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VERB MOVEMENT IN WOLOF

HAROLD TORRENCE
torrence@humnet.ucla.edu

1. INTRODUCTION

1.1. *The Paradigms to be Analyzed*

This paper[1] investigates a small part of the verbal syntax of Wolof. More specifically, it will examine a set of systematic asymmetries in the distribution of verbs and inflectional morphemes in perfective clauses and those in imperfective clauses. These asymmetries involve the ordering of subject agreement, tense, negation, the conditional particle and the main verb. The ordering of these elements varies with tense, aspect, negation, and mood of the clause. Thus, one finds both the ordering: Tense-Subject Agreement (SA), but also SA-T. The core paradigm that displays these asymmetries is exemplified below.

(1) a. Dem-**oon**-**naa** — V_{perf}-past-SA
go- past-1sg
'I went'

b. D-**oon**-**naa** dem — *di*-past-SA V[2]
di-past-1sg leave
'I was leaving'

c. Dem-u-**ma** **woon** — V_{perf}-neg-SA past
go – Neg-1sg past
'I did not leave'

d. D-**oon**- u- **ma** dem — *di*-past-neg-SA V
di-past-Neg-1sg go
'I was not leaving'

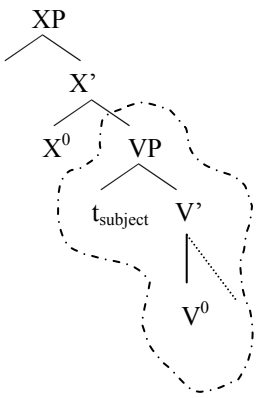
[1] I would like to thank my Wolof teacher and language consultant Ms. Maryam Sy without whom this paper could not have been written. I would also like to thank for their extremely helpful comments, suggestions and discussions: Hilda Koopman, Pamela Munro, Russ Schuh, Dominique Sportiche, and Tim Stowell.
[2] The *i* of *di* is dropped before vowel initial suffixes.

In affirmative past perfective clauses, (1)a, subject agreement *-naa* follows the (past) tense morpheme *–oon* (T-SA). In negative (past) perfective clauses, (1)c, subject agreement *–ma* precedes the tense morpheme (SA-T). In (1)b and c, both imperfective clauses, subject agreement follows tense in both the affirmative and negative clauses. Questions arise as to how such asymmetries should be analyzed.

Throughout this paper, I will be restricting my analysis to 'neutral' clauses i.e. clauses which do not contain any focused constituents. I will argue that the aforementioned asymmetries cannot be accounted for under either a pure head movement analysis or pure remnant movement analysis, but call for a mixed type analysis. I will show that the ordering of elements in perfective clauses arises from remnant VP movement while these orderings in imperfective clauses are formed under head movement of V.

A remnant is a constituent which contains the trace(s) of extracted material. A VP remnant then will be a verb phrase containing the trace(s) of the subject, verb, object, or adjuncts or any combination thereof. (In this work, a VP remnant will contain the verb and the trace of the subject and dependents of V.) Assuming the VP Internal Subject Hypothesis (Koopman and Sportiche (1991)), a VP remnant is encircled below in (2).

(2)



1.2 *Background*

1.2.1. *Literature*

Wolof is a member of the West Atlantic branch of Niger-Congo (Greenberg (1963), Westermann and Bryan (1971)). It is spoken

primarily in Senegal and Gambia as well as Mauritania. Its closest relatives are Fula (also called Pulaar) and Serer. There are several works on Wolof, mainly in the descriptive tradition. These include Sauvageot (1965), Diagne (1971), Mangold (1977), Church (1981), Dialo (1981), Njie (1982), Samb (1983) and Dialo (1984). Theoretical works include Njie (1982) and Ka (1987). There are several dictionaries of Wolof[3] including Fal, et al. (1990), Munro and Gaye (1997) and Cissé (1998).

1.2.2. *Verbal System*

1.2.2.1. Generalities

As in many West African languages, the Wolof verbal system encodes perfective versus imperfective aspectual distinctions both morphologically and syntactically. Finite verbs are marked for subject agreement and can be accompanied by object and locative/partitive clitics.

(3) Teg-na-léén-fë
put-3sg-3pl$_{obj}$ -loc
'He put them there'

Object (direct, indirect, instrumental) clitics always precede locative/partitive clitics. Typically, clitics cluster together either pre- or post-verbally, although in some constructions (none that I will discuss here) they may be split so that the subject agreement markers are preverbal and all other clitics are postverbal.

1.2.2.2. *Aspect*

Perfective verbs do not show any aspectual markers (with the exception of temporal/if clauses, while imperfective verbs always have the imperfective marker *di* or its clitic variants *–y* or *-a*. *Di* always precedes the main verb.[4]

Eventive perfective verbs are interpreted as simple past verbs in English or as present perfects. Stative perfective verbs are typically interpreted as present. That is, the state is taken to hold at speech time.

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[3] Throughout this paper, I will adhere to the standard orthography. Consonants have basically their English values except <c> which is a voiceless palatal stop; <j>, which is a voiced palatal stop; <x>, which is a voiceless velar fricative; <q>, which is a uvular stop; and <nd>, <mb>, <ng>, <nj>, which are prenasalized stops. Almost all consonants can be geminate. These are written as doubled. All accented vowels except <à>, both long and short, are +ATR as are <i> and <u>. Schwa <ë> is +ATR.

[4] *Di* is also a form of the verb 'be'. As its status is not clear, it is glossed simply as "di".

I use 'imperfective' as a cover term for at least four distinct aspectual notions. Wolof imperfective clauses may be translated as English progressives 'I am working (now)', habituals 'John works here', futures 'I will work (tomorrow)', or generics 'Dogs chew bones'.[5]

1.2.2.3. *Tense*

Wolof possesses two past tense markers; the 'definite' past, *–(w)oon* and the 'indefinite' past, *-(w)aan*. When the definite past tense is used, it indicates that the action or state is limited to some definite time in the past and no longer continues into the present. The indefinite past indicates that a state or action existed at some point (or points) in the past and does not continue into the present. Indefinite past clauses are most felicitously translated into English as 'used to V'. I will not be discussing the indefinite past in this paper. The consonant initial variants show up when tense immediately follows a vowel-final verb root or derivational affix (e.g. causative *–loo-*; reciprocal *–ante-* ; reversive *–i-*; middle *–u-*).[6] The morphophonological status of *–(w)oon/-(w)aan* is not always clear. Sometimes it phrases with the verb and other times it seems to be an independent word. Verbs do not have to be overtly marked for tense.

1.2.2.4. *Negation*

Clausal negation is expressed by *–u(l)*.[7] In the neutral conjugation, *u(l)* appears in one of two places. In perfective clauses negation immediately follows the verb (and any derivational affixes) and thus intervenes between the verb and subject agreement.

(4) Dem-u-nu
leave-Neg-1pl
'We did not leave'

When the verb is imperfective, negation immediately follows *di*, and intervenes between *di* and subject agreement.

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[5] For the translations throughout, I will use just one of these. It should be noted that there is also the possibility of having more than one imperfective marker in a clause. As these only have a habitual interpretation, I will exclude them from discussion here.

(i) **di**-naa-**y** jàng a-y teere
di-1sg-di read indef-cl book
'I read books'

[6] Although there are fused forms too.

[7] In certain constructions, e.g. the progressive, the verb cannot carry negation. In these, speakers may resort to the use of either of two 'negative' auxiliaries *bañ* 'refuse' or *ñàkk* 'lack'. I will not be discussing these cases.

(5) D- u- nu dem
di-Neg-1pl leave
'We will not leave'

The *–l-* of *u(l)* drops before a consonant so that it often surfaces as just *–u-*, as in the sentences above.[8]

1.2.2.5. *Subject Marking*

As Wolof has eleven different series of subject agreement markers, here I will only present the three that will be relevant for the discussion. Subject agreement varies with clause type in both its form and linear position. All paradigms distinguish first, second and third person, singular and plural. Given this, it should come as no surprise that Wolof is a null subject language. These subject agreement paradigms vary according to three variables. The first factor is whether a focused constituent is present in the clause and if the focused constituent is a subject, non-subject, or verb.

(6) a. Xac bi **moo** màtt jigéén ji Subject Focus
dog the SA bite woman the
'The DOG bit the woman'

b. Jigéén ji **la** xac bi màtt Non-Subject Focus
woman the SA dog the bite
'The dog bit the WOMAN'

c. Xac bi **dafa** màtt jigéén ji Verb Focus
dog the SA bite woman the
'The dog BIT the woman'

The second variable is whether the clause is affirmative or negative.

(7) a. Lekk-**naa**
eat-SA
'I have eaten'

b. Lekk-u-**ma**
eat-neg-SA
'I have not eaten'

[8] In syntactic representations I will write *ul* even though this may not be the surface morphophonological realization of this negative morpheme.

Subject agreement also varies with mood (indicative, subjunctive and optative, which are distinctive in Wolof).

(8) a. Toog-**na**
sit-SA
'He sat'

b. Bëgg-naa **mu**[9] toog
want-1sg 3sg sit
'I want him to sit'

c. **Na** toog
SA sit
'Would that he sit!', '(I wish) he would sit'

There is no subject agreement in running narrative contexts with an identical subject, as below, where only the first verb is marked for subject agreement.

(9) Pàpp Dàll jënd-na ñam togg ko te lekk ko.
P. D. buy-3sg food cook 3sg and eat 3sg
'Papp Dall bought some food, cooked it, and ate it'

Finally, infinitives have no distinct marking setting them apart from verb roots or derived stems and do not carry subject agreement.

(10) a. Lakk-naa ganaar gi
fry-1sg chicken the
'I fried the chicken'

b. Jéém-naa lakk ganaar gi
try-1sg fry chicken the
'I tried to fry the chicken'

Wolof clauses are SVO except when a non-subject is focused. In that case, the focused constituent always precedes the main verb; it may also precede the subject.

(11) a. yaay-am la Aysatu seet-i démb
mother-3sg.poss 3sg A. visit-go yesterday
'It's her mother that Aysatu went to visit yesterday'

[9] It should be noted that *mu* is not an object since the corresponding object form is *ko* (see section 1.2.2.6).

As previously noted, I will be restricting my analysis to clauses having 'neutral' focus. Clauses with neutral focus can be used as yes/no questions or negated. When the main verb has perfective aspect, subject agreement follows that verb. When the clause is imperfective, these agreement markers precede the main verb but follow the auxiliary *di*. These are obligatorily encliticized.

(12) a. Xàc bi màtt-**na** góór gi (Perfective)
dog the(sg) bite-3sg man the(sg)
'The dog has bitten the man'

b. Xàc bi di-**na** màtt góór gi (Imperfective)
dog the(sg) di-3sg bite man the(sg)
'The dog bites/will bite the man'

Each of the sentences above could also be a yes/no question, depending on the intonation. For example, the first could also mean 'Did the dog bite the man?'[10]

The subject agreement paradigm for affirmative neutral clauses is shown below. It would seem that these forms are at least bi-morphemic, with an initial *n(g)*- element indicating focal neutrality and followed by material indicating person and number.

(13) Table 1. Neutral Affirmative Subject Agreement

	singular	plural
1st person	*naa*	*nanu (or nañu)*
2nd person	*nga*	*ngeen*
3rd person	*na*	*nañu*

In neutral clauses negation always immediately precedes subject agreement. This configuration correlates with the appearance of distinctive 'negative' subject agreement forms. Some examples of these are shown below.

(14) a. Lekk-**naa** jën wa Affirmative Perfective
eat-1sg fish the
'I ate the fish'

b. Lekk-u-**ma** jën wa Negative Perfective
eat-neg-1sg fish the
'I didn't eat the fish'

[10] Yes/no questions can also be indicated by the use of various particles.

c. Di-**naa** lekk jën wa — Affirmative Imperfective
di-1sg eat fish the
'I will eat the fish'

d. D-u-**ma** lekk jën wa — Negative Imperfective
di-neg-1sg eat fish the
'I will not eat the fish'

The tables below show that the negative perfective and imperfective agreement forms vary only in the second person plural.

(15) Table 2. Negative Perfective in Neutral Clauses

	singular	plural
1st person	*ma*	*nu (or ñu)*
2nd person	*oo*	*leen*
3rd person	∅[11]	*ñu*

(16) Table 3. Negative Imperfective in Neutral Clauses

	singular	plural
1st person	*ma*	*nu (or ñu)*
2nd person	*oo*	*ngeen*
3rd person	∅	*ñu*

Comparing the negative subject agreement markers in (15) and (16) with the neutral affirmative markers in (13) further reveals that the negative pronouns are 'smaller' than the neutral affirmative ones (*nanu* = first person plural neutral affirmative, *nu* = first person plural neutral negative). They are probably morphologically related (with the neutral affirmative pronouns having one more morpheme). There are other, purely morphophonemic processes occuring too since there are examples like 1sg *naa* and *ma*.

Wolof has ten noun classes. However, noun class membership does not determine the morphological form of subject agreement on the verb. This is shown in the examples below. Although the subjects in

[11] It might seem that the negative morpheme is *-u-* and that the 3sg ending is *-l*. Evidence from focus constructions provides evidence against this conclusion.
(i) Kañ lanu lekk-ul jën?
when 1pl eat-neg fish
'When didn't we eat fish?'
As can be seen in the example above (non-subject focus), although the subject is first person plural, the negative morpheme still shows up as *-ul*. Therefore, I assume that the final *-l* of *-ul-* really is part of the negative morpheme and not 3sg agreement.

the sentences below are drawn from different classes, subject agreement does not vary with the noun class, but marks person and number.

(17) a. Góór **gi** daanu-**na**
man the(sg) fall- 3sg
'The man has fallen'

b. Taabal **ji** daanu-**na**
table the(sg) fall-3sg
'The table has fallen'

c. Bunt **bi** daanu-**na**
door the(sg) fall-3sg
'The door has fallen'

d. Ndap **yi** daanu-**nañu**
dish the(pl) fall-3pl
'The dishes have fallen'

e. Nit **ñi** daanu-**nañu**
people the(pl) fall-3pl
'The people have fallen'

1.2.2.6. *Object Marking*

Wolof has object markers,[12] which are more like clitics in Romance languages (in the sense that they are in complementary distribution with overt DPs), than agreement markers (i.e. cooccurring with full DPs). These object markers may signal direct, indirect, instrumental, or benefactive objects or object controllers. Object clitics always occur to the right of subject agreement clitics (in most cases immediately to the right, but in some cases, they can be split), as below.

(18) Bi-**nga-ko-fa** lekk-ee
when-2sg-it-there eat-perfective
"When you ate it there"

(19) Tee **nga** lekk-**ko-fa**
why.not 2sg eat-it-there
'Why didn't you eat it there?'

[12] In addition, there are also locative/partitive clitics.

The object clitics are shown below.

(20)

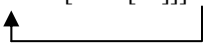
Table 4. Clitic Object Pronouns

	singular	plural
1st person	*ma*	*ñu*
2nd person	*la*	*leen*
3rd person	*ko*	*leen*

1.3 *Assumptions*

I will be making the following theoretical assumptions in this paper. I will adopt the now standard VP Internal Subject Hypothesis which assumes that the external argument of the verb originates in the specifier of VP. I will also adopt Kayne's (1994) antisymmetry proposal. In particular, I will assume binary branching, underlying Head-Complement structures and upward (or leftward) movement as the only movement direction. Crucially, I also assume that head movement is strictly local (Head Movement Constraint (HMC, hereafter) (Travis (1984)). That is, no heads may be skipped in head movement. Thus, taking X,Y,Z as heads, long head movement of Z^0 over Y^0 to X^0 is blocked.

(21) * [X^0 [Y^0 [Z^0]]] t_x



2. THE PROBLEM OF PAST TENSE

2.1. Past Tense in Perfective and Imperfective Clauses

In this section, I will show the need for both remnant movment and head movement in the analysis of Wolof clauses. Further, it will be shown that a unified analysis of this asymmetry is impossible in terms of head movement. Consider again the sentences below in (22) (=(1)) which are all in the neutral definite past.

(22) a. Dem-oon-naa V_{perf}-past-SA (Perfective)
go-past-1sg
'I had gone'

b. D-oon-naa dem di-past-SA V (Imperfective)
di-past-1sg go
'I had been going'

c. Dem-u-ma woon V_{perf}-neg-SA past (Perfective)
go –Neg-1sg past
'I had not gone'

d. D-oon-u-ma dem di-past-neg-SA V (Imperfective)[13]
di-past-Neg-1sg go
'I had not been going'

The important generalization to note is that while the location of past tense with respect to subject agreement remains constant in the imperfective verbal complexes, this is not the case for the perfective forms. In these, when the verb is affirmative, past precedes subject agreement and when the verb is negative, past follows subject agreement.

(23)
Table 5. Ordering of Morphemes in Verbal Complexes

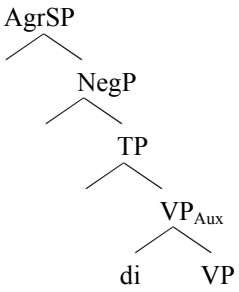
	AFFIRMATIVE	NEGATIVE
PERFECTIVE	V_{perf} -Past- SA	V_{perf} -Neg-SA Past
IMPERFECTIVE	di-Past-SA V	di-Past-Neg-SA V

2.2. Analyzing Imperfective Clauses

For the imperfectives, the orders in Table 5. ((23)) can be translated into a single syntactic hierarchy. That the hierarchical ordering of functional heads is SA> Tense> V_{di}> Verb for the affirmative and SA>Neg>Tense>V_{di}>Verb for the negative follows if one assumes Baker's (1989) Mirror Principle and left adjunction of *di* to derive the surface order. The imperfective functional hierarchy can be represented in the tree below.

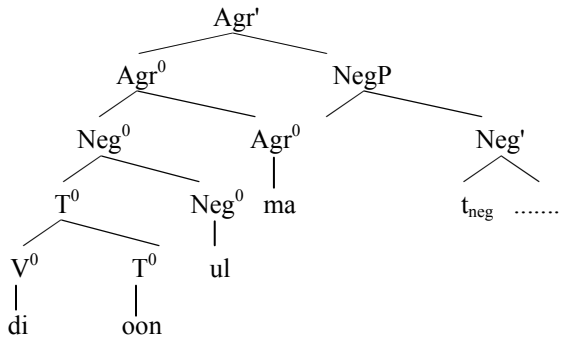
[13] *Di* also functions as an identificational and predicational copula. In these cases, *di* acts like a main perfective verb. Thus, in the past negative, the ordering is: di –neg-SA -past and not di –past-neg-SA.
(i) D- u- ma woon jàngalekat
di-Neg-1sg past teacher
'I was not a teacher'

(24)



The surface ordering of morphemes in the imperfectives can be derived by head movement of *di* up the tree. The derived structure below Agr' will then be as below.

(25)



More specifically, these orders follow if we assume *di* to be an auxiliary-like element that takes the main verb as its complement (following Dialo (1981), Njie (1982) and Munro and Gaye (1997). This assumption is rather straightforward and supported by several distributional criteria. Among these is the fact that subject agreement, tense, and negation, which are usually verbal affixes in the language, are suffixal to *di.* In this respect, *di* looks like a verb. Further, *di* may be selected by another verb, as below.

(26) Sámba bëgg-na door di lekk jën wi
S. want-3sg begin di eat fish the(sg)
'Samba wanted to begin eating the fish'

In (26), the verb *door* 'begin' may select *di* as a complement. *Di* in turn takes *lekk* 'eat' as its complement.[14] Finally, in a restructuring

[14] The aspectual meaning of this construction contrasts with its infinitival counterpart below.

context like (26), *di* patterns with lexical verbs in being able to support clitics as they climb. The sentences below are essentially equivalent to (26) with a pronominal object.

(27) a. Sámba bëgg-na door di-ko lekk
S. want-3sg begin di-3sg$_{obj}$ eat
'Samba wanted to begin eating it'
b. Sámba bëgg-na door-ko di lekk
c. Sámba bëgg-na-ko door di lekk

The examples above show that the object clitic *ko* can encliticize onto either *di*, *door* 'begin' or onto the subject clitic *-na* '3sg'.

2.3. Analyzing Perfective Clauses: Problems with Head Movement

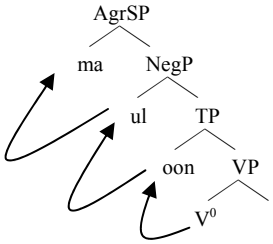
Affirmative perfective clauses have the order SA> Tense> V_{perf} . This ordering is expected given the affirmative imperfectives. The negative perfectives though, pose a problem: past tense follows the V+negation +SA in the negative perfectives while it precedes negation+SA in the imperfectives. If we again assume the Mirror Principle, in conjunction with strict locality of head movement, this suggests the functional hierarchy to be Tense> SA> Neg> V_{perf}, with tense higher than SA and negation. The problem with this hierarchy is that it is different from that posited for the imperfectives and the affirmative perfective, certainly an assumption that we do not want to make. Let us assume instead a common underlying hierarchy, from which both orders can be derived. Consider the two trees below based upon the hierarchy identical to that of the imperfectives.

Sámba bëgg-na door lekk jën wi
S. want-3sg begin eat fish the(sg)
'Samba wanted to begin to eat the fish'

The meaning of the sentence above is paraphrasable as 'Samba wanted to begin the eating event.' In this case, the eating is seen as a single event and not divisible.

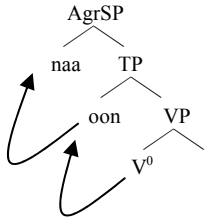
(28)

a. Negative Perfective



dem-u-ma woon
go-neg-1sg past
'I had not gone'

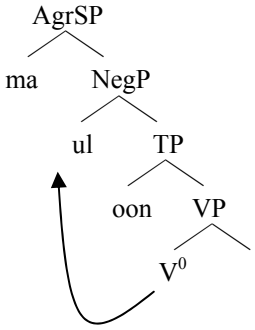
b. Affirmative Perfective



dem-oon-naa
go-past-1sg
'I had gone'

Head movement of the verb in the affirmative perfective yields the correct surface form, V + past + SA. On the other hand, head movement of the verb up the tree in the negative perfective would derive the incorrect surface string *V-oon-ul-ma (e.g. *dem-oon-u-ma). Deriving the negative perfective by head movement alone would require that the verb skip over T^0, as shown below.

(29)



The configuration in (30) below, representing (29), is exactly the kind that the HMC blocks since it is equivalent to (21) (= (31)).

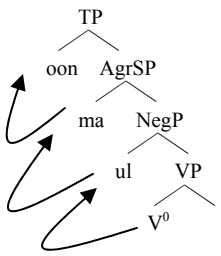
(30) *[Neg^0 [T^0 [V^0]]]

(31) *[X^0 [Y^0 [Z^0]]]

If the opposite tack is taken, putting Tense above AgrSP in the examples in (28), then deriving the negative will be straightforward while deriving the affirmative will require skipping over Agr^0. This is shown below.

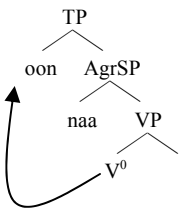
(32)

a. Negative Perfective



dem-u-ma woon
go-neg-1sg past
'I had not gone'

b. Affirmative Perfective



dem-oon-naa
go-past-1sg
'I had gone'

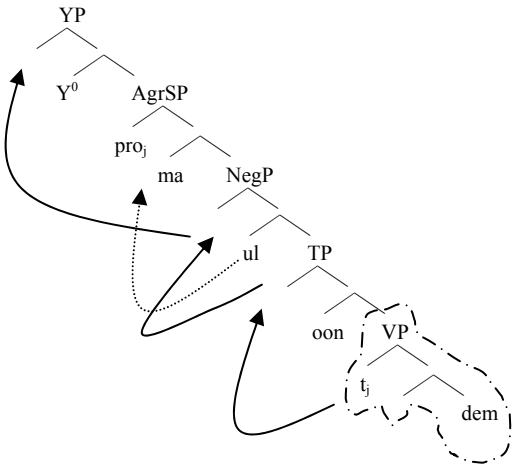
Thus, simply switching around the order of functional categories will not do any good. With a strict head movement analysis then, it would seem that the HMC must be violated one way or another.

2.4. Remnant Movement in Perfective Clauses

So far, imperfective clauses were shown to be derivable by head movement, contrary to perfective clauses. In this section I will propose that the asymmetry between perfective and imperfective clauses can be accounted for by assuming that perfective clauses are derived by phrasal movement of a VP remnant. That is, once the subject has vacated the VP, the VP remnant raises to some specifier higher than AgrP. Furthermore, as will be seen, some head movement is still necessary for this analysis to go through. As a concrete example, consider the negative perfective clause from (33) and its derivation in (34).

(33) Dem-u-ma woon (=22c)
go-neg- 1sg past
'I had not gone'

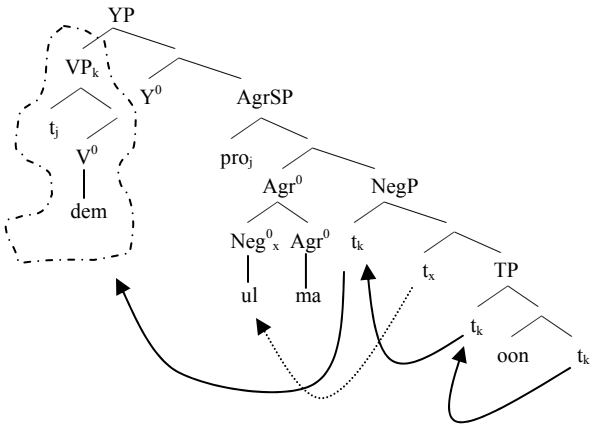
(34)



Here, after the subject has vacated the VP, the VP remnant raises to Spec,TP, then to Spec,NegP, checking features along the way. Finally, the VP must raise further to the specifier of some XP, called here "YP", in the left periphery. The intermediate steps are posited because the imperfective auxiliary, *di*, raises, presumably to check the features of the higher functional heads. The only substantive conclusion is that VP raises into the left periphery. This is deducible from the fact that, on the surface, the verb precedes subject agreement. Since *pro*, the subject, has already raised to Spec,AgrSP the VP remnant must raise higher than that.

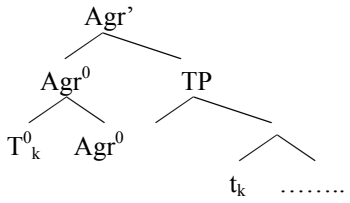
As can be seen in (22)c, the negative marker *ul*, also precedes subject agreement. It is therefore necessary to posit head movement of Neg^0 to Agr^0. Thus, although remnant movement does most of the work, some residual head movement is still necessary. This means that the higher portion of the clause will be as below.

(35) Dem-u-ma woon
go-neg-1sg past
'I had not gone'



T^0, *-oon*, remains in situ above. As will be seen in the next section, this is a general property of T^0 in perfective clauses: it never raises to Neg^0. Recall that where *di* is present, the *di + past* complex can head raise to Neg^0. This brings to mind the behavior of English auxiliaries and modals. If a modal, for example, head raises to Neg^0 in a subject inversion context, then Neg must precede the subject. This gives, 'Can't the boys swim?' versus the ungrammatical '*Can not the boys swim?' If we take the cliticized *n't* to be the spellout of an incorporated Neg (as opposed to *not*), then the English facts are analogous to Wolof: Neg is licensed in presubject position (i.e. it can raise) when it is carried along by head movement. In English, the verb may not head move as well, in which case, Neg is stranded in a post-subject position, yielding 'Can the boys not swim?' In terms of the analysis in this paper, we can say that when a verb head moves through Neg ^{0}, the Neg head raises with it. Returning to the affirmative case (22)a, T^0, the closest head c-commanded by Agr^0, will head raise so that the derived structure under Agr' will be as follows.

(36)



The VP remnant will have raised to Spec,YP as before. These movements suffice to derive the correct surface string, but here too, questions arise as to why tense should not remain in situ in the affirmative as it apparently does in (35), the negative counterpart to (36).

The account that I have proposed yields the desired results, although at a cost; principally, the apparently anomolous result that T^0 must remain in situ in the negative perfective, but raise in all the other cases (i.e. imperfectives, and affirmative perfectives). In terms of what the analysis must account for, there are three things which must be obtained. First, for the perfectives, the analysis must be such that VP raises higher than Agr^0 and that T raises to Agr^0, unless Neg is present. Second, for the perfectives, the analysis must make it so that T is stranded on the surface when Neg is present. Finally, for the imperfectives, we want a string of *di*-T-(Neg)-SA in all cases.

Recall that in the analysis, perfective VP lands in Spec,TP at some point in the derivation. This is the canonical checking configuration (and also the canonical pied-piping configuration). The import of this is that once features are checked, VP can, and does, move on without pied-piping TP. As in all cases, SA attracts the next lowest head, be it Neg^0 or T^0 . Recalling that Neg is higher than T, the fact that T raises only in the absence of Neg may be said to follow from some implementation of Attract Closest, Shortest Move, etc.

Straightforward head movement was invoked to account for the imperfectives. This head movement results, in both cases, in the other heads being carried along. Thus, for Wolof, it seems that head adjunction is an obligatory pied-piping configuration. That is, there is no excorporation.

The apparently anomolous result mentioned above, namely that T raises in all cases except the negative perfective now falls out from general principles which we may deduce for the language. That is, (i) when there is head movement, there is no excorporation, (ii) where there is XP movement, there need not be pied-piping and (iii) SA attracts the next lowest head. With this way of looking at things, the negative perfective is not anomolous in the sense of being a more complicated derivation. In fact, it shows no more movement than the affirmative.

At this point, we have seen that perfective and imperfective clauses mainly result from two different types of verb movement: remnant movement and head movement respectively. Perfective clauses have both types of movement, but it is remnant movement which raises the

verb to its surface position. These conclusions about verb movement were based on three analytical points. First, imperfective clauses can be derived straightforwardly by head movement of the *di*. Second, verb movement in perfective clauses cannot be accounted for under a restrictive theory of head movement. That is, head-skipping would seem to be necessary. Third, assuming remnant movement (and head movement) in perfective clauses allows us to account for these straightforwardly. Furthermore, remnant VP movement processes have been independently motivated in other unrelated languages (Lee (1999), Nkemenji (1992, 1995), Kayne (1998), Koopman and Szabolcsi (2000). In the next section, I will show how the proposed analysis can be extended to conditional clauses.

3. The Position of Object Clitics (and an Adjustment)

Up until now, we have considered only intransitive verbs in the analysis. Let us now expand the paradigms and look at the position of object clitics versus those of full DP objects. Consider the clauses below based on the paradigm in (22).

(37)

Table 6. Positions of DP Objects and Object Clitics

Clause Type	DP OBJECT	CLITIC OBJECT
Perfective Affirmative	a. **V-PAST-SA OBJECT** lekk-oon-naa jën wi eat-past-1sg fish the 'I had eaten the fish'	b. **V-PAST-SA-CLT** lekk-oon-naa-ko eat-past-1sg-3sg 'I had eaten it'
Perfective Negative	c. **V-NEG-SA PAST OBJECT** lekk-u-ma woon jën wi eat-neg-1sg past fish the 'I had not eaten the fish'	d. **V-NEG-SA-CLT PAST** lekk-u-ma-ko woon eat-neg-1sg-3sg past 'I had not eaten it'
Imperfective Affirmative	e. **DI-PAST-SA V OBJECT** d-oon-naa lekk jën wi di-past-1sg eat fish the 'I had been eating the fish'	f. **DI-PAST-SA-CLT V** d-oon-naa-ko lekk di-past-1sg-3sg eat 'I had been eating it'
Imperfective Negative	g. **DI-PAST-NEG-SA V OBJECT** d-oon-u-ma lekk jën wi di-past-neg-1sg eat fish the 'I had not been eating the fish'	h. **DI-PAST-NEG-SA-CLT V** d-oon-u-ma-ko lekk di-past-neg-1sg-3sg eat 'I had not been eating it'

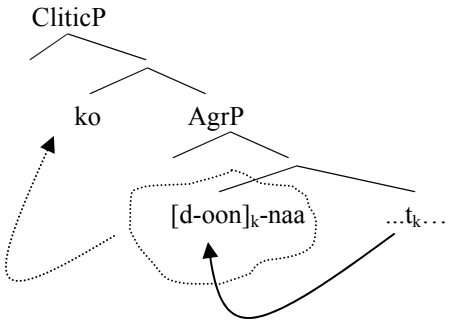
There are several things to notice in the table above. First, DP objects follow the entire verbal complex, be it the clausal perfective or imperfective, affirmative or negative. This means that in imperfectives the DP object follows the main verb ((37)e, g) while in perfectives it follows the V-T-SA complex and the stranded tense morpheme ((37)a,c). Clitic objects pattern quite differently. In imperfectives, the

clitic object immediately follows SA and therefore precedes the main verb ((37)f,h). In affirmative perfectives, the clitic follows the V-T-SA complex and in the negative it precedes the stranded tense ((37)b,d).

How then do these clitic facts relate to the analysis? Let us assume that the object clitic is a syntactic head that, for a given construction, e.g. neutral clauses, always occupies the same position. I will call it head of CliticP. Thus the question is, where is CliticP located?

Recall that surface orders in the verbal complex in imperfective clauses result from head movement of *di* up the tree to Agr^0 . Since the clitic is suffixal to SA ((37)f,h), the most straightforward assumption is that CliticP is located higher than Agr and that the clitic surfaces as suffixal to SA as a result of the *di*-complex head raising to *ko*, as below for (37)f.

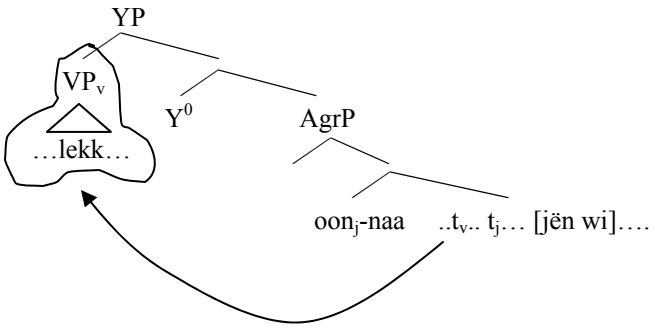
(38)



This means that in order to account for the position of the object clitic, the original analysis must be adjusted by assuming that the verbal complex raises higher than AgrP.

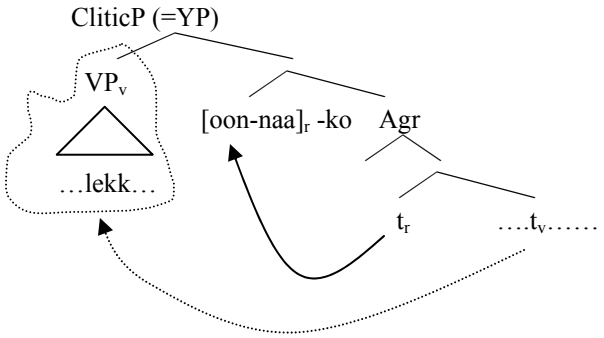
Recall that for a perfective like (37)a, we ended up with a structure like the one below.

(39)



If we take the posited YP to be CliticP, again with *ko* as its head, and head raise the [oon-naa] complex to *ko*, we get the correct surface order, as shown below.

(40)



On this analysis, CliticP, as in perfectives, the functional heads T^0, Agr^0, etc, also raise to CliticP. This conclusion has the advantage of putting elements which act as phonological constituents in the same syntactic constituent, CliticP. The vowel of the object clitic *ko* is ATR harmonic to the verb root. Thus, when it is cliticized to a complex with a +ATR verb root, it surfaces as [ko] or [kë] and when cliticized to a -ATR verb complex, leads to *ko* being pronounced as [k□] or [k∧].

Let me note that the past tense morpheme *-oon* is also ATR harmonic to the verb root, being pronounced as <óón> with +ATR verb roots and <oon> with -ATR verb roots.[15] Thus, by assuming that Agr^0 raises to $Clitic^0$, which we need to do anyway, we also can also create a more transparent mapping into the phonological component.

2.5. The Adverbial Suffix –agum

In order to illustrate that the paradigms presented above are not unique in the language, I should mention here that the apparent head skipping I discussed is not just limited to cases where negation is present. The adverbial suffix *–agum* 'already' seems to induce 'head skipping' in just the way that negation does. Consider the clauses below.

(41) a. Lekk-agum-naa
eat-already-1sg
'I have already eaten'

[15] But, the situation with *-oon* is a not straightforward. This is because, according to Omar Ka (p.c.), even when the past tense is stranded, it is still harmonic to the verb root.

b. Lekk-oon-naa
eat-past-1sg
'I had eaten'

c. Lekk-agum-naa woon
eat-already-1sg past
'I had already eaten'

In both (41)a and c, *-agum* immediately follows the verb stem. What is interesting is that when the past morpheme, *-oon* is present, it appears at the right edge of the verbal complex. This is unexpected given (41)a and (41)b. One expects either *V-oon-agum-SA or *V-agum-oon-SA. But, the configuration that we do see, V-agum-SA…oon looks very much like the stranded tense configuration that we see in the past negative perfective. Note also that the subject agreement triggered is that found in non-immediately-preceding negation contexts, i.e. neutral clauses. What this shows is that the kinds of derivations I have posited for perfectives and imperfectives seem to be more widely available in the language.

2.6. Conditionals

In this section, I will discuss two syntactically distinct conditional constructions. They are both characterized by the presence of the particle *kon* and are most easily distinguished by its position in the string. Consider the data below. (A template showing the ordering of morphemes is shown above each example sentence.)

(42) Table 6. Type I conditionals

	IMPERFECTIVE	PERFECTIVE
Affirmative	a. **KON DI-SA V** Kon di-naa dem cond di-1sg go 'I would be going'	e. **KON V-SA** Kon dem-naa cond go-1sg 'I WOULD go'
Negative	b. **KON DI-NEG-SA V** Kon d-u-ma dem cond di-neg-1sg go 'I would not be going'	f. **KON V-NEG-SA** Kon dem-u-ma cond go-neg-1sg 'I WOULDN'T go'
Affirmative Past	c. **KON DI-PAST-SA V** Kon d-oon-naa dem cond di-past-1sg go 'I would have been going'	g. **KON V-PAST-SA** Kon dem-oon-naa cond go-past-1sg 'I WOULD have gone'
Negative Past	d. **KON DI-PAST-NEG-SA V** Kon d-oon-u-ma dem cond di-past-neg-1sg go 'I would not have been cooking'	h. **KON V-NEG-SA PAST** Kon dem-u-ma woon cond go-neg-SA past 'I WOULDN'T have gone'

(43) Table 7. Type II conditionals

	IMPERFECTIVE	PERFECTIVE
Affirmative	a. **DI-SA KON V** Di-naa kon dem di-1sg cond go 'I would be going'	e. **V-KON-SA** Dem-kon-naa go-cond-1s 'I would go'
Negative	b. **DI-NEG-SA KON V** d-u-ma kon dem Di-neg-1sg cond go 'I would not be going'	f. **V-KON-NEG SA** Dem-kon-u-ma go-cond-neg-1sg 'I would not go'
Affirmative Past	c. **DI-PAST-SA KON V** d-oon-naa kon dem Di-past-1sg cond go 'I would have been going'	g. **V-KON+PAST-SA** Dem-koon-naa go-cond+past-1sg 'I would have gone'
Negative Past	d. **DI-PAST-NEG-SA KON V** d-oon-u-ma kon dem Di-past-neg-1sg cond go 'I would not have been going'	h. **V-KON+PAST-NEG-SA** Dem-koon-u-ma go-cond+past-neg-1sg 'I would not have gone'

In the first type, Type I, *kon* is clause initial and in the other, Type II, *kon* appears inside of the verbal complex. The ordering of elements in the verbal complexes in the Type I clauses is exactly as that in their indicative counterparts (cf. (22) and (23)).

For the Type II conditionals, note first that *kon* appears somewhere within the verbal complex. In the imperfective cases, *kon* intervenes between the *di*-(past)-(neg)-SA elements and the main verb. Object and locative clitics immediately follow SA and therefore precede *kon*. Further, as in the indicative cases, tense and negation are suffixal to *di*. Thus, the Type II imperfective verbal complexes are identical to their indicative counterparts except for the presence of *kon* before the main verb. In the Type II perfectives, *kon* follows immediately after the verb stem. Strikingly, in the negative past perfective, (43)h, *koon* precedes negation, *ul*.[16] Morphologically, this appears to be *kon-oon-ul*. Analytically, this would seem to indicate that T^0 has raised to Neg^0, which we have not seen before.

In terms of their interpretations, Type I and Type II are essentially identical in expressing conditionality. But, for some reason, the Type I perfectives, where *kon* is clause initial, have a focus interpretation.

[16] I take *koon* to be *kon* + *oon* (i.e. cond + past). Others, (e.g. Samb (1983)) have reported *koon* as the conditional itself. For my consultant, *koon*, the long vowel form, only has the past tense meaning. The morphological assumption I make is consistent with the meaning.

That is, they are interpreted as focusing on the conditionality of the clause. In English, this kind of focus would be indicated by heavy phrasal stress on *would* in a sentence like, 'I WOULD smoke it, if I didn't have to drive.' The Type I and Type II imperfective conditionals are identical in their interpretations as far as I know. That is, neither one conveys a focus on the conditionality. Currently, I have no explanation for these interpretive differences. In my analysis, I will be abstracting away from the conditional focus interpretation of the Type I perfectives and leave it for future research.

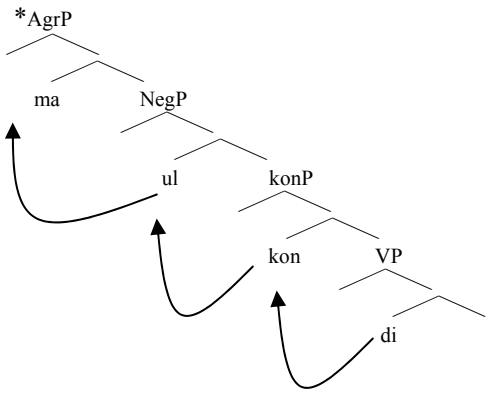
What then can we say about the position of *kon* in the different conditional paradigms? Given that the verbal complexes in the Type I conditionals are identical to their indicative counterparts, the simplest assumption is that the Type I verbal complexes are derived in an identical manner. Since the perfective VP raises to YP, *kon* is at least as high as YP. Note also that when an overt DP subject is present, it intervenes between *kon* and the verbal complex, as shown below.

(44) Kon Abdu dem-oon-na
cond A. go-past-3sg
'Abdu would have gone'

Now, since Wolof is pro-drop language, overt DP subjects typically have a topic/focus interpretation. It seems too that overt subjects are very high in the clause and *kon* precedes even these. An analysis of the Type I facts must somehow account for why *kon* appears to be very high in the clause in these constructions and it must be such that the verb movements (or less strictly, that the outcome of verb movement) produce identical strings in the verbal complexes for the conditional and the indicative.

For the Type II imperfectives, the fact that *kon* immediately precedes the main verb and yet follows all other verbal material is crucial for determining its location in the clausal structure. Given the head movement analysis of imperfectives, we can deduce that *kon* must be lower than *di*, but higher than the main verb. This is because if *kon* were higher than *di*, we would expect that head movement of *di* up the tree would force pied-piping of *kon* and therefore, *kon* would precede tense, negation, SA or all of these. This scenario, under which *kon* is immediately above *di*, is shown below.

(45)



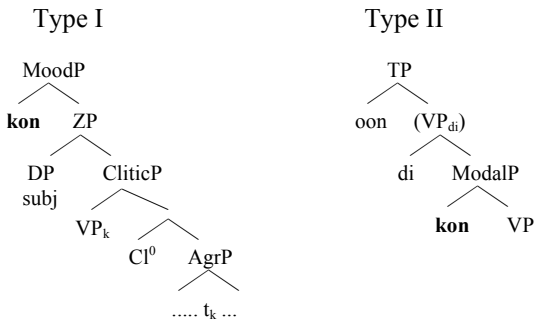
This derivation would produce the ungrammatical *di-kon-u-ma. Therefore, I assume that in Type II imperfective conditionals, *kon* is indeed lower than *di,* but higher than the main verb. In the Type II perfective conditionals, the situation is similar. Since I have posited remnant movement, the structural position of *kon* is not immediately obvious since it could be contained in a remnant. At the same time, since this is the one case where it appears that we have T^0 to Neg^0 movement, *kon* should be low enough so that it can interact with tense and result in the *kon +oon* string's contracting to *koon*. I take this kind of contraction as indicative of head incorporation as in English *don't* (resulting from 'do' raising to Neg^0). If *kon* has head incorporated into T^0, then it must be lower than TP in this case. This is consistent with what was deduced concerning the Type II imperfectives: that is, *kon* is low in the structure.

We thus arrive at what appears to be a paradox: *kon* must be able to be both high (in Type I) and low (in Type II) in the structure. This paradox can be resolved by assuming that the paradigms in (42) and (43) result from *kon* merging into the derivation at either one of two distinct points.[17] This proposal is inspired by Kayne's (1998) analysis of English *only*. According to Kayne, the DP *Bill* and *only* in a DP like *only Bill* are not merged into the derivation as a constituent, but come together through movement. That is, *Bill* is merged into the derivation as the complement of V. *Only* merges higher than VP, say in a focus projection. Subsequently, *Bill* is attracted by *only* and raises to the specifier of the XP headed by *only.* Then, *only* head moves to the next highest head, denominated 'W' in that analysis, yielding *only Bill*, the correct surface order. On the other hand, in a DP like *only one linguist*, *only* and *one linguist* are merged into the derivation as a single constituent and move to the focus projection. If Kayne is

[17] This was suggested by Hilda Koopman.

correct, certain elements should be allowed to be merged at different points in a derivation. Type I conditionals could be seen to result from *kon* merging higher than Agr^0 in the semantic Mood Phrase. Type II conditionals on the other hand, could result from *kon* merging just above the main verb and pied piping a Modal Phrase to Mood Phrase. That is, we will say that *kon* has a mood feature and can either merge in the head position of MoodP or merge with VP and satisfy MoodP by moving. These two options are shown below.

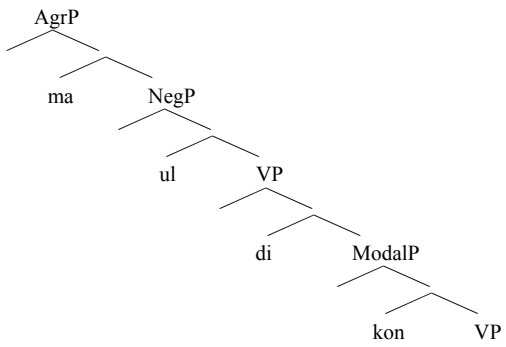
(46)



The XP headed by *kon* in Type I will be referred to as 'MoodP' while the XP headed by *kon* in Type II will be referred to as 'ModalP'. In the structures above, we see that for the Type I's, *kon* merges higher than the (overt) position of a DP subject. In the Type II, *kon* merges with VP and, if present, *di* merges with ModalP.

Since the Type I paradigm is essentially identical to the indicative paradigms already analyzed, I will not discuss any specific derivations. *Kon* will simply be merged into the derivation with ZP to form Mood' . For the Type II imperfectives, we simply need to adjust the tree in (45) so that *kon* merges lower than *di*, as below.

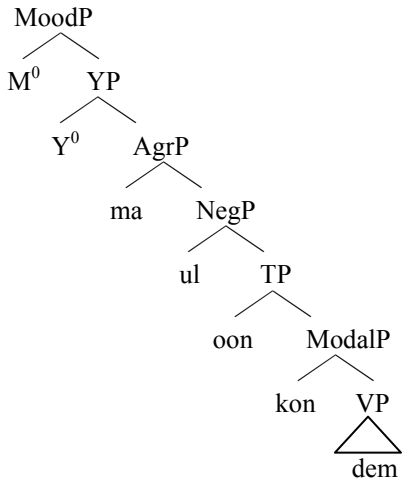
(47)



Thus, the Type II imperfectives are derived straightforwardly by head movement. The imperfective *di* does not raise to *kon* because, as an aspectual auxiliary, it may not have any mood features (although this is certainly not true cross-linguistically).

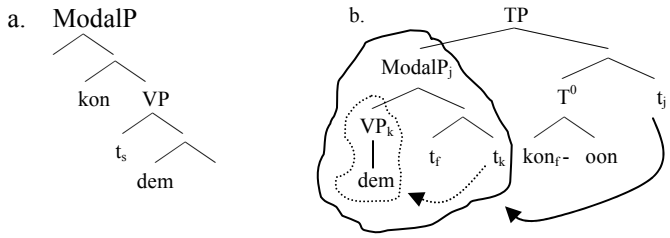
For the a Type II perfective ((43)h for example), we again take *kon* as the head of ModalP. The underlying structure is then as below.

(48)



In the perfective clause above, a phonetically empty element, here designated M^0, the head of MoodP, merges with ZP. Recall also that SpecCliticP is the landing site of the (indicative) VP remnant. The first steps in the derivation are shown below.

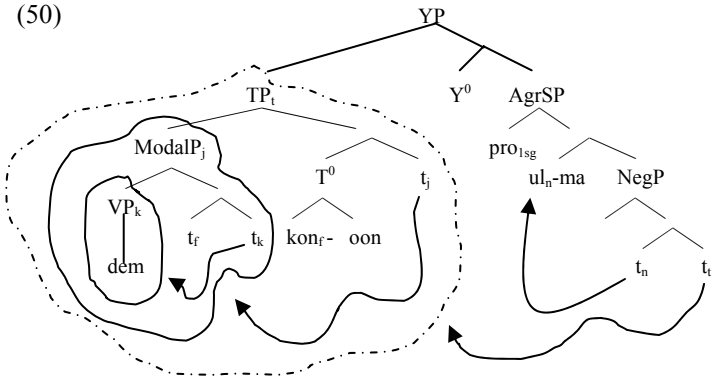
(49)



First, the VP remnant raises to Spec,ModalP. This puts VP and hence V^0 in a checking relation with *kon* and thence ModalP. Next, *kon*, attracted by T^0, raises creating a *kon-oon* configuration. This string will undergo contraction to *koon* at PF. The entire ModalP, carrying VP in its specifier raises to Spec,TP. We may think of this as VP raising to TP, just as in indicative clauses, but pied piping ModalP. In this analysis, I have to stipulate that VP must pied pipe its entire containing category ((49)b). While this is a stipulation in this context, the VP in (47) is in the canonical pied piping configuration (Koopman & Szabolcsi (2000)) with respect to ModalP. In fact, it seems to be the same species of category pied-piping that one finds in a Wh-question like, 'Whose mother did Kyle see?'. Here, where we may take the Wh-possessor to be in the specifier of a DP headed by *'s*, the entire containing DP is pied piped as the Wh- word raises to Spec,CP.

In the next steps, TP raises to Spec,NegP. Again, we may think of this as being driven by the need to check features of the verb. However, TP is pied piped. The question then arises as to why TP should be pied piped here and not in the indicative. I do not have a definitive answer, but I suspect that it is due to ModalP. That is, ModalP does not allow anything in its specifier to escape and it pied pipes its containing category. (Recall that we have already seen that head incorporation can lead to different movement possibilities in English.) Returning to the derivation, TP raises to Spec,YP as before and Neg^0 raises to Agr^0 as always. This is shown below.

(50)



Since the verbal complex follows DP subjects, I assume that it remains in Spec,YP until LF when it raises to Spec,MoodP.

In this section, we have seen that the basic analysis of positing head movement vs. remnant VP movement in indicative clauses can be extended to cover two types of conditional clauses. The two paradigms fall out, although not without complication, by taking *kon* to have two distinct merge locations, one high in the clause (Type I) and the other low in the clause (Type II). The only stipulations necessary involved the obligatory category pied piping (i.e. ModalP, and TP). However, these are processes independently attested in other unrelated languages.

3. CONCLUSIONS, PROBLEMS, AND AREAS FOR FURTHER RESEARCH

In this paper I have presented data from Wolof that are quite challenging from an analytical point of view. The perfective-imperfective asymmetries were shown to result from two different kinds of verb movement: head movement and remnantVP movement. The data could be accounted for if it was assumed that perfective verbs underwent VP movement while in imperfective clauses, the auxiliary *di* underwent head movement alone, leaving the main verb in its underlying position. Finally, it was shown that the conditional particle *kon* has a syntax similar to that of English *only*. Many issues have arisen in the course of the analysis. For example, it is not clear why ModalP should need to be pied-piped and why it should not allow specifier extraction. Similarly, why should the mood feature of kon induce verb movement in the Type II perfectives, but not in the imperfectives? That is, why does Modal^0 not raise overtly in Type II imperfectives? Presumably, if the null head of MoodP needs its mood feature checked in perfectives this should also be true for imperfectives. I leave these and other interesting questions to further research.

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