

The Clause Structure of Pulaar

by

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Abstract

In this thesis, I investigate the clause structure of Pulaar, an Atlantic language spoken in Senegal. Specifically, I look at the ordering of functional heads under the hypothesis on the Hierarchy of Functional Heads in Cinque (1999). I also look at the derivation of these functional morphemes under Baker's Mirror Principle (1985). Thus, I show that Pulaar is largely consistent with those hypotheses. I provide an extensive background on Pulaar, ranging from its sound system to its syntax and its aspectual system.

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1. Introduction

In this paper, I want to analyze the structure of Pulaar clauses, especially the Perfective and the Imperfective clauses. My purpose is to expose the ordering of morphemes in Pulaar structures. The question is whether there is only one aspectual phrase position located below T(ense) or there are instead two distinct aspectual phrase positions. Thus, the two aspects of this question (i.e. one aspectual phrase position or two) will be the fundamental hypotheses that I will use to test the order morphemes in the perfective and imperfective structures in Pulaar. I will undertake this analysis under the assumption of the Mirror Principle put forward by Baker (1985) and with reference to the hierarchy of functional heads motivated by Cinque (1999) who argues that perfective is higher in the clause than imperfective cross-linguistically.

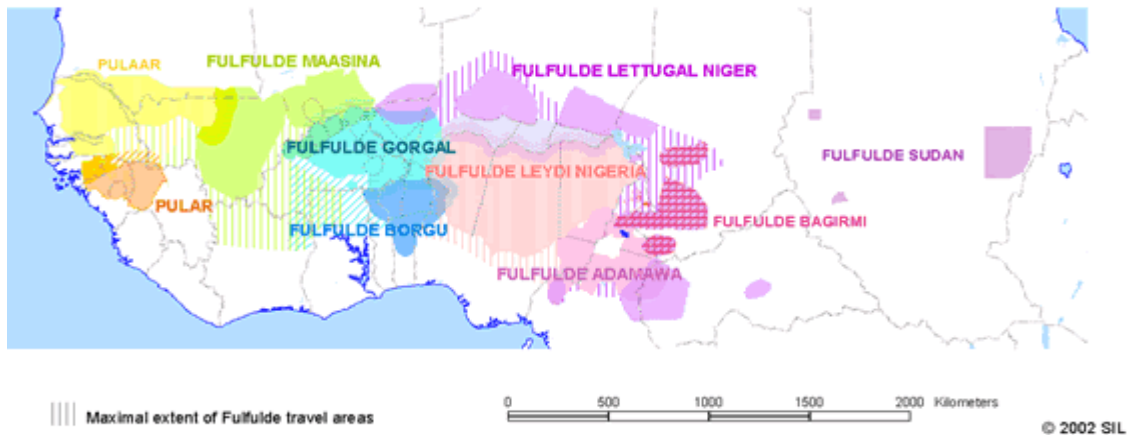
The thesis will, then, be organized as follows: In section (2) I will provide a background on Pulaar. The term *Pulaar* is used in this thesis as a cover term which refers to a language with a variety of dialects (Toore being the one under focus). Thus, I will lay out a few cross-dialectal variations to give a flavor of the differences that can be found between those dialects. In this section, I also discuss various properties of the language, ranging from phonology to morphology and general syntactic aspects. In this regard, I will lay emphasis on the verb structure, especially because the fundamental hypotheses to be tested are mainly based on the verb morphology in the sense that the different morphemes to be ordered are stacked on the verb. In part (3) I lay out the paradigms under which my hypotheses will be tested. I then give a brief background on the theoretical assumptions on which my analysis will be based, namely Baker's (1985) Mirror Principle and Cinque's (1999) Hierarchy of Functional Heads. I thus show how these theoretical assumptions are relevant to the analytical part of this thesis which bears on the perfective and imperfective clauses in Pulaar. The aim is to provide the hierarchy of morphemes in the clause structure of Pulaar along the lines of the theories under assumption. Also in this part, I deal with the clitic constructions of Pulaar so as to see how they fit into the general analysis of perfective and imperfective clauses or what problem they represent to the analysis. This will be followed by some concluding remarks.

2. 1 Background on Pulaar

2.1.1 Pulaar and Its Dialects

Pulaar is a member of the Atlantic language family, a branch of Niger-Congo. Pulaar is just one alternative name for the language, designating the variety spoken in northern Senegal. Pulaar has lots of varieties or dialects spread on a continuum that stretches in seventeen countries, from Senegal to Sudan. SIL International (2003) groups dialects into ‘areas of clear communication’ within which parallel dialects can be spoken while exhibiting some degree of mutual intelligibility. As pointed out by SIL International (2003), several Fulfulde dialect areas on the continuum have names, locations, and general definitions that are more or less generally agreed upon by linguists, anthropologists, and others. These include the Pulaar of Senegal, Pular of Guinea, Fulfulde of Maasina, Fulfulde of Nigeria, and the Fulfulde of the Adamawa highlands in Cameroon. Arnott (1970) also identified six dialect areas: Fuuta Tooro (Senegal), Fuuta Jaloo (Guinea), Maasina (Mali), Sokoto and western Niger, Central northern Nigeria and eastern Niger, and Adamaawa. Map 1 (SIL International 2002) shows dialectal distribution of Pulaar:

(1) Map 1: Dialectal distribution of Pulaar



(SIL International 2003)

There is intelligibility between dialects within a dialect area as well as between contiguous dialect areas, but intelligibility becomes difficult between dialects that are farther apart, for instance between dialects in Senegal and dialects in Nigeria or Cameroon.

In Senegal for instance, there are four major varieties of Pulaar: Fuuta Tooro/Pulaar (north-eastern part of Senegal), Kabaadaa/Toore (southern Senegal) and Fuladu/Fulakunda (southern Senegal and east of Kabaadaa). There is also “Pular”, (spelled with one ‘a’) spoken by immigrants from Guinea-Conakry who are scattered all over Senegal. These four varieties exhibit some differences, especially on the lexical, phonological levels. There are also a few morphological and syntactic differences.

2.1.2 Lexical Differences Between Dialects

The dialects of Pulaar spoken in Senegal exhibit a large number of lexical differences. Some words can be similar in form across dialects but diverge in meaning from one dialect to another.

Similarly, different lexical items may be used by dialects to refer to the same thing. However, it is hard to find different words in all dialects that mean the same thing; there are enough similarities to show that they are relatively close to each other, as indicated in Table 2:

(2) Table 1: Lexical differences in Senegalese Dialects

gloss	Toore	Fuuta	Fulakunda	Pular
village	saare	saare, wuro	saare	hod'o
town, city	tufnde	saare, wuro	tuunde	saare
herd	wuroo	oornde	wuro	wuro
to get out	funtu-go	yaltu-de	yaltu-de	yaltu-gol
to die	may-go,yaltu-go	may-de	may-de	maayu-gol
to deceive	yoynu-go	funtu-de	daynu-de	daynu-gol

It is interesting to see that while the stem *funtu-* in Toore means ‘get out’ it means ‘deceive’ in Fuuta. Likewise, *yaltu-* in Toore means ‘die’, but it means to ‘get out’ in both Fuuta and Pular. In addition, in Pular ‘to deceive’ is *funtu-de*, but it is *yoynu-go* and *yoynu-gol* in Toore and Fulakunda respectively which literally means ‘to make cleverer’ and *daynu-gol* in Pular, literally meaning ‘to make a fool of, to fool’. A lot of lexical differences of this sort exist between these dialects. The limited data set in Table 2 suggests that Toore and Fulakunda are much closer. However, lexical differences do exist between these two dialects, although the sample above does not show many.

2.1.3 Phonological Differences Across Dialects

Several phonological differences can also be identified between these dialects. They sometimes diverge in the way words similar in form and meaning are pronounced, differing generally in one sound, as can be seen in the table below.

(3) Table 2: Phonological differences in Senegalese Dialects

Gloss	Toore	Fuuta	Fulakunda	Pular
study	jaŋnde	jaŋnde	jaŋnde	jannde
relative	banndiraawo	banndiraad'o	banndiraad'o	banndiraad'o
aid, help	ballaa	ballal	ballal	ballal
horse	pucuu	puccu	puccu	puccu
to rest	fooft-aa-go	fooft-aa-de	fowr-in-aa-de	fowt-a-gol
where	ho to	hol to	horoo	honto

In Toore, the final syllable in nouns denoting family members like, *kaawiraado* ‘uncle’, *yummiraado* ‘mother’, *miñiraado* ‘younger brother or sister’, etc. is always **-wo** instead of **-do** in other dialects. In Fulakunda, [t] becomes a rhotic in most intervocalic positions. According to Balde (2009), the substitution of /t/ for /r/, in medial position, is common in Fulakunda (See the difference between Toore and Fulakunda ‘where’ in Table 3 below, for example.) In Pular, as well as in Fulakunda, the **-aa** morpheme expressing middle voice is short unlike in Fuuta and Toore. In addition, in abstract nouns mostly, as well as other nouns ending in **-al** or **-el** in the three other

dialects, Toore ends in a long vowel, most of the time *-aa* or *-ee*. It should be noted that, unlike Pular, vowel harmony is a prominent feature of Toore.

(4)	Toore	Pular	Translation
	a. ha-dá	hi-dá	you are
	b. ho-mo	hi-mo	he is
	c. he-be	hi-be	they are

2.1.4 Cross-Dialectal Morphological Differences

Senegalese dialects exhibit some morphological differences, in the forms of *wh*-words, for example. These *wh*-words appear in two independent words in Pulaar and Toore with the first member (*ho* or *hol*) being optional, but these independent words merge in one in Fulakunda and Pular.

(5) Table 3: Morphological differences

Gloss	Toore	Fuuta	Fulakunda	Pular
who	(ho) mo, (he) be	(hol) mo, (hol) be	homboo, hebe	hommo, hombe
where	(ho) to	(Hol) to	horoo	honto
what	(ho) ko	(hol) ko	hokoo	hond'uj
when	ndey	(hol) nde	tuma	honde tuma
how	(ho) no	(hol) no	honoo	honno

It should be noted that the word for ‘when’ in Toore is a single invariant term and not two independent words as the rest of *wh*-words, while in Fulakunda and Pular there is an additional word *tuma* meaning ‘moment’ or ‘time’. The English *wh*-word ‘when’ translates as ‘what time’ in Pular and Fulakunda.

2.1.5 Syntactic differences

There are also a number of syntactic differences between the Senegalese dialects. Some of the syntactic differences can be seen in the verbal complex. For example, in Toore perfective clauses, the perfective, *-m(a)*, follows the past tense marker (*-no*) and object clitic pronouns (*-moo*), as (6a) shows. In Fuuta, Fulakunda, and Pular on the other hand, the perfective morpheme, (*-ii*) precedes both past tense and the object clitic pronoun (*-mo*) as can be seen in (6b).

Toore

(6) a.	Mi sood- no-moo-m .	V-T-OCLITIC-Perf
	I buy -past-it-PERF	
	‘I bought it’	

Fuuta, Fulakunda, Pular

b.	Mi sood- ii -no - mo .	V-Perf-T-OCLITIC
	I buy- PERF -past it	
	‘I bought it’	

2.2 The typology of Pulaar

2.2.1 Phonetic Inventory

Pulaar has twenty two simple consonants, including three implosives and four nasals. Table 4 below displays the consonants in Pulaar. I present these consonants with respect to the orthography of Pulaar, following the writing system proposed in the 1966 Bamako meeting of a group of experts for the unification of alphabets of national languages and adopted by the Senegalese government. These sounds map with the IPA symbols except for the palato-alveolar sounds: <c> corresponds to the IPA sounds [tʃ], <j> stands for [dʒ] and <y> is [j].

(7) Table 4: Pulaar single consonants

	Bilabial		Labiodental		Alveolar		Palato-alveolar		Palatal		Velar		Glottal	
Plosives	p	b			t	d					k	g		
Implosives		ɓ				ɗ				y				
Nasals		m				n				ɲ		ŋ		
Affricates							c	j						
Fricatives			f		s								h	
Laterals						l								
Retroflex						r								
Semi-vowels		w								y				

Source: Sylla (1993)

Geminates are sounds produced with a length and energy superior to that of simple consonants. According to (Niang, 1997), the only consonants that do not have geminate counterparts are /r/, /f/, /s/ and /h/. Niang holds that the fact that /r/ does not geminate is attributed to an accidental gap in Pulaar. He points out that the other three consonants do not geminate because they are voiceless continuants. Geminates are found only in medial position, in Pulaar. Prenasal consonants are considered as one time unit segments (Paradis, 1995) occurring mostly in initial and medial positions.

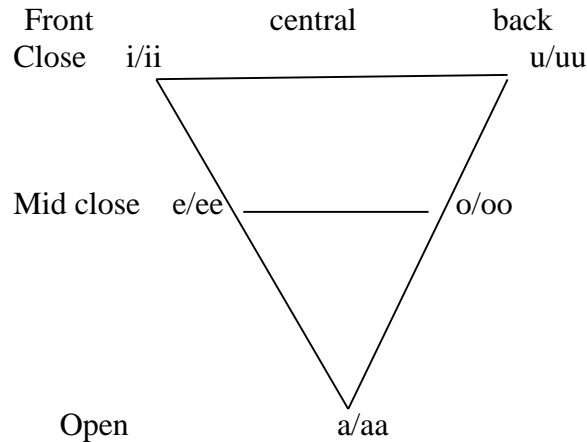
(8) Table 5: Geminates and Prenasals

	bilabial	alveolar	palatal	velar
Voiceless stops	pp	tt	cc	kk
Voiced stops	bb	dd	jj	gg
Implosives	ɓɓ	ɗɗ	y'y	
Nasals	mm	nn	ɲɲ	ŋŋ
Approximants	ww	ll	yy	
prenasals	mb	nd	ɲj	ŋg

Source: Sylla (1993)

Pulaar has a five vowel system (two front, two back and one central). Each of the five vowel qualities in Pulaar has a long counterpart, as shown in the diagram below. Notice that length is indicated by doubling the vowel. This is also the way it is used in the orthography.

(9) Pulaar Vowels



Source: Niang (1997, 29)

In Toore, there are the following alternations for the initial consonant of nouns and verbs:

(10) Table 6: Mutating Initial Consonants

Initial consonant of the verb	
Simple	Mutated
Ø ¹ , g	ŋg
f	p
h	k
b, w	mb
s	c
j, y	ɲj
d, r	nd

These alternations occur in a variety of contexts such as plural marking on nouns, subject marking on verbs, non-subject focus, wh-expressions, et c. I will show this more in details later.

2.2.2 Word Order

The basic word order in Pulaar is Subject-Verb-Object (SVO), Example (11a-b) shows the SVO order in Pulaar:

¹ The symbol 'Ø' represents cases when the verb starts with a vowel. In such cases, [ŋg] becomes the initial sound when the subject is plural.

- (11)a. Aali yah-ii geese.
 Aali go-PERF farm.CL
 ‘Aali went to the farm’
- b. Danna mo war-no jawre.
 Hunter.CL CL.the kill-PAST deer.CL
 ‘The hunter killed a deer’.

However, other orders occur in topicalization, wh-questions and focus, especially when the subject and the object are pronouns.

Pulaar is a prepositional language. Prepositions are independent morphemes and precede the head noun. This can be seen in (12a) and (12b) below, the prepositions *les* ‘under’ and *nder* ‘in, inside’ precede respectively *lekki* ‘tree’ and *suudu* ‘room’:

- (12)a. Muusa jooɗ-i-no les lekki.
 Muusa sit-PERF-PAST under tree.CL
 ‘Muusa sat under a tree’.
- b. O naat-i nder suudu ndu.
 He enter-PERF in room.CL CL.the
 ‘He entered in the room’

Negation in Pulaar is a bound morpheme and it is a suffix on the verb, as can be seen in example (13) below.

- (13) Mi yah-at-**aa**.
 I go-IMPERF-NEG
 ‘I don’t go’

2.3 Noun Classes and Noun Structure

Pulaar is a noun class language, according to Anderson (1976), Arnott (1970), Labatout (1982), Labouret (1952), Lieber (1984, 1987), McIntosh (1984), Paradis (1986a, b, c, 1987a, b) and Sylla (1982)). Pulaar dialects have between eighteen to twenty one noun classes, including noun diminutives and augmentatives. Toore has twenty one noun classes. Most nouns have a noun class suffix. For most noun classes, the class suffix on the noun is homophonous with the definite article (or related to it by regular morpho-phonological rules). (14a) below shows the noun with the noun class suffix followed by the definite article. In (14b) we can see the plural form of the noun class suffix and the plural definite article.

- (14)a. raa-ndu ndu
 dog-CL CL.the
 ‘the dog’
- b. daa-dī dī
 dog-cl.pl cl.the.pl
 ‘the dogs’

However, there are nouns that lack a noun class suffix. (15a) and (15b) show borrowed nouns that do not occur with noun class suffix. Borrowed nouns do not have class suffixes.

- (15)a. oto-∅ mo
 car-CL CL.the
 ‘the car’
- b. doctor-∅ mo
 doctor-CL CL.the
 ‘the doctor, the physician’

In glossing an indefinite noun, I indicate the meaning of the root noun to which a class suffix is attached, as can be seen in the examples below with the contrast singular/plural.

- | | | |
|--|---|----------|
| (16)a. suk- ko
child-CL
‘a child’ | b. gor- ko
man-CL
‘a man’ | Singular |
| (17)a. suk- aaɓe
child-CL.PL
‘children’ | b. wor- ɓe
man-CL.PL
‘men’ | Plural |

Notice that in some cases, that the noun class suffix and the noun class are homophonous. Table 7 below gives examples from the singular noun classes. The noun classes are organized according to the form of the definite article. The noun class suffixes are in bold:

(18)Table 7: Singular Noun Classes

Noun class	example	Translation
mo	suko mo	the child
nde	hoore nde	the head
ndi	ngaari ndi	the ox
ndu	raandu ndu	the dog
nge	nagge nge	the cow
ngo	jungo ngo	the hand
ngu	pucuu ngu	the horse
nga	damnga nga	the door
ba	mbabba ba	the donkey
ka	laanaa ka	the plane, the boat
ki	lebii ki	the knife
ko	huuko ko	the grass
ɗum	baleejum ɗum	the black thing
ɗam	ndiyam ɗam	the water
nge	laacee nge	the little tail
ka	leyka ka	the small land
ngi	damngii ngi	the huge door
nga	nedɗaa nga	the huge person

The plural forms of the nouns in Table 7 are given in Table 8. Notice that the noun classes, except for the *mo* class, which contains singular human nouns, all collapse in the plural into two noun classes: *dī* or *dē*, but *koñ* for the diminutive. If the plural noun stem ends in [i], then the definite article, is *dī* and when the plural noun stem ends in [e], the definite article independent noun class is *dē*. this can be seen in Table 8 below where I have put in parentheses the singular form of the noun class to which the noun belongs.

(19)Table 8: Plural forms of noun classes

Noun class	Example	Translation
be (mo)	suka aabe be	the children
dē (nde)	ko'e dē	the heads
dī (ndi)	ga'i dī	the oxen
dī (ndu)	daad i dī	the dogs
dī (nge)	na'i dī	the cows
dē (ngo)	juud e dē	the hands
dī (ngu)	pucci dī	the horses
dē (nga)	dam dē dē	the doors
dī (ba)	babba aaji dī	the donkeys
dē (ka)	laad e dē	the planes, the boats
dē (ki)	lebe dē	the knives
dī (ko)	kuud ooli dī	the grasses
dī (dam)	ndiyameeli dī	the waters
koñ (nge)	laaco ñ koñ	the little tails
koñ (ka)	leyko ñ koñ	the small lands
dē (ngi)	dam datte dē	the huge doors
dē (nga)	ned datte dē	the huge persons

It should be noted that the *dum* class has no plural form. It refers to uncountable entities, such as colors. In fact, nouns belonging to the *dum* class are adjectival nouns like *daneejum* 'the white thing', *bodeejum*, 'the red thing'.

The Diminutive noun classes are: *nge* and *ka* (both singular) and *koñ* (plural). The diminutive *nge* is, however, homophonous with the regular noun class *nge* like in *nagge*² *nge* 'the cow'. Likewise, the diminutive *ka* is homophonous with the ordinary noun class *ka* found in *laana ka* 'the boat, the plane'.

(20)a. daange nge
dog.cl cl.the
'the little dog'

b. daakoñ koñ
dog.cl cl.the
'the little dogs'

c. leyka ka
land.cl cl.the
'the little land, country'

d. leykoñ koñ
land.cl cl.the
'the little lands'

² For the diminutive of *nagge*, the final vowel is lengthened, giving *naggee*. But the definite article is the same for both forms.

The Augmentative noun classes are: *nga*, *ngi* (singular) and *dé* (plural). Here again, we note that the augmentative *nga* has the same form as the regular noun class *nga* like in *damnga nga* ‘the door’.

- | | | | |
|---|---------------|---|--------------|
| (21)a. daangaa
dog.CL.AUG
‘the big dog’ | nga
CL.the | b. daangatte
dog.CL.AUG.PL
‘the big dogs’ | dɛ
CL.the |
| c. daangii
dog.CL
‘the big dog’ | ngi
CL.the | d. daangatte
dog.CL
‘the big dogs’ | dɛ
CL.the |

Even nouns denoting humans take the augmentative plural *dé* instead of the human plural class *be*. In (22a-b) below, we have regular human noun classes with singular *mo* and plural *be*. In (22c-d), however, the same noun, *neddo* ‘person’, takes the augmentative plural *dé* instead of the regular human plural *be*.

Simple noun:

- | | | | |
|--|--------------|--|--------------|
| (22)a. neddo
person. CL
‘the person’ | mo
CL.the | b. yimbe
persons.CL
‘the people’ | be
CL.the |
|--|--------------|--|--------------|

Noun with augmentative:

- | | | | |
|---|---------------|---|--------------|
| c. neddaa
person.CL.AUG
‘the huge person’ | nga
CL.the | d. neddatte
person.CL.AUG
‘the huge people’ | dɛ
CL.the |
|---|---------------|---|--------------|

2. 4 Verb Structure in Pulaar

2.4.1 Introduction

The verb in Pulaar can be active, middle or passive (Sylla, 1993; Arnott, 1978). The verb form varies according to five variables: tense, aspect, voice, focus and negation.

2.4.2 Tense

In Pulaar, only past tense appears as an overt morpheme *no(o)*; all other tense specifications, especially present tense, remain silent. In (23)a below we can see that an overt past tense morpheme occurs together with the perfective *-m* (they occur independently, however). In (23b-c), on the other hand, only an imperfective or progressive morpheme is suffixed to the root of the verb.

- | | |
|---|--------------|
| (23)a. Mi yaa-noo-m toon ngey.
I go-PAST-PERF there yesterday.
'I went, I had gone yesterday' | Past |
| b. Mi yah-at toon bimbi.
I go-IMPERF there tomorrow
'I will go there tomorrow' | Imperfective |
| c. Homo toon yah-a jooni.
he.is there go-PROG now
'He is going now' | Progressive |

2.4.3 Voice

The verb in Pulaar has three voices (Arnott 1970, Sylla 1982): active, middle and passive, as can be seen in the examples in (24) below, which are given in the infinitive (i.e. with the infinitive suffix *-go*). (24a) shows an active verb, with the verb root and the infinitive suffix. In (24b-c), however, a long vowel intervenes between the root of the verb and the infinitive suffix; *-aa* for the middle and *-ee* for the passive.

- | | |
|---|---------|
| (24) a. loot-Ø ³ -go
wash-ACT-INF.
'to wash' | Active |
| b. loot-aa -go
wash-MIDDLE-INF.
'to wash oneself' | Middle |
| c. loot-ee -go
wash-PASS-INF.
'to be washed' | Passive |

2.4.4 Aspect

³ I indicate the active form of a verb with a null morpheme. But maybe the active form of a verb is a default form which does not necessarily involved an active morpheme at all.

There is a rich array of aspectual morphemes and constructions in Pulaar. These include perfective and imperfective morphemes, and progressive constructions: (25a-c) below show respectively a perfective, an imperfective and a progressive construction.

- | | |
|---|--------------|
| (25)a. Mi yaa-ma.
I go-PERF
'I went, I have gone' | Perfective |
| b. Mi yah-at.
I go-IMPERF
'I will go' | Imperfective |
| c. Mido yah-a.
I go-PROG
'I am going' | Progressive |

In (25a), the action of the verb is completed. In (25b), the action is not yet undertaken while in (25c) it is ongoing. However, the imperfective morpheme in (25b) can also express progressive or the habitual, as I will show later when I discuss the imperfective morphemes more in depth. The progressive morpheme, *-a*, in (25c) can, in other contexts, express present conditional, in which case the subject pronoun is *mi* instead of *mbidó*, as in (26).

- (26) O ar -i han mi yah-a.
He come-PERF when I go-PROG
'When he comes, I go'

The different aspectual constructions in (25) above can also contain the past tense morpheme, except for the progressive, as can be seen in (27)a, b, and c below:

- | | |
|--|---------------------------------|
| (27)a. Mi yaa-noo-m.
I go-PAST-PERF
'I went, I have gone' | (Past Perfective/Perfect) |
| b. Mi yah-at-no
I go-IMPERF-PAST
'I would go' | (Past Imperfective/Subjunctive) |
| c. *Mbidó yah-a-no ⁴
I go-IMPERF-PAST
'Intended: I was going' | |

⁴ 'I was going' can be expressed using the imperfective morpheme *-at* together with the past morpheme *-no(o)* as in '*mi yah-at-no*', but it can also be expressed using the free morpheme *taa* (meaning something along the lines of 'then', at that time') and the progressive morpheme *-a* as in '*Taa mbidó yah-a*'. In the latter case, the past morpheme *-no* is banned.

- d. *Mbidó yah-no-a⁵
 I go-PAST-IMPERF
 ‘Intended: I was going’

As I have shown above, Pulaar has quite a rich aspectual system. In the remainder of this thesis, I will focus on perfective and imperfective forms. I will leave the progressive as well as other aspects for future research. In what follows, I will provide more detail on perfective and imperfective constructions.

2.4.5 Focus

The verb form varies with respect to what part of the clause is focused (a DP or the verb itself). It also has a specific form for neutral clauses and wh-questions, as can be seen in the example below. Although all the sentences in (28) should be interpreted as referring to a completed event, we can see that the verb does not have the same form in all of them. In (28a), the past morpheme and the perfective morpheme are overt. But in (28b-d), only the past morpheme is overt. In addition, while the vowel in the past morpheme can be long in (28a-c), it is always short in Verb Focus structures with the focus particle *ko*.

- | | |
|--|-------------|
| (28)a. Mi yii- noo-m raandu ndu.
I see-PAST-PERF dog.CL the.CL
‘I saw, I have seen’ | Neutral |
| b. (Ko) raandu ndu jjii- noo mi.
FOC dog.CL the.CL see-PAST 1SG
‘It’s the dog that I saw’ | DP focus |
| c. Ko jjii- noo mi?
What see-past-1SG
‘What did I see?’ | Wh-question |
| d. (Ko) mi yii- no raandu ndu.
FOC 1SG see-PAST dog.CL the.CL
‘I saw the dog (not heard it bark)’ | Verb focus |

Notice that wh-question and DP focus are the same; i.e. they have the same verb forms. In both of them, the subject is post-verbal.

Pulaar has a wide range of perfective and imperfective allomorphs. The forms of the perfective verbs vary according to the voice of the verb (active, middle or passive) as well as what is focused in the clause. Thus, there are three perfective morphemes that are used in different contexts and assume different forms for each voice. Table 9 below presents the perfective verb suffixes in the Toore dialect:

⁵ ‘I was going’ can be expressed using the imperfective morpheme –at together with the past morpheme –no(o) as in ‘*mi yah-at-no*’, but it can also be expressed using the free morpheme *taa* (meaning something along the lines of ‘then’, at that time’) and the progressive morpheme –a as in ‘*Taa mbiḏó yah-a*’. In the latter case, the past morpheme –no is banned.

(29) Table 9: Perfective morphemes⁶

Context of use	Active	Middle	Passive
Neutral	-m(a)	-iim	-aam
DP Focus	-i	-ii	-aa
Verb Focus	-∅	-i	-a

The neutral verb form is used when nothing is in focus. (30a) shows neutral perfective morpheme *-m(a)*⁷ on the active verb root. In (30)b-c, the perfective *-m* is attached to the middle and passive morphemes *-ii* and *-aa* respectively.

- (30)a. Kumba loot-**ma** comci di. Active
 Kumba wash-PERF.NEUT clothes.CL CL.the
 ‘kumba has washed the clothes’
- b. Kumba loot-**iim**. Middle
 Kumba wash-PERF.NEUT
 ‘Kumba has wash’
- c. Kumba loot-**aam**. Passive
 Kumba wash-PERF.NEUT
 ‘Kumba is washed’

Unlike in the neutral perfectives, the perfective *-m* does not show up in DP focus perfectives as in (31) below. Focused items are optionally preceded by the particle *ko*. For the active, the morpheme *-i* appears as a DP focus perfective. As for the middle and passive verbs (31b-c), they occur respectively with the morpheme *-ii* and *-aa* when the subject is focused.

- (31)a. (Ko) Kumba loot-**i** comci di. Active
 FOC Kumba wash-PERF.FOC.SUBJ clothes.CL CL.the
 ‘It is Kumba who washed the clothes (not Maram)’
- b. (Ko) Kumba loot-**ii**. Middle
 FOC Kumba wash- PERF.FOC.SUBJ
 ‘It is Kumba who washed (not Maram)’
- c. (Ko) Kumba loot-**aa**. Passive
 FOC Kumba wash- PERF.FOC.SUBJ
 ‘It is Kumba who is washed herself(not Maram)’

The picture is the same as the examples above, when the focused DP is a non-subject.

⁶ In Sylla 1993, what I label “Neutral” is referred to as ‘P3’.

⁷ It should be noted that the [a] between parentheses appears when the perfective morpheme follows a consonant as in *naw-ma* ‘has taken’, *sood-ma* ‘has bought’, *yottin-ma* ‘has brought (to destination)’. But only *-m* appears when the active verb root ends in a vowel as in *funtu-m* ‘has got out’, *jokku-m* ‘has followed’, *riwdu-m* ‘has chased’.

- (32)a. (Ko) comci d̩i Kumba loot-i . Active
 FOC clothes.cl cl.the Kumba wash- PERF.FOC.SUBJ
 ‘It is the clothes that kumba who washed.
- b. (Ko) tuuba ba o duf-ii. Middle
 FOC pants.cl cl.the 3sg wash- PERF.FOC.SUBJ
 ‘It is the pants that he is wearing’

However, DP focus for the passive is only possible when the focused DP is the subject. In the examples above, the focused DP is the object. Yet, the passive requires that the object becomes subject. Thus, only the subject can be focused. In Toore, the focused object is moved to the front.

The data in (33) below show the Verb Focus Perfectives in the active, middle and passive verb forms. For the active verb (33a), the perfective is expressed by a null morpheme. The middle and the passive verbs (33b-c), on the other hand, have overt morphemes.

- (33)a. Kumba (ko) loot-∅ comci d̩i Active
 Kumba FOC wash-PERF.FOC.VERB clothes.cl cl.the
 ‘What Kumba did is wash the clothes (not iron them)’
- b. Kumba (ko) loot-i Middle
 Kumba FOC wash-PERF.FOC.VERB
 ‘What Kumba did is wash (not dress)’
- c. Kumba (ko) loot-a. Passive
 Kumba FOC wash-PERF.FOC.VERB
 ‘Kumba is washed (not dressed)’

Table 10 below displays the imperfective morphemes in Pulaar. These morphemes vary with regard to the context of use (meaning intended) and the voice of the verb (active, middle or passive).

(34) Table 10: Imperfective morphemes

Context of use	Active	Middle	Passive
Imperative	-∅	-o	-e
Progressive	-a	-oo	-ee
Neutral Imperfective	-at	-oto	-ete
Focus Imperfective	-ata	-otoo	-etee

The forms in Table 10 result from morpho-phonological operations where different morphemes can interact. Table 11 below displays those morpho-phonological operations that derive the surface forms in Table 10.

(35) Table 11: Derivation of Imperfective Morphemes

	Active	Middle	Passive
Progressive	-a-∅ → -a	-a-o → -oo	-a-e → -ee
Neutral Imperfective	-at-∅ → -at	-at-o → -oto	-at-e → -ete
Imperative	-∅-∅ → -∅	-o-∅ → -o	-e-∅ → -e
Focus Imperfective	-at-a-∅ → -ata	-at-a-o → -otoo	-at-a-e → -etee

For the progressive, the morpheme *-a* is associated with the null active morpheme and the middle and passive morphemes, respectively *-o* and *-e*. The latter two cases yield long vowels as a result of vowel harmony. In the neutral imperfective, the imperfective morpheme *-at* is fused with the active, middle and passive morphemes to yield the surface forms. The same way, the null imperative morpheme is computed with the active, middle and passive morphemes to give the surface representation of the imperative. For the focus imperfective, however, the neutral imperfective and the progressive, in that order, are fused with the active, middle and passive morphemes to give the surface forms. The arrows in the table indicate the surface forms shown in Table 10. Notice that vowel harmony operates throughout; the preceding vowels assimilate to the last vowel. In the subsequent examples, I will stick to the surface forms resulting from the morpho-phonological operations shown in Table 11.

(36)a,b,c below shows the imperative which is expressed with just the root of the active verb (36a), but with the morphemes *-o* in (36b) and short *-e* in (36c) respectively for the middle and passive verb types.

- | | | | | |
|--------|--|---------------------|-------------------------------|---------|
| (36)a. | Kumba, loot-Ø
Kumba wash-IMPER
'kumba, wash the clothes!' | comci
clothes.CL | đi.
CL.the
(Imperative) | Active |
| b. | Yo Kumba loot- o .
HORT Kumba wash-MID-IMPER
'I command Kumba to wash!' | | | Middle |
| c. | Yo Kumba loot- e .
HORT Kumba wash-PASS-IMPER
'I order Kumba be washed' | | | Passive |

The active progressive in (37) has *-a* suffixed to the root. The middle and the passive progressive morphemes differ and are *-oo* and *-ee* respectively, as in (37b-c) below:

- | | | | | |
|--------|---|---------------------|---------------|---------|
| (37)a. | Kumba mo loot- a
Kumba she wash-ACT.PROG
'kumba is washing the clothes' | comci
clothes.CL | đi.
CL.the | Active |
| b. | Kumba mo loot- oo .
Kumba she wash-MID.PROG
'Kumba is undergoing a wash' | | | Middle |
| c. | Kumba mo loot- ee .
Kumba she wash-PASS.PROG
'Kumba is being washed' | | | Passive |

The active imperfective verb is composed of the root of the verb suffixed with *-at*. The middle and passive imperfectives are composed of the imperfective *-at* and the short vowels of, respectively, the middle and passive imperatives, as can be seen in (38)c-d.

- (38)a. Kumba loot-**at** comci di. Active
 Kumba wash-NEUT.IMPERF clothes.cl cl.the
 ‘Kumba is going to/will wash the clothes’
- b. Kumba loot-**oto**. Middle
 Kumba wash-NEUT.IMPERF
 ‘Kumba will undergo a wash’
- c. Kumba loot-**ete**. Passive
 Kumba wash-NEUT.IMPERF
 ‘Kumba will be washed’

The argument that the focus imperfective is composed of the imperfective morpheme *-at* and the imperative morphemes seems to hold since, in some contexts, the neutral imperfective can be used as a habitual imperative, as in (39a-c) below. In any case, the active imperative morpheme is null, as the description in Table 9 shows.

- (39)a. Yah-**at** toon.
 go-NEUT.IMPERF there
 ‘Take the habit to go there’
- b. Loot-**oto**.
 Wash-NEUT.IMPERF
 ‘Take the habit to wash’
- c. Yo o loot-**ete**.
 HORT he wash-NEUT.IMPERF FUT
 ‘Let him be washed habitually.’

As shown in the description in Table 11, the focus imperfective is a combination of the imperfective morpheme *-at* and the active, middle and passive morphemes of the progressive. Thus, (40)a shows the progressive morpheme for the active when the subject is focused. This morpheme can be seen as consisting of *-at* and *-a*. the pattern is the same for the middle verb (40b) and the passive verb (40c).

- (40)a. Kumba loot-**ata** comci di. Active
 Kumba wash-FOC.IMPERF clothes.cl cl.the
 ‘It is kumba who is washing/going to/will wash the clothes’
- b. Kumba loot-**otoo**. Middle
 Kumba wash- FOC.IMPERF
 ‘It is Kumba who is washing/will wash’
- c. Kumba loot -**ete**. Passive
 Kumba wash- FOC.IMPERF
 ‘Kumba who is being washed/will be washed’

2.4.6 Verb movement in Pulaar

As Ayoun (1999/2000) states, verb movement phenomena include an array of apparently unrelated syntactic structures – sentence negation, inverted questions, adverb placement, floating quantifiers and quantification at a distance – in both tensed or [+finite], and infinitive or [–finite] clauses. The following account is taken from Pollock (1989, 1997), revisited by Ayoun (1999/2000).

In finite contexts, both French and English are assumed to have the underlying structure presented in (1):

[_{TP} NP T ([Neg not/pas]) [_{VP} (Adv) V...]]

The adverb precedes the verb within Verb Phrase, and has NegP to its left. Thus, whenever the verb ends up preceding adverbs or negation on the surface structure, it has been raised out of its initial position.

We can consider the following well-known examples in which the contrast is made between French and English structures involving Negation, Inversion and Adverbs:

- (41)a. *John sees not Mary.
b. Jean (ne) voit pas Marie.

- (42)a. *Sees he Marie?
b. Voit-t-il Marie?

- (43)a. *John sees often Marie.
b. Jean voit souvent Marie.

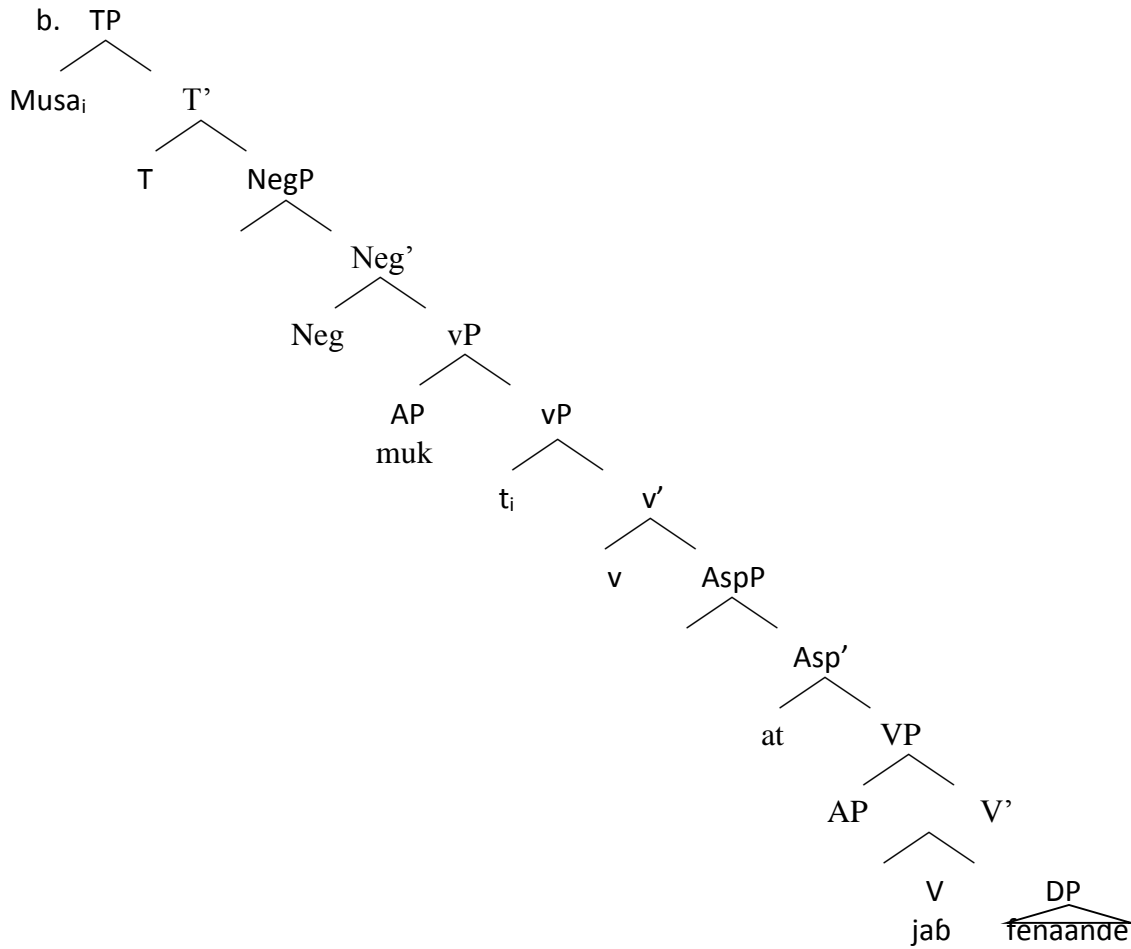
- (44)a. John often sees Marie.
b. *Jean souvent voit Marie.

In the French examples, the verb must move up to a higher position, while in English, it cannot because of its weak verbal morphology.

I argue that the verb moves in Pulaar in a way similar to French. The movement of the verb in Pulaar can be motivated by a need to check a V feature on morphemes which attach on it.

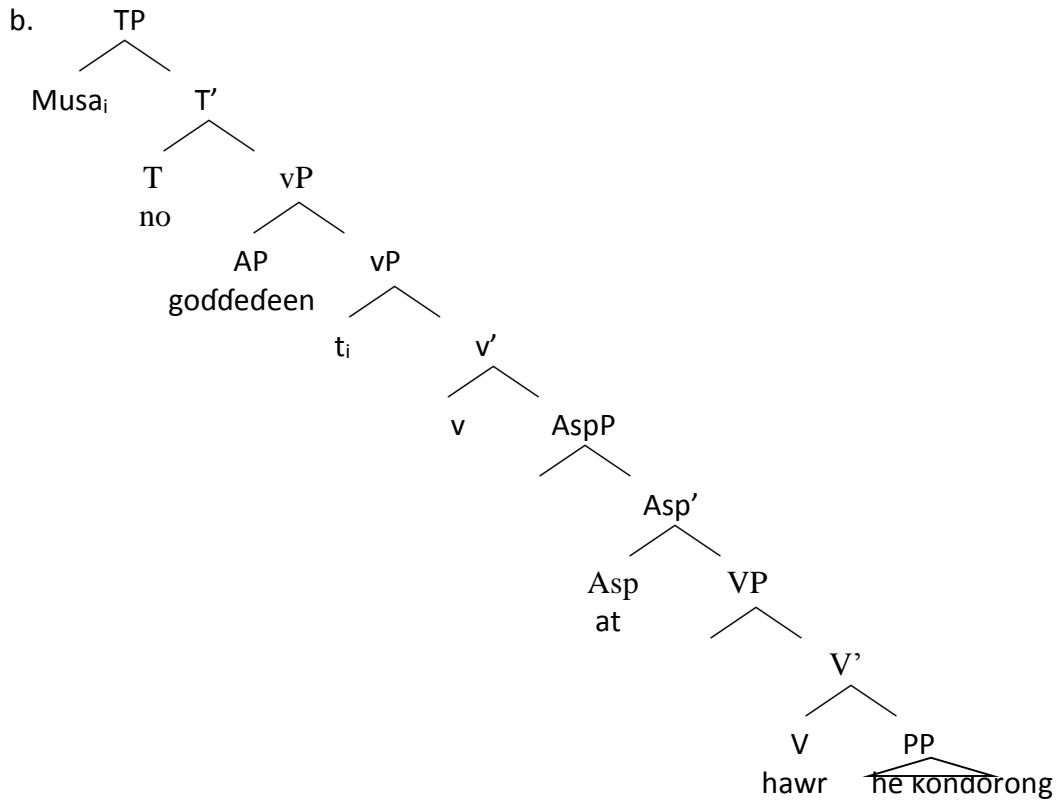
In Pulaar, the verb can precede negation (a bound morpheme), adverbs and floated quantifiers, as the following examples show:

- (45)a. Musa jaɓ-at-aa-no muk fenaande
Musa accept-IMPERF-NEG-PAST never lies
'Musa never accepts/condones lies'



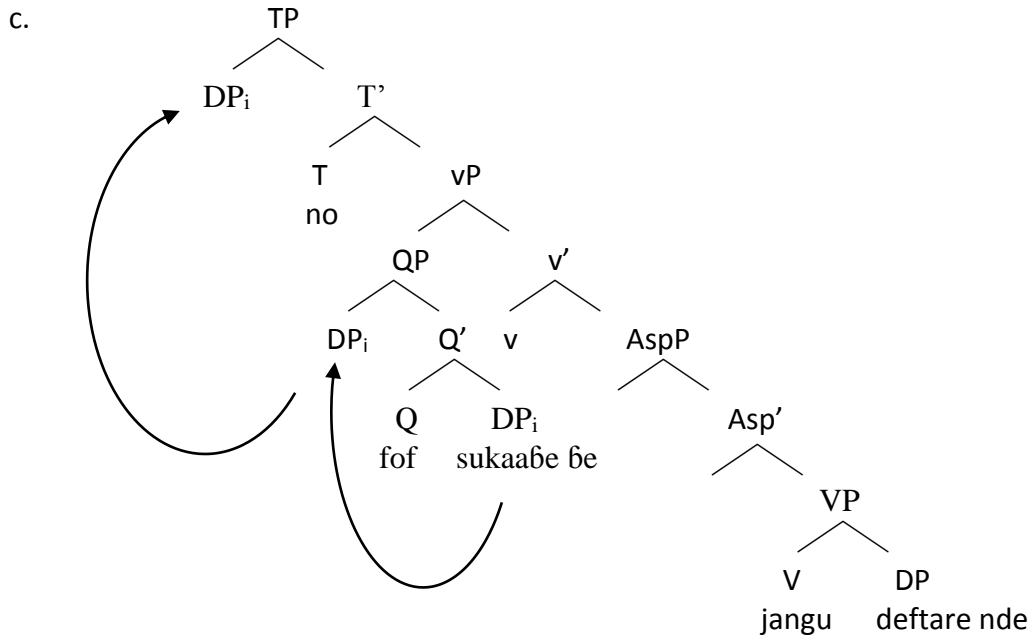
For the surface order in (45a) to emerge, the verb must raise past the adverb, and all the way to T through Asp and Neg which are all suffixal in Pulaar. As a result, the verb precedes both Neg, the adverb and the aspect marker *-at*. The same observation can be made for the example in (46) where the verb precedes the adverb.

- (46)a. Musa hawr-at-no godfedeen he kondorong.
 Musa meet-IMP-PAST often with efl
 ‘Musa often met with an elf’



Here again, the verb has to move to T and through Asp, thus leaving the adverb below. Consequently, the verb precedes the adverb in the linear order. In addition to these two cases where the verb precedes adverbs and negation, the example in (47) shows that the verb can either follow or precede a floated quantifier.

- (47)a. Sukaabe be **fof** njangu-noo deftare nde
 child.PL CL.the all read-PAST book CL.the
 ‘The children have all read the book’
- b. Sukaabe be njangu-noo be **fof** deftare nde
 child.PL CL.the read-PAST 3PL all book CL.the
 ‘The children have all read the book’



The example in (47a) shows that the quantifier can form a constituent with the DP subject whereas the example in (47b) shows that the quantifier can be floated in its base position as the DP raises to a higher subject position and the verb raises around the floated quantifier. This mechanism is demonstrated by tree structure in (47c).

The structure in (47c) suggests that for the surface order in (47b) to obtain, the verb must raise to T around the floated quantifier, thus preceding it. The floated quantifier is preceded by a pronoun in (47b) which, I consider, is resumptive. This word order alternation is evidence for verb raising in Pulaar. But it also shows that the subject originates down low.

The occurrence of a resumptive with the floated quantifier in Pulaar is similar to quantifier float in Twi, a language spoken in Ghana and in which a resumptive pronoun occurs necessarily with the floated quantifier, as shown in (48a-c) from Kandybowicz (2013).

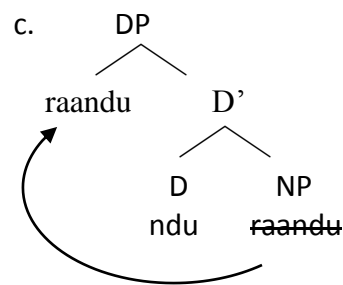
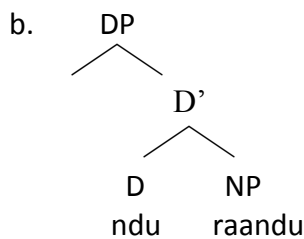
- (48)a. [Kofi nko] bε-bɔ Ama.
 Kofi only FUT-kick Ama
 ‘Only Kofi will kick Ama.’
- b. [Kofi nko] na ɔ-bε-bɔ Ama.
 Kofi only FOC 3SG-FUT-kick Ama
 ‘It’s ONLY KOFI that will kick Ama.’
- c. Kofi na *(ɔno) **nko** bε-bɔ Ama.
 Kofi FOC 3SG only FUT-kick Ama
 ‘It’s only KOFI that will kick Ama.’

The example in (48c) shows that a resumptive pronoun has to precede the floated quantifier when the DP has raised to Spec, FocP.

Notice that in the tree in (47c), the quantifier selects the DP as its complement, but the latter will end up moving to Spec, QP. Although this movement seems non-standard, it appears to be similar to other phenomena, especially DP structure in Pulaar (see example (49) below). In both the DP and derived object cases, some head (a D or Asp) attracts some material (an NP or DP) in its specifier. As a result of such derivation, the complement precedes its head on the surface structure. We can assume that D and Q have EPP features which attract their complement in their specifier position.

(49) Derivation of DP in Pulaar

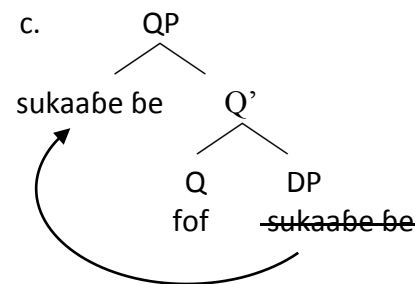
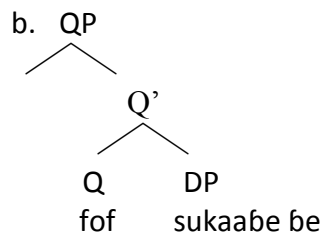
- a. raandu ndu
 dog CL.the
 'the dog'



The surface order of the DP in (49a) starts off as (49b) then movement of the NP to the specifier of DP derives the correct DP structure. Compare (49a-c) to the derivation of the QP structure in (50):

(50) Derivation of the Quantifier Phrase in Pulaar

- a. sukaabe be fof
 child.PL CL.the.PL all
 'all the children'



Just like in (49) where the D selects an NP which then moves to Spec, DP; the quantifier selects a DP which ends up raising to Spec, QP and, thus, precede the quantifier on the surface.

2.5 Subject marking

In Pulaar, the verb agrees in number with the subject (Sylla 1993). Contrasting (51a) and (51b) below, we see that the verb undergoes a phonological change with regard to the number of the subject. (51a) shows the form of the verb with a singular subject while in (51b), we see the form of the verb with a plural subject, the verb also is plural. In (51a), where the subject is singular, the verb stem begins with [s]. In (51b), where the subject is plural, the verb stem begins with [c] (a voiceless palatal stop). This change in the initial consonant which realizes agreement, “initial consonant mutation” is found in a number of Atlantic languages (Sapir, 1971; Holst, 2008). I refer to the form that occurs with singular subjects as the “simple” stem, and the form that occurs with plural subjects in (51b) as the “mutated” stem. Consonant mutation occurs when the subject is plural, thus, showing the agreement of the verb in number.

- (51)a. Mi/a/o⁸ sood-ma oto-∅. Singular subject
 1sg/2sg/3sg buy.SG-PERF.NEUT car-cl
 ‘I/you/he have bought a car’
- b. En/on/be cood-ma oto-∅. Plural subject
 1pl/2pl/3pl buy.PL- PERF.NEUT car-cl
 ‘We/you/they have bought a car’

The same pattern of consonant mutation can be seen in (52)a-b. In (52a) the initial consonant of the verb is <y> with a singular subject. But this initial consonant changes to <nj> when the subject is plural as in (52b).

- (52)a. Mi/a/o yiy-aa-no Samba.
 1sg/2sg/3sg see.SG-NEG-PAST Samba
 ‘He did not see Samba’
- b. En/on/be njiy-aa -no Samba.
 1pl/2pl/3pl see.PL-NEG-PAST Samba
 ‘They did not see Samba’

In fact, the distribution of initial consonant mutation is rather complex. For example, in wh-questions, the verb form varies according to whether the subject marker precedes or follows the verb. When the subject marker follows the verb, as in (53b), the verb takes the mutated form, even if the subject is singular.

- (53)a. A sood-ma oto.
 You buy.SG-PERF.NEUT car.cl
 ‘You bought a car’
- b. Ho ko cood-**ɗaa**?
 Q what buy-you

⁸ The 3sg form corresponds to masculine or feminine. However, I will just translate as masculine.

‘What did you buy?’

- c. Ho ko o sood-i?
Q what he buy.SG-PERF.NEUT
‘What did he buy?’

In (53b) the singular subject follows the verb. So, the verb is in mutated form, although the subject is singular. (53b) can be compared to (53c) where the subject is 3SG and precedes the verb.

Pulaar has four types of subject pronominals occurring in different contexts. These pronoun types belong to different paradigms. The first group of pronouns is the “Neutral” Pronouns, because they occur in neutral contexts, that is, where nothing is focused. The second group can be labeled the Focus Clause Pronouns, occurring in wh-questions, conditional constructions and focus clauses. The third group can be referred to as the Progressive Pronouns which encode the progressive or the stative. The fourth group of pronouns consists of Focus or Independent Pronouns since they occur only in contexts of DP subject or object focus. Below is the table of neutral subject pronouns.

(54) Table 12: Neutral Pronouns⁹

Gloss	Neutral Pronouns
1sg	mi
2sg	a
3sg	o
1pl.excl	min
1pl.incl	en
2pl	on
3pl	be

- (55)a. **Mi** yaa-ma.
1SG go-NEUT.PERF
‘I went, I have gone’

- b. **A** yah-at
2SG go-IMPERF
‘You will go’

- c. **O** wii be ñjah-a
3SG say 3PL go-IMPERF
‘He says they go’, ‘He asks/allows them to go’

For all the neutral pronouns, except for 1SG and 1PL EXCL and 3SG/PL, there is a corresponding Focus Clause Pronoun that occurs only post-verbally, especially in wh-questions, relative clauses focus and conditional clauses.

⁹ I call these “pronouns” following Sylla (1993) and Arnott (1977).

(56) Table 13: Focus Clause Pronouns

Gloss	Focus Clause Pronouns
1sg	-mi
2sg	- <i>daa</i> / -a
3sg	o
1pl.excl	min
1pl.incl	- <i>den</i> / -en
2pl	- <i>don</i> / -on
3pl	be

The example below shows clearly that these two groups of pronouns belong to two different paradigms.

- (57) a. **A**¹⁰ yii--ma gujjo mo.
You see-PERF.NEUT thief-CL CL.the
'You saw the thief'
- b. Ho mo ñjii-**daa**?
Q who see-you
'Who did you see?'
- c. **On** ñjii-moo-m.
2pl see-him/her- PERF.NEUT
'You saw him/her'
- d. Ko deeko ñjii-**don**.
FOC him see-you.PL
'It's him that you (plural) saw'

The third set of subject pronouns, the Progressive Pronouns, occurs in stative constructions and with neutral progressive imperfectives.

¹⁰ However, while the forms *daa* '2SG' and *don* '2PL' occur only post-verbally, their respective counterparts *a* and *on* occur both in pre-verbal and post-verbal positions. They assume a post-verbal position in wh-questions and focus when the verb ends in a consonant, as can be seen in the following example.

- (1) a. (Ho) to ñjah-ata-a?
Q where go-NEUT.IMPERF-2SG
'Where are you going?'
- b. (Ko) bimbi ñjah -at-on.
FOC tomorrow go-NEUT.IMPERF-you.PL
'It's tomorrow that you are going'

(58) Table 14: Progressive/Stative Pronouns

Gloss	Progressive Pronouns
1sg	mbido
2sg	(ha)da
3sg	(ho)mo
1pl.excl	mbidoŋ
1pl.incl	(he)den
2pl	(ho)don
3pl	(he)be

These pronouns occur preverbally. (59a-b) shows progressive-encoding pronouns occurring with DP Focus perfectives and (59c-b) shows that they occur with neutral progressive imperfectives.

The fourth set of subject pronouns occurs in progressive and stative constructions. But, for most of them, their first syllable is optional, except for the first person singular and plural. These pronouns are never in post-verbal position. They generally occur with DP Focus perfectives and progressive imperfectives. (59a-b) shows progressive/stative pronouns occurring with DP Focus perfectives and (59c-b) shows them occurring with progressive imperfective constructions.

- (59)a. **Mbido** sood-i oto. Stative
 I buy- PERF.FOC car.cl
 'I have bought a car'
- b. **(Ho)don** nodd-aa riño Stative
 You.PL call-PERF.FOC meeting.CL
 'You are summoned to a meeting'
- c. **(Ha)da** yah-a gese? Progressive
 I go-PROG farm.CL
 'You are going to the farm, right?'
- d. **Homo** loot-oo. Progressive
 He wash-PROG
 'He is washing himself'

I refer to the fourth set of pronouns as Independent Pronouns. In fact, this class of subject pronouns is essentially a DP Focus class.

(60) Table 15: Independent Pronouns

Gloss	DP Focus Pronouns
1sg	miin
2sg	aan
3sg	moon, deeko
1pl.excl	minen
1pl.incl	enen
2pl	onon
3pl	been, deebe

The independent pronouns are bimorphemic and consist of the neutral pronouns with a nasal (-*n*)¹¹. For neutral pronouns that end with a consonant (1SG, 2SG, 3SG/PL), a vowel is inserted between the consonant and the nasal suffix. The inserted, thus, vowel harmonizes with the one in the neutral pronoun.

(61) Table 16: Morphemic Analysis of Independent Pronouns

Gloss	Neutral Pronouns	Nasal suffix		Independent Pronouns
1sg	mi	-n	⇒	miin
2sg	a	-n		aan
3sg	mo	-n		moon
1pl.excl	min	-n		minen
1pl.incl	en	-n		enen
2pl	on	-n		onon
3pl	be	-n		been

Notice that when the Neutral Pronoun ends with a vowel, that vowel is lengthened in the corresponding Independent Pronoun. These pronouns occur more frequently with DP Focus perfectives and Focus Imperfectives (progressive with DP focus), as (61) below shows. In (62a-b), we see Independent pronouns occurring with DP Focus perfectives and in (62c-d) they occur with Focus Imperfectives. In all of these occurrences, they can co-occur with the focus particle *ko* which, however, remains optional.

- (62)a. Mi yii-ma be/*been.
 1sg see-PERF.NEUT 3PL
 ‘I saw them’
- b. (Ko) miin/*mi yi’-i be.
 FOC 1SG/1SG see-PERF.FOC 3PL
 ‘It’s me who saw them’
- c. (Ko) deebe/*be njii-mi.
 FOC 3PL/3PL see-1SG
 ‘They are the ones that I saw’

These Independent pronouns can be interpreted as subjects (62b) or objects (62c). However, they cannot be interpreted as objects in non-focused contexts as in (62a). But, as their name indicates, they can occur in isolation on the left edge, unlike other groups of pronouns. In these cases, they occur as topics and they are resumed by neutral or progressive/stative pronouns.

¹¹ This looks very similar to the structure of Wolof strong pronouns (Torrence 2005).

Wolof:
 ma + n → man ‘1SG’
 nu + n → nun ‘1PL’

Toore:
 mi + n → miin ‘1SG’
 min + n → minen ‘1PL’

(63)*On/*hodon/onon¹² on njaa-noo-m toon.
 2PL 2.PL go-PAST-NEUT.PERF there
 ‘As for you, you went there’

(64)a. Aan (ha)da yah-a Dakar kala lewru.
 You you go-PROG Dakar every month
 ‘As for you, you are go to Dakar every month’

b. Onon (ho)don ñjog -ii kaalis.
 You.PL you.PL have-PERF.FOC money.CL
 ‘As for you, you have money’

Independent pronouns can also co-occur with the DP they refer to. In other words, they are not in complementary distribution when the DP is focused. This can be seen in the example in (65) below.

(65)a. (Ko) onon mawbe be ngard-otoo.
 FOC 2PL old.CL cl.the lead-FOC.IMPERF
 ‘You the elders should be leading the way’

b. (Ko) Minen elewaabe be mbinnd-ata leetar mo.
 FOC we student.cl cl.the write-NEUT.IMPERF letter.cl cl.the
 ‘We the students are the ones who will be writing the letter’

Another property of independent pronouns is that they cannot be objects of prepositions. In this context, a genitive pronoun is used instead.

(66)(ko) dow maako/*deeko teg-mi deftare nde.
 FOC on 3SG.GEN/3SG put-1SG book.CL CL.the
 ‘It’s on him that I put the book’

¹² These pronouns can occur post-verbally in Fuuta, but this is not possible in Toore.

(2) be kald-ata ko enen Fuuta
 they talk-NEUT.IMPERF
 ‘We are the ones they are talking to’

(3) *be kald-ata ko enen Toore
 they talk- NEUT.IMPERF
 ‘We are the ones they are talking to’

However, when they are preceded by a relative clause, they can occur post-verbally in Toore.

(4) Mbaw-dô ma moo noon wii ko miin.
 can-REL 2SG CL.the that say FOC 1SG
 ‘The one who can tell you that is me’

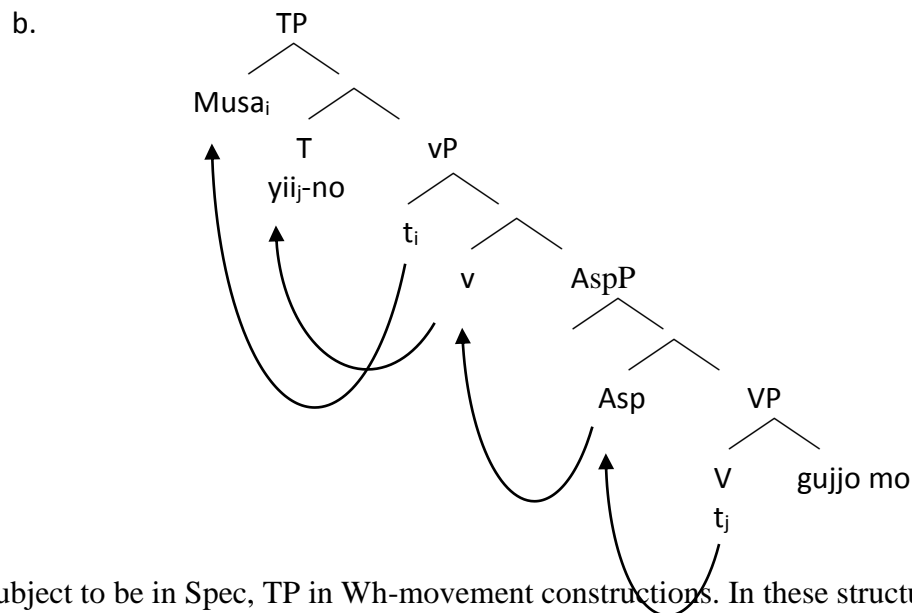
In addition, two independent pronouns cannot be coordinated; they can only be the first member of coordination. The second member of the coordination is either a full DP or a genitive pronoun.

- (67)a. (ko) deeko he *deebe/maabe njaa-du-noo.
 foc 3sg and 3pl/3pl.gen go-ass-past
 ‘It’s him and them that went together’
- b. *(ko) maabe he deeko njaa-du-noo.
 foc 3sg.gen and 3pl go-ass-past

2.6. Position of the subject in Pulaar

I argue that the subject moves to Spec, TP in Pulaar. This movement is driven by the EPP feature on T. I argue that the verb raises to T and the subject moves from its VP-internal position to Spec, TP, as in (1a, b):

- (68)a. Musa yii-no gujjo mo.
 Musa see-PAST thief CL.the
 ‘Musa saw the thief’



I also assume subject to be in Spec, TP in Wh-movement constructions. In these structures, however, T-to-C movement does not appear to always take place. In some cases the tensed verb precedes the subject (Subject-Verb Inversion) and in others it follows the subject, as the examples below show:

- (69)a. Homo **Musa** yii-noo?
 who Musa see-PAST
 ‘Who did Musa see?’

- b. Homo **o** yii-noo?

who 3sg see-PAST
'Who did he see?'

- c. Homo njii-no-**faa**?
who see-PAST-2SG
'Who did you see?'

The DP subject in (69a) and the pronoun in (69b) precede the verbal complex whereas the pronoun in (69c) follows the subject. DP subjects always precede the verbal complex in Wh-constructions, while there is some variability with respect to pronouns. The variability, however, is limited to pronouns denoting humans. With animals for instance, the noun class standing for the pronoun has to precede the verb when it is subject and follow it when it object.

- (70)a. Homo **ndu** wof-noo?
who 3sg bark-past
'Who did it (the dog) bark at?'
- b. Homo riw-noo **ndu**?
who chase-past 3sg
'Who chased it (i.e. 'the dog')?'
- c. *Homo wof-noo **ndu**?
who bark-past 3sg
Intended: 'Who did it (.e. 'the dog') bark at?'

We can assume that the variability in the position of the pronoun depends on other reasons (phonology, for instance) than syntactic. But the subject appears to occupy two topic position: one higher and one lower than a focus position.

- (71)a. **Musa** min-en yii-noo.
Musa.TOP 1PL-FOC see-PAST
'As for Musa, it is us that he saw'
- b. **Deeko** min-en *(o) yii-noo.
3SG.STRG.TOP 1PL-FOC 3SG see-PAST
'As for him, it is us that he saw'

What the examples in (71) show is that the subject can actually occupy two surface positions with at least one higher than. We compare (71) to (72) below:

- (72)a. Minen **Musa** yii-noo.
1PL.FOC Musa.TOP see-PAST
'It is us that Musa saw'
- b. Minen **deeko** *(o) yii-noo.
1PL.FOC 3SG.STRG.top 3sg see-PAST
'It is us that he saw'

Here again, both *Musa* and *deeko* can be considered to be in Spec, TopP (the lower topic position in Rizzi's 1997 Split CP) in the sense that in the (b) example, the resumptive pronoun *o* can be

assumed to be in Spec, TP. The example in (72b) is just the example in (72a) where the DP *Musa* has been pronominalized, requiring a resumptive for reasons to be investigated in future research. So, we can assume then that the subject in Pulaar is either in Spec, TP; Spec, TopP of Spec, FocP.

2.7 Object Marking

The object is not marked in any way on the verb. In (73a) below, the object is singular while in (73b) the object is plural. In neither case is there a phonological or morphological change on the verb.

(73)a. Mi yii-ma suko mo.
 I see-PERF.NEUT child.CL CL.the
 ‘I saw the child’

b. Mi yii-ma sukaaɓe ɓe.
 I see-PERF.NEUT child.CL. CL.the
 ‘I saw the children’

Similarly, the verb does not show agreement for noun class. We can compare (73a) to (74) below to see that the form of the verb does not change according to the noun class of the object.

(74)Mi yii-ma pucuu ŋgu.
 I see-PERF.NEUT horse.CL CL.the
 ‘I saw the horse’

2.7.1 Object Pronouns

Some object pronouns (1SG/PL.EXCL, 3PL) in Toore are the same as their corresponding neutral (subject) pronouns.

(75)Table 17: Object Pronouns

Gloss	Object Pronouns
-------	-----------------

1sg	mi/ kam ¹³
2sg	ma
3sg	mo
1pl.excl	min
1pl.incl	men
2pl	mon
3pl	be

Notice that, unlike independent pronouns where the nasal *-n* is suffixed to neutral pronouns, here the nasal (m) appears to be prefixed to the neutral pronoun (where possible) to the object pronoun. In other words, object pronouns too appear to have a bimorphemic structure, as Table 18 shows.

(76) Table 18: Morphemic Analysis of Object Pronouns

Gloss	Nasal Prefix	Neutral Pronouns		Object Pronouns
1sg	∅	mi	⇒	mi
2sg	m	a		ma
3sg	m	o		mo
1pl.excl	∅	min		min
1pl.incl	m	en		men
2pl	m	on		mon
3pl	∅	be		be

Object pronouns in Toore appear to be built on the neutral (subject) pronouns by a morphological derivation. All of these pronouns, except 3PL, can be cliticized to the verb and followed by the neutral perfective.

- (77) O yii-no-mi/maa/moo/min/men/mon/*be-m(a).
 3sg see-past-1sg/2sg/3sg/1pl.excl/1pl.incl/2pl/3pl-perf.neut
 ‘He saw mi/you/him/us/you’

2.6.2 Genitive Pronouns

Genitive pronouns show some differences with regard to object pronouns, but there are also cases where the genitive pronoun is the same as the object pronoun, as Table 19 shows.

¹³ *kam* is used in contexts where *mi* is excluded, especially in negative sentences, verb focus, wh-questions.

- (5) O yii kam/*mi.
 3sg see.perf.foc.verb 1sg
 ‘He SAW me’
- (6) O yiy-aa kam/*mi.
 3sg see-neg.perf.foc.verb 1sg
 ‘He SAW me’
- (7) Homo yi’i kam/*mi?
 who see-PERF.FOC 1SG
 ‘Who saw me?’

(78) Table 19: Genitive Pronouns

Gloss	Genitive Pronouns
1sg	am
2sg	ma
3sg	maako/mum ¹⁴
1pl.excl	amen
1pl.incl	men
2pl	mon
3pl	maaʒe

We can notice that 2SG, 1PL.INCL and 2PL are exactly the same as their corresponding object pronouns. We can also note the similarity between 1sg and 1pl.excl. The latter appears to be built the former by the suffixation of *-en*. This morpheme is found in words *Halpulaar'en* (those who speak Pulaar), *Muusaa'en* (Muusaa and those with him). Similarly, the 1PL.EXCL genitive can be interpreted as 'me and those with me'. As to the 3sg and 3pl, they are reminiscent of the singular/plural alternations of the human class, as in *gorko* (SG)/*worʒe* (PL).

As I already said with regard the coordination of independent (strong) pronouns, genitive pronouns are always the second member of the coordination.

- (79) Miin he maako/*moon/*deeko njaa-du-noo.
 1sg and 3sg/3sg/3sg go-ass-past
 'It's me and him that went together'

3. The Clause Structure of Pulaar

In this section, I provide an analysis of the structure of the Pulaar clause. Specifically, I focus on the perfective and imperfective clauses. Thus, I look at structures like the following:

- (80)a. Mi yah-**ma**. Perfective
 I go-PERF
 'I went'
- b. Mi yah-**at**. Imperfective
 I go-IMPERF

¹⁴ *Mum* can be used human referents, especially with proper nouns.

- (8) Aali yaa-du-m he baa mum.
 Aali go-ASS-PERF.NEUT with father 3SG.GEN
 'Aali is gone with his dad'

But *mum* can also be used as a bound variable, or to refer to unspecified individuals.

- (9) Kala ko nedfó waf-i ko hoore mum.
 every what person do-PERF.FOC it.is head 3SG.GEN
 'Whatever a person does, they do it to themselves (Lit. their head)'

‘I will go’

In (80a) and (80b), we can see respectively the perfective and the imperfective morphemes attached to the verb root.

3. 1 Paradigms

I focus mainly on two paradigms within the perfective/imperfective dichotomy (see section 2.2.2.3 on aspect). Below, I lay out these paradigms which show the structural properties of the perfective and imperfective clauses in Pulaar (Toore, more specifically).

- (81) a. Mi yii-no-moo –**m** Perfective
I go-PAST-3SG-PERF
‘I had seen him/I saw him’
- b. Mi yiy-aa-no-mo-Ø
I go-NEG-PAST-3SG-PERF
‘I had not seen him/I did not see him’
- c. *Mi yiy-aa-no-mo-m
I go-NEG-PAST-3SG
‘I had not seen him/I did not see him’

In (81a), we can see the sequence *past-3sg-perf*. We can notice that the 3sg object is cliticized to the verb. Thus, it precedes the perfective morpheme. However, this can only occur in neutral affirmative contexts. In (81b), the perfective appears as a null morpheme due to the occurrence of the negation morpheme. Yet, even though the perfective morpheme is not overt, (81b) is semantically perfective and can only be interpreted that way in the sense that it is an event that has already ended. Consequently, I assume the presence of a null perfective morpheme the phonological spell-out of which is incompatible with negation in Toore.

In (82a), on the other hand, the object clitic follows not only past tense, but also the imperfective morpheme. This sequence does not change with the occurrence of negation which follows the imperfective morpheme. Notice that, unlike the perfective, the imperfective does co-occur with negation.

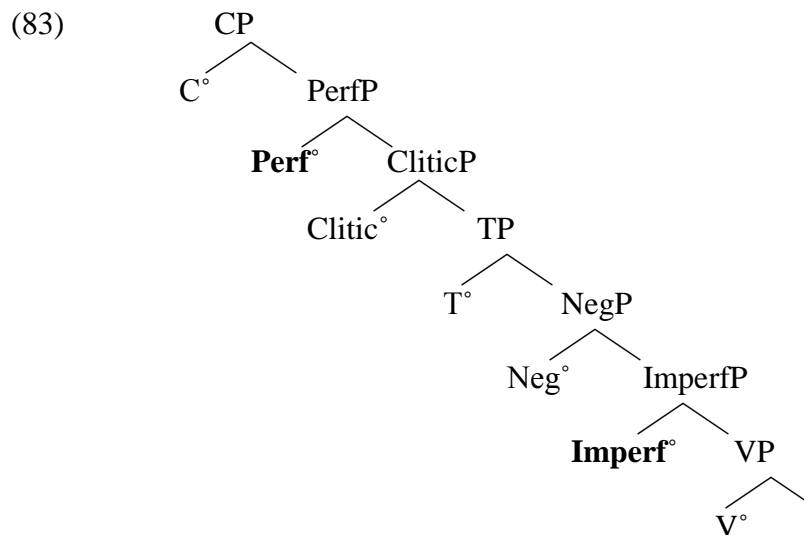
- (82) a. Mi yiy–**at**–no-mo. Imperfective
I go-IMPERF-PAST-3SG
‘I would see him’
- b. Mi yiy–**at**–aa-no-mo.
I go-IMPERF-NEG-PAST-3SG
‘I would not see him’
- c. *Mi yiy-no-mo–**at**.
I go-PAST-3SG-IMPERF
‘I would not see him’

The description of the perfective and imperfective constructions in the paradigms above shows some structural asymmetries between these two aspectual clauses. For instance, while the perfective can be preceded by an object clitic in some specific contexts, the imperfective can never be preceded by such clitic. In addition, the imperfective morpheme precedes both negation and past tense whereas the perfective morpheme appears to follow both of those functional morphemes.

The structures in (81b) and (82b) show that the perfective and imperfective morphemes are totally asymmetrical with regard to their structural position with respect to other functional heads in the clause, such as past tense and negation.

3. 2 General Assumptions

Given the structural properties displayed by perfective and imperfective structures, I argue for a Pulaar clause structure like the following:

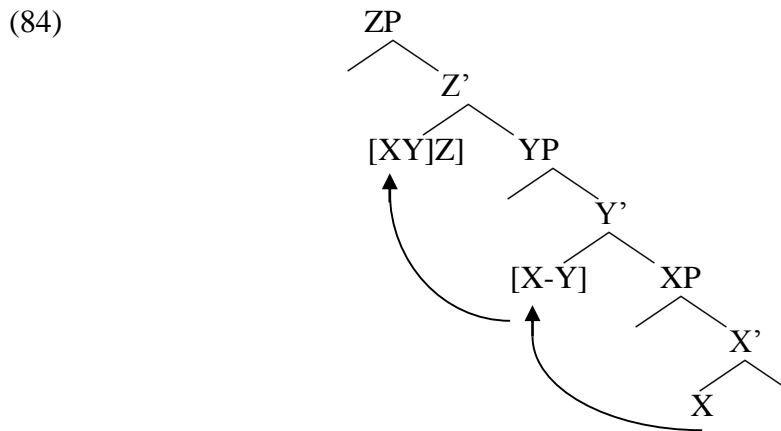


I hold perfective to be higher than tense and negation whereas imperfective is lower than both tense and negation. It follows logically from the previous statement that, for the analysis of the perfective and imperfective clauses in Pulaar, I am going to use two theoretical assumptions, namely Baker's (1985) Mirror Principle and Travis, (2010) Inner Aspect Hypothesis. But I will also compare the outcome to Cinque's (1999) Hierarchy of Functional Heads.

3. 3 Theoretical Assumptions

3. 3. 1 Mirror Principle

Baker (1985) claims that morphological derivations directly reflect syntactic derivations and vice versa. That is, the morphological structure of a clause is the reflection of the syntactic structure. In other words, the surface string of morphemes results from a series of syntactic derivations from an underlying mirror image hierarchy. For instance, when there is a sequence of morphemes $X > Y > Z$ in a word on the surface, these must have started out as Z, Y, X at an underlying level. To come up with the surface order of morphemes, X must raise up to Y and the complex head $[X-Y]$ then moves up and left-adjoins to Z , as in the abstract structure below.



The syntactic derivations in (84) where the underlying hierarchy is $Z > Y > X$ yield the surface order $X > Y > Z$ which is a perfect mirror image of the underlying order, as Baker claims.

The Pulaar verb structure can contain a certain number of morphemes. Negation, past tense, perfective and imperfective morphemes can all be attached to the verb root. In addition to the above, a relatively large number of derivational morphemes such as instrumental, benefactive, causative, etc. can be affixed to the verb at a time. This raises the legitimate question as to how the surface order of these morphemes is derived. With this regard, Baker (1985) offers a useful theoretical foundation on which an analysis of Pulaar clauses can be built. The question that comes next is: can we account for the structure of Pulaar perfective and imperfective clauses under the Mirror Principle or do we have to call on other procedures to derive the surface string of morphemes?

3. 3. 2 The Hierarchy of Functional Heads

Cinque (1999) argues that clause structure is much richer than previously assumed in terms of the functional heads that comprise it. In fact, Cinque points out in his reanalysis of the clause structure, that a clause may contain aspectual, mood and modal heads. Drawing examples from a variety of languages in a cross-linguistic perspective, he comes to the conclusion that functional heads across languages are in a fixed hierarchy. This can be seen in the hierarchy of functional heads in (85) which is a portion of Cinque's hierarchy:

(85) Mood_{speech act} > Mood_{evaluative} > Mood_{evidential} > Mod_{epistemic} > **T(Past)** > T(future)
 > .. Mood_{irrealis} > Mod_{root} > Aspect_{habitual} > / T(Anterior) > **Aspect_{perfect}** >
Aspect_{imperfective} > Aspect_{completive} > / Voice > **V**

In addition, Cinque claims that across languages, perfective aspect is always higher in the clause than imperfective aspect, as can be seen in the hierarchy in (85). In (85), both perfective and imperfective aspects are located below T(past) but perfective is actually higher than imperfective.

Given that I focus on perfective and imperfective clauses, Cinque's claim about the ordering of perfective and imperfective aspects is a fundamental theoretical assumption. As a matter of fact, the structure of Pulaar clause that I argue for contains both perfective and imperfective heads with the former being higher than the latter. With that regard, Cinque's claim appears to be all the more relevant to this study since in Toore, perfective and imperfective morphemes can co-occur, as (86) shows:

(86) Mi yah-**at**-noo-**m**.
 I go-IMPERF-PAST-PERF
 'I used to go' or 'I would go (habitual)'

The example in (86) indicates that Pulaar is a good language to test Cinque's theory since, for the most part, you can look at the interaction of these morphemes overtly. Given the fact that perfective and imperfective morphemes co-occur in Toore, it becomes relevant to investigate perfective and imperfective clauses along the lines of Cinque's claim that these aspectual heads occur as distinct heads in the syntax and in a fixed order typologically.

3. 4 Perfective Clauses in Pulaar

In the analysis of Pulaar perfective clause, I investigate structures like that in example (87), highlighting the linear order of tense, (perfective) aspect and negation morphemes.

- | | |
|--|--------------------------------|
| (87)a. Mi yah- ma
I go-PERF
'I have gone, I went' | Affirmative Present Perfective |
| b. Mi yah-aa-(*m).
I go-NEG-PERF
'I have not gone' | Negative Present Perfective |
| c. Mi yah-noo- m
I go-PAST-PERF
'I had gone' | Affirmative Past Perfective |

d. Mi yah-aa-noo-(*m).
 I go-NEG-PAST
 'I did not go'

Negative Past Perfective

In (87a), the perfective morpheme immediately follows the verb. In (87b), however, the perfective morpheme does not surface. Yet, I assume (as for (87b)) that a null perfective morpheme is present. In (87c), past tense intervenes between the verb root and the perfective morpheme, whereas in (87d), both negation and past tense, in that respective order, follow the verb and precedes the null perfective morpheme. This is summarized in (88):

(88) Order of Morphemes in Perfective Clauses:

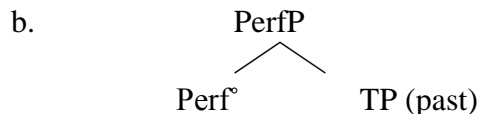
- | | |
|------------------------------------|------------------|
| a. Affirmative Present Perfective: | V-PERF |
| b. Negative Present Perfective: | V-NEG-(PERF=Ø) |
| c. Affirmative Past Perfective: | V-T-PERF |
| d. Negative Past Perfective: | V-NEG-T-(PERF=Ø) |

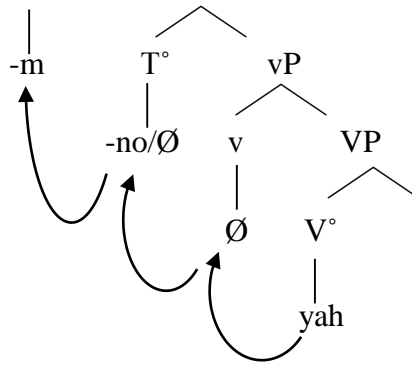
In (88), which is a schematic representation of the structures in (87), the verb always raises high in the clause to perfective which, thus appears at the end of the verb complex in the linear order. Negation and tense intervene between the verb and the perfective morpheme, with negation preceding tense.

3. 4. 1 Affirmative Perfective Clauses

Using the Mirror Principle, the perfective clauses in (87a) and (87c) will have an underlying structure like the following (abstracting away from some syntactic details):

(89)a. Mi yah-**ma** Affirmative Perfective
 I go-PERF
 'I have gone, I went'





Surface morpheme order:

(90) V > T(past) > Perf

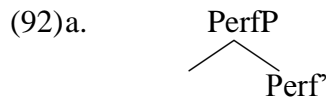
Tense does not surface in the Affirmative Perfective (present) in (89a). Thus, (90) is consistent with both (87a) and (87c); tense is null in the present and overt in the past. Simple head movement derives the correct surface order, with the verb raising up to Perfective through Tense and pied-piping the latter. In the case of (87a) where Tense is null, head movement would still yield the expected linear order of morphemes, namely *V-Perf*.

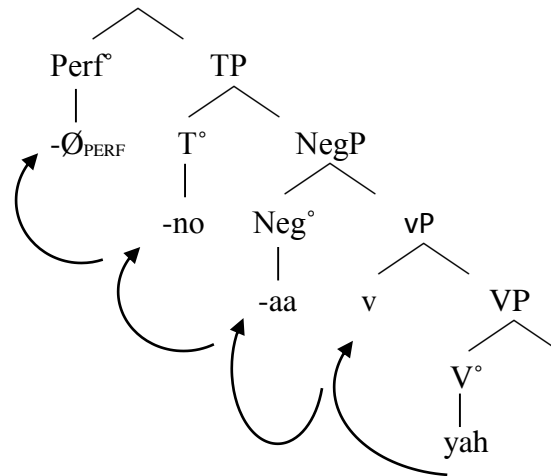
3. 5. 2 Negative Perfective

Negation does not co-occur with Perf *-m* in the Toore dialect, as (88) shows:

(91) Mi yah-aa-(*m).
 I go-NEG-(*PERF)
 'I did not go'

I assume a silent perfective morpheme (\emptyset_{PERF}) is present where perfective would be expected to be, that is above Tense. Here again, following the same analysis on the basis of the Mirror Principle, (91) can be represented as the structure in (92a) at an underlying level:





b. V > Neg > T(past) > Perf

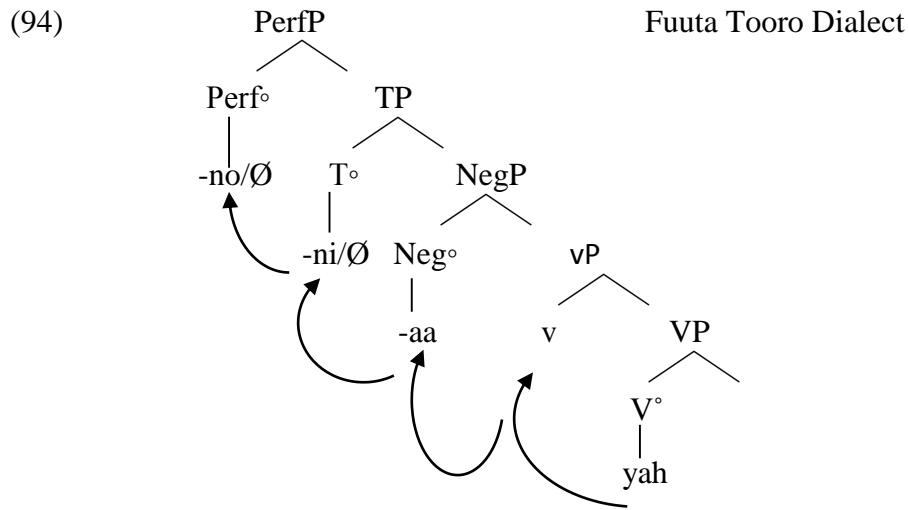
(92b) is the surface morpheme order of the structure in (92a). Again, under the assumption of a null perfective morpheme, head movement derives the correct linear order of morphemes. The verb has raised to the top of the tree, pied-piping the intermediate heads. Thus, it appears on the left edge of the linear string of morphemes.

There is cross-dialectal evidence on the position of a perfective morpheme. In the Fuuta Tooro (Northern Senegal) dialect, Perfective and Negation do co-occur and Perfective follows Negation linearly, as (93a) and (93b) show (as predicted by (92a)):

- (93)a. Mi yah-i toon. Fuuta Tooro Dialect
 I go-PERF there
 ‘I have been there’
- b. Mi yah-aa-ni toon.
 I go-NEG-PERF there
 ‘I have not gone’
- c. Mi yah-ii-no toon.
 I go-PERF there
 ‘I went’
- d. ?Mi yah-aa-ni-no toon.
 I go-NEG-PERF there
 ‘I have not gone’

The data in (93b), is partially consistent with the analysis in (92a): Perf follows Neg in both structures. The construction in (92b) shows that perfective is higher than tense in Toore. However, the example in (93c) suggests that T is higher than Perf if we assume head movement under the Mirror Principle. The tree structure in (94) shows that perfective is higher than negation, but lower than tense in Fuuta Tooro Pulaar. I indicate an optional null morpheme to show that either tense

or perfective is perceptually salient in a structure like (93d), but pronouncing both of them with be somewhat marked.

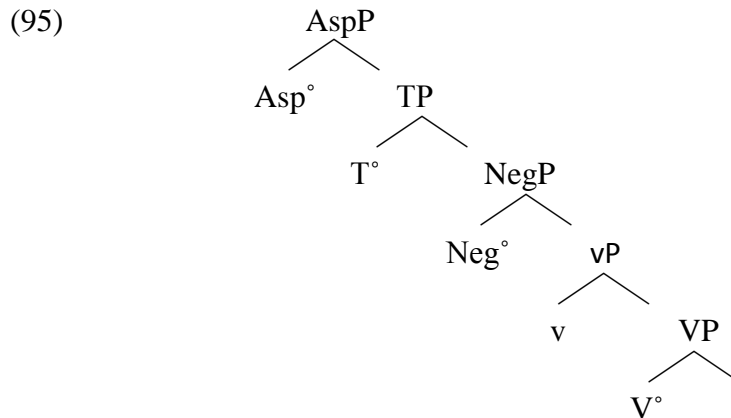


Considering the hierarchy in (92) which shows that perfective is higher than tense, the hierarchy in (94) is plausible under the Mirror Principle and under the assumption of head movement to derive the surface order of morphemes. The derivation indicates that perfective is higher than both tense and negation in Pulaar (Toore).

In the following section, I will show that the imperfective clause is consistent with this templatic hierarchy of the aspectual structure of Pulaar.

3.6 Imperfective clauses

Taking the perfective position to be just an aspectual position which should host perfective and imperfective alternatively, the analysis suggests a clause structure like the following:



In examining the imperfective clauses of Pulaar, I look at constructions like those in (96a-d) which show the tense, imperfective aspect and negation morphemes.

- (96)a. Mi yah-at. Imperfective
 I go-IMPERF

‘I will go’

b. Mi yah-**at-aa** Negative Imperfective

I go-IMPERF-NEG

‘I will not go’

c. Mi yah-**at-no**. Past Imperfective

I go-IMPERF-PAST

‘I would go’

d. Mi yah-**at-aa-no**. Negative Past Imperfective

I go-IMPERF-NEG-PAST

‘I would not go’

The imperfective morpheme immediately follows the verb in (96a). In (96b), the imperfective follows the verb but precedes negation. Likewise, past tense follows imperfective in (96c) and in (96d) both negation and past tense (in that order) follow imperfective which follows the verb. (97a-d) is a summary of the surface morpheme ordering in (96):

(97) Order of Morphemes in Imperfective Clauses

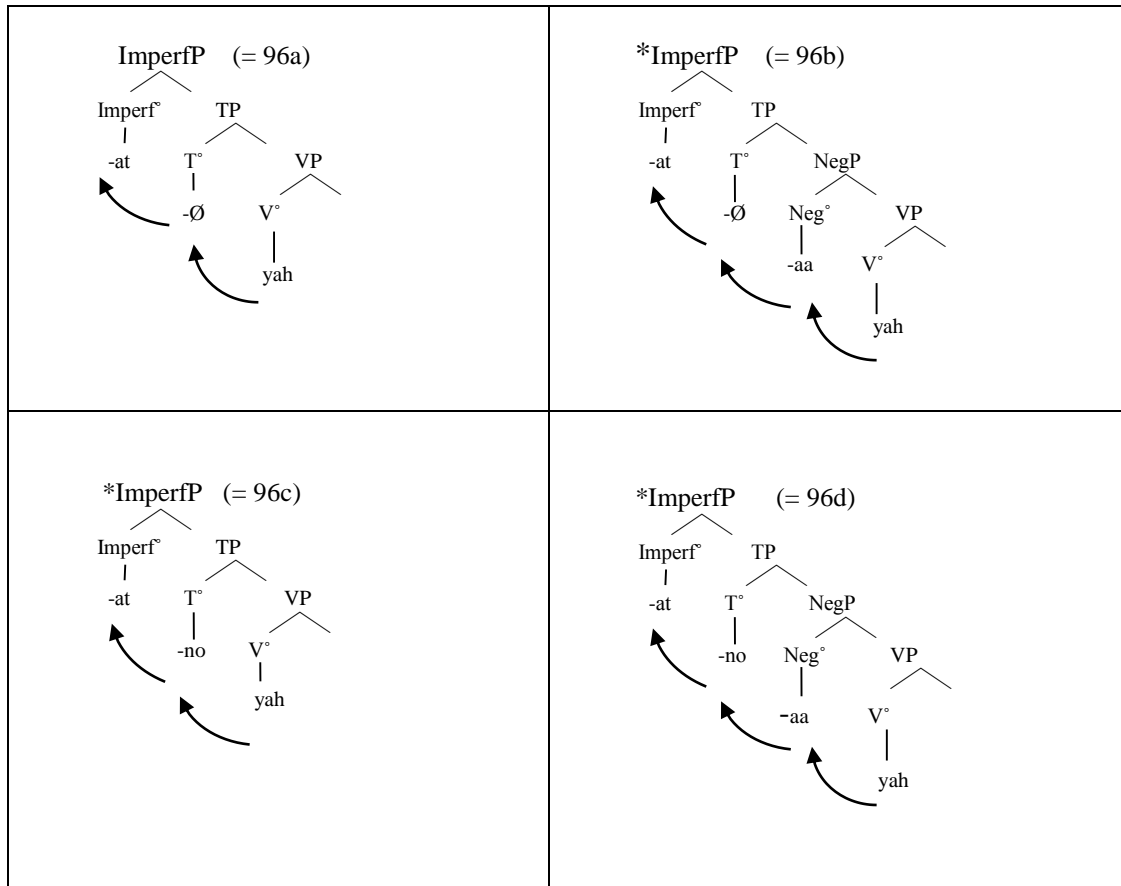
- a. Affirmative Imperfective: V-IMPERF
- b. Negative Imperfective: V-IMPERF-NEG
- c. Affirmative Past Imperfective: V-IMPERF-T
- d. Negative Past Imperfective: V-IMPERF-NEG-T

The verb, as in the perfective structure, is always high in the clause (i.e. just below the subject). But unlike the perfective which can be separated from the verb root by tense and negation, the imperfective is always closest to the verb root and is followed by tense and negation morphemes.

In analyzing imperfective clauses, one approach would be to assume that there is one functional head, AspP, where either the perfective or imperfective marker is inserted. This would be similar to an analysis of English where we assume that past tense *-ed* and future *will* both occur in T⁰.

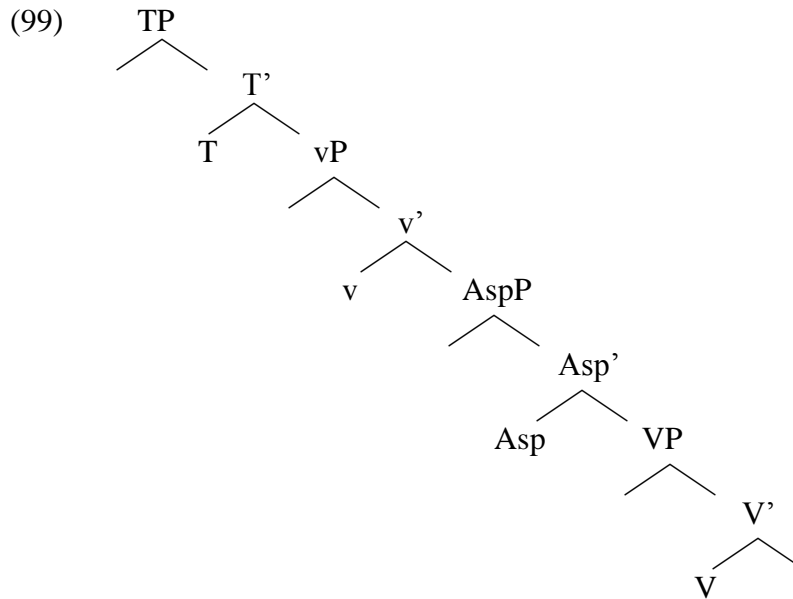
Assuming that there is only one aspectual head, I attempt to derive these imperfective structures using the templatic hierarchical structure in (95), with the imperfective occurring high in the hierarchy, as in (98):

(98) AspP Analysis of Imperfectives



Considering the structure in (95), (96a) will be derived by movement of V to Imperf. This derivation gives the correct surface order, as in (97a). However, the structure in (96b) will be derived by movement of V to Imperf through Neg and T, which will yield the incorrect surface order V-Neg-Imperf (*yah-aa-at). The same way, head movement in the structure in (96c) will yield as V-T-Imperf (*yah-no-at) which also is improper in Pulaar. The structure in (95) as a whole, corresponding to (96d) will be derived by head movement as V-Neg-T-Imperf (*yah-aa-no-at) which yields an incorrect structure in Pulaar.

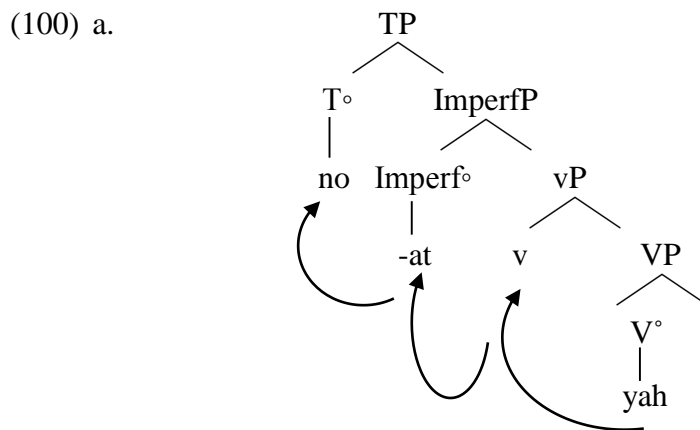
The analysis in (95), which works for the perfective clauses in Pulaar, does not carry over for the imperfective clauses. Another mechanism or hierarchical structure is necessary in order to derive the imperfective clauses of Pulaar if we are to follow the Mirror Principle hypothesis. In the remainder of this section, I derive the imperfective clause using a hierarchy of functional heads along the lines of the inner aspect account proposed by Travis (2010), as the structure below:



The hierarchy in (99) is different from the one in (95) in that the perfective aspect in (95) is above T, whereas in (99) aspect is represented inside of VP; so, below both T and Neg. I assume Asp (I call Asp_{low}) in (99) to be the position where Imperf is generated.

3. 6. 1 Affirmative Imperfective

Just like the perfective clauses, the verb moves high in the clause similar to French (Pollock, 1989), appearing on the left edge of the verbal complex. However, unlike the perfective morpheme which follows tense, the imperfective precedes tense linearly. This suggests the following hierarchy, under the Mirror Principle:

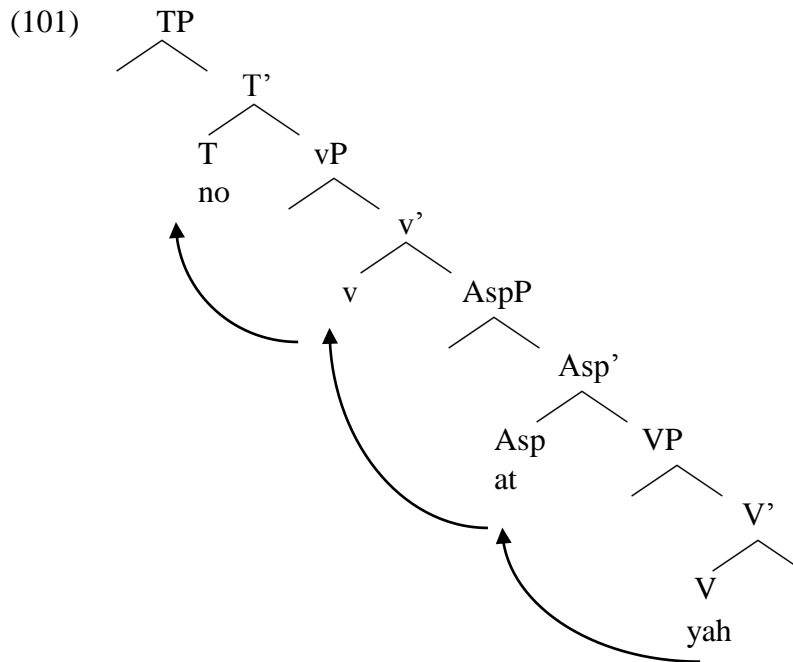


b. Mi yah-**at**-no. Past Imperfective
 I go-IMPERF-PAST
 'I would go'

c. V < Imperf < T

The derivation in (100a) gives the correct surface order of morphemes for both (97a) and (97c), with the imperfective preceding past tense. The contrast between the perfective and the imperfective clauses appears in the comparison of the hierarchies in (100c) and (100d); Imperf is lower than tense in Pulaar, unlike perfective which is higher than tense.

However, the same structure would be correctly derived if we assumed the inner aspect view, with the verb raising to Asp and then to higher positions (i.e. T), as shown in the structure below



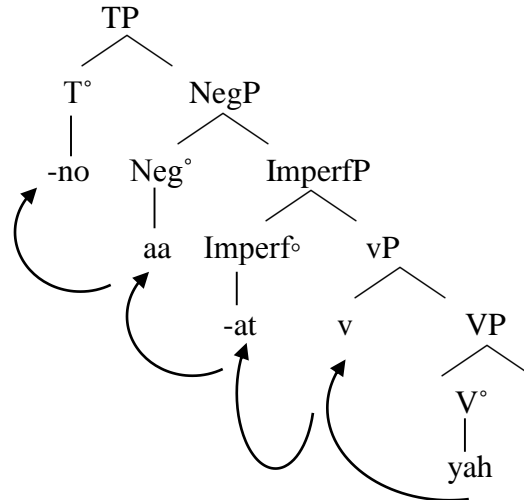
3. 6. 2 Negative Imperfective

Unlike the perfective morpheme which is incompatible with negation (87d), the imperfective co-occurs with negation in Toore Pulaar, as (102) shows:

- (102) Mi yah-**at-aa-no**.
 I go-IMPERF-NEG-PAST
 'I would not go'

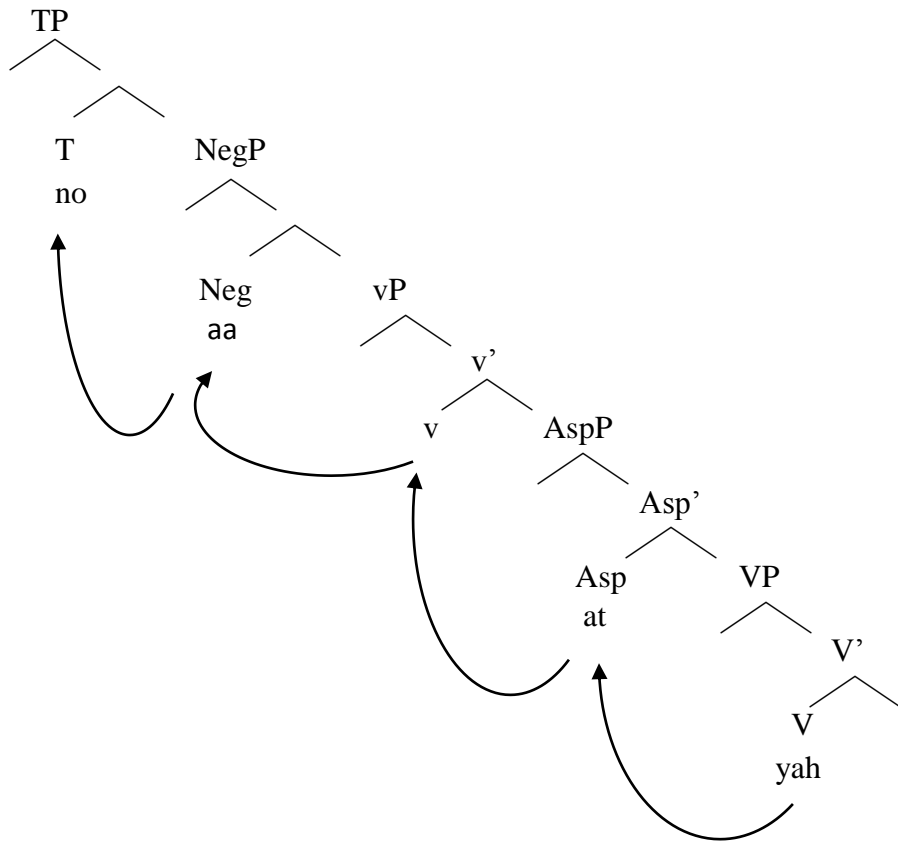
Following the same line of analysis under the Mirror Principle, (102) is analyzed as (103) below. Imperfective is lower than Negation which itself is lower than T(past):

(103)



Again, as in the analysis of the previous clauses, simple head movement derives the correct surface order under the assumption of the Mirror Principle. Imperfective is lower than Tense and Negation, unlike perfective which is higher than Tense and Negation. This analysis so far appears to be compatible with an inner aspect approach of the syntactic structure in conjunction with head movement.

(104)



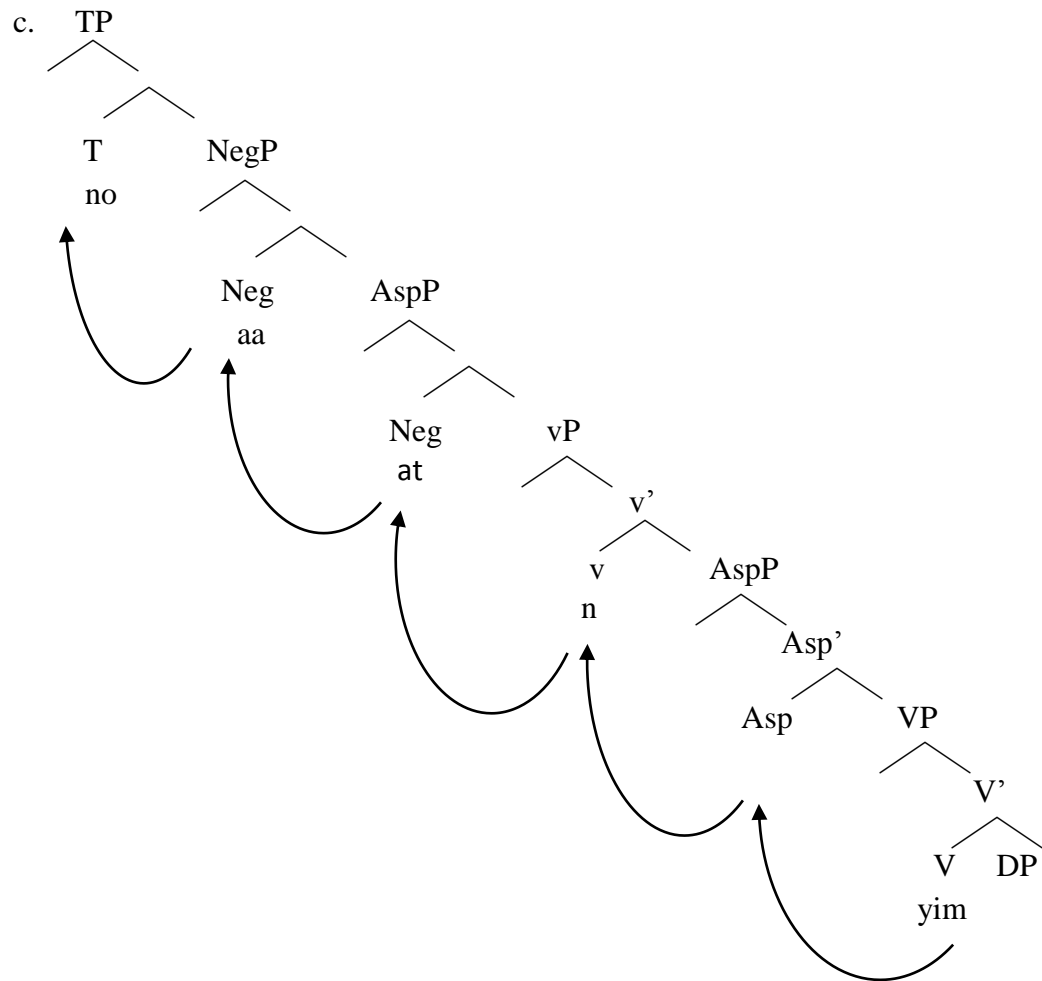
As it appears, the analysis proposed here with respect to the position of imperfective aspect in Pulaar is compatible with an Inner Aspect approach of syntactic structure following Travis (2010), if we assume systematic head movement based on the assumption, supported by empirical data,

that the verb raises high in the clause in Pulaar. However, according to Travis, this inner aspect position, depending on its feature content, has a meaning along the lines of BE/BECOME, which does not seem to be compatible with the imperfective in Pulaar. In fact, imperfective rather encodes future or progressive.

However, little *v* can be filled with an overt morpheme in Pulaar, which encodes causative as suggested by Travis. Yet, this causative morpheme is closest to the verb root and, thus, precedes the imperfective morpheme. As such, a Mirror Principle analysis would necessarily put the imperfective at a position above little *v* and not inside VP (following the Inner Aspect approach). This is shown in the examples below, with the verbal complex represented in the tree structure in (105c):

- (105) a. Mi yim-at-aa-no
 1SG sing-IMPERF-NEG-PAST
 ‘I was sing singer’

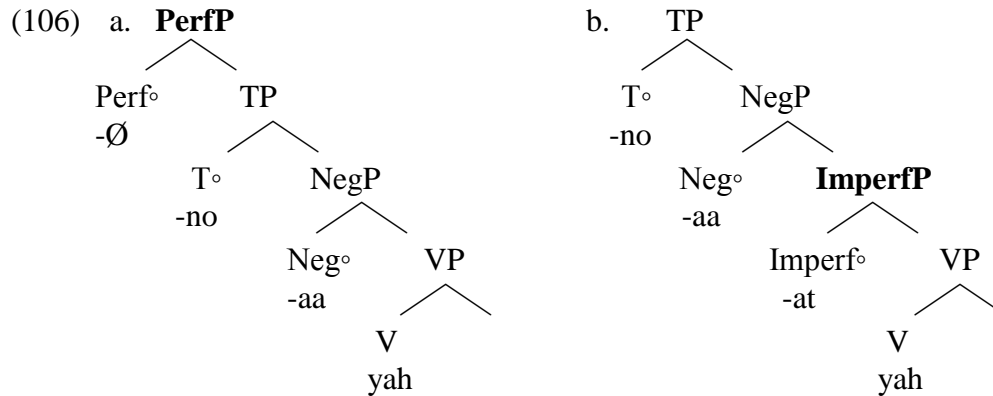
- b. Mi yim-n-at-aa-no jali mo.
 1SG sing-CAUS-NEG-IMPERF-PAST singer CL.the
 ‘I was making the singer sing’



The examples in (105) show that imperfective is under Tense and Negation, but above the verb phrase and, thus incompatible with an Inner Aspect analysis.

3. 7 Comparing Perfective and Imperfective Clauses

The constructions in (106a) and (106b) are two different aspectual structures with perfective and imperfective morphemes occupying distinct positions.



Surface order of morphemes: V > Neg > T > Perf

V > Imperf > Neg > T

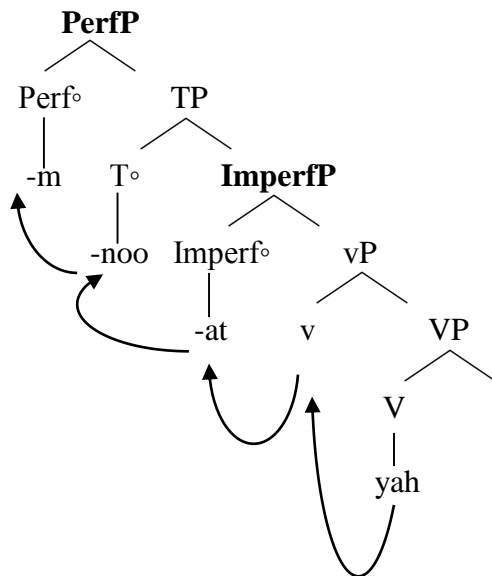
If we compare the structures in (106), we see clearly that Perfective is higher than Tense (past) and Negation while imperfective is lower than Negation which is lower than T(past). Perfective and imperfective appear to occupy two distinct positions in the syntax.

The structures in (106) suggest that the perfective (-*m(a)*) and imperfective (-*at*) morphemes can co-occur in Pulaar in the sense that they occupy distinct positions in the syntax, as we can see in (107). The example in (107a) shows that the perfective and the imperfective morpheme can co-occur, whereas (106b) demonstrates that such a co-occurrence cannot be overt in the presence of negation. When perfective and imperfective co-occur, the interpretation is that an event used to happen repetitively in the past. In other words, some action or event was completed habitually.

(107) a. Mi yah-**at**-noo-**m**.
 I go-IMPERF-PAST-PERF
 'I used to go' or 'I would go (habitual)'

b. Mi yah-**at**-aa-no-∅. Negative of (106a)
 I go-IMPERF-NEG-PAST-PERF
 'I would not go'

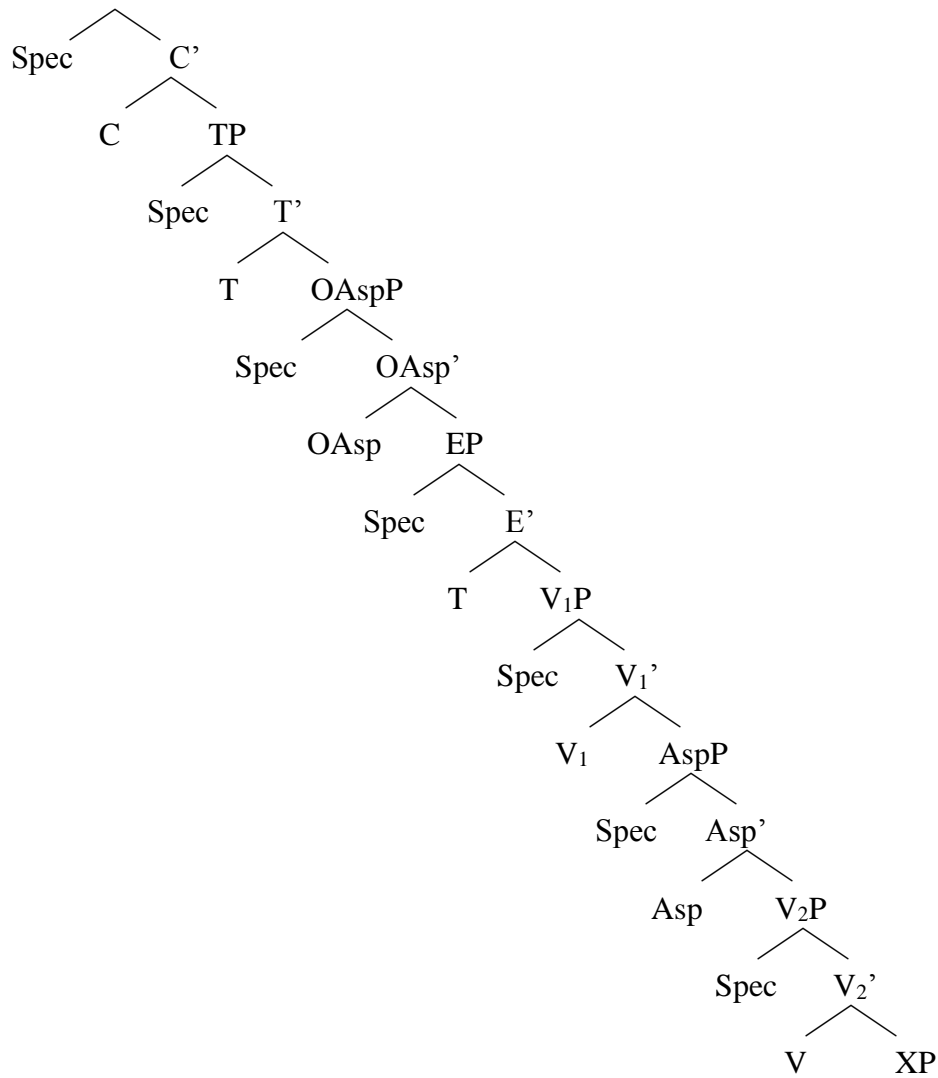
(108)



The new data (107) shows that my analysis is strong by confirming the general assumption I made about the Pulaar. There are two aspectual heads that occur at two syntactic distinct positions, with one (Perf) higher in the hierarchy than the other (Imperf).

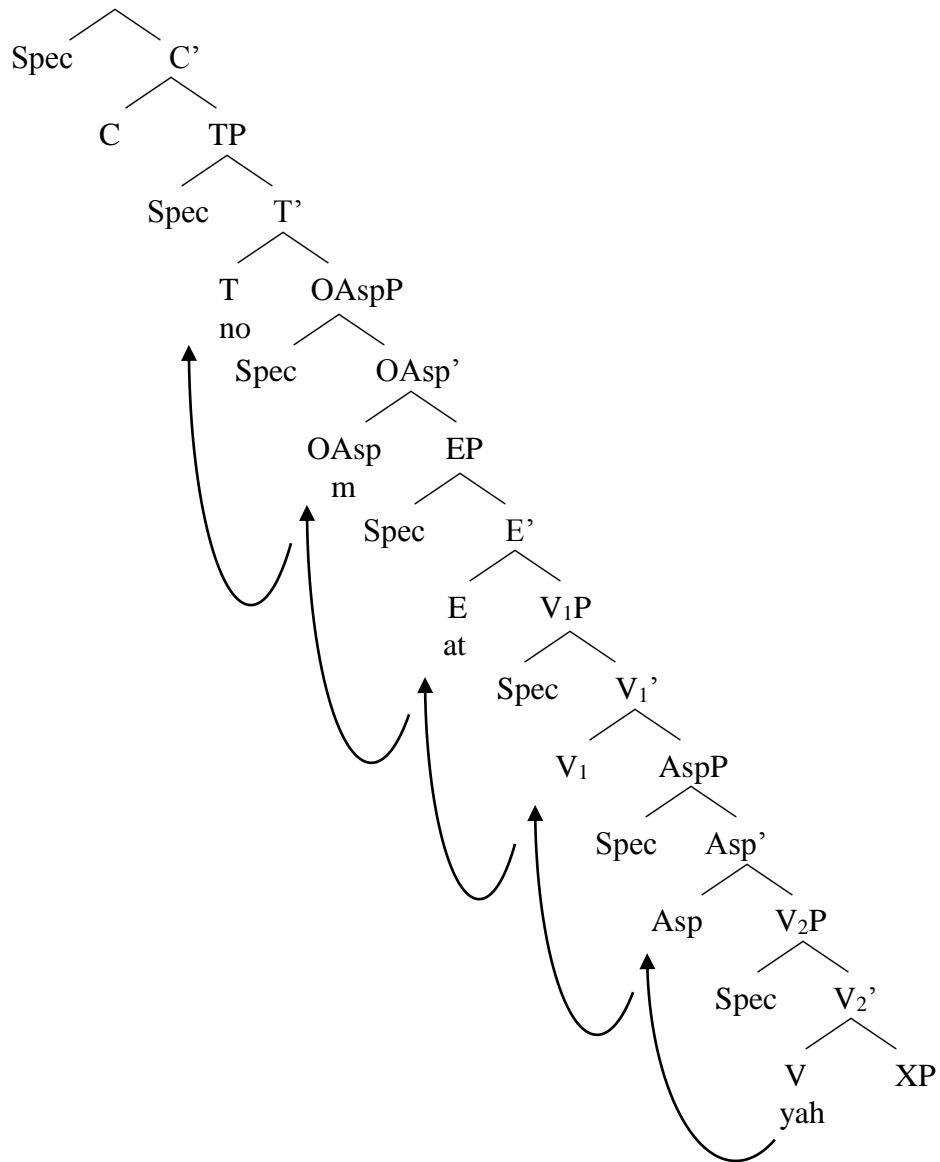
The position of Perf in the Pulaar clause above appears to be unusually high. In fact, in Cinque's hierarchy this position is below T. This calls for a reanalysis of the Pulaar clause structure. For that matter, I use follow Travis' (2010) Outer Aspect framework, as shown in the structure below:

(109)
CP



In addition to the Inner Aspect located inside the verb phrase, Travis shows that there is another functional category above vP (here, V₁P) which she calls E(vent). As for Outer Aspect, it takes scope over the entire event (EP). Using this analytical framework, I represent the tree in (109) where Perf and Imperf co-occur with Perf located in the Outer Aspect position and Imperf as the head of E.

(110)
* CP



This framework too does not derive the correct surface order since Perf is going to precede Tense, whereas Perf normally follows Tense. To hold Outer Aspect as an appropriate theoretical framework would require speculations such as prosodic movement to account for the right sequence of functional heads, with Perf being underlying below T but raising above T at PF. I leave the issue for future research. However, the question remains as to whether Perf (-*m*) is really a perfect(ive) marker or some other aspectual/functional category. For now, I maintain it to be a perfect(ive) marker, at least based on its semantics in the language.

3. 8 The Pulaar clause in a Typological Framework

Given our analysis, morphemes in the Pulaar clause have the hierarchy in (111a). We can compare this to Cinque's hierarchy in (111b):

- (111) a. **Perf** > T(past) > (Neg) > **Imperf** > V
 b. Mood_{speech act} > ... Mode_{epistemic} > **T(Past)** > ... **Aspect_{perfect}** > **Aspect_{imperfective}** > Voice > **V**

Underlyingly, Perfective is higher than T(past) while Imperfective is lower than T. The surface order of morphemes is derived by simple head movement. The verb raises up the tree through the intermediate heads and pied-piping them. The hierarchy in (111a) is similar to Cinque's hierarchy in (111b). The analysis of Pulaar perfective and imperfective clauses shows that Perfective is in a position higher than Tense while Imperfective is lower than Tense.

Consequently, perfective is higher than imperfective as argued by Cinque (1999). Pulaar, then, provides support for a portion of Cinque's analysis:

- (112) T(Past) > ... Aspect_{perfect} > Aspect_{imperfective} > ... V

From this initial order, there will be successive leftward movements to get the surface order of morphemes. Thus, according to Cinque (1999:92) citing Kayne (1994), in 'head-initial' languages like English and Spanish where leftward movements of lower morphemes does not take place and the V+ (functional) suffix combinations may be seen as providing evidence for the order in (109). This can be seen in (110) (a) and (b) below, represented in (110c):

- (113) a. The books have been being read all year.
 b. Esos libros han estado siendo leídos todo el año.
 c. Tense > Aspect_{perfect} > Aspect_{progressive} > Voice (> V)

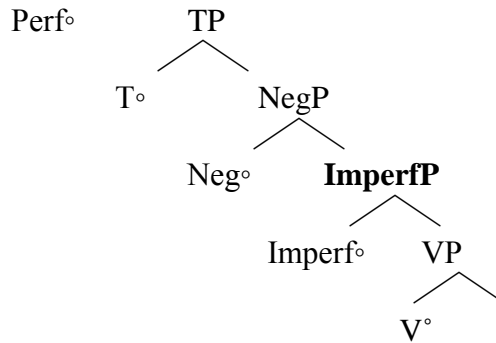
So, if this is the fixed order of morphemes, it appears that aspectual phrases are generated below T(ense) and that the perfect(ive) is higher than the imperfective.

As (113) shows, Perfect(ive) is actually higher than Imperfective in the hierarchy. However, both Perfective and Imperfective are below Tense in Cinque's hierarchy, unlike in Pulaar which shows a lower T intervening between Perfective and Imperfective. This goes slightly against Cinque's hierarchy, though it provides evidence for it.

3.9 Summary

The analysis of Pulaar clause structure shows that the clause structure is like the one in (110), with perfective higher than tense and imperfective lower than tense and negation:

- (114) **PerfP**
 ^



Perf and Imperf co-occur and Perf is higher than Imperf. Thus, Pulaar provides evidence for part of Cinque’s hierarchy of functional. However, the clause structure of Pulaar shows perfective is higher than tense whereas in Cinque’s hierarchy (111b) perfective aspect is lower than T(past). We can speculate that Perf is sitting in Fin(iteness).

3. 10 The Case of Object Clitics

Object pronouns behave differently from DP objects in Pulaar with respect to their position in the clause. Unlike full DPs, Object pronouns cliticize to the verb.

- (115) a. Mi yii-ma **suko mo**.
 1SG see-PERF child.CL CL.the
 ‘I have seen the child’
- b. Mi yii-**moo**-m.
 1SG yii-3SG-PERF
 ‘I have seen him’
- c. *Mi yii-ma **mo**.
 1SG see-PERF 3SG
 Intended: ‘I have seen him (the child)’

In (115a), the DP *suko mo* “the child” follows the verb inflected with the perfective morpheme. In (114b), however, the pronoun *moo* referring to the DP *suko mo* “the child” intervenes between the verb root *yii-* and the perfective morpheme *-ma*. This cliticization is more clearly instantiated in neutral active perfective structures. In past tense clauses, clitics follow the past tense morpheme and they precede the perfective morpheme, as (116) shows:

- (116) a. Mi yii-noo-m **suko mo**.
 1SG see-PAST-PERF child.CL CL.the
 ‘I saw the child’
- b. Mi yii-no-**moo**-m.
 1sg see-past-3sg-perf
 ‘I saw him’
- c. *Mi yii-noo-m **mo**.
 1SG see-PAST-PERF 3SG

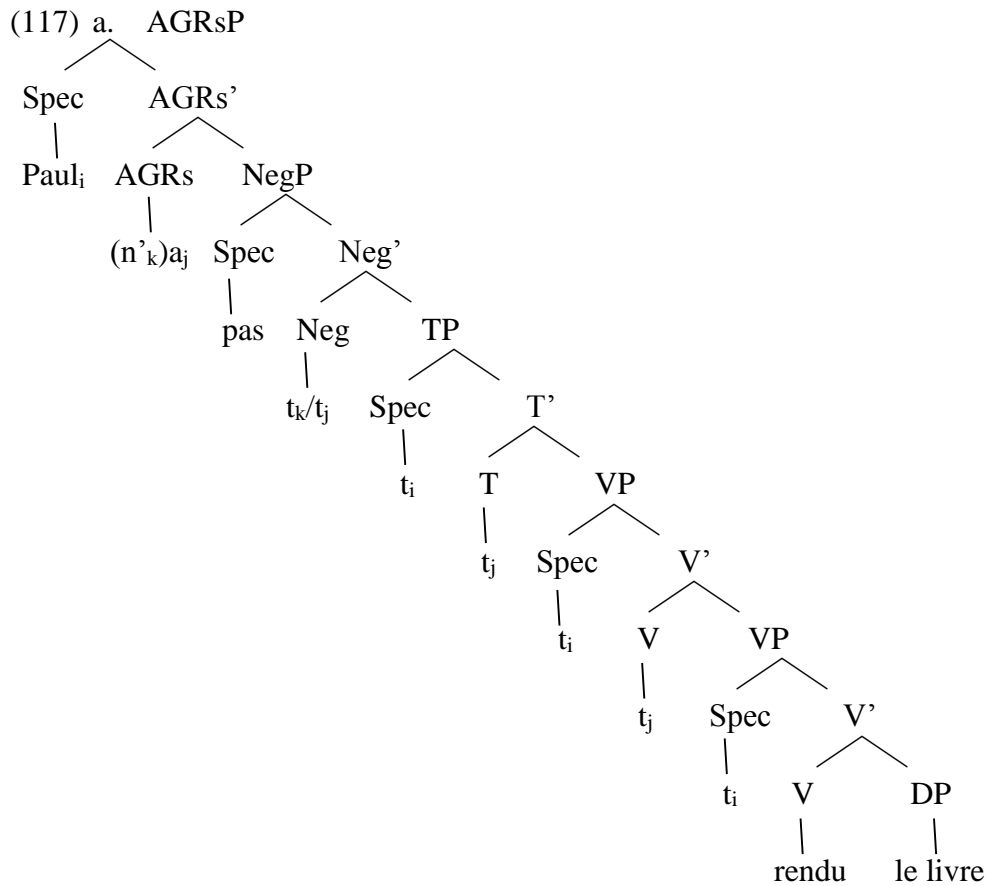
Intended: 'I saw him'

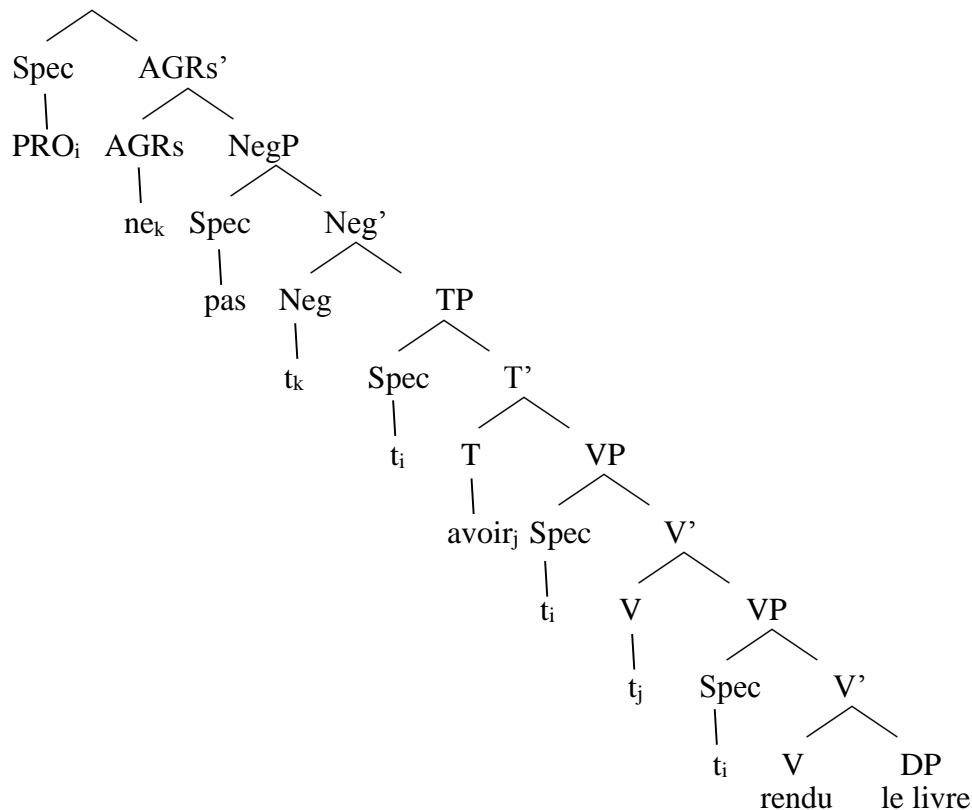
- d. *Mi yii-**mo**-noo-m
 1SG see-3SG-PAST-PERF

In (116a-b), the DP follows the verb again while the pronoun is incorporated into the verb, between past tense and the perfective morpheme. In (115b) and (116b) we can notice that the object clitic is incorporated in to the verb form. In fact, the object pronoun must necessarily cliticize; it cannot be in the position of the DP object as in (115c) and (116c).

It is not clear whether clitics are base generated or they appear in their surface position by movement. Sportiche (1992) adopts the proposal in Kayne (1991) that if a clitic does move, such a movement must involve head movement at some point in the derivation in that they do end up incorporated to the verb as only heads are expected to.

The order of projections in French, as Sportiche points out, is (*ne*) AGRs (*pas*) T, with short V moving to T in infinitivals (short V-movement) and V moving to AGRs tensed verbs (long V-movement). AGRs and T represented a split INFL, with AGRs being the higher than T. This is represented in the trees below, following Yuan (2003):





The tree in (117a) represents a structure with a tensed verb (auxiliary in this case) and the tree in (117b) stands for a structure with tenseless verb. We have the following word order:

(117a): Paul n'a pas rendu le livre.
 Paul *n'*AUX NEG return-PERF the.MASC.SG book
 'Paul has not returned the book'

(117b): ne pas avoir rendu le livre.
ne NEG to-have return-PERF the.MASC.SG book
 'not to have returned the book ...'

For clauses that have one or two auxiliary verbs, the following structures apply:

(118) a. Tensed clauses
 (ne) Cl AUX1+Tense (pas) (AUX2) Verb XP*
 ne lui aura pas ete rapporte
 'not to-him will-have been brought-back' (Sportiche, (47a))

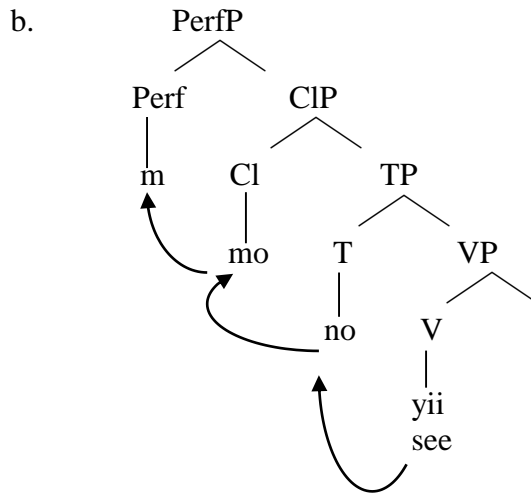
b. Tenseless clauses
 (ne) (pas) Cl AUX1+Inf (AUX2) Verb XP*
 ne pas lui avoir ete rapporte
 'not to-him to-have been brought-back' (Sportiche, (47b))

In these passive constructions in (118a-b), the Dative Clitic behaves like Agreement Phrases. The projection they are heading are, thus, AGR_{IO} which assigns Dative Case, in a way similar to how AGR_S and AGR_O are responsible for Nominative and Accusative Case features. In (118a), for instance, the object of the verb will move to Spec AGR_S to get nominative Case while the Dative Clitic *lui* ‘to-him’ is generated as head of AGR_{IO} from which it gets its dative Case.

According to Sportiche (1992), the morphological structure of the sequence Cl+AUX1+Tense+AGRs seems to be Cl+[AUX1+Tense+AGR]. By the Mirror Principle, the order of the corresponding projections should then be CIP>AgrsP>TP>AuxP, with Aux raising to T, (then to Agrs) then to Cl. In particular, CIP should be in a position preceding the negative marker *pas*. The tenseless clauses template suggests, infinitive verbs (*Inf* here) do not necessarily raise to AGRs. This is why they may follow the negative marker *pas*, as in (118b). We also notice that Cl is higher than tense and agreement in the clause.

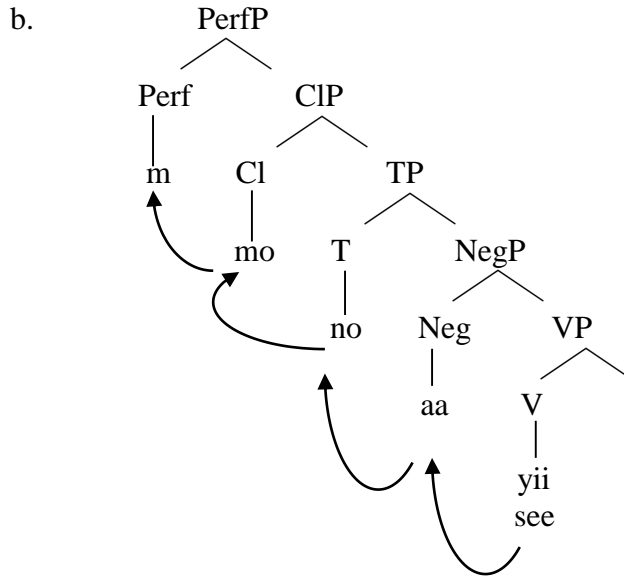
I follow the analysis under the assumption that clitics are base generated in a Pulaar construction like (119a) which will have an underlying structure as the one (119b), under the Mirror Principle.

- (119) a. Mi yii-no-**moo**-m.
 1SG yii-PAST-3SG-PERF
 ‘I saw him’



If clitics are treated like heads and move as such, then simple head movement will derive the surface order of morphemes. The verb moves up the tree, pied-piping the intermediate heads. The same mechanism is expected to work for negative perfective structures. I pointed in section 3.4 that the negative morpheme does not co-occur with the perfective morpheme in Pulaar. As a result, the same derivation should be applicable to the structure in (116a), as in (116b):

- (120) a. Mi yiy-aa-no-mo.
 I see-NEG-T-3SG
 ‘I did not see him’

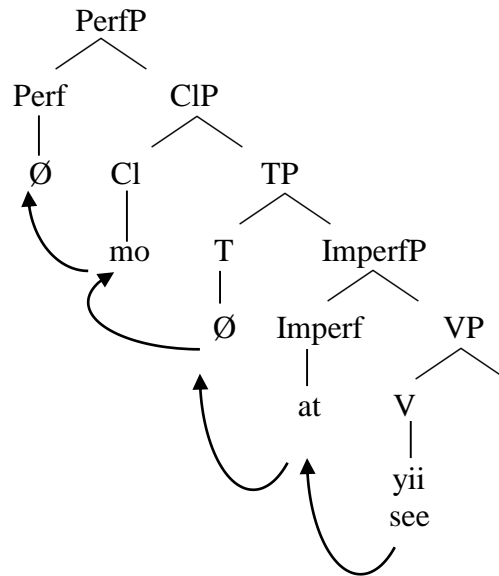


The hierarchy in (120b) appears to be appropriate for negative perfective just as it is for affirmative perfective. So far, the position positioned for the clitic seems to be defensible since it is compatible with the analysis that has been adopted throughout. But only perfective structures have been tested so far with the clitic. If my analysis is correct, we can predict imperfectives with clitic to be derived by simple head movement under the Mirror Principle. I will attempt to derive the imperfective structures containing clitics in (121a-c), while maintaining the same position I assumed for the clitic in (120a-b):

- | | |
|--|---------------------------|
| (121) a. A yiy-at-Ø-mo.
you see-imperf-pres-3sg
'You will see him.' | Simple Imperfective |
| b. Mi yiy-at-no-mo-m.
I see-IMPERF-PAST-3SG
'I would/used to see him' | Past Habitual Affirmative |
| c. Mi yiy-at-aa-no-mo.
I see-imperf-neg-past-3sg
'I would/used to see him' | Past Habitual Negative |

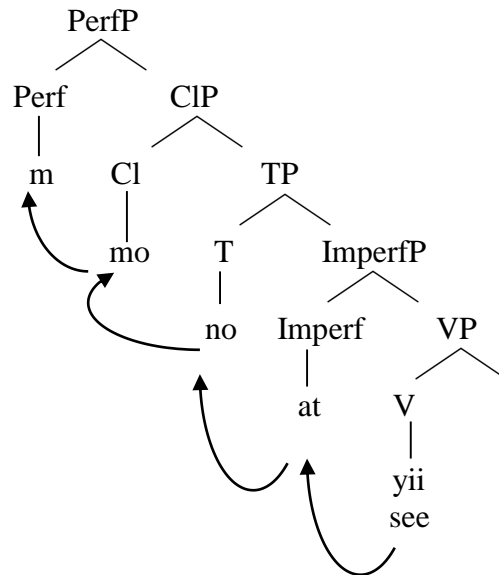
The example in (121a) is represented as the hierarchy in (122):

(122)

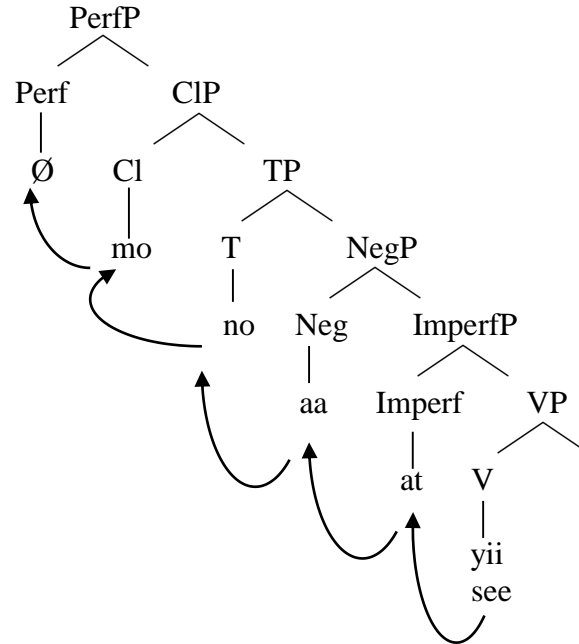


The structure in (121) shows that the derivational model works for imperfective constructions too. The reason why tense and perfective aspect are left in the tree as null morphemes is that, as shown in section 3.7, they could be overt as in (119b) and the structure still be valid, as in (123) and (124) representing (121b) and (121c) respectively:

(123)



(124)



From the analysis above, the order of morphemes in infinitival structures with clitics is the following: PERF > CL > T > IMPERF > V.

The assumption of a base-generated clitic high the clause is consistent with the analysis of Pulaar clause structure. Consequently, the treatment of clitics as heads turns out to be plausible. In fact, this treatment of clitics appears to be consistent with Sportiche (1992) account of their syntactic behavior, analyzing them as heads or morphemes, with each clitic heading its own projection high in the clause.

3.11 General Conclusion

The analysis of the perfective and imperfective clauses in Pulaar reveals that the perfective occupies a position higher than T; this is overt when Tense surfaces in the past. Further evidence for this ordering comes from the fact that the perfective and imperfective morphemes can co-occur and perfective happens to be higher in the clause than imperfective which is closer to the verb root. This, then, provides strong support for analysis in Cinque (1999) with the argument that perfective should be higher in a clause than imperfective. We also have evidence that imperfective occupies a position lower than T(ense) and Neg(ation) in Pulaar; the imperfective morpheme co-occurs with both T(past) and Neg, unlike Perf which co-occurs only with T(past). It also comes out that simple head movement derives the surface order of morphemes under the Mirror Principle.

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These pronouns are morphologically complex. Thus, I adopt a tetra-morphemic approach for their analysis. Basing on the fact that initial consonant mutation is held to involve a null prefix (C-) which triggers the mutation, I assume that Progressive Pronouns involve a null prefix because the variation of the 1sg between Toore and Fuuta shows initial consonant mutation.

Fuuta: mi-dɔ

Toore: mbi-dɔ (= C-mi-dɔ)

The mb-/m- alternation is reminiscent of the initial consonant mutation with verbs. We can then assume that the 1sg has a null prefix (C-), which suggests the following morphemic breakdown for Progressive Pronouns

Table 13: Morphemic Analysis of Progressive Pronouns

morpheme 1	morpheme 2	morpheme 3	morpheme 4
C-	mi	dɔ	∅
ha	a	dɔ	∅
ho	mo	∅	∅
C-	mi	dɔ	n
he	∅	dɛ	n
ho	∅	dɔ	n
he	bɛ	∅	∅