

# Nominalization in Pulaar

By

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Ibrahima Ba

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## **Abstract**

There are a few strategies to construct nominal structures and phrases. The Pulaar infinitive, for instance is used genitive nominalization and other non-finite clauses with nominal properties. Relative clause (RC) nominalization (headed relative clause and factive clauses) is also another nominalization process in the language.

This dissertation lays out a description of these nominalization processes with a main focus on constructions involving the infinitive and relative clause nominalizations. The infinitive in Pulaar can have both nominal and verbal properties and this is usually indicated by an agreeing determiner but also through adjectival or adverbial modification. RC nominalization is a very prominent and productive in the language. The verb within the relative clause can occur with functional morphemes such as tense, aspect and negation. In addition, a relativized verb can have derivational morphemes like valency-changing affixes attached to it. The factive RC nominals can have an event, factive and manner interpretation whereas the GN nominal can have a generic, event and factive interpretation.

This dissertation also places Pulaar within the typology with respect to this type of nominalization with similar nominalization types found in related African languages like Wolof, Ewe, Gungbe, Yoruba and other related languages, thus showing that Pulaar nominalization types fits within the typology of nominalization. Also, a brief parallel is drawn with English nominal constructions built on the gerund.

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## List of Abbreviations

1SG: first person singular  
AGR: agreement  
ALL: allative  
AN: action nominalizer  
ASC: associative  
ASP: aspect  
BEN: benefactive  
CAUS: causative  
EHX: exhaustive  
CL: noun class marker  
COMP: complementizer  
CL: noun class marker  
PERF: perfective  
IMPERF: imperfective  
INF: infinitive  
GEN: genitive  
MID: middle  
NEG: negation marker  
NOM : nominalizer  
PAST: past tense marker  
REL: relative pronoun  
ALL: allative  
REC recipro  
REV: reversive  
REL: relative pronoun  
SIM :simulative  
REV: reversive  
RFF : reflexive marker  
INSTR: instrumental  
OBJ: objective  
3SG: third person accusative  
3SG: third person nominative

# Chapter 1

## 1. Introduction

In this dissertation, I investigate the morpho-syntactic processes that exist in Pulaar nominalization. Although I focus mainly on clausal nominalization, I attempt to show all the nominalization strategies available in Pulaar.

According to Comrie and Thompson (1985), nominalization is the process of “turning something into a noun” (Comrie and Thompson, 1985:334). Genetti et al. (2008) state a little more specifically that nominalization is a process “by which non-nominal elements become grammatical nominal” (Genetti et al., 2008: 2). The topic of nominalization is important in a language like Pulaar in the sense that there are many ways in which a nominal can be constructed. In the addition to the relatively simple process of nominalizing verb, for instance, through deverbal, there are other strategies used in the language to construct nominal phrases or clauses.

Presented below are examples of types of nominals which constitute the focal points of my present research:

- (1) a. Musa windu-m deftare.  
musa write-PERF book  
‘Musa wrote a book’
- b. [**windu-go** Musaa deftare ngo] bettu Aali Genitive  
write-INF musaa book CL.the surprise Aali  
‘Musaa’s writing of a book surprised Aali’
- c. [**mbin-uu** ngu Musaa **wind-i** deftare ngo] bettu Aali RC  
write-NOM C.REL musaa write-PERF book CL.the surprise Aali  
‘The writing that Musaa wrote a book surprised Aali’
- d. [**windu-go** ngo Musaa **wind-i** deftare ngo] bettu Aali Verbal Factive  
write-INF C.REL musaa write-PERF book CL.the surprise Aali  
‘The fact that Musaa wrote a book surprised Aali’
- e. [**ko** Musaa **wind-i** deftare ko] bettu Aali *ko-Factive*  
C.REL musaa write-PERF book CL.the surprise Aali  
‘The fact that Musaa wrote a book surprised Aali’

The the bracketed phrases in (1b-e) represent clausal nominalization. In (1b) the infinitive *windu-go* is acting as a head modified by *Musaa* in a genitive construction. The bracketed phrase in (1c) is a relative clause headed by the deverbal noun *mbind-uu*. The example in (1d) shows a factive relative clause headed by a nominalized form of the main verb. On the other hand, the *ko*-factive is a headless relative clause with a complementizer appearing on the left edge of the clause. I discuss the syntactic/morphological differences and semantic nuances that exist between these types of nominal phrases.

Clausal nominalizations are generally quite complex constructions; in fact, they appear to occur with certain types of arguments typically calling for the presence of a verb. I provide a description and an analysis of the three types of nominalization structures; that is, genitive nominalization, headed relative clauses and the verbal and *ko* relative clause nominalizations.

In a nutshell, this dissertation also contributes to the general study of the morpho-syntax of clausal nominalization and to a better understanding of Pulaar syntax in general.

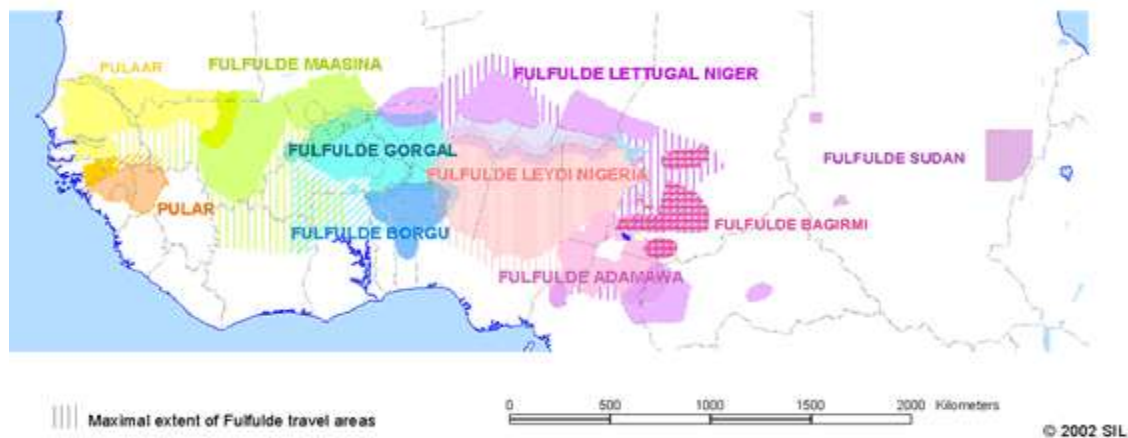
The dissertation outline is the following: chapter 2 explores the morphosyntax of nominal structures involving the infinitive form of the verb. In chapter 3 I examine three types of nominalization; specifically the headed relative clause and the verbal and *ko* factive relative clauses. In chapter 4, I explore some typological aspects of Pulaar nominalization by showing accounts from other languages.

## **1.2 Background on Pulaar: Geographical Location and Status**

Pulaar belongs to Atlantic branch of the Niger-Congo language family. There is a number of Pulaar dialects with varying levels of mutual intelligibility ( See Lewis, M. Paul, Gary F. Simons, and Charles D. Fennig (eds.). 2016. *Ethnologue: Languages of the World, Nineteenth edition*. Dallas,

Texas: SIL International. Online version: <http://www.ethnologue.com>). These Pulaar dialects are spoken from Senegal to Cameroon and Sudan and all the countries in-between.

## (2) Map 1: Distribution of Pulaar Across Africa



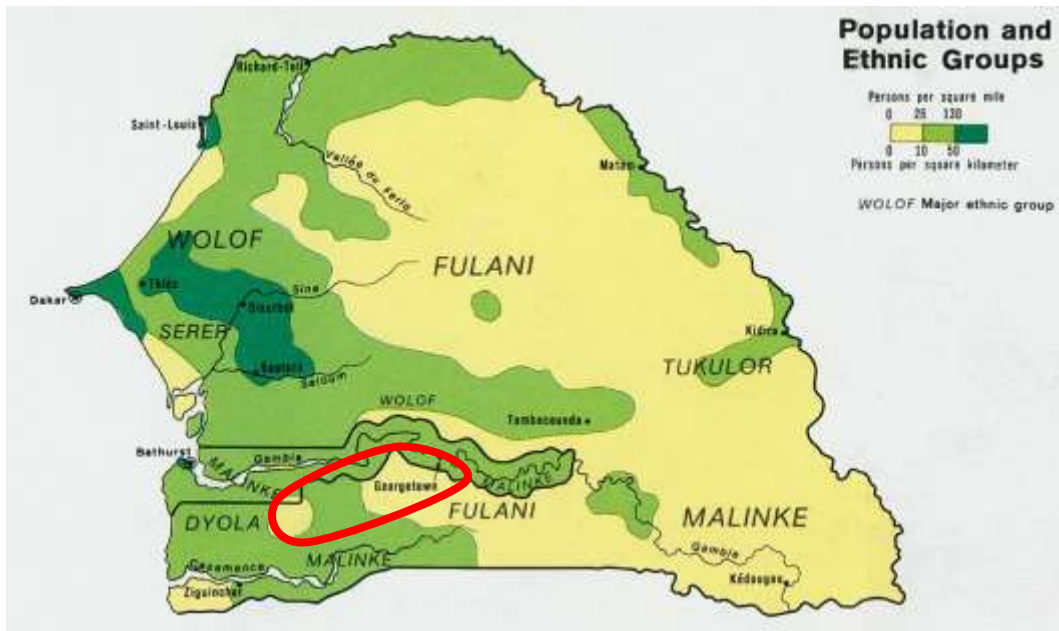
(SIL International 2002)

There are at least four dialects of Pulaar in Senegal: Pulaar in Futa Tooro region (north-east), Fula (kunda) spoken in the Kolda region (south), Pular (spelled with one 'a' ) spoken by people originally from Guinea Republic; and the dialect spoken in Kabaadaa (southern Senegal and parts of the Gambia), also known as Toore, which this dissertation is based on.

French is the official language of Senegal but there are 11 languages termed national languages which include Pulaar. Pulaar is the standard dialect in Senegal, spoken by about 3.7 million people. It is used on national and private radios and televisions stations and taught at the university level but also in informal schools throughout the country. Yet, it is not present in newspapers. The language is written mainly in Latin script as standard script. However, it is also written in Arabic script in places with little or no formal education. The Toore variety is spoken by about 50 thousand people who are generally bilingual in either Wolof or Mandinka. Some people speak all those three

languages. Educated Toore speakers speak some or all of the aforementioned languages in addition to French and/or English.

(3)Map 2: Location of the Toore Dialect



Toore is located in the area delineated by the closed red line on the map. This is, however, just an approximation based on my sole knowledge of the Kabaadaa region where the variety is spoken and not on any official mapping.

### 1.3 Situating Pulaar Nominalization

In this section, I discuss the previous work on Pulaar in general. I also highlight the contributions of this dissertation in the framework of the research on nominalization, especially with respect to related language.

#### 1.3.1 Previous Work on Pulaar

There is not a very sizable literature on Pulaar. But a few authors have written on various aspects of the language. Arnott, D.W. (1970) has dealt with the nominal and verbal systems of Fula, focusing

mainly on a dialect of Pulaar spoken in the central part of Africa (Niger, Chad, Nigeria and Cameroon). McIntosh (1984) wrote on the Fulfude syntax and verbal morphology. Paradis (1992) investigated the lexical phonology and morphology, focusing mainly on the nominal classes in Fula. Some other studies have also addressed Pulaar noun classes, as I indicate in the section on the Pulaar noun.

In addition to his dissertation on grammatical relations in Pulaar (1979), Sylla has written two books on Pulaar grammar. Sylla (1982) is a descriptive account on Pulaar, ranging from phonetics to aspects of Pulaar syntax and pronominal systems. On the other hand, Sylla (1993) is a work on Pulaar syntax aiming to make a contribution to research on language universals. More recently, Ba (2013) has examined the clause structure of Pulaar using theoretical such as the Mirror Principle (Baker 1985) and the Hierarchy of aspectual heads (Cinque 199).

None of these studies has, however, dealt with Pulaar clausal nominalization as undertaken in other West African languages like Wolof, Gungbe, Ewe, Fon which are all typologically related to Pulaar. In the following section, I give a brief overview of the literature on nominalization in West African languages which consist of the foundational background to which this dissertation aims to provide some contribution.

### **1.3.2 The Current Dissertation**

In regard to previous studies on Pulaar, this dissertation provides some new data and analyses the knowledge an understudied morpho-syntactic aspect of Pulaar grammar by applying current theoretical assumptions and hypotheses about nominalization to Pulaar. By providing totally new research in the Pulaar language, this piece of research contributes to furthering general knowledge of Pulaar as a language and Pulaar syntax as a body of research.

There is previous research on the subject conducted in languages belonging to this family. Some of these studies are conducted in Wolof which is closely related to Pulaar. These studies include Torrence 2013; Tamba 2014). The present study is meant to further this body of research on nominalization in these language by highlighting the presence of similar types of nominal structures and at the same time laying bare the few idiosyncratic differences. My hypothesis is that Pulaar nominalization is comparable in some to nominalization strategies found in related languages like Wolof, for instance. This current study builds largely on Tamba (2014) who investigates similar nominal structures to those those I set out to examine. Some examples from Tamba are provided below:

- (4) a. Musaa bind na tééré b-i  
 Musaa write FIN book CL-the  
 ‘Musaa wrote the book’
- b. Musaa ànd na ci [m- bind –u -m tééré b -i] Genitive  
 Musaa agrees FIN with NOM- write- GEN-CL book CL-the  
 ‘Musaa agrees with the writing of the book’
- c. [bind b-i [Musaa bind tééré b-i]] bett na ma Relative Clause  
 write CL-the Musaa write book CL-the surprise FIN 1SG  
 ‘Musaa’s writing of the book surprised me’
- d. [l-i [Musaa bind tééré b-i]] bett na ma Headless Relative Clause  
 CL-the Musaa write book CL-the surprise FIN 1SG  
 ‘The fact that Musaa wrote the book surprised me’ (Tamba 2014, page 1)

The current research aims to build on these previous works by providing new data which highlight the similarities and differences existing between the various languages and, thus, contributes to shedding more light on the subject matter under study and grew the the body of research as a result.



### **1.3.3 Literature on Nominalization**

In addition to studies like Torrence (2013) and Tamba (2014) which focused mainly on Wolof, a West African language, there are other studies which were also based on other West-African (Niger-Congo) languages related to Pulaar.

In this regard, Collins (1994) and Aboh (2005, 2010) provide an analysis of factive clauses in several Niger-Congo languages, with a focus on the Kwa group (Yoruba, Kpele, Ewe and Fon). Collins points out that factive clauses in some of the Kwa languages exhibit structural similarity to relative clauses. This claim is suggested by the occurrence the relative clause complementizer or relative

Aboh (2005, 2010) argues for a Kaynean head-raising analysis of relative and factive clauses in Gungbe, a language belonging to the Gbe group (like Ewe). According to him, in a headed relative clause in Gungbe like the relativized noun raises to SpecCP which is headed by a complementizer. The CP is then pied piped by the relativized noun as it raises to higher heads in DP such as SpecNumP and SpecTopP. In this perspective, Aboh (2005, 2010) provides a discussion of two types of factive clauses in Gungbe. One type involves the fronting of an (internal) argument of the verb (a type also found in Kpele Ewe). The second type of factive involves a fronted copy of the main verb (a type found in Pulaar and Wolof). He claims that the two types of factive constructions are similar to headed relative clauses in the sense that they involve a relative CP which is headed by the relative complementizer. This dissertation is attempting to provide data which helps further and/or support this line of research.

This dissertation is set to contribute to the general and typological body of research on nominalization. It appears that most research on nominalization has been conducted on Indo-European languages like English, for instance. In this regard, this research opens new perspectives

and expand current findings by highlighting structural differences and similarities, if any, between nominalization in Pulaar as opposed to other languages, especially those belonging to the same family. Such a contrast is more crucial in the framework of research conducted in the Niger-Congo language family of which Pulaar is a member.

#### 1.4 Morphology: Consonant Mutation

Consonant mutation in language refers to the change of one consonant into another under certain conditions. According to Sylla (1982) and McLaughlin (2005), Pulaar exhibits consonant mutation, as seen in the examples below. Consonant mutation is a crucial feature in Pulaar nominalization.

Example (5) shows that [k] changes to [h] to suggest plurality: Pulaar (Mc Laughlin 2005)

- (5) a. **kan** ‘Kane’ patronym  
b. **han-hanbe** ‘those of the last name Kane’

The following example shows alternation between different sounds to contrast singular and plural forms of the noun. Again, we can notice the change in the initial consonant:

- (6) Alternation between **y, g** and **s, c** is triggered by plural.

<b>y</b> itare	‘eye’
<b>g</b> ite	‘eyes’
<b>s</b> engo	‘side’
<b>c</b> engle	‘sides’

Consonant mutation may also occur in nominalization from a verb; that is, verb to noun alternations:

- (7) **surku-go** ‘to smoke’      **curki** ‘smoke (N)’  
      smoke-INF

Alternations like these occur in a variety of contexts such as subject agreement on the verb, singular/plural alternation on nouns, but also affixation. I will return to this in chapter 3.

## 1.5 Word order

*Pulaar* is used here as an umbrella term to refer to the language as opposed to the multiple dialect names. In this dissertation, I focus on the Toore dialect. *Pulaar* is a Subject-Verb-Object (SVO), prepositional language:

- (8) Taalibe mo jangu-m deft-are nde les lekki  
student CL.the read-PERF.NEUT book-CL CL.the under tree  
'The student has read the book under a tree'

This word order is disrupted when a part of the sentence (subject, object or locative) is focused. In this case, the focused phrase is generally fronted and it can optionally be preceded by the focus marker *ko*:

- (9) (Ko) taalibe mo jang-i deft-are nde les lekki  
FOC student CL.the read-PERF.FOC book-CL CL.the under tree  
'It's the student who has read the book under a tree'

- (10) (Ko) deft-are nde taalibe mo jang-i les lekki  
FOC book-CL CL.the student CL.the read-PERF.FOC under tree  
'It's the book that the student read under a tree'

The subject is focused in (9) and the object is focused in (10). In (11), however, the prepositional phrase is in focus.

- (11) (Ko) les lekki taalibe mo jang-i deft-are nde  
FOC under tree student CL.the read-PERF.FOC book-CL CL.the  
'It's under a tree that the student read the book'

- (12) a. (Ko) raandu ndu **njii-noo mi.** DP focus  
FOC dog.CL the.CL see-PAST 1SG  
'It's the dog that I saw'
- b. Ko **njii-noo mi?** Wh-question  
What see-PAST 1SG  
'What did I see?'
- c. (Ko) **mi yii-no** raandu ndu. Verb focus  
FOC 1SG see-PAST dog.CL the.CL  
'I saw the dog (not heard it bark)'

In (12a) and (12b) the bolded parts indicated that consonant mutation occurs on the initial consonant of the verb when the subject marker is postverbal. In contrast, in (12c) where the subject pronoun is preverbal, the initial consonant of the verb does not undergo mutation.

## 1.6 Nouns in Pulaar

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)) with twenty two noun classes and the noun class marker following the noun (Sylla 1982: 34).

- |         |           |        |    |            |        |
|---------|-----------|--------|----|------------|--------|
| (13) a. | raa-ndu   | ndu    | b. | daa-dí     | dí     |
|         | dog-CL    | CL.the |    | dog-CL     | CL.the |
|         | ‘the dog’ |        |    | ‘the dogs’ |        |

In (12a), the noun can be broken into the root noun *raa* “dog” and a noun class suffix *ndu*. Thus, the noun always occurs as a combination of the noun and the noun class suffix, like *raandu* “a dog”.

Most nouns in Pulaar are composed of a root and a class suffix. This clitic suffix has singular/plural alternations, seen in the example below where the singular clitic suffix *ndu* becomes *dí* in the plural, but also the initial sound in ‘dog’ and ‘female’ changes from [r] to [d]:

- |         |                  |        |        |    |                   |        |        |
|---------|------------------|--------|--------|----|-------------------|--------|--------|
| (14) a. | raa-ndu          | rewru  | ndu    | b. | daa-dí            | dewi   | dí.    |
|         | dog-CL           | female | CL.the |    | dog-CL            | female | CL.the |
|         | ‘the female dog’ |        |        |    | ‘the female dogs’ |        |        |

However, what is most important here is the alternation of the initial consonant, <r> becoming <d> in both the root noun and the adjective that modifies it. Similar alternations occur with a variety of consonant pairings. Table 1 shows the different noun classes in Pulaar and a noun they go with.

(15) **Table 1:** The Noun Classes in Pulaar

	<b>Noun class</b>	<b>example</b>	<b>gloss</b>
1	mo	suko mo	the child
2	nde	hoore nde	the head
3	ndi	ngaari ndi	the ox
4	ndu	raandu ndu	the dog
5	nge	nagge nge	the cow
<b>6</b>	<b>ngo</b>	jungo ngo	the hand
7	ngu	pucuu ngu	the horse
8	nga	damnga nga	the door
9	ba	mbabba ba	the donkey
10	ka	laanaa ka	the plane, boat
11	ki	lebii ki	the knife
<b>12</b>	<b>ko</b>	huuko ko	the grass
13	dum	baleejum dum	the black thing
14	dam	ndiyam dam	the water
15	nge	laacee nge	the little tail
16	ka	leyka ka	the small land
17	ngi	damngii ngi	the huge door
18	nga	neddāa nga	the huge person
19	be	yimbe be	the people
20	de	gite de	the eyes
21	di	babaaji di	the donkeys
22	koñ	laanoñ koñ	the small boats

Noun classes 1 to 18 are singular and noun classes 19 to 22 are plural. The noun class 1 is used for humans and borrowed words. It has two plural forms: 19 for humans and 21 for borrowed words. However, while 19 relates specifically to humans, 21 is not only related to borrowed words; it is also the plural of other noun classes such as 3, 4, 5, 7 etc. The noun class 20 is also the plural of several noun classes such as 8, 10, 2, etc. The noun class 22 is the plural for diminutives 15 and 16. The augmentative classes 17 and 18, however, have the regular plural class 20 even when the “augmented” noun denotes human. Thus, a noun like *raandu* can occur in simple, augmentative and diminutive forms, as shown in the examples below where different noun classes in the (a) examples correspond to different plural noun classes in the (b) examples.

- (16) a. raa-**ndu** ndu dog-CL CL.the ‘the dog’      b. daa-**dí** **dí.** dog-CL CL.the ‘the dogs’      Simple
- (17) a. daa-**ngaa** nga dog-CL CL.the ‘the big dog’      b. daa-ngatte **dé.** dog-CL CL.the ‘the big dogs’      Augmentative
- (18) a. daa-**nge** nge dog-CL CL.the ‘the little dog’      b. daa-koñ **koñ** dog-CL CL.the ‘the little dogs’      Diminutive

(19) **Table 2:** Singular/Plural Mapping of Noun Classes

Singular	Plural
mo	be (humans), dí (loanwords)
ndi, ndu, nge, ngu, ba, ko, d̄um, d̄am	dí
nde, ngo, ka, ki & the augmentatives nga, ngi	dé
nge, ka (diminutives)	koñ

Table 2 shows the singular to plural correspondence of Pulaar noun classes. While augmentatives share a plural form (*dé*) with regular noun classes, the diminutives have a specific plural form (*koñ*). The *mo* class has two plural forms: *be* for humans and *dí* for loanwords. However, if a loanword has human content like a profession (mechanic, car driver, student, etc) it takes the human plural *be*.

For the remainder of this paper, I will be spelling nouns as a split word, for instance *raa-ndu* instead of a one single unit *raandu*.

Apart from the noun class *mo* which clearly relates to humans and borrowed words, it is hard to pin down a specific class or category of things which fall under one noun class. For some noun classes such as *nde* and *d̄am*, the class appears to be identifiable but with some exceptions; with

round objects falling under the *nde* noun class for the most part and nouns denoting liquids falling under the *dam* noun class.

Whether a noun is definite or indefinite depends on the presence of the noun class marker; it's presence signals that the noun is definite and it's absence indicates infiniteness.

- (20) a. **raa-ndu** dog-CL 'dog/a dog'  
 b. **daa-ndu ndu.** dog-CL CL.the 'the dog'

### 1.7 Demonstratives

There is also a class of demonstratives pronouns which can be used in reference to an object that is being pointed at. They are built on the 3<sup>rd</sup> person pronoun singular and plural to which the morphemes *-y* and *-n* are suffixed. The *-n* morpheme involves vowel lengthening, unlike the *-y* morpheme. This also includes all noun classes in Pulaar.

(21) **Table 3:** Demonstratives

	Proximal	Distal	Gloss
DEM	NC		This one (close to speaker, and maybe listener too)
		NC + n	That one (close to listener)
		NC + y	That one over there (away from speaker and listener)

- (22) a. **mo** 'this (here)' Class 1  
 b. **moon** 'that' where the listener is.  
 c. **moy** 'that' over there

- (23) a. **ndu** 'this (here)' Class X  
 b. **nduun** 'that' where the listener is.  
 c. **nduy** 'that' over there  
 d. **di** 'these'  
 e. **diin** 'those'  
 f. **diy** 'those over there'

The demonstrative can be combined with a locative to specify the distance relative from the speaker, the listener or both the speaker and the listener with respect to the object in reference. In this case, particles translatable as ‘here’, ‘there’, ‘over there’ are adjoined to the pronoun to suggest the position of the object in space.

- (24) a. moo **ɗo** ‘this one here’ where the speaker is (maybe the listener too)  
 b. moon **ɗoon** ‘that one’ where the listener is (not far from the speaker)  
 c. moy **ɗa** ‘that one there’ not far away from speaker and listener  
 d. moy **to** ‘that one over there’ far away from both speaker and listener
- (25) a. nduu **ɗo** ‘this one here’ where the speaker is  
 b. nduun **ɗoon** ‘that one’ where the listener is (not far from the speaker)  
 c. nduy **ɗa** ‘that one there’ not far away from speaker and listener  
 d. nduy **to** ‘that one over there’ far away from speaker and listener

Noticeably, there are three forms of demonstratives: the neutral form (consisting of the pronoun or noun class marker), the *-n* and *-y* forms which indicate a certain distance in which an object is located with regard to the participants in the speech event.

## 1.8 Adjectives in Pulaar

Adjectives in Pulaar agree in noun class with the noun they modify. In other words, the noun class of the noun is suffixed on the root of the adjective. This can be seen in the following examples:

- (26) a. raandu **ndu**  
 dog CL.the  
 ‘the dog’
- b. raandu mawn-**ndu ndu**  
 dog big-CL CL.the  
 ‘the big dog’



- (27) a. nagge **nge**  
 cow CL.the  
 ‘the cow’
- b. nagge tokos-**ee** **nge**  
 cow big-CL CL.the  
 ‘the small cow’
- (28) a. daangaa **nga**  
 dog CL.the  
 ‘the huge dog’
- b. raangaa mawn-**nga** **nga**  
 dog big-CL CL.the  
 ‘the enormous dog’

Adjectives in Pulaar behave like verbs in certain contexts. They bear the same tense and aspect morphemes found on regular verbs in the language:

- (29) a. raandu ndu ndu mawn-**i**  
 dog CL.the 3SG big-STATE  
 ‘the dog is big’
- b. raandu ndu mawnu-**m**  
 dog CL.the big-PERF  
 ‘The dog has grown big’
- c. raandu ndu mawn-**at**  
 dog CL.the big-IMPERF  
 ‘The dog is going to grown big’

The examples in (29) show that different aspectual morphemes can be suffixed to an adjectival root in ways similar to a verb.

## 1.9 Verb Structure in Pulaar

The verb in Pulaar can be active, middle or passive (Arnott, 1978; Sylla, 1993). The infinitive in Pulaar is composed of the verb root and the infinitive suffix *-go*. This is shown below:

- |      |    |                     |                 |               |
|------|----|---------------------|-----------------|---------------|
| (30) | a. | <b>loot-go</b>      | ‘to wash’       | <b>Active</b> |
|      | b. | loot- <b>aa</b> -go | ‘to get washed’ | Middle        |
|      | c. | loot- <b>ee</b> -go | ‘to be washed’  | Passive       |

The verb morphology varies according to variables such as subject agreement, tense, aspect, negation and derivational morphemes.

The verb in Pulaar agrees with the subject. In matrix clauses for instance, subject agreement is shown on the verb through the “mutation” of the initial consonant when the subject is plural.

- |      |    |                           |                  |      |          |
|------|----|---------------------------|------------------|------|----------|
| (31) | a. | mi/a/o                    | <b>sood</b> -ma  | oto. | Singular |
|      |    | I/you/he/she              | buy-PERF.NEUT    | car  |          |
|      |    | ‘I/you have bought a car’ |                  |      |          |
|      | b. | En/on/6e                  | <b>cood</b> -ma  | oto. | Plural   |
|      |    | We/you/they               | buy-PERF.NEUT    | car  |          |
|      |    | “We have bought a car.”   |                  |      |          |
| (32) | a. | mi/a/o                    | <b>yeey</b> -ma  | oto. | Singular |
|      |    | I/you/he/she              | sell-PERF.NEUT   | car  |          |
|      |    | ‘I/you have sold a car’   |                  |      |          |
|      | b. | En/on/6e                  | <b>njeey</b> -ma | oto. | Plural   |
|      |    | We/you/they               | sell-PERF.NEUT   | car  |          |
|      |    | ‘We have sold a car.’     |                  |      |          |

In (31a) the sentence has a singular subject and the verb ‘buy’ starts with [s]. In (31b), however, where the subject is plural the verb ‘buy’ begins with <c> pronounced [ʃ]. Similarly, the verb ‘sell’ starts with <y> in (32a) with a singular subject whereas in (32b) where the subject is plural, the verb begins with the prenasalized sound [nj].

### 1.9.1 Tense and aspect

In Pulaar, only past tense appears as an overt morpheme *no(o)*; all other tense specifications, especially present tense, remain silent. In (33a) below, it is noticeable that an overt past tense morpheme that is suffixed to the verb root. In (33b-c), on the other hand, only an aspectual morpheme is suffixed to the root of the verb.

- |      |  |              |
|------|--|--------------|
| (33) | a. Mi            yaa- <b>noo</b> toon ngey.<br>1SG.SUBJ go-PAST there yesterday.<br>'I went yesterday'         | Past         |
|      | b. Mi            yaa- <b>ma</b> toon.<br>1SG.SUBJ go-PERF there.<br>'I have gone/been there'                   | Perfective   |
|      | c. Mi            yah- <b>at</b> toon bimbi.<br>1SG.SUBJ go-IMPERF there tomorrow<br>'I will go there tomorrow' | Imperfective |
|      | d. Mbidó      toon yah- <b>a</b> jooni.<br>1SG.SUBJ there go-PROG now<br>'He is going now'                     | Progressive  |

The past tense can co-occur with the perfective and the imperfective, but it cannot co-occur with the progressive/subjunctive. It precedes the perfective morpheme and it follows the imperfective morpheme:

- |      |   |                   |
|------|---|-------------------|
| (34) | a. Mi            yaa- <b>noo-m</b> toon.<br>1SG.SUBJ go-PAST-PERF there.<br>'I had gone/been there'                                       | Past Perfective   |
|      | b. Mi            yah- <b>at-no</b> toon bimbi.<br>1SG.SUBJ go-IMPERF-PAST there tomorrow<br>'I was going there tomorrow/I would go there' | Past Imperfective |
|      | c. *Mbidó      toon yah- <b>a-no</b> .<br>1SG.SUBJ there go-PROG-PAST<br>Intended: 'I was going there'                                    | Past Progressive  |

- d. **Taa** mbido toon yah-**a**. Past Progressive  
 PROG 1SG.SUBJ there go-PROG  
 ‘I was going there’

The example in (34a) shows that past tense can co-occur with the perfective morpheme whereas in (34b) in co-occurs the imperfective morpheme. For the past progressive (34d), a grammatical operator which encodes something along the lines of ‘at that time’ is placed at the beginning of the clause. The past tense marker *-no* cannot surface with the progressive, as shown in (34c).

### 1.9.2 Negation

Negation in Pulaar is a suffix on the verb, as can be seen in example (35) below.

- (35) Mi yah-at-**aa**.  
 1SG.SUBJ go-IMPERF-NEG  
 ‘I don’t go’

Negation in Pulaar cannot co-occur with the perfective morpheme, as shown in the examples below:

- (36) a. Mi yah-**ma** Affirmative Present Perfective  
 I go-PERF  
 ‘I have gone, I went’
- b. Mi yah-aa-(\***m**). Negative Present Perfective  
 1SG.SUBJ go-NEG-PERF  
 ‘I have not gone’

In (36a), only the perfective appears on the verb root and (36b) shows that the perfective morpheme cannot co-occur with negation. Similarly, the past tense morpheme surfaces with the perfective in (37a). But the perfective is banned in this structure in the presence of negation, as seen in (37b).

All this shows is that the perfective cannot surface with negation in Pulaar.

- (37) a. Mi yah-noo -**m** Affirmative Past Perfective  
 1SG.SUBJ go-PAST-PERF  
 ‘I had gone’

- d. Mi yah-aa-noo-(\*m). Negative Past Perfective  
 1SG.SUBJ go-NEG-PAST  
 ‘I did not go’

The example in (38a) is unmarked with tense or negation. The example in (38b) shows the imperfective morpheme co-occurring with negation.

- (38) a. Mi yah-at. Imperfective  
 1SG.SUBJ go-IMPERF  
 ‘I will go/I’m going to go’
- b. Mi yah-at-aa Negative Imperfective  
 1SG.SUBJ go-IMPERF-NEG  
 ‘I will not go’

The structure in (39a) indicates the co-occurrence of imperfective and past tense in that linear order whereas (39b) shows the imperfective, negation and past tense co-occurring in that order.

- (39) a. Mi yah-at-no. Past Imperfective  
 1SG.SUBJ go-IMPERF-PAST  
 ‘I would go’
- b. Mi yah-at-aa-no. Negative Past Imperfective  
 1SG.SUBJ go-IMPERF-NEG-PAST  
 ‘I would not go’

The imperfective can co-occur with past tense, as in (39a); but it can also co-occur with both negation and past tense, as shown in (39b).

### 1.9.3 Derivational Morphemes

A variety of morphemes can also be suffixed to the verb root (Sylla, 1982). Some of these morphemes increase or decrease the valency of the verb. Such morphemes include causative, benefactive, reversive, repetitive, reciprocal, allative, instrumental, simulative, etc.

- (40) a. Musa jangu-**m** deftare nde.  
 musa read-PERF book CL.the  
 ‘Musa read the book’
- b. Musa jang-**in**-noo-m Aali deftare nde. causative  
 musa read-CAUS-PAST-PERF Aali book CL.the  
 ‘Musa had made Aali read the book’
- c. Musa jang-**an**-at-no Aali deftare nde. benefactive  
 musa read-BEN-IMPERF-PAST Aali book CL.the  
 ‘Musa would read the book to Aali’
- d. Musa jang-**id**-aa-no deftare nde he Aali. associative  
 musa read-ASC-NEG-PAST book CL.the with Aali  
 ‘Musa did not read the book with Aali’

In (40b), the causative co-occurs with past tense and the perfective. In (40c), the benefactive morpheme surfaces with imperfective and past tense whereas the associative morpheme co-occurs with negation and past tense in (40d). Notice that in (40b-d), the valency-changing morpheme is the closest to the verb root. Similarly, the valency-changing morphemes (in bold) in (41a-e) precede the perfective morpheme and are closer to the verb root.

- (41) a. Musa jang-**id**-ma deftare nde. exhaustive  
 musa read-EXH-PERF book CL.the  
 ‘Musa read the book entirely’
- b. Musa jang-**oy**-ma deftare nde. allative  
 musa read-ALL-PERF book CL.the  
 ‘Musa went to read the book’
- c. Musa jang-**ir**-ma deftare nde lone. instrumental  
 musa read-INST-PERF book CL.the glasses  
 ‘Musa read the book wearing glasses’
- d. Musa jang-**it-ii**-m deftare nde. repetitive  
 musa read-REP-MID-PERF book CL.the  
 ‘Musa reread the book’
- e. Musa udd-**it**-ma deftare nde. reversive  
 musa close-REV-PERF book CL.the  
 ‘Musa opened the book’

As it appears, some of these morphemes like causative, benefactive, associative and instrumental increase the valency of the verb. On the other hand, the morphemes encoding the exhaustive, allative, repetitive and reversive do not change the valency but they only add in extra semantics to the verb.

#### 1.9.4 Object Pronouns

The pronouns labeled object pronouns occur in neutral contexts (when nothing is focused). In this case, they are clitics, as in (42a-b), except for *be* ‘them’ (42c-d). Thus, they can occur between the verb root or tense on the one hand, and the perfective marker on the other:

- (42) a. mi yii-**moo**-m  
           I see-3SG-PERF  
           ‘I saw him’
- b. mi yii-no-**mon**-ma  
           I see-PAST-2PL-PERF  
           ‘I saw him’
- c. O yii-ma     **be**.  
           he see-PERF 3PL.  
           ‘he saw them’
- d. \*O yii-**be**-ma.  
           he see-3PL-PERF  
           ‘he saw them’

The examples in (42a-b) show that the object pronoun precede the perfective morpheme. The third person plural is an exception; it follows the perfective as in (42c) which can be contrasted to the ungrammatical examples in (42d) where the 3PL precede the perfective. However, object pronouns always follow the imperfective morpheme as shown in the following examples:

- (43) a. mi yii-at-**mo**  
           I see-IMPERF-3SG  
           ‘I am going to/will him’

- b. mi yii-at-no-**mo**  
 I see-IMPERF-PAST-3SG  
 ‘I would see/was habitually seeing him’

The third person singular subject follows the imperfective in (43a) and it also follows both the imperfective and past tense in (43b).

- (44) a. O yiy-at **fe**.  
 he see-IMPERF them.  
 ‘He is going to/will see them’
- b. O yiy-at-no **fe**.  
 he see-IMPERF-PAST them.  
 ‘He would/was habitually seeing them’

Similarly, the third person plural object follows the imperfective in (44a) and it also follows both the imperfective and past tense in (44b). However, neither the 3SG nor the 3PL can precede the imperfective morpheme, as shown in (45a-b):

- (45) a. \*O yii-**mo**-at.  
 he see-3SG-IMPERF  
 ‘He is going to/will see him’
- b. \*O yii-**fe**-at.  
 he see-3PL-PERF  
 Intended: ‘He is going to/will see them’

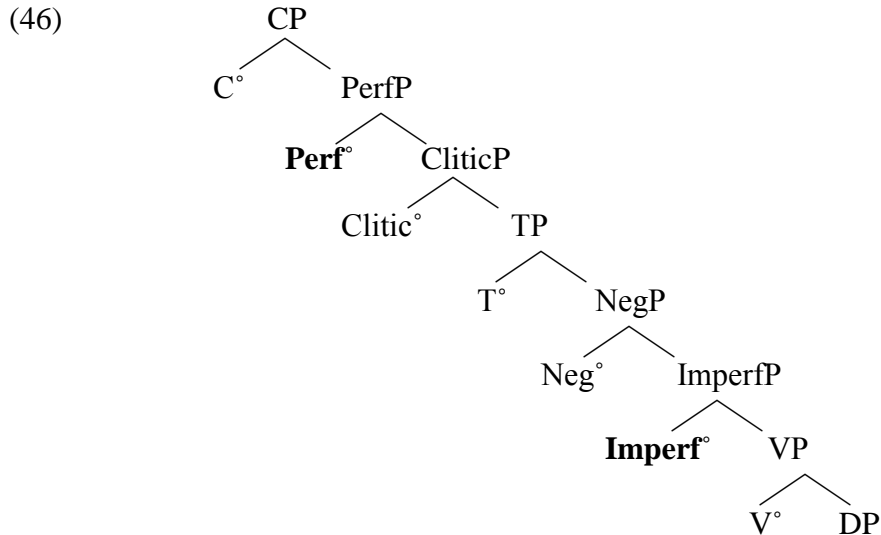


## 1.10 Pulaar clause structure

### 1.10.1 General Assumptions

Given the structural properties displayed by perfective and imperfective structures, I argue for a

Pulaar clause structure like the following:



This structure is relevant as I will discuss constructions involving tense, aspect and negation in chapter 2 and chapter 3.

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

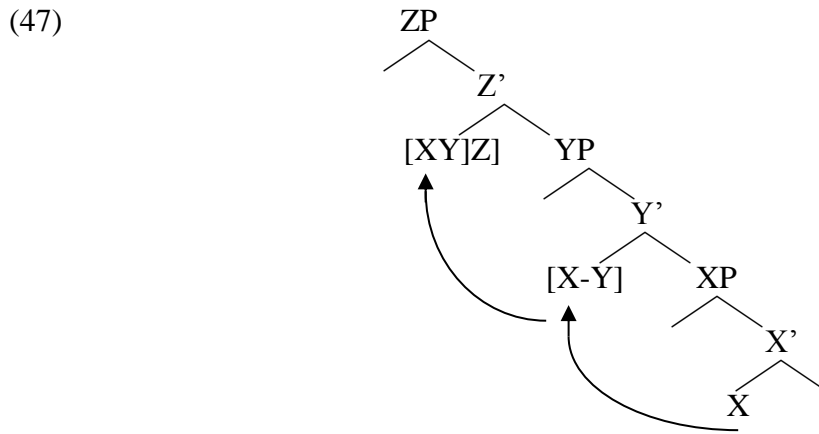
### 1.10.2 Theoretical Assumptions

#### 1.10.2.1 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-adjoints to Z, as in the abstract structure below.



The syntactic derivation of (47) where the underlying hierarchy is Z > Y > X yields the surface order X > Y > Z which is a mirror image of the underlying order, as Baker claims. The Pulaar verb structure can contain a number of morphemes. Negation, past tense, perfective and imperfective morphemes can all be attached to the verb root, just like the derivational morphemes. This raises the 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. I will use the Mirror Principle in the derivation of certain nominal clause such as the infinitive clause in chapter 2 which can involve a number of functional and derivational morphemes.

### 1.10.2.2 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 and he comes to the conclusion that functional heads across languages are in a fixed hierarchy:

- (48) Mood<sub>speech act</sub> > Mood<sub>evaluative</sub> > Mood<sub>evidential</sub> > Mod<sub>epistemic</sub> > **T(Past)** > T(future) >..  
 Mood<sub>irrealis</sub> > Mod<sub>root</sub> > Aspect<sub>habitual</sub> > / T(Anterior) > **Aspectperfect** >  
**Aspectimperfective** > Aspect<sub>completive</sub> > / Voice > **V**  
 (Cinque 1999: page 77)

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 (48). In (48), both perfective and imperfective aspects are located below T(past) but perfective is 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 (49) shows:

- (49) **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.

### 1.10.2.3 Perfective Clauses in Pulaar

In the analysis of Pulaar perfective clause, I investigate structures like that in example (50), highlighting the linear order of tense, (perfective) aspect and negation morphemes.

- |   |                                |
|---|--------------------------------|
| (50) a. Mi yah- <b>ma</b><br>I go-PERF<br>'I have gone, I went' | Affirmative Present Perfective |
| b. Mi yah-aa-(*m).<br>I go-NEG-PERF<br>'I have not gone'        | Negative Present Perfective    |
| c. Mi yah-noo - <b>m</b><br>I go-PAST-PERF<br>'I had gone'      | Affirmative Past Perfective    |
| d. Mi yah-aa-noo-(*m).<br>I go-NEG-PAST-PERF<br>'I did not go'  | Negative Past Perfective       |

In (50a), the perfective morpheme immediately follows the verb. In (50b), however, the perfective morpheme does not surface. In (50c), past tense intervenes between the verb root and the perfective morpheme, whereas in (50d), both negation and past tense, in that respective order, follow the verb and precedes the null perfective morpheme. This is summarized in (51):

(51) **Order of Morphemes in Perfective Clauses:**

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

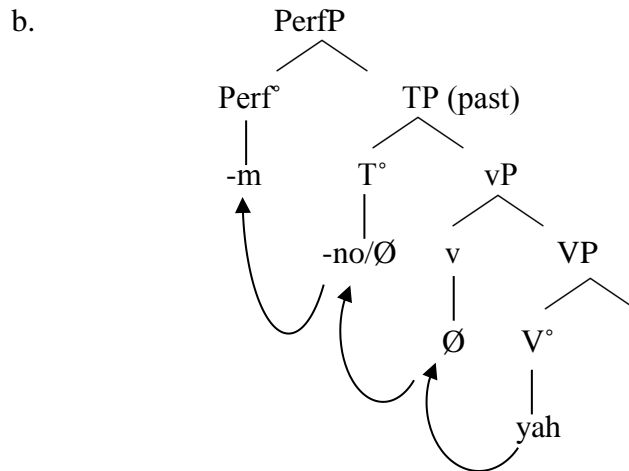
In (51), which is a schematic representation of the structures in (50), the verb always raises high in the clause to perfective which, thus appears at the end of the verb complex in the linear order.

Negation and tense intervene between the verb and the perfective morpheme, with negation preceding tense.

#### 1.10.2.4 Affirmative Perfective Clauses

Using the Mirror Principle, the perfective clauses in (50c) will have an underlying structure like the following (abstracting away from some syntactic details):

- (52) a. Mi yah-noo-**m** Affirmative Perfective  
 I go-PAST-PERF  
 'I have gone, I went'



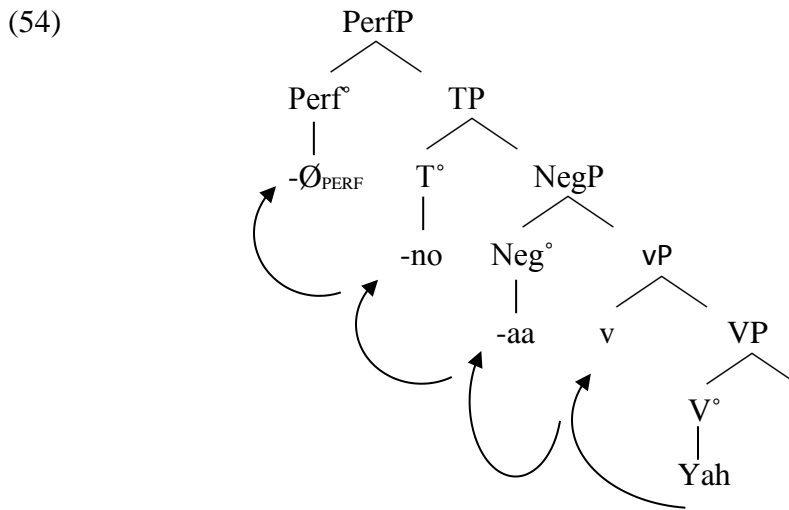
Tense surfaces in the Affirmative Past Perfective (present) in (50c). Thus, (52b) is consistent with both (50c); tense is null in the present and overt in the past. Simple head movement derives the correct surface order, with the verb raising up to Perfective through Tense and pied-piping the latter.

### 1.10.2.5 Negative Perfective

Negation does not co-occur with Perf *-m* in the Toore dialect, as (53) shows:

- (53) Mi yah-aa-no-(\*m).  
 I go-NEG-PAST-(\*PERF)  
 'I did not go'

I assume a silent perfective morpheme ( $\emptyset_{\text{PERF}}$ ) 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, (53) can be represented as the structure in (54) at an underlying level:



Here again, under the assumption of a null perfective morpheme, head movement derives the correct linear order of morphemes.

### 1.10.2.6 Imperfective clauses

In examining the imperfective clauses of Pulaar, I look at constructions like those in (55a-d) which show the tense, imperfective aspect and negation morphemes.

- |  |                            |
|--|----------------------------|
| (55) a. Mi yah- <b>at</b> .<br>I go-IMPERF<br>'I will go'                | Imperfective               |
| b. Mi yah- <b>at-aa</b><br>I go-IMPERF-NEG<br>'I will not go'            | Negative Imperfective      |
| c. Mi yah- <b>at-no</b> .<br>I go-IMPERF-PAST<br>'I would go'            | Past Imperfective          |
| d. Mi yah- <b>at-aa-no</b> .<br>I go-IMPERF-NEG-PAST<br>'I would not go' | Negative Past Imperfective |

The imperfective morpheme immediately follows the verb in (55a). In (55b), the imperfective follows the verb but precedes negation. Likewise, past tense follows imperfective in (55c) and in (55d) both negation and past tense (in that order) follow imperfective which follows the verb. (56a-d) is a summary of the surface morpheme ordering in (55):

#### (56) Order of Morphemes in Imperfective Clauses

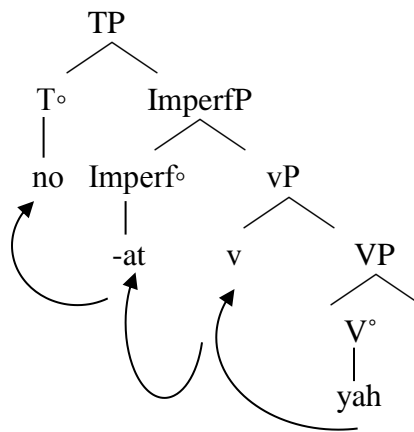
- |                                   |                |
|-----------------------------------|----------------|
| a. Affirmative Imperfective:      | V-IMPERF       |
| b. Negative Imperfective:         | V-IMPERF-NEG   |
| c. Affirmative Past Imperfective: | V-IMPERF-T     |
| d. Negative Past Imperfective:    | 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 morpheme is always closest to the verb root and is *followed* by tense and negation morphemes.

### 1.10.2.7 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:

(57) a.



b. Mi yah-**at**-no.

I go-IMPERF-PAST  
'I would go'

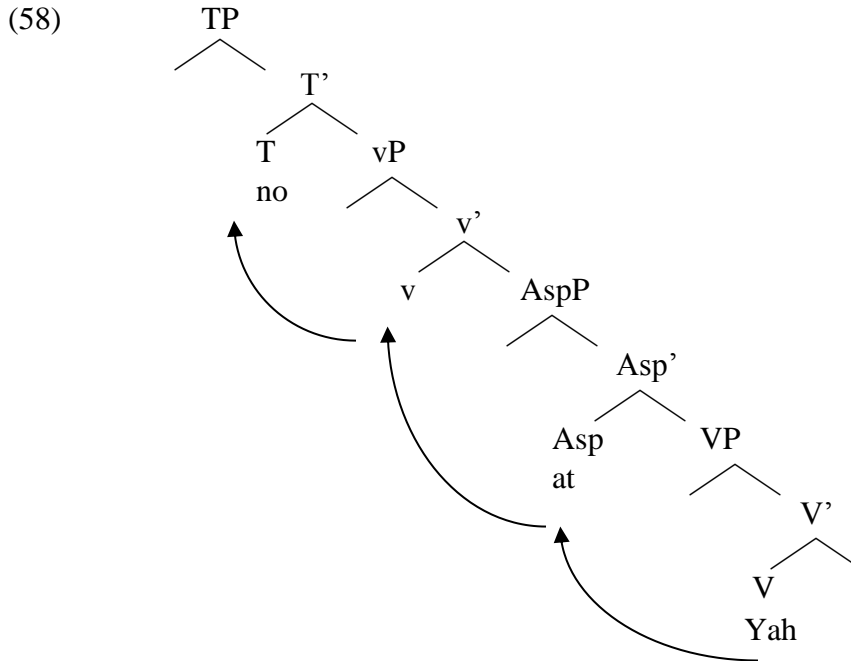
Past Imperfective

c. V < Imperf < T

The derivation in (57a) gives the correct surface order of morphemes for both (57a) and (57c), with the imperfective preceding past 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:



I argue, however, that the imperfective morpheme in Pulaar is outside of vP, as I will show later in this chapter.

### 1.9.2.8 Negative Imperfective

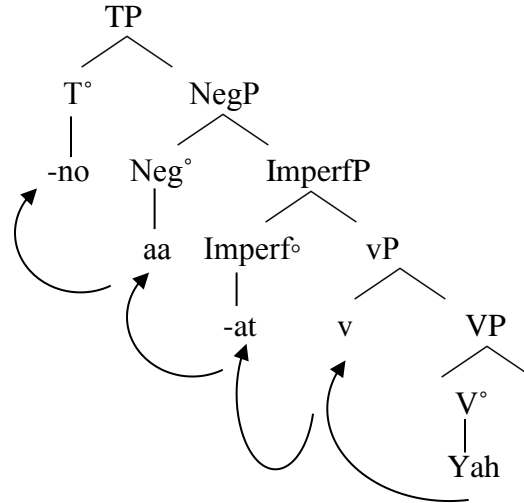
Unlike the perfective morpheme which is incompatible with negation, the imperfective co-occurs with negation in Toore Pulaar, as (59) shows:

- (59) **Mi yah-at-aa-no.**  
 I go-IMPERF-NEG-PAST  
 ‘I would not go’

Following the same line of analysis under the Mirror Principle, (59) is analyzed as (60) below.

Imperfective is lower than Negation which itself is lower than T(past):

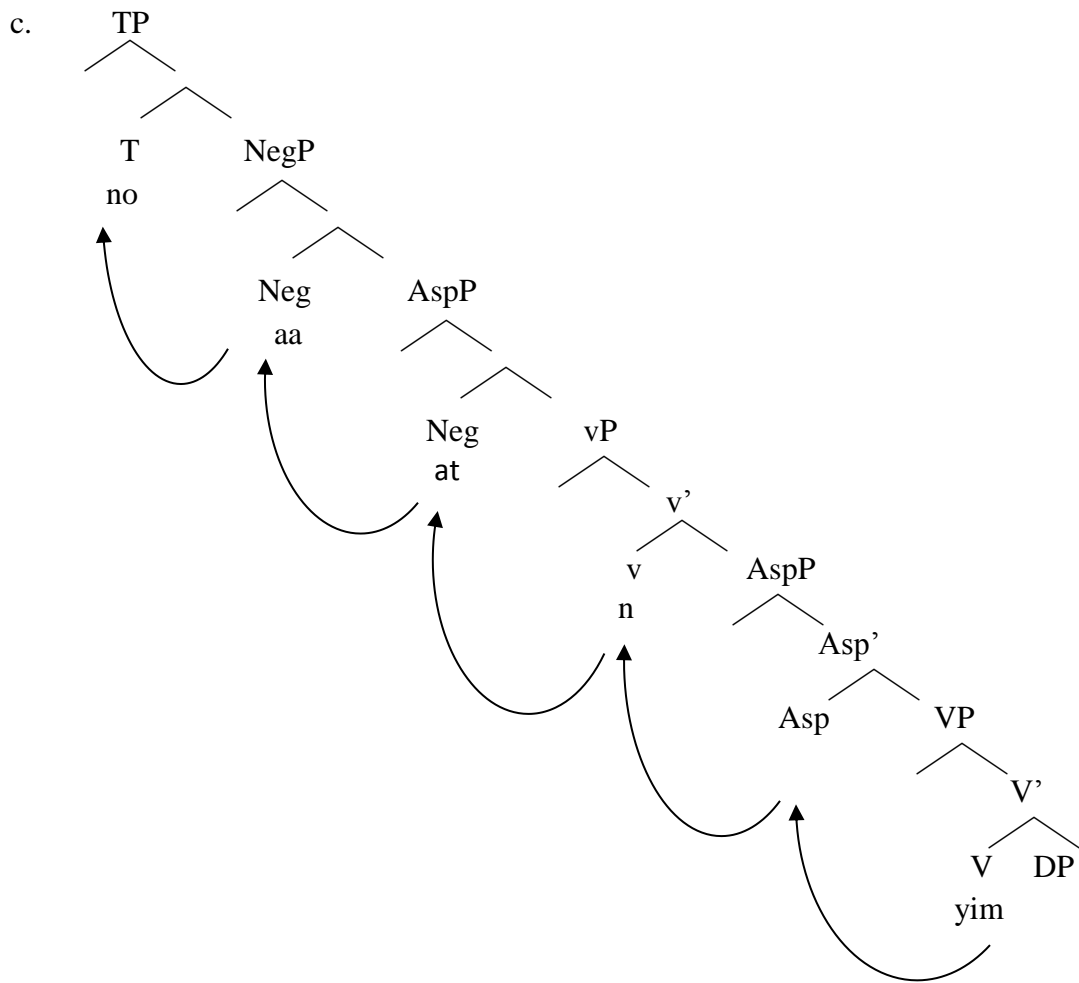
(60)



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.

In Pulaar, 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*. This is shown in the examples below, with the verbal complex represented in the tree structure in (61c):

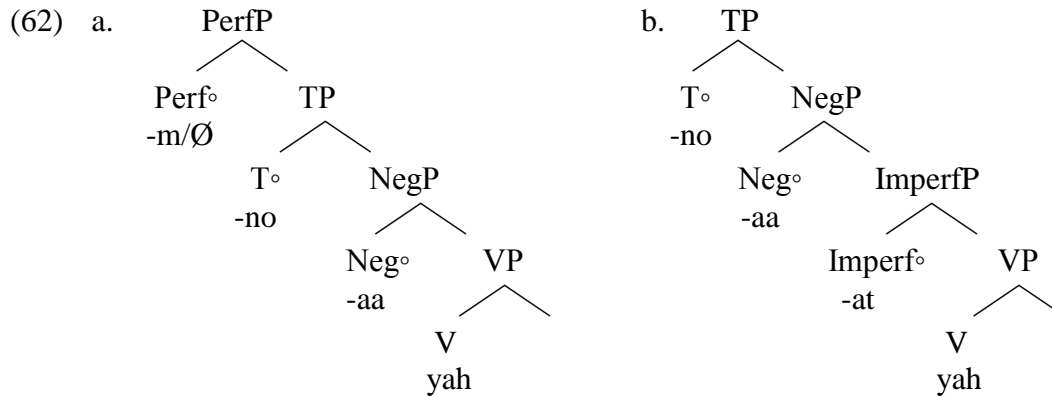
- (61) a. Mi yim-at-aa-no  
1SG sing-IMPERF-NEG-PAST  
'I was sing singer'
- b. Mi yim-n-at-aa-no                      jali    mo.  
1SG sing-CAUS-NEG-IMPERF-PAST singer CL.the  
'I was making the singer sing'



The examples in (61) show that imperfective is under Tense and Negation, but above the verb phrase.

### 1.10.3 Comparing Perfective and Imperfective Clauses

The constructions in (62a) and (62b) are two different aspectual structures with perfective and imperfective morphemes occupying distinct positions.



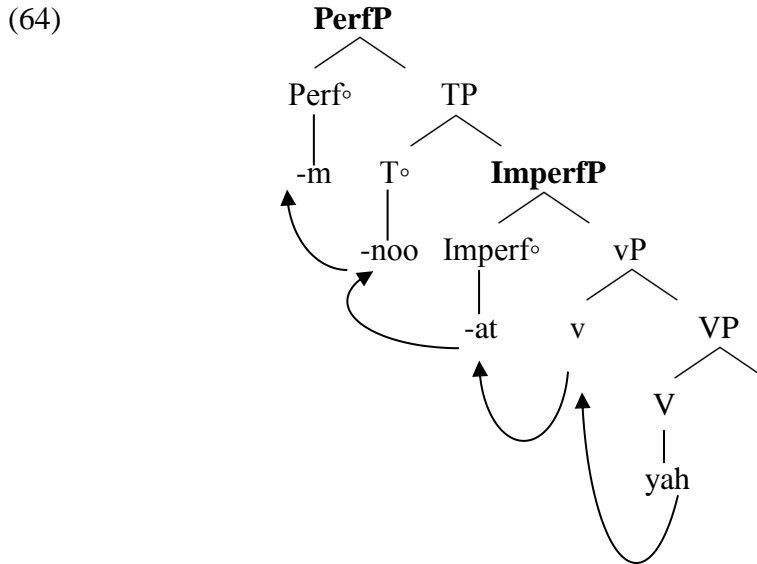
Surface order of morphemes: V > Neg > T > Perf

V > Imperf > Neg > T

The comparison of the structures in (62), reveals 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 (62) 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 (62). The example in (62a) shows that the perfective and the imperfective morpheme can co-occur, whereas (62b) 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.

- (63) 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-**Ø**.  
 I go-IMPERF-NEG-PAST-PERF  
 ‘I would not go’



The new data (64) indicates that my analysis is correct by confirming the general assumption I made about the clause structure of 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. 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.

## **1.11 Conclusions**

In this chapter, I have given an inclusive background on Pulaar. I have indicated that the language is pretty widespread throughout Africa, and as a result there is a sizeable number of dialects which spread along a continuum stretching from Senegal to Sudan. I have also provided some aspects of Pulaar morpho-syntax such as word order, noun structure, noun classes, consonant mutation, adjectival phrases, verb morphology, etc. These morpho-syntactic aspects of Pulaar, especially noun classes and consonant mutation, can all be crucial in the types of nominal constructions examined in this dissertation. In fact, the central issue of Pulaar nominalization addressed here is mainly clausal nominalization and as such, it can involve every morphological and syntactic aspect of the Pulaar clause structure discussed in this chapter. Furthermore, I have argued for a Pulaar clause structure which will be instrumental in subsequent chapters.

## Chapter 2

### 2. Infinitival Clauses in Pulaar

#### 2.1 Introduction

In this chapter, I examine Pulaar infinitives which behave either as nouns or verbs in different context. I also show the clausal nominals of genitive constructions involving infinitives. In addition, I show other constructions involving various nominalizing affixes in comparison the infinitives clauses (with and without genitives). I give examples of these structures below:

- (1) a. [**windu-go** am deftare ngo] bettu-m Musaa.  
write-INF my book CL.the surprise-PERF musaa  
'My writing of a book surprised Musaa'
- b. [**windu-go** am deftare nde] bettu-at Musaa.  
write-INF my book CL.the surprise-IMPERF musaa  
'My writing the book will surprise Musaa'

The bracketed nominal clause in (1a) involves an infinitival which behaves like a noun whereas the bracketed nominal in (1b) involves an infinitival which behaves like a verb.

#### 2.4 Overview of Some Pulaar Nominalization Processes

There is a variety of nominalization strategies in Pulaar that I review in this section. These strategies consist of a set of procedures such as affixation, conversion, compounding, consonant mutation and reduplication. Each of these nominalization processes is very productive.

Affixation is a very productive nominalization strategy. It is mainly suffixation of a nominalizing morpheme to the root as well as other morphemes with some semantic content. This results into nominal which have features such as instrumental, stative, agentive, objective, etc.

(2)	a.	lig-orde work-INSTR	‘tool’, ‘workplace’	Instrumental
	b.	juut-oo tall-STAT	‘length’	Stative
	c.	ndem-oowo farm-AG	‘farmer’	Agentive
	d.	hum-ande tie-OBJ	‘knot’	Objective

The suffix *-orde* in (2a) selects for an action verb while the nominalizing suffix *-oo* in (2b) only attaches to stative verbs (or adjectives). The suffix *-oowo* in (2c) and the suffix *-ande* in (2d) are respectively compatible with agentive verbs and action verbs. All these nominalizing suffixes are very productive in Pulaar.

Compounding is another nominalization process which involves a variety of word pairings resulting, in most cases, in rather idiomatic meanings.

One form of compounding in Pulaar is the association of two verbs conjugated at a certain tense and aspect in order to create a noun the meaning of which is not necessarily compositional, as seen in the examples below:

(3)	a.	jol    jippo get.on get.off	‘trip with stops’	Imperative
	b.	suutu    muut undip    suck.on	‘type of sauce’	Imperative
	c.	njahaa    ngaraa coming    going	‘a busy atmosphere’	Subjunctive
	d.	ñootaa    bilaa sewn    hung	‘ready-to-wear clothes’	Passive



As shown in the examples above, a nominal can be formed by placing two verbal forms with the same tense/aspect marking adjacent to each other. The resulting noun cannot, however, be read off of that combination.

Two nouns can also be combine in Pulaar to form a new noun the meaning of which may be totally opaque. Examples of this type of nominalization are provided below:

- |     |    |        |              |                 |
|-----|----|--------|--------------|-----------------|
| (4) | a. | jom    | galle        | ‘family guy’    |
|     |    | owner  | house/family |                 |
|     | b. | endu   | hayre        | ‘breast cancer’ |
|     |    | breast | stone        |                 |
|     | c. | ndiyam | woyde        | ‘peanut sauce’  |
|     |    | water  | cooking      |                 |
|     | d. | nagge  | lagde        | ‘bison’         |
|     |    | cow    | bush         |                 |

The examples shown above provide evidence of nominalization through the combination of two nouns.

Another compounding strategy that is used to form nouns is through the combination of a verb form and a noun. The resulting meaning in this case is not transparent, as shown in the examples below:

- |     |    |         |        |                     |
|-----|----|---------|--------|---------------------|
| (5) | a. | naam    | nee-jo | ‘witch’             |
|     |    | eat     | flesh  |                     |
|     | b. | hokata  | janaa  | ‘woodpecker’ (bird) |
|     |    | knock   | log    |                     |
|     | c. | fud     | naange | ‘East’              |
|     |    | rise    | sun    |                     |
|     | d. | toowa   | maṅna  | ‘snob’              |
|     |    | be.high | hat    |                     |

The examples in (5) appear to indicate an underlying syntactic structure in the sense that they are built from a verb and what might be construed as its complement (Comrie and Thompson (1985)).

As a matter of fact, these compounds do look like a VP structure.

Simple reduplication refers to a process whereby a word is repeated without adding any other affix whereas in complex reduplication the word is repeated but other morphemes can be affixed to either one or both members. In this sense, Pulaar has a complex reduplication process in that a nominalizing morpheme is suffixed to the second member of the reduplication, as shown in the following examples:

- |     |    |      |                |           |                   |
|-----|----|------|----------------|-----------|-------------------|
| (6) | a. | fal  | ‘lay across’   | falfal-oo | ‘creeper’ (plant) |
|     | b. | tiim | ‘hang over’    | timtim-oo | ‘rainbow’         |
|     | c. | fil  | ‘tell a story’ | filfil-oo | ‘story’           |
|     | d. | lew  | ‘shine’        | lewlew-aa | ‘moonshine’       |

This type of nominalization is not very productive and the resulting noun is not always transparent.

The nominalizing suffix is obligatory. It is akin to an indefinite article in the sense that the indefinite article in Pulaar is sometimes built in the noun as an overt morpheme or noun class clitic which changes when the noun is plural. Some examples are shown below:

- |     |    |                  |                   |                 |              |
|-----|----|------------------|-------------------|-----------------|--------------|
| (7) | a. | <b>raandu</b>    | ‘a dog’           | <b>daadi</b>    | ‘dogs’       |
|     | b. | <b>colee</b>     | ‘a bird’          | <b>coli</b>     | ‘birds’      |
| (8) | a. | <b>falfal-oo</b> | ‘creeper’ (plant) | <b>palpal-i</b> | ‘creepers’   |
|     | b. | <b>timtim-oo</b> | ‘rainbow’         | <b>timtim-i</b> | ‘rainbows’   |
|     | c. | <b>filfil-oo</b> | ‘story’           | <b>pilpil-i</b> | ‘stories’    |
|     | d. | <b>lewlew-aa</b> | ‘moonshine’       | <b>lewlew-e</b> | ‘moonshines’ |

## 2.5 Genitive Nominals in Pulaar

This section presents different types of genitive constructions, including derived nouns as well as infinitival nouns. It also shows genitive structures with pronoun and DP possessors.

Genitive nouns are consist of a DP and a possessor or modifier which is either a pronoun or another DP. I discuss genitive constructions like the ones in (9) here because they can also involve infinitives generally behaving as head/possessed nouns. There is, however, no morphological genitive marker on the noun in Pulaar. The possessed noun is followed by the possessor noun or pronoun.

- (9) a. Mi yeey-ma [oto Musaa mo]. Alienable  
1st sell-PERF car musaa CL.the  
'I sold Musaa's car'
- b. Mi yeey-ma [oto maako mo].  
1st sell-PERF car 3SG.GEN CL.the  
'I sold his car'
- (10) a. Mi yii-ma [yeesoo Musaa ngo]. Inalienable  
1st see-PERF face musaa CL.the  
'I saw Musaa's face'
- b. Mi yii-ma [yeesoo maako ngo].  
1st see-PERF face 3SG.GEN CL.the  
'I saw his face'

As the examples above show, genitive constructions are for the same for both alienable and inalienable nouns. In (9a), the alienable possessed noun 'car' is followed by the possessor noun *Musaa* which, in turn, is followed by the noun class of the possessed noun. In the example in (9b), the possessive pronoun is placed between the possessed noun and its noun class. The pattern is the same for the inalienable noun 'face' in (10a-b) where the possessed noun is separated from its noun class by either a possessor noun in (10a) or a possessive pronoun (10b).

It can be noticed, however, that these genitive constructions are somewhat unlike English genitives in the sense that in Pulaar we have the definite article surfacing. In other words, it is not an option to have ‘*the* Musaa’s car’ in English whereas in Pulaar the phrase *the Musaa car* is perfectly fine for ‘Musaa’s car’. One cannot, however, say ‘the Musaa’; in other words, a proper noun does not surface with a determiner. The difference between English and Pulaar genitives in this case may be that since both ‘s and ‘the’ are Ds, each language allows only one to surface.

In genitive constructions involving a noun derived from a verb, a nominalizing suffix appears on the root. I will discuss these cases later in this chapter.

- (11) a. O windu-m deftare nde.  
 3SG write-PERF book CL.the  
 ‘He wrote the book’
- b. 6e mbaktid-ma [mbind-uu deftare ngu]  
 3SG discuss-PERF write-NOM book CL.the  
 ‘They have discussed the writing of a book’

The following table shows the full paradigm of possessives pronouns in Pulaar.

(12) **Table 1:** Possessives Pronouns in Pulaar

	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Singular	am	ma	maako
Plural	amen/men <sup>1</sup>	mon	maafe

When a possessed noun is modified by a numeral and an adjective, both the numeral and the adjective follow the possessive pronoun, as shown in the examples below:

- (13) a. Defte am jowi mawde de  
 books 1sg five big cl.the  
 ‘my five big books’

---

<sup>1</sup> *Amen* is exclusive and *men* is inclusive.

- b. \*Defte jowi **am** mawdè dè  
 books five 1sg big cl.the  
 ‘my five big books’
- c. \*Defte jowi mawdè **am** dè  
 books five big 1SG CL.the  
 ‘my five big books’
- d. \*Defte jowi mawdè dè **am**  
 books five big CL.the 1SG  
 ‘my five big books’

If one wanted to express something like ‘this/these N of mine’ the possessive pronoun would be of the same form and be placed in the same position relative to the possessed noun, as in (5a). The only difference is that the noun class (determiner) which is placed at the end of the phrase in the examples in (13) is now replaced by a pre-nominal demonstrative. The possessive pronoun also be placed at the end of the phrase. In this case, it has to be preceded by a resumptive noun class related to the possessed noun, as in (14d).

- (14) a. dèe defte am jowi mawdè  
 these books 1SG five big  
 ‘these five big books of mine’
- b. \*dèe defte jowi am mawdè  
 these books five 1SG big  
 ‘these five big books of mine’
- c. \*dèe defte jowi mawdè am  
 these books five big 1SG  
 ‘these five big books of mine’
- d. dèe defte jowi mawdè **dè** am  
 these books five big CL 1SG  
 ‘these five big books of mine’

There is not a major difference between (14a) and (14d). In (14a), the initial intention of the speaker is to talk about THEIR book whereas in (14d) the speaker is just talking about some five books and in doing so they insert semantics along the lines ‘which happen to be mine’. But that

extra information is marginal as compared to whatever the speaker set out to talk about with regard to the books themselves.

I will illustrate genitives involving nominalized verbs later. Now, I will look into infinitive constructions.

#### 2.4 Basic Properties of Infinitives

The constructions are called ‘genitive nominalizations’ in the sense that the infinitive acts as a head noun which takes a genitive marker. The examples in (15) show a genitive construction involving an infinitive acting as an argument of the verb, here ‘discuss’. The genitive DP consists of the infinitive *windu-go* ‘to write’ followed by the genitive marker (a noun or pronoun) and the noun *deftare* (which is an object). The determiner associated with the infinitive *windu-go* appears at the end of the clause. The infinitive *windu-go* has nominal properties since it can be modified by a possessor and it agrees with the noun class *ngo*. The modifier noun *deftare* is the object to the verb ‘write’.

- (15) a. ʃe mbaktid-ma [wind-**go** am deftare ngo]  
 3SG discuss-PERF write-INF my book CL.the  
 ‘They have discussed my writing (of) the book’
- b. ʃe mbaktid-ma [wind-**go** maako deftare ngo]  
 3SG discuss-PERF write-INF his book CL.the  
 ‘They have discussed his writing (of) the book’
- c. ʃe mbaktid-ma [windu-**go** Musaa deftare ngo]  
 3SG discuss-PERF write-INF Musaa book CL.the  
 ‘They have discussed Musaa’s writing (of) the book’

In the previous examples the genitive phrase involving the infinitive is in object position. The following examples show the infinitive clause as a subject:

- (16) a. [windu-go am deftare ngo] bettu-m Musaa.  
 write-INF my book CL.the surprise-PERF musaa  
 ‘My writing of a book surprised Musaa’
- b. [windu-go maako deftare ngo] bettu-m Musaa.  
 write-INF his book CL.the surprise-PERF musaa  
 ‘His writing of a book surprised Musaa’
- c. [windu-go Musaa deftare ngo] yaaw-no.  
 write-INF Musaa book CL.the be.fast-PAST  
 ‘Musaa’s writing of a book was fast’

The infinitive can also be used in these type of phrases. In this case, it can have nominal as well as verbal properties depending on whether the determiner is related to the infinitival or the internal argument of the verb. The examples below show the infinitive as a noun:

- (17) a. [windu-go am deftare ngo] bettu-m Musaa.  
 write-INF my book CL.the surprise-PERF musaa  
 ‘My writing of a book surprised Musaa’
- b. [windu-go maako deftare ngo] bettu-m Musaa.  
 write-INF his book CL.the surprise-PERF musaa  
 ‘His writing of a book surprised Musaa’
- c. [windu-go Musaa deftare ngo] yaaw-no.  
 write-INF Musaa book CL.the be.fast-PAST  
 ‘Musaa’s writing of a book was fast’
- d. [windu-go deftare ngo] yaaw-aa.  
 write-INF book CL.the be.fast-NEG-PAST  
 ‘The writing of a book is not fast’

The infinitive can appear in the context of control verbs such as *vidgo* ‘to want’, as indicated in the following examples:

- (18) Midō yid-i **yaa-go**.  
 1SG want-PERF leave-INF  
 ‘I want to leave’

They can occur as well with restructuring verbs like *etaa-go* ‘to try’. This is instantiated in the example below:

- (19) Mi et-ii-m **fudf-aa-go def-go** maaro ko.  
 1SG try-MID-PERF begin-MID-INF cook-INF rice CL.the  
 ‘I tried to begin to cook the rice’

### 2.4.1 Verbal Properties

In the examples in (16), the infinitival agrees with the determiner in the bracketed phrase. As a result, the infinitival has nominal properties. It can be modified by an adjective, for instance, and not by an adverb or adverbial phrase. The example in (20a) show a regular noun modified by an adjective whereas (20b) indicates that a regular verb can be modified by an adverbial phrase.

- (20) a. [toboo **yaawngo** ngo] bettu-m Musaa.  
 rain quick CL.the surprise-PERF Musaa  
 ‘The quick rain surprised Musaa’
- b. dum tob-ma **ko yaawi**.  
 3SG rain-PERF CL.REL quick  
 ‘It rained quickly.’
- (21) a. [windu-go am deftare **yaawngo** ngo] bettu-m Musaa.  
 write-INF my book quick CL.the surprise-PERF musaa  
 ‘My writing (of) a book surprised Musaa’
- b. \*[windu-go am deftare ngo **ko yaawi**] bettu-m Musaa.  
 write-INF my book CL.the REL quick surprise-PERF musaa  
 ‘My writing (of) a book surprised Musaa’

In (21a), the infinitival is modified by an adjective. However, in the same type of structure, the infinitival cannot be modified by an adverbial phrase, as shown in (21b). This indicates that in this context the infinitival is a nominalized form of the verb.

When the determiner within the bracketed agrees with the noun ‘book’, the infinitival behaves as a verb, as shown in the following examples:



- (22) a. [windu-go am deftare nde] bettu-at Musaa.  
 write-INF my book CL.the surprise-IMPERF musaa  
 ‘My writing the book will surprise Musaa’
- b. [windu-go maako deftare nde] bettu-at Musaa.  
 write-INF his book CL.the surprise-IMPERF musaa  
 ‘His writing the book will surprise Musaa’
- c. [windu-go Musaa deftare nde] yaaw-at-aa.  
 write-INF Musaa book CL.the be.fast-IMPERF-NEG  
 ‘Musaa’s writing the book is not going to be fast’
- d. [windu-go deftare nde] yaaw-at.  
 write-INF book CL.the be.fast-IMPERF  
 ‘Writing the book will be fast’

The infinitive in these examples can only be modified by an adverb or adverbial phrase which suggests that it has verbal properties. This is shown the following examples:

- (23) a. [windu-go maako deftare nde **ko yaawi**] bettu-at Musaa.  
 write-INF his book CL.the REL quick surprise-IMPERF musaa  
 ‘His writing the book quickly will surprise Musaa’
- b. \*[windu-go maako deftare nde **yaawngo**] bettu-at Musaa.  
 write-INF his book CL.the quick surprise-IMPERF musaa  
 ‘His quick writing the book will surprise Musaa’
- (24) a. Musaa aaw-ma. gerte.  
 Musaa sow-PERF peanut  
 ‘Musaa has peanut’
- b. **\*aaw-go** Musaa gerte **de yaawngo**  
 sow-INF musaa PEANUT CL.the quick  
 ‘Musaa’s quick sowing of peanut’
- c. **aaw-go** Musaa gerte **de ko yaawi**  
 sow-INF musaa PEANUT CL.the CL.REL fast  
 ‘Musaa’s sowing the peanut quickly’
- (25) a. **\*feccu-go** Musaa kaalis mo **woñiingo**  
 share-INF musaa money CL.the crooked  
 ‘Musaa’s unfair sharing of money’
- b. **feccu-go** Musaa kaalis mo **ko woñii**  
 share-INF musaa money CL.the CL.REL crooked  
 ‘Musaa’s sharing of money unfairly’

The example in (23b), (24b) and (25a) show that the infinitive cannot be modified by an adjective suggesting that the infinitive behaves like a verb. This contrasts with the following examples.

- (26) a. [windu-go maako deftare **yaawngo ngo**] bettu-at Musaa.  
 write-INF his book quick CL.the surprise-IMPERF musaa  
 ‘His quick writing the book will surprise Musaa’
- b. \*[windu-go maako deftare **ko yaawi** ngo] bettu-at Musaa.  
 write-INF his book REL quick CL.the surprise-IMPERF musaa  
 ‘His writing the book quickly will surprise Musaa’
- (27) a. **aaw-go** Musaa gerte **yaawngo** ngo  
 sow-INF musaa PEANUT quick CL.the  
 ‘Musaa’s quick sowing of peanut’
- c. \***aaw-go** Musaa gerte **ngo ko yaawi**  
 sow-INF musaa PEANUT CL.the CL.REL fast  
 ‘Musaa’s sowing the peanut quickly’
- (28) a. **feccu-go** Musaa kaalis **wooñiingo ngo**  
 share-INF musaa money crooked CL.the  
 ‘Musaa’s unfair sharing of money’
- b. \***feccu-go** Musaa kaalis **ngo ko wooñii**  
 share-INF musaa money CL.the CL.REL crooked  
 ‘Musaa’s sharing of money unfairly’

The infinitive acts as a noun in (26), (27) and (28) as indicated the grammaticality of the examples involving adjectives and the ungrammaticality of those involving an adverbial phrase. Therefore, it can only be modified by an adjective. Past tense is another test that tease these two structures apart. In fact, the past tense morpheme can be attached to the infinitival when it behaves like a verb, but not when it acts as a noun, as shown in the following examples:

- (29) a. [windu-**noo**-go maako deftare nde] bettu-at-no Musaa.  
 write-PAST-INF his book CL.the surprise-IMPERF-PAST musaa  
 ‘His writing the book would surprise Musaa’
- b. \*[windu-**noo**-go maako deftare ngo] bettu-at-no Musaa.  
 write-PAST-INF his book CL.the surprise-IMPERF-PAST musaa  
 ‘His writing the book would surprise Musaa’

When there is no determiner, the structure is ambiguous and can, thus, be interpreted either as a nominal phrase or as a verbal phrase. This is shown in the following examples:

- (30) a. [windu-go am deftare] bettu-m Musaa.  
 write-INF my book surprise-PERF musaa  
 ‘My writing of a book surprised Musaa’  
 ‘My writing a book surprised Musa’
- b. [windu-go maako deftare] bettu-m Musaa.  
 write-INF his book surprise-PERF musaa  
 ‘His writing of a book surprised Musaa’  
 ‘His writing a book surprised Musa’
- c. [windu-go Musaa deftare] yaaw-no.  
 write-INF Musaa book be.fast-PAST  
 ‘Musaa’s writing of a book was fast’  
 ‘Musaa writing a book was fast’

In (30a-c) where there is no determiner at the end of the bracketed phrase to indicate whether it acts as a noun or a verb, it can be read either as a nominal phrase or a verbal phrase.

#### **2.4.2 Internal Structure of Infinitives**

I have shown in the previous section that the infinitive can be modified by an adjective, indicating that it has nominal properties. But it can also be modified by an adverbial phrase suggesting that it exhibits verbal properties. An infinitive clause with verbal properties can have a subject which precedes the infinitive just like in matrix clauses.

### 2.4.2.1 Subjects

Infinitive clause can have subjects in preverbal position, as indicated in the examples (31b) and (32):

- (31) a. Mo yid-i. **suko maako mo** jang-a do.  
3SG like-PERF child his CL.the study-SUB here  
'His child studying here is what she/he wants'
- b. [**suko maako mo** jangu-go do] o yid-i.  
child his CL.the study-inf here 3SG like-PERF  
'His child studying here is what she/he wants'
- (32) [**Musaa** windu-go deftare] bett-at kam.  
Musaa write-INF book surprise-IMPERF 1SG  
'Musaa's writing of a book was fast'  
'Musaa writing a book will surprise me'

The examples in (31b) and (32) show the subject occurring in preverbal position in the bracketed infinitive clause. I also observe that these clauses can have an object. Subject pronouns also occur in preverbal position. However, they have to be strong pronouns, as the following examples show:

- (33) a. **Deebe** yaa-go ekool won-aa ko wakt-id-tee.  
3PL go-INF school be-NEG PRO discuss-ASC-IMPERF  
'Them going to school is not matter for discussion'
- b. \***be** yaa-go ekool won-aa ko wakt-id-tee.  
3PL go-INF school be-NEG PRO discuss-ASC-IMPERF  
Intended: 'Them going to school is not matter for discussion'

The possessor/modifier in genitive infinitives follows the infinitive, as shown in (34a-b). Genitive clauses can also be subjects in infinitive clauses. A case of this is given in (34c).

- (34) a. [windu-go **am** deftare nde] booy-ma.  
write-INF my book CL.the take.long-PERF  
'My writing of the book took a long time'
- b. [windu-go **Musaa** deftare] yaaw-no.  
write-INF Musaa book be.fast-PAST  
'Musaa's writing of a book was fast'  
'Musaa writing a book was fast'

- c. [**windu-go am deftare nde** booy-go] be kul-i.  
 write-INF my book CL.the take.long-INF 3PL be.afraid-PERF  
 ‘The fear my writing of the book taking long’

#### 2.4.2.2 Objects

Infinitives can have definite as well as indefinite objects within a non-finite clause. These objects appear in postverbal position just like in matrix clauses.

- (35) Dokter mo hoddir-ma [suko mo yar-go **keddām**].  
 Doctor CL.the allow-PERF child CL.the drink-INF milk  
 ‘The doctor allowed the child to drink milk’
- (36) [Musaa ñaam-go **maaro ko**] mett-at Hawaa.  
 musaa eat-INF rice CL.the displease-IMPERF Hawaa  
 ‘Musaa eating rice will displease Hawaa’
- (37) [Musaa windu-go **deftare nde**] bett-at kam.  
 Musaa write-INF book CL.the surprise-IMPERF 1SG  
 ‘Musaa writing the book will surprise me’

In (35), the indefinite noun *keddām* ‘milk’ is the object of the infinitive *yar-go* ‘to drink’ and it follows the verb like in matrix clauses. Similarly, in (36) and (37) the bolded definite nouns *maaro ko* ‘the rice’ and *deftare nde* ‘the book’ are the objects of the verbs *yar-go* ‘to drink’ and *windu-go* ‘to write’ respectively.

In addition, infinitives can have indirect objects, as shown in the following example:

- (38) Musaa sal-i rokku-go **sukaabe be** tangal.  
 Musaa refuse-PERF give-INF children CL.the candy  
 ‘Musaa refused to give candy to the kids’

The object pronoun in infinitive clauses appears in the same position as the definite and indefinite objects; i.e it is postverbal.

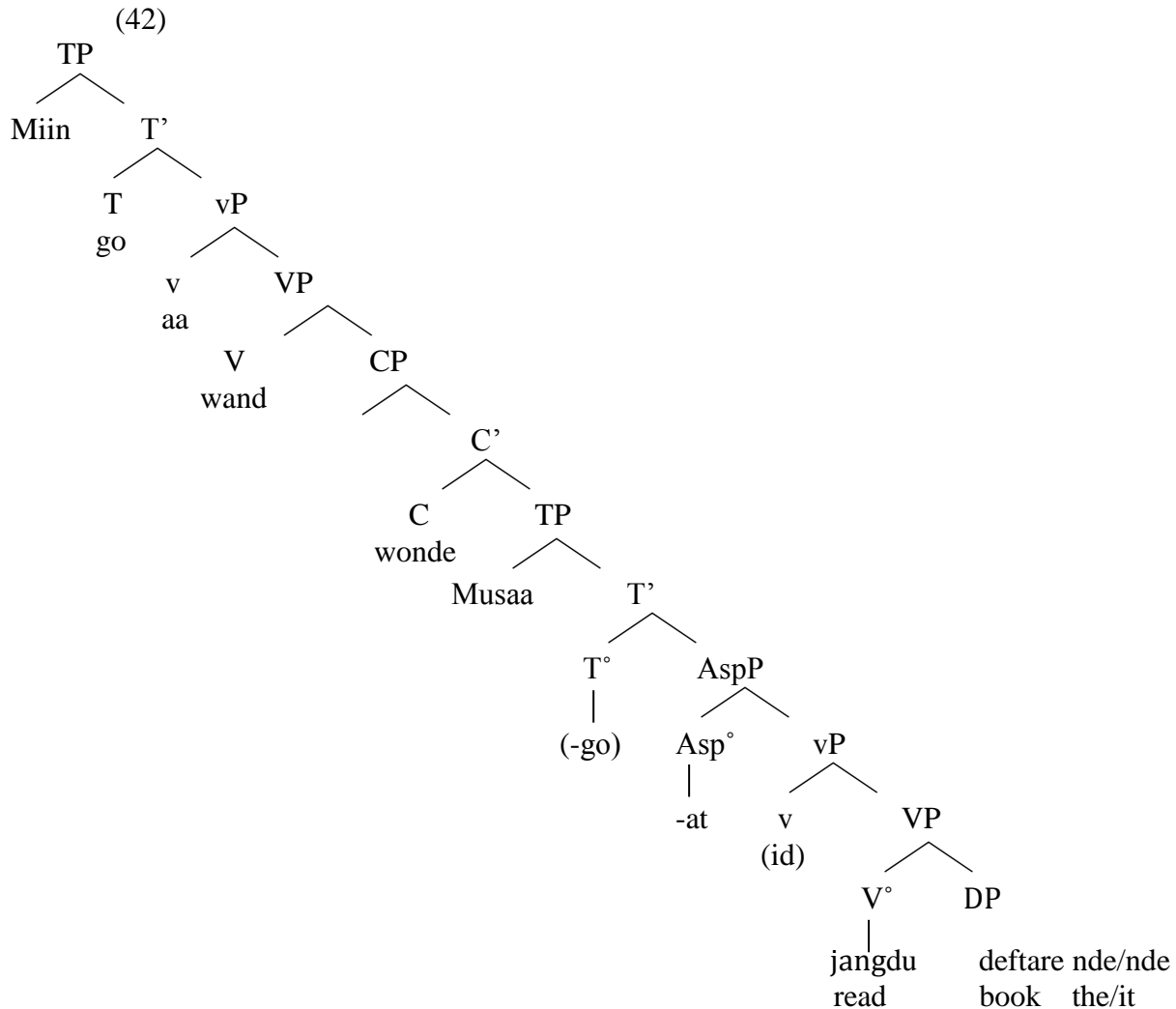
- (39) [Musaa windu-go **nde**] bett-at kam.  
 Musaa write-INF 3SG surprise-IMPERF 1SG  
 ‘Musaa writing it will surprise me’

Verbs that take a CP complement can also appear in infinitive clauses, as shown below:

- (40) a. Mi wandi wonde Musaa jangu deftare nde.  
 1sg think that musaa read book cl.the  
 ‘I think that Musaa read the book’
- b. Miin **wand-aa-go** wonde Musaa jangu deftare nde  
 1SG think-MID-INF that musaa read book CL.the  
 ‘My thinking that Musaa read the book’

Prepositional phrases occur postverbally in Pulaar infinitive clauses, as evidenced in the example below:

- (41) [Musaa ar-tu-go **nder balde didi**] bett-at kam.  
 Musaa come-REV-INF PREP days two surprise-IMPERF 1SG  
 ‘Musaa coming back in two days will surprise me’



The tree in (42) indicates that the infinitive clause is a TP but it can embed a CP. In other words, the infinitive in TP can have a CP as complement.

### 2.4.2.3 Adverbs

Different types of adverbs can appear in infinitive clauses. First, manner adverbs such as ‘quickly’, ‘slowly’, ‘well’ occur in these constructions, as indicated in the examples below:

- (43) [Musaa windu-go deftare nde **ko yaawi**] bett-at kam.  
 Musaa write-INF book CL.the REL quick surprise-IMPERF 1SG  
 ‘Musaa writing the book quickly will surprise me’

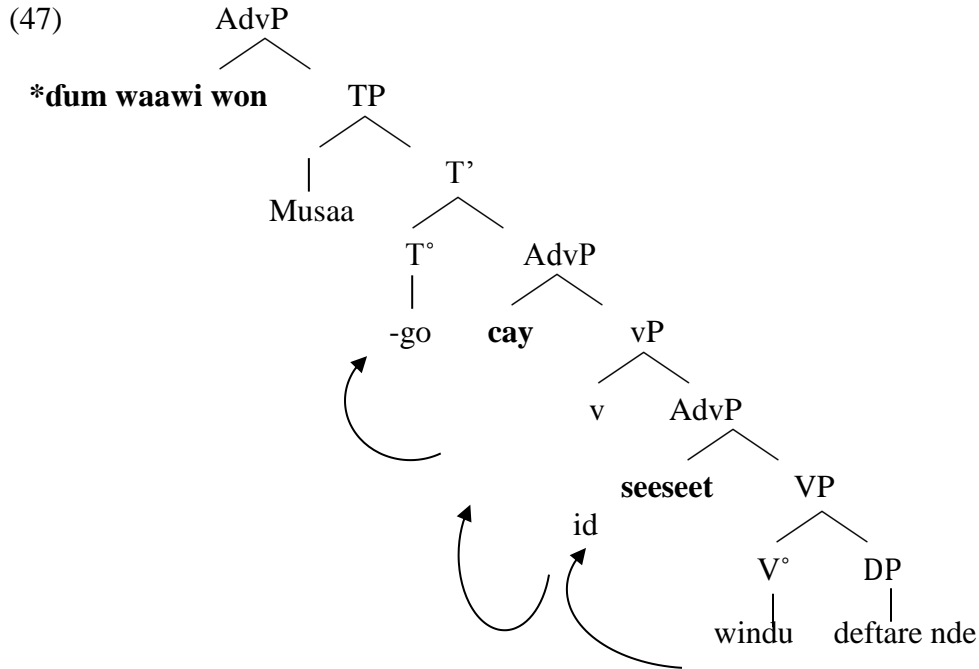
- (44) [Musaa yaa-ru-go **seeseet**] won-at kaawise.  
 Musaa go-MANN-INF slowly be-IMPERF surprises  
 ‘Musaa walking slowly will be surprising’

In addition, an adverb like *always* can appear in these infinitive constructions, as shown in the following example:

- (45) [Musaa yaa-go gese **cay**] won-at kaawise.  
 Musaa go-INF farms almost be-IMPERF surprises  
 ‘Musaa always going to the farms will be surprising’

However, an adverb like ‘possibly/probably/perhaps’ cannot occur in infinitive clauses. Consider the following example:

- (46) \*[**dum waawi won** Musaa windu-go deftare nde] jag-at.  
 3sg can be Musaa write-INF book CL.the be.good-IMPERF  
 Intended: ‘Musaa probably writing the book quickly will be good’



It appears in (47) that adverbs lower than T can occur in infinitive clauses, but adverbials that are higher than T cannot surface in these types of constructions.

### 2.4.3 Verbal Valency Affixes

Furthermore, these nominalized forms of the verb can also involve derivational or valency-changing morphemes, such as benefactive, associative, instrumental, etc. The following structures show genitive constructions with verbs involving one of these valency-changing morphemes:

- (48) a. Musaa sood-**oy**-ma deftare nde.  
 Musaa buy-ALL-PERF book CL.the  
 ‘Musaa has gone to buy the book.’
- b. sood-**oy**-go Musaa deftare nde.  
 buy-ALL-INF Musaa book CL.the  
 ‘Musaa’s going to buy the book.’
- c. sood-**oy**-go Musaa deftare ngo.  
 buy-ALL-INF Musaa book CL.the  
 ‘Musaa’s going to buy a book.’



The example above involves the allative morpheme *-oy* which encodes distance and/or movement away from a set place. The example in (48a) is a matrix clause. On the other hand, (48b) is an infinitive clause with verbal properties whereas (48c) is an infinitive clause with nominal properties. Similarly, the examples in (49) involve the benefactive affix *-an* which, just like the allative, attaches to the verb root.

- (49) a. Musaa sod-**an**-ma Aali wutte.  
 Musaa buy-BEN-PERF aali shirt  
 ‘Musaa has bought Aali a shirt’
- b. Musaa sod-**an**-go Aali wutte ngo.  
 Musaa buy-BEN-NOM aali shirt CL.the  
 ‘Musaa(‘s) buying Aali a shirt’
- c. Musaa sod-**an**-go Aali wutte mo.  
 Musaa buy-BEN-INF aali shirt CL.the  
 ‘Musaa buying Aali the shirt’

Parallel to the examples in (48), (49a) is a matrix clause whereas (49b) and (49c) are infinitive clause with nominal and verbal properties respectively.

- (50) a. Musaa jang-**id**-ma he Aali.  
 Musaa study-ASC-PERF with aali  
 ‘Musaa has studied with Aali.’
- b. jang-**id**-go Musaa he Aali.  
 study-ASC-INF Musaa with aali  
 ‘Musaa(‘s) studying with Aali.’
- c. Musaa jang-**id**-go he Aali.  
 Musaa study-ASC-INF with aali  
 ‘Musaa studying with Aali.’

The same way, the examples above include a valency-changing morphemes. In this case, it is the associative morpheme *-(i)d*. (50b) is nominal while (50c) is verbal.

- (51) a. Musaa ñaam-**ru**-m maaro ko kuddu.  
Musaa eat-INST-PERF rice CL.the spoon  
'Musaa has eaten the rice with a spoon.'
- b. ñaam-**ru**-go Musaa maaro ko kuddu.  
eat-INST-NOM Musaa rice CL.the spoon  
'Musaa('s) eating the rice with a spoon.'
- c. ñaam-**ru**-go maaro ko kuddu.  
eat-INST-NO rice CL.the spoon  
'Eating the rice with a spoon.'
- d. ñaam-**ru**-go Musaa kuddu.  
eat-INST-NO musaa spoon  
'Musaa('s) eating with a spoon.'
- e. ñaam-**ru**-go kuddu.  
eat-INST-NO spoon  
'Eating with a spoon.'

The examples in (51) involve the instrumental affix *-r(u)* which can also encode manner. In the genitive in (51b), the infinitive has nominal properties.

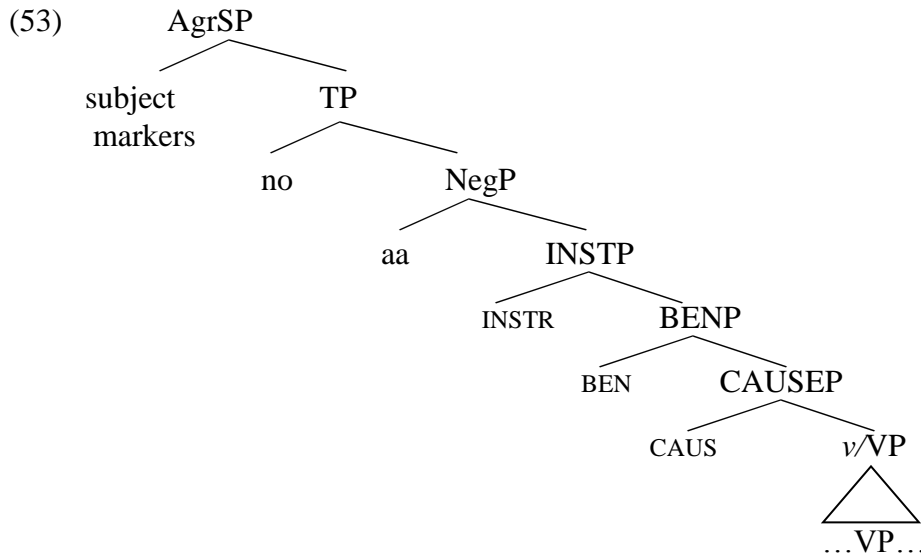
The constructions in (51c-e) are verb phrases suggesting that the infinitive has verbal properties.

The examples in (52) below involve the affix *-id* encoding exhaustive and homophonous with the associative morpheme.

- (52) a. Musaa jang-**id**-ma deftare nde.  
Musaa study-EXH-PERF book CL.the  
'Musaa has read the book through.'
- b. jang-**id**-go Musaa deftare ngo.  
study-EHX-NOM Musaa book CL.the  
'Musaa's reading of an entire book.'
- c. jang-**id**-go deftare nde.  
study-EHX-NOM book CL.the  
'Reading all the book.'

While the example in (52b) indicates that the infinitive behaves as a noun, the example in (52c) suggests that the infinitive has verbal properties. All these morphemes add in extra information

which, in some cases, triggers the addition or deletion of an argument of the verb. So, valency-changing morphemes contribute in some way to the semantics of the verb. They do not, however, co-occur with any of the other nominalizing suffixes; in other words, they only occur with *-go*.



Following Buell and Sy (2005, 2006) and Torrence (2000, 2003) and Buell, Sy and Torrence (2008) I take valency-changing morphemes to be in the region from and right above *v*, as in indicated in (53) above which is supplemented by the following examples where at least two of these affixes co-occur.

- (54) a. Maa maako def-**in-an**-moo-m kodó mo bottaari.  
 Mother 3SG cook-CAUS-BEN-3SG-PERF guest CL.the lunch  
 ‘Her mother made her cook lunch for the guest.’
- b. Maa maako def-**an-ir**-ma kodó mo kaleera keso  
 Mother 3SG cook-BEN-INST-PERF guest CL.the pot new  
 ‘Her mother cooked lunch for the guest with a new pot.’

#### 2.4.4 Tense, Aspect and Negation

Past tense (the only overt tense marker in Pulaar) can appear on these infinitive constructions, as shown in the following examples.

- (55) a. Musaa aaw-aa. gerte.  
Musaa sow-NEG peanut  
'Musaa has not sown peanut'
- b. **aaw-noo-go** Musaa gerte de bur-noo  
sow-PAST-INF musaa peanut CL.the be.better-PAST  
'Musaa having sown the peanut would be better'
- (56) a. Musaa andu-m sirru mo  
Musaa know-PERF secret CL.the  
'Musaa has known the secret'
- b. andu-noo-go Musaa sirru mo moỵ-at-aa-no.  
know-PAST-INF musaa secret CL.the be.good-IMPERF-PAST  
'Musaa knowing the secret would not be good'
- (57) **il-noo-go** ndiyam dam yakk-at-no  
flow-PAST-INF water CL.the destroy-IMPERF-PAST  
'The flowing/running of water would be destructive'

The infinitives in the examples above bear the past tense morpheme. However, rather than necessarily referring to an actual past event (which it can), the past tense here seems to be referring to a hypothetical and, thus, encoding something like the subjunctive. In this sense, it is just pointing to the eventuality of an event happening in the past, present or even future. It should be observed that I use the term 'infinitive' even though they are not truly non-finite; this is the term used in the Pulaar linguistics literature.

However, the lower verb in a restructuring construction like in (58) cannot be tensed.

- (58) a. Ami waaw-**no** windu-go deftare.  
Ami can-PAST-INF write-INF book  
'Ami could write a book'

- b. \*Ami waaw windu-**no** deftare.  
 Ami can write-PAST book  
 ‘Ami could write a book’
- c. \*Ami aaw-**no** windu-**no** deftare.  
 Ami can-PAST write-INF book  
 ‘Ami could write a book’

Similar to past tense, these structures can occur with aspect. But this has to necessarily be the imperfective aspect –*at*. The occurrence of this aspectual morpheme with the infinitive seems to indicate habitual aspect. This is shown in the following examples:

- (59) a. Musaa aaw-aa. gerte.  
 Musaa sow-NEG peanut  
 ‘Musaa has not sown peanut’
- b. aaw-**at**-go Musaa gerte de bur-at-a  
 sow-IMPERF-INF musaa PEANUT CL.the be.better-IMPERF-PROG  
 ‘Musaa habitually sowing peanut is going to be better’
- (60) a. Musaa andu-m sirru mo  
 Musaa know-PERF secret CL.the  
 ‘Musaa has known the secret’
- b. andu-**at**-go Musaa sirruuji di moyɔ-at-aa.  
 know-IMPERF-INF musaa secret CL.the be.good-IMPERF-PAST  
 ‘Musaa constantly knowing of the secrets is not going to be good’
- c. andu-**at**-**noo**-go Musaa sirruuji di be kul-noo.  
 know-IMPERF-INF musaa secret CL.the 3PL be.scared-PAST  
 ‘Musaa constantly knowing of the secrets is what they were scared about’
- (61) il-**at**-go ndiyam dam yakk-at  
 flow-IMPERF-INF water CL.the destroy-IMPERF  
 ‘The water consistently flowing is going to be destructive’

The presence of the imperfective aspect on the infinitive suggests a repetition of the event; a certain habit or recurrence of the event. The example in (60c) shows that tense and aspect can co-occur in this case. Here, the event referred to is situated in the past.

The occurrence of tense (specifically, past tense) on the infinitive does not necessarily indicate a past event. But it, rather, subjunctive and indicates eventuality or hypothetical. As for aspect, its appearance on an infinitive is suggest the eventuality of an event being repeated or occurring on a regular basis. In other words, it suggest the event encoded by the verb being a habit. One intriguing fact remains that negation cannot appear on the infinitive, unlike other inflectional morphemes such as tense and aspect. Infinitive clauses cannot appear with negation. This is the case even when the infinitive has a verbal reading. The following examples indicated that the presence of negation on the nominalized verb yields an ungrammatical structure:

- (62) a. Musaa aaw-aa. gerte.  
 Musaa sow-NEG peanut  
 ‘Musaa has not sown peanut’
- b. \*aaw-**aa**-go Musaa gerte yaawngo **ngo**  
 sow-NEG-INF musaa peanut quick CL.the
- c. \*aaw-**aa**-go Musaa gerte de ko yaawi  
 sow-NEG-INF musaa PEANUT CL.the CL.REL fast  
 Intended: ‘Musaa not sowing the peanut quickly’
- d. \*aaw-go-**aa** Musaa gerte yaawngo **ngo**  
 sow-INF-NEG musaa peanut quick CL.the
- e. \*aaw-go-**aa** Musaa gerte de ko yaawi  
 sow-INF-NEG musaa PEANUT CL.the CL.REL fast  
 Intended: ‘Musaa not sowing the peanut quickly’

The examples in (62b) and (62d) are intended to be nominal phrases as suggested with the adjective *yaawngo* ‘quick’ which agrees with the infinitive in class. In this case, it is expected not to co-occur with negation regardless whether the negative affix precedes or follows the infinitive morpheme. The examples in (62c) and (62e), on the other hand, have verbal properties as indicated

by the occurrence of an adverb. Yet, this yields an ungrammatical result suggesting that negation cannot occur in the infinitive clause.

- (63) a. Musaa and-aa sirru mo  
Musaa know-NEG secret CL.the  
'Musaa has known the secret'
- b. \*andu-aa-go Musaa sirru mo **law**.  
know-NEG-INF musaa secret CL.the early  
Intended: 'Musaa not knowing the secret early'
- c. \***andu-aa-go** Musaa sirru **haawniingo** ngo.  
write-NEG-INF musaa secret surprising CL.the

The examples in (63b-c) with a different adjective and a different adverb still shows that the negative morpheme is banned in these constructions. This confirms that negation cannot occur in infinitive clauses even when the infinitive acts as a verb.

Negation can, however, appear in some way in the clauses where the infinitive has a verb reading.

But in this case, it must appear as a negative auxiliary, as shown in the examples below:

- (64) a. Musaa aaw-aa. gerte.  
Musaa sow-NEG peanut  
'Musaa has not sown peanut'
- b. **waas-go** Musaa **aaw-go** gerte de ko yaawi<sup>2</sup>  
fail-INF musaa sow-INF peanut CL.the CL.RE L fast  
'Musaa not sowing the peanut quickly'
- (65) a. Musaa andu-m sirru mo  
Musaa know-PERF secret CL.the  
'Musaa has known the secret'
- b. **was-go** Musaa **andu-go** sirru mo **law**.  
fail-INF musaa know-INF secret CL.the early  
'Musaa not knowing the secret early'

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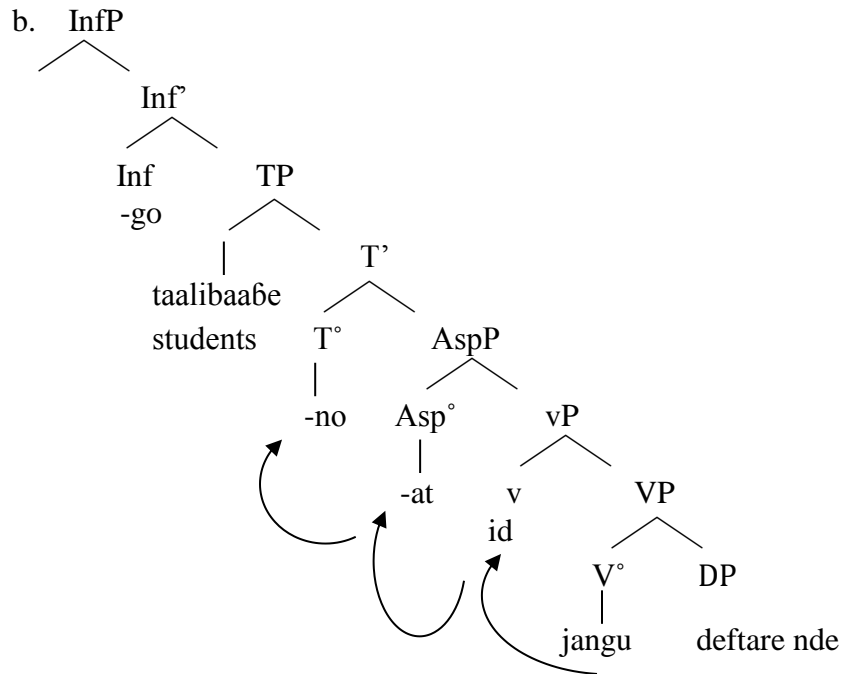
<sup>2</sup> Notice that *waas* can precede or follow the subject of the main verb, as seen in (56)-(59).

(66) ndiyam dam **waas-go** il-go ko booyi  
 water CL.the fail-INF flow-INF CL.REL long  
 ‘The of water not flowing/running for a long time’

(67) **Waas-go** Musaa **innu-go** cukaayee nge ko badii. Verb  
 Fail-inf musaa name-INF baby CL.the CL.REL close  
 ‘Musaa not naming the baby soon’

In the examples above, the verb *waas-go* ‘fail’ appears to encode negation. In other words, I note that negation in these types of clauses is lexical rather morphological.

(68) a. [Taalibaaɓe jang-**id-at-noo-go** deftare nde] bur-at-noo.  
 Students read-ASC-IMPERF-TENSE-INF book CL.the be.better-IMPERF-PAST  
 ‘Students reading the book together would have been better’



Here, I use the Mirror Principle to derive the infinitive clause. The tree in (68b) seems to indicate that an infinitival phrase can involve at least a TP and everything below. The verb root appears to raise through every head all the way up to tense. Here we have the presence of the associative morpheme in little *v*. Likewise, we could have any other of the valency-changing morphemes.



### 2.4.3 Distribution of Nominalized Verbs

The nominalized verbs in Pulaar can distribute syntactically as grammatical subjects. In this case, they occur in a position preceding the conjugated verb. I show examples of infinitival nominals as subjects below:

- (69) **aaw-go** bur-i yaaw soñ-go  
 sow-INF be.more-PERF fast harvest-INF  
 ‘Sowing is faster than harvesting’
- (70) **Jangu-go** add-i mo dō  
 study-INF bring-PERF 3SG here  
 ‘Studying brought him/her here’
- (71) **wandaa-go** won-aa andu-go  
 assuming-INF be-NEG know-INF  
 ‘Assuming is not knowing’
- (72) **Yaa-go** ma he ar-tu-go ma pond-in-ir-mi  
 go-INF 2sg conj come-REV-INF 2sg measure-CAUS-INST-1SG  
 ‘Your going and coming back does not matter to me’
- (73) **il-go** ndiyam ngo yakk-i suudu ndu.  
 flow-INF water CL.the destroy-PERF house CL.the  
 ‘The flowinf/running of water’
- (74) **feccu-go** kaalis ngo wad-d-i be.  
 share-INF money CL.the do-ASC-PERF 3PL  
 ‘The sharing of money caused them to clash’

In each of the sentences above, a nominalized verb in its infinitival form is in subject position sometimes by itself. These nominal infinitives can also occur as objects. This is evidenced by the following examples:

- (75) a. be mbaktid-ma **windu-go** deftare ngo.  
 3SG discuss-PERF write-INF book CL.the  
 ‘They have discussed the writing of a book’
- b. be kaal-ma kulle **jangu-go** maako deftare ngo.  
 3SG talk-PERF about write-INF his book CL.the  
 ‘They have discussed his reading of a book’

- (76) Min njaa-no **jum-oy-go**.  
 1PL go-PAST harvest.honey-ALL-INF  
 ‘We went harvesting honey’

The examples in (75) and (76) show nominalized verbs occurring as objects. In (75a-b) the nominalized verb is in a larger phrase which involves a definite article agreeing with the nominalized verb.

Furthermore, nominalized verbs can be complements of restructuring verbs such as ‘want’, ‘try’, ‘begin’, etc. In this case, they have to be in their infinitival form. In what follows, I show examples of nominalized verbs occurring in this syntactic environment:

- (77) a. Musaa fudf-ii-m **aaw-go** gerte.  
 musaa begin-MID-PERF sow-INF PEANUT  
 ‘Musaa has begun sowing of peanut’
- b. Musaa et-ii-m **jangu-go** deftare nde.  
 musaa try-MID-PERF read-INF book CL.the  
 ‘Musaa tried to read the book.’
- c. Musaa yid-i **andu-go** sirru mo.  
 Musaa want-PERF know-INF secret CL.the  
 ‘Musaa wants to know the secret’
- (78) a. Homo waaw-i **windu-go** deftare nde.  
 3sg can-PERF come-INF book CL.the  
 ‘He can write the book’
- b. da fot-i **ar-tu-go**.  
 2SG be.time-PERF come-REV-INF  
 ‘You should come back.’

As the examples above show, nominalized verbs or infinitives can also be complement to restructuring verb.

Pulaar infinitives display nominal properties. One piece of evidence in that regard is that they can be followed by a noun class marker just like an ordinary noun:

- (79) a. howaango **ngo**  
 fence CL.the  
 ‘the fence’
- b. loot-go **ngo**  
 wash-INF CL.the  
 ‘the wash’

The infinitive can be modified by an adjective in similar fashion to the noun. This can be seen below:

- (80) a. howaango toow-**ngo** **ngo**  
 fence tall-CL CL.the  
 ‘the tall fence’
- b. loot-go yaaw-**ngo** **ngo**  
 wash-INF quick-CL CL.the  
 ‘the quick wash’

The data above suggest that the verb in Pulaar exhibits nominal properties by behaving like a noun in certain instances.

There are verb/noun alternations; that is cases where a verb is turned into a noun. This process involves mutation of the initial consonant of the infinitive:

- (81) a. **yim-go** ‘to sing’ **jimoo** ‘song’  
 sing-INF
- b. **raddu-go** ‘to hunt’ **danna** ‘hunter’  
 hunt-INF
- c. **hul-go** ‘to fear’ **kuloo** ‘fear’  
 fear-INF

One can notice the alternations in the examples (81a)-(81c) in which the initial consonant of the verb changes in the corresponding noun. I will return to this later in this chapter.

This infinitive form occurs in a variety of positions within a sentence. The examples below show the different positions that the infinitive can occupy.

- (82) a. Mbidŋ yidi **def-go** maaro. After ‘want’  
 1SG want cook-INF rice  
 ‘I want to cook rice’
- b. **def-go** maaro buri yaaw. Subject  
 cook-INF rice more fast  
 ‘Cooking rice is faster’
- c. da foti **def-go** maaro hannde. Complement to a modal  
 2SG should cook-INF rice today  
 ‘You should cook rice today’
- d. Mo/be foti/poti **def-go** maaro. No SG/PL subject effect  
 2SG/3PL should cook-INF rice  
 ‘You/they should cook rice’
- e. O ñoot-ma tuuba am ba **ñoot-go** wesoo. As a noun + adjective  
 3SG sew-PERF pants my CL.the sew-INF fast  
 ‘He has sewn my pants beautifully’

The infinitive in Pulaar can occur in many different positions in a sentence. In (82a) it occurs after ‘want’ and it is in subject position in (82b). The example in (82c) shows that the infinitive can be the complement of a modal verb whereas (82d) suggests that the infinitive has nominal features in the sense that it can be modified by an adjective.

## 2.5 Topic and Focus

The subject, the object and the verb can all be focused in Pulaar. This can be evidenced by the appearance of the focus marker *ko* before the focused part of the sentence, as seen in the following examples:

- (83) a. Musaa sood-ma deftare.  
 Musaa buy-PERF book.  
 ‘Musaa has bought a book.’
- b. **Ko** Musaa sood-i deftare.  
 FOC Musaa buy-PERF book  
 ‘MUSAA bought a book.’

- c. Musaa **ko** sood deftare.  
Musaa FOC buy book  
'Musaa BOUGHT a book.'
- d. **ko** deftare Musaa sood-i.  
FOC book Musaa buy-PERF  
'It's A BOOK that Musaa bought'
- e. Musaa **ko** deftare sood-i.  
Musaa FOC book buy-PERF  
'As for Musaa, it's A BOOK that he bought'

The examples above show that focus is possible in simple matrix clauses in Pulaar. It can be noted, however, that focusing the object as in (83d) requires its movement to a position past the subject unless the latter is topicalized (83e). My assumption that the object in this case moves to a focus position in the C-domain along the lines of Rizzi (1997). It appears in the translation of (83e) that the subject is interpreted as a topic.

It is not possible to focus an infinitive inside of a genitive construction. This shows in the example below:

- (84) a. Musaa fadɗ-ii-m.  
Musaa fainted-MID-PERF  
'Musaa fainted'
- b. \*ɓe mbakt-id-ma **ko fadɗ-aa-go** Musaa.  
3pl talk-ASC-PERF FOC faint-MID-INF musaa  
'They discussed MARY'S fainting'

Likewise, it is not possible to focus 'book' inside of the infinitive phrase involving a genitive, shown in the following examples:

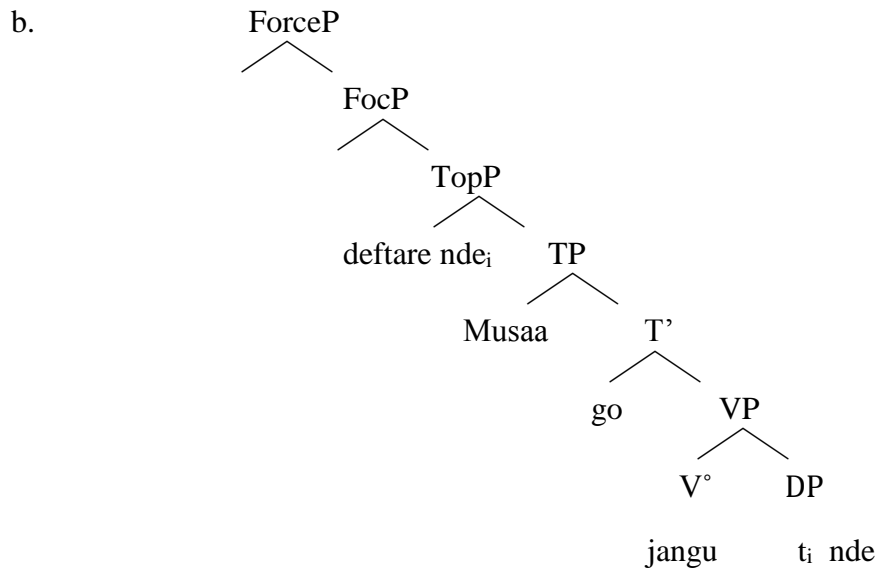
- (85) a. ɓe mbaktid-ma [windu-**go** Musaa deftare]  
3SG discuss-PERF write-INF musaa book  
'They have discussed Musaa's writing of a book'
- b. \*ɓe mbaktid-ma [windu-**go** Musaa **ko deftare**]  
3SG discuss-PERF write-INF musaa FOC book  
'They have discussed Musaa's writing of a book'

It is possible, however, to have a topic inside of an infinitive phrase. But here again, the presence of a resumptive pronoun is necessary. This is indicated in the following examples:

- (86) a. 6e mbaktid-ma [Musaa windu-go **deftare nde**]  
 3SG discuss-PERF musaa write-INF book CL.the  
 ‘They have discussed Musaa writing the book’
- b. 6e mbaktid-ma [**deftare nde**, Musaa windu-go **nde**]  
 3SG discuss-PERF book CL.the musaa write-INF 3SG  
 ‘They have discussed the book, Musaa writing it’

The example in (86b) suggests that topic is possible inside of an infinitive phrase. But the presence of a resumptive phrase is necessary in this case.

- (87) a. 6e mbaktid-ma [**deftare nde**, **Musaa windu-go nde**]  
 3SG discuss-PERF book CL.the musaa write-INF 3SG  
 ‘They have discussed the book, Musaa writing it’



The tree in (87b) shows that the infinitive phrase can be at least a Topic phrase, with the object of the infinitive being topicalized and a resumptive pronoun being supplied at its original position.

## 2.6 A-bar Extraction

First, I show that A-bar extraction is possible in Pulaar in ordinary clauses, like those shown in the examples in (88) and (89):

(88) Hoko Ami wand-i-i           wonde debbo mo def-i \_\_\_\_\_?  
 What Ami think-MID-PERF that woman CL.the cook-PERF  
 ‘What does Ami think that the woman cooked?’

(89) Ko debbo mo Ami wand-i-i           wonde \_\_\_\_\_ def-i           maaro ko.  
 FOC woman CL.the Ami think-MID-PERF that           cook-PERF rice CL.the  
 ‘It’s the woman that Ami thinks that cooked the rice’

Both these examples are fine in Pulaar, although the WH element *hoko* in (88) and the focus particle in (89) appear to have moved long distance across the complementizer *wonde*. In other words, the examples in (88) and (89) suggest that Pulaar allows long distance movement of WH-words and focus. However, this may depend on the type of construction under consideration:

- (90) a. ɓe mbakt-id-at           Ami jangu-go deftare nde ko yaawi ngeey.  
 3pl talk-ASC-IMPERF Ami read-INF book CL.the REL quick yesterday  
 ‘They discussed Ami reading the book quickly yesterday.’
- b. \*Homo ɓe mbakt-id-ta           \_\_\_\_\_ jangu-go deftare nde ko yaawi ngeey.  
 Who 3pl talk-ASC-IMPERF           read-INF book CL.the REL quick yesterday  
 ‘Who will they discussed reading the book quickly yesterday.’
- c. \*Ko Ami ɓe mbakt-id-ta           \_\_\_\_\_ jangu-go deftare nde ko yaawi ngeey.  
 FOC Ami 3pl talk-ASC-IMPERF           read-INF book CL.the REL quick yesterday  
 ‘It’s Ami they will discussed reading the book quickly yesterday.’

The examples (90b-c) are ungrammatical. However, this ungrammaticality may only be due to the ambiguity in extracting the subject either as Wh-movement or focus. In fact, in both these examples, the most salient interpretation is the subject of the main clause discussing WITH the A-bar extracted subject and not discussing ABOUT it. This is, however, unlike the examples below where the object is extracted.

(91) Hoko 6e mbakt-id-ta Ami jangu-go \_\_\_\_\_ ko yaawi ngeey.  
 What 3SG talk-ASC-IMPERF Ami read-INF REL quick yesterday  
 ‘What will they discuss Ami reading quickly yesterday.’

(92) ko deftare nde 6e mbakt-id-ta Ami jangu-go \_\_\_ ko yaawi ngeey.  
 FOC book CL.the 3SG talk-ASC-IMPERF Ami read-INF REL quick yesterday  
 ‘It’s the book that they will discuss Ami reading quickly yesterday.’

In the example in (91), the object is A-bar moved across clauses and the result is perfectly fine. Similarly, (92) where the object is focused and subjected to the same movement, the outcome is grammatical. What this seems to suggest it is not just about the extraction, but also about what is being extracted and what semantic effects this generates. This is confirmed by the following examples.

- (93) a. \*Hono 6e mbakt-id-ta Ami jangu-go deftare nde \_\_\_\_\_ ngeey.  
 How 3PL talk-ASC-IMPERF Ami read-INF book CL.the yesterday  
 ‘How will they discuss Ami reading the book yesterday?’
- b. \*Ko ko yaawi 6e mbakt-id-ta Ami jangu-go deftare nde \_\_\_\_\_ ngeey.  
 FOC REL quick 3pl talk-ASC-IMPERF Ami read-INF book CL.the yesterday  
 ‘It’s quickly they will discuss Ami reading the book yesterday.’

The example in (93) is ungrammatical as intended. In other words, is not grammatical when the Wh-word is targeting the manner adverbial. Otherwise, it would be fine if the intended meaning is ‘how they will discuss the event’ as opposed to ‘how Ami read the book’.

Furthermore, extraction from an infinitival phrase appears to be prohibited in Pulaar, at least in certain contexts. It is prohibited in the case where the infinitive phrase is the external argument of a verb like ‘discuss’. However, the extraction becomes acceptable with the presence of a resumptive pronoun, specifically a non-referential pronoun with the *-um* ending. Examples of this are shown below:



- (94) a. ƒe mbakt-id-ma [windu-**go** deftare nde]  
 3SG talk-ASC-PERF write-INF book CL.the  
 ‘They have discussed writing the book’
- b. \***Hoko** ƒe mbakt-id-i [windu-go \_\_\_\_\_ ]?  
 what 3SG talk-ASC-PERF write-INF  
 ‘What did they discuss writing?’
- c. Hoko ƒe mbakt-id-i [windu-go **mum**]?  
 what 3SG talk-ASC-PERF write-INF PRO  
 ‘What did they discuss the writing of?’

Extraction of an infinitival phrase involving a genitive construction is completely blocked when targeting the complement. In the following examples, the noun ‘book’ cannot be extracted, but Musaa can be extracted with the provision of a resumptive pronoun:

- (95) a. ƒe mbaktid-ma [windu-**go** Musaa deftare]  
 3SG discuss-PERF write-INF musaa book  
 ‘They have discussed Musaa’s writing of a book’
- b. \*Hoko ƒe mbakt-id-i [windu-go Musaa \_\_\_\_\_ ?]  
 what 3SG talk-ASC-PERF write-NOM musaa  
 ‘What did they discuss Musaa’s writing of?’
- c. \*Homo ƒe mbakt-id-i [windu-go \_\_\_\_\_ deftare]  
 who 3SG talk-ASC-PERF write-NOM book  
 ‘Who did they discuss writing a book’
- d. Homo ƒe mbakt-id-i [windu-go **mum** deftare]  
 who 3SG talk-ASC-PERF write-NOM PRO book  
 ‘Who did they discuss their writing of a book?’

As we can see, extraction out of an infinitival phrase appears to be impossible as shown in (95b-c). However, (95c) can be salvaged by the presence of a resumptive pronoun, as is apparent in (95d).

## 2.7 Other Nominalized Verb Forms

### 2.7.1 Nominalizing Suffixes

There is a large number of different nominalizing suffixes in Pulaar. I am not sure whether this is dependent on verb type or not. Some verbs (*waal*, *windu*, *dar*, etc.) can take different suffixes with nuances of meaning. The majority of Pulaar verbs can take the infinitival suffix as a nominalizing suffix. Below is a list of Pulaar verbs and the nominal suffix they go with:

(96) **Table 2:** Verbs and Nominal Suffixes

Affix	Verb root	Translation
<i>-di</i>	aaw faw waal (also <i>-nga</i> )	sow add on top spend the night
<i>-aa</i>	woppu suus soñ sellu noddu laaḅ hum rokku hel heḅ hawru fin feew dur dañ ḅeydu ustu andu	abandon dare harvest be healthy call be clean tie give break have, get meet, agree wake up be straight pasture have, possess increase decrease know
<i>-nga</i>	waal (also <i>-di</i> ) dar (also <i>-nde</i> ) ḅann hof (also <i>-o</i> ) muus	Spend the night travel stay, live hurt, be painly
<i>-ka</i>	Aas aynu	dig watch over

	saf	Taste (sweet or salty)
<i>-oo</i>	yim windu sif juut hul fembu doftu dojju buu6 il	sing write tell, recount be tall/long be scared shave see off cough be cold/cool flow
<i>-nde</i>	innu dar gaañ hiirt jangu jifnu	name stand up hurt, injure dine give birth
<i>-are</i>	yewtu tampu feccu dillu yakku foft	converse, chat be tired share shake, move destroy, spoil rest
<i>-ga</i>	born	dress
<i>-uu</i>	windu (also <i>-oo</i> ) def buut	write cook swell
<i>-du</i>	ñaam dog yah	eat run go
<i>-ngo</i>	daan	sleep
<i>-de</i>	nan fir hiir	hear translate spend the night
<i>-ndu</i>	salmin	greet
<i>-gu</i>	sood yeey saw	

-a	nanngu lamd haal	hold ask speak
-o	hod (also <i>-nga</i> ) añ (also <i>-aa</i> )	stay hate

### 2.7.2 Consonant Mutation

When verbs are nominalized using one of the nominalizing suffixes, this triggers the mutation of the initial consonant of the verb root wherever this mutation is applicable. In what follows, I show examples of some of these nominalizing suffixes below:

- (97) **Cuus-aa** Musaa nga bettu-no min.  
Dare-NOM Musaa CL-the surprise-PAST us  
'Musaa's bravery surprised us'
- (98) Musaa as-ma **ngas-ka**.  
Musaa dig-PERF dig-NOM  
'Musaa dug a hole'
- (99) Homo yid-i ngoo **jim-oo**.  
3SG like-PERF DEM sing-NOM  
'Who likes this song?'

As discussed previously (See chapter 1, section 1.3) nominalization in Pulaar may involve consonant mutation. The examples in (97)-(99) show that the nominalized exhibit both the nominal suffix and the mutated initial consonant of the verb root, as indicated in bold. However, consonant mutation does not always occur in presence of a nominalization suffix.

- (100) Musaa yejit-ma inn-**nde** kodò nde.  
Musaa forget-PERF name-NOM guest CL.the  
'Musaa forgot the guest's name'

- (101) Mi yii-ma bornaa-ga Musaa nga.  
 1SG see-PERF dress-NOM Musaa CL.the  
 ‘I saw Musaa’s outfit’
- (102) Hodo fecc-**are** Musaa nde?  
 Where share-NOM Musaa CL.the  
 ‘Where is Musaa’s share?’
- (103) Hodo pecc-**e** amen de?  
 Where share-NOM Musaa CL.the  
 ‘Where are our shares?’

The examples in (100)-(103) show that the initial consonant of the verb does not mutate despite the presence of a nominalization suffix. In (103), however, consonant appears because the noun is plural and not because on the nominal suffix, as shown in (102). Verbs that are nominalized using the nominalizing suffixes can occur in genitive constructions just like infinitives, as shown in the following examples:

- (104) [Mbind-**uu** maako ngu] bur-an-i kam.  
 Write-nom 3SG CL.the be.better-BEN-PERF 1SG  
 ‘I prefer Musaa’s writing’
- (105) [Dog-**du** maafe ndu] waf-i raandu ndu riw-i be.  
 Run-NOM 3SG CL.the do-PERF dog CL.the chase-PERF 3PL  
 ‘Their run made the dog chase them’
- (106) [doy-**ngo** maako ngo] lug-at-a.  
 sleep-nom 3sg cl.the deep-imperf-neg  
 ‘Her sleep will not be deep’
- (107) [Haal-a Musaa ka] laaf-ma tos.  
 Speak-NOM Musaa CL.the be.clear-PERF INT  
 ‘Musaa’s speech is very clear’
- (108) Mi jog-aa-ki [cog-**gu** moo oto].  
 1SG have-NEG-STATE buy-NOM DEM car  
 ‘I don’t have the price of this car’

The examples in (104)-(108) show nominalized verbs in genitive structures. The consonant mutation is indicated in bold where applicable. I note that these genitive constructions, just like with infinitives, can occur as subjects ((104)-(107)) or objects as in (108). The following example contrast genitive phrases with infinitive on the one hand and with nominalizing suffixes on the other.

- (109) a. Musaa aaw-ma. gerte.  
 Musaa sow-PERF peanut  
 ‘Musaa has peanut’
- b. aaw-go Musaa gerte ngo  
 sow-INF musaa PEANUT CL.the  
 ‘Musaa’s sowing peanut’
- c. aaw-di Musaa gerte ndi  
 depart-NOM musaa PEANUT CL.the  
 ‘Musaa’s peanut seeds’

The example in (109b) where the infinitive behaves like a noun parallels the the example in (109c) which involve a nominalized form of the verb used a nominal suffix.

- (110) a. Musaa andu-m sirru mo.  
 Musaa know-PERF secret CL.the  
 ‘Musaa has known the secret’
- b. andu-go Musaa sirru mo  
 know-INF musaa secret CL.the  
 ‘Musaa knowing the secret’
- c. **gand-aa** Musaa sirru nga  
 know-NOM musaa secret CL.the  
 ‘Musaa’s knowledge of a secret’

The examples in (110b-c) show a similar pattern to those in (109b-c) with two genitive constructions; one with an infinitive and the other with a nominalized form of the verb.

These genitive constructions can be found with unaccusative, unergative, transitive, and ditransitive verb roots. This is shown in the examples below:

- (111) a. Musaa fokkit-ma.  
Musaa depart-PERF  
'Musaa has departed'
- b. Fokit-go Musaa ngo  
depart-NOM musaa CL.the  
'Musaa's departure'
- (112) a. Musaa dog-ma.  
Musaa run-PERF  
'Musaa has run'
- b. dog-**du** Musaa ndu  
run-NOM musaa CL.the  
'Musaa's run'
- (113) a. Musaa windu-m deftare.  
Musaa write-PERF book  
'Musaa has written a book'
- b. Mbind-**uu** Musaa deftare ngu  
write-NOM musaa book CL.the  
'Musaa's writing (of) a book'

The examples in (111b), (112b) and (113b) are genitive constructions involving a nominalized form of the verb. A verb root like *fokkit* 'depart' can only be nominalized with *-go*.

- (114) a. Musaa rokku-m sukaaḃe ḃe tangal. Ditransitive  
musaa give-perf kids cl.the candy  
'Musaa gave the kids candy'
- b. ?Roku-go Musaa sukaaḃe ḃe tangal ngo  
give-NOM musaa children CL.the candy CL.the  
'Musaa's giving the kids candy'
- c. Roku-go Musaa sukaaḃe ḃe tangal  
give-NOM musaa children CL.the candy  
'Musaa giving the kids candy'
- d. dokk-aa Musaa nga  
give-NOM Musaa CL.the  
'Musaa's gift'

In the examples in (114) above, we have genitive constructions involving a ditransitive verb. The example in (114b) is marginal. This may be due to the presence of the clausal determiner at the end. The omission of the determiner in (114c) makes it perfectly fine. The example in (114d) shows a derived noun with a nominalizing suffix and a consonant mutation. Unlike infinitive clauses, tense, aspect do not co-occur with the nominalizing affixes other than *-go*, as indicated by the following examples.

- (115) a. Musaa dog-ma.  
Musaa run-PERF  
'Musaa has run'
- b. \*dog-**noo-du** Musaa ndu  
run-PAST-NOM musaa CL.the  
'Musaa's (eventual) run (in the past)'
- c. \*dog-**at-du** Musaa ndu  
run-ASP-NOM musaa CL.the  
'Musaa's (habitual) run'
- (116) a. Musaa windu-m deftare.  
Musaa write-PERF book  
'Musaa has written a book'
- b. \*Mbind-**noo-uu** Musaa deftare ngu  
write-PAST-NOM musaa book CL.the  
'Musaa's (eventual) writing (of) a book'
- c. \*Mbind-**at-uu** Musaa deftare ngu  
write-ASP-NOM musaa book CL.the  
'Musaa's (habitual) writing (of) a book'

The examples in (115b-c) and (116b-c) show that tense and aspect do not co-occur with a nominalizing suffix. Similar to infinitive clauses, negation also not co-occur with the nominalizing morphemes.



- (117) a. Musaa dog-ma.  
Musaa run-PERF  
'Musaa has run'
- b. \*dog-**aa-du** Musaa ndu  
run-NEG-NOM musaa CL.the  
'Musaa's not running'
- (118) a. Musaa jangu-m deftare.  
Musaa read-PERF book  
'Musaa has read a book'
- b. \*jang-**aa-nde** Musaa deftare ngu  
write-PAST-NOM musaa book CL.the  
'Musaa's not reading a book'

The examples in (117b) and (118b) show that negation cannot surface in presence of a nominalizing suffix.

Furthermore, valency-changing morphemes cannot co-occur with these nominalizing suffixes, as shown in the following examples:

- (119) a. Musaa dog-ma.  
Musaa run-PERF  
'Musaa has run'
- b. \*dog-**ir-du** Musaa pafe ndu  
run-INST-NOM musaa shoes CL.the  
'Musaa's running with shoes'
- (120) a. Musaa jangu-m deftare.  
Musaa read-PERF book  
'Musaa has read a book'
- b. \*jang-**id-nde** Musaa deftare nde  
write-EXH-NOM musaa book CL.the  
'Musaa's reading an entire book'

In (119b), the occurrence of the instrumental morpheme in presence of a nominalizing morpheme yields an ungrammatical structure. Similarly, (120b) shows that the exhaustive morpheme is incompatible with the nominalizing affix.

The noun class for nominalized verbs follows the sounding of the nominalizing suffix. In other words, the choice of the noun class or the noun/noun class association depends on the ending of the noun so that all singular nouns with similar ending take the same noun class. This is not just for nominalized verb, but it applies to any noun in Pulaar. This is shown in the table below:

(121) **Table 3:** Noun class/Nominal suffix association

<b>Nominal suffix</b>	<b>Noun class</b>	<b>Nouns similar in ending<sup>3</sup></b>
<i>-di</i>	<b>Ndi</b> (for <i>-di</i> , <i>-ri</i> , and <i>-ndi</i> endings)	mboddi (snake) conndi (flour) kuudi (stool) toori (a type of dish)
<i>-aa</i>	<b>Nga</b> (for <i>-nga</i> , <i>-ga</i> , and <i>-aa</i> endings)	Legga (piece of wood) Koynga (leg) Lewlewaa (moonshine)
<i>-nga</i>	Same as <i>-aa</i> above	
<i>-ka</i>	<b>Ka</b> (for <i>-ka</i> , <i>-a</i> and diminutive <i>-aa</i> endings)	Conaa (little flour) Cafka (flavor) Haala (speech)
<i>-a</i>	Same as <i>-ka</i>	
<i>-ga</i>	Same as <i>-nga</i>	
<i>-oo</i>	<b>Ngo</b> (also for <i>-go</i> , <i>-ngo</i> endings)	ɓoggo (rope) juŋngo (arm, hand)
<i>-ngo</i>	Same as <i>-oo</i>	
<i>-nde</i>	<b>Nde</b> (also for <i>-de</i> , <i>-re</i> , <i>-are</i> )	Hoore (head), horde (gourd), feccare (share)
<i>-de</i>	Same as <i>-nde</i>	

<sup>3</sup> The English translation is in parentheses.

<i>-are</i>	Same as <i>-nde</i>	
<i>-uu</i>	<b>Ngu</b> (for nouns ending in <i>-uu</i> )	Pucuu (horse), ñaakuu (bee), pembuu (hairdo, shave)
<i>-gu</i>	Same as <i>-uu</i>	
<i>-du</i>	<b>Ndu</b> (also for <i>-ndu, -ru</i> )	Raandu (dog), fowru (hyena), nofru (ear)
<i>-ndu</i>	Same as <i>-du</i>	
<i>-o</i>	<i>Mo</i> (also for loanwords of any form)	Suko (child), sukur (sugar), abiyon (plane)

## 2.8 Conclusions

In this chapter, I have shown infinitive structures in Pulaar. I have indicated that the infinitive can behave in these constructions either as a noun or as a verb. One piece of evidence for this is that the infinitive is compatible with certain functional morphemes such as tense and aspect. An intriguing fact remain, however, that it is not compatible with negation. Although I have left this fact unexplained, I assume it has more to do with semantics rather than morphosyntax.

Another piece of evidence that the infinitive can be ambiguous between a noun and a verb is that in some infinitive constructions, whether genitive or non-finite clauses, an adjective or adverb may indicate that the infinitive has nominal or verbal properties. I have also argued for a particular hierarchy of functional heads in Pulaar infinitives, based on the Mirror Principle from Chapter 1. The structure of infinitives is different from matrix clauses, because for example, it is not possible to have the infinitive occur with valency-changing morphemes which further suggests that in those cases it acts as a verb. As a verb, the infinitive can have a subject preceding it and an object following it in ways similar to matrix clauses. Furthermore, I have observed that the infinitive

clauses can be as big as a TP. However, material inside the infinitive clause can be moved as topic or focus, thus ending up in the C-region.

I have also shown in this chapter that Pulaar has a number of nominalizing suffixes. The nominalized form of the verb using these affixes can behave in ways similar to the infinitive. However, the nominalized forms only behave as nouns and never as verbs and they are incompatible with tense, aspect and negation. They also cannot co-occur with valency-changing morphemes.

## Chapter 3

### 3. Pulaar Relative Clause Nominalization

In this chapter, I investigate relative clauses in Pulaar. This includes relative clauses with a head noun but also two forms of factive clauses; i.e the verbal factive and the *ko*-factive. I show their structural properties and how the headed relatives parallel factive clauses. Pulaar has head-initial relative clauses, as the following examples indicate.

- (1) a. Simis **mo** Musaa ɓorn-i **mo** Headed Relative Clause  
shirt C.REL musaa wear-PERF CL.the  
'The shirt that Musaa is wearing'
- b. Deftare **nde** Musaa wind-i **nde**  
book C.REL musaa write-PERF CL.the  
'The book that Musaa wrote'
- c. Pucuu **ngu** Musaa sood-i **ngu**  
Horse C.REL musaa buy-PERF CL.the  
'The horse that Musaa bought'

In each of the examples in (1), there is a head noun which is followed by an agreeing complementizer in ways similar to Wolof (Torrence 2005) and then a TP consisting of a subject (Musaa) and a verb. The determiner at the right edge of the clause agrees with the head noun encodes definiteness. Without this final determiner, however, the head noun is indefinite, as in the following examples:

- (2) a. Simis **mo** Musaa ɓorn-i Headed Relative Clause  
shirt C.REL musaa wear-PERF  
'A/some shirt that Musaa is wearing'
- b. Deftare **nde** Musaa wind-i  
book C.REL musaa write-PERF  
'A/some book that Musaa wrote'

- c. Pucuu **ngu** Musaa sood-i  
 Horse C.REL musaa buy-PERF  
 ‘A/some horse that Musaa bought’

In the examples above, the head noun of the relative clause is indefinite. This is indicated by the absence of a determiner at the end of the phrase and the translation ‘a/some’.

In Pulaar, the definite article can have different forms which encode slightly different meanings.

In the examples (3c) and (3d) below, the determiner is more of a demonstrative.

- (3) a. Musa jangu-m deftare nde.  
 musa read-PERF book CL.the  
 ‘Musa read the book’
- b. [Deftare] nde Musa jang-i nde  
 book CL.REL musa read-PERF CL.the  
 ‘The book that Musa read’
- c. [Deftare] nde Musa jang-i nde-e  
 book CL.REL musa read-PERF CL.the-DEM  
 ‘This book that Musa read’
- d. [Deftare] nde Musa jang-i nde-en  
 book CL.REL musa read-PERF CL.the-DEM  
 ‘That book that Musa read’ (Previously mentioned book or close to listener)
- e. [Deftare] nde Musa jang-i nde-y  
 book CL.REL musa read-PERF CL.the-DEM (over there)  
 ‘The book there that Musa read’

The morphological difference of the determiners at the end of the clause indicates a slight difference in meaning. In fact, these determiners are demonstrative in nature. They signal the spatial or temporal position of person or object they refer to. They are based on the definite article (noun class). However, unlike the noun class which occurs postnominally, demonstratives can be placed before or after the noun they agree with, as will be shown later in this section.

(4) **Table 1: Demonstratives**

	Proximal	Distal	Gloss
DEM	NC <sup>4</sup>		This one (close to speaker, and maybe listener too)
		NC + n	That one (close to listener)
		NC + y	That one over there (away from speaker and listener)

The demonstrative does not have to be in final position. In fact, it can be at the beginning of the clause and still agree with the head noun, as shown below:

- (5) a. **moo** suko mo ʃe tott-i tangalaare nde DO  
 DEM child C.rel 3PL give-PERF candy CL.the  
 ‘This kid that they gave the candy to’
- b. **moon** suko mo ʃe tott-i tangalaare nde DO  
 DEM child C.C.rel 3PL give-PERF candy CL.the  
 ‘That kid that they gave the candy to’

The demonstrative can also be placed in the position immediately following the head noun. This is generally the expected position for determiners relative to the noun since the determiner follows the noun in Pulaar.

- (6) a. suko **moo** mo ʃe tott-i tangalaare nde DO  
 child DEM C.rel 3PL give-PERF candy CL.the  
 ‘This kid that they gave the candy to’
- b. suko **moon** mo ʃe tott-i tangalaare nde DO  
 child DEM C.rel 3PL give-PERF candy CL.the  
 ‘That kid that they gave the candy to’
- c. suko **moy** mo ʃe tott-i tangalaare nde DO

<sup>4</sup> NC stands for ‘noun class’.

child DEM C.rel 3PL give-PERF candy CL.the  
'The kid there that they gave the candy to'

In the examples above involving a DP object, the demonstrative is placed right after the head noun.

This is an expected position given that determiners in Pulaar generally appear right after the noun they agree with. However, the definite article cannot surface at the end of the clause in the examples in (6a-c) concomitantly with the demonstrative.

### 3.1 General Properties of Relative Clauses

Keenan and Comrie (1977) present a typological generalization about relative clause formation in the languages of the world. The structures they examine consist of two parts: one part which specifies a set of objects (this is syntactically a head noun), and one part which restricts the interpretation of the head noun to some subset of which a certain sentence is true (the restricting clause).

The way in which the restricting clause limits the interpretation of the head noun depends on the syntactic position that is missing in the restricting clause.

Based on a sample of 50 languages, Keenan and Comrie demonstrate that some limitations apply to the syntactic positions which can be relativized from, defining an "Accessibility Hierarchy" such that: first, any relative clause-forming strategy must apply to a continuous segment of the Accessibility Hierarchy (AH); second, strategies that apply at one point of the AH may in principle cease to apply at any lower point. The hierarchy itself is found empirically in the language sample as seen below:

(7) Subj>Direct Obj>Indirect Obj>Oblique>Genitive>Object of Comparison (OComp)



The hierarchy is an ordered list of syntactic positions within the restricting clause which provide the restriction on the head noun. Basically, the symbol > in the hierarchy can be read as ‘is more accessible to relativization than’. So, a language which allows for an object relative, will also necessarily allow for subject relative, but not necessarily oblique relative; whereas a language which allows oblique relative will allow both subject relative and object relative.

Relativization of OComp appears to be harder to process than relativization of a subject for instance, so a grammatical strategy strong enough to deal with a relativized subject may not be powerful enough to handle a relativized OComp.

The hierarchy of accessibility proposed by Keenan and Comrie applies to Pulaar in the sense that the language allows the object of comparison (OComp) to be accessed by relativization, as shown in the following examples:

- (8) a. Musaa ɓuri yaaw suko njool mo  
Musaa COMP fast child tall CL.the  
‘This child is faster than than the tall child’
- b. **suko njool** mo Musaa ɓuri yaaw mo Ocomp  
child tall C.REL musaa comp fast CL.the  
‘the tall child that Musaa is faster than’
- c. **suko** ɓur dɔ yaaw suko njool mo Subject  
child comp C.CREL fast child tall CL.the  
‘The child who is faster than the tall child’
- (9) a. Musaa sood-ma mbabba ndemoowo mo.  
Musaa buy-PERF donkey farmer CL.the  
‘Musaa has bought the donkey of the farmer’
- b. ndemoowo mo Musaa sood-i mbabba mum mo. Genitive  
farmer CL.REL Musaa buy-PERF donkey 3SG CL.the  
‘Musaa has bought the donkey of the farmer’
- c. mbabba ndemoowo mo ba Musaa sood-i Direct Object  
donkey farmer CL.the CL.REL Musaa buy-PERF

‘Musaa has bought the donkey of the farmer’

- (10) a. Musaa rokku-m suko mo tangal.  
 Musaa give-PERF child CL.the candy  
 ‘Musaa gave the child candy’
- b. Suko mo Musaa rokku-i tangal mo. Indirect Object  
 child CL.REL Musaa give-PERF candy CL.the  
 ‘The child that Musaa gave candy (to)’

### 3.2 Relative Clause Structure and Verb Morphology

In relative clause constructions, the verb agrees with the subject in person and number.

(11) **Table 2:** Subject markers

	Singular	Plural
<b>1</b>	mi	min (EXCL) en (INCL)
<b>2</b>	a	on
<b>3</b>	o	be

Subject agreement is shown on the verb through consonant mutation for plural subjects, as in matrix clauses.

- (12) a. ñebbe de debbo mo **d**ef-i de Singular DP  
 beans C.REL woman CL.the cook-PERF CL.the  
 ‘The beans that the woman cooked’
- b. ñebbe de rewbe be **nd**ef-i de Plural DP  
 beans C.REL women CL.the cook-PERF CL.the  
 ‘The beans that the women cooked’
- c. ñebbe de be **nd**ef-i de Plural Pronoun  
 beans C.REL 3PL CL.the cook-PERF CL.the  
 ‘The beans that they cooked’

The initial consonant of the verb changes from [d] in (12a) to [nd] in (12b-c). DP subjects in relative clauses always precede the verb. However, all subject pronouns, except 3SG/PL, have to follow the verb. When the subject pronoun is pot-verbal, the initial consonant of the verb mutates even when the subject pronoun is singular, as seen below:

- (13) a. ñebbe dɛ debbo mo **def-i** dɛ Singular DP  
 beans C.REL woman CL.the cook-PERF CL.the  
 ‘The beans that the woman cooked’
- b. ñebbe dɛ **ndef-mi** dɛ Singular Pronoun  
 beans C.REL cook-1SG CL.the  
 ‘The beans that I cooked’
- c. ñebbe dɛ **o** **def-i** dɛ Singular Pronoun  
 beans C.REL 3SG cook-PERF CL.the  
 ‘The beans that he/she cooked’

The initial consonant of the verb mutates in (13b) where the post-verbal subject is singular; but it does not mutate in (13c) where the preverbal subject is also singular.

Object pronouns and full DP objects occur in different positions in Pulaar headed relative clauses.

The full DP can appear either before or after the determiner on the right edge of the clause:

- (14) a. suko mo ɓe tott-i (**tangalaare nde**) mo **tangalaare nde** DO  
 child C.REL 3PL give-PERF (candy CL.the) CL.the candy CL.the  
 ‘The child that they gave the candy to’
- b. tangalaare nde ɓe tott-i (**suko mo**) nde **suko mo** IO  
 candy C.REL 3PL give-PERF (child CL.the) CL.the child CL.the  
 ‘The candy that they gave to the child’

In the examples above the objects are definite DPs. Indefinite object DPs can also precede or follow the definite article:

- (15) a. suko mo ɓe tott-i (**tangalaare**) mo **tangalaare** DO  
 child C.REL 3PL give-PERF (candy) CL.the candy  
 ‘The child that they gave the candy to’
- b. tangalaare nde ɓe tott-i (**suko**) nde **suko** IO  
 candy C.REL 3PL give-PERF (child) CL.the child  
 ‘The candy that they gave to a child’

Unlike DP objects, object pronouns occur only in the position immediately preceding the right edge determiner.

- (16) tangalaare nde ɓe tott-i **mo** nde (\***mo**)  
 candy C.REL 3PL give-PERF 3<sup>RD</sup>.SG CL.the 3<sup>RD</sup>.SG  
 ‘The candy that they gave to him.’

There is no difference in the form or type of pronoun between direct and indirect object pronouns.

In other words, the pronoun is the same for definite direct object, definite indirect object, and indefinite direct object and benefactive:

- (17) a. tangalaare nde ɓe tott-i **mo** nde IO  
 candy C.REL 3PL give-PERF 3<sup>RD</sup>.SG CL.the  
 ‘The candy that they gave to him.’  
 b. suko mo ɓe tott-i **nde** mo DO  
 child C.REL 3PL give-PERF 3<sup>RD</sup>.SG CL.the  
 ‘The child that they gave it to.’  
 c. tangalaare nde ɓe cood-an-i **mo** nde BEN  
 candy C.REL 3PL buy-BEN-PERF 3<sup>RD</sup>.SG CL.the  
 ‘The candy that they bought for him.’

The examples above indicate that the pronominal forms of the direct object, the indirect object and the benefactive all occur in the same position relative to the determiner at the end of the clause. In other words, they all precede the determiner.

While object DPs can optionally occur after the final determiner, prepositional phrases always follow the determiner.

- (18) a. tangalaare nde ɓe tott-i mo **nde** (to) ekol to  
 candy C.REL 3PL give-PERF 3<sup>RD</sup>.SG CL.the (LOC) school LOC  
 ‘The candy that they gave to her at school.’  
 ✓ ... Det PP  
 b. \*tangalaare nde ɓe tott-i mo (to) ekol to **nde**  
 candy C.REL 3PL give-PERF 3<sup>RD</sup>.SG (LOC) school LOC CL.the  
 ‘The candy that they gave to her at school.’  
 \* ... PP Det

In (18b) where the prepositional phrase comes before the determiner, the structure is ungrammatical. In all these examples involving an object DP or pronoun, the final determiner can be a demonstrative which still agrees with the head noun:

- (19) a. suko mo ɓe tott-i (tangalaare nde) **moon** tangalaare nde DO  
 child C.REL 3PL give-PERF (candy CL.the) DEM.DIST candy CL.the  
 ‘That child that they gave the candy to’
- b. suko mo ɓe tott-i (tangalaare nde) **moy** tangalaare nde DO  
 child C.REL 3PL give-PERF (candy CL.the) DEM.DIST candy CL.the  
 ‘The child there that they gave the candy to’
- c. tangalaare nde ɓe tott-i (suko mo) **ndeen** suko mo IO  
 candy C.REL 3PL give-PERF (child CL.the) DEM.DIST child CL.the  
 ‘That candy that they gave to the kid’
- d. tangalaare nde ɓe tott-i (suko mo) **ndey** suko mo IO  
 candy C.REL 3PL give-PERF (child CL.the) DEM.DIST child CL.the  
 ‘That candy that they gave to the kid’

In the examples above involving a DP object, the final determiner is turned into a demonstrative by suffixing either *-en* or *-y* and it can precede or follow the DP object. The demonstrative is based on the *mo*-class in (19a-b) and on the *nde*-class in (19c-d).

The morphology of the verb in a relative clause may show tense and aspect as well as negation just like in matrix clauses:

- (20) a. Hawaa def-**ma** ñebbe dɛ  
 hawaa cook-PERF beans CL.the  
 ‘Hawaa has cooked the beans’
- a’. ñebbe dɛ Hawaa def-**i**<sup>5</sup> dɛ Perfective  
 beans C.REL Hawaa cook-PERF CL.the  
 ‘The beans that Hawaa has cooked’

<sup>5</sup> The difference in the form of the perfectives (and imperfective in (18b-b’)) in (18a) and (18a’) is triggered by the relativization. In other words, there is a morphological difference between the aspect morphemes in matrix clauses and those in clauses involving A-bar movement.

- b. Hawaa mo def-**a** ñebbe dɛ  
 hawaa 3SG cook-PROG beans CL.the  
 ‘Hawaa is cooking the beans’
- b’. ñebbe dɛ Hawaa def-**ata** dɛ Imperfective  
 beans C.REL Hawaa cook-IMPERF CL.the  
 ‘The beans that Hawaa is cooking’
- c. Hawaa mo def-**noo** ñebbe dɛ  
 hawaa 3SG cook-PAST beans CL.the  
 ‘Hawaa cooked the beans’
- c’. ñebbe dɛ Hawaa def-**noo** dɛ Past  
 beans C.REL Hawaa cook-PAST CL.the  
 ‘The beans that Hawaa cooked’
- d. Hawaa mo def-**aa** ñebbe dɛ  
 hawaa 3SG cook-NEG beans CL.the  
 ‘Hawaa has not cooked the beans’
- d’. ñebbe dɛ Hawaa def-**aa** dɛ Negation  
 beans C.REL Hawaa cook-NEG CL.the  
 ‘The beans that Hawaa did not cook’

Although the same tense and aspect morphemes occur in matrix clauses, the interpretation may differ for the perfective and imperfective morphemes. In fact, in what appears to be matrix clauses the aspectual morphemes *-i* and *-ata* relate to focus but they encode perfective and progressive just as in relative clauses.

- (21) a. Hawaa def-**i** ñebbe dɛ  
 hawaa cook-PERF beans CL.the  
 ‘Hawaa cooked the beans’
- b. ñebbe dɛ Hawaa def-**i** dɛ Perfective  
 beans C.REL Hawaa cook-PERF CL.the  
 ‘The beans that Hawaa has cooked’  
 \*‘The beans that it’s Hawaa who cooked’

- (22) a. Hawaa def-**ata** ñebbe dɛ  
hawaa cook-IMPERF beans CL.the  
‘HAWAA is cooking/going to cook the beans’
- b. ñebbe dɛ Hawaa def-**ata** dɛ Imperfective  
beans C.REL Hawaa cook-IMPERF CL.the  
‘The beans that Hawaa is cooking’  
\*‘The beans that it’s Hawaa who is cooking’

As for past tense and negation, they behave the same in matrix clauses as well as relative clauses.

- (23) a. Hawaa def-**noo** ñebbe dɛ  
hawaa cook-PAST beans CL.the  
‘Hawaa cooked the beans’
- b. ñebbe dɛ Hawaa def-**noo** dɛ Past  
beans C.REL Hawaa cook-PAST CL.the  
‘The beans that Hawaa cooked’
- (24) a. Hawaa def-**aa** ñebbe dɛ  
hawaa cook-NEG beans CL.the  
‘Hawaa has not cooked the beans’
- b. ñebbe dɛ Hawaa def-**aa** dɛ Negation  
beans C.REL Hawaa cook-NEG CL.the  
‘The beans that Hawaa did not cook’

The order of morphemes in the examples above is explained by the fact that the verb raises and left-adjoins to the different tense and aspect morphemes, as well as other derivational morphemes.

The templatic representation of Pulaar headed relative clauses is as follows:

- (25) a. NP      C<sub>REL</sub>      S      V      O      Det      Headed relative

### 3.3 Extraction

Relative clauses appear to be islands in the sense that extraction out of a relative clause yields an ungrammatical structure.

- (26) a. Isa tottu-m suko mo ñebbe. Matrix Clause  
 Isa give-PERF child CL.the beans  
 ‘Isa has given the beans to the child’
- b = RELATIVIZATION
- b. dā yid-i [suko mo Isa tott-i ñebbe mo.] RC  
 2SG like-PERF child CL<sub>rel</sub> Isa give-PERF beans CL.the  
 ‘You like the boy that Isa gave beans to’
- c = RELATIVIZATION
- c. \*dā yid-i [ñebbe dē [suko mo Isa tott-i \_\_\_\_\_ dē] RC  
 2SG like-PERF [beans CL<sub>rel</sub> [child CL<sub>rel</sub> Isa give-PERF] CL.the  
 ‘You like the beans that the boy that Isa gave (to)’
- d = WH-MOVEMENT
- d. \*Homo njid-dā [ñebbe dē [Isa tott-i \_\_\_\_\_ mo]? Wh-Extraction  
 who like-2SG [beans CL<sub>rel</sub> [Isa give-PERF] CL.the  
 ‘Who do you like the beans that Isa gave (to)?’
- e = FOCUS
- e. \*Ko ñebbe njid-daa [suko mo Isa tott-i \_\_\_\_\_ mo] Focus  
 FOC beans like-2SG [child CL<sub>rel</sub> isa give-PERF CL.the  
 ‘It’s beans that you like the child that Isa gave (to)’

The example in (26c) shows that a relativization out of a relative clause is not possible. (26d) is evidence that Wh-movement out a relative clause is impossible. The example in (26e) shows an argument inside a relative clause cannot be clefted.

In conformity with Ross’s (1967) island constraints, relativization out of a focus structure, a coordinate structure, an adjunct or an island is impossible in Pulaar.



(27) = FOCUS CLAUSE

- (27) a. Ko Isa ñaam-i ñebbe dē. FOCUS  
 FOC Isa eat-PERF.FOC beans CL.the  
 ‘It’s Isa who ate the beans’
- b. \*A def-ma ñebbe dē ko Isa ñaam-i \_\_\_\_\_ dē RC  
 . 2SG cook-PERF beans CL.the FOC Isa eat-PERF.FOC  
 ‘You cooked the beans that it’s Isa who ate’

(28) = COORDINATION

- (28) a. Isa def-ma ñebbe te Aali sood-i deftare. CSC  
 Isa cook-perf beans and Aali buy-PERF.FOC book  
 ‘Isa cooked the beans and Aali bought a book’
- b. \*dā yid-i ñebbe dē Isa def-i \_\_\_\_\_ te Aali sood-i deftare RC  
 . 2sg like-PERF beans CL.REL Isa eat-PERF.FOC and Aali buy-PERF book  
 ‘You like the beans that Isa cooked and Aali bought a book’

(29) = WH-ISLAND

- (29) a. Ami mo and-i hedē ñebbe Isa def-an-i suko mo. Wh  
 Ami 3SG know-PERF which beans Isa cook-BEN-PERF child CL.the  
 ‘Ami knows which beans Isa cooked for the child’
- b. \*suko mo Ami and-i [hedē ñebbe Isa def-an-i mo RC  
 child CL.REL Ami know-PERF which beans Isa cook-BEN-PERF CL.the  
 ‘The child that Ami knows which beans Isa cooked for’

(30) and (31) = ADJUNCT

- (30) a. Isa ñaam-ma ñebbe dē dow taabul mo. Adjunct  
 Isa eat-PERF.FOC beans CL.the  
 ‘Isa ate the beans on the table’
- b. \*taabul mo Isa ñaam-i ñebbe dē dow \_\_\_\_\_ mo RC  
 table CL.the Isa eat-PERF.FOC  
 ‘The table that Isa ate the beans on’
- (31) a. Isaa dāan-ii-m haande miin def-go ñebbe. Adjunct  
 Isaa sleep-MID-PERF before 1SG cook-INF beans  
 ‘Isaa slept before I cooked beans.’
- b. \*A ñaam-ma ñebbe dē [Isaa dāan-i-i haande miin def-go dē  
 2SG eat-PERF beans CL<sub>rel</sub> Isaa sleep-MID-PERF before 1SG cook-INF CL.the  
 ‘You ate the beans that Isaa slept before I cooked.’

These examples below show that relativization in Pulaar is sensitive to islands in the sense that they appear to block movement. The example in (30b) indicates that the preposition cannot strand in Pulaar.

### 3.4 Factive Clauses in Pulaar

#### 3.4.1 Distribution and Internal Structure of Factives

I now look at two types of relative clause nominalizations in Pulaar, namely the verbal factive and the *ko*-factive clauses.

- (32) a. ɓe ndicit-ii-m [wuju-go ngo ɓe nguj-i deftare ngo] V-Factive  
 3PL regret-MID-PERF steal-INF C.REL 3.PL steal-PERF book CL.the  
 ‘They regret the fact that they stole a book.’  
 a’. they stole the book, indeed.  
 a’’. \*but they did not steal the book
- b. ɓe ndicit-ii-m [ko ɓe nguj-i deftare ko] *ko*-Factive  
 3PL regret-MID-PERF C.REL 3PL steal-PERF book CL.the  
 ‘They regret (the fact) that they stole a book.’  
 b’. they stole the book, indeed.  
 b’’. \*but they did not steal the book

In both the verbal factive (32a) and the *ko*-factive (32b), the stealing event is taken to be a fact. I argue that these structures are types of relative clauses. The verbal factive bracketed in (32a) is headed by an infinitival acting as a head noun which is followed by an agreeing complementizer and a TP complement. In the bracketed *ko*-factive in (32b), the relative complementizer is the first element in the clause and it is followed by a TP. In other words, the *ko* factive is a headless relative clause.

### 3.4.2 Distribution of Factives

Both factive clause types occur as subjects and complements to factive predicates, i.e. predicates that presuppose the truth of their subjects or complements. In other words, factive clauses relate to facts or events that are supposed to have already occurred. For instance, the sentence in (33), from Kiparsky and Kiparsky (1970), involves the non-factive verb ‘claim’. In other words, a claim may turn out to be proven either right or wrong, as shown in (33b-c):

- (33) a. John claims that he offended Mary. Non-factive Predicate  
 b. ... and in fact, he did.  
 c. ... but in fact, he did not.

The example in (33a), however, involves a factive verb. That means it refers to an event that is presupposed to have occurred, as shown in (34b-c):

- (34) a. John regrets that he offended Mary. Factive Predicate  
 b. ... and in fact, he did.  
 c. #... but in fact, he did not.

The examples in (33) and (34) correspond to the Pulaar examples in (35) and (36) respectively.

- (35) a. Musaa wii wonde o tooñ-ma Ami  
 Musaa said that 3SG offend-PERF Ami  
 ‘Musaa said that he offended Ami’  
 b. ... and in fact, he did.  
 c. ... but in fact, he did not.

- (36) a. Musaa riccit-ii-m [ko o tooñ-i Ami ko]  
 Musaa said that C.REL 3SG offend-PERF Ami cl.the  
 ‘Musaa regrets the fact that he offended Ami’
- b. ... and in fact, he did.
- c. #... but in fact, he did not.

The examples in (37b) and (37c) respectively show verbal and *ko* factives as grammatical subjects:

- (37) a. ɓe nguju-m deftare.  
 3.PL steal-PERF book  
 ‘They stole a book’
- b = VERBAL FACTIVE
- b. [wuju-go ngo ɓe nguj-i deftare ngo] bettu-mii-m  
 steal-INF C.REL 3.PL steal-PERF book CL.the surprise-1SG-PERF  
 ‘The fact that they stole the book surprised me’
- c = *KO*-FACTIVE
- c. [ko ɓe nguj-i deftare ko] bettu-mii-m  
 C.REL 3.PL steal-PERF book CL.the surprise-1SG-perf  
 ‘(The fact) that they stole the book surprised me.’

In Pulaar, factive clauses occur as arguments of factive verbs like *bettugo* ‘surprise’, *lobgo* ‘to be angry’, *ricitaago* ‘to regret’. Factive clauses can, thus, be complements to factive verbs, as in the following examples where the verbal and the *ko* factive are complements of *ricitaago* ‘to regret’:

- (38) a. ɓe ndicit-iim [wuju-go ngo ɓe nguj-i deftare ngo] Verbal Factive  
 3PL regret-PERF steal-INF C.REL 3.PL steal-PERF book CL.the  
 ‘They regret the fact that they stole the book.’
- b. ɓe ndicit-iim [ko ɓe nguj-i deftare ko] *ko*-Factive  
 3PL regret-PERF C.REL 3.PL steal-PERF book CL.the  
 ‘They regret (the fact) that they stole the book.’

Factives clause cannot be subordinate clauses following the complementizer *wonde* ‘that’ in Pulaar, as shown below:

- (39) a. ɓe ndicit-iim (\*wonde) [wuju-go ngo ɓe nguɟ-i deɓtare ngo] VF  
 3PL regret-PERF that steal-INF C.REL 3.PL steal-PERF book CL.the  
 ‘They regret fact that they stole the book.’
- b. ɓe ndicit-iim (\*wonde) [ko ɓe nguɟ-i deɓtare ko] ko-Factive  
 3PL regret-PERF that C.REL 3.PL steal-PERF book CL.the  
 ‘They regret (The fact) that they stole the book.’
- c. ɓe ndicit-iim wonde ɓe nguɟu-m deɓtare nde]  
 3PL regret-PERF that 3.PL steal-PERF book CL.the  
 ‘They regret (The fact) that they stole the book.’

In addition, factive clauses do not occur as arguments of non-factive verbs like *sib-go* ‘to doubt’, which confirms that fact that they refer to events that are supposed to have occurred.

- (40) a.\* mbiɗo sib-i [wuju-go ngo ɓe nguɟ-i deɓtare ngo] VF  
 1SG doubt-PERF steal-INF C.REL 3.PL steal-PERF book CL.the  
 Intended: ‘I doubt the fact that they stole a book’
- b. \*mbiɗo sib-i [ko ɓe nguɟ-i deɓtare ko] ko-Factive  
 1SG doubt-PERF C.REL 3.PL steal-PERF book CL.the  
 Intended: ‘I doubt that they stole a book’
- c. mbiɗo sib-i [kongo ngo o haal-i ngo] Headed Relative  
 1SG doubt-PERF statement C.REL 3.SG speak-PERF CL.the  
 ‘I doubt the statement that he made’

The examples in (38a-b) can be contrasted to the grammatical example in (38c) where a headed relative clause is complement to a non-factive verb. In (38c), what is doubted is not that a statement was made, but the truthfulness of the statement that is made.

### 3.4.3 The Clause Structure of Factive Clauses

Verbal factives are called so because a form of the verb (the infinitive or gerundive) is treated as a noun heading the factive clause. In this clause, the nominalized form of the verb is followed by an agreeing complementizer which is homophonous with the determiner at the right edge of the clause. This can be seen in the examples below:

- (41) 6e njid-i [loot-go **ngo** Hawaa loot-i wutte **ngo**] Verbal Factive  
3PL like-PERF wash-INF C.REL Hawaa wash-PERF shirt CL.the  
'They like the fact that Hawaa washed a shirt'
- (42) 6e njid-i [def-go **ngo** Jeyla def-i ñebbe **ngo**]  
3PL like-PERF cook-INF C.REL Jeyla cook-PERF beans CL.the  
'They like the fact that Jeyla cooked beans'

*ko*-Factives are so called due to the fact that *ko* is the leftmost the element. This contrasts with headed relatives which have an overt head noun and verbal factives which are headed by a nominalized form of the conjugated verb. In this construction, I take the leftmost *ko* to be a complementizer sitting in the same position as complementizers in the headed relative and the verbal factive. Just like in the headed relative and the verbal factive, the complementizer<sup>6</sup> is homophonous with determiner at the end of the clause, as seen in the following examples:

- (43) 6e njid-i [**ko** Hawaa loot-i wutte **ko**]  
3PL like-PERF C.REL Hawaa wash-PERF shirt CL.the  
'(The fact) that Hawaa washed a shirt'
- (44) 6e njid-i [**Ko** debbo mo def-i ñebbe **ko**]  
3PL like-PERF C.REL woman CL.The cook-PERF beans CL.The  
'(The fact) that the woman cooked beans'

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<sup>6</sup> Having an additional complementizer (like those in headed relatives) would yield ungrammatical structures not only because the COMP slot is filled, but also there is no noun for the additional complementizer to agree with.

In relative clause nominalizations, the relativized word can be the infinitive form of the verb used in the clause, or its nominal counterpart. But the relative clause can also be headless as in the case of the *ko*-factive. This is shown below:

- (45) a. **windu-go** ngo Hawaa wind-i deftare ngo Verbal Factive  
 write-INF C.REL Hawaa write-PERF book CL.the  
 ‘The fact that Hawaa wrote a book’
- b. **ko** Hawaa wind-i deftare **ko** *ko*-Factive  
 C.REL Hawaa read-PERF book CL.the  
 ‘(The fact) that Hawaa wrote a book’
- c. **mbind-uu** ngu Hawaa wind-i deftare ngu Headed RC  
 writing C.REL Hawaa write-PERF book CL.the  
 ‘The fact that Hawaa wrote a book’
- d. \***wind-uu** ngu Hawaa wind-i deftare ngu  
 writing C.REL Hawaa write-PERF book CL.the  
 ‘The fact that that Hawaa wrote a book’

The ungrammaticality of the (45b) example above results from the absence of initial consonant mutation on the noun *winduu* which should be *mbinduu* ‘writing’. This can be compared to the genitive nominalization where the mutation of the initial consonant is necessary, as shown in (46b):

- (46) a. 6e windu-m deftare nde.  
 3PL write-PERF book CL.the  
 ‘He wrote the book’
- b. 6e mbaktid-ma [**mbind-uu** deftare ngu]  
 3PL discuss-PERF write-NOM book CL.the  
 ‘They have discussed the writing of the book’
- c. 6e mbaktid-ma [**windu -go** deftare ngo]  
 3SG discuss-PERF write-NOM book CL.the  
 ‘They have discussed the writing of the book’

Similar to the headed relative clauses in Pulaar, factive constructions are compatible with different tense and aspectual morphemes, as well as negation. The verbal factive, for instance, is consistent with past tense, progressive, perfective aspect and negation:

- (47) a. [def-go ngo Aali def-**noo** ñebbe ngo] bettu Hawaa Past  
 cook-INF C.REL aali cook-PAST beans CL.the surprise Hawaa  
 ‘The fact that Aali cooked beans surprised Hawaa’
- b. [def-go ngo Aali def-**ata** ñebbe ngo] bettu Hawaa Prog  
 cook-INF C.REL aali cook-PROG beans CL.the surprise Hawaa  
 ‘The fact that Aali is cooking beans surprised Hawaa’
- c. [def-go ngo Aali def-**i** ñebbe ngo] bettu Hawaa Perf  
 cook-INF C.REL aali cook-PERF beans CL.the surprise Hawaa  
 ‘The fact that Aali has cooked beans surprised Hawaa’
- d. [def-go ngo Aali def-**aa** ñebbe ngo] bettu Hawaa Neg  
 cook-INF C.REL aali cook-NEG beans CL.the surprise Hawaa  
 ‘The fact that Aali has not cooked beans surprised Hawaa’

The *ko*-factive constructions are also compatible with these tense and aspect morphemes, as shown below:

- (48) a. [Ko Aali def-**noo** ñebbe ko] bettu Hawaa Past  
 C.REL aali cook-PAST beans CL.the surprise Hawaa  
 ‘The fact that Aali cooked beans surprised Hawaa’
- b. [Ko Aali def-**ata** ñebbe ko] bettu Hawaa Progressive  
 C.REL aali cook-PROG beans CL.the surprise Hawaa  
 ‘The fact that Aali is cooking beans surprised Hawaa’
- c. [Ko Aali def-**i** ñebbe ko] bettu Hawaa Perfective  
 C.REL aali cook-PERF beans CL.the surprise Hawaa  
 ‘The fact that I cooked beans surprised Hawaa’
- d. [Ko Aali def-**aa** ñebbe ko] bettu Hawaa Negation  
 C.REL aali cook-NEG beans CL.the surprise Hawaa  
 ‘The fact that Aali has not cooked beans surprised Hawaa’



### 3.5 Headed Relative Clauses and Factive Clauses

Just as in the headed relative clause the determiner can be absent. In this case, the interpretation changes. Also, just as in headed relatives, relative complementizer is obligatory.

- (49) Loot-go \*(ngo) Hawaa loot-i wutte  
Wash-INF C.REL Hawaa wash-PERF shirt  
'A/some washing that Hawaa washed a shirt'  
\*'The fact that Hawaa washed a shirt'
- (50) Def-go \*(ngo) Jeyla def-i ñebbe  
Cook-INF C.REL Jeyla cook-PERF beans  
'A/some cooking that Jeyla cooked beans.'  
\*'The fact that Jeyla cooked beans'

When the determiner is omitted, the structure can be interpreted as an indefinite factive. The relative complementizer is obligatory. This is shown in the following examples:

- (51) ko Hawaa loot-i wutte  
C.REL Hawaa wash-PERF shirt  
'The fact that Hawaa washed a shirt'  
'An instance of Hawaa washed a shirt'
- (52) ko Hawaa def-i ñebbe  
C.REL Hawaa cook-PERF beans  
'The fact that Jeyla cooked beans.'  
'An instance of Jeyla cooked beans.'

Just as in headed RCs, a demonstrative can replace the right-edge determiner, as indicated in the following examples.

- (53) a. Jeyla def-ma ñebbe.  
 Jeyla cook-PERF beans  
 ‘Jeyla cooked beans’
- b. Def-go **ngo** Jeyla def-i ñebbe **ngo**  
 Cook-INF C.REL Jeyla cook-PERF beans CL.the  
 ‘The fact that Jeyla cooked beans’
- c. Ngoo def-go **ngo** Jeyla def-i ñebbe **ngoo**  
 DEM cook-INF C.REL Jeyla cook-PERF beans DEM  
 ‘The fact that Jeyla cooked beans (in this instance)’
- d. Def-go **ngo** Jeyla def-i ñebbe **ngoon**  
 Cook-INF C.REL Jeyla cook-PERF beans DEM  
 ‘The fact that Jeyla cooked beans (then)’
- e. Def-go **ngo** Jeyla def-ata ñebbe **ngoy**  
 Cook-INF C.REL Jeyla cook-IMPERF beans DEM  
 ‘The fact that that Jeyla is cooking beans (there, as you see)’

Similar to headed RCs, the demonstrative can occur preceding the (verbal) head noun. In this case, the demonstrative is taking on the role of the determiner with which it cannot co-occur.

- (54) a. Jeyla def-ma ñebbe.  
 Jeyla cook-PERF beans  
 ‘Jeyla cooked beans’
- b. \***Ngoo** def-go **ngo** Jeyla def-i ñebbe  
 CL.the cook-INF C.REL Jeyla cook-PERF beans  
 ‘The cooking that Jeyla cooked beans’
- c. **Ngoo** def-go **ngo** Jeyla def-i ñebbe  
 DEM cook-INF C.REL Jeyla cook-PERF beans  
 ‘This cooking that Jeyla cooked beans’
- d. **Ngoon** def-go **ngo** Jeyla def-i ñebbe  
 DEM cook-INF C.REL Jeyla cook-PERF beans  
 ‘That cooking that Jeyla cooked beans’
- e. **Ngoy** def-go **ngo** Jeyla def-ata ñebbe  
 DEM cook-INF C.REL Jeyla cook-IMPERF beans  
 ‘That cooking (style) there that Jeyla is cooking beans’

Finally, like in headed RCs, the demonstrative can surface between the head noun and the complementizer. Here again, the determiner cannot occur at the end of the clause. Example (55b) also shows that the determiner cannot surface between the head noun and the complementizer.

- (55) a. Jeyla def-ma ñebbe.  
 Jeyla cook-PERF beans  
 ‘Jeyla cooked beans’
- b. def-go \*ngo ngo Jeyla def-i ñebbe  
 cook-INF CL.the C.REL Jeyla cook-PERF beans  
 ‘The cooking that Jeyla cooked beans’
- c. def-go ngoo ngo Jeyla def-i ñebbe  
 cook-INF DEM C.REL Jeyla cook-PERF beans  
 ‘This cooking that Jeyla cooked beans’
- d. def-go ngoon ngo Jeyla def-i ñebbe  
 cook-INF DEM C.REL Jeyla cook-PERF beans  
 ‘That cooking that Jeyla cooked beans’
- e. def-go ngoy ngo Jeyla def-ata ñebbe  
 cook-INF DEM C.REL Jeyla cook-IMPERF beans  
 ‘That cooking (style) there that Jeyla is cooking beans’

In factive clauses, the verb agrees with the subject. Similar to headed relative clauses, subject agreement is shown on verb through consonant mutation for plural subjects, as in matrix clauses.

This is shown in the examples below:

- (56) a. Def-go ngo Hawaa def-i ñebbe ngo Singular DP  
 cook-INF C.REL Hawaa cook-PERF beans CL.the  
 ‘The fact that Hawaa cooked beans.’
- b. Def-go ngo rewbe ɓe ndef-i ñebbe ngo Plural DP  
 cook-INF C.REL women CL.the cook-PERF beans CL.the  
 ‘The fact that the women cooked beans.’
- c. Def-go ngo ɓe ndef-i ñebbe ngo Plural pronoun  
 cook-INF C.REL SUBJ.pro cook-PERF beans CL.the  
 ‘The fact that they cooked beans.’

- (57) a. ko Hawaa **def-i** ñebbe ko Singular subject  
C.REL Hawaa cook-PERF beans CL.the  
‘The fact that Hawaa cooked beans.’
- b. ko rewbe be **ndef-i** ñebbe ko Plural DP subject  
C.REL women CL.the cook-PERF beans CL.the  
‘The fact that the women cooked beans.’
- c. ko be **ndef-i** ñebbe ko Plural subject pronoun  
C.REL 3<sup>RD</sup>.PL cook-PERF beans CL.the  
‘The fact that they cooked beans.’
- (58) a. ñebbe de debbo mo **def-i** de Singular DP  
beans C.REL woman CL.the cook-PERF CL.the  
‘The beans that the woman cooked’
- b. ñebbe de rewbe be **ndef-i** de Plural DP  
beans C.REL women CL.the cook-PERF CL.the  
‘The beans that the women cooked’
- c. ñebbe de be **ndef-i** de Plural Pronoun  
beans C.REL 3PL CL.the cook-PERF CL.the  
‘The beans that they cooked’

In the verbal factive examples in (56), the initial consonant of the main clause verb changes from [d] in to [nd] to indicate agreement with a plural subject. The same is true of the *ko*-factive examples in (57) and headed RCs in (58).

Like in headed relative clauses in (12) and (13), DP subjects in factives always precede the verb, as in (54a-b) and (55a-b). However, all subject pronouns, except 3SG/PL, have to follow the verb. In other words, subject-verb inversion is obligatory. In this case, the initial consonant of the verb mutates even when the subject pronoun is singular, as seen below in (57b):

- (59) a. Def-go ngo Hawaa **def-i** ñebbe ngo Singular DP  
cook-INF C.REL Hawaa cook-PERF beans CL.the  
‘The fact that Hawaa cooked beans’  
‘The cooking that Hawaa cooked beans’
- b. Def-go ngo **ndef-mi** ñebbe ngo Singular pronoun  
cook-INF C.REL cook-1SG beans CL.the  
‘The fact that I cooked beans.’  
‘The cooking that I cooked beans’

- c. Def-go ngo o **def-i** ñebbe ngo Singular pronoun  
 cook-INF C.REL 3SG cook-PERF beans CL.the  
 ‘The fact that he/she cooked beans.’  
 ‘The cooking that she cooked beans’
- (60) a. ko Hawaa **def-i** ñebbe ko Singular subject  
 C.REL Hawaa cook-PERF beans CL.the  
 ‘The fact that Hawaa cooked beans’
- b. ko **ndef-mi** ñebbe ko Singular subject  
 C.REL cook-1SG beans CL.the  
 ‘The fact that I cooked beans.’
- c. ko o **def-i** ñebbe ko Singular subject  
 C.REL 3SG cook-PERF beans CL.the  
 ‘The fact that he/she cooked beans.’

The initial consonant of the verb mutates in (59b) and (60b) where the post-verbal subject is singular; but it does not mutate in the (59c) and (60c) where the third person preverbal pronominal subject is also singular. This seems to suggest that mutation is triggered by something else, like movement for instance.

Objects pronouns and full DP objects occur in a different positions in the factive clauses, just like in headed relative clauses. While the full DP may appear after the determiner at the end of the sentence, the object pronoun only precedes the determiner. This is instantiated in the examples (61) and (62) below:

- (61) a. Def-go ngo Hawaa **def-i** (**ñebbe de**) ngo (**ñebbe de**) VF  
 cook-INF C.REL Hawaa cook-PERF beans CL.the CL.the (beans CL.the)  
 ‘The fact that Hawaa cooked the beans.’
- b. Def-go ngo Hawaa cook-i **de** ngo (**\*de**)  
 cook-INF C.REL Hawaa give-PERF OBJ.PRO CL.the OBJ.PRO  
 ‘The fact that Hawaa cooked them.’

- (62) a. ko Hawaa def-i (ñebbe dɛ) ko (ñebbe dɛ)  
 C.REL Hawaa cook-PERF beans CL.the CL.the beans CL.the  
 ‘The fact that Hawaa cooked the beans’
- b. ko Hawaa def-i dɛ ko (\*dɛ)  
 C.REL Hawaa cook-PERF 3SG CL.the  
 ‘The fact that Hawaa cooked them’

The distribution of definite and indefinite objects DPs is relatively the same, just like in headed relative clauses. Both, definite and indefinite objects occur before the final determiner although they can optionally appear at the end of the clause, this shown in the following examples:

- (63) a. Def-go ngo Hawaa def-i (ñebbe dɛ) ngo ñebbe dɛ  
 cook-INF C.REL Hawaa cook-PERF (beans CL.the) CL.the beans CL.the  
 ‘The fact that Hawaa cooked the beans.’
- b. Def-go ngo Hawaa def-i ñebbe ngo (ñebbe)  
 cook-INF C.REL Hawaa cook-PERF beans CL.the beans  
 ‘The fact that Hawaa cooked beans.’
- (64) a. ko Hawaa def-i ko ñebbe dɛ  
 C.REL Hawaa cook-PERF CL.the beans CL.the  
 ‘The fact that Hawaa cooked the beans’
- b. ko Hawaa def-i ñebbe ko (ñebbe)  
 C.REL Hawaa cook-PERF beans CL.the (beans)  
 ‘The fact that Hawaa cooked them.’

The example in (63a) indicates that the definite object occurs more naturally after the right-edge determiner, but it is slightly marked when it precedes the determiner. Whereas an indefinite object is acceptable after the determiner as shown in (63b), an object pronoun can never appear after the determiner as shown in (62b). The occurrence of a full DP before the final determiner also suggest a contrast such as ‘the cooking of the beans’ as opposed to the ‘the cooking of the potatoes’ for instance.

Based on the data presented here, the headed relative clause, the verbal factive and the ko-factive clauses share a similar structural pattern, as shown below:

(65)	a.	NP	C.REL	S	V	O	Det	Headed relative
	b.	V <sub>NP</sub>	C.REL	S	V	O	Det	Verbal factive
	c.	∅ <sub>NP</sub>	C.REL	S	V	O	Det	ko-factive

This structural scheme indicates that factives are types of relative clauses, similar to headed relative clauses.

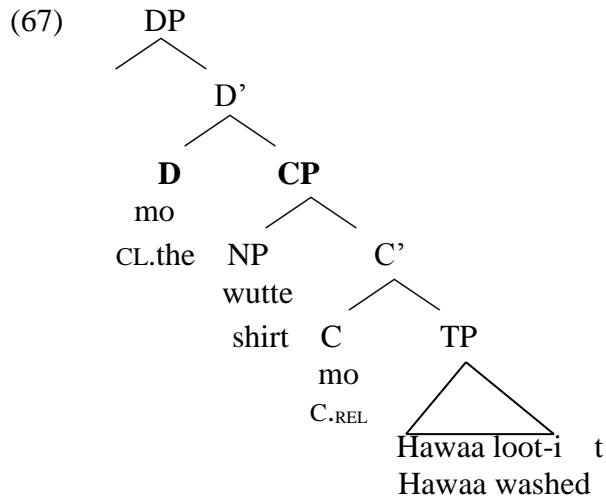
I argue that factive clauses involve a null noun ‘fact’ in Spec,CP that agrees with a specific complementizer and the corresponding homophonous determiner or noun class. In the verbal factive, the infinitival form of verb behaves like a noun by agreeing with a specific noun class. Similarly, in the ko-factive the agreeing complementizer suggests that there is a null noun in Spec,CP with which it agrees.

### 3.6 Analysis of Relative Clauses

In this section, I provide an analysis of Pulaar headed relative clauses like those in the following examples:

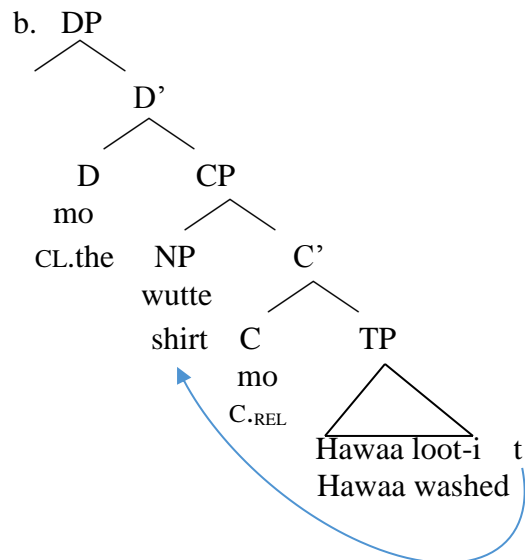
(66)	a.	Simis	mo	Musaa	born-i	mo	Headed Relative Clause
		shirt	C.REL	musaa	wear-PERF	CL.the	
		‘The shirt that Musaa is wearing’					
	b.	Deftare	nde	Musaa	wind-i	nde	
		book	C.REL	musaa	write-PERF	CL.the	
		‘The book that Musaa wrote’					
	c.	Pucuu	ngu	Musaa	sood-i	ngu	
		Horse	C.REL	musaa	buy-PERF	CL.the	
		‘The horse that Musaa bought’					

I argue that headed RCs involves a D head and a CP complement.



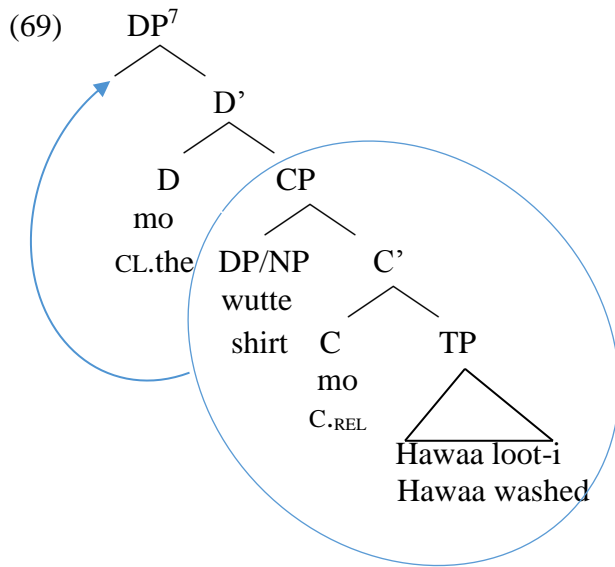
Following Kayne (1994) and Torrence (2005), I argue that relative clauses in Pulaar are derived by movement of the head noun to Spec,CP.

- (68) a. Wutte **mo** Hawaa born-i **mo** Headed Relative Clause  
 shirt CL.REL Hawaa wear-PERF CL.the  
 'The shirt that Hawaa is wearing'





The derivation of the headed relative clause in follows two necessary steps. First, the head (object) NP moves to Spec,CP as shown in (66b). Once the head noun moves to Spec,CP, it agrees with the complementizer in class. Then the whole CP moves to Spec,DP to yield the surface structure.



After the whole has moved to Spec,DP the determiner agrees with the complementizer which is the noun class of the head noun.

Does Pulaar RCs indeed have D + CP structures? I provide the logic that supporting the claim that it does.

The determiner and the Comp are homophonous in Pulaar.

(70) a. Hayre **nde** Musaa fer-ii **nde** Definite  
 shirt C.REL musaa throw-PERF CL.the  
 ‘The stone that Musaa threw’

b. Hayre **nde** Musaa fer-ii Indefinite  
 stone C.REL musaa throw-PERF  
 ‘A that Musaa threw’

<sup>7</sup> The relative clause does not seem to extrapose in Pulaar. Also, I think the D and the noun it agrees with do form a constituent in the sense that the whole structure is interpreted as a nominal.

The difference between (70a) and (70b) is that *nde* is missing in (70b). Therefore, *nde* must be the determiner

Now that I have established that the noun class on the right edge is a determiner. I show that the first *mo/nde/* etc. in an RC is indeed a complementizer and not, say, a relative pronoun.

In fact, the presence of the first *mo/nde/* etc. determines the form of Tense/aspect. This is what we expect of a Complementizer since C selects for TP. In an RC the perfective marker is *-i*. In a matrix clause it's *-m*. This is unexpected of a relative pronoun, but expected of a Comp.

Furthermore, inside of an RC you can have tense, aspect, negation, etc. So, it looks like a clause.

In addition, in cases of long distance relativization, the relative Comp is repeated on the left edge of every clause:

- (71) **deftere nde** Aali wand-i-i      **nde** Ami wi-i      **nde** ɓe cood-i      nde  
 Book CL.REL Aali think-MID-PERF CL.REL Ami say-PERF CL.REL 3PLbuy-PERF CL.the  
 ‘The book that Aali thinks that Ami said that they bought’

This distribution is expected if *nde* is a complementizer, but not expected of a relative pronoun.

If *nde* is a relative pronoun, then it should correspond to an argument or adjunct in the clause, but there are cases where it does not do this, like when-clauses:

- (72) **Nde** cood-mi maaro ko  
 When buy-1SG rice CL.the  
 ‘When I bought the rice...’

If *nde* is a pronoun, it is unclear if any argument or adjunct has been relativized. From my perspective, when-clauses involve the complementizer *nde*.

Although-clauses also involve relative complementizers, where they do not correspond to arguments of adjuncts:

- (73) **Ko** cood-mi oto mo fof, mi      waaw-aa mo naw-go Dakar  
 CL.REL buy-1SG horse CL.the all 1SG.PROG can-NEG 3SG take-INF Dakar  
 ‘Although I bought the car, I cannot take it to Dakar’

The 'nde' can be selected for by external elements:

(74) Caggal **nde** cood-mi maaro ko  
After CL.REL buy-1SG rice CL.the  
'after I bought the rice...'

(75) gila **nde** cood-mi maaro ko  
since CL.REL buy-1SG rice CL.the  
'Since (given that) I bought rice..''

(76) Hade **nde** cood-mi maaro ko  
Before CL.REL buy-1SG rice cl.the  
'Before I bought the rice...'

Under my analysis, the preposition/adverb selects for a particular Comp, which is expected. This is similar to what is seen in French, where prepositions/adverbs can select for CPs:

(77) avant **que** les enfants partent aux champs je voudrais les voir  
'Before COMP the children go to.the fields I would.like them see  
'Before the children go to the fields, I would like to see them'

(78) depuis **que** nous sommes revenus il est au lit  
since COMP we are come.back he is at.the bed  
'Since we came back he is in bed'

(79) apres **que** j'ai vu le film, je me suis endormi  
After COMP I've seen the movie, I me am fall.asleep  
'After I saw the movie, I fell asleep'

In conclusion, RCs in Pulaar involve a D +CP structure, with relative complementizers on the left edge. In what follows, I motivate each piece of the analysis I have provided in this section. One piece of evidence is provided in the section below.

### 3.7 Noun Raising

This section provides support for the relative clause constructions by providing cases of movement and reconstruction in Pulaar. To begin with, I talk about reflexives in Pulaar which are formed by the word *hoore* 'head' and a possessive. In other words, the English reflexive 'oneself' would be rendered in Pulaar as 'one's head'. The following examples involve reflexive phrases:

- (80) a. Jeyla mo yid-i hoore.maako.  
 Jeyla 3SG like-STATE head.3SG.POSS  
 ‘Jeyla likes herself’
- b. \*Hoore.maako jangu-m deftare  
 head.3SG.POSS read-perf book  
 ‘Herself read a book’
- c. \*Jeyla wii wonde hoore.maako jangu-m deftare  
 Jeyla say.PERF that head.3SG.POSS read-PERF book  
 ‘Jeyla said that herself read a book’
- d. \*Jeyla<sub>i</sub> wii wonde Musaa mo yid-i hoore.maako<sub>i</sub>  
 Jeyla say.PERF that musaa 3SG like-STATE head.3SG.POSS  
 ‘Jeyla said that herself read a book’

The examples in (80b-d) violate Principle A suggesting that reflexives in Pulaar obey Principle A.

This is further instantiated in the following example.<sup>8</sup>

- (81) \*Aali<sub>j</sub> wuju-m [notaal hoore.maako<sub>i</sub>] mo Jeyla<sub>i</sub> yid-i mo.  
 Aali steal-PERF picture head.3SG.POSS CL.CREL jeyla like-STATE CL.the  
 ‘Aali stole the picture of herself that Jeyla likes’

In the example above, *Jeyla* cannot be the antecedent for the reflexive *hoore.maako*. Similarly, in the example below is ungrammatical.

- (82) \*Aali<sub>j</sub> wuju-m [notaal hoore.maako<sub>i</sub>] mo sukaaḃe ḃe mband-i-i  
 Aali steal-PERF picture herself CL.CREL children CL.the think-MID-STATE  
 ‘Aali stole the picture of herself that the children think that Jeyla likes’
- wonde Jeyla<sub>i</sub> yid-i.  
 that jeyla like-STATE  
 ‘that Jeyla likes’

*Jeyla* cannot be the antecedent for the reflexive in the example above.

Furthermore, Pulaar has idioms chunks the objects of which can be relativized. Examples of this are shown below:

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<sup>8</sup> In addition to reconstruction, (67) shows that the reflexive cannot relativize and be in a c-commanding position to its antecedent.

- (83) a.  $\text{\textit{be}} \text{ kupp-u-m} \text{ \textbf{nibre}} \text{ Binta}$   
           3PL pour-PERF darkness binta  
           ‘They deceived Binta’
- b.  $\text{\textbf{nibre}}_i \text{ nde} \text{ \textit{be}} \text{ kupp-i} \text{ } t_i \text{ Binta} \text{ nde}^9$   
           darkness CL.C<sub>REL</sub> 3PL pour-PERF binta CL.the  
           ‘The deception that they inflicted to Binta’
- (84) a.  $\text{o} \text{ fi\textit{b}-ma} \text{ \textbf{anniya.}}$   
           3SG tie-PERF intention  
           ‘He made a decision’
- b.  $\text{\textbf{anniya}} \text{ mo} \text{ o} \text{ fi\textit{b}-i} \text{ } t_i$   
           intention CL.C<sub>REL</sub> 3SG tie-PERF  
           ‘the decion that he made’

As discussed in Kluender (1998), already in Ross (1968) there was an implicit distinction between extractions from complex noun phrases (NPs) and sentential subjects on the one hand, and from sentential interrogative complements on the other. Ross noted that nonstructural factors such as finiteness of the embedded verb influence the felicity of extractions from sentential interrogative complements when structural factors are held constant. For this reason, he proposed specific structural constraints for complex noun phrases (NPs) and for sentential subjects, but not for what subsequently came to be identified as *wh*-islands. This implicit distinction became obscured under early versions of subjacency (Chomsky, 1973, 1977, 1981), which characterized all extractions from island contexts as crossing two bounding nodes (i.e., NP and/or S). But, it resurfaced in explicit form in the barriers framework (Chomsky, 1986), where subjacency came to be viewed as a relative phenomenon rather than a categorical one. In this framework, the parallel behavior of extraction from subjects and adjuncts first noted by Huang (1982; the so-called Condition on Extraction Domain or CED) was assimilated to the relative clause subcase of Ross's (1968) complex NP constraint. Relative clauses, subjects, and adjuncts thus came to be considered "strong islands," as they involved the crossing of two barriers, while extractions out of *wh*-islands and the

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<sup>9</sup> Just like any relative clause in Pulaar, (69b) can be either a subject or object of a matrix verb.

sentential complements of NPs (the other subcase of Ross's complex noun phrase constraint) involved crossing only one (weak islands).

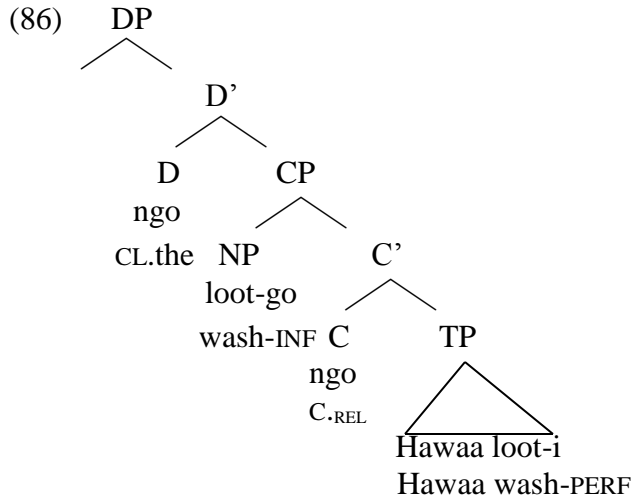
The following examples are evidence in support for the fact that relativization in Pulaar is sensitive to strong, as well as weak, islands.

- (85) a. *be ñaam-ma [ñebbe dè Hawaa tott-i Isa dè ]*  
 3PL eat-PERF bean s CL.REL Hawaa give-PERF Isa CL.the  
 ‘They ate the beans that Hawaa gave to Isa’
- b. \**Homo be ñaam-i [ñebbe dè Hawaa tott-i \_\_\_\_\_ dè]?*  
 who 3PL eat-PERF [beans CL.REL Hawaa give-PERF CL.the  
 ‘Who did they eat the beans that Hawaa gave to?’
- c. \**Mi ñaam-ma ñebbe dè [homo tott-i Isa\_\_\_\_\_ ] dè*  
 1SG eat-PERF beans CL.REL who give-PERF] Isa CL.the  
 ‘I ate the beans that who gave to Isa’

In (85a) the relative clause in brackets has a head noun followed by an agreeing complementizer and a TP complement. The example in (85b) show that an argument inside the relative clause (here, the indirect object *Isa*) cannot be Wh-moved. Similarly, in (85c) it appears that the object cannot be extracted out of the Wh-clause. As it appears, movement outside the relative clause or a Wh-clause is not possible. The ungrammaticality of (85b-c) is due to the fact that Spec,CP is already occupied by the head of the relative clause. As a result, there is no landing site for the moved element.

### 3.8 Analysis of Factive Clauses

I assume the following analysis for the verbal factive, which involves a D head and a CP complement, as in (86) below. I also argue that the infinitive form of the relative verb is moved to Spec,CP to fill in for a null noun ‘fact’ (which does not exist in Pulaar) along the lines of Collins (1994) and Torrence (2013). I also assume that factive relatives and headed relatives are derived in a similar fashion.



This type of nominalization results in a hybrid category. In fact, similar to genitive nominalization, relative clause nominalization has both the properties of a noun and the properties of a verb. It has verbal properties in the sense that it can involve verbal suffixes such as causative, anti-causative, allative, instrumental, benefactive, etc.

- (87)
- a. jang-it-aa-go    ngo    Hawaa    jang-it-i-i    deftare    ngo  
 read-REP-MID-INF    C.REL    Hawaa    read-REP-MID-PERF    book    CL.the  
 ‘The fact that Hawaa re-read a book’
- b. jangu-inkin-aa-go    ngo    Hawaa    jang-inkin-i-i    deftare    ngo  
 read-SIM-MID-INF    C.REL    Hawaa    read-SIM-MID-PERF    book    CL.the  
 ‘The fact that Hawaa faked to read a book’
- c. jangu-oy-go    ngo    Hawaa    jang-oy-i    deftare    ngo  
 read-ALL-INF    C.REL    Hawaa    read-ALL-PERF    book    CL.the  
 ‘The fact that Hawaa went to read a book’
- d. jangu-r-go    ngo    Hawaa    jang-ir-i    deftare    nde    lone    ngo  
 read-INST-INF    C.REL    Hawaa    read-PERF    book    CL.the    glasses    CL.the  
 ‘The fact that Hawaa read the book with glasses’

The examples above provide some of the verbal suffixes that can occur in this type of nominal constructions. In each example, a verbal suffix (repetitive, simulative, allative or instrumental) occurs with both the relativized form of the verb and the form the verb inside of TP.

That these constructions have verbal properties is further suggested by the fact that the relativized form of the verb can be associated with the complement.

- (88) a. jang-it-aa-go    **deftare** ngo    Hawaa    jang-it-i-i            deftare ngo  
 read-REP-MID-INF book    C.REL    Hawaa    read-REP-MID-PERF book    CL.the  
 ‘The fact that Hawaa re-read a book’
- b. jangu-inkin-aa-go    **deftare** ngo    Hawaa    jang-inkin-i-i            deftare ngo  
 read-SIM-MID-INF book    C.REL    Hawaa    read-SIM-MID-PERF book    CL.the  
 ‘The fact that Hawaa faked to read a book’
- c. jangu-oy-go    **deftare** ngo    Hawaa    jang-oy-i            deftare ngo  
 read-ALL-INF book    C.REL    Hawaa    read-ALL-PERF book    CL.the  
 ‘The fact that Hawaa went to read a book’
- d. jangu-r-go    **lone**    ngo    Hawaa    jang-ir-i    deftare    nde    lone    ngo  
 read-INST-INF glasses C.REL    Hawaa    read-PERF book    CL.the glasses CL.the  
 ‘The fact that Hawaa read the book with glasses’

However, some verbal suffixes such as past tense marker and negation cannot occur in these structures, as seen in the examples below:

- (89) a.\* **windu-noo** ngo    Hawaa    wind-noo    deftare ngo    bettu    kam.  
 write-PAST C.REL    Hawaa    write-PERF book    CL.the surprised me  
 ‘Hawaa’s writing of a book surprised me’
- b.\* **wind-aa**    ngo    Hawaa    wind-i            deftare ngo    bettu    kam.  
 write-NEG C.REL    Hawaa    write-PERF book    CL.the surprised me  
 ‘Hawaa’s writing of a book surprised me’

Similar to headed relatives, it is also not possible to extract out of a factive. For the verbal factive construction too, Wh and focus constructions are prohibited from extracting.

- (90) a. be    njid-i            [def-go    ngo    Hawaa    def-i            ñebbe    ngo ]  
 3PL like-PERF [cook-INF CL<sub>rel</sub> Hawaa cook-PERF] beans    CL.the  
 ‘They like the fact that Hawaa cooked the beans’
- b.\* **Hoko** be    njid-i            [ def-go    ngo    Hawaa    def-i            \_\_\_\_\_ ngo ] ?  
 what 3PL like-PERF [ cook-INF CL<sub>rel</sub> Hawaa cook-PERF]            CL.the  
 ‘What do they like the fact that Hawaa cooked?’



- c. \*Ko ñebbe dɛ ɓe njid-i [def-go ngo Hawaa def-i \_\_\_\_ ngo]  
 FOC beans CL.the 3PL like-PERF [cook-INF CL<sub>rel</sub> Hawaa cook-PERF] CL.the  
 ‘It’s the beans that they like the fact that Hawaa cooked.’
- (91) a. ɓe njid-i [ko Hawaa def-i ñebbe ko]  
 3PL like-PERF CL<sub>rel</sub> Hawaa cook-PERF beans CL.the  
 ‘They like the fact that Hawaa cooked the beans’
- b. \*Hoko ɓe njid-i [ko Hawaa def-i \_\_\_\_\_ ko]?  
 what 3PL like-PERF CL<sub>rel</sub> Hawaa cook-PERF CL.the  
 ‘What do they like the fact that Hawaa cooked?’
- c. \*Ko ñebbe dɛ ɓe njid-i [ko Hawaa def-i \_\_\_\_\_ ko]  
 FOC beans CL.the 3PL like-PERF CL<sub>rel</sub> Hawaa cook-PERF CL.the  
 ‘It’s the beans that they like the fact that Hawaa cooked.’

As the examples in (91b-c) show, Wh extraction as well as focus are impossible out of a verbal factive in Pulaar. Extraction out of a verbal factive yields an ungrammatical structure in Pulaar, which indicates that the verbal factive is, in fact, an island. This is similar to headed relative clauses. I will further investigate in my dissertation how island effects in verbal factive are like or unlike headed relative clauses.

The verbal factive also obeys Ross’s (1967) island constraints in the sense that relativization or ‘factivization’ out of a focus structure, a coordinate structure, an adjunct or an island is impossible in Pulaar.

- (92) a. Ko Isa def-i ñebbe dɛ. FOC  
 FOC Isa cook-PERF.FOC beans CL.the  
 ‘It’s Isa who cooked the beans’
- b. \*ɓe njid-i def-go ngo [ko Isa def-i ñebbe dɛ] ngo VF  
 3sg like-PERF cook-INF C<sub>REL</sub> FOC Isa cook-PERF beans CL.the CL.the  
 ‘They like the fact that it’s Isa who ate the beans’
- (93) a. Isa def-ma ñebbe Aali ñaam-i dɛ. CSC  
 Isa cook-PERF beans Aali eat-PERF CL.the  
 ‘Isa cooked the beans (and) Aali ate them’

- b. \*be njid-i def-go ngo Isa def-i ñebbe Aali ñaam-i dè ngo VF  
 cook-INF CL.the Isa eat-PERF.FOC beans Aali eat-PERF CL.the CL.the  
 ‘The fact that Isa cooked beans and Aali ate them’

Furthermore, relativization or ‘factivization’ out of a relative clause is impossible:

- (94) a. Mi ñaam-ma [ñebbe dè Hawaa def-i dè]  
 3PL eat-PERF beans CL<sub>rel</sub> Hawaa cook-PERF CL.the  
 ‘I ate the beans that Hawaa cooked’
- b. be njid-i def-go ngo Hawaa def-i ñebbe ngo]  
 3PL like-PERF cook-INF CL<sub>rel</sub> Hawaa cook-PERF] beans CL<sub>rel</sub> CL.the  
 ‘They like the fact that Hawaa cooked beans’
- c. \*def-go ngo ñaam-mi [ñebbe dè Hawaa def-i dè] ngo  
 cook-INF CL<sub>rel</sub> eat-PERF [beans CL<sub>rel</sub> Hawaa cook-PERF] CL.the CL.the  
 ‘The fact that I ate the beans that Hawaa cooked’

The verb *yid* ‘like’ is taking here a sentential complement. The impossibility to extract out of a relative clause or relativize out of a relative clause indicates that these constructions involve some type of movement and are islands.

### 3.8.1 Analytical Background: Operator Analyses of Factive Clauses

The analysis of Pulaar that I argue for in this section is based on previous analyses factive clauses, mainly, the ones which associate factive clauses to relative clauses and suggest the presence of an operator in SpecCP (Melvold 1991, Collins 1994, Aboh 2005, 2010, Haegeman 2006 and Haegeman and Ürögdi 2010a). Melvold (1991) for instance establishes a comparison between wh-islands and factive clauses and points out that these are similar in the sense that both types of construction are weak islands. This is suggested by the fact that when arguments are extracted in either one of them, the outcome is slightly marked:

- (95) a. ?What did Mary wonder whether John bought?<sup>10</sup> Wh-Island  
 b. ?Who did Fred confess that he fired? Factive Island

<sup>10</sup> Melvold 1991: 12a-b.

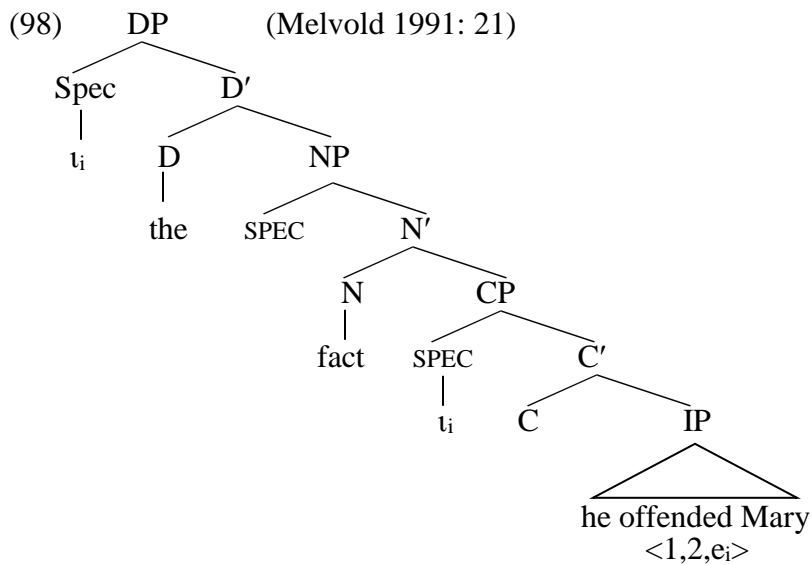
It is impossible, however, to move adjuncts out of wh-islands as well as factive islands:

- (96) a. \*How<sub>i</sub> did Bill wonder whether Anne solved the problem t<sub>i</sub> ? Wh-Island  
 b. \*How<sub>i</sub> did Bill reveal that Anne solved the problem t<sub>i</sub> ? Factive Island

Melvold (1991) and (Kastner (2014)) suggest that English factive clauses which have the overt string of words *the fact that* happen to be strong islands:

- (97) a. \*/??Who does John regret the fact that he offended *t*? (Melvold 1991: 19c)  
 b. \*What do you remember **the fact/claim** that John stole \_\_\_?  
 c. #Why do you remember **the fact/claim** that John stole the cookies \_\_\_?

Melvold makes a link between wh-islands and factives by asserting that the CP of a factive predicate involves a “definite” C° which serves as the licenser of an *t*-operator in its specifier, as in (98):



The *t*-operator binds the event argument introduced by the predicate in IP. In other words, same as with wh-islands, a filled SpecCP indicates that it cannot serve as an escape hatch for any subsequent movement. The argument/adjunct difference in both cases is due to the fact that adjunct traces fail to be properly governed (Empty Category Principle are violated).

In regard to African languages, Collins (1994) and Aboh (2005, 2010) provide an analysis of factive clauses in several Niger-Congo languages, with a focus on the Kwa group. Collins highlights that factive clauses in some of the Kwa languages are structurally identical to relative clauses. This is suggested by the presence of the relative clause complementizer or relative pronoun, as seen below:

Yoruba (Collins 1994: 7)

- (99) a. Iwe ti mo ra dara.  
 book that I bought good  
 ‘The book that I bought is good.’  
 ‘The fact that I bought a book is good.’

Kpele Ewe (Collins 1994: 1b)

- b. Ntsu xe wo fo me dzɔ na-ŋ o.  
 boy which he hit NEG please to-me PRT  
 ‘The fact that he hit a boy does not please me.’

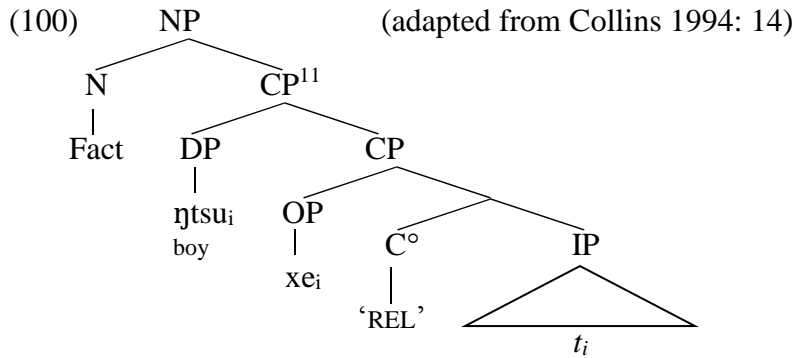
Kpele Ewe (Collins 1994: 17)

- c. Kofi xe Papa kpɔ be Mana fo me dzɔ dzi na-ŋ o.  
 Kofi which Papa saw that Mana hit NEG please to-me PRT  
 ‘The fact that Papa saw that Mana hit Kofi does not please me.’

Fon (Collins 1994: 4)

- d. Xo dee Bayi xo Kofi ɔ ve nu mi.  
 hit which Bayi hit Kofi def bothers to me  
 ‘The fact that Bayi hit Kofi bothers me.’

One can note that in (99b) and (99c), despite the fact that *n̄tsu* ‘boy’ and *Kofi* are relativized, the whole clause is interpreted as a factive. Collins’s argument is that the factive construction involves a null noun FACT which selects for a relative clause-like CP as complement. The factive interpretation comes from this null FACT noun. He also argues that examples like (99b) should be analyzed as in (100)(100) below. The relative CP contains an operator *xe* ‘which’ (which is bound by *n̄tsu* ‘boy’) which is adjoined to the CP complement of FACT. For the verbal-factives, the V/VP is nominalized, and that a null noun with the meaning of ‘fact’ is involved in the process of nominalization.



In Collins' analysis, factive constructions are similar to relative clauses because both types of constructions involve a relative CP. In the factives, the null FACT noun selects for a relative CP, and the latter is headed by a specific complementizer ("REL").

Collins proclaims that the factive construction in Ewe exhibits some sensitivity to Subadjacency, which, for him, is evidence that the construction involves some type of movement. As a case in point, he shows that an island boundary cannot separate the relative operator (*xe* 'which') from the gap. As a result, it is impossible to 'factiveize' out of a relative clause, as is manifest in (101b):

- (101) a. Papa kpɔ ame xe fo Kofi. (Collins 1994: 16)  
 Papa saw person which hit Kofi  
 'Papa saw the person who hit Kofi.'
- b. \*Kofi xe Papa kpɔ ame [xe fo] me dzɔ na-ŋ o.<sup>12</sup>  
 Kofi which Papa saw person which hit NEG please to-me PRT  
 'The fact that Papa saw the person which hit Kofi does not please me.'

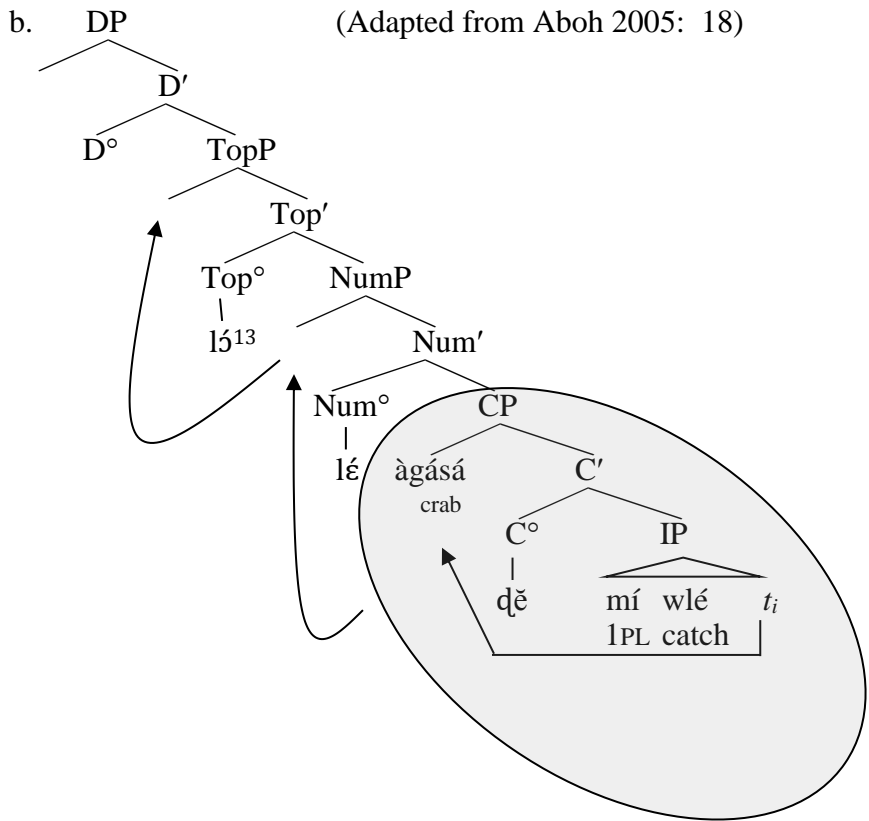
In his turn, Aboh (2005, 2010) puts forth the argument for a Kaynean head-raising analysis of relative and factive clauses in Gungbe, a language belonging to the Gbe group (like Ewe). A headed relative clause in Gungbe like the one in (102a) is analyzed as in (102b). In (102b), the

<sup>11</sup> According to Isaac, there has to be another difference. the higher CP in (90) has to denote a proposition. a head+RC in a regular relative clause construction does not denote a proposition. But I am not sure Collins(1994) discusses.

<sup>12</sup> Adapted from Collins 1994: 18.

relativized noun, *àgásá* ‘crab’ raises to SpecCP which is headed by the complementizer *dě*. The CP is then pied piped by relativized noun as it raises to higher heads in DP such as SpecNumP and SpecTopP. Aboh holds this movement to be a necessary step to check the features [+specific] and [+plural].

- (102) a. Kòfí xò àgásá [ *dě mí wlé* ] ló lé. (Aboh 2005: 17)  
 Kofi buy crab that<sub>[REL]</sub> 1PL catch Det Num  
 ‘Kofi bought the [aforementioned] crabs that we caught.’



Aboh (2005, 2010) provides a discussion of two types of factive clauses in Gungbe. One type ((103a)) involves the fronting of an (internal) argument of the verb (like (99b-c) from Kpele Ewe). The second type of factive, shown in (103b), involves a fronted copy of the main verb. Both of the

<sup>13</sup> This head is glossed as “Det” in (102)a, as in Aboh 2005.

factive constructions are similar to headed relative clauses in the sense that they involve a relative CP which is headed by the relative complementizer *dě*:

- (103) a. Àgásá ló lé [dě mí wlé] vé ná Kòfí. (Aboh 2005: 21a)  
 crab Det Num that<sub>[REL]</sub> 1pl catch hurt for Kofi  
 ‘The fact that we caught the crabs hurt Kofi.’
- b. Wlé [dě mí wlé] àgásá ló lé vé ná Kòfí. (Aboh 2005: 21b)  
 catch that<sub>[REL]</sub> 1pl catch crab Det Num hurt for Kofi  
 ‘The fact that we caught the crabs hurt Kofi.’

Aboh points out that the two constructions in (103) have basically the same meaning but there are subtle pragmatic differences between them. He notes that in an example like (103a), where an argument is preposed, emphasis is put on specific crabs that were caught. In the verb copying construction in (103b) however, the emphasis is put on the crab catching event. Both factive constructions seem to refer to an event, whether the fronted item is the verb or an internal argument. This leads Aboh to consider the factive constructions to be essentially “event” relative clauses. He maintains that factives involve the movement of an event operator to the specifier of CP.

Although in the factive in (103a) a DP is fronted, Aboh (2005) points out that not all arguments can freely be fronted in this type of construction. He shows particularly that internal arguments can be fronted as in (104a-b), but the fronting of an external argument is either ungrammatical or very marginal as in (104c):

Indirect Object Fronted

- (104) a. [Dáwè ló]<sub>i</sub> [dě nàwè ló kàn wé xlán t<sub>i</sub>] vé ná mì gbáú.  
 man Det that<sub>[REL]</sub> woman Det write letter to hurt for me a.lot  
 ‘The fact that the woman wrote a letter to **the man** hurt me a lot.’

Direct Object Fronted

- b. [Wé ló]<sub>i</sub> [dě nàwè ló kàn t<sub>i</sub> xlán dáwè ló] vé ná mì gbáú.  
 letter Det that<sub>[REL]</sub> woman Det write to man Det hurt for me a.lot  
 ‘The fact that the woman wrote **a letter** to the man hurt me a lot.’

Subject Fronted

- c. <sup>\*/?</sup>[Náwè ló]<sub>i</sub> [dě t<sub>i</sub> kàn wé xlán mì] vé ná mì gbáú.  
 woman Det that<sub>[REL]</sub> write letter to me hurt for me a.lot  
 ‘The fact that **the woman** wrote a letter to the man hurt me a lot.’

Since the fronting of an internal argument or the verb can give factive interpretations, Aboh (2010) considers this as evidence that the origin of the event operator is lower than TP (lower than the subject) and it is attracted to the left periphery. In regard to the verb copying construction like (103b), he suggests that this involves ‘parallel’ chain formation (Aboh and Dyakonova 2009) where the verb simultaneously raises to the IP region and C-domain.<sup>14</sup> Consequently, a copying factive construction like (105a) is analyzed as in (105b):

- (105) a. Sà dĕ Súrù sà xwé ló vé ná Kòfí. (Aboh 2010: 16b)  
 sell that<sub>[Rel]</sub> Suru sell house<sup>15</sup> DET hurt PREP Kofi  
 ‘The fact that Suru SOLD the house hurt Kofi.’
- b. [<sub>CP</sub> sà [<sub>C</sub> dĕ [<sub>TP</sub> Súrù sà [<sub>VP</sub> sà xwé ló]]]]. (Aboh 2010: 19)  
 sell that<sub>[Rel]</sub> Suru sell sell house DET

From the analysis in Aboh (2005) there is another piece of evidence which concerns the external determiner in relative clauses. While a headed relative clause like (102a) involves an external determiner (D<sup>o</sup>), Aboh argues that factive clauses are ‘smaller’ than relative clauses given that they lack an external determiner. He notes, for instance, that factives as in ((106a)), contrary to the headed relative clause ((106b)), cannot have right edge determiner-like elements which is unlike Pulaar:

### Gungbe

- (106) a. \*Àgásá ló lé [dĕ mí wlé] ló lé vé ná Kòfí.<sup>16</sup>  
 crab Det Num that<sub>[Rel]</sub> 1pl catch Det Num hurt for Kofi
- b. Àgásá [dĕ mí wlé] ló lé nyón ná Kòfí.  
 crab that<sub>[Rel]</sub> 1PL catch Det Num good for Kofi  
 ‘The aforementioned crabs that we caught are good for Kofi.’  
 [i.e., he will like them]

<sup>14</sup> See Aboh (2005, 2010) for technical details of the mechanics of the operator movement.

<sup>15</sup> This is glossed in the original as ‘crab’.

<sup>16</sup> Adapted from Aboh 2005: 26a, 26b.



In summary, earlier examinations have yielded a host of key analytical elements for understanding the Pulaar factive constructions. Building on these previous analyses, I expand some aspects of this line of research to Pulaar and provide further empirical support for the following claims about factives:

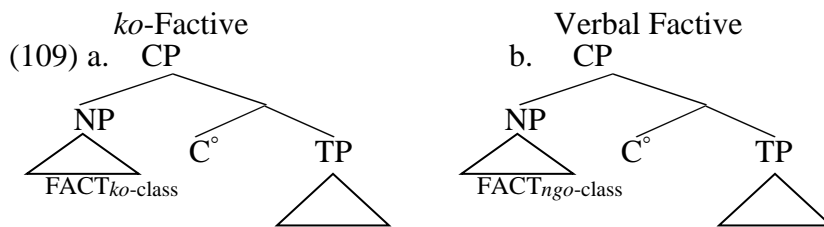
- (107) a. Factives involve a null noun of FACT in SpecCP.  
 b. The null FACT noun (in the Pulaar verbal factive) originates below TP.  
 c. Factive relatives have an external D layer, like headed relative clauses.

### 3.8.2 The Null Factive Nouns

I noted in discussing the relative clauses that the relative complementizer agrees in class with the head of the relative clause. This results from the head noun moving to SpecCP, thus triggering agreement on C. In the *ko*-factive, the complementizer (*ko*) displays agreement for the *ko*-class (108a). But likewise, I have also indicated that in the verbal factive, the relative complementizer show agreement for the *ngo*-class (108b):

- (108) a. **ko** o daan-ii **ko** *ko*-Factive  
 CL.C<sub>REL</sub> 3SG sleep CL.the  
 ‘the fact that he slept’
- b. daan-aa-go **ngo** o daan-i-i **ngo** Verbal Factive  
 sleep-MID-INF CL.C<sub>REL</sub> 3SG sleep-MID-PERF CL.the  
 ‘the fact that he slept’

In regard to the results from headed relative clauses, I have come to the conclusion that the *ko*-factive involves a noun from the *ko*-class whereas the verbal relative contains a noun from the *ngo*-class and both of those nouns are in SpecCP. The reason for this is that SpecCP is the position where heads of relative clauses trigger agreement on C°:



I observed that in the analyses of Collins (1994), Aboh (2005, 2010), and Haegeman and Ürögdi (2010a) factive clauses contain a null noun of FACT. Following the agreement patterns, my claim is that Pulaar also possesses two distinct nouns of FACT which appear in SpecCP. The assertion that the two factive constructions involve distinct null nouns is born by the different interpretations available for each construction. The translations in (110) indicate that verbal factives are not only interpreted as fact:

(110)	<u>Soow-go</u>	<u>ngo</u>	<u>o</u>	<u>soow-i</u>	loobn-i	kam	Verbal Factive
	Scream-INF	CL.C <sub>REL</sub>	3SG	scream-PERF	anger	1SG	
	‘The fact that he screamed angered me’						Fact
	‘The way that he screamed angered me’						Manner
	‘His screaming angered me’						Event

The reason why the verbal factive in (110) has the series of interpretations that it does is that the null is ambiguous and can mean ‘fact’, ‘manner’ or ‘event’ depending on the situational/linguistic context. This null noun of FACT is in the *ngo*-class. On the other hand, *ko*-factives is restricted to a factive interpretation, as shown by the unavailability of other interpretations in (111):

(111)	<u>ko</u>	<u>o</u>	<u>soow-i</u>	loobn-i	kam	<i>ko</i> -Factive	
	CL.C <sub>REL</sub>	3SG	scream-PERF	anger-PERF	1SG		
	‘The fact that he screamed angered me’						Fact
	*‘The way that he screamed angered me’						*Manner
	*‘His screaming angered me’						*Event

Therefore, the null noun which appears in the *ko*-factive means ‘fact’ only and falls under the *ko*-class of nouns.

The nuance in available interpretations between the two factive constructions can also be elicited by changing the matrix predicate, for instance, when the factive clause is the subject of a transitive verb such as *finin* ‘wake (tr)’:<sup>17</sup>

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<sup>17</sup> Interestingly, when adjectival/stative verbs are copied, they can have either a factive or degree interpretation:

- (112) a. \* ko o soow-i ko finin-i kam *ko-Factive*  
 CL.C<sub>REL</sub> 3SG scream-PERF CL.the wake-PERF 1SG  
 Intended: ‘The fact that he screamed woke me’
- b. Soow-go ngo o soow-i ngo finin-i kam Verbal Factive  
 Scream-INF CL.C<sub>REL</sub> 3SG scream-PERF CL.the wake-PERF 1SG  
 ‘His screaming woke me’

The example in (112(112)a), with a *ko*-factive, is odd in the sense that a fact cannot wake up a person. The verbal factive in (112b), however, is fine because the *event* reading is available to the null noun thus, the person screaming woke me.

What Aboh (2005) (and Haegeman and Ürögdi (2010a)) posit as an ‘event operator’ in their analyses seems to be very similar to the null FACT noun that I have argued is present in the verbal factives. Given that Pulaar appears to have a second occurrence of the noun FACT (in the *ko*-class), the question arises as to what its counterpart might be in other languages. (See Aboh 2005 and Haegeman and Ürögdi 2010 for further discussion of the nature of the event operator.)

The two factive constructions have also distributional differences. For example, verbal factives can be complements to direct perception verbs ((113a)), whereas the *ko*-factive cannot as in ((113)113b)):

- (113) a. Mi yii-ma [wujju-go ngo o wujj-i deftare] Verbal Factive  
 1SG see-PERF steal-INF CL.C<sub>REL</sub> 3SG steal-PERF book  
 ‘I saw him steal a book’

- 
- (i) **wel hekkil** ngo o **wel-i hekkil** ngo  
 good mind CL.C<sub>REL</sub> 3SG good mind CL.the  
 ‘the fact that he is smart’ Fact  
 ‘the degree/extent of his intelligence’ Degree
- (ii) **wel-go** ngo o **wel-i hekkil** ngo  
 Good-INF CL.C<sub>REL</sub> 3SG good-PERF mind CL.the  
 ‘the fact that he is smart’ Fact  
 ‘the degree/extent of his intelligence’ Degree

I leave analysis of such interesting interpretive effects for future research.

- b. \*Mi yii-ma [ko o wujj-i deftare] *ko*-Factive  
 1SG see-PERF CL.REL 3SG steal-PERF book  
 Intended: \*‘I saw the fact that he stole a book.’

This difference make some some, at least at an informal level, since a fact cannot be observed, but an event can be. The data on noun class, interpretation, and distribution, leads me to conclude that the verbal factive and *ko*-factive are both constructed from relative CPs, yet some differences come from the nature of the null nouns contained in each clause.

### 3.8.3 A'-Movement in Pulaar Factives

In the previous section, I have argued that the two factive constructions involve A'-movement of null nouns to SpecCP. Support for this analysis come from islandhood data as well a long distance extraction. Pulaar headed relative clauses are strong islands and it is impossible to relativize out of a relative clause (See Torrence 2005, 2013 for Wolof), as the attempt in (114b) shows:

- Headed Relative Clause  
 (114) a. Mi yii-ma deftare nde Hawaa tott-i **sukaabe** be ngeey  
 1SG see-PERF book CL.REL Hawaa give-PERF child CL.the yesterday  
 ‘I saw the book that Hawaa gave to the children yesterday’  
 b. \*Mi yii-ma **sukaabe** be [deftare nde Hawaa tott-i ngeey]  
 1SG see-PERF child CL.REL book CL.REL Hawaa give-PERF yesterday  
 \*‘I saw the children that the book that the Hawaa gave to yesterday’

The ungrammaticality of ((114b)) can be expected as it involves a Subjacency violation. Likewise, it is not possible to “factivize” across a relative clause boundary for both types of factive ((115)):

- (115) a. Mi ñaam-ma kanja mo cood-mi mo.  
 1SG eat-PERF okra CL.REL buy-1SG CL.the  
 ‘I ate the okra that I bought’  
 b.\* Mbidō **sood-go** [ngo ñaam-mi [**kanja** [mo cood-mi ngo]]] Verb-Factive  
 1SG buy-INF CL.REL eat-PERF okra CL.REL buy-1SG CL.the  
 \*‘I like the fact that I ate the okra that I bought’  
 c. \* Mbidō **ko** ñaam-mi [**kanja** [mo cood-mi ko]]] *ko*-Factive  
 1SG CL.REL eat-PERF okra CL.REL buy-1SG CL.the  
 \*‘I the fact that I ate the okra that I bought’

The ungrammaticality of (115a-b) is predicted if the null nouns undergo A'-movement and are thus subject to Subadjacency. Let's consider the adjunct clauses such as *before* CPs ((116a)) where the data suggests that neither relativization ((116b)) nor factivization ((116c)) can operate across an adjunct island boundary:

- (116) a. Isa fin-ma [haande Hawaa def maaro] *before* Clause  
 isa awaken-PERF before hawaa cook rice  
 'Isa awakened before Hawaa cooked rice.'
- b. \*Mbidó yid-i **maaro** ko Isa fin [haande Hawaa def] \*RC  
 1SG like-PERF rice CL.REL isa awaken before hawaa cook  
 'I like the rice that Isa awakened before Hawaa cooked'
- c. \*Mbidó yid-i **def-go** ngo Isa fin [haande Hawaa **def-i** maaro] \*Fact  
 1SG like-PERF cook CL.REL isa awaken before hawaa cook-PERF rice

The result is fine if the factivization does not cross an island boundary, as in (117), where the null noun is originally from the matrix clause and has pied piped the matrix verb:

- (117) **fin-go** ngo Isa **fin-i** [haande Hawaa def maaro]  
 awaken-INF CL.C<sub>REL</sub> Isa awaken-PERF before hawaa cook rice  
 'The fact that Isa woke up before Hawaa cooked rice'

The data is consistent if both the verbal factive and *ko*-factive involve A'-movement of the posited null nouns.

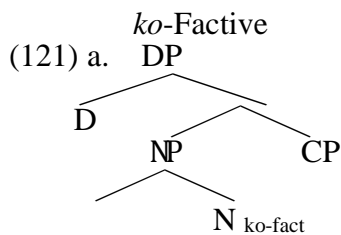
As indicated by the ungrammaticality of (118b), Pulaar headed relative clauses are islands for wh-extraction:

- (118) a. A jangu-m deftare [nde Hawaa tott-i \_\_\_ Sàmba] nde  
 2SG read-PERF book CL.C<sub>REL</sub> hawaa give-PERF samba CL.the  
 'You read the book that Hawaa gave to Samba'
- b. \***Homo** njangu-daa deftare [nde Hawaa tott-i \_\_\_]  
 who read-2SG book CL.C<sub>REL</sub> hawaa give-PERF  
 Intended: 'Who did you read the book that Hawaa gave to?'

The analysis laid out here suggests that the factive clauses, like headed relative clauses, should also create island configurations as they too have a filled SpecCP. Pulaar factive clauses are strong islands. The examples in (119b) and (120b) show that argument extraction is illicit:

- ko*-Factive
- (119) a. A riccit-ii-m [ko njar-daa tentulu mo]  
 2SG regret CL.C<sub>REL</sub> drink-2SG palm.oil CL.the  
 ‘You regret the fact that you drank the palm oil’
- b. \***Hoko** ndiccit-i-daa [ko njar-daa \_\_\_ ]? \*Wh-Extraction  
 what regret-MID-2SG CL.C<sub>REL</sub> drink -2SG  
 Intended: ‘What do you regret the fact that you drank?’
- Verbal Factive
- (120) a. A riccit-ii-m yar-go [ngo njar-daa tentulu mo].  
 2SG regret-MID-PERF drink-INF CL.C<sub>REL</sub> drink-2SG palm.oil CL.the  
 ‘You regret that you drank the palm oil.’
- b. \***Hoko** ndiccit-i-daa yar-go [ngo njar-daa \_\_\_ ] \*Wh-Extraction  
 what regret-MID-2SG drink-INF CL.C<sub>REL</sub> drink -2SG  
 Intended: ‘What do you regret the fact that you drank?’

It is unclear where the null noun in the *ko*-factive originates or whether it is base generated in SpecCP. There is, however, an alternative analysis in which the *ko*-factive involves base-generation of the null noun and a CP modifier like English “the fact that”. The head of NP is the null fact noun. The NP will have a CP adjunct in which the head of CP is the relative marker:



This explains why *ko*-factives are islands: you can’t move out of an adjunct. It does not easily explain how you get complementizer agreement though. In similar way to headed relative clauses and verbal factives.

Extracting adjuncts out of the *ko*-factive ((122a-b)) and verbal factives ((122a-b)) is not possible:

*ko*-Factive

- (122) a. A riccit-ii-m [ko njar-daa tentulu mo ko.yaawi]  
 2SG regret-MID-PERF CL.C<sub>REL</sub> 2SG drink palm.oil CL-the quickly  
 ‘You regret the fact that you drank the palm oil quickly’
- b. \***Hono** ndiccit-i-daa [ko njar-ir-daa tentulu mo \_]?\*Wh-Ext  
 how regret-MID-2SG CL.C<sub>REL</sub> drink-MANN-2SG palm.oil CL-the  
 Intended: ‘How do you regret the fact that you drank the palm oil?’

Verbal Factive

- (123) a. A riccit-ii-m yar-go [ngo njar-daa tentulu mo].  
 2SG regret-MID-PERF drink-INF CL.C<sub>REL</sub> drink-2SG palm.oil CL.the  
 ‘You regret that you drank the palm oil.’
- b. \***Hono** ndiccit-i-daa yar-go [ngo njar-ir-daa tentulu mo]\*Wh-Ext  
 how regret-MID-2SG drink-INF CL.C<sub>REL</sub> drink- MANN-2SG palm.oil CL.the  
 Intended: ‘How do you regret the fact that you drank?’

Therefore, Pulaar factive clauses pattern like English *the fact that* clauses, as shown in (98)(97) (Melvold 1991, Kastner 2014).

In addition to Subjacency effects, the claim that the null noun undergoes A'-movement in the verbal factive receives further evidence from the investigation of embedded clauses. Let's consider the data in (124b-c), where the copy of the verb *daanaago* ‘sleep’ surfaces a long distance from that of the verb in the relative clause:

- (124) a. Isaa dammin-i [wonde mi daan-ii-m]  
 isa think-PERF that 1SG sleep-MID-PERF  
 ‘Isa thinks that I slept’
- b. **daan-aa-go** [ngo Isaa dammin-ii [wonde daan-ii-mi]]  
 sleep-MID-INF CL-C<sub>REL</sub> isa think-PERF that sleep-MID-1SG  
 ‘the fact that Isa thinks that I slept’

- c. **ɗaan-aa-go** [ngo Isa wi i [wonde Sàmba foog-i  
 sleep-MID-INF CL.REL isa say that samba think-PERF  
 ‘the fact that Isa said that Samba thinks

[wonde **ɗaan-ii-mi**]]<sup>18</sup>  
 that sleep-MID-1SG  
 that I slept’

Under the analysis put forth here, the data in (124b) and (124c) indicate that the null noun can undergo unbounded A'-movement, as could be expected.

### 3.9 Morphological Asymmetries in the Verbal Factive

#### 3.9.1 Pulaar Clause Structure

In this section, I lay emphasis on the type of material that can appear on the left edge in the verbal factive. We can first consider the example in (125a), where a copy of the verb surfaces on the left edge of the relative CP. As (125b) indicate, it is also a possibility for the verb and object to be copied and thus appear on the left edge of the relative CP:

- (125) a. **jangu-go** [ngo be **njang-i** deftare ] jaak-nu kam  
 read-inf CL.CRel 3PL read-PERF book surprise-CAUS 1SG  
 ‘The fact that they read a book surprised me.’
- b. **jangu-go deftare** [ngo be **jang-i tééré** ] jaak-nu kam .  
 Read-INF book CL.CRel 3PL read-PERF book surprise-CAUS 1SG  
 ‘The fact that they read a book surprised me.’

In what follows, I use copying asymmetries in the verbal factive to argue that (i) the null FACT noun I posited in the verbal factive originates in the area between vP and VP and (ii) the verbal factive contains phrasal movement and pied piping. Before examining the verbal relative, I first look at Pulaar clause structure.

Like Wolof (See Ka 1981, Voisin-Nougier 2002, Torrence 2005) and other closely related Atlantic languages, Pulaar has a relatively large number of verbal affixes. I follow a similar analysis to

<sup>18</sup> It is also possible to factivize from the matrix clause:

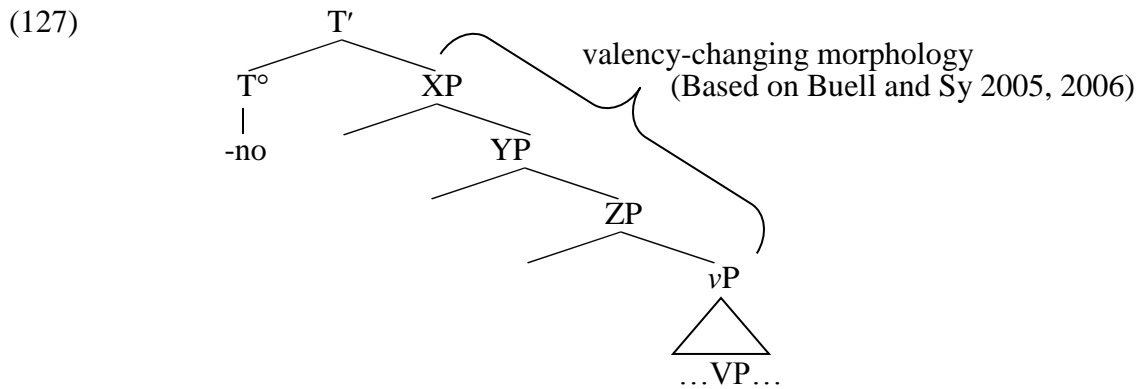
- (i) **dammin-aa-go** [ngo Isaa **dammin-i** ngo [wonde mi **ɗaan-ii-m**]  
 think-MID-PERF CL-CREL isaa think CL.the that 1SG sleep-MID-PERF  
 ‘the fact that Isa thinks that I slept’



Buell and Sy (2005, 2006), who put forward detailed analyses of the interactions of Wolof valency changing morphology and argue for a syntactic analysis of the causative, impersonal causative, applicative, benefactive, and instrumental affixes. They consider these morphemes to be syntactic heads with selectional and thematic properties, just like non-affixal predicates (following Baker 1988, among many others.). Let's consider a Pulaar example like (126), in which the verbal complex has two valency increasing suffixes (i.e. *-ir* 'INSTR' and *-in* 'CAUS'):

- (126) Musaa lapp-**in-ir**-ma Faatu hayre nde legga.<sup>19</sup>  
 musaa hit-INSTR-CAUS-PERF Faatu stone the stick  
 'Musaa made Faatu hit the stone with the stick.'

Buell and Sy maintain that verbal complexes like those in (126) originate from remnant VP movement through a fixed hierarchy of heads (like CAUS and INSTR). Crucially, in their proposed analysis, the valency changing morpheme is rather low in the structure, in the region just above *v*/VP and lower than tense (T):

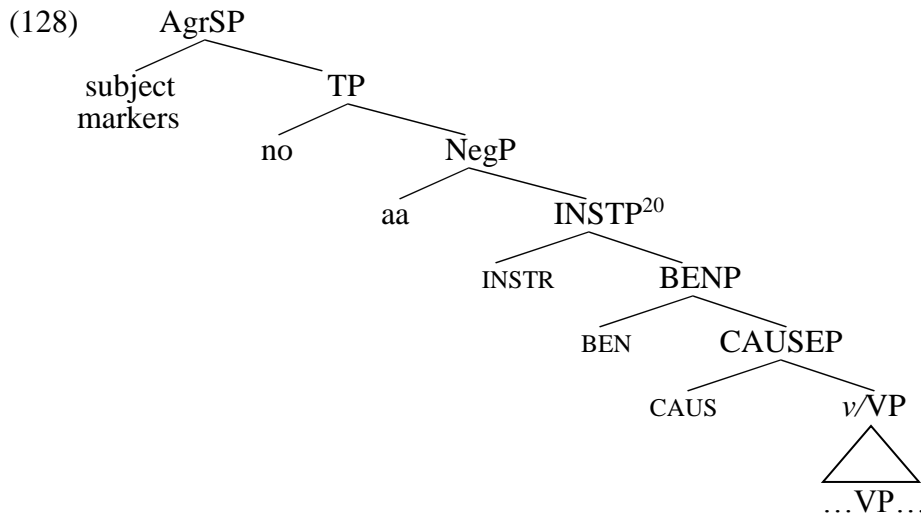


I argue that Pulaar and Wolof share a similar clause structure. Torrence (2003) examine the clause structure of Wolof, focusing on the higher region, where subject markers, tense, negation, and

<sup>19</sup> Adapted from Buell and Sy 2006: (7a).

aspect appear generally. Just like Buell and Sy (2005, 2006), Torrence (2003) also takes a syntactic approach to the inflectional morphology and argues that certain affix orders can be derived if the tense, negation, subject markers, non-subject clitics and aspect heads are in a particular fixed hierarchy but also both VP remnant movement and head movement are involved, depending on aspect.

As for the analysis here, what is important is that Torrence argues that the (relevant) inflectional morphology is high in the clause. Torrence (2003, 2013) treats Wolof verbs as undergoing raising to higher positions in the clause, depending on the type of the clause. Putting together the analyses in Buell and Sy 2005, 2006 and Torrence, 2000, 2003, and Buell, Sy, and Torrence 2008 I assume that Pulaar clauses are structured roughly as:



In (128)(53) the valency-changing morphology (syntactic heads) are in the *v/VP* region, low in the clause, while the functional heads appear in the higher region.

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<sup>20</sup> I have put in INSTR, BEN, and CAUS only to indicate that this region is where valency changing morphology appears. See Buell and Sy 2005, 2006 for the precise hierarchy that they propose for Wolof.

### 3.9.2 Copied Strings in the Verbal Factive

Considering the structure in (128)(53) to be basically on the right track, I can now focus on the issue of what material can be copied in the verbal factive and how this is connected to the syntactic structure. First, direct objects can be copied ((129b)). It should, however, be pointed that these are regarded as slightly ‘heavy’ or marked by speakers:

- (129) a. 6e nguju-m defte dīdī  
3PL steal-PERF book 2  
‘They stole two books’
- b. [[**wuju-go defte dīdī**] ngo 6e **nguj-i defte dīdī**]]  
steal book 2 CL.C<sub>REL</sub> 3PL steal-PERF book 2  
‘The fact that they stole two books’
- jaak-nu kam.  
surprise-CAUS 1SG  
surprised me.’

Objects in idiomatic phrases can also be copied. This was indicated previously in (125b), but the example in (130c) is a little different because of the postverbal DP *tiinde* ‘forehead’.

- (130) a. Mo wel-i tiinde.  
 1sg be.good-PERF forehead  
 ‘He has very good luck.’
- b. [**Wel-go** ngo o **wel-i tiinde**] ngo bettini.<sup>21</sup> Verb Copy  
 be.good-INF CL.C<sub>REL</sub> 3SG be.good-PERF forehead 3sg surprising  
 ‘The fact that the child has very good luck is surprising’
- c. [**Wel-go tiinde** ngo o **wel-i tiinde**] ngo bettini. V+ O Copy  
 be.good-INF forehead CL.C<sub>REL</sub> 3SG forehead 3SG surprising  
 ‘The fact that the child has very good luck is surprising’

In the case of double object constructions, minimally the verb is copied ((131b)), either of the objects can be copied ((131c-d)) or both ((131e)):

- (131) a. Ayda teg-ma kaalis he taabul  
 ayda put-PERF money P table  
 ‘Ayda put money on a table’
- b. **teg-go** ngo Ayda teg-i xaalis he taabul  
 put-INF CL.C<sub>REL</sub> ayda put-perf money P table  
 ‘the fact that Ayda put money on a table’
- c. **teg-go xaalis** ngo Ayda teg-i xaalis he taabal  
 put-INF money CL.C<sub>REL</sub> ayda put-PERF money P table  
 ‘the fact that Ayda put money on a table’
- d. **teg-go he taabal** ngo Ayda teg-i xaalis he taabal  
 put-INF P table CL.C<sub>REL</sub> ayda put-PERF money P table  
 ‘the fact that Ayda put money on a table’

<sup>21</sup> Note that when the idiomatic objects are copied along with the nominalized form of the verb, the interpretation remains factive. Interestingly, when the idiomatic object is relativized by itself, the result is also factive:

- (i) **nifre<sub>i</sub>** nde be kupp-i *t<sub>i</sub>* Binta  
 darkness CL.C<sub>REL</sub> 3PL pour-PERF binta  
 ‘the fact that they deceived Binta’
- (ii) **anniya** mo o fiβ-i *t<sub>i</sub>*  
 decision CL.C<sub>REL</sub> 3SG tie-PERF  
 ‘the fact that he made a decision’

When ordinary DP objects are fronted, the factive interpretation is unavailable, as in (ii):

- (ii) **ndiyam** dām be kupp-i dow Binta  
 water CL.C<sub>REL</sub> 3PL pour on binta  
 ‘the water that they poured on Binta’  
 \*‘the fact that they poured the water on Binta’

The type of relative construction in (i) is, at least at a superficial level, very similar to the factive constructions in Kwa where an internal argument of the verb is relativized and the result is factive, like (99)b-c from Kpele Ewe (Collins 1994) and (103)a from Gungbe (Aboh 2005).

- e. **teg-go xaaalis he taabal** ngo Ayda teg-i xaaalis he taabal<sup>22</sup>  
 put-INF money P table CL.C<sub>REL</sub> ayda put-PERF money P table  
 ‘the fact that Ayda put money on a table’

Manner adverb also can be copied, which I assume following (Cinque 1999) are low in the clause as shown in ((132b)):

- (132) a. O dog-ma ko.yaawi.  
 3SG run-PERF quickly  
 ‘He ran quickly.’  
 b. [**dog-go ko.yaawi**] ngo o **dog-i ko.yaawi** ngo V+Manner Adverb  
 run-INF quickly CL.C<sub>REL</sub> 3SG run-PERF quickly CL.the  
 ‘the fact that he ran quickly’

With respect to affixal morphology, Koopman (2005) analyzes the Wolof affixal adverb *-ati* ‘again’ as being lower than T°.

I argue that the Pulaar counterpart affix *-iti* has similar syntactic behavior. In fact, it is possible to copy this affix ((133)133b)), but not necessarily (133a)):

- (133) a. **jangu-go** ngo Hawaa **jang-iti-i** defte V Copy  
 read-INF CL.C<sub>REL</sub> hawaa read-again-PERF books  
 ‘the fact that Hawaa read some books again’  
 b. **jang-ittaa-go** ngo Hawaa **jang-iti-i** defte ngo V+Adverb Copy  
 read-again-INF CL.C<sub>REL</sub> hawaa read-again-PERF books CL.the  
 ‘the fact that Awa read some books again’

Furthermore, valency-changing affixes such as benefactive ((134a)), instrumental ((134b)), and causative ((134c)) can also be copied:

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<sup>22</sup> There are independent grammatical constraints on what can be copied. For example, when a definite article immediately precedes the relative complementizer, the result is very marginal or ungrammatical:

- (i) ??/\*[teg-go kaalis he taabal **mo**] **ngo** Ayda teg-i kaalis he taabal mo  
 Put-INF money P table CL.the CL.C<sub>REL</sub> ayda put-PERF money P table CL.the  
 Intended: ‘the fact that Ayda put money on the table’

That is, it is extremely awkward to have the <mo ngo> sequence.

- (134) a. [ **def-(an)-go**] ngo ɓe **togg-an-i** kam goori Benefactive  
 cook-BEN-INF CL.C<sub>REL</sub> 3PL cook-BEN 1SG millet  
 ‘the fact that they cooked millet for me’
- b. [ **tay-(ru)-go**] ngo ñu **tay-r-i** liddi di leɓii Instrumental  
 cut-INSTR-INF CL.C<sub>REL</sub> 3PL cut-INSTR-PERF fish CL.the knife  
 ‘the fact that they cut the fish with a knife’
- c. [ **jang-(in)-go**] ngo ɓe **jang-in-i** Hawaa simoore Causative  
 read-CAUS-INF CL.C<sub>REL</sub> 3PL read-CAUS-PERF hawaa poem  
 ‘the fact that they made Awa read a poem’

Focusing on the higher regions of the clause, I observe that tense cannot be copied, as the ungrammaticality of (135b) shows:

- (135) a. wuju-go ngo ɓe nguju-**noo** maaro  
 steal-INF CL.C<sub>REL</sub> 3PL steal-PAST rice  
 ‘the fact that they stole/had stolen rice’
- b. \* wuju-**noo** ngo ɓe nguju-**noo** maaro  
 steal-PAST CL.C<sub>REL</sub> 3PL steal-PAST rice
- (136) a. **et-aa-go** ngo o **et-i-i** nangu Isaa<sup>23</sup> V Copy  
 try-MID-INF CL-C<sub>REL</sub> 3SG try-MID-PERF catch isaa  
 ‘the fact that I tried to catch Isaa’
- b. **et-aa-go nangu** ngo o **et-i-i** nangu Isaa<sup>24</sup> V String Copy  
 try-MID-INF catch CL.C<sub>REL</sub> 3SG try-MID-PERF catch isaa  
 ‘the fact that I tried to hit Isaa’
- (137) a. **fud-aa-go** ngo o **fud-i-i** jangu Engele V Copy  
 try-MID-INF CL-C<sub>REL</sub> 3SG try-MID-PERF learn english  
 ‘the fact that he began to learn English’
- b. **fud-aa-go jangu** ngo o **fud-i-i** jangu Engele V String Copy  
 try-MID-INF learn CL.C<sub>REL</sub> 3SG try-MID-PERF learn english  
 ‘the fact that he began to learn English’
- (138) a. **yid-go** ngo o **yid-i** jangu Engele V Copy  
 try-INF CL-C<sub>REL</sub> 3SG try-PERF learn english  
 ‘the fact that she wants to learn English’

<sup>23</sup> The examples in (125)-(128) show that the verb string can be copied.

<sup>24</sup> The lower verb can be copied to the exclusion of the higher verb:

(i) lappu-go ngo o et-i-i lappu Isaa ngo  
 Hit-INF CL.C<sub>REL</sub> 3SG try-MID-PERF hit isaa CL.the  
 ‘the fact that I tried to hit Isaa’

- b. **yid-go jangu** ngo o **yid-i** jangu Engele V String Copy  
 try-INF learn CL.C<sub>REL</sub> 3SG try-PERF learn english  
 ‘the fact that she wants to learn English’
- (139) a. **waaw-go** ngo o **waaw-i** jangu deftare V Copy  
 can-INF CL-C<sub>REL</sub> 3SG can-PERF learn book  
 ‘the fact that she can read a book’
- b. **waaw-go jangu** ngo o **waaw-i** jangu deftare V String Copy  
 can-INF learn CL.C<sub>REL</sub> 3SG try-PERF learn book  
 ‘the fact that she can read a book’

In addition, it is also not possible to copy the negation morpheme *-aa*, even though I have indicated that an affix such as *-iti* ‘again’ ((133b)) can be copied just like the valency-changing affixes ((134a-c)). Thus, the issue in (140b) cannot be attributed only to the affixal nature of the negation morpheme:

- (140) a. wuju-go ngo be nguj-**aa** maaro ngo  
 steal-INF CL.C<sub>REL</sub> 3PL steal-NEG rice CL.the  
 ‘the fact that they did not steal rice’
- b. \*wuj-**aa** ngo be nguj-**aa** maaro ngo  
 steal-NEG CL.C<sub>REL</sub> 3PL steal-NEG rice CL.the

It is not possible to copy subject markers, as shown in (141b):

- (141) a. wuju-go ngo **be** nguj-i **dum toon**  
 steal-INF CL.C<sub>REL</sub> 3PL steal-PERF 3SG LOC  
 ‘the fact that they stole it there’
- b. \***be** wuju-go ngo **be** nguj-i dum toon \*Subject Marker Copying  
 3PL steal-INF CL.C<sub>REL</sub> 3PL steal-PERF 3SG LOC  
 Intended: ‘the fact that they stole it there’

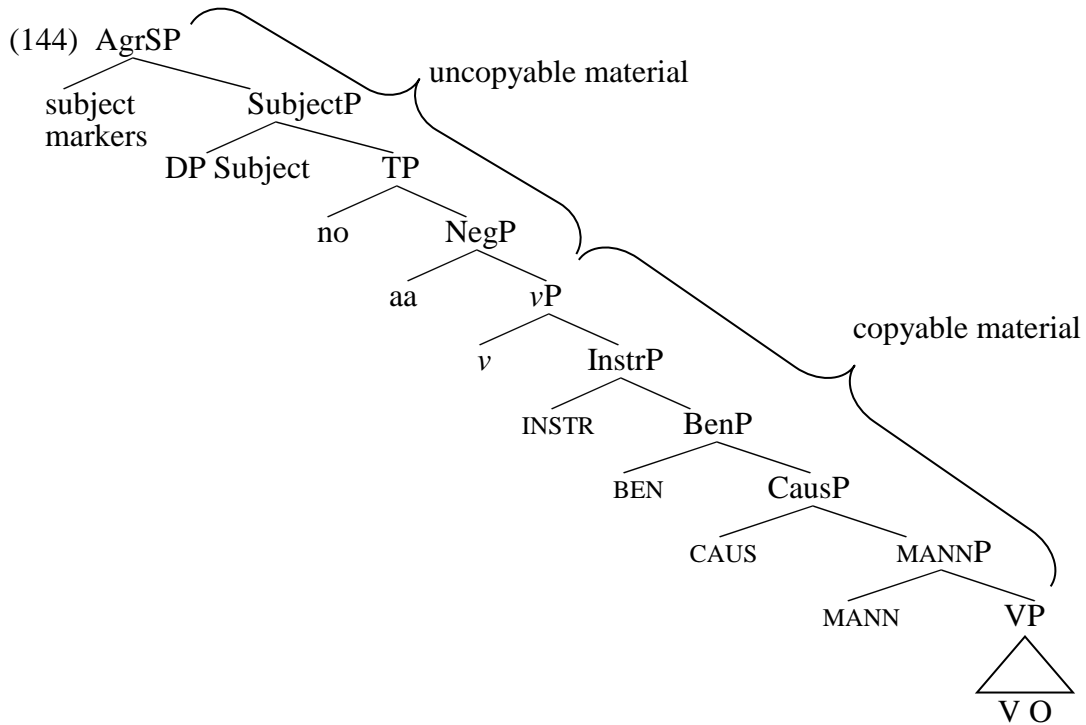
Object as well as locative clitics cannot be copied, as indicated in (142a-b):

- (142) a. \*wuju-go-dum ngo **be** nguj-i (**dum**) **toon** \*Object Clitic Copying  
 steal-INF-3SG CL.C<sub>REL</sub> 3PL steal-PERF 3SG LOC  
 Intended: ‘the fact that they stole’
- b. \*wuju-go-**toon** ngo be nguj-i (**toon**) maaro \*Loc Clitic Copying  
 steal-INF-LOC CL.C<sub>REL</sub> 3PL steal-PERF LOC rice  
 Intended: ‘the fact that they stole rice there’

As a final point, copying DP subjects yields ungrammatical results:

- (143) \***gorko def-go** ngo      **gorko def-i**      ceeb      \*Subject Copying  
 man    cook    CL.C<sub>REL</sub>    man    cook-PERF    rice  
 Intended, ‘the fact that a man cooked rice’

Maintaining that the representation in (128)(53) is correct, I can then make the following generalization that material in the region higher than *v*P cannot be copied whereas material lower than *v*<sup>o</sup> can be copied:





### 3.10 Conclusions

In this chapter, I have examined Pulaar relative clauses, i.e. headed relative clauses and factive clauses. I have shown the morphosyntactic similarities between RCs and factive clauses (the verbal factive and the *ko*-factive). I maintained factive that factive clauses in Pulaar involve a null noun fact, along the lines of Collins (1994). I also argued for a derivation of these constructions. I put forward an analysis of these clauses, arguing that they are DPs with a D head and a CP complement. In this regard, I have provided previous accounts of similar constructions.

I have analyzed Pulaar factive clauses. Now, I am in a position to compare Pulaar to other West African languages. Basically, I show how Pulaar is like and unlike other languages. I compare the Yoruba example below to an example from Pulaar:

#### Yoruba

- (145) rírà tí mo ra ìwé dára (Bamgboṣe 1975: 2,20)  
buying that I bought book good  
'The buying that I bought a book is good.' i.e.  
'The fact that I bought a book is good.'  
'The manner in which I bought a book is good.'

- (146) Sood-go **ngo** cood-mi deṭtare ngo **ngo** moyíí  
Buy-INF CL.REL buy-1SG book cl.the 3sg good  
'The buying that I bought a book is good.' i.e.  
'The fact that I bought a book is good.'  
'The manner in which I bought a book is good.'

Although the internal structures may be slightly different, the Pulaar nominal structure in (146) has the same range of meanings as the Yoruba construction in (145). In addition, both structures have a fronted verb. One difference, however, is that the fronted Pulaar verb agrees with the following complementizer as well as the determiner at the right edge of the clause.

- (147) a. Àgásá ló lé [dě mí wlé] vé ná Kòfí. (Aboh 2005: 21a)  
crab Det Num that[Rel] 1PL catch hurt for Kofi  
'The fact that we caught the crabs hurt Kofi.'

- b. Wlé [dǽ mí wlé] àgásá ló lé vé ná Kòfi. (Aboh 2005: 21b)  
 catch that[Rel] 1PL catch crab Det Num hurt for Kofi  
 ‘The fact that we caught the crabs hurt Kofi.’
- (148) a. [ **bind** b -i] [ Musaa **bind** tééré b-i]] bett na ma (Tamba 2014: 2a)  
 write CL - COMP Musaa write book CL-the surprise FIN 1SG  
 ‘Musaa’s writing the book surprised me’
- b. [ **I** -i] [ Musaa **bind** tééré b-i]] bett na ma (Tamba 2014: 2b)  
 CL – COMP Musaa write book CL-the surprise FIN 1SG  
 ‘Musaa’s writing the book surprised me’
- (149) a. [Nangu-go ngo be nang-i kaŋa ngo] mett-i Musaa  
 Catch-INF CL.REL 3SG catch crab cl.the hurt-PERF musaa  
 ‘The fact that they caught a crab hurt Musaa’
- b. [Nangu-go ngo be nang-i kaŋa ngo] mett-i Musaa  
 Catch-INF CL.REL 3SG catch crab cl.the hurt-PERF musaa  
 ‘The fact that they caught a crab hurt Musaa’

The Pulaar examples in (149) exhibit structural as well as semantic similarities with the structures from the related West African languages (Wolof in (148) and Gungbe (147)). It should be noted, however, that the Pulaar examples have a determiner at the end of the clause, which is not the case for a closely related language like Wolof for instance. So, these languages exhibit structural and semantic similarities. However, there are a few morpho-syntactic differences.

## Chapter 4

### 4. Pulaar within the typology of nominalization

#### 4.1 Action Nominals in Koptjevskaja-Tamm (KT)

In this chapter, I examine how nominalization Pulaar fits in the typology of nominalization. I focus on crosslinguistic generalizations about nominalization laid out mainly from Koptjevskaja-Tamm (1993).

In her sizable study on the typology of nominalization, Koptjevskaja-Tamm (KT) has worked with a database of seventy languages from a different language families. She looked mainly into the type of nominalization she called “Action Nominal Construction” (ANC). According to her ANCs constitute a hybrid class of word in that they are somewhat ambiguous between verbs and nouns. In addition, KT refers to these types of words as “non typical nouns” in the sense that they refer to events in contrast to typical nouns. That is the reason why they combine properties of both verbs and nouns. In this regard, languages vary as to whether their ANCs behave more like verbs than they behave like nouns. KT’s main objective in this study is to look at the variations in languages with respect to the way ANCs are constructed. In order to understand such a crosslinguistic variation, she looks at how languages determine syntactic relations between a finite verb and its arguments in a finite clause in comparison to an ANC head noun and its dependents. In the following section I show how KT accounts for the different syntactic relations in a neutral finite clause as compared to ANCs.

##### 4.1.1 Syntactic relations in clauses

KT lays out three ways of indicating syntactic relations; the first one of these is through head-marking; i.e. the head of a construction is marked through agreement in a clause or possessive affixes in a noun phrase.

Secondly, syntactic relations can be shown through dependent-marking; in this instance the arguments of a verb or a noun in an action nominal construction are morphologically marked in a way which specifies their syntactic relations to the head of the clause; this applies to a language like Arabic, for instance which resorts to case-marking on the arguments of the verb (i.e. nominative case on an agent and accusative case on a patient).

Finally, KT argues that word order is also a way of determining syntactic relations; for instance a “more or less fixed word order” between a verb or a noun and their arguments. She use the following example from Russian illustrate this point.

- (1) a. Mal’čik razmyšlja-et (o prirod-e ) KT (1993: (1.6))  
boy.NOM meditate-PRES.3SG (about nature-LOC)  
“The boy is meditating (about the nature)”
- b. Aleksandr zavoeva-l Egipet  
Alexander.NOM conquered-PAST.PERF Egypt.ACC KT (1993: (1.8))  
“Alexander conquered Egypt”

The examples (1a) and (1b) shows that Russian resorts dependent-marking as a way of indicating relations between verbs and their arguments. In Russian, subjects take the nominative case whereas objects take the accusative case. This suggests that Russian is a language which follows the nominative-accusative pattern.

In addition to this, head-marking is also another strategy employed; in (1a) the finite verb agrees with its subject in person in the present tense. Furthermore, KT notes that word order is free in Russian, which can be explained by the fact that arguments of verbs in Russian overtly are case-marked.

In a nutshell, in Russian all three ways of specifying the syntactic relation between a head and its arguments are used in finite; this is shown in (1). However, only dependent-marking is used in the case of ANCs.

- (2) a. Aleksandr zavoeva -l Egipet KT (1993: (1.8))  
 Alexander.NOM conquered-PAST.PERF Egypt.ACC  
 “Alexander conquered Egypt”
- b. zavoeva-nija Egipet -a (Aleksandr-om) (adapted from KT (1993: 1.6))  
 conquer-AN Egypt -GEN (Alexander-INSTR)  
 “the conquest of Egypt (by Alexander)”
- c. [zavoeva-nie Aleksandr-a] izmenlo žizn’ Egipet-a  
 conquer -AN Aleksandr-GEN changed life.ACC Egypt-GEN  
 “Alexander’s conquest changed the life of Egypt”

The examples (2b) and (2c) are ANC’s derived from (2a); in (2b) the head of the nominal has the action nominal marker, the direct object has genitive case whereas the subject has instrument case. When only one argument is present in the structure, it has to take the genitive case, as indicated in (2c). This shows that the type of dependent-marking in ANC’s is different from those in finite clauses. Also, head-marking is not found in ANC’s; word order, however, is a way of signaling syntactic relations since action nominals precede their arguments as shown in (2b) and (2c). In addition, the order of the arguments is free even though subjects tend to precede objects (KT (1993: 9)). KT comes to the conclusion that Russian ANC’s are syntactically analogous to noun phrases. In the next section, I discuss syntactic relations between a head and its arguments in a finite clause in contrast to an ANC in Pulaar.

#### 4.1.2 Syntactic relations in Pulaar clauses

Pulaar is a language which does not show case morphologically on the noun, the only case is shown is with the presence of pronouns.

- (3) a. sukaabe be ñaam-ma mangora  
 child CL.the eat-PERF mangora  
 “the children ate the mango”
- b. be njii-ma sukaabe be  
 3PL see-PERF child CL.the  
 “They saw the children”

In (3a) there is no morphological marking on the subject and the object of the verb. In (3b) the DP object does not exhibit any morphological marking. This suggests that overt DP arguments in Pulaar are not case-marked. However, the situation is different in the presence of pronouns as (4) shows.

- (4) a. Deeko noddu-m Asan  
 3SG.NOM call-PERF Asan  
 ‘S/he called Asan’
- b. Musaa noddu-m **mo** /\*deeko  
 Musaa call-PERF 3SG.ACC/3SG.NOM  
 ‘Musaa called her/him’
- c. Asan ñaamdu-m he **Musaa**  
 Asan eat-ASC-PERF with Musaa  
 ‘Asan ate with Musaa’
- d. Asan ñaamdu-m he **deeko** /\*mo  
 Asan eat-ASC-PERF with 3SG.NOM/3SG.ACC  
 ‘Asan ate with him/her’

The example in (4a) shows that the DP subject pronoun has nominative case; as a result, it cannot occur in object position as in (4b) where the pronoun object has accusative case. The example in (4c) shows that there is still no case-marking when an DP is complement of the preposition, *he* ‘with’ in this case. However, when the object pronoun is the complement of a preposition, the pronoun with nominative case is used as in (4d).

As KT (1993) observes, languages vary as to the way syntactic relations are indicated in verbal clauses in comparison to nominal clauses. The examples in (5a-g) are a case in point.

- (5) a. Aali ñaam-ma mangora  
 Aali eat-PERF mango  
 ‘Aali ate a mango’
- b. ñaam-go mangora ngo  
 eat-INF mango CL.the  
 ‘The eating of mango’

- c. Aali ñaam-go mangora  
Aali eat-INF mango  
'Aali's eating mango'
- d. ñaam-go Aali mangora  
eat-INF Aali mango  
'Aali's eating mango'
- e. \*ñaam-go mangora Aali  
eat-INF mango Aali  
'Aali's eating mango'
- f. \*ñaam-go nde/deede  
eat-INF 3SG  
'The eating of it'
- g. ñaam-go Aali  
eat-INF Aali  
'Aali's eating (something)'
- h. Aali ñaam-go  
Aali eat-INF  
'Aali eating (something)'

The example in (5a) is a typical finite matrix clause in Pulaar with no morphological markers on the verb and its arguments. Similarly, in (5b) where the verb *ñaam* “eat” is nominalized, there is no morphology on it except for the nominalizing/infinitival suffix. However, the subject can be present as shown in (5c) where it is an infinite clause with verbal properties; changing its position does seem to have a semantic effect in (5d) where the structure has nominal properties instead. The example in (5e), however, is ungrammatical.. In addition (5f) shows that a direct object pronoun cannot appear in a nominalization of this type. Finally in (5g-h) where only one argument is present, the subject in this case, it appears in object position as a modifier and the whole phrase is nominal (5g) or it can appear in subject position, in which case the phrase is verbal in nature. For a situation like this Koptjevskaja-Tamm has argued, however, that crosslinguistically if only one argument is present it takes the role of the direct object (contra to Pulaar). She gives the

example of Russian where if only one argument is present the opposition between subjects and objects is neutralized as the single argument take the genitive case (Koptjevskaja-Tamm (1993:9)). Normally, in Russian when the two arguments are present, it is the subject or possessor which takes the genitive case. This suggests that there is a difference in dependent-marking strategy in Russian in verbal clauses as opposed to nominal clauses. In Pulaar, however, since case is not shown on the noun, I would not argue for the same strategy. The fact that pronouns with accusative case are banned in nominal clauses might be evidence that accusative case is not available in Pulaar ANC. This will, however, need further investigation.

Apart from a dependent-marking strategy, a head-marking strategy is another way to show syntactic relations between a verb or nominalized verb, and its argument (Koptjevskaja-Tamm (1993:7)). Based on the examples presented here so far, it can be argued that such a strategy is used in Pulaar as the verb in finite clauses appears along with some agreement that gives some information about its subject.

(6) a. (aan) a ñaam-ma mangora  
 YOU 2SG eat-PERF mango  
 ‘You ate a mango’

b. (onon) on ñaam-ma mango  
 YOU.PL 2PL eat-PERF mango  
 ‘You.pl ate a mango’

In (6a) and (6b) the subject markers *a* and *on* respectively, precede the verb; however, there are other contexts where these markers would follow the verb. This type of agreement is not affixed to the verb but appear as an independent form, in this case following the verb. The example in (7) shows that head-marking on the verb and the noun in (7a) and (7b) respectively.

(7) a. (aan) deftare mbinu-**ɗaa**  
 2SG book write-2SG.PERF  
 ‘You wrote A BOOK’



- b. (onon) mbind-**uu** ma deftare  
 2PL write-NOM 2SG.POSS book  
 ‘Your writing of a book’

The third strategy to signal syntactic relations as stated by Koptjevskaja-Tamm is in relation to the position of the head arguments. This is due to the fact that some languages allow a different word order in verbal clauses as opposed to nominal clauses whereas for other languages the word order remains the same. In this regard, Pulaar uses a SVO order in verbal clauses; in nominal clauses, genitive nominal in this case, even though the subject is not present, the object remains in its canonical position. Interestingly, when the subject appears as the single argument of the nominal it takes that position.

- (8) a. Ami ñaam-ma mangora  
 Ami eat-PERF mango  
 ‘Ami ate a mango’
- b. Ami ñaam-ma  
 Ami eat-PERF  
 ‘Ayda ate’
- c. ñaam-go mangora  
 eat-INF mango  
 ‘The eating of mangoes’
- d. ñaam-go Ami  
 eat-INF Ami  
 ‘Ami’s eating’
- e. \* Ami ñaam-du  
 Ayda eat-NOM  
 ‘Ami’s eating’

The examples in (8a) and (8b) involve the verb *ñaam* ‘eat’ which can behave as a transitive verb (8a) or an intransitive verb (8b) that only includes the external argument of the verb. In (8c), when the verb is nominalized, the object stays in the same position, which makes it a genitive construction. However, when only the external argument of the verb is involved, *Ami* in this case,

its position changes from a prenominal one as in (8a) and (8b) to a postnominal one as in (8d), which again is a genitive construction with the external argument as a modifier. It cannot stay in its original position as shown by the ungrammaticality of (8e) where a nominalizing affix is attached to the verb root. Word order is the same in genitive nominals if a pronominal DP is used as a subject.

- (9) a. (aan) a windu-m deftare  
 2SG 2SG write-PERF book  
 ‘You wrote a book’
- b. mbind-uu ma deftare  
 write-nom 2SG.POSS book  
 ‘You writing of a book’

In (9a) and (9b) the word order remains the same even though in (9a) the head of the clause is a verb whereas in (9b) the head is a noun. Interestingly if a subject must be present, it can be added indirectly to the nominal clause. This is the case in the following:

- (10) a. Hawaa windu-m deftare  
 Hawaa write-PERF book  
 ‘Hawaa wrote a book’
- b. \*Hawaa mbind-uu deftare nde  
 Hawaa write-NOM book CL.the  
 ‘Hawaa’s writing the book’
- c. mbind-uu deftare Hawaa<sup>25</sup>  
 write-NOM book Awa  
 ‘Hawaa’s writing the book’
- d. mbind-uu deftare Hawaa ngu  
 write-NOM book Awa CL.the  
 ‘Hawaa’s writing a book’

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<sup>25</sup> This form is really marginal. Only few speakers were able to produce. I would never say this.

I have shown that there are various ways of indicating syntactic relations between the head and its arguments in Pulaar; head-marking, dependent-marking (with pronouns) and word order. In Pulaar, head-marking and word order are the main strategies used to determine syntactic relations. The strategies used in genitive nominals are different from the ones used in typical clauses. In fact, in genitive nominals, the head genitivizes whereas an external argument cannot occur in its canonical position.

In the next section, I discuss the types of nominalization discussed in KT (1993) then I show to which type Pulaar nominalizations belong.

#### **4.2 Types of nominalization**

In comparing nominalization cross-linguistically, KT classifies them into several types. She identifies seven types of nominalization; they are listed below with examples for each. In the following S is used to refer to the single argument of an intransitive verb or AN; A to the agent of a transitive verb and P to the patient of a transitive verb. The nominalizations patterns from KT (1993:61) are presented below.

First, Sentential type (SENT): all the arguments in ANCs retain their sentential dependent marking.

This is illustrated by the following example from classical Arabic.

- (11) ‘ağibtu                      min [ḍarb- in Zayd-un                      ‘Amr-an] (KT (1993:280))  
wonder:PRF.1SG of beat:AN-GEN Zayd-NOM ‘Amr-ACC  
“I wonder at Zeid’s beating Amr”

In Arabic nominal constructions, the A and the P still follow the nominative-accusative pattern.

In Possessive-Accusative type (POSS-ACC) – the S and the A in ANCs genitivize, while the P retains the sentential dependent-marking. This is illustrated with Amharic which is a typical nominative-accusative case language but in the nominalization process, the A genitivizes and the P keeps the accusative case as illustrated in (12).

- (12) ya-pitär bet-u-n mä-srat (KT (1993:284))  
 GEN-Peter house-DEF-ACC AN-build  
 “Peter’s building the house”

In Ergative-Possessive type (ERG-POSS): the P and S in ANCs genitivize, while the A gets another dependent-marking. Within this type it is, perhaps, reasonable to distinguish between (a) the Sentential-Possessive subtype (SENT-POSS), in which the A retains its sentential marking, and (b) the Oblique-Possessive subtype (OBL-POSS), in which the A turns into an oblique. The examples in (13) and (14) are of ERG-POSS nominalization type in the SENT-POSS subtype and the OBL-POSS subtype in Classical Arabic and French respectively.

- (13) safat-hum [rīh-u l-fanā? -i (KT (1993:289))  
 sweep:PRF.3SG:OB.3PL wind-NOM.CONSTR the-annihilation-GEN  
 “The wind of annihilation swept them away..”
- (14) la destruction de Carthage par les Romains (KT (1993:289))  
 the destroy:AN of Carthage by the Romans  
 ‘The destruction of Carthage by the Romans’

In the Nominal type (NOMN): all the arguments in the ANCs assimilate to dependents in non-derived NPs. Here, it is also possible to distinguish between (a) the Double-Possessive subtype (DBL-POSS) and (b) the Possessive-Adnominal subtype (POSS-ADN), in which both the S and the A genitivize, while the P gets the same dependent-marking as some oblique.

This is illustrated in (15) and (16) from Estonian (DBL-POSS) and Icelandic (POSS-ADN) respectively.

- (15) Peetr-i maja-de ehita-mine (KT (1993:294))  
 Peter-GEN house-GEN.PL build-AN  
 “Peter’s building of houses”
- (16) dràp-ið v eiðmannanna á birninum (KT (1993:297))  
 kill:AN-DEF hunter:DEF:GEN.PL on bear:DEF:DAT.SG  
 “The killing of the bear by the hunters”

Mixed type (MIX): the S genitivizes, the A turns into an oblique NP (perhaps in the same form as the Agent in passive clauses), while the P retains its sentential dependent marking. This is shown in the Maori example in (17).

- (17) Te pa-nga i te kupenga e te (KT (1993:143))  
 ART throw-AN ACC ART net AGT ART  
 “the throwing of the net by the man”

- Incorporating type (INC): the P forms part of the complex AN, the S retains its sentential dependent-marking or genitivizes, while the A is either similar to the S or turns up as an oblique NP.

The following example is from Hungarian.

- (18) Péter ujság -olvas-ás-a (KT (1993:298))  
 Peter newspaper -read-AN-3SG.POSS  
 “Peter’s reading the newspaper”

In Relative type (REL): the S and P genitivize or, at least, appear as adnominal dependents, whereas the A is expressed within the relative clause.

KT uses Hausa, an Afro-asiatic language spoken in West Africa (mainly in Niger and Nigeria) as an example of the REL type. Hausa is an SVO language and verbs are not inflected for tense, mood or aspect.

- (19) a. ya karfi kudi  
 3M.PRFV take money  
 “He took money”  
 b. karfi-a-n kudi [ya yi]  
 take-AN-of money 3M.PRFV do  
 “His taking of money”

The example in (19a) is a typical matrix clause in Hausa; (19b) shows an example of a REL type nominalization in Hausa. In this example, when the verb nominalizes it is relativized along with

the object *kudfi* “money”; it should be noted in this case that the verb *yi* “do” is used inside the relative clause to refer to the action described by the relativized verb. KT therefore concludes that in English constructions of the form “X’s V-ing of Y” correspond roughly to constructions like “V-ing of Y that X did” in Hausa (KT (1993:192)).

#### **4.2.1 Pulaar nominalization types**

In Pulaar, the REL type can be used to describe RC nominalization. However the copying strategy found in a language like Pulaar is not found in the types identified by KT. Unlike Hausa, Pulaar does not use the verb “do” in a relative clause but uses a copy of the relativized verb. Also in Pulaar the object of the verb can appear with the relativized verb, but this is optional as shown in Chapter 3. This is similar to the nominal morphology on the relativized verb which is also optional. Finally the nominalized verb does not genitivize in Pulaar but does so in Hausa. This points out another interesting property of Pulaar nominalization in typology. Crucially, even though this REL strategy is not found in the seventy languages used in the KT’s study this strategy is very productive in Pulaar and other genetically related languages like Yoruba and Gungbe. By the way, KT discusses Kwa languages but does not mention the REL type in those languages.

As far as Pulaar genitive nominals are concerned, it is not simple to determine the category in which they fall due to the strategy used. In the sample used by KT, only one language i.e. Chukchee, behaves like Pulaar. For this reason KT points out that a special type should be created for this nominalization type that is, Argument-reducing type (ARG-RED). Even though KT mentions Chukchee as an example of a language utilizing this strategy, she warns the reader that she does not have enough data on Chukchee for a strong and reliable analysis of this nominalization pattern in this language. In those languages which use this nominalization strategy,

the nominalized transitive verb cannot appear with both arguments at the same time as shown in the next section.

## 4.2.2 Argument-Reducing

### 4.2.2.1 Argument-Reducing in Russian

This type of construction which constrains the occurrence of an argument is referred to as argument reducing strategy ((KT (1993)). KT notes three different situations regarding the reduction of arguments in ANCs.

In the first case, “the semantic argument *ai* of X (or any action nominal) can never be expressed, at least if some other semantic argument, *aj*, is to be expressed” (KT (1993:13)).

- (20) a. raboči-e                  napolnjaj-ut      bassejn                  vod-oj                  Russian  
           worker-PL.NOM fill-PRES.3PL swimming.pool.ACC water-INSTR  
           “The workers are filling the swimming pool with water”
- b. napoln-enie bassejn-a                  vod-oj  
           fill-AN          swimming.pool-GEN water-INSTR  
           “The filling of the swimming pool with water”
- c. napoln-enie bassejn-a                  raboči-mi  
           fill-AN          swimming.pool-GEN worker-INSTR.PL  
           “The filling of the swimming pool by the workers”

In (20b), derived from (20a), the missing argument is the agent (*raboči* “worker”) whereas in (20c) the instrument *vodoj* “water” is missing. Having these two arguments at the same time is impossible in Russian.

In the second case of argument reducing, “the action nominal X is used in such a way that the semantic argument *ai* cannot be expressed in this particular situation” (Koptjevskaja-Tamm (1993:14)).

In the third case, the semantic argument of the action nominal X could in principle be expressed in the given sentence, but is omitted with respect to the communicative goal of the sentence (KT

(1993:15)). She argues that this case is the most commonly used across languages, in this case, the context makes it irrelevant to use a semantic argument.

#### 4.2.2.2 Argument-Reducing in Pulaar GN

GN constructions in Pulaar seem to follow the first case of argument-reducing discussed by KT because the two arguments of the derived nouns cannot be expressed in their original position at the same time. Compare (21a), (21b) and (21c).

- (21)
- a. mbind-uu Ami  
write-NOM Ami  
'Ami's writing'
  - b. mbind-uu deftare nde  
write-NOM book CL.the  
'the writing of the book'
  - c. \*Ami mbind-uu deftare nde  
Ami write-NOM book CL.the  
'Ami's writing of the book'

I have shown that in Pulaar there are various constraints related to the co-occurrence of different types of arguments with respect to the nominalized verb. For instance the agent of a transitive verb cannot normally occur in its base position in genitive nominals. This is summarized in (22).

- (22)
- a. Hawaa windu-m deftare nde  
Hawaa write-PERF book CL.the  
'Awa wrote the book'
  - b. \*Hawaa mbind-uu deftare nde  
Hawaa write-NOM book CL.the  
'Awa's writing of the book'
  - c. \*Hawaa mbind-uu  
Hawaa write-NOM  
'Hawaa's writing' (intended)
  - d. mbind-uu Hawaa  
write-NOM Hawaa  
'Hawaa's writing'



e. mbind-uu am deftare nde  
 write-NOM 1SG.POSS book CL.the  
 ‘My writing of the book’

The example (22a) shows a typical Pulaar sentence without any nominalized verb. This sentence has two overt DPs as subject and object of the verb *windu* “write”. In (22b) the verb has been nominalized, which makes the presence of an overt DP subject ungrammatical. The sentence is still ungrammatical in (22c). The meaning in (22c) can only be conveyed like in (22d) where the subject of writing *Hawaa* has to occur after the noun *mbinduu* “writing” even though Pulaar is a SVO language. In contrast, with the presence of a pronominal DP subject along with an overt DP object, the sentence is grammatical as shown in (22e). To sum it up, a pronoun possessor can occur as a DP subject with a genitive nominalization whereas an overt DP possessor is cannot occur in a similar position. In English the overt DP subject *Hawaa* can be in subject position, that is, before the noun *mbinduu* “writing” as shown in the translation of (22d).

In KT’s analysis, a language which resorts to argument-reducing for any of the reasons mentioned above might have another way of expressing all arguments. This is true for Pulaar as there is another nominalization strategy (discussed in chapter 3) that allows the expressing of all arguments.

This type of nominalization (in (23)) was referred to as RC nominalization.

- (23) a. [**windu-go ngo** Hawaa wind-i deftare **ngo**] bettu kam  
 write-INF CL.REL Hawaa write-PERF book CL.the surprise 1SG  
 ‘Hawaa’s writing the book surprised me’
- b. [**windu-go ngo** Hawaa wind-i **nde** ngo] bett kam  
 write-INF CL.REL Hawaa write-PERF 3SG.ACC CL.the surprise 1SG  
 ‘Hawaa’s writing **it** surprised me’

In (23)a both the subject and the object are present. This construction, which I take as a Relative clause nominalization, is very productive in the language and always include all the arguments contrary to (21b) and (21c). In (23b), the object pronoun can surface and the structure is totally grammatical.

### **4.3 English gerunds vs Pulaar infinitivals**

#### **4.3.1 English Gerunds**

Punske (2012) points out that the status of gerunds has been a major issue within the status of nominals for decades (see: Lees 1961, Chomsky 1970, Abney 1987, Chierchia 1984, Baker 2005, among many others). The general consensus seems to be that there are (at least) two distinct type of gerunds, one which is essentially a verb phrase and the other with is more like a noun phrase. He states that the verbal gerund is the least controversial and typically analyzed as a full *vP* with DP-structure added on top. The status of the nominal gerund, however, is less understood. Chomsky (1970), for instance, argued that the nominal gerund is a “mixed” class containing both elements of the verbal system and of true nominalization. On their side, Harley and Noyer (1998) argued that the nominal gerund is identical to other forms of nominalization. However, a closer examination of the data shows that both of these claims appear to be incorrect. Nominal gerunds are not identical to other forms of nominalization, but they are also the *least* like the verbal system contra Chomsky’s (1970) proposal.

There is no agreement on the terminology for the different classes of gerunds. Chomsky (1970) uses the terms “nominal gerunds” and “mixed nominalization” to describe the two classes under discussion. Chierchia (1984) comes up with his own terminology. Siddiqi (2010), who attempts to provide a DM-account of *-ing*’s distribution, provides yet another set of terms. Abney (1987) and Baker (2005) are appear to be the most faithful to the terms used in the groundbreaking scholarship

in this area (Lees 1961, Roeper and Wasow 1972 and Horn 1975) but the terms are the most opaque.

(See table 1 below adapted from Punske (2012)).

(1) **Table 1:** Terminology associated with nominalization

	“Classic” terms	Chomsky	Chierchia (1984)	Parsons (1990)	Siddiqi (2010)	Punske (2012)
Accusative subjects, VPs in argument position	ACC-ing Constructions	(1970)	N/A	Verbal gerunds	Verbal Gerunds	N/A
Gerunds modified by adverbs, subject marked by - 's, direct case marking	POSS-ing Constructions	Nominal gerunds	NP-Gerunds	Verbal Gerunds	Hybrid Gerunds	True gerunds/ Verbal Gerunds
Gerunds modified by adjectives, no direct case marking		Mixed Nominalization	CN-gerunds	Nominal Gerunds	Nominal Gerunds	Nominal gerunds

#### 4.3.2 True Gerunds

According to Punske the most straightforward class of gerunds is the true gerund. These are gerunds that behave almost identically to Verb Phrases. Lees’ (1961) foundational work on the subject showed that all verb phrases can be made into gerunds of this type—a high level of productivity unseen in other corners of nominalization. He points out that these gerunds also

exhibit identical modificational properties as Verb Phrase: they must be modified by adverbs not adjectives; they may have auxiliaries; they directly assign Case to their object arguments (Lees 1961, Chomsky 1970, Abney 1987, Baker 2005, among many others). These properties can be seen in the examples below. In (25), modification is unambiguously adverbial and the object is directly case marked (i.e. there is no *of*). In (26), an auxiliary is present in the gerund and case marking is again direct.

(2) John's quick\*(ly) riding his bike in the rain made him wet.

(3) John's having eaten fish for the first time made him ill.

This class also behaves in ways that separate them from other DP arguments. Unlike common nouns, derived nominals or nominal gerunds, in verbal gerunds subject arguments are obligatory and determiner-like elements are blocked (Abney 1987, Baker 2005) seen in the ungrammaticality of (27).

(4) John's writing a letter to congress demonstrated that he was a model citizen.

(5) \*The/\*A writing a letter to congress shows one to be a model citizen.

The subject element can be null, however:

(6) PROARB writing a letter to congress shows one to be a model citizen.

As stated in Punske (2012), the most widely accepted analysis of these constructions is some variation on Abney's (1987) proposal, which has a GER (gerund) head (in Abney's analysis it was the actual noun, in the noun phrase) which is structurally higher than a verb phrase. This analysis captures the cobbled-together feel of verbal gerunds which are distributionally noun phrases, but

structurally verb phrases. But Baker (2005) offers a more modern treatment of this analysis. In Baker's analysis GER is a functional head which is present in the structure instead of INFL or T.

### 4.3.3 Nominal Gerunds

As for the Nominal gerunds, they hold a particular place within the theory, and have not been given a treatment of their own. Nominal gerunds are marked with *-ing* and mark their subjects with *- 's* like verbal gerunds, but take adjectives instead of adverbs. They cannot have auxiliaries and cannot directly assign Case to their objects, marking them with *of* instead. Alexiadou (2001) also suggests that nominal gerunds are not productive. Yet, this argument that can be quite disputable as suggested by the following examples from Punske (2012).

(7) John's quick(\*ly) riding of his bike in the rain made him wet.

(8) \*John's having eaten of fish for the first time made him ill. (Contrast with: 16b.  
John's eating of fish...)

Chomsky (1970) appears to be the first to have introduced the notion that these exhibited "mixed" properties because they introduced their object arguments with *of* but were marked in the *-ing* of the verbal gerunds. Harley and Noyer (1998) disputed the "mixed" status of these constructions. They argued that the *-ing* found in nominal gerunds was an elsewhere case for derived nominal morphology and that this accounts for a difference noted in verb particle alternations across gerund-types. Verbal gerunds allow the same positional variation of particles as verb phrases, while nominal gerunds do not. Harley and Noyer thus use that fact to argue that there is nothing "mixed" about these constructions. The relevant contrasts is rather in the possible position of the verb particle *up* between the verb phrase/verbal gerunds (examples 32- 35).

(9) Chris rapidly wrote the paper up

(10) Chris rapidly wrote up the paper.

(11) Chris's rapidly writing up the paper...

(12) Chris's rapidly writing the paper up...

The same structural analysis can be given to both structures, such as the following (adapted from Harley & Noyer 1998, and Ramchand & Svenonius 2002). In these structures, the particle optionally incorporates into the verb before the verb head moves. When particle-incorporation occurs, the particle surfaces adjacent to the verb. When it does not, the particle surfaces in a verb phrase final position because the object A-moves around it.

These accounts of English gerunds bear some similarities to Pulaar infinitival constructions such as the following:

- (13) a. [windu-go am deftare ngo] bettu-m Musaa.  
write-INF my book CL.the surprise-PERF musaa  
'My writing of a book surprised Musaa'
- b. [windu-go maako deftare ngo] bettu-m Musaa.  
write-INF his book CL.the surprise-PERF musaa  
'His writing of a book surprised Musaa'
- c. [windu-go Musaa deftare ngo] yaaw-no.  
write-INF Musaa book CL.the be.fast-PAST  
'Musaa's writing of a book was fast'
- d. [windu-go deftare ngo] yaaw-aa.  
write-INF book CL.the be.fast-NEG-PAST  
'The writing of a book is not fast'

Assuming the Pulaar infinitival marker *-go* is similar to the English *-ing*, some Pulaar infinitival structures may exhibit more verbal properties. In this case, they are only modified by adverbial phrases, as seen below:

- (14) a. [windu-go maako deftare nde **ko yaawi**] bettu-at Musaa.  
 write-INF his book CL.the REL quick surprise-IMPERF musaa  
 ‘His writing the book quickly will surprise Musaa’
- b. \*[windu-go maako deftare nde **yaawngo**] bettu-at Musaa.  
 write-INF his book CL.the quick surprise-IMPERF musaa  
 ‘His quick writing the book will surprise Musaa’

Similarly, when a structure involving a infinitival exhibits more nominal properties, then it only adjectival modification, and not adverbial modification. This split behavior of infinitival constructions can be assimilated to what lead to the analysis of English gerunds as “mixed”.

#### 4.4 Derivation of Factive Clauses and RCs

Following work on the syntax of DPs (e.g. Abney 1987; Szabolcsi 1994; Ritter 1995; Siloni 1997; Carstens 2000; Bernstein 2001a, b; Longobardi 1994, 2001; Panagiotidis 2000, Aboh 2002, 2004a, b, among others), Aboh (2005) assumes that the nominal structure is parallel to the clausal structure in that it involves a predicate layer (i.e. NP), a functional layer (i.e.  $\Sigma$ P) that encodes inflectional specifications (e.g. agreement and definiteness), and a left periphery (i.e. DP). Extending Rizzi’s (1997) split-C hypothesis to the nominal domain, Aboh proposes that the D-system splits into distinct projections that encode number, focus, topic, as represented in (38) (see Giusti 1996, and Aboh 2004a, b for discussion).

- (15) [DP [D [TopP [Top ló [ FocP [Foc té [NumP [Num lé [ $\Sigma$ P [NP ]]]]]]]]]]]

Under this hypothesis, D is a subordinator comparable to the clausal C. It heads the highest projection of the D-system, whose specifier provides an escape hatch for extraction out of the DP as is the case in the Hungarian dative extraction in (38) (Szabolcsi 1994). As the highest projection of the D-system, DP represents the interface between the noun phrase (or the nominal predicate) and the discourse.

- (16) [Péter-nek] mindenki csak [a kalap-já-t ] látta  
 Peter-DAT everyone only the hat-Poss-3sg-ACC saw  
 ‘As for Peter, everyone saw only his hat (e.g. no one saw his coat)’  
 (Szabolcsi 1994: 205)

Aboh argues that Gungbe manifests a relative clause versus factive clause asymmetry whereby the former reading is assigned to the sequence NP-[CP-clause]-D, while the latter is assigned to the sequence NP-D-[CP-clause]. This is slightly unlike Pulaar where I argue both the relative clause and the factive clause share a similar structure which is a D-system structure along the lines of Kayne (1994).

Aboh points out that Gungbe manifests the types of relative clauses in (40). Example (40a) illustrates what could be referred to as a bare noun relative clause (i.e. a bare noun immediately precedes the relative marker). In this context, the head noun is interpreted as definite, due to the relative clause. Therefore, the Gungbe relative sentences can be described as restrictive relative clauses (de Vries 2002). In (40b), however, the relativised noun is interpreted as specific due to the presence of the specificity marker to the right edge. Similarly the example (40c) illustrates a relative clause where the head noun is plural and the plural marker occurs to the right edge. Finally, the sentence under (40d) indicates that when the relative noun is plural and specific, both the specificity marker and the number marker must surface to the right edge.

- (17) a. Kòfí xó àgásá [dě mí wlé]  
 Kofi buy crab that[REL] 1PL catch  
 ‘Kofi bought the crab that we caught’
- b. Kòfí xó àgásá [dě mí wlé] ló  
 Kofi buy crab that[REL] 1PL catch Det  
 ‘Kofi bought the [aforementioned] crab that we caught’
- c. Kòfí xó àgásá [dě mí wlé] lé  
 Kofi buy crab that[REL] 1PL catch Num  
 ‘Kofi bought the crabs that we caught’



- d. Kòfí xó àgásá [dě mí wlé] ló lé  
 Kofi buy crab that[REL] 1PL catch Det Num  
 ‘Kofi bought the [aforementioned] crabs that we caught’

He assumes that an analysis of the Gungbe relatives in terms of adjunction would be that the relative clause right adjoins to  $\Sigma P$ , and this complex phrase pied-pipes to Spec,NumP and Spec,TopP, as shown in (41).

- (18) [DP[D°[TopP[Top°ló[NumP[Num°lé [ΣP àgásá<sub>i</sub> [ΣP[CP Op<sub>i</sub>[C°dĕ[IP mí wlé ti ]]]]]]]]]]]]]]

However, not considering issues related to free adjunction rules (see Kayne 1994), such an analysis does not seem to carry over to the distribution of the D-type elements with regard to the head noun, and the implications of the discussed distributive facts with regard to the relative versus factive asymmetry as illustrated in (42) and schematized in (43).

- (19) a. Àgásá d̀àxó [dĕ mí sà] ná Kòfí ló lé  
 crab big that[REL] 1PL sell to Kofi Det Num  
 ‘the aforementioned big crabs that we sold to Kofi’  
 \* ‘the fact that we sold the [aforementioned] big crabs to Kofi’
- b. Àgásá d̀àxó ló lé [dĕ mí wlé] vé ná Kòfí  
 crab big Det Num that[REL] 1PL catch hurt for Kofi  
 ‘The fact that we caught the aforementioned big crabs hurt Kofi’  
 \* ‘The [aforementioned] big crabs that we caught hurt Kofi’
- (20) a. NP-[CP clause]- ló lé = restrictive relative clause  
 b. NP- ló lé -[CP clause] = factive clause

The only difference between (43a–b) is the placement of the relative CP clause vis-à-vis the determiners. Under the adjunction analysis, a possible solution would be to treat the asymmetry in (43) as evidence that the CP clause may adjoin at different sites prior to movement: at the  $\Sigma P$  level

in (43a) or at the DP level in (43b). Such an asymmetry is not found in Pulaar where the analysis I put forward is a movement of the CP the Spec,DP for both types of construction.

## **5. General conclusion**

In this dissertation, I have investigated clausal nominalizations in Pulaar. I have presented types of nominalization patterns in Pulaar involving infinitives such genitive nominalizations, relative clause nominalizations and headless relative clause nominalizations. I have mainly laid emphasis on genitive nominalizations and relative clause nominalizations.

The GNs are not as productive as the RC nominals; which is not surprising since the RC nominals allow the co-occurrence of all the nominalized verb arguments. RC nominals are syntactically like typical relative clauses in the language, the nominalized verb is moved to the front but still pronounced in its original position. In addition, not only can the nominalized verb be fronted along with a wide range of verbal derivational affixes, it can also be fronted along with its internal argument. Interestingly, in this respect, both GNs and RC nominals have in common the fact that they cannot co-occur with negation and past tense markers. I have also discussed how Pulaar aligns in some way with the typology of nominalization in general through reference to the typological study of KT (1993).

Furthermore, this study establishes a comparison between nominalization strategies found in African languages genetically related to Pulaar i.e., Yoruba, Gungbe, Ewe, etc. All these languages have some type of RC nominals..

This study has provided an insight into the clausal nominalization that I hope, will spurs more works in this area of Pulaar syntax. As for now, it would be interesting for instance, to pursue this study further by carrying out a thorough syntactic and semantic analysis of the two nominalization patterns which, I hope, would give more insight into their internal differences.

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