*, is not present in structures with *(l)a*, something we might expecte if they were indeed clefts, containing a relative clause:

(20) *Relative clause*
nit k-u Musaa gis
person CM-C_N.INDEF Moussa see
"a person who Moussa saw"

(21) *(L)a question*
K-an l-a (*k-u) Musaa gis?
CM-Q *l*-C_N (*CM-C_N.INDEF) Moussa gis
"Who did Moussa see?"

Another possibility is that structures with *(l)a* are pseudoclefts, sentences consisting of a free relative and a DP, connected with a copula. Wolof's pseudocleft constructions, as shown in Chapter 6, §6.5, have a different form. They do have an overt complementizer, and they have properties that regular A′-movement constructions do not have, for example, reversibility, exhibited by the absence of the *a/la*-asymmetry, and the obligatory topicalization of the free relative. An example of a pseudocleft is repeated in (22):

(22) *Pseudoclefts in Wolof*
Ñ-i lekk tangal yi xale yi l-a/a.
CM-C_N eat sweets DEF.PL child DEF.PL *l*-C_N/C_N
"Who ate the sweets were the children."

A final, minor argument that structures with CM-*u* and *(l)a* are not two distinct strategies for forming *wh*-questions comes from comparing Wolof with languages which do employ multiple strategies. Crucially, those strategies usually differ in some way. For example, different strategies might be used for questioning different constituents, as is the case in some Austronesian languages.

Seediq (Aldridge 2002, 2004) uses clefts or *wh*-in-situ for argument *wh*-questions, but only *wh*-in-situ for adjunct *wh*-questions. Tagalog (Richards 1998; Aldridge 2002, 2004) uses clefts for argument *wh*-questions, but focus fronting for adjunct *wh*-questions. There is no such division of labor in Wolof: all constituents can be questioned both in a structure with CM-*u* and *(l)a*. The only restriction is in the type of element allowed to occupy Spec,CTP, which receives a straightforward explanation in the post-syntactic analysis I propose in §8.3.

To summarize: in order to claim that Wolof A′-movement constructions with *(l)a* are clefts or pseudoclefts, one would have to posit a special type of a relative clause without an overt sentence particle that occurs only in clefts, or another type of a pseudocleft, in addition to the one in (22), in which a free relative also does not have an overt sentence particle. More importantly, one would have to explain the absence of semantic differences between structures with CM-*u* and those with *(l)a*, which are expected if one of those structures is a cleft. Finally, and most importantly, given the absence of semantic differences, positing syntactic differences offers no insight into the distribution of the two structures.

8.2.3 Syntactic equivalence of CM-*u and (l)a*

In the previous section, I discuss the lack of evidence for a semantic difference between structures with CM-*u* and those with *(l)a*, which we would expect to find if one of the two structures was a syntactic cleft, or related to a focus feature, as argued in previous work on Wolof. In this section, I present empirical arguments in favor of uniform syntactic treatment of structures with the two allomorphs.

An important property of *(l)a*, one that strongly favors an analysis which treats it as a sentence particle in A′-movement, is that it obligatorily occurs in long-distance movement; extraction out of an embedded clause that contains a different sentence particle is not possible (Dunigan 1994). The example in (23b) illustrates an attempt at extraction out of an embedded Predicate Focus clause. Extraction is equally ungrammatical with CM-*u* and *(l)a* in the matrix clause, if the embedded

clause retains the V-raising sentence particle. Long distance extraction out of the sentence in (23a) is only possible if *(l)a* occupies the embedded C_N, as in (23c).[7]

(23) *Verb focus particle and A′-extraction*

a. Moodu xam ni Faatu **daf-a**-3SG gis gainde.
Modu know that Fatou do-C_V-3SG see lion
"Modu knows that Fatou SAW a lion."

b. *{L-an l-a}/{L-u} Modu xam ni Faatu **daf-a**-3SG gis?
{CM-Q *l*-C_N}/{CM-C_N} Modu know that Fatou do-C_V-3SG see
Intended: "What does Modu know that Fatou SAW?"

c. {L-an l-a}/{L-u} Moodu xam ni **l-a** Faatu gis?
{CM-Q *l*-C_N}/{CM-C_N} Modu know that *l*-C_N Fatou see
"What does Modu know that Fatou saw?"

Similarly, in the dialect of Wolof discussed in this dissertation, CM-*u* cannot occupy the position of the sentence particle in an embedded relative clause; only *(l)a* is allowed:

(24) *Relative Clauses*

a. film b-u-ñu bëgg
movie CM-C_N.INDEF-1PL like
"a movie we liked."

b. film b-u-mu wax-oon ni **l-a**-ñu bëgg
movie CM-C_N.INDEF-3SG say-PERF that *l*-C_N-1PL like
"a movie that s/he said we liked"

c. *film b-u-mu wax-oon ni **b-u**-ñu bëgg
movie CM-C_N.INDEF-3SG say-PERF that CM-C_N.INDEF-1PL like

However, Torrence (2005, 2012b) shows that for some speakers the complementizer CM-*u* exhibits the same behavior as *(l)a*, i.e. that it occupies intermediate CT positions in long-distance extraction, shown in (25a). Furthermore, he gives examples of *mixed chains*, in which CM-*u* and *(l)a* can alternate along the path of A′-movement, as in (25b) (example from Torrence 2012b, p.1173):

7. This follows straightforwardly from the analysis of V-raising and N-raising clauses presented in Chapters 4 and 5, which was based on a stipulation that the CT in the two clause-types has different features. This section simply presents empirical evidence for it.

(25) CM-u *in intermediate positions in long-distance extraction*

a. **K-u** Kumba wax ne **k-u** Isaa defe ne **k-u** Maryam di dóór?
CM-C_N Kumba say that CM-C_N Isa think that CM-C_N Maryam IMPF hit
"Who did Kumba say that Isa thought that Maryam will hit?"

b. **K-u** Kumba wax ne **l-a** Isaa defe ne **k-u** Maryam di dóór?
CM-C_N Kumba say that *l*-C_N Isa think that CM-C_N Maryam IMPF hit
"Who did Kumba say that Isa thought that Maryam will hit?"

Torrence's data give strong support for an account which treats *(l)a* and CM-*u* as allomorphs of C_N, since they show that both variants can occupy C_N in long-distance extraction, and even alternate along the path of extraction. The analysis I propose in §8.3 can account for both dialects – the one described in this dissertation, in which only *(l)a* can occupy intermediate CT positions in long-distance extraction, and Torrence's dialects, in which either can occur in any intermediate CT.

Another important piece of evidence for the parallel treatment of CM-*u* and *(l)a* comes from pied piping. First, not all phonologically overt material is banned from Spec,CTP of structures with the allomorph CM-*u*. The locative preposition *ci* can be pied-piped by the *wh*-phrase both in constructions with CM-*u* and in those with *(l)a* (Torrence 2012a):[8]

(26) *Preposition pied-piping in Wolof*[9]

a. {Ci fan}/{Fan ci} l-a-ñu teg téeré bi?
{P-LOC where}/{where P-LOC} *l*-C_N-3PL put book DEF.SG
"On what did they put the book?"

b. Ci l-u-ñu teg téeré bi?
P-LOC CM-C_N-3PL put book DEF.SG
"On what did they put the book?"

These examples show that both the overt *wh*-phrase in (26a) and the null *wh*-phrase in (26b) can pied-pipe material to Spec,CP. Crucial for us is that not all material can be pied-piped with both

8. This is the only preposition that behaves in this way in Wolof. Other prepositional elements, *ag* 'with' (which is also a conjunction) and *ngir* 'for' cannot pied-pipe or be stranded in A′-movement, but are replaced with applicative/benefactive suffixes on the verb (Torrence 2012a).

9. In *wh*-questions, *ci* can be both a preposition and a post-position. The fact that it can precede or follow the *wh*-word *fan* 'where', but cannot follow CM-*u*, is additional evidence that CM-*u* is not a question word.

sentence particles, and the restriction parallels the distribution of CM-*u* and *(l)a* in all other constructions in Wolof. Namely, CM-*u* is found only in constructions with null *wh*-words in Spec,CTP, and *(l)a* in constructions with overt DPs in Spec,CTP. This extends to questions with complex *wh*-phrases, which can only be formed with the complementizer *(l)a*, as shown in (27). CM-*u* is banned.[10]

(27) *Questions with a complex* wh-*phrase can only contain* (l)a

a. Yaay-u **k-an** **l-a** Aali gis?
mother-of CM-Q *l*-C_N Ali see
"Whose mother did Ali see?"

b. *Yaay-u **k-u** Aali gis?
mother-of CM-C_N Ali see

c. **B-an** xale **l-a** Faatu gis?
CM-Q child *l*-C_N Fatou see
"Which child did Fatou see?"

d. ***B-an** xale **b-u** Faatu gis?
CM-Q child CM-C_N Fatou see

The data in (26) and (27) bring home the point that the crucial distinction between CM-*u* and *(l)a* lies in the type of element in Spec,CTP. When the phrase in Spec,CTP is recoverable (and I shall argue in §8.3 that *wh*-words are), it can be null and the sentence particle may surface as CM-*u*. When the phrase in Spec,CTP is not recoverable (as, for example, complex *wh*-phrases which contain non-operator material), it must be overt, which correlates with the allomorph *(l)a*. The availability of preposition pied-piping with both allomorphs lets us know that it is the type of DP that makes complex *wh*-questions ungrammatical with CM-*u*, and not just any kind of overt material in Spec,CTP. I argue in §8.3 that the reason for the ungrammaticality of complex *wh*-phrases with CM-*u* lies in the tension between the requirement that the phrase in Spec,CTP containing φ-features be deleted when CT is realized as CM-*u*, and the fact that complex *wh*-phrases cannot be deleted (due to their non-recoverability). Such questions can therefore only contain *(l)a*. If we assume that

10. Torrence (2012a) reports that there is variation in whether CM-*u* can occupy C_N in these types of questions. I have found no variation amongst speakers from Saint Louis and Dakar, but I address Torrence's data in §8.3 in more detail and show that my analysis can easily be extended to account for them as well.

structures with CM-*u* and *(l)a* are syntactically equivalent, and their surface differences the result of post-syntactic processes, we have a way of understanding the pied-piping facts, which otherwise remain unexplained.

8.2.4 Summary

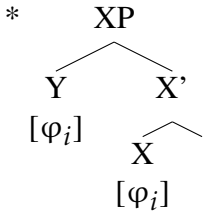
In this section, I have presented arguments for treating *(l)a* and CM-*u* as allomorphs and constructions in which they occur as syntactically identical. I have demonstrated the lack of semantic differences between the two structures, and the lack of syntactic evidence for a cleft or a pseudocleft analysis in Wolof, weakening possible alternative analyses which would treat the two structures as syntactically distinct. I also showed that *(l)a* behaves like an A′-extraction complementizer *par excellence*: it obligatorily occupies all intermediate CT positions along the movement path in long-distance extraction. The fact that certain dialects also allow the occurrence of CM-*u* in intermediate CTs strengthens the proposal that they are allomorphs of the head. Both variants occur in A′-movement constructions. In one type, *wh*-questions, both versions are possible, with no difference in meaning or contexts of use. In other structures only one is allowed, which correlates with the overtness of the *wh*-phrase in Spec,CTP. This is especially significant in *wh*-questions with complex *wh*-phrases, which in the dialect discussed in this thesis cannot be formed with CM-*u*.

We are now left with two puzzles to solve. First, why is it that with the sentence particle CM-*u*, which exhibits φ-agreement, we never see the subject/non-subject asymmetry, and vice versa, why is there no φ-agreement on C_N with *(l)a*? Second, what mechanisms determine which allomorph of C_N is observed in which context, i.e. why can C_N in questions with a simple *wh*-phrase surface as either of the allomorphs, in relative clauses only as CM-*u*, and in questions with complex *wh*-phrases, EI-structures and all embedded CT positions only as *(l)a*? The answers to these questions are the topic of the following section.

8.3 OCP$_{\varphi}$

I propose that the key to the understanding of the surface shape of the CTP-layer in N-raising clauses lies in the distribution of the φ-feature. Namely, the φ-feature in the CTP-layer always surfaces only in one place: either in the specifier, or on the complementizer. I pursue the idea that a morphological Obligatory Contour Principle (OCP) constraint in Wolof prohibits identical φ-features to surface in a specifier-head configuration, as in (28).

(28) *Morphological Obligatory Contour Principle constraint in Wolof (OCP$_{\varphi}$)*

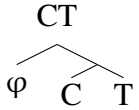


I propose that the repair to the OCP$_{\varphi}$ violation is to delete the φ-feature node in CT, or to delete the entire phrase in Spec,CTP. This section explores the details of this proposal.

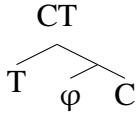
8.3.1 OCP$_{\varphi}$ in subject and non-subject extraction

The feature content of CT in N-raising is extensively discussed in Chapter 5. As proposed there, CT has two Type 1 features, EPP* and Wh*, which are deleted from the syntax once they are checked. The Type 2 feature, φ°, is not deleted, and remains present in the syntax. Furthermore, I proposed another difference between subject extraction and non-subject extraction, in the position of the T^{+}-feature in CT, which raises to adjoin to CT in non-subject extraction, in order to satisfy the *Tense C-command Condition*. The structure of CT that is sent to Spell-Out in subject and non-subject extraction is represented in (29) and (30), respectively.

(29) *CT in subject extraction*



(30) *CT in non-subject extraction*



I also propose the set of Vocabulary Insertion rules in (31). In the environment of φ, C surfaces as *u*, and as *a* elsewhere, and T surfaces as *l* when left-adjacent to C.

(31) *Vocabulary Insertion Rules, first version*[11]

a. $C_N \rightarrow u/\varphi\_\_$

b. $C_N \rightarrow a$

c. $T \rightarrow l/\_\_C$

The realization of T as *l* is in this analysis the result of universal adjacency conditions on contextual allomorphy (Embick 2010). The key idea is that a node can be sensitive to another node for the purpose of allomorphy only if they are linearly next to one another, so *l* is a contextual realization of T triggered by being left-adjacency to C. When the φ-feature is not deleted in C, T is no longer linearly next to C and therefore does not surface as *l* (in that case, according to our rules, it has no exponent).

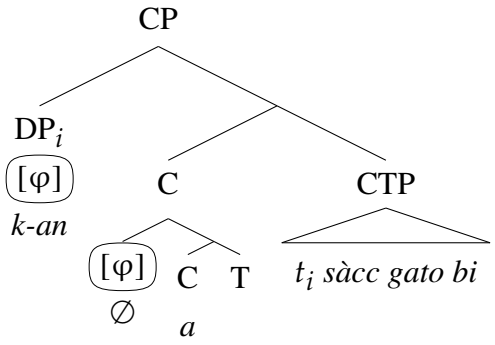
When the extracted element is merged in the final Spec,CTP, there are two possible resulting configurations. We start with A′-extraction in questions, in which the complementizer can surface both as *(l)a*, in (32), and as CM-*u*, in (33).

(32) *Overt φ-feature in Spec,CTP*

a. K-an a sàcc gato bi?
CM-Q C_N steal cake DEF
"Who stole the cake?"

11. The Vocabulary Insertion rules will need to be made slightly more precise to account for versions of the complementizer in relative clauses.

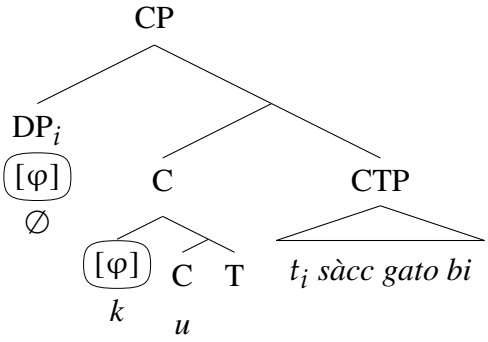
b.



(33) *Overt φ-feature in CT*

a. K-u sàcc gato bi?
CM-C_N steal cake
"Who stole the cake?"

b.

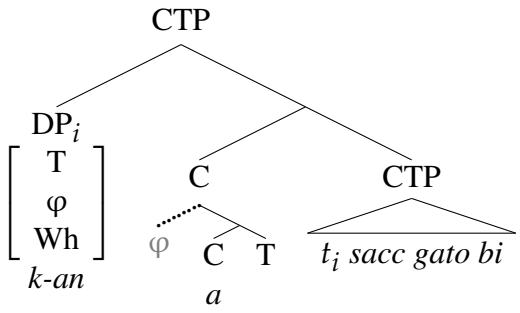


The φ-feature in these constructions occurs in two places—in the *wh*-operator in Spec,CTP, and, via agreement, in CT—however, it is overt either in one or in the other position. I argue that this is the result of an Impoverishment rule, which militates against structures offending the OCP_φ constraint in (28) by deleting one of the nodes containing the φ-feature. Even though Impoverishment was initially a rule that deleted features, there are proposals in the literature (Arregi and Nevins 2007, 2012; Calabrese 2010; Pescarini 2010) according to which it can delete all material contained in a node. Such deletion, which results in the removal of the entire node, is referred to as Obliteration. This is the type of deletion that repairs OCP_φ in Wolof.[12]

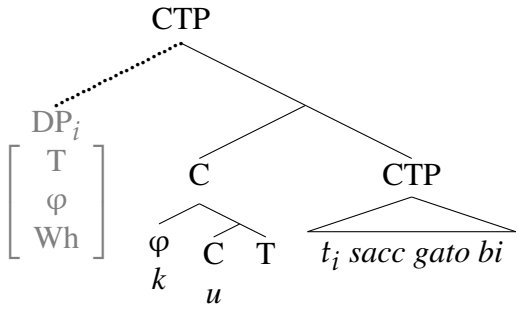
12. The absence of an entire phrase (either the *wh*-phrase or the complementizer) is also the result of the Doubly-Filled-Comp-Filter constraint, which the phenomenon in Wolof is clearly related to, and which I discuss later in this section. Whether the present analysis can be extended to accommodate all similar phenomena is left for future

In order to repair the structure offending the constraint in (28), Wolof can employ one of two options. One option is to delete the node with the φ-feature in CT. In that case, as per the Vocabulary Insertion rules in (31), C surfaces as *a*, illustrated in (34a). The operator in this case is overt and has the form CM-*an*. The second option is to delete the operator. In that case φ in CT is present and conditions allomorphy: C is realized as *u*, shown in (34b). The examples illustrate subject extraction, when TCC is satisfied by the subject phrase itself.

(34) a. *Subject a-question*



b. *Subject u-question*



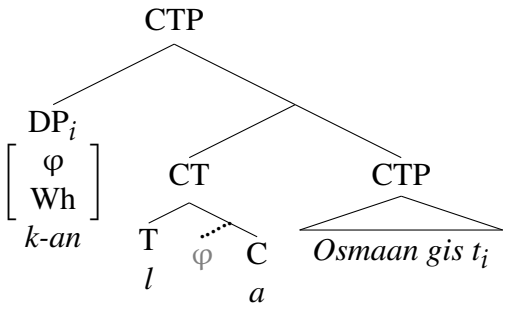
When a non-subject moves to Spec,CTP, the TCC is valued by the movement of T which adjoins to CT and is realized as *l*. T only surfaces as *l* in structures in which the OCP-triggered repair results in the deletion of the φ-feature in CT, as in (35). In case the repair results in the deletion of the phrase from Spec,CTP, as in (36), T is not adjacent to C and has no exponent.

research.

(35) *Non-subject a-question*

a. K-an l-a Osmaan gis?
CM-Q *l*-C_N Oussman see
"Who did Oussman see?"

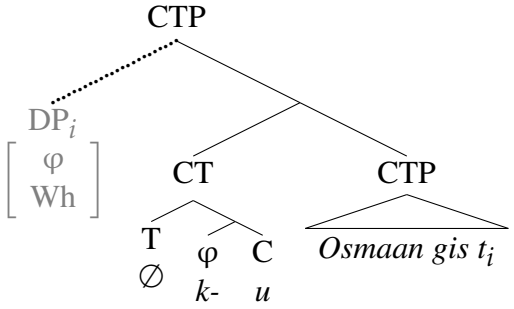
b.



(36) *Non-subject u-question*

a. K-u Osmaan gis?
CM-C_N Osman see
"Who did Osman see?"

b.



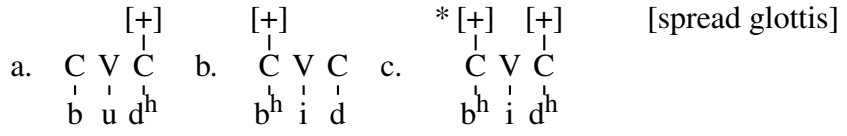
Under the analysis developed here, we do not need to stipulate that the complementizer CM-*u* selects for an empty operator, and that the empty operator only occupies the specifier of CM-*u*. A post-syntactic analysis offers a natural explanation for the occurrence of the φ-feature only in one position in the CTP-layer, attributing it to an Impoverishment rule with the purpose of avoiding a marked structure banned by a morphological OCP_{φ}.

8.3.2 Morphological OCP and the Doubly-Filled-COMP Filter

The Obligatory Contour Principle was first proposed in phonology (Leben 1973; Goldsmith 1976) as a constraint that prohibits adjacent identical elements at the melodic level. It was initially

an analysis for tonal dissimilation in African tone languages, but was later extended to account for all kinds of dissimilation phenomena concerning adjacent segments or features on the same (autosegmental) tier (e.g. McCarthy 1986). A well known example of OCP involving features is the constraint banning roots with two aspirated consonants in Sanskrit, illustrated in (37). The examples in (a) and (b) show grammatical roots which have one aspirated and one unaspirated consononat. Two aspirated consonants, however, are prohibited, which is explained as a ban on adjacent features on the *spread glottis* tier.

(37)



Similar phenomena (referred to as morphological dissimilations, haplologies, repetition avoidance, morphological OCP, etc.) have been identified to occur in the mapping between syntax and phonology, prohibiting adjacent identity (in form and/or content of morphemes) in particular morphosyntactic configurations. Nevins (2012) identifies different levels at which an OCP-style constraint may apply, and various repair mechanisms that languages employ to avoid the offending structure. In order to illustrate the range of OCP-type constraints and especially the diversity of the types of repairs that they trigger, we shall briefly look at several examples from the literature. We are especially interested in featural dissimilation, since in the current account, the dissimilation is not dependent on phonological form.

Bizkaian Basque dialects do not allow adjacent [+Participant] features in particular morphosyntactic configurations, triggering dissimilation which manifests itself as either deletion of one of the [+Participant] features (turning second person into default third person), or as deletion of one of the terminal nodes containing the offending feature (Arregi and Nevins 2007). There is a lot of variation between different Basque dialects in which context triggers the dissimilation, and in which type of repair is applied. For example, in the context 2 Erg – 1Pl Abs (**you-us*), the Maruri dialect deletes [+Participant] on 2 Erg, and the Ondarru dialect on 1Pl Abs:

(38) *Participant dissimilation in Maruri Basque*
(*Suk gu ikusi*) g- aittu- **su** → g- aittu- ∅.
(*You us seen*) 1P.A- TR- 2S.E → 1P.A- TR- 3S.E
"You saw us."

(39) *Partcipant dissimilation in Ondarru Basque*
(*Suk gu ikusi*) **g-** aitxu- su → **d-** o- su.
(*You us saw*) 1P.A- TR- 2S.E → 3S.A- TR- 2S.E
"You saw us."

The example of Basque nicely illustrates that even within one language, different dialects can employ distinct types of repairs of an offending OCP constraint. We shall see, taking some of the data from Torrence's work into account, that different Wolof dialects Wolof seem to do the same thing.[13]

Another language in which adjacent clitics bearing some of the same features are disallowed is Spanish, where the 3rd person indirect object and direct object clitics cannot be adjacent Perlmutter (1971). Nevins (2007) analyzes the spurious *se* in Spanish as the result of dissimilation of adjacent clitics both bearing the feature [-Participant], where the first clitic is turned into a reflexive.

(40) *Spurious 'se' in Spanish*

a. *A Pedro, el premio, le lo dieron ayer.
to Pedro, the prize, 3-DAT 3-ACC gave-PL yesterday

b. A Pedro, el premio, se lo dieron ayer.
to Pedro, the prize, *se* 3-ACC gave-PL yesterday
"To Pedro, the prize, they gave it to him yesterday."

13. Phonological OCP constraints are known to behave in the same way; for example, a constraint that bans two adjacent high tones is repaired differently in various languages (Myers 1997):

(i) /...H_1 H_2.../

a. H_2 is deleted (Shona)
b. H_1 is deleted (Rimi)
c. H_1 is retracted away from H_2 (Shona)
d. H_2 is retracted away from H_1 (Chichewa)
e. H_1 and H_2 are fused into one $H_{1,2}$ (Shona, Kishambaa)

Dissimilations are also argued to occur in agreement configurations, which is the expected consequence of agreement.[14] Ackema and Neeleman (2003) (also Benmamoun and Lorimor (2006)) argue that the post-syntactic allomorphy rules delete identical features of terminal nodes contained within the same prosodic domain in subject-verb agreement in languages such as Dutch and Arabic. This happens in configurations that result in VS order, when inflection and agreement are adjacent, resulting in *weakened* agreement on the verb. For example, in Dutch the verb does not agree with the second person subject and exhibits first person agreement, which is explained as the dissimilation in the feature addressee [Add].

(41) *Weakened agreement in Dutch*
dagelijks loop(*t) jij met een hondje over straat
daily walk.(*2SG) you with a doggy in.the street
"Daily you walk with a doggy in the street."

These several examples illustrate that different languages ban different featural adjacencies, and that they employ different repair strategies to avoid them. Crucially, all of these accounts rely on some type of structural adjacency in triggering dissimilation. Wolof is the same – its OCP_{φ} markedness constraint prohibits φ-features in adjacent nodes a Specifier-Head configuration.

The impossibility of the co-occurrence of a head and its specifier is of course not an unfamiliar phenomenon. It is well known in many European languages as the consequence of the Doubly-Filled-COMP Filter of Chomsky and Lasnik (1977), who identified it as a surface filter responsible for ungrammaticality of the following sentence:

(42) *Cooccurrence restriction on a wh-word and C in English*
*I wonder who that Captain Picard met.

14. This is not to say that every type of agreement in every language will trigger a dissimilation. This is nothing controversial; phonological assimilations and dissimilations do not operate equally in all languages, so there is no reason to expect morphological ones to behave any differently.

In subsequent work, the filter was extended to account for cooccurrence restrictions in other Spec-Head configurations in syntactic structures, formulated as the Generalized Doubly-Filled-Comp Filter in Koopman 1996:

(43) *Generalized Doubly-Filled-COMP Filter*

No projection has both an overt specifier and an overt head at the end of the derivation.

The Doubly-Filled-COMP Filter in the CP layer is known to be violated in older stages of languages in which it is fully operational today, like standardized English and German, but it is also violated in many dialects of these languages today. Wolof presents an interesting case, in which it seems that the filter is respected in A′-movement with one allomorph of C, CM-*u*, but violated with the other, *(l)a*. It could of course be argued that there is additional structure between the A′-moved element and CT in constructions with *(l)a*, and that this is why the Doubly-Filled-COMP Filter does not apply to them, however, this dissertation is in large part dedicated to presenting evidence against position additional structure that is not functionally justified.

There are also proposals which make the Doubly-Filled-COMP Filter a feature-based constraint, such as its application in Pearson 2005:

(44) If H is a category containing some feature F, *[$_{HP}$ XP [$_{H'}$ H^0 ...]] when XP and X^0 both overtly encode F.

This formulation of the filter is close to the OCP$_\varphi$ constraint used here. The main problem with Pearson's formulation is in the use of the term "overtly", which makes it unclear at which level it is meant to apply. The feature architecture proposed in this dissertation, according to Type 2 features stay visible after checking, and therefore indistinguishable from Goal features, in combination with the precise definition of the syntactic and post-syntactic domains, clarifies the point in the derivation at which the OCP$_\varphi$ applies and allows us to test the prediction this makes for the architecture of the syntactic component proposed in Chapter 7. It remains to be seen whether an

OCP-style analysis could be applied to all the phenomena in which there is a restriction on the co-occurrence of a head and its specifier.

In this section, I presented the core of the analysis which accounts for the two versions of *wh*-questions with simple *wh*-phrases, which are the only A′-movement construction which can occur with either of the A′-complementizer allomorph, CM-*u* and *(l)a*. In all other constructions, only one of the allomorphs is allowed. They are discussed in the following sections.

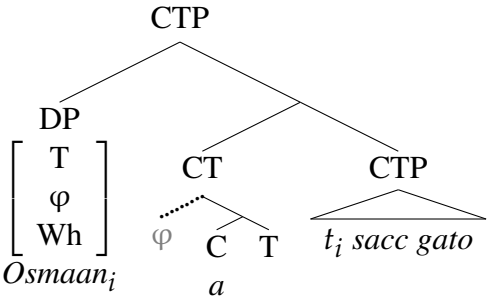
8.4 EI-structures and Recoverability

The only option of avoiding an OCP_{φ} violation in EI-constructions is to delete the φ-feature in CT, resulting in those structures always surfacing with *(l)a*, as in extraction of an EI-ed subject illustrated in (45), and of an EI-ed non-subject in (46).

(45) *Subject focus*

a. Osmaan$_i$-a t_i sacc gato.
Oussman$_i$-C_N t_i steal cake
"It's Oussman who stole a cake."

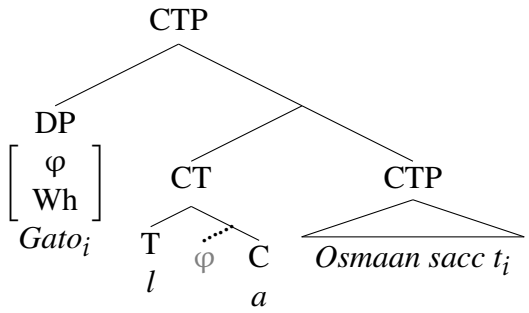
b.



(46) *Non-subject focus*

a. Gato l-a Osmaan sacc.
cake *l*-C_N Oussman steal
"It's a cake that Oussman stole."

b.



I argue that the obligatoriness of *(l)a* in all constructions in which Spec,CTP is occupied by a lexical DP that is not a simple *wh*-phrase is due to a well known constraint on deletion – Recoverability. Namely, a node can only be deleted if there is no unrecoverable material that gets deleted along with it. A similar constraint is proposed by Pesetsky (1998), in an OT-approach to the pronunciation of complementizers. In Ackema and Neeleman (2004), the suppression (i.e. deletion, impoverishment) of a morphosyntactic feature is also subject to a notion of recoverability: the target of the rule and the terminal mentioned in the rule's context must agree. The notion of recoverability under agreement is particularly applicable to the case under discussion: the φ-feature is deleted from one of the nodes in an agreement configuration. EI-structures can only contain the allomorph *(l)a* because the DPs in their Spec,CTP contain irretrievable material and can therefore not be deleted, whereas the featural content of the *wh*-operator can easily be retrieved from C_N, which contains all of the same features.

Recoverability also explains why complex *wh*-phrases can occur only in the specifier of *(l)a*, as in (47).

(47) *Complex wh-questions can only contain (l)a*

a. B-an xale l-a Faatu gis?
CM-Q child *l*-C_N Fatou see
"Which child did Fatou see?"

b. *B-an xale b-u Faatu gis?
CM-Q child CM-C_N Fatou see

The obliteration of the phrase in Spec,CTP is blocked, because it contains irretrievable material: the noun phrase. The deletion of the specifier node would result in the deletion of the entire DP, as

in (48).

(48) *Obliteration of Spec,CTP with a complex wh-phrase*

*B-u Faatu gis?
CM-C_N Fatou see
intended: "Which child did Fatou see?"

The ungrammaticality of (48) is in my analysis the result of the target of the Impoverishment rule, which is the whole phrase in Spec,CTP containing the offending feature. Torrence (2012a) shows that there is dialectal variation with respect to the grammaticality of CM-*u* with complex *wh*-phrases. For some speakers, a null *wh*-phrase can pied-pipe an NP to Spec,CTP in questions:

(49) *Null wh-phrase in a question with* CM-*u*

%Picc **m-u** xale y-i dáq?
bird CM-C_N child CM.PL-DEF chase
"Which bird did the children chase?"

Dialectal variation in Impoverishment rules is not unusual; as we saw in the discussion of various morphological dissimilations, such variation is a rule, rather than an exception, and my analysis can easily be extended to account for this data: in the variety of Wolof that Torrence reports, the Impoverishment rule targets only the *wh*-word, and not the entire phrase in Spec,CTP.

There is a case in which the specifier of CM-*u* can contain some overt material in the variety of Wolof discussed in this dissertation. The locative preposition *ci/si* can be pied-piped to Spec,CP, and both CM-*u* and *(l)a* are possible CTs (Torrence 2012a):

(50) *Preposition pied-piping in Wolof*

a. {Ci fan}/{Fan ci} la-ñu teg téeré bi?
{P-LOC where}/{where P-LOC} *l*-C_N-3PL put book DEF.SG
"On what did they put the book?"

b. Ci l-u-ñu teg téeré bi?
P-LOC CM-C_N-3PL put book DEF.SG
"On what did they put the book?"

These examples show that the Obliteration rule targets only the DP which contains the φ-feature, and that the ban is not against any kind of material in Spec,CTP. This reaffirms the proposal for a post-syntactic source of the Wolof version of the Doubly-Filled-COMP Filter.

I have now offered an analysis for the occurrence of both allomorphs in *wh*-questions, and the obligatoriness of *(l)a* in focus constructions. Recall the distribution of CM-*u* and *(l)a* in A′-movement constructions in Wolof, repeated here in Table 8.2.

		(l)a	CM-**u**
HIGHEST C	questions	√	√
	Exhaustive Identification	√	*
	relative clauses	*	√
INTERMEDIATE C		√	*

Table 8.2: The distribution of C_N allomorphs CM-*u* and *(l)a* in Wolof.

In the remainder of this section, we look at very different data, which may seem to contradict the proposed analysis. First, relative clauses are only possible with the complementizer CM-*u*, meaning that we have to explain why relative CTPs do not behave like interrogative CTPs, in other words, why the relative operator, which should contain all retrievable material, must obligatorily be deleted in relative clauses. The situation in long distance extraction is quite the opposite: since only the allomorph *(l)a* can occur in intermediate CT positions, it is φ in CT that must delete. This is also surprising, because the feature content of a copy/trace is not expected to differ from that of the extracted phrase. Intermediate positions should thus behave just as final landing positions with respect to OCP_φ and Recoverability. My analysis can explain both the realization of CT in relative clauses and in intermediate positions of movement.

8.5 Relative clauses

First, let us examine the predictions of the analysis of CT in relative clauses, as in (51).[15]

15. CM-*u* also occurs in temporal clauses and conditionals, which are a type of relative clause (Torrence 2012a). There are additional differences in verbal morphology that must occur in those clauses, but the shape of the CTP-layer does not differ.

(51) *Wolof relative clauses*

a. xaj **b-u**-ma bëgg
dog CM-C_N.INDEF-1SG like
"*a dog that I like*"

b. xaj **b-i**-ma bëgg
dog CM-C_N.DEF.PROX-1SG like
"*the dog here that I like*"

c. xaj **b-a**-ma bëgg-oon
dog CM-C_N.DEF.PROX.DIST-1SG like-PST
"*the dog there that I like*"

As can be seen from (51), in addition to noun class, in relative clauses CT encodes definiteness and proximity, having three allomorphs – CM-*u*, CM-*i* and CM-*a*. Recall from Chapter 2 that determiners have similar forms in Wolof, *a*-CM (or in some dialects *u*-CM) being the indefinite one, and CM-*i* and CM-*a* the definite ones, with the former denoting a spacially proximal entity, and the latter a distal one. The relevant data is repeated in (52).

(52) a. *Indefinite determiner*
a-b xaj
INDEF-CM.SG dog
"*a dog*"

b. *Definite proximal determiner*
xaj **b-i**
dog CM.SG-DEF.PROX
"*the (proximal) dog*"

c. *Definite distal determiner*
xaj **b-a**
dog CM.SG-DEF.DIST
"*the (distal) dog*"

The vowels in the complementizer have the same meaning: CM-*u* is an indefinite relative marker, and CM-*i* and CM-*a* definite ones, denoting that the head of the relative clause is proximal or distal, respectively, in space, time, or discourse (Torrence 2012a).[16]

16. The three versions of this complementizer differ in their distribution. Only CM-*u* can be used in questions, and only CM-*i* in certain free relative constructions (Caponigro and Heller 2007). In this paper, I am disregarding these distributional facts, though the definiteness of the complementizer plays an important role in the analysis in this section.

It must also be pointed out that the determiner of the DP containing the head noun and the relative marker normally do not co-occur, shown in (53).[17]

(53) *Relative clauses and definite determiners in Wolof*

a. (*a-b) xaj **b-u**-ma bëgg
INDEF-CM dog CM-C_N-1SG like
"*a dog that I like*"

b. xaj (*b-i) **b-i**-ma bëgg
dog CM-DEF.PROX CM-C_N 1SG like
"*the dog (here) that I like*"

c. xaj (*b-a) **b-a**-ma bëgg-oon
dog CM-DEF.DIST CM-C_N-1SG like-PERF
"*the dog (there) that I liked*"[18]

It could be proposed that a morpho-phonological process (fusion or deletion) ensures that the the determiner and the complementizer do not both surface next to each other, due to their phonological similarity, and that what surfaces is the determiner, carrying the definiteness feature. While this could explain examples (53b) and (53c), where the determiners and the complementizer are next to each other and have identical phonological form, it cannot account for the absence of the indefinite determiner in (53a), which is prenominal, and which differs in form from the complementizer.[19] I therefore propose that CT in relative clauses, in addition to the φ-feature, carries the

17. In the variety of Wolof examined by Torrence (2012a,b), the determiner can optionally surface on the edges of the relative clause (the definite ones on the right, and the indefinite on the left edge), as in (i) (example from Torrence 2012a, p.103).

(i) góór g-i-ñu gis (g-i)
man CM-C_N.DEF.PROX-3PL see CM-DEF.PROX
"*the man that they saw"*

Such forms are not grammatical for any of my speakers, however, my analysis does not hinge on the exact position of the determiner, as I propose that a mechanism different from the OCP_{φ} is involved in regulating the cooccurrence of CT and D, as elaborated on later in this section.

18. In my data, CM-*a* is always accompanied by the perfective morpheme *-oon* on the verb, indicating that the state or event is removed in time from the moment of speaking.

19. It also cannot account for Torrence's data, in which the determiners can optionally surface on the edges of relative clauses.

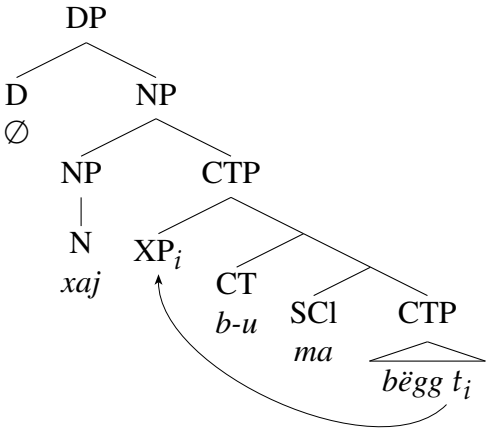
definiteness and proximity features.

I follow the *matching analysis* (Lees 1960, 1961; Chomsky 1965; Sauerland 1998, 2003 among others), and assume that Wolof relative clauses, as in (54a), have the syntax in (54b): a relative operator co-indexed with the head noun is located in Spec,CTP, and the relative CTP is adjoined to the head NP.

(54) *The syntax of Wolof relative clauses*

a. Xaj **b-u**-ma bëgg.
dog CM-C_N-1SG like
"*a dog that I like*"

b.

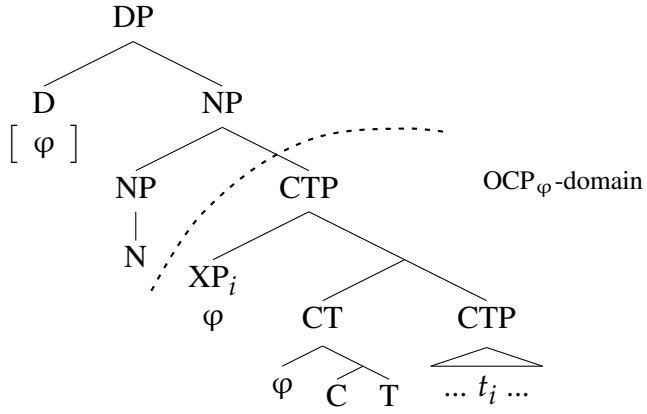


The reason for assuming a head-external representation of Wolof relative clauses is maintaining the generalization that Spec,CP of CM-*u* is always empty, as we have seen is the case in *wh*-questions. Torrence (2005, 2012a,b) advocates a structure for Wolof relative clauses in which the relativized DP occurs in Spec,CTP, which would make relative clauses different from questions in that they could have an overt phrase in their specifier. He argues for such an analysis because relative clauses exhibit reconstruction effects, suggesting that the relativized DP starts out inside the clause and moves to Spec,CTP, binding its trace. It is, however, not necessary for the relativized noun to be inside the relative clause to account for reconstruction effects. In the here adopted *matching analysis*, an internal head corresponding to the external head is located in Spec,CTP, and then deleted under identity with the external head. The two heads are not related by movement, so they

must both be interpreted.[20] The representation in (54b) maintains the parallel between questions, which have an empty *wh*-operator in Spec,CTP, and relative clauses, which along the same lines have an empty relative operator in Spec,CTP.

Since Spell-Out occurs in a cyclic fashion, I propose that the domain of the OCP_{φ} is the highest CTP phase, as in (55), meaning that the φ-feature in D is not taken into consideration in evaluating markedness.

(55) *Wolof relative clause and the domain of OCP_{φ}*



The analysis developed thus far then predicts that the complementizer allomorphy in relative clauses should parallel that of matrix questions: the complementizer should surface as either CM-*u* or *(l)a*; if the former, the operator should be absent, and if the latter, it should be overt. This is, however, not what we observe: in relative clauses, only the allomorph CM-*u* is possible, and the operator is never overt.

Relative CTPs, however, are not quite identical to interrogative CTPs, and where they differ is in the featural content of CT: the φ-feature complex in relative clauses consists of the class feature, the definiteness feature, and the proximity feature. It obtains these features not via agreement

20. Another analysis which can account for reconstruction effects is the *head raising* analysis (e.g. Brame 1968; Schachter 1973; Vergnaud 1974; Åfarli 1994; Kayne 1994; Bhatt 1999, 2002), according to which the head NP originates inside the relative clause, but is not necessarily located in Spec,CP in the final structure (its final position varies in different analyses). Since the head originates inside the relative clause, it can be reconstructed into its original, clause-internal position, and interpreted there. Whether one of the two analyses should be given preference in Wolof is not relevant for the present purposes, and is left for future research.

with the *wh*-phrase in Spec,CTP, but via agreement with D of the external head: D agrees with its complement, the CTP, and the features percolate down to CTP's head. Inside the CTP, the φ-feature complex is only expressed with the complementizer CM-*u*, which can be realized with three different exponents corresponding to indefinite, definite proximal, and definite distal features. The Vocabulary Insertion rules therefore need to be made more precise:

(56) *Vocabulary insertion rules, second version*[21]

a. $C_N \rightarrow u/\{\varphi, -Def\}\_\_$

b. $C_N \rightarrow i/\{\varphi, +Def, +Prox\}\_\_$

c. $C_N \rightarrow a/\{\varphi, +Def, -Prox\}\_\_$

d. $C_N \rightarrow a$

e. $T \rightarrow l/\_\_C$

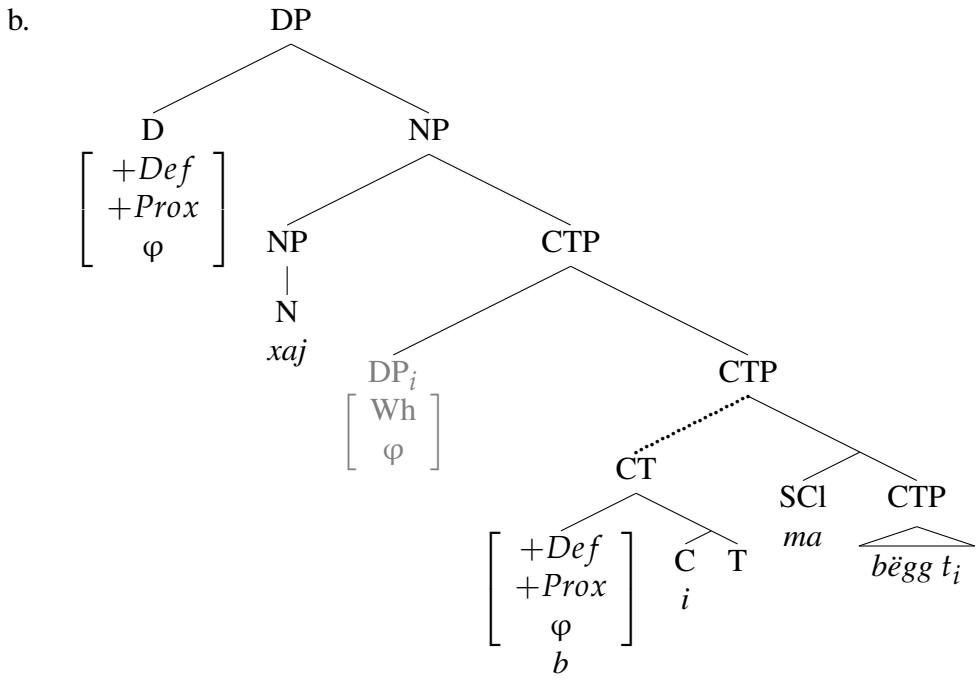
I argue that the reason for the obligatory deletion of the relative operator in Spec,CTP lies precisely in the fact that the φ-feature complex in CT of relative clauses does not contain only the class and number features, but also definiteness and proximity. Recoverability therefore prevents the deletion of irretrievable material, protecting the deletion of φ in CT. The only option, then, is to delete the operator in Spec,CTP, which causes the φ-feature in CT to be pronounced and C to surface as *-u*, *-i*, or *-a*, per the Vocabulary Insertion rules in (56).

Obligatory deletion of Spec,CTP in relative clauses

(57) a. xaj b-i-ma bëgg
dog CM-C_N.DEF.PROX-1SG like
"the dog that I like"

21. Technically, the Vocabulary Insertion rule in (56c) is not necessary, since the exponent for the definite distal complementizer is homophonous with the exponent for the elsewhere condition in (56d). I posit two rules to make the distinction between the two complementizer forms clearer.

b.



And finally, a note on the restriction of the co-occurrence of CT and D in relative clauses. In the dialect of Wolof that this paper is concerned with, D never surfaces in relative clauses. The fact that the definiteness feature does not surface twice is reminiscent of a similar phenomenon in some Scandinavian languages.[22] In Wolof, the two heads, D and CT, agree in φ-features, definiteness and proximity. As a result, the determiner and the complementizer have identical feature specifications. I propose that in such a case only one of the two heads can be pronounced, and that in this configuration in Wolof, it is the lower one. The determiner is therefore deleted. That this analysis is on the right track is corroborated by data in Torrence 2012a,b, where in some dialects the determiner can optionally surface on the edges of the relative clause, reported here in footnote 17. Such variation is expected in the scenario sketched above: in some dialects the expression of identical features in two different heads is prohibited, in others it is not. A similar restriction exists in some Scandinavian languages (Embick and Noyer 2001; Hankamer and Mikkelsen 2002, 2005, i.a.), where the definite feature can occur in two positions inside the DP – as a suffix on

22. I thank Rajesh Bhatt for this suggestion.

the noun, or as an article, depending on the presence or absence of adjectival modifiers. In some languages, for example in Danish, the definite determiner can only be expressed once. Swedish and Norwegian, on the other hand, exhibit the phenomenon of Double Definiteness, whereby the presence of a modifier requires the definite feature to surface both as an article, and as a suffix on the noun. The variation in the expression of definiteness in Wolof is similar: in some dialects it can only be expressed on one head, while other dialects allow the determiner to optionally surface on the edges of the relative clause. The details of this proposal are left for future research. What is important to stress, is that the deletion of the determiner of the head noun in the relative clause is not the OCP_{φ}-triggered deletion that occurs in the CTP-layer, and is presumably handled by a different mechanism.

8.6 Intermediate traces

In long-distance extraction in Wolof, *(l)a* obligatorily occupies all intermediate CT positions. In the variety of Wolof discussed in this paper, this is the only option, meaning that the OCP_{φ} violation in a non-final CTP-layer can only be avoided by deleting the φ-feature in CT, regardless of the nature of the element in Spec,CTP. I argue that this is the result of the timing of Spell-Out of the CTP-layer (occurring at the moment of the merger of a higher phase head), which in those dialects precedes movement out of the spelled out domain. In successive-cyclic movement the derivation in which the phrase in Spec,CTP is deleted crashes, because there is nothing left to be attracted by the higher CT. Torrence (2005, 2012a,b) also shows data in which CM-*u* can occupy intermediate CT positions. While this is not a grammatical option for any of my speakers, my analysis can capture those data, by timing movement out of the CTP-layer before its Spell-Out in those dialects. This is then the second example I provide in this dissertation for the architecture of the syntactic component proposed in Chapter 7.

We start by examining long-distance object extraction. Consider the sentence in (58).

(58) *Long-distance object extraction in Wolof*
[$_{CTP2}$ K-an$_i$ l-a Isaa wax ne [$_{CTP1}$ t_i l-a xaj bi matt t_i]]?
[$_{CTP2}$ CM-Q *l*-C$_N$ Isaa say that [$_{CTP1}$ t_i *l*-C$_N$ dog DEF bite t_i]]
"Who did Isaa say that the dog bit?"

I first explore the option in which movement follows Spell-Out, as this is the variety of Wolof described in this paper. We start at the moment when the Spell-Out of the edge of the embedded CTP-layer (CTP1) is triggered by a higher phase head,[23] and the OCP$_\varphi$ evaluates the resulting construction. This proceeds in the way explained for local non-subject extraction: either φ in CT or the whole Spec,CTP node delete, resulting in the complementizer surfacing as either *(l)a* or CM-*u*, respectively:

(59) *Deletion of φ in CT, Step1*
[$_{CTP2}$ CT ... [$_{CTP1}$ k-an$_i$ l-a xaj bi matt t_i]]
[$_{CTP2}$ CT ... [$_{CTP1}$ CM-Q *l*-C$_N$ dog DEF bite t_i]]
"who did the dog bite?"

(60) *Deletion of Spec,CTP, Step1*
[$_{CTP2}$ CT ... [$_{CTP1}$ ∅ k-u xaj bi matt t_i]]
[$_{CTP2}$ CT ... [$_{CTP1}$ ∅ CM-C$_N$ dog DEF bite t_i]]
"who did the dog bite?"

Since in this derivation movement follows Spell-Out, the *wh*-phrase in CTP1 is only attracted to the Spec,CTP2 after the described post-syntactic processes have taken place. If the φ-feature in CT is deleted, as in (59), the *wh*-phrase is present in Spec,CTP1 and can move to Spec,CTP2, as in (61). The Spell-Out of the CTP2 layer proceeds in the same way, with two possible outcomes – either *kan l-a* or *k-u* in the CTP-layer:

(61) *Deletion of φ in CT, Step2*
[$_{CTP2}$ {K-an$_i$ l-a}/{K-u} Isaa wax ne [$_{CTP1}$ t_i l-a xaj bi matt t_i]]?
[$_{CTP2}$ {CM-Q *l*-C$_N$}/{CM-C$_N$} Isaa say that [$_{CTP1}$ t_i *l*-C$_N$ dog DEF bite t_i]]

23. For simplicity of exposition, I assume that it is the matrix CT head that triggers Spell-Out of the edge of the embedded CTP phase.

"Who did Isaa say that the dog bit?"

If, however, the phrase in Spec,CTP of CTP1 is deleted as a result of OCP_{φ} repair, as in (60), there is no *wh*-phrase left in the specifier of CTP1 to move to Spec,CTP2 in a dialect in which Spell-Out precedes movement. This derivation therefore crashes (in (62)), because [Wh*] on CT2 remains unchecked. This also gives evidence for the claim made in Chapter 3 that checking of Type 1 features is obligatory. The derivation in which φ in CT is deleted is the only one that converges, meaning that, if movement happens after Spell-Out, *(l)a* is the only exponent that can surface in intermediate positions.

(62) *Deletion of Spec,CP, Step2*

*[$_{CTP2}$ __ C Isaa wax ne [$_{CTP1}$ ∅ k-u xaj bi matt t_i]]

[$_{CTP2}$ __ C Isaa say that [$_{CTP1}$ ∅ CM-C_N dog DEF bite t_i]]

Let us now investigate the second option, in which movement out of the CTP-layer occurs before its Spell-Out. In that case, in the moment of Spell-Out of CTP1 (which, again, happens when a higher phase head is merged; here for convenience assumed to be the higher CT), Spec,CTP1 contains the copy of the *wh*-phrase which has all of the same features as the phrase which is moved into the higher Spec,CTP2. Again, deletion of φ in CT or the phrase in Spec,CTP is governed by Recoverability, meaning that only a *wh*-operator could be deleted, and never a full DP. Unlike in the case in which movement occurs after Spell-Out, in this case the phrase from Spec,CTP is already located in the higher Spec,CTP, so deleting its copy does not cause the derivation to crash.[24] When movement precedes Spell-Out, intermediate CT's behave just like matrix CT's. The prediction is that, if there are dialects in which movement occurs before Spell-Out, either *(l)a* or CM-*u*, as in (63), can surface in the intermediate position. However, if CM-*u* can occupy intermediate positions, this should only occur in *wh*-questions, and never in EI-constructions, due to Recoverability.

24. The fact that a higher copy of the moved phrase exists does not affect Recoverability in the post-syntax, which only evaluates the immediate Spell-Out domain.

(63) *Successive cyclic movement follows Spell-Out*

[$_{CTP2}$ {K-an$_i$ l-a}/{K-u} Isaa wax ne [$_{CTP1}$ {∅ k-u}/{t_i l-a} xaj bi
[$_{CTP2}$ {CM-Q *l*-C$_N$}/{CM-C$_N$} Isaa say that [$_{CTP1}$ {∅ CM-C$_N$}/{t_i l-C$_N$} dog DEF
matt t_i]]?
bite t_i]]

"Who did Isaa say that the dog bit?"

These predictions are confirmed by the data. In the variety of Wolof discussed in this dissertation, only *(l)a* can occupy intermediate positions of movement, meaning that in that dialect, Spell-Out precedes movement. Torrence (2005, 2012a,b) shows data in which CM-*u* is allowed in intermediate positions, alongside *(l)a* (see (25)), and, as expected if this analysis is on the right tract, he only reports such an option for *wh*-questions, never EI-constructions. This analysis also accounts for the occurrence of what Torrence calls *mixed chains*, where CM-*u* and *(l)a* can interchangeably occupy embedded Spec,CTP position, since in every CTP, whether embedded or not, either of the two allomorphs can surface. Crucially, there are no reported dialects in which only CM-*u* occurs in intermediate CT positions, and indeed, my analysis predicts that such dialect should not exist.

In this section I argued for a post-syntactic analysis of the A′-complementizer distribution in Wolof, attributing the difference between sentence particle form in different A′-movement constructions to the interplay of a morphological OCP$_\varphi$ constraint, which prohibits adjacent identical φ-features, and a Recoverability condition on deletion, which prevents the deletion of nodes that carry irretrievable featural content. This analysis allows us to maintain a uniform account of A′-movement in Wolof.

8.7 Pronunciation of CT in V-raising clauses

Finally in this chapter, I wish to briefly address the form of the pronunciation of CT in V-raising clauses. Recall that it surfaces differently in Neutral clauses and in Predicate Focus clauses – as *na* in the former, and *a* in the latter case. The relevant examples are repeated in (64).

(64) *The exponent of CT in Neutral and Predicate Focus clauses*

a. Xale bi lekk-**na**-∅ jën.
child DEF.SG eat-C_V-3SG fish
"The child ate fish."

b. Xale yi daf-**a**-∅ lekk jën.
child DEF.SG do-C_V-3SG eat fish.
"(It's that) The child ate fish."

Since I am claiming that C_V in Neutral clauses and the one in Predicate Focus clauses are featurally identical, something must be said about their different surface form. I propose that the default pronunciation of C_V is *na*, and that something special happens in *do*-support. This is a reasonable claim, as a closer look at the realization of *def*+C_V reveals that saying that *def* precedes C_V in Predicate Focus this is an abstraction in itself: *def* never actually surfaces in such a form in the dialect of Wolof discussed in this dissertation. The closest it gets is in 3*rd* person singular, when it is pronounced as *daf*. In all other persons, *def*+C_V surfaces as *da*. Table 8.3 lists all the forms of *def*+C_V, including the following subject marker.

	SG	PL
1	da-ma	da-ñu
2	da-nga	da-ngeen
3	daf-a-∅	da-ñu

Table 8.3: C_V + subject marker in Predicate Focus

I therefore propose that there is a special Vocabulary Insertion rules in Predicate Focus for both C_V, which surfaces as *a*, and the special do-support *def*, which I label as def^2. The rules are given in (65).

(65) *Vocabulary Insertion rules for V-raising C_V*

a. $C_V \rightarrow na$

b. $C_V \rightarrow a / def^2\_\_$

c. $def^2 \rightarrow d$

d. $def^{2} \rightarrow daf/3\text{SG}$

8.8 Conclusion

A′-movement in Wolof results in two seemingly syntactically distinct structures, which differ in the shape of the complementizer and the overtness of the phrase in Spec,CTP. Furthermore, each of the complementizer variants exhibits a different agreement-based A′-extraction effect – CM-*u* shows φ-agreement and *(l)a* a subject/non-subject asymmetry, and it obligatorily marks the cyclicity of A′-movement. The two versions of CT are for the most part in complementary distribution: they both occur in *wh*-questions with a simple *wh*-phrase, but only one variant is allowed in all other A′-constructions, and their distribution does not correspond to any obvious syntactic or semantic differences. I therefore argue that the two variants of CT are allomorphs, meaning that all extraction effects (the subject/non-subject asymmetry and agreement in φ-features) are present in the syntax of each of them, but not observed on the surface due to post-syntactic processes.

The central part of the analysis presented in this chapter lies in identifying the source of the distribution of the two CT allomorphs in Wolof in different constructions as post-syntactic. Namely, adjacent featural identity is known to trigger post-syntactic dissimilations. In Wolof, dissimilation targets the φ-feature, which, due to agreement, is found in CT and in Spec,CTP. However, an overt φ-feature marker never surfaces both in CT and in Spec,CTP. I argue this to be a consequence of a version of the Doubly-Filled-COMP Filter, routed in a morphological Obligatory Contour Principle, which prohibits the φ-feature from occupying two adjacent nodes. Repairs of such violations are language-specific, as are the constraints themselves. In Wolof, one of the nodes containing the φ-feature, either in CT or Spec,CTP, is deleted. However, if either of the two contains content irretrievable in the CTP-layer, its deletion is blocked, which results in a particular construction always surfacing with only one allomorph of CT.

In Distributed Morphology, some aspects of word formation take place in the syntax proper, while other aspects occur in the post-syntactic component, during Spell-Out. Processes that happen

during Spell-Out are highly constrained and limited to minor manipulations of terminal nodes, such as feature or node deletion. They can nonetheless alter the surface output of syntax, creating the appearance of differences between structures that are syntactically identical. This chapter adds to the body of work supporting this view of morphology by showing that surface distinctions in two A′-movement constructions in Wolof can be reduced to the interaction of syntactic and post-syntactic processes, in particular agreement and dissimilation. It furthermore supports the architecture of the syntactic component proposed in Chapter 7, by showing that the distribution of the N-raising CT allomorphs in long-distance A′-extraction can be explained if we accept the proposal that the output of post-syntactic processes can be fed back into narrow syntax.

This chapter maintains a unified syntax of A′-extraction in Wolof, and crucially offers a principled account for the distribution of different shapes of the CTP-layer in different instances of A′-movement.

CHAPTER 9

CONCLUSION

This thesis is a case study of a part of the grammar of the Niger-Congo language Wolof, which investigates two related topics. First, I explore the syntax of the heads commonly referred to as C and T and their projections, arguing that they originate as a single head (CT), which in the process of the syntactic derivation either stays unified, or splits into two heads. Second, I address the interaction of syntactic and post-syntactic processes in the CTP layer, showing that a better understanding of the post-syntactic component of the grammar can explain many seemingly puzzling surface characteristics of syntactic structures. Related to that, I propose an architecture of the syntactic component which rests on a much more interactive view of narrow syntactic and post-syntactic processes, allowing the output of post-syntax to be fed back into syntax and participate in further narrow syntactic operations. In the remainder of this chapter, I give an overview of the main claims of the thesis in §9.1, and discuss avenues for future research in §9.2.

9.1 Overview of the main claims

The first part of this dissertation focuses on the connection between the C and the T heads, by exploring the syntax of Wolof *sentence particles* – complementizer-like elements occupying the same syntactic position, usually claimed to encode various information-structural properties. A detailed investigation of the morphosyntactic properties of this layer of the syntactic structure resulted in the following insights.

First, the morphosyntactic characteristics of different sentence particles offer a novel type of evidence for a connection between C and T. A C-T link has been much discussed in the literature, based mostly on data from languages such as English, in which their relationship seems to be one of selection (finite Cs only select for finite Ts, etc.). There are also languages in which the same features occur both on C and T, such as φ-features and Tense (e.g. West Germanic, Kinande,

Lubukusu, Irish). This has prompted various versions of an analysis based on *feature inheritance* or *feature sharing* (e.g. Chomsky 2005, 2008; Richards 2007, 2011; Fortuny 2008; Ouali 2008; Miyagawa 2010), whereby either all features originate on the phase head, C, and are inherited by T, or are shared between the two heads. The data from Wolof point to a need for a different approach to capturing the C-T link. I show that indicative clauses with different sentence particles in Wolof can be divided into two types: those in which a verbal head raises to the sentence particle (V-raising clauses), and those in which a nominal A′-moves to its specifier (N-raising clauses). The two clause-types have different morphosyntactic properties which lead us to conclude that the features of C and T are unified on one head, CT, in V-raising clauses, while being split over two heads in N-raising clauses.

Since the features traditionally associated with C and T are not duplicated on both heads in the case of CT-splitting in N-raising clauses in Wolof, I propose a new way to naturally separate the features between the split heads, which I argue to be governed solely by morphosyntactic considerations. I argue that features on a head are organized hierarchically, in a type of a feature-geometry, with each feature contained in its own node. Their checking is strictly ordered, with only the highest unchecked feature being accessible to the head (similarly proposed in Georgi and Müller 2010; Müller 2010). The difference between V-raising and N-raising clauses is derived from the ability of all of CT's features to be checked and other conditions placed on the clause to be satisfied in the former, but not in the latter clause-type. In particular, when a specific feature-type cannot be checked (because the element with a matching Goal-feature is no longer in its head's c-command domain, or because it has nowhere to move to), the node dominating the unchecked feature (and all lower features) can split off and move to a higher position, creating a new c-command domain and new syntactic positions for elements to move into. This framework gives us a natural way to account for the slightly unorthodox feature-division between the two parts of the CT head in Wolof (with the higher one hosting both the φ-feature and, as I argue, the T-feature), and places the motivation for the distribution of features over varying amounts of structure

(discussed extensively concerning the inflectional layer, e.g. Rizzi 1996; Thráinsson 1996; Bobaljik and Thráinsson 1998) into syntax proper.

The second contribution of the dissertation is in a detailed investigation of the interaction between the syntactic and the post-syntactic component of the CTP-layer in Wolof, showing that a more fine-grained understanding of their interface can shed light on otherwise puzzling surface variations. In the last several decades, with the rise of realizational frameworks of morphology, such as Distributed Morphology, the output of the syntactic component is seen as affected by various operations occurring in the post-syntax, such as Impoverishment (the deletion of features), Obliteration (the deletion of terminal nodes), Fission (the realization of one morpheme as multiple Vocabulary Items), Fusion (the realization of multiple morphemes as one Vocabulary Item), etc. Crucially, these operations are as constrained and as orderly in their application as operations in any other module. Therefore, a much deeper understanding of their properties is needed in order to draw the line between processes happening in narrow syntax and in other modules. In this dissertation, I focus on the morphosyntax of the CTP-layer in A′-movement, showing that several of its properties can be explained using a realizational approach to morphology. Specifically, the CTP-layer in A′-movement in Wolof shows several morphosyntactic effects—a type of the *that*-trace effect, complementizer agreement in φ-features, and cyclic marking of A′-movement—distributed between two seemingly different A′-movement constructions, which are in near-complementary distribution. I show, however, that the syntax of those constructions is identical, with their differences being the result of the interaction of syntax and post-syntax, specifically, a morphologically grounded Doubly-Filled-COMP Filter, which prevents two adjacent φ-features, and a post-syntactic repair in the form of Impoverishment or Obliteration. I show that the surface form of the sentence particles in the two A′-movement constructions is the result of contextual allomorphy, and not syntactic differences.

And finally, I advocate a more interactive view of the syntax-morphology interface, by proposing an architecture of the syntactic component which contains sub-modules, narrow syntax and

post-syntax being among them, applying cyclically, with the order of their application not being fixed. This allows for the output of post-syntax to be fed back into the narrow syntax sub-module and participate in further operations. Phenomena which would require such an approach have been recognized in the literature – for example, the treatment of agreement as a post-syntactic operation by Bobaljik 2008, or Matushansky 2006 reanalysis of head-movement as consisting of phrasal movement followed by Spell-Out, applying cyclically, effectively making Spell-Out a part of syntax. By revising our view of the interaction of syntax and post-syntax, we allow for processes which appear to involve an unorthodox ordering of operations in the syntactic and the post-syntactic components to be accounted for, while still keeping the distinction between narrow syntax and morphology. In Wolof, I give two pieces of evidence for this approach, one from the behavior of inflectional morphology in verb raising to CT, and another one from long-distance A′-extraction.

Ultimately, this dissertation demonstrates that we can retain a view of syntax as a cross-linguistically very uniform system, even when we look at a strongly discourse-configurational language such as Wolof. In particular, we do not need to invoke any discourse features to explain the structure of Wolof clauses – their differences are derivable from independent syntactic and post-syntactic principles.

9.2 Future research

There are many questions raised by the proposed analysis, both with respect to other clauses in Wolof, and concerning the CP-TP layer(s) in other languages.

As far as Wolof is concerned, there are clause-types that are not discussed in this dissertation. One are Optative clauses, mentioned briefly in Chapter 2, §2.3.3. They express a desire of the speaker, and contain a sentence particle, one that is in fact homonymous with the sentence particle in Neutral V-raising clauses, *na*. However, no element aside from *na* is found in the CTP-layer in this clause-type, and both a lexical subject and a pronominal one are felicitous clause-internally.

The relevant examples are repeated in (1).

(1) *Optative sentence*

a. Na **xale yi** xaar.
C child DEF.PL wait
"Let the children wait."

b. Na-**ñu** xaar.
C-3PL wait
"Let them wait."

c. Xale yi na-**ñu** xaar.
child DEF.PL C-3PL wait
"The children, let them wait."

In this dissertation I proposed that a lexical subject below the sentence particle is only felicitous if it can be assigned nominative case, which is claimed to be a T°-feature on D (as in Pesetsky and Torrego 2001). I also claimed that [T°] can only be checked when locally c-commanded by CT (with locality here defined as a minimality condition), meaning that such a relationship between the subject DP and CT must exist in Optative sentences. On possibility would be that the CT in Optative clauses takes *v*P as its complement, meaning that it is automatically in a local c-commanding relationship with the DP subject in Spec,*v*P. And indeed, some elements in the inflectional layer cannot occur in optatives, such as negation or the perfective aspect *oon* suffixed onto the verb. But some inflectional material is possible, specifically the imperfective auxiliary *di*:

(2) *Optative clause with the imperfective* di (Church 1981, 101)
Na-nga di (>nangay) faju b-u baax!
C-2SG IMPF take.care CM-C_N good
"May you (continue to) take good care of yourself!"

This could mean that there is another position for the subject somewhere in the inflectional layer, in which nothing can surface in clause-types which were discussed in this dissertation, due to the presence of a higher inflection projection in indicative clauses. Other clause types without overt sentence particles (e.g. imperative and subjunctive clauses) also need to be explained in the

proposed framework.

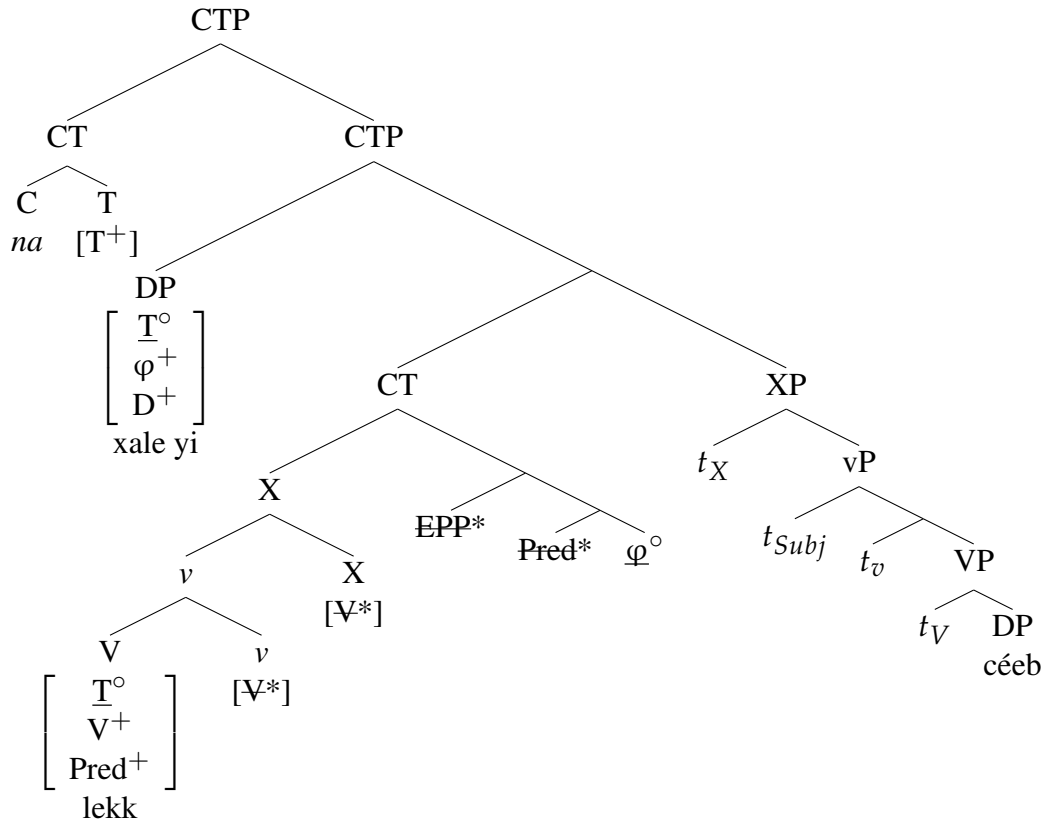
More work needs to be done to have a full picture of the structure of the Wolof inflectional layer, not just to resolve the question of other clause-types, but to also possibly extend the analysis proposed for the CTP-layer to other parts of Wolof clause-structure. As mentioned multiple times throughout this dissertation, the observation that languages differ in the amount of structure over which they distribute features is initially tied to the inflectional layer. If my analysis is on the right track, it should be applicable to this issue as well. This is not an entirely novel idea; a particularly interesting proposal can be found in Shimada (2007), who proposes a new model of head movement to resolve various issues that this particular operation presents for the Minimalist Program. He proposes that the derivation starts with a complex head, out of which heads move in order to resolve a semantic type mismatch. Seeing how head-reprojection has been proposed by other authors specifically to address issues related to head movement through the inflectional layer (Surányi 2005), this seems to me to be a very promising research path.

The second set of questions concerns the application of this framework to other languages. For instance, I argued that V-raising clauses look the way they do in Wolof for two reasons. First, I proposed that nominative case is checked in a particular configuration – by the CT head locally c-commanding the DP subject. I argued that, since the CT and the subject are never in such a configuration in V-raising clauses in Wolof, only a pronominal clitic, that reaches a position in which it can be assigned nominative case via a special type of movement, can be generated in Spec,*v*P of such a clause. This begs the question of what V-raising clauses would look like if Wolof did not have pronominal clitics. We could imagine that this might trigger head-splitting, in order to get the part of the CT head with the T-feature into a position in which it c-commands the subject. A Neutral V-raising sentence in that case would maybe look as in (3) (note that this is the structure of an Optative sentence).

(3) *A Neutral V-raising clause in a Wolof with no pronominal clitics*

a. *Na xale yi lekk céeb.
C_V child DEF.SG eat rice
intended: *"The children ate rice."*

b.



In testing the framework on other languages, we therefore must answer various questions about its grammar – for example, how case is assigned, and what other clausal requirements might need to be satisfied.

Numerous questions also arise with respect to the organization of features on heads. We have seen that there are languages in which for example φ-features occur on both C and T – West Germanic languages, and some Bantu languages. The type of head-splitting that I applied to Wolof does not derive the occurrence of the same feature on both heads. I already hinted at a possible modification of the system along the lines of Georgi and Müller (2010) and Müller (2010), who propose that features are organized in stacks, but still checked in a hierarchical manner. One can imagine that head-reprojection in such a system might involve the copying of the entire head and its

merger in a higher position, which would account for some unchecked features finding themselves in both the original and the reprojected head.

Although only a detailed investigation of many more languages is needed to test the proposed framework and determine to what extent it can successfully account for different types of C-T links that have been discovered, and more generally for the way the syntactic structure is built, I hope to I have shown that it accounts for a wide range of phenomena in Wolof and is therefore a research direction worth of further exploration.

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