
Electronic Thesis and Dissertation Repository

11-9-2015 12:00 AM

Applicative Structure in Wolof

Christen Harris, *The University of Western Ontario*

Supervisor: Dr. Ileana Paul, *The University of Western Ontario*

A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree
in French

© Christen Harris 2015

Follow this and additional works at: <https://ir.lib.uwo.ca/etd>



Part of the [African Languages and Societies Commons](#)

Recommended Citation

Harris, Christen, "Applicative Structure in Wolof" (2015). *Electronic Thesis and Dissertation Repository*.
3464.

<https://ir.lib.uwo.ca/etd/3464>

This Dissertation/Thesis is brought to you for free and open access by Scholarship@Western. It has been accepted for inclusion in Electronic Thesis and Dissertation Repository by an authorized administrator of Scholarship@Western. For more information, please contact wlsadmin@uwo.ca.

APPLICATIVE STRUCTURE IN WOLOF

(Thesis format: Monograph)

by

Christen Harris

Graduate Program in French Studies

A thesis submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

The School of Graduate and Postdoctoral Studies
The University of Western Ontario
London, Ontario, Canada

© Christen Harris 2015

Abstract

This dissertation investigates applicative structures in Wolof, based on new data collected from native speakers in Saint Louis, Senegal. The dual purpose of this dissertation is to describe the applicative constructions available in Wolof and to identify their syntactic structure. Following previous work on applicatives, the description of these applicatives focuses on their object properties and the c-command configuration of the VP. The analysis is framed within the Minimalist Program (Chomsky 1993, 1995, 2000). I propose multiple function heads involved in applicative formation which account for the properties in Wolof.

Four types of applicatives, benefactive, dative, instrumental, and locative in Wolof. They are classified into three groups based on their object properties, selectional restrictions, and c-command configuration. The groups are benefactive applicatives, dative applicatives, and oblique applicatives (including instrumental and locative). Object properties will show that benefactive and dative applicatives are symmetrical applicatives while instrumental and locative applicative, which have been previously identified as symmetrical (Dunigan 1994), show mixed symmetrical and asymmetrical behaviour. C-command tests will show that in benefactive and dative applicatives, the applied object asymmetrically c-commands the theme but in instrumental and locative applicatives, it is the theme that asymmetrically c-commands the applied object.

The analysis proposed is based on the Thematic and Raising Applicative Hypothesis from Georgala (2012). I propose a third applicative head in addition to thematic and raising Appls, which I call Oblique Appl. Although not a standard theoretical tool in Minimalism, the notion of Downward Merge from Phillips (2003) and McGinnis (2005) is incorporated in Oblique Appl to account for instrumental and locative applicatives which fall outside the explanatory power of the Raising and Thematic Hypothesis vis-à-vis c-command and verbal adjacency. In the spirit of Marantz (1993) and Georgala (2012), I argue that all three applicative heads merge in the same position,

above the lexical VP. I maintain that instrumental and locative applied objects are uniformly merged as VP-external objects contrary to Marantz who assume they can merge within the lexical VP.

Keywords: applicative, Wolof, double object construction, verbal valency, instruments, locatives

Ndànk ndànk mooy jàpp golo ci ñaay.

“It is slowly that one catches the monkey in the bush.”

Wolof Proverb

For my father, whose boundless curiosity always inspired me.

Laurence Earl Harris
1955-2015

Acknowledgements

I would first like to thank Ileana Paul, my advisor. Her constant support and encouragement were instrumental in the achievement of this dissertation. Her understanding and love of syntax have moulded and motivated me in both the good times of this process and the bad.

I would also like to thank the professors that taught me and helped me over the years, David Heap, Jacques Lamarche, Michiya Kawai, Jeff Tennant, and François Poiré. I would also like to thank my senior thesis advisor, Sarah Gordon, who set me on the path of research and languages.

I am deeply indebted to Boubacar Boris Diop and his son Moustapha Diop for taking me in during my fieldwork in Senegal. They introduced me to many Wolof speakers and linguists as well as providing me with wonderful insight into Wolof. I would also like to thank Ibrahim Saar and Abdoulaye Dial for their help teaching me Wolof and understanding its grammar. Finally, I cannot forget the wonderful and generous people who worked with me as native language consultants including Badara Saar, Dame Diop, Moussa Ndiaye and Hyacinthe Dione, and Xadija Diene as well as those who wished to remain anonymous.

I have been lucky to be surrounded by such wonderful and stimulating fellow graduate students. Thank you Kristen Izaryk for listening to many a syntactic rant and always taking the time to chat with me about research. I also would like to thank Jorge Emilio Roses Labarada and Olga Kharytonava who also helped and encouraged me along the way. I cannot forget Nico Baier with whom I had many delightful and stimulating discussion about Wolof, applicatives, syntax, and all these Senegal.

Lastly, I cannot forget to thank my wonderful family who have supported me throughout the entire journey. Darryl Wheeler, who has loved me through the good times and the bad and was always ready with a hug and a Blizzard. My mother, Ann Marie

Harmon who was there when I needed countless pep talks and my father, Laurence Harris, who learned about linguistics just so he could talk to me about my work. He was always there to listen and to help me think outside the box. Sadly, he was unable to make it to see this moment, but he will always be in heart.

Table of Contents

Abstract	ii
Acknowledgements	vi
List of abbreviations	xii
CHAPTER 1	
1. Introduction to Wolof	1
1.1. Clause structure	3
1.1.1. Clause Types	4
1.1.2. Nouns and DPs	10
1.1.3. Adjectives	13
1.1.4. Focus and Question Formation	13
1.2. Methodology	14
1.3. Overview of thesis	16
CHAPTER 2	
2. Applicatives: Theoretical Background	17
2.1. Applicatives	18
2.1.1. Typology	20
2.1.2. Object properties	24
2.1.2.1. Passivization	25
2.1.2.2. Pronominalization	27
2.1.2.3. Word Order	29
2.1.2.4. Extraction	31
2.1.3. C-command	33
2.1.4. Summary	36
2.2. Syntactic Approaches	36
2.2.1. Issues in applicative research	36
2.2.2. Marantz	38

2.2.3. Pylkkänen	44
2.2.4. McGinnis	50
2.2.5. Georgala	52
2.2.6. Summary	57
2.3. Existing work on Wolof applicatives	58
2.3.1. Schwartz 1975	58
2.3.2. Dunigan 1994	59
2.3.3. Dione 2013	64
2.4. Theoretical Assumptions	65
2.4.1. Overview of proposed analysis	66
2.5. Conclusion	68
 CHAPTER 3	
3. Wolof benefactive and dative applicatives	70
3.1. Object Properties	70
3.1.1. Word Order	71
3.1.2. Pronominalization	72
3.1.3. Extraction	76
3.1.4. Object Omission	78
3.1.5. Summary of Object Properties	81
3.2. C-command	82
3.2.1. Tests	82
3.2.1.1. Quantifier Binding	82
3.2.1.2. Reflexivization	90
3.2.1.3. Weak Cross-Over	93
3.2.1.4. Summary of c-command tests	99
3.3. Analysis	99
3.3.1. Benefactives	100
3.3.2. Datives	103

3.3.3. Variable Word Order	109
3.3.3.1. Object Scrambling	115
3.3.3.2. Different Merges	118
3.3.3.3. Rightward Adjunction	121
3.3.4. A ‘small clause’ problem	122
3.4. Conclusion	126
 CHAPTER 4	
4. Oblique Applicatives	128
4.1. Oblique objects in Wolof	128
4.1.1. In situ applicatives	130
4.1.2. Hybrid Applicatives	133
4.1.3. Prepositional Instruments and Locatives	134
4.1.4. Fronted Oblique Objects	135
4.2. Object Properties	138
4.2.1. Pronominalization	138
4.2.2. Extraction in oblique applicatives	142
4.3. C-command	147
4.3.1. Quantifier Binding	148
4.3.2. Weak Cross-Over	150
4.3.3. Conclusion	153
4.4. Analysis	153
4.4.1. Lack of Object Scrambling	156
4.4.2. Extraction	158
4.4.3. The in-between nature of instruments and locatives	160
4.4.4. Other applicative proposals	162
4.4.5. Movement out of VP	165
4.5. Conclusion	169

CHAPTER 5	
5. Conclusion	170
REFERENCES	174
CURRICULUM VITAE	184

Abbreviations

ABS - absolutive case
ACC - accusative case
APPL - applicative
ASP - aspect
AT - actor topic
BEN - benefactive
CAUS - causative
CL - classifier
C_{REL} - complementizer of relative clauses
CS - construct state
CT - circumstantial topic
DAT - dative
DEF - definite
DET - determiner
ERG - ergative case
FOC - focus
FV - final vowel
GEN - genitive case
HABIT - habitual
IND - indicative
INST - instrumental
LOC - locative
NOM - nominative case
OFOC - object focus
OM - object marker
OP - object pronoun
PASS - passive
PAT - patient
PERF - perfective
PL - plural
PRES - present
PST - past
REL - relativizer
SA - subject agreement
SFOC - subject focus
SG - singular
SP - subject pronoun

CHAPTER 1

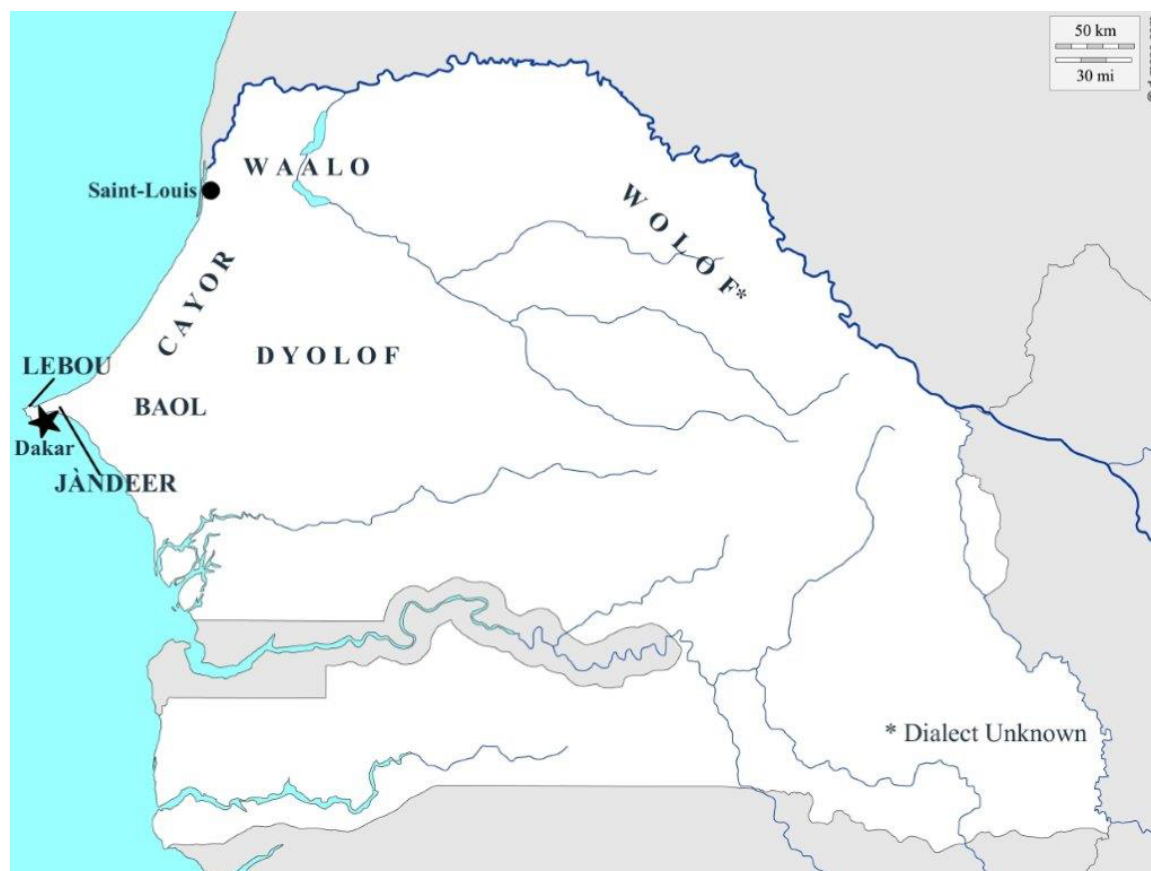
1. INTRODUCTION TO WOLOF

Wolof is a language of the West Atlantic branch of the Niger Congo family. It is primarily spoken in Senegal and The Gambia with speakers also found in Mauritania, Mali, and Guinea-Bissau. As of 2006, *Ethnologue* estimates approximately four million first language speakers between these four countries. Estimates of both first and second language speakers worldwide are around 7 million (Torrence 2012).

Wolof is the main vehicular language in Senegal, and is used, alongside the official language French, in political venues, domestic business, and the media. Even with the widespread use, the language remains largely oral. Wolof is spoken by approximately 80 percent of the population either as a first or second language (Taylor 1995). While French is the official language of government and education, the majority of the population do not speak it. Thus, Wolof is used for daily communication instead of French by many Senegalese.

The first major dialect split in Wolof is between Senegalese Wolof and Gambian Wolof. The two are mutually intelligible but are marked by differences in phonology, morphology, and syntax. I set Gambian Wolof aside and focus only on Senegalese Wolof. As for Wolof spoken in Senegal, *Ethnologue* lists five dialects: Baol, Cayor, Dyolof, Lebou, and Jander (Lewis et al. 2014). Waalo is another dialect not mentioned by *Ethnologue* (Torrence 2012).

Figure 1: Map of Wolof Dialects in Senegal



It is important to note that Lebou Wolof is not the same dialect as Dakar Wolof which will be described next.

Another dialect which is not mentioned on *Ethnologue* is Dakar Wolof, also known as Urban Wolof. Dakar Wolof is an urban dialect spoken primarily in the Dakar region of Senegal, as the name suggests. It is characterized by borrowed lexical items, code-switching, and reduction of the nominal class system. French, English, and Arabic loan words are the main sources of borrowed words and expressions in Dakar Wolof. As for syntactic characteristics, the most salient variation is the reduction in the noun class system from fifteen classes to two classes: *b-* for singular nouns and *y-* for plural nouns.

The last dialect I would like to mention is the Wolof spoken in Saint Louis and the immediate surrounding area. Saint Louis is in the north of Senegal on the coast of the

Atlantic Ocean and the southern border of Mauritania. Zribi-Hertz and Diagne characterize the Wolof of Saint Louis, in sociolinguistic terms, as “upper-class conservative” (2002:827). They note that speakers in Saint Louis cultivate an awareness of ‘Good Wolof’. There are fewer borrowed words than Dakar Wolof and all the noun classes have been retained by speakers. The data analyzed in this thesis come from the Saint Louis dialect.

Since education in Senegal takes place in French, most speakers are not literate in Wolof. However, in recent years, there has been a significant push to integrate more national languages into the school systems leading to Wolof and other national languages classes being taught in schools. Publication of Wolof newspapers and books as well as educational material and dictionaries is climbing, but still lags far behind French publications. A standard orthography for Wolof was adopted in 1972 but spelling in everyday contexts remains fluid. Most speakers spell phonetically using French orthography. For example, [u] is spelled with a ‘u’ in standardized Wolof but many people write [u] with ‘ou’ as in French. I present all data using the standard orthography as outlined by Diouf in *Dictionnaire wolof-français* (2003) and Fal (1999).

While gaining popularity among linguists, Wolof remains understudied, particularly with regard to syntax and semantics. Recent works focusing on these areas, such as Njie (1987), Robert (1991), Dunigan (1994), Nougier-Voisin (2002), Russell (2007), Torrence (2012), Martinovic (2013), and Dione (2013) have added great insight into the language. The aim of this dissertation is to add to the study of Wolof with an in depth treatment of its predicate argument structure. Treating all aspects of a language’s argument structure is far too ambitious a goal for a single thesis so I will only attempt a treatment of the argument structure of applicative predicates.

1.1. Clause Structure

There have been several syntactic treatments of Wolof in generative frameworks. Njie (1982) focuses on the clause structure of Gambian Wolof. Dunigan (1994) and Russell

(2007) describe and analyze Dakar Wolof focusing on clause structure. Torrence (2012) and Martinovic (2013) explore the left periphery of Wolof clauses. Descriptive works on Senegalese Wolof include Ngom (2003) and Fal (1999). Dione (2013) treats applicative and causatives in Wolof using Lexical Functional Grammar. The rest of this section is devoted to a brief description of Wolof. First, the basic clause structures are presented in 1.1.1. Nouns are described in 1.1.2., followed by adjectival modification in 1.1.3. The last area of Wolof to be presented is focus and question formation in 1.1.4. Much of the information given here is cited from Torrence (2012). Additional sources are cited when used.

1.1.1. Clause Types

Neutral sentences in Wolof are SVO. As for verbal agreement, the verb agrees with the subject in person and number. Agreement is not marked on the verb as affixes, rather person and number are indicated on a subject marker that is considered an independent word. The linear order of subject markers in relation to the verb depends on the tense, aspect, mood, negation, and clause type. A list of clause types and agreement is given in Table 1. There is no object agreement in Wolof.

Table 1: Wolof Clause Types (cited from Torrence 2012:29-31)		
Type	Example	Use
- <i>Na</i> Clause	a. Xale yi lekk- na-ñu gato bi. child the.PL eat-FIN-3PL cake the 'The children ate the cake.'	The entire clause is new information. No subconstituent is in focus.
Negative	b. Xale yi lekk-u- ñu gato bi. child the.PL eat-NEG-3PL cake the 'The children did not eat the cake.'	No emphasis on anything. Negative of <i>na</i> -clause
Subject Cleft 1	c. Xale yi a lekk gato bi. child the.PL COP eat cake the 'It's the children who ate the cake.'	Subject in focus

Subject Cleft 2	d. Xale yi ñu a lekk gato bi. child the.PL 3PL COP eat cake the ‘It’s the children who ate the cake.’	Subject in focus
Negative Subject Cleft 1	e. Xale yi a lekk-ul gato bi. child the.PL COP eat-NEG cake the ‘It’s not the children who ate the cake.’	Negative of subject cleft
Negative Subject Cleft 2	f. D-u xale yi a lekk gato bi. IMPERF-NEG child the.PL COP eat cake the ‘It’s not the children who ate the cake.’	Negative of subject cleft
Non-subject Cleft	g. Gato bi I-a xale yi lekk. cake the XPL-COP child the.PL eat ‘It’s the cake that the children ate.’	Non-subject in focus
Subjunctive	h. Bëgg- na-a ñu lekk-ko. want-FIN-1SG 3PL eat-3SG ‘I want them to eat it.’	CP complement of predicates of desire, command, wish, etc.
Adverbial	i. Tusuur ñu lekk-ko. always 3PL eat-3SG ‘They always eat it.’	CP/TPs that are introduced by certain adverbs in the left periphery
Optative	j. Xale yi nañu lekk gato bi! child the.PL OPT-3PL eat cake the ‘The children, may they eat the cake!’	Wish or desire of speaker
Negative Optative	k. Xale yi b-u ñu lekk gato bi! child the.PL C-NEG-3PL eat cake the ‘The children, may they not eat cake!’	Wish of desire of speaker
Progressive	l. Xale y-àng-i lekk gato bi. child CL-PROG-LOC eat cake the ‘The children are eating the cake.’	Ongoing actions or current states
Subject Focus Progressive	m. Xale y-àng-ii di lekk gato bi. child CL-PROG-LOC IMPERF eat cake the ‘It’s the children who are eating the cake.’	Subject is in focus with ongoing actions or current states

Non-Subject Focus Progressive	n. Gato b-àng-ii xale yi di lekk. cake CL-PROG-LOC child the.PL IMPERF eat 'It's the cake that the children are eating.'	Non-subject in focus
Predicate Focus Progressive	o. Xale yi da-ñu lekk gato bi. child the.PL do-3PL eat cake the 'The children did eat the cake.' 'Eat the cake is what the children did.'	Focus on predicate or predicate (and complement) of a clause, explanation
Modal	p. Ma togg-al-la ceeb bi? 1SG cook-BEN-2SG rice the 'Should I cook you the rice?'	Request
Exclamative	q. Aka mu leen dóór! EXCL 3SG 3PL hit 'How he hit them!'	Exclamations

A detailed description of each of these clause types is not needed to understand the data in the following chapters. I would like to take a closer look, however, at several of these clause types because their relevance in chapters 3 and 4. The first clause type is what Torrence calls the *-na clause*. Here the entire clause expresses new information. I refer to this clause as a neutral clause rather than a *-na clause*. As can be seen the lexical subject *xale yi* 'the children' precedes the verb, *lekk* 'to eat' and the subject markers (bolded) appear after the verb and agree with the lexical subject for person and number.

Neutral clause (repeated from a. in Table 1)

- (1) Xale yi lekk-**na-ñu** gato bi.
child the.PL eat-FIN-3PL cake the
'The children ate the cake.'

I note here that the orthography I use represents the subject markers as independent words.¹ The clause in (1) from Torrence is given in (2) using the orthography adopted here (see Fal 1999 and Diouf 2003 for more on orthography).

¹ The bound/independent status of inflectional morphemes does not affect the analysis offered and spelling conventions do not offer insight to structure. The inflectional morphemes are clitics and are dependent phonetically on the verb. I mention the difference only to avoid confusion.

- (2) Xale yi lekk **nañu** gato bi.
 child DEF eat 3PL cake DEF
 ‘The children ate the cake.’

One final note on the Wolof examples presented in this thesis is that I do not break down subject markers morphologically in the examples. I present them as a single unit and gloss them simply by the person and number features and the semantic features such as predicate focus or object focus, as seen in (2). This is not motivated by theoretical concerns but is done for convenience.

The next clause type that will be important in this thesis is a cleft structure that is used to focus the subject. A copular element *a* follows the clefted subject *xale yi* ‘the children’.

Subject cleft 1 (repeated from c. in Table 1)

- (3) Xale yi **a** lekk gato bi.
 child the.PL COP eat cake the
 ‘It’s the children who ate the cake.’

A second way of forming a subject cleft is to include a subject marker that agrees with the subject for person and number. In (4), the particle *ñu* reiterates the subject *xale yi* ‘the children’ and precedes the particle *a*. While not shown in Table 1, the vowel contact between *ñu+a* results in the form *ñoo* (see Ka 1987 for more on morphophonological patterns in Wolof).

Subject cleft 2 (repeated from d. in Table 1)

- (4) Xale yi ñu a (>ñoo) lekk gato bi.
 child the.PL 3PL COP eat cake the
 ‘It’s the children who ate the cake.’

The non-subject cleft is used to focus syntactic objects. The focused object, *gato bi* ‘the cake’, appears in the sentence initial position followed by the particle *la*. The

subject, *xale yi* ‘the children’, follows the cleft particle and the verb, *lekk* ‘to eat’, follows the subject.

Non-subject cleft (repeated from g. in Table 1)

- (5) Gato bi **l-a** xale yi lekk.
 cake the XPL-COP child the.PL eat
 ‘It’s the cake that the children ate.’

Progressive clauses involve a progressive morpheme in the subject marker. In (6), the *y-* represents the class of the subject nominal, in this case plural. It combines with a progressive morpheme, *àng*, and finally a locative morpheme *-i* which indicates the proximity of the subject.

Progressive with lexical subject (repeated from l. in Table 1)

- (6) a. Xale **y-àng-i** lekk gato bi.
 child CL-PROG-LOC eat cake the
 ‘The children are eating the cake.’

Another possibility is that *yàngi* is both progressive and subject focus as proposed by Zribi-Hertz and Diagne (2002:839). They argue the *-a* particle marks subject focus while *-ng* is the copular particle. Like Torrence, they assume *-i* is a locative morpheme involved in obviation.

- (7) y(i>a)-a -ng -i
 DEF.PL-SFOC COP LOC

As mentioned earlier, the morphological division of subject markers is not crucial to a discussion of Wolof applicatives, which are the subject matter of this thesis. I adopt Torrence’s assertion that *-a* is the copular particle.

A second way to express ongoing actions or current states is to use both a lexical subject, *xale yi* ‘the children’, and a corresponding subject marker, *ñu ngi* as in (6).² This second type of progressive clause is commonly used when the subject is not focused and is not new information. In the following example, I assume *-ng* as a progressive morpheme.

Progressive

- (8) Xale yi **ñu** **ng-i-y** lekk gato bi.
 child DEF 3PL PROG-LOC-IMP eat cake DEF
 ‘The children are eating the cake.’

I assume as well that *-i* is a locative morpheme that marks the proximity of the subject since the marker can also surface as *ng-a* when the subject is not proximal to the speaker. In (8) the children are close to the speaker or have been mentioned recently in the conversation while in (9) the children are not near the speaker or were mentioned further back in the conversation.

Progressive

- (9) Xale yi **ñu** **ng-a-y** lekk gato bi.
 child DEF 3PL PROG-LOC-IMP eat cake DEF
 ‘The children are eating the cake.’

The last clause type I will talk about is what Torrence calls the predicate focus progressive. I refer to it simply as predicate focus. In this clause, the subject marker is made up of two morphemes, *da-* and the corresponding agreement for person and number of the subject, *-ñu* in the case of (10). The subject marker precedes the lexical verb, *lekk* ‘to eat’.

² Dunigan (1994) argues that in these cases, the lexical subject is in a topic position and the subject marker is in the subject position of the structure.

Predicate focus (repeated from o. in Table 1)

- (10) Xale yi da-ñu lekk gato bi.
 child the.PL do-3PL eat cake the
 ‘The children did eat the cake. / Eat the cake is what the children did.’

A final note about Wolof clauses is that Wolof does not have a syntactic passive construction (Dione 2013). Sentences with a passive interpretation are expressed using a 3SG impersonal pronoun in subject position. A more detailed description and analysis of the different clause types are given in Torrence (2012) and Zribi-Hertz and Diagne (2002) (see also Njie 1982, Dunigan 1994, Fal 1999, Ngom 2003, and Russell 2007 for more on Wolof clause structure).

1.1.2. Nouns and DPs

Wolof nouns are divided into nominal classes. Torrence (2012) identifies fifteen noun classes, which he classifies into eight singular, two plural, two locative, and three defective classes. Noun class is not marked on the noun itself but on the determiner. The determiner is made up of a consonant that reflects the nominal class and a vowel that expresses relative location of the noun. The singular classifiers are: *b-*, *g-*, *l-*, *j-*, *w-*, *s-*, *m-*, *k-*, and the plural classifiers are: *y-*, *ñ-*. The three defective classifiers are *f-* (locative), *n-* (manner), *c-* (preposition).

Table 2: Nominal classifiers			(Torrence 2012: 16)
Singular	xaj bi	‘the dog’	<i>bi</i> -class
	gaal gi	‘the boat’	<i>gi</i> -class
	ndap li	‘the pot’	<i>li</i> -class
	wax ji	‘the talk’	<i>ji</i> -class
	jën wi	‘the fish’	<i>wi</i> -class
	ndaw si	‘the young woman’	<i>si</i> -class
	saw mi	‘the urine’	<i>mi</i> -class
	nit ki	‘the person’	<i>ki</i> -class
Plural	ja yi	‘the markets’	<i>yi</i> -class
	góór ñi	‘the men’	<i>ñi</i> -class

When the noun is definite, these classifiers combine with either *-i* or *-a*. When *-i* is used, it indicates proximity or salience of the noun, be it conversational, physical, or temporal. When *-a* is used it indicates the distance or non-salience of the noun.

- (11) a. xaj b-i
 dog CL-PROX
 ‘the dog mentioned recently (in the conversation)’
 ‘the dog that is close (physically)’
 ‘the dog that existed recently/[currently exists]’
- b. xaj b-a
 dog CL-DISTAL
 ‘the dog mentioned a while ago (in the conversation)’
 ‘the dog that is far away (physically)’
 ‘the dog that existed a long time ago’

(Torrence 2012:17-18)

Indefinite determiners consist of the vowel *a-* and the nominal classifier.

- (12) a-b xaj
 a-CL dog
 ‘a dog’
- (Torrence 2012:18)

Indefinite nouns can also be expressed as a bare noun or with the numeral *benn* ‘one’.

- (13) a. xaj
dog
'a dog'
- b. benn xaj
one dog
'a dog'
- (Torrence 2012:18)

The defective classifiers are used only with demonstratives and pronouns.

Table 3: Defective Classifiers (Torrence 2012: 16)

Class	Demonstrative	Wh-pronoun
<i>fi</i> -class ‘locative’	foofu ‘aforementioned place’	fan ‘where?’
<i>ci</i> -class ‘prepositional’	coocu ‘in/at/on aforementioned place’	can ‘in/at/on where?’
<i>ni</i> -class ‘manner’	noonu ‘aforementioned way’	nan ‘how, in what way?’

The order of constituents within the DP is as follows.

Table 4

INDEFINITE DETERMINER	noun	DEFINITE DETERMINER
NUMERAL		DEMONSTRATIVE
POSSESSIVE PRONOUN		C_{REL} + complement
SIMPLEX QUANTIFIER		COMPLEX QUANTIFIER

1.1.3. *Adjectives*

Adjective is not a grammatical category in Wolof (McLaughlin 2004, Tamba et al. 2012). Qualitative adjectives are expressed by a relative clause containing a stative verb that describes the property in question.

- (14) a. bal bu mag
 ball C_{REL} be.big
 ‘a big ball’ (lit: a ball that is big)
- b. bal bi mag
 ball C_{REL} be.big
 ‘the big ball’ (lit: the ball that is big)
- (15) a. bal bu tutti
 ball C_{REL} be.small
 ‘a small ball’ (lit: a ball that is small)
- b. bal bi tutti
 ball C_{REL} be.small
 ‘the small ball’ (lit: the ball that is small)

The (a) examples in (14) and (15) show a relative clause modifying an indefinite noun while the (b) examples involve a definite noun. The complementizer in definite relative clauses is homophonous with the definite determiner. The exact mechanics of relative clauses in Wolof is not crucial here, so I will not look at it further. For more information on relative clauses and adjectival modification in Wolof see Torrence (2012), McLaughlin (2004).

1.1.4. *Focus and Question Formation*

Focus and wh-question formation in Wolof involve the cleft structures mentioned earlier (see Table 1 and examples 4 and 5) (Torrence 2012, Martinovich 2013). The focused or

questioned element (underlined) is placed at the beginning of the sentence followed by the appropriate subject marker and a copular particle, *-a*.

Subject cleft

- (16) a. Ayda moo (>mu a) lekk dibi.
 Ayda 3SG.COP eat dibi
 ‘It is Ayda who ate dibi.’

Non-subject cleft

- b. Dibi l-a Ayda lekk.
 dibi XPL-COP Ayda eat
 ‘It is dibi that Ayda ate.’

Subject wh-question

- (17) a. Kan moo (>mu a) lekk dibi?
 who 3SG.COP eat dibi
 ‘Who ate dibi?’

Non-subject wh-question

- b. Lan l-a Ayda lekk?
 what XPL-COP Ayda eat
 ‘What did Ayda eat?’

Wh-questions are types of focus constructions. I assume the focused NP/wh-phrase, if present, is found in CP or focus position in the left periphery. For detailed descriptions and analyses of focus and question formation see Torrence (2012) and Martinovich (2013).

1.2. Methodology

The majority of the data presented in this thesis are new data collected in the field in Saint Louis, Senegal. Only first language Wolof speakers who had grown up in Saint Louis region were consulted for data collection to control for dialectal variation. A total

of seven consultants responded to grammaticality judgement tasks, elicitation tasks, and acceptability tasks. All data were verified by at least three different speakers.

Data were collected in the city of Saint Louis, Senegal, situated on the northwest coast of Senegal just south of the border with Mauritania. The data were collected during two research trips, totaling five months in Saint Louis during the spring and fall of 2013. None of the consultants have any formal instruction in Wolof. Five of the seven consultants had formal instruction in French through at least a high school level of education. All consultants are Wolof and French bilingual speakers. The consultants ranged in age from twenty to mid-sixties and were all male.

Data were collected using French as the metalanguage. Three types of tests were preformed in order to target different information. Elicitation tasks, such as translations, were used to define basic utterances and identify relevant vocabulary and grammatical information to facilitate further testing. Once baseline sentences and structures were established with elicitations, negative evidence was collected using grammaticality judgements and acceptability judgements. Grammaticality judgements were used to target syntactic constraints. Limited context was provided when presenting sentences and the consultants were asked to judge sentences.

Grammaticality judgements show what structures are acceptable but they do not offer much insight into the semantic information encoded in a sentence (Matthewson 2004). To target the semantics of tests sentences, acceptability tasks were used. The acceptability tasks are similar to grammaticality judgements except that the sentence in question is presented in a detailed context that selects for a particular semantic property or interpretation. The consultant was then asked to rate whether the sentence was appropriate within the provided context. Contexts were presented as verbal descriptions, stories, pictures, cartoon drawings, or acting.

1.3. Overview of Thesis

The rest of the thesis is organized as follows. Chapter 2 offers a general description of applicative structures and gives an overview of some of the major analytical approaches for applicatives. Previous research published on Wolof applicatives will be presented at the end of chapter 2. Chapter 3 focuses on the description and analysis of benefactive and dative applicatives. Instrumental and locative applicatives and their analysis are the subject of chapter 4. Concluding remarks and remaining questions are found in chapter 5.

Chapter 2

2. APPLICATIVES: THEORETICAL BACKGROUND

Applicatives are of interest to linguists because of the particular challenges they pose for syntactic theory. Early formal approaches to applicative sentences attempted to elucidate a single structure from which all types of applicatives arise (Baker 1988, 1992, Larson 1988, Marantz 1993). More recent proposals (McGinnis 2005, Pylkkänen 2008, Georgala 2012) involve multiple structures for different types of applicatives. Such approaches have many advantages over more traditional, single structure approaches, but still fail to account for the full range of applicative variation exhibited. I maintain that a subtler approach is needed, involving unique structures for different types of applicatives, based on a detailed exploration and analysis of Wolof applicatives. The need for different structures casts doubt on treating applicatives as a construction because although they share descriptive similarities (adding an argument), structurally they are quite different. I assume that “applicative” refers to a class of descriptively similar structures. Note that this assumption fits within the Minimalist approach to syntactic theory, where we have moved away from constructions in an attempt to find the primitive components of the grammar.

In this chapter, I present an overview of applicatives and their properties using examples from various languages. Applicatives are grouped into types based on the theta role of the applied object (e.g. benefactive, dative, instrument, locative, reason, etc.). Cross-linguistically, these different applicatives tend to show common patterns of behaviour in relation to object properties and syntactic configuration. Differences in behaviour are also discussed and provide motivation for classifying applicatives by type rather than assuming a single applicative construction. I then turn to theoretical work on applicatives and then review several previous analyses of Wolof applicatives. Building off these analyses, in the last section, I show that a subtler approach is needed and

propose different structures for the different applicatives found in Wolof. These structures will be motivated and discussed in more detail in chapters 3 and 4.

2.1. Applicatives

The term *applicative* refers to verb forms¹ in which the verbal valency has been increased by one.² Payne (1997) defines an applicative as “... a valence increasing operation that brings a peripheral participant onto center stage by making it into a direct object. The ‘new’ direct object is sometimes referred to as the applied object (186).” This is illustrated in English in examples (1-3) below. The first sentence shows an example of the transitive, non-applicative, use of *write*. The sentence in (2) shows an applicative in English with the same verb. The sentence now contains two objects, *Sam*, the recipient, and *a letter*. The sentence in (3) has two complements like the applicative version in (2) *Sam* and *a letter*, but the recipient is contained in a prepositional phrase. I call examples like (3) prepositional complement sentences.

- (1) Bill wrote a letter.
- (2) Bill wrote *Sam* a letter.
- (3) Bill wrote a letter *to Sam*.

I note here that the term ‘applicative’ is at times confused with the term ‘double object construction’. While the two are sometimes used interchangeably, there is an important distinction between them. A double object construction involves two direct objects associated with a single predicate, as seen in (4). It is also an applicative by definition since the valency of the verb *bake* has increased by one from “Bill baked a cake.”.

¹ ‘Applicative’ is also used to refer to sentences that contain an applicative verb. Note that ‘verb forms’ does not necessarily mean that applicative forms are morphologically distinct from non-applicative forms. In some languages, like English, there is no overt change in verb form.

² I exclude causative constructions from the discussion of applicatives, even though they technically fall under this definition, as they involve the addition of an external argument, not an internal one.

- (4) Bill baked Sarah a cake.

The valency increase of an intransitive verb, however, does not lead to a sentence with two objects so it can't be called a *double object construction*. The term *applicative* still correctly qualifies the sentence in (5b) and others like it, as a valency increase has occurred between (5a) and (5b) even though there is only one object present, *Katonga*.

Luganda

- (5) a. Mukasa ya-tambu-dde
 Mukasa 3SG.PST-walk-PST
 'Mukasa walked.'
- b. Mukasa ya-tambu-le-dde Katonga.
 Mukasa 3SG.PST-walk-APPL-PST Katonga
 'Mukasa walked for Katonga.'
- (Pylkkanen 2008:20)

In other words, double object constructions are applicatives, but not all applicatives are double object constructions. Note that I consider lexically ditransitive verbs, like *give*, as applicatives. This is not an obvious conclusion since the valency of the verb has not increased. Ditransitive verbs, like *give*, cannot be used intransitively, and strongly resist even transitive usage. Nevertheless, the second half of Payne's definition does describe ditransitive verbs in double object constructions because the indirect object has been metaphorically moved from a peripheral position within the PP, (6a), to a direct object, (6b).

- (6) a. I give presents to the children.
 b. I give the children presents.

It is important to note that I do not assume that the sentence in (b) is derived from (a) unlike Larson proposes (1988). They involve different derivations and structures following Marantz (1993) and Harley (2002). Predicates like these which involve a non-morphologically marked applied object are called valency-preserving (Creissels 2004).

Now that applicative sentences have been briefly described, I turn to a discussion of generally recognized properties of applicatives.

2.1.1. *Typology*

Cross-linguistically, applicatives are found in languages from all over the world. They are common in three geographical areas: Africa, the western Pacific region, and the Americas according to the World Atlas of Language Structures Online (Polinsky 2013). There is quite a bit of variation within applicative sentences. There are multiple ‘flavors’ of applicatives based on the thematic role of the applied object, such as benefactive, goal, instrumental, locative, and reason. The inventory of which applicatives are available depends on the language in question. In some languages, applicatives are very productive and can express multiple theta roles, like Bantu languages, while in others, like English, applicatives are more constrained.

In English, applicatives have limited productivity: benefactive or recipient/source arguments can be expressed as a direct object but only with a certain class of verbs, those which convey a transfer of possession, like *give*, *send*, *sell*, *write*. The sentence in (7a) shows an applicative with a recipient applied object, *Sam*, and (7b) shows a benefactive object, *Sarah*. Note that in both sentences the possession of the theme objects, *a letter* and *a cake*, is transferred to the applied object.

- (7) a. Bill wrote Sam a letter.
 b. Bill baked Sarah a cake.

Since both applicatives express a transfer of possession, I call them dative applicatives.³ Examples of dative applicatives from other languages are given in (8) - (12). Greek, Basque, and Albanian examples are similar to English in that there is no overt applicative marker attached to the verb.

³ This type of applicative has been called ditransitive or possessor dative, although the exact terminology varies widely.

Greek

- (8) O Nikos edhose tis Marias ena vivlio.
 the.NOM Nick.NOM gave.3SG the.GEN Mary.GEN a.ACC book.ACC
 ‘Nick gave Mary a book.’ (Georgala 2012:104)

Basque

- (9) Jonek Norari liburua ekarri dio.
 J-ERG N-DAT book-ABS bring AUX
 ‘Jon brought Nora the book.’ (Oyharçabal 2010:235)

Albanian

- (10) Agimi i mban Drites çanten time.
 Agim.NOM CL holds Drita.DAT bag.ACC my
 ‘Agim holds my bag for Drita.’ (Pylkkänen 2008:21)

Kinyarwanda

- (11) Umugóre y-iim-ye ábáana ibíryo.
 woman she-refuse-ASP children food
 ‘The woman refused food to the children.’ (Kimenyi 1980:31)

Some languages, like Mandarin, on the other hand, require an additional morpheme, like *gěi*, in applicative sentences. If *gěi* is missing, the sentence is ungrammatical (12b).

Mandarin

- (12) a. Wǒ mài-gěi-le Mǎli yī-ge shǒubiǎo.
 1SG sell-GEI-PERF Mali 1-CL watch
 ‘I sold Mali a watch.’ (cited from Georgala 2012)
- b. *Wǒ mài-le Mǎli yī-ge shǒubiǎo.
 1SG sell-PERF Mali 1-CL watch
 ‘I sold Mali a watch.’ (Paul and Whitman 2010: 264)

verb *iica* ‘sit’ in (15). A benefactive object has been applied to the intransitive verb *kor* ‘work’ in (16).

Locative applicative - Kinyarwanda

- (15) Umugabo y-iica-yé-**ho** íntebe.
 man he-sit-ASP-on chair
 ‘The man is sitting on the chair.’ (Kimenyi 1980:38)

Benefactive applicative - Kinyarwanda

- (16) Umugóre a-rá-kor-**er**-a umugabo.
 woman she-PRES-work-APPL-ASP man
 ‘The woman is working for the man.’ (Kimenyi 1980:32)

In some languages, applicatives can be iterated. The sentence in (17) has a locative applied object, *intebe* ‘chair’, and a benefactive applied object, *umugabo* ‘man’. Additionally, there are two applicative suffixes attached to the verb, *-i* for the benefactive and *-ho* for the locative.

Locative and benefactive applicative - Kinyarwanda

- (17) Úmwáana y-iicar-i-yé-ho íntebe umugabo.
 child he-sit-APPL-ASP-LOC chair man
 ‘The child is sitting on the chair for the man.’ (Kimenyi 1980:113)

In (18), there are three objects, a benefactive object *umugóre* ‘woman’, a dative object *ábáana* ‘children’, and a theme object *ibíryo* ‘food’. Only one applicative morpheme appears on the verb and it is associated with the presence of the benefactive object.

Triple object construction - Kinyarwanda

- (18) Umukoóbwa a-rá-hé-er-a umugóre ábáana ibíryo.
 girl she-PRES-read-APPL-ASP woman children food
 ‘The girl is giving food to the children for the woman.’ (Kimenyi 1980:32)

Predicates with dative objects in Kinyarwanda don't show overt morphology, similar to English, Greek, and Albanian applicatives. Recall from section 2.1. that I assume double object constructions with or without overt applicative morphology are applicatives so the sentence in (18) involves two applicative heads, dative and benefactive, only one of which is overtly realized.

From this brief survey, we see applicatives can express a variety of theta roles including dative (recipient or source), benefactive, instrumental, locative, and reason. They can be signaled by overt or null morphology and they are compatible with transitive and intransitive predicates. In the next section, I focus on the object properties of applicatives.

2.1.2. Object properties

Object properties are often a starting point for applicative research. Researchers attempt to determine to what extent the objects in applicative sentences show similar syntactic properties as “normal” direct objects (e.g. of a monotransitive verb). Common object properties are passivization, pronominalization, and adjacency to the verb. In applicatives that have two objects, one or both objects can have object properties depending on the language and applicative type in question. When both objects display object properties, the applicative is classified as symmetrical. When only one object has direct object properties, the applicative is classified as asymmetrical. In the literature, people often refer to the languages themselves as symmetrical or asymmetrical (see Bresnan and Moshi 1990, Ngonyani 1996, 1998) but looking at the full range of data this classification is not entirely accurate. As will be seen in this section, some applicative types in certain languages show symmetrical properties while other types in the same language show asymmetrical properties. This mixed behaviour is particularly relevant to the discussion of Wolof applicatives in chapters 3 and 4.

2.1.2.1. Passivization

One test for objecthood is passivization. If an argument can be made the subject of a passive sentence, it behaves like a direct object. In symmetrical applicatives, either object can be the subject of a passive while in asymmetrical ones only one object can be. English, for example, only allows the applied object, *Jill*, to become the subject of a passive sentence (19b). The direct object, *a cake*, cannot be the subject of a passive applicative sentence, (19c); it loses its object properties when the applied object is present.

- (19) a. Mary baked Jill a cake.
 b. Jill was baked a cake (by Mary).
 c. *A cake was baked Jill (by Mary).⁴

Compare this to the prepositional complement sentence in which the theme, *a cake*, can be the subject of a passive and the benefactive object, *Jill*, cannot.

- (20) a. A cake was baked for Jill (by Mary).
 b. *Jill was baked a cake for (by Mary).

In (19), we saw in English that the applied object acts like a direct object rather than oblique objects, while the original direct object, the theme, no longer exhibits object properties as it does in the prepositional complement sentence in (20).

In some languages, however, both objects in applicatives can be the subject of a passive sentence. Kinyarwanda has symmetrical applicatives that allow either object to be the subject of a passive sentence. Example (21a) involves two applied objects, a benefactive *umugabo* ‘man’ and a dative *imbwa* ‘dog’, resulting in a total of three direct objects. Symmetry is shown because the subject position can be filled by any one of the three objects in a passive, as shown in (b-d).

⁴ In certain dialects of English, theme passivization is acceptable.

Active sentence

- (21) a. Umugóre a-rá-hé-er-a umugabo ímbwa ibíryo.
 woman she-PRES-give-APPL-ASP man dog food
 ‘The woman is giving food to the dog for the man.’

Passive - Benefactive subject

- b. Umugabo a-rá-hé-er-w-a ímbwa ibíryo n’ûmugóre.
 man she-PRES-give-APPL-PASS-ASP dog food by.woman
 lit: ‘The man is given food to the dog by the woman.’ (The man benefits from the woman giving food to the dog.)”

Passive - Dative subject

- c. ímbwa i-rá-hé-er-w-a umugabo ibíryo n’ûmugóre.
 dog she-PRES-give-APPL-ASP man food by.woman
 ‘The dog is given food for the man by the woman.’

Passive - Theme subject

- d. ibíryo bi-rá-hé-er-w-a umugabo ímbwa n’ûmugóre.
 food she-PRES-give-APPL-ASP man dog by.woman
 ‘The food is given to the dog for the man by the woman.’

(Kimenyi 1980: 65-66)

As mentioned earlier, I do not classify Kinyarwanda as a symmetrical language because there is variation based on the type of applicative sentence. Locative applicatives do not show symmetrical behaviour like the benefactive applicative in (21). In locative applicatives, only the applied object can raise to subject position (22a). The theme cannot be the subject of a passive sentence (22b).

Passive - locative subject

- (22) a. Umwaana y-a-menn-w-e-ho amaazi n’umubooyi.
 child SP-PST-pour-PASS-ASP-APPL water by.cook
 ‘The water was poured on the child by the cook.’

Passive - theme subject

- b. *Amaazi y-a-menn-w-e-ho umwaana n'umubooyi.
 water SP-PST-pour-PASS-ASP-APPL child by.cook
 'The water was poured on the child by the cook.'

(Zeller and Ngoboka 2006:102)

For this reason, I classify applicative types based on their symmetrical or asymmetrical properties, rather than classifying them by languages. In English, which only have one type of applicative, they are asymmetrical. In Kinyarwanda, benefactive and dative applicatives are symmetrical while locative applicatives are asymmetrical.

2.1.2.2. Pronominalization

The second object property under consideration is the pronominalization of objects using a verbal clitic or affix. In Bantu languages, like the Kinyarwanda example in (23), pronominalization is generally called 'object marking' and involves a prefix (underlined) attached to the verb. The pronominal prefix matches the noun it replaces for noun class.

- (23) a. Umugóre a-rá-bi-he-er-a umugabo ímbwa
 woman she-PRES-it-give-APPL-ASP man dog
 'The woman is giving it to the dog for the man.'
- b. Umugóre a-rá-yi-he-er-a umugabo ibíryo.
 woman she-PRES-it-give-APPL-ASP man food
 'The woman is giving food to it for the man.'
- c. Umugóre a-rá-mu-he-er-a ímbwa ibíryo.
 woman she-PRES-him-give-APPL-ASP dog food
 'The woman is giving food to the dog for him.'

(Kimenyi 1980:66)

Symmetrical applicatives allow both, or all, the objects to be pronominalized using verbal prefixes, as in (23), while asymmetrical applicatives only allow one. For example, in Kiswahili, the benefactive object can be marked but not the theme object.

Kiswahili - Benefactive object agreement

- (24) a. Juma a-li-wa-let-e-a wa-toto mw-alimu.
 Juma 1-PST-1-bring-APP-FV 2-child 1-teacher
 ‘Juma brought the teacher for the children.’ (Ngonyani 1998:84)

Kiswahili - Theme object agreement

- b. *Juma a-li-m-let-e-a mw-alimu wa-toto.
 Juma 1-PST-1-bring-APP-FV 1-teacher 2-child
 ‘Juma [brought] the teacher for the children.’ (Ngonyani 1998:86)

As with passivization, pronominalization shows that Kinyarwanda locative applicatives are asymmetrical. The applied object can be marked on the verb but not the theme.

Kinyarwanda - locative object marking

- (25) a. Umubooyi y-a-mu-menn-ye-ho amaazi.
 cook SP-PST-OM-pour-ASP-APPL water
 ‘The cook poured water on him/her.’

Kinyarwanda - theme object marking

- b. *Umubooyi y-a-ya-menn-ye-ho umwaana.
 cook SP-PST-OM-pour-ASP-APPL child
 ‘The cook poured it on the child.’

(Zeller and Ngoboka 2006:102)

The pronominalization test will show that like Kinyarwanda, Wolof has both symmetrical and asymmetrical applicatives (see chapters 3 and 4).

2.1.2.3. Word Order

Asymmetrical applicatives, like those found in English and Kiswahili, only allow one object, the dative/benefactive object, to appear adjacent to the verb. *Julie* cannot follow *a car* as seen by the ungrammaticality of (26b). The same is true for the benefactive object, *ma-gazeti* ‘papers’, in (27b).

- (26) a. Sally sold Julie a car.
b. *Sally sold a car Julie.

Kiswahili - Benefactive - theme order

- (27) a. Juma a-li-chor-e-a ma-gazeti picha.
Juma 1-PST-draw-APPL-FV 6-paper 10.picture
‘Juma drew pictures for papers.’

Kiswahili - Theme - benefactive order

- b. *Juma a-li-chor-e-a picha ma-gazeti.
Juma 1-PST-draw-APPL-FV 10.picture 6-paper
‘Juma drew pictures for papers.’

(Ngonyani 1998:81)

On the other hand, symmetrical applicatives, as illustrated in the examples below from Kikuyu, allow either object to appear adjacent to the verb. The benefactive object in (28) *ciana* ‘children’ can precede or follow the theme, *mũbira* ‘ball’.

Kikuyu - Benefactive > theme order

- (28) a. Mũ-geni a-ra-gũ-ĩ-ire ci-ana mũ-bira.
1-guest 1SA-PRG-buy-APPL-PF 8-child 3-ball
‘The guest bought children a ball.’

Kikuyu - Theme > benefactive order

- b. Mũ-geni a-ra-gũ-ĩ-ire mũ-bira ci-ana.
 1-guest 1SA-PRG-buy-APPL-PF 3-ball 8-child
 ‘The guest bought a ball for the children.’

(Ngonyani and Githinji 2006:35)

In Kinyarwanda instrumental applicatives either the theme or instrument is allowed to be adjacent to the verb as in Kikuyu but locative applicatives have fixed word order like English and Kiswahili.

Instrumental applicative - theme > instrument order

- (29) a. Umugabo y-a-tem-eesh-eje igiti umuhoro.
 man SP-PST-cut-APPL-ASP tree machete
 ‘The man cut the tree with the machete.’

Instrumental applicative - instrument > theme order

- b. Umugabo y-a-tem-eesh-eje umuhoro igiti.
 man SP-PST-cut-APPL-ASP machete tree
 ‘The man cut the tree with the machete.’

(Zeller and Ngoboka 2006:117)

Locative applicative - locative > theme order

- (30) a. Umubooyi y-a-menn-ye-ho umwaana amaazi.
 cook SP-PST-pour-ASP-APPL child water
 ‘The cook poured water on the child.’

Locative applicative - theme > locative (Zeller and Ngoboka 2006:108)

- b. *Umubooyi y-a-menn-ye-ho amaazi umwaana.
 cook SP-PST-pour-ASP-APPL water child
 ‘The cook poured water on the child.’

(Zeller and Ngoboka 2006:108)

Word order shows that some applicatives in Kinyarwanda are symmetrical (e.g. instrumentals) while others (e.g. locatives) are asymmetrical. A similar pattern will be seen in Wolof applicatives in chapters 3 and 4.

2.1.2.4. Extraction

A third property, A-bar extraction, provides useful information about the objects in applicatives. In English, the theme object *what* in (31a) is questioned, and the sentence is acceptable. In (31b) the sentence's acceptability is degraded when the dative object, *who*, is questioned. Extraction thus shows the English applicative to be asymmetrical, just as we have seen above.

- (31) a. What did you give Julie?
b. ?Who did you give books?

In symmetrical applicatives, either object can be extracted. For example in Kiswahili, the instrument can be questioned as in (32a) or the theme can be questioned like in (32b). The wh-word, *nini* 'what', remains in situ but assuming wh-movement is required at LF for interpretation (Huang 1982), these are still cases of A-bar extraction.

Instrument questioned - Kiswahili

- (32) a. wa-toto wa-li-vunj-i-a nini ch-ungu?
2-child 2-PST-break-APP-FV what 7-pot
'What did the children break the pot with?'

Theme questioned - Kiswahili

- b. wa-toto wa-li-vunj-i-a nini ma-we?
2-child 2-PST-break-APP-FV what 6-rock
'What did the children break with the rocks.?'

(Ngonyani 1998:82)

As with the other object properties, an object's accessibility for extraction sometimes depends on the type of applicative sentence as seen in Kinyarwanda (33) and

(34). Either object can be extracted in dative applicatives. In (33) the theme, *igitabo* ‘book’, has been relativized. In (34), the dative object, *umukoôbwa* ‘girl’ has been relativized.

Kinyarwanda - Theme extracted

- (33) N-a-boon-ye igitabo_i [umuhuungu ya-a-haá-ye umukoôbwa *t_i*].
 SP-PST-see-ASP book boy SP-PST-REL.give-ASP girl
 ‘I saw the book [that the boy gave to the girl].’ (McGinnis 2001:15)

Kinyarwanda - Dative extracted

- (34) N-a-boon-ye umukoôbwa_i [umuhuungu y-a-haá-ye *t_i* igitabo].
 I-PST-see-ASP girl boy he-PST-REL.give-ASP book
 ‘I saw the girl to whom the boy gave the book.’ (Kimenyi 1980:68)

Kinyarwanda locative applicatives, however, do not allow the theme to be extracted, only the locative object. The sentence in (35) is ungrammatical because the theme object, *igitabo* ‘book’, has been relativized while relativizing the locative object in (36), *ishuûri* ‘school’, is grammatical.

Theme extracted from locative applicative - Kinyarwanda

- (35) *y-a-tw-eerets-e igitabo_i [úmwáalímu y-oóhere-jé-ho ishuûri *t_i*].
 SP-PST-OP-show-ASP book teacher SP-REL.send-ASP-APPL school
 ‘He showed us the book [that the teacher sent to school].’ (McGinnis 2001:15)

Locative extracted

- (36) Umugabo y-a-tw-eerets-e ishuûri_i [úmwáalímu y-oóhere-je-ho...
 man SP-PST-OP-show-ASP school teacher SP-REL.send-ASP-APPL

t_i igitabo].
 book
 ‘The man showed us the school to which the teacher sent the book.’
 (Kimenyi 1980:95)

The data once again indicate that both symmetrical and asymmetrical applicatives exist in the same language. Languages are not necessarily symmetrical or asymmetrical. Rather symmetrical or asymmetrical classification is better applied to applicative types themselves.

2.1.3. C-command

A second issue for applicative research is the structural relationships between the objects. Tests sensitive to c-command are often used for exploring structural relationships between items. In applicatives, previous research has shown the objects have an asymmetrical c-command relationship, where one of the objects c-commands the other. Whether the applied object c-commands the theme or vice-versa depends on the language and the type of applicative in question.

Looking at data from quantifier binding in English applicatives, a quantified dative object, like *every worker_i*, can bind an anaphor within the theme (37a) but the theme, *every paycheck_i*, cannot bind an applied dative (37b).

Quantifier Binding - Applicative

- (37) a. I sent every worker_i his_i paycheck. Applied > Theme
 b. *I sent its_i owner every paycheck_i.

In the prepositional complement construction (38), a quantified DO, *every check_i*, can bind an anaphor in the ppIO (38a) but the ppIO, *to every worker_i*, cannot bind a DO (38b).

Quantifier Binding - Prepositional Complement Construction

- (38) a. I sent every check_i to its_i owner. Theme > Applied
 b. ??I sent his_i paycheck to every worker_i.

Similar patterns obtain for other c-command tests (39-48), as shown by Barss and Lasnik (1986) and Larson (1988) (examples taken from Larson 1988:336-338).

Anaphor Binding - Applicative

- (39) a. I showed Mary herself. Applied > Theme

- b. *I showed herself Mary.

Anaphor Binding - Prepositional Complement Construction

- (40) a. I showed Mary to herself. Theme > Applied
b. *I showed herself to Mary.

Weak Crossover - Applicative

- (41) a. Which man_i did you send his_i paycheck? Applied > Theme
b. *Whose_i pay did you send his_i mother?

Weak Crossover - Prepositional Complement Construction

- (42) a. Which check_i did you send to its_i owner? Theme > Applied
b. *Which worker_i did you send his_i check to?

Superiority - Applicative

- (43) a. Who did you give which paycheck? Applied > Theme
b. *Which paycheck did you give who?

Superiority - Prepositional Complement Construction

- (44) a. Which check did you send to who? Theme > Applied
b. *Whom did you send which check to?

Each...the other - Applicative

- (45) a. I showed each man the other's socks. Applied > Theme
b. *I showed the other's friend each man.

Each...the other - Prepositional Complement Construction

- (46) a. I sent each boy to the other's parents. Theme > Applied
b. *I sent the other's check to each boy.

Negative Polarity Items - Applicative

- (47) a. I showed no one anything. Applied > Theme
b. *I showed anyone nothing.

Negative Polarity Items - Prepositional Complement Construction

- (48) a. I sent no presents to any of the children. Theme > Applied
b. *I sent any of the packages to none of the children.

Not all of these tests are amenable to applicatives in other languages. Negative polarity items are not found in all languages, for example. Not all languages show syntactic

superiority effects. Quantifier binding is one test that lends itself well to other languages (Marantz 1993) and is often used in applicative research. I present the relevant data below.

Looking at a range of languages, benefactives and datives typically c-command theme objects, as in the English examples. In Swahili, quantifier binding shows the applied object asymmetrically c-commands the theme. The applied object *kila mwandishi* ‘each other’ binds the anaphor *chake* ‘his’ in the theme object, (49a). The quantified theme in (48b), however, cannot bind the anaphor, *wake* ‘its’, in the applied object.

Quantifier binding - Swahili

- (49) a. Ni-li-m-som-e-a [kila mwandishi]_i kitabu chake_i.
 SP-PST-OP-read-APPL-FV each author book his
 ‘I read each author his book.’
- b. *Ni-li-m-som-e-a [kila kitabu]_i mwandishi wake_i.
 SP-PST-OP-read-APPL-FV each book author its
 ‘I read for its author each book.’

(Marantz 1993:117)

Instrumental applicatives in Kinyarwanda, however, show that the applied object does not always c-command the theme. A quantified theme object, *buri muryango* ‘each door’ in (50a), can bind an anaphor in the applied instrumental object, *rwáwo* ‘its’, but not vice-versa.

Quantifier binding - Kinyarwanda

- (50) a. N-a-fúngul-ish-ije buri muryango_i úrufunguzo rwáwo_i.
 I-PST-open-APPL-ASP each door key its
 ‘I opened each door_i with its_i key.’

- b. *N-a-fúngul-ish-ije umuryano wáyo_i buri rufunguzo_i.
 I-PST-open-APPL-ASP door its each key
 ‘I opened its_i door with each key_j/*i.’

(A. Rutayoberana, p.c., cited in McGinnis 2005:195)

C-command tests show the applied object usually c-command the theme object but there are exceptions, like instrumental applicatives in Kinyarwanda.

2.1.4. Summary

Given the inter- and intralinguistic variation in applicative sentences, it is important to identify which types of applicatives are present in a language (e.g. benefactive, instrumental, locative, etc.), what the properties of the objects are (e.g. symmetrical or asymmetrical), and which object c-commands the other. Applicative do not always show the same properties or c-command, even within the same language as illustrated by Kinyarwanda.

2.2. Syntactic Approaches

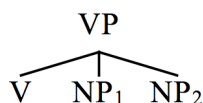
The goal of any formal syntactic analysis of applicatives is to account for the presence of an additional direct object, (e.g. its selection and Case), the objects’ properties (e.g. extraction, passivization, object marking, and word order), and the structural relationship between the objects (e.g. binding, wh-movement, superiority, negative polarity items, reciprocalization and reflexivization). There are many proposals available in the literature to account for applicatives and their properties. I start with a very brief overview of pre-Minimalist approaches to applicatives (traditionally called double object constructions) before turning in more detail to more recent proposals.

2.2.1. Issues in applicative research

What is challenging about applicatives is the presence of an additional object. Starting with a transitive verb, the resulting applicative will have two ‘direct objects’. Starting with an intransitive verb, the applicative will have one direct object. Major questions for

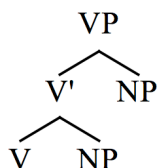
applicative analysis are where is this additional object in the structure and how does it get there. Early generative approaches assumed a ternary structure in which both objects were sisters to each other and the verb (Baker 1988).

(51)

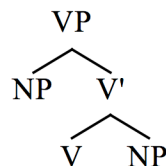


However, a ternary branching structure is problematic for theoretical and empirical reasons. First, developments in Minimalist syntactic theory do not support a ternary branching structure analysis for any type of sentence. Following Kayne (1984), binary branching structures were adopted by many as the only possible type of structure in generative syntax. Binary branching structure prevents both objects from simultaneously being sisters of the verb. One object would necessarily be higher than the other.

(52) a.



b.



Empirical evidence supports a structure in which the objects are not sisters. C-command data show an asymmetry between the two objects. The applied object typically c-commands the theme object, as shown in section 2.1.3. The structure in (51) is ruled out because it predicts mutual c-command between the objects and (52a) is ruled out because it predicts the second object will c-command the first. In English, however, the first object c-commands the second. As for the structure in (52b), the first object c-commands the second, which matches the empirical data but we will see that it is unable to account for applicatives cross-linguistically.

Another issue for applicatives is Case assignment for both objects. If one assumes a transitive verb has only one case, the applicative is problematic since the applied object would then violate the Case Filter. How does the second object receive case, then and escape the Case Filter if the verb has only one Case to assign or in the case of intransitive verbs, if it has no Case at all? The other option is to assume the verb has two Cases to assign, but then the prepositional variant is a mystery. If the verb assigns two Cases, the use of a preposition to provide Case for oblique arguments would be redundant.

Some researchers, like Baker (1988), argue verbs in some languages, like Kinyarwanda, can assign structural Case to two objects. Since the verb can case license both objects, no preposition is needed to give Case to the second object. Verbs in other languages, like English can also assign more than one Case, but one is structural case and the other is inherent case. Under such an account the verb in applicatives assigns structural case to one object and inherent case to the other while the verb in prepositional complement constructions only assigns structural Case to one object and the preposition is inserted to save the second object from the Case Filter. Why the verb sometimes assigns inherent case, resulting in double object constructions, and sometimes does not, resulting in the prepositional complement, is unclear. As we will see below, Marantz proposes an alternative approach involving an additional verbal head that can introduce and license the applied object, which avoids arbitrary stipulations of Case assignment.

2.2.2. Marantz

Marantz (1993) is one of the first linguists to propose that applied objects are not introduced by the lexical verb but by a light verb (what I will call a functional head) called Appl. The motivation for this separate projection in the structure of applicatives is to capture the difference in semantic affectedness between the applied and theme objects. In his book on grammatical relations (1984), he shows the asymmetry between the dependency of objects and subjects. Changing the object changes the event described as seen in (53) (examples from Marantz 1984:25).

- (53)
- a. throw a baseball
 - b. throw support behind a candidate
 - c. throw a boxing match (i.e. take a dive)
 - d. throw a party
 - e. throw a fit

Marantz argues that the event designated by a predicate is defined in combination with the theme object. Assuming the verb is alone in depicting an event, one would expect the events in all of the sentences in (53) to be the same, which is not true. *Throwing a baseball* involves propelling a baseball through the air by use of one's arm, a very different event from *throwing a fit*. *Throwing a fit* describes a person who is expressing dissatisfaction in a conspicuous manner. These examples show event meaning is derived compositionally. Marantz claims that a verb, such as *throw*, *take*, or *kill*, is underspecified as to the event described until it merges with the object.

The same cannot be said of subjects. Changing the subject has little effect on the semantic role assigned to the object, as can be seen in (54). Unlike (53), the 'NP' in each sentence has the same semantic role even though the subject has changed. In each example, 'NP' is being propelled through the air by the subject (examples from Marantz 1984:26).

- (54)
- a. The policeman threw NP.
 - b. The boxer threw NP.
 - c. The aardvarks throw NP.
 - d. Throw NP!

The merge order of arguments therefore depends directly on the semantic composition of the event.

Marantz points out in a later article (1993) that applied objects pattern with subjects in regard to this asymmetry rather than with objects. The semantic role of the theme object does not change when the applied object is varied. In both of the following

examples, the ‘NP’ is cooked by being placed in an oven. The event remains unchanged in (55b) even though the sentence is pragmatically odd, given that the rock is the recipient and beneficiary of the baked NP.

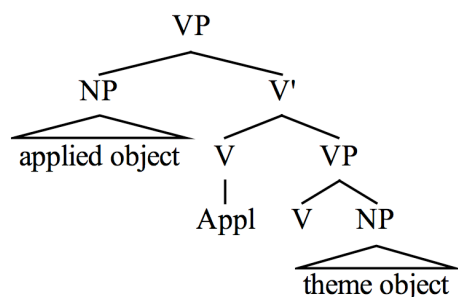
- (55) a. I am baking Mary NP.
b. I am baking the rock NP.

Marantz concludes the applied object, unlike the theme, is not involved in defining the event. Instead, it helps identify and distinguish the event in question from other events of the same type. The addition of an applied object does not change the event class, say from baking bread to baking something else, it just identifies a specific instance of the event within that class via Event Identification. For example, if the NP in (55) is bread, then both cases represent a specific instance of baking bread. Adding the applied object, *Mary* or *Sally*, helps to exclude the other cases of bread baking in the model so that one can be identified.

It is Marantz’ assertion that the semantic composition of the event and the affectedness of objects is directly reflected in the syntactic structure of a sentence. Rather than using a mapping principle like the Uniform Theta Assignment Hypothesis (UTAH) (Baker 1988), merge order is determined by the sequential affectedness of the object. The theme is affected within the event and an applied object is affected outside the event. The applied object must be added after the theme object because it is affected later in the semantic derivation. Translating the semantic composition of the event to syntax, elements ‘merging later’ semantically merge higher in the syntactic structure according to Marantz.⁵ This means the theme merges before the applied object.

⁵ Marantz actually assumes the theme object is generated in the specifier position of the minimal VP, not the complement as shown here. However, the difference between complement and specifier disappears in Bare Phrase Structure. In the tree, the theme is the daughter of VP, so in some sense it is the specifier.

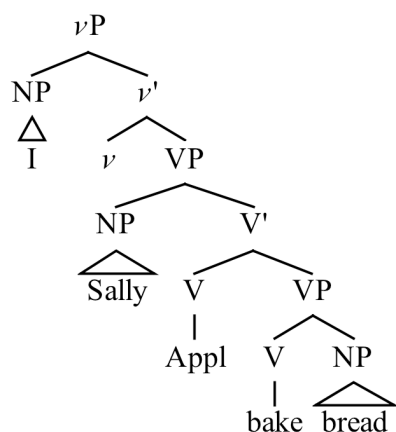
(56)



Building off the principle of Semantic Compositionality, Marantz proposes the applied object is introduced by a second functional head or light verb named Appl that functions to relate the new object to the event.

The example in (55) would therefore have the structure given in (57).

(57)



Marantz' Semantic Compositionality approach captures the event semantics directly in the syntax without the need for a mapping principle between a semantic/thematic representation and the syntactic representation such as UTAH (Baker 1988) and a stipulatory thematic hierarchy (see Baker 1996, Kirparsky 1987, Machobane 1989, Jackendoff 1977, Grimshaw 1990, and Larson 1988).

While this approach accounts for most examples of applicatives, Marantz mentions that instrumental and locative objects in some languages show opposite c-command relations than benefactive and dative applicatives. Remember from 2.1.3. that in Kinyarwanda, a quantified theme c-commands an applied instrumental object (repeated from 50a).

- (58) a. N-a-fúngul-ish-ije buri muryango_i úrufunguzo rwáwo_i.
 I-PST-open-APPL-ASP each door key its
 ‘I opened each door_i with its_i key.

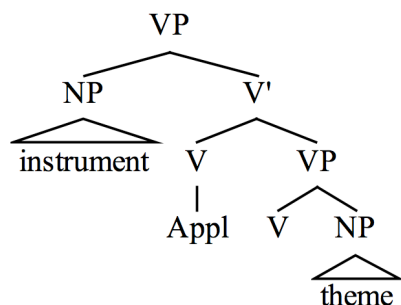
(A. Rutayoberana, p.c.; cited in McGinnis 2005:195)

Marantz argues that instrumental and locative objects are affected differently than benefactive or dative objects. Since both instrumental/locative and theme objects are affected within the event as opposed to being affected *by* the event like benefactive objects, either the applied object or the theme can merge first. He proposes the following to account for the alternative merge order in instrumental and place locative applicatives.

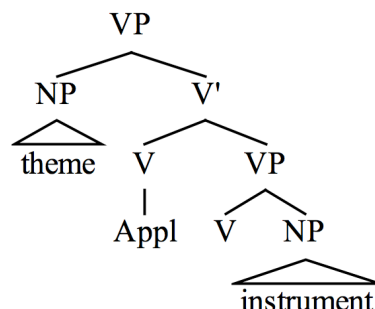
“Affected object benefactives are compositionally outside the event constructed by the verb and theme/patient; affected object instruments and place locatives are affected inside this event and thus may be compositionally inside or outside the combination of the verb and theme/patient (1993:123-124).”

Allowing the instrument to merge before the theme, as shown in (59), solves the problems of word order and c-command in instrumental applicatives, but it necessitates that the theme be selected by Appl, and lie outside the event defined by the minimal VP, as seen in (59b).

(59) a.



b.



However, merging the theme outside the minimal VP is precisely what Marantz argues against in 1984 when he showed themes have a much closer relationship to the verb than subjects and applied objects, such as benefactive objects. Even assuming instrumental and locative objects are affected by the event differently than benefactive objects, as Marantz does, the placement of the theme is still problematic. If the theme can appear in the same position as the VP-external objects like datives and benefactives, then the asymmetry between applied objects and direct objects explained above would be mysterious (see example 55).

Marantz is not the only researcher to argue that instrumental and locative objects are similar to themes (Gruber 1965, Jackendoff 1987, Gropen et al. 1991). Looking however at how instrumental and locative objects behave in the subject/object dichotomy, they fall somewhere in between, not fully behaving like subjects and benefactive applied objects but not like theme objects either. Changing the instrument or place locative object, for example, does not change the event described or the semantic role of the theme object, whatever it may be. The 'NP' in both (60) and (61) is propelled through the air regardless of how the action was initiated or where it occurred.

(60) a. I threw NP with a ball launcher⁶.

b. I threw NP with my hand.

⁶ A ball launcher is used to increase the throwing range of a ball, typically when playing with dogs.

- (61) a. I threw NP in the park.
 b. I threw NP at the stadium.

So instruments and locatives don't look like themes for event composition, but they can incorporate into adjectival passives, unlike benefactive and dative (goal) objects which distinguishes them from VP-external objects (examples from Marantz 1993:147).

- (62) a. hand-made cookies *instrument*
 b. spoon-fed children *instrument*
 c. home-made cookies *locative*
 d. *children-baked cookies *benefactive*
 e. *boss-given flowers *goal/benefactive*

Assuming the instrument or locative can merge before the theme because it is sequentially affected before the theme leads one to expect it should act like a theme. In the same logic, if the theme merges outside the initial event, or the minimal VP in syntactic terms, then it should behave like a benefactives and datives. Merging instruments (and locatives) in different positions fails to capture their in-between nature. Despite this problem, Marantz' intuitions about themes and applied objects are valuable and will be considered in greater depth in section 2.4. and again in chapter 4.

2.2.3. Pylkkänen

Pylkkänen (2002, 2008) expands Marantz' analysis of applicatives. She agrees that argument structure, and ultimately object position, stems directly from the semantic composition of the event. Nonetheless, she shows there is a split in the syntactic and semantic behaviour of applicatives cross-linguistically that a single Appl position is unable to capture. First, in some languages (e.g. Venda), applicatives are compatible with unergative verbs, while in other languages, they are only compatible with certain transitive verbs, like English (examples from Pylkkänen 2008:2).

Venda

- (63) Mukasa o-amb-el-a Katonga.
 Mukasa 3SG.PST-speak-APPL-FV Katonga
 ‘Mukasa spoke for Katonga.’

English

- (64) *Mary spoke Sue.
 Intended meaning: ‘Mary spoke for Sue.’

Second, in some applicatives, the applied object is semantically related to the event while in others, the objects are related to each other. In the Chaga example below, the applied object *mkà* ‘wife’ is not related to the theme object *kélyá* ‘food’. Instead, the applied object is related to the event of eating food. Contrast this with the English example, in which *Bill* is in some way related to *a letter*, in this case the ultimate possessor of the letter.

Chaga

- (65) N-a-i-lyì-í-à m-kà k-élyá.
 FOC-1SG-PRES-eat-APPL-FV 1-wife 7-food
 ‘He is eating food for his wife.’ (Pylkkänen 2008:11)

English

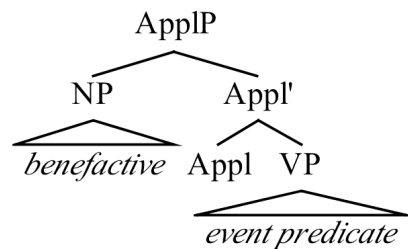
- (66) I wrote Bill a letter.

Pylkkänen points out that *mkà* ‘wife’ cannot enter into a relation with the object *kélyá* ‘food’. The wife benefits from her husband eating the food but she cannot, for example, possess the food. In the English example, *Bill* does not simply benefit from the action of me writing a letter. I must intend that *Bill* receives the letter.

Assuming a single position in which the “extra” object is generated, which Marantz does, does not explain the clear split in applicatives. Pylkkänen proposes that, in addition to Marantz’ Appl, which she calls High Appl, there is a second type of Appl,

Low Appl. High Appl relates an individual with an event and takes the VP as its complement and the applied object in its specifier. Being above the VP, High Appl is not sensitive to the transitivity of predicates and is compatible with both unergative and transitive verbs. This is the type of applicative seen in the Venda and Chaga examples, (63) and (65) respectively.

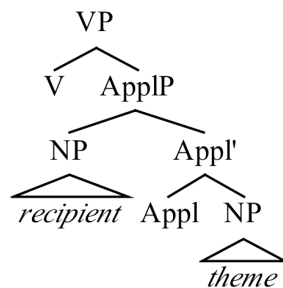
(67) High Appl



On the other hand, Low Appl relates an individual to an individual, encodes a *transfer-of-possession* interpretation and is found within the minimal VP below the lexical verb. Low Appl is not compatible with an unergative predicate because it relates two individuals and unergative verbs do not have a theme to which the applied object can be related.

Pylkkänen also argues that low applicatives always have a transfer-of-possession of the theme either to or from the applied object. This means Low Appl will only be compatible with verbs which allow a possessive interpretation. Pylkkänen cites English applicatives as an example of Low Appl.

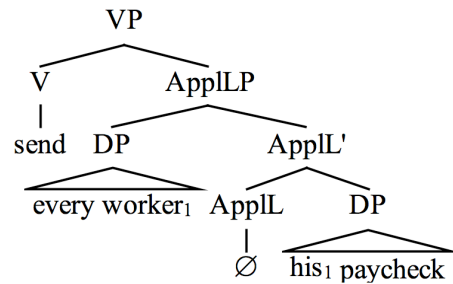
(68) Low Appl



As for the c-command properties seen in applicatives, High and Low Appl structures both account for the fact that applied objects asymmetrically c-command theme objects, as seen in many languages. Whether Appl is below the lexical verb or above it, the applied object is always in the higher position and c-commands the theme object. Low Appl structure is shown using English (69) and High Appl structure is shown using Swahili (70).

Low Appl - English (repeated from 37)

- (69) a. I sent every worker_i his_i paycheck.
 b. *I sent its_i owner every paycheck_i.
 c.

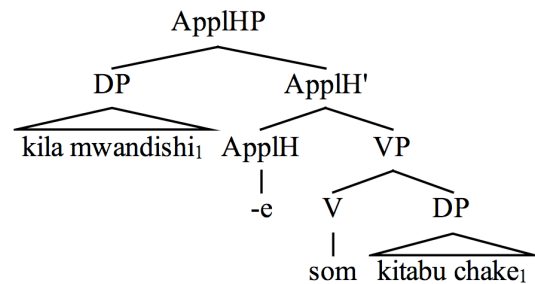


High Appl - Swahili (repeated from 48)

- (70) a. Ni-li-m-som-e-a [kila mwandishi]_i kitabu chake_i.
 SP-PST-OP-read-APPL-FV each author book his
 'I read each author his book.'
- b. *Ni-li-m-som-e-a [kila kitabu]_i mwandishi wake_i.
 SP-PST-OP-read-APPL-FV each book author its
 'I read for its author each book.'

(Marantz 1993:117)

c.



The High/Low Appl Theory accounts for the typological split in applicatives, whether they are compatible with unergative predicates or not, and the word order and c-command properties exhibited by benefactive and dative applicatives.

Although insightful, High and Low Appl are not able to account for the full range of applicatives. Instrumental applicatives, noted earlier (see section 2.1.3), show the theme c-commands and precedes the instrument which is the opposite pattern of what High and Low Appl predict. Recall that Marantz proposes that the theme and the applied instrument may merge in either order. This is not an assumption Pylkkänen makes. An applied object must be generated in the specifier of the Appl phrase, whether Low or High.

Given instrumental and locative applicatives are compatible with intransitive predicates, she assumes they are high applicatives.

Kindendeule Instrumental

- (71) a-ki-tyang-i hi-latu.
 1-PST-walk-APPL 8-shoe
 ‘He walked with shoes.’

(Ngonyani 1998:72)

Kindendeule Locative

- (72) Yesu a-ki-hwel-e ku-Golgota.
 Jesus 1-PST-die-APPL 15-Golgota
 ‘Jesus died at Golgota.’

(Ngonyani 1998:73)

The problem with this approach is that in a High Appl structure, the instrumental object is predicted to precede and c-command the theme object, contrary to what is seen. The instrument *icyúuma* ‘knife’ follows the theme *inyama* ‘meat’ in (73).

Instrumental applicative - Kinyarwanda

- (73) Umubooyi a-ra-kat-iish-a inyama ícyúuma.
 cook she-PRES-cut-APPL-ASP meat knife
 ‘The cook is cutting meat with a knife.’ (Kimenyi 1980:32)

Kinyarwanda (sentence repeated from 49b)

- (75) b. N-a-fúngul-ish-ije umuryano wáyo*_{i/j} buri rufunguzo_i.
 I-PST-open-APPL-ASP door its each key
 ‘I opened its_i door with each key_j/*_i.’

Additionally, the obligatory nature of such a shift remains mysterious. Nothing in the High/Low Appl Theory explains why instruments would have to appear to the right while benefactive and dative objects can stay to the left or optionally move to the right.

In sum, neither a High nor Low Appl analysis accounts for the properties of instrumental and locative applicatives. I argue in chapter 4 that they involve a third, new type of applicative head. The problem of instrumental and locative applicatives is picked up by McGinnis (2005).

2.2.4. McGinnis

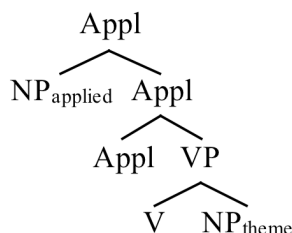
McGinnis (2005) builds off of Pytkänen’s (2002) High and Low Appls, assuming they are responsible for applicative formation, but arguing that High Appl can merge either up or down.⁷ She shows that problematic instrumental and locative applicatives in some Bantu languages can be accounted for using High Appl if it merges downward with the VP.

McGinnis proposes that derivations proceed outward, starting with the verb. Elements can merge up or down depending on their lexical specification. She argues that allowing syntactic items to merge up or down does not violate UTAH. For McGinnis, UTAH is not a constraint on representations but a condition on External Merge.

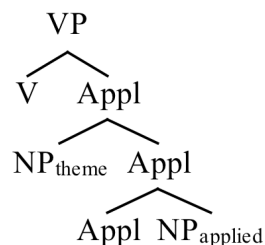
⁷ Downward Merge is based on work by Philips (2003). Philips argues that syntactic derivations proceed top-down, based on data from constituency tests. While intriguing, a top-down approach to syntax, in which successive elements merge downward from the previously established node, is problematic because it does not match with generative theories of semantic derivation, including Semantic Compositionality and UTAH which are based on a bottom up derivation. Major works on the semantic nature of argument structure (Marantz 1993, Kratzer 1996, and Pytkänen 2008) assume a bottom-up derivation beginning with the predicate.

McGinnis (2005) notes the recent movement away from predefined phrase structures in Minimalist theories. Thematic relations between items are defined at Merge depending on the nodes involved and not sisterhood relations in the completed structure. Under McGinnis' conception of UTAH, the thematic role of an object doesn't depend on its final syntactic position in a structural representation but on the node with which it merges. Two elements can merge without necessarily becoming sisters. The figure in (76a) shows the representation of Appl that has merged upward with the VP. The figure in (76b) shows the representation of Appl that has merged downward with the VP.

(76) a.

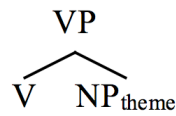


b.

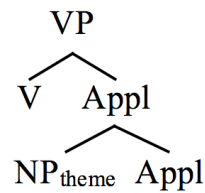


The NP_{theme} receives the theme role because it merges with V in both cases. This relationship is obvious in (76a) but more opaque in (76b) since the subsequent merge of the Appl head leads to a reanalysis of the structure; the NP_{theme} becomes the specifier of Appl. To illustrate this, the first step of the derivation of (76b) is given in (77a). The NP merges with the verb and is assigned the theme theta role. In the next step, illustrated in (77b), Appl merges with the VP. However, since the VP already has a complement, something has to move in order to allow Appl to merge down. Appl takes the place of the NP_{theme} and subsumes it in its specifier. In the last step, shown in (76b), the applied object has merged downward with Appl placing it below the theme object. The original relationship created by the merge of V + NP_{theme} is not broken by the reanalysis and so the NP remains a theme even though it is no longer the sister of V.

(77) a.



b.



Since Appl merges outside the VP, its object is generated outside of the event as shown in (76b). Although the final structure in (76b) looks like the structure of Low Appl, the downward merging High Appl does not relate two individuals like Low Appl does. It relates an individual to an event by merging with the VP and introducing an object. Moreover, unlike Low Appl, this Appl is insensitive to the transitivity of the predicate.

Dative applicatives are not the focus of the article, but McGinnis does assume they are formed using Low Appl. As will be shown in the next section, this assumption is problematic because Low Appl is unable to account for floating quantifiers in dative applicatives.

2.2.5. Georgala

Another proposal that builds off of Marantz' Appl Theory and Pykkänen's Theory of High/Low Appl, but in a different direction than McGinnis, is the Thematic/Raising Applicative Hypothesis by Georgala (2012). She argues that Low Appl cannot account for several particular properties of dative applicatives. She adopts High Appl as proposed by Pykkänen but argues that Low Appl be rejected. The main motivation for rejecting Low Appl is that it fails to account for floating quantifiers in dative applicatives.⁸ In the following example from Mandarin, the dative object *háizimen* 'children' precedes the quantifier *měi-rén* 'every' even though the quantifier scopes over the dative object.

⁸ Georgala also uses the false entailments that Low Appl leads to, as pointed out by Larson (2010) and morphology to motivate rejection of Low Appl. I will discuss Larson's criticism in 3.4 in greater detail. Data from floating quantifiers suffice for the current discussion.

Chinese - Floating quantifier

- (78) Wǒ sòng-gěi háizimen [měi-rén] [yībǎi kuài qián].
 1SG give-GEI children every(one) 100 CL dollar
 ‘I gave the children each 100 dollars.’

(Paul and Whitman 2010:279)

Georgala also cites an example from German in which the dative object appears to the left of an adverb merged at the VP level. Assuming the adverb *heimlich* ‘secretly’ is at the left edge of VP, then it provides evidence that the dative object *den Studenten* ‘the students’ is outside of the VP.

- (79) Der Hiwi hat den Studenten _{VP}[heimlich
 the.NOM teaching.assistant has the.DAT students.DAT secretly

_{VP}[einen alten Test ausgeteilt].
 an.ACC old.ACC quiz.ACC distributed
 ‘The teaching assistant secretly distributed an old quiz to the students.’

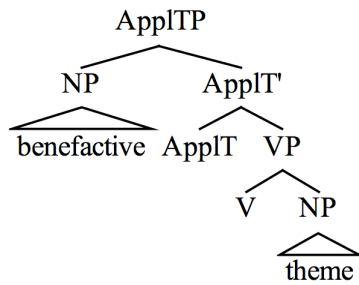
(Georgala 2012:74)

The floating quantifier in (78) and the adverb placement in (79) are difficult to explain assuming a Low Appl structure. How does the dative object end up outside the minimal VP?

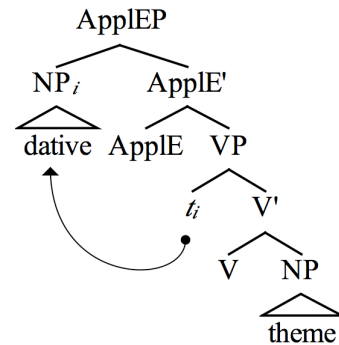
Instead of Low Appl and High Appl, she proposes two Appls that merge in the same position, as the sister to VP. The result is a single applicative structure reminiscent of Marantz (1993) but two heads differing for selectional properties, which explains the division of applicatives into two groups, reminiscent of Pylkkänen’s approach (2008). Georgala calls the two types of applicatives Thematic and Raising. The head in thematic applicatives is called Thematic Appl (ApplT) and the head in raising applicatives is called Expletive Appl (ApplE). ApplT is equivalent to High Appl; it relates an individual to an event. It does this by selecting the applied object and linking it with the VP in its complement. Raising applicatives involve an expletive head, ApplE and has no semantic

content, unlike ApplT. Rather, in raising applicatives, the dative object is selected by the verb. It is the verb that relates the dative object to the theme object. The dative object then moves to the ApplE projection for licensing.

(80) a. Thematic Applicative



b. Raising Applicative



This means that in raising applicatives, the object is not truly *applied* to the predicate in the same sense as thematic applicatives. Nonetheless, datives are still considered applicative structures because they contain an Appl head, ApplE. Dative applicatives, including goals, recipients, and sources, are raising applicatives and the other types of applicatives are thematic according to Georgala. Two examples from Greek are provided below.

Greek Dative - Raising applicative

- (81) O Nikos edhose tis Marias ena vivlio.
 the.NOM Nick.NOM gave.3SG the.GEN Mary.GEN a.ACC book.ACC
 'Nick gave Mary a book.'

Greek Benefactive - Thematic applicative

- (82) O Nikos fitepse tis Marias luludhia ...
 the.NOM Nick.NOM planted.3SG the.GEN Mary.GEN flowers.ACC
 'Nick planted flowers for Mary...(in the garden.)'

(Georgala 2012:104)

While these two sentences appear to be similar on the surface, the motivation for adopting two derivations instead of one comes from semantic differences and the position of floating quantifiers. Greek dative applicatives are argued not to be thematic like benefactive applicatives, but rather raising applicatives because they show the properties of low applicatives such as the transfer of possession between the objects and are only compatible with transitive predicates (Georgala 2012). In raising applicatives, the objects have an underspecified relationship resulting from their positions in the complement and specifier of V. The transfer of possession interpretation itself comes from the lexical semantics of the verb. As a result, raising applicatives are only possible with verbs that are compatible with or encode a transfer of possession.

Benefactives, on the other hand, do not show the properties of low applicatives and are not limited to verbs with transfer of possession semantics. They are compatible with intransitive and stative predicates as well as transitive predicates indicating they are not selected by the verb.

Stative predicate + benefactive applicative

- (83) Borite na kratisetē tis Marias afto to forema...
 can.2PL to keep.2PL the.GEN Mary.GEN this.ACC the.ACC dress.ACC
 'Can you keep this dress for Mary...(until tomorrow?)' (Georgala 2012:106)

The compatibility with intransitive and stative predicates motivates a thematic applicative analysis. Raising applicatives are not compatible with these predicates.

Returning now to examples of floating quantifiers in dative applicatives, this phenomenon is easily accounted for by a raising applicative analysis. In the following example from Greek, the dative object, *tus pelates* 'the customers' is modified by a floating quantifier, *olus* 'all'.

Thematic Appl falls victim to the same problems as High Appl, not surprisingly, since they are structurally the same. The instrumental object cannot be added such that the theme c-commands it and thus the structure fails to explain instrumental applicatives in languages like Kinyarwanda. Raising applicatives have the same problem as the position of Appl is the same so it cannot account for the theme c-commanding the instrument either. Raising Appl encounters another problem with instrumental and locative applicatives: it fails to account for the compatibility of instrumental and locative applicatives with intransitive predicates.

2.2.6. Summary

The approaches presented in this section have much to offer in the way of analyzing applicative sentences. However, certain applicatives resist explanation for each analysis. Marantz's (1993) approach captures the problematic instrumental data but raises theoretical issues like allowing the theme to be generated in the same position as the applied object. If the theme can be generated outside the VP, then a syntactic explanation of the difference between core objects and external objects disappears. Identifying the need for more than one applicative structure is a major step forward, but Pylkkänen's High and Low Appl structures (2008) fail to account for the instrumental data from Kinyarwanda and other similar data. Additionally, the definition of Low Appl is also problematic (Larson 2010). The final problem with the High/Low Applicative analysis is that neither Low Appl nor High Appl are able to capture the phenomenon of floating quantifiers in dative applicatives (Georgala 2012). McGinnis (2005) extends Pylkkänen's analysis by arguing that High Appl can merge downward with the VP. This modification does capture the word order and c-command effects seen in Kinyarwanda instrumental applicatives but is not able to account for dative applicatives. While not the focus of the article, McGinnis does assume Low Appl is used in dative applicatives, which is problematic as Georgala (2012) and Larson (2010) point out. Georgala successfully accounts for dative applicatives and floating quantifiers with the Raising Applicative

analysis. However, again, instrumental applicatives remain problematic. Before outlining my proposal for Wolof applicatives, I turn to previous work done on Wolof applicatives.

2.3. Existing work on Wolof applicatives

Many works on Wolof focus on clause structure, as mentioned in Chapter 1. Here I present previous works that touch on applicatives in Wolof. Nougulier-Voisin (2002) and Creissel and Nougulier-Voisin (2004) focus on valency changing suffixes including applicatives. While they provide ample data and description of Wolof applicatives, they focus their analyses on the historical development of these sentences and their morphology. Schwartz (1975) does not focus on applicatives in his article, but he does present many applicative sentences and discusses different object properties. Dungian's doctoral thesis (1994), which examines the clause structure of Wolof, describes and analyzes applicatives in chapter 6. Dione (2013) treats Wolof causative and applicative polysemy in the Lexical Function Grammar framework. I focus on formal analyses of Wolof applicatives so I discuss only Schwartz, Dunigan, and Dione's works below.

2.3.1. Schwartz 1975

Schwartz looks at the properties of objects in Wolof and argues based on certain tests that Wolof does not have a direct object. The tests he uses are properties commonly associated with the direct object of a transitive verb like post-verbal position, case-marking, passivization, object incorporation, etc. What he finds is that these "direct object properties" can be associated with either the DO (what I call the theme) or the IO (what I call the applied object) in double object constructions. Given that there is not one object alone to which direct object properties can be ascribed, he argues there is no direct object in Wolof. Though this assertion has not been supported by later works on Wolof, the data he provides is useful for exploring applicatives. One drawback to this article is that the

dialect of Wolof is not specified. As will be seen in chapters 3 and 4, the speakers consulted for this thesis often had different intuitions about Schwartz' sentences as to their meaning and grammaticality.

Schwartz shows that DO and IO object in Wolof show symmetrical behaviour in relation to their properties. He ascribes both objects with the following properties: position of applied object (verbal adjacency), pronominalization of the objects, reflexivization, clefting, and topicalization (tests not relatable to applicatives are not included). The majority of data come from dative applicatives. Instrumental, locative, and benefactive applicatives are assumed by Schwartz to behave the same.

Table 1. Object properties exhibited by DO and IO in Wolof					
	position	pronominalization	reflexivization	clefting	topicalization
DO	✓	✓	✓	✓	✓
IO	✓	✓	✓	✓	✓

The property “position” refers to the ability of the object to appear adjacent to the verb. In Wolof, either the DO or the IO can immediately follow the verb. Pronominalization means that both the DO and IO are replaced with the same form of the object and interrogative pronouns. As for reflexivization, he refers to the ability of the DO and IO to be a reflexive pronoun. As for clefting and topicalization, both the DO and IO can be fronted. While Schwartz interprets this to mean that there is no single DO in Wolof since the properties can be ascribed to NPs with different theta roles (recipient, benefactive, instrument, or locative), we now know this behaviour is precisely what is seen in symmetrical applicatives. As will be illustrated in chapter 4, however, not all applicatives in Wolof are symmetrical.

2.3.2. Dunigan 1994

In chapter 6 of her dissertation, Dunigan (1994) describes four types of Wolof applicatives: dative, benefactive, instrumental, and locative. She also notes some of these

constructions are inherently ditransitive, requiring no applicative morphology (86 and 87), while others are lexically transitive and require an applicative suffix to be grammatical (88-89).

Dative applicative

- (86) Faatu jox-na yaay-am guru gi.
 Fatou give-AFF.3SG mother-POSS.3SG kola.nut DEF
 ‘Fatou gave her mother the kola nut.’ (Dunigan 1994:237)

Locative applicative

- (87) Faatu gunge-na xale bi seen ker.
 Fatou accompany-AFF.3SG child DEF POSS.3PL house
 ‘Fatou accompanied the child to their house.’ (Dunigan 1994:238)

The number of verbs that are inherently ditransitive in Wolof is limited. Only dative applicatives and at least one locative applicative allow two objects with no additional morphology on the verb. The majority of applicative sentences in Wolof, however, do require an applicative morpheme. The suffix that allows benefactive objects is *-al*. In benefactive applicatives, the benefactive precedes the patient.¹⁰

- (88) Faatu sampa-**al**-na yaay-am ker.
 Fatou build-**APPL**-AFF.3SG mother-POSS.3SG house
 ‘Fatou built her mother a house.’ (Dunigan 1994:238)

The applicative suffix for instrumental and most locative applicatives has the form *-é*.¹¹ Dunigan notes that the order of the objects differs from the benefactive example. In instrumental applicatives, the patient precedes the instrument.

¹⁰ Dunigan refers to the original direct object as the ‘patient’. I use the term ‘theme’ in my analysis but for now, the two terms are treated as equivalent.

¹¹ Dunigan spells the suffix with the accent *-é*. Some orthographies spell it without the accent. The latter spelling will be adopted in chapters 3 and 4.

- (89) Xale bi bindd-é nē letar bi estilo.
 child DEF write-APPL AFF.3SG letter DEF pen
 ‘The child wrote the letter with a pen.’

(Schwartz 1975:226, cited from Dunigan 1994:239)

Dunigan cites the instrumental example, given by Schwartz (1975) in his article on direct objects in Wolof, but notes that her consultant, a speaker of Banjul Wolof, rejected the sentence in (89). Her consultant only accepted sentences in which the instrument was contained in a prepositional phrase. The presence of the applicative suffix *-é* in conjunction with the preposition is optional (90).

- (90) Gaan(-é) na Modu ak paaka.
 wound(-APPL) AFF.3SG Modu with knife
 ‘He/she wounded Modu with a knife.’ (Dunigan 1994:239)

The use of the instrumental *-e* suffix will be discussed in more detail in chapter 4. As for morphologically derived locative applicatives, Dunigan does not cite any examples but does mention they exist.

After providing a description of basic applicative sentences, Dunigan compares the object properties of each type. Her findings are summarized in the following chart. Dunigan presents data that all four types allow alternate word order for the objects.¹² However, she does conclude that default word order for benefactive and dative applicatives is *applied object - theme object* and the default order for instrumental and locatives is *theme object - applied object*. Benefactive and dative applicatives allow both objects to be replaced by an object marker, *wh*-moved, or a combination of those two properties. Instrumental and locative applicatives are only shown with the instrumental and locative objects undergoing object marking and *wh*-movement so it is unknown if the theme object also shares these properties.

¹² It will be shown in chapter 4 that this is not true of instrumental and locative applicatives for Saint Louis speakers which is the focus of this dissertation.

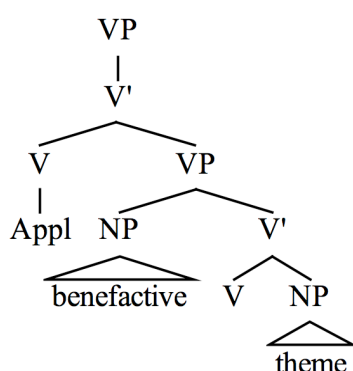
Table 2: Object properties as described by Dunigan 1994

	Benefactive	Dative	Instrumental	Locative
Preferred word order	BEN > PAT	REC > PAT	PAT > INST	PAT > LOC
Alternate word order	✓	✓	✓	✓
Object marker	BOTH	BOTH	INSTR*	LOC*
Wh-movement	BOTH	BOTH	INSTR*	LOC*
Object marker with wh-movement	BOTH	BOTH	NO DATA	NO DATA

*No examples in which the patient was object marked or wh-moved were given.

The analysis Dunigan adopts for Wolof builds off of Larson (1988) and Aoun and Li (1989)'s work on applicatives in English. She assumes a complex predicate structure involving two verbal phrases as Larson proposed (1988) but she assumes the objects are base generated in their surface structure positions following Aoun and Li (1989). She adopts Marantz' Semantic Compositionality and assumes the applied object merges higher than the theme but does not assume the applied object is introduced by the second verbal head. Instead, she generates it within the minimal VP.

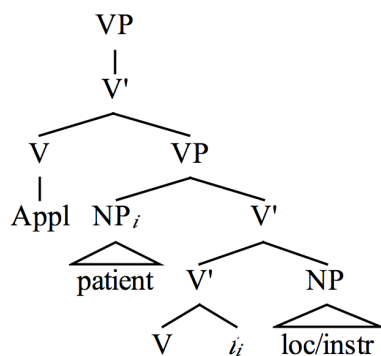
(91)



As for cases of non-default word order in benefactive and dative applicatives, she assumes the higher (applied) object is demoted to an V'-adjunct position to the right of the verb. This is similar to the rightward adjunction proposed for Bantu languages.

The structure for instrumental and locative applicatives is similar to the one seen above except that the applied object in instrumental and locative applicatives is generated as a V'-adjunct. The theme moves to the specifier of VP and the lower V' gets reanalyzed¹³ as a V and assigns case to the applied object.

(92)



This second structure is proposed for instrumental and locatives in order to account for the word order of instrumental and locative applicatives, which is inverted from benefactive and dative applicatives. As for cases of the non-default word order, they results from the locative or instrumental object moving to the specifier of VP while the theme stays in the V complement position. Dunigan does not assume, as Marantz does, that an applied instrumental or locative object can merge as the sister of V. The theme always merges in that position.

The symmetrical properties of all types of applicatives results from both objects being assigned their theta role and case by the lexical verb. Since both get case from the

¹³ For more on V' reanalysis in applicatives see Larson 1988.

lexical verb, Dunigan assumes they both receive the same case, accusative. It is the accusative case that allows them to be object marked and wh-moved.

2.3.3. *Dione 2013*

Dione describes and analyzes applicative and causative sentences in Wolof from the perspective of Lexical Functional Grammar (LFG). His goal is to provide an analysis of the effect of these affixes on argument structure and to highlight the differences between causatives and applicatives despite the identical morphology.

Dione shows that beneficiary and recipient applicatives are obligatory, meaning objects with these roles are expressed only as an applied object in applicative sentences and cannot appear in prepositional phrases. The other remaining types are optional applicatives because they can be expressed using a prepositional phrase or as an applied object. As for object properties, he argues benefactives must be adjacent to the verb and are the non-restricted object. Instrumental applied objects must follow the theme and are restricted. We will see in chapter 3, that the data I present don't completely match his.

He analyzes applicatives as complex predicates with the following (LFG) a-structure.

- (93) Applicatives a-structure:
 'PRED₁<%PRED, ARG>'
 ARG: any semantic role
 introduced by the applicative

The notation %PRED stands for "a variable to be filled in by a predicate's a-structure of the non-derived verb (Dione 2013)". Within this structure, he proposes four distinct types of a-structures for applicatives.

His goals are somewhat different than mine, given the framework. He is interested in argument structure while I am interested in syntactic structure, in particular, the c-command relationship between the theme object and the applied object. As such, it makes

comparing approaches very difficult. However, I do agree with him that different analyses are required for the different types of applicatives.

In the following chapters, I adopt a generative approach to applicatives following Dunigan, Marantz, Pytkänen, McGinnis and Georgala. We will see that a more fine-grained approach to applicatives is needed. I now turn to a sketch of the analyses that will be proposed in chapters 3 and 4.

2.4. Theoretical Assumptions

In what follows, I adopt the Minimalist Program within Generative Grammar (Chomsky 1993, 1995, 2000). I assume Bare Phrase Structure, which means I assume vacant positions are not projected, contra X-bar theory. I also reject a syntax that is strictly built from the bottom up (Kratzer 1996, Chomsky 1995, 2000), adopting instead a syntax that is built from the verb outward (McGinnis 2005). This means that new items can merge either up or down. I follow the Minimalist Program in assuming Merge can only take place at the highest node. Put differently, Merge takes place at the most recently generated node. The distinction in terminology between ‘highest node’ or ‘most recently generated node’ will be particularly relevant for the discussion of oblique applicatives in chapter 4.

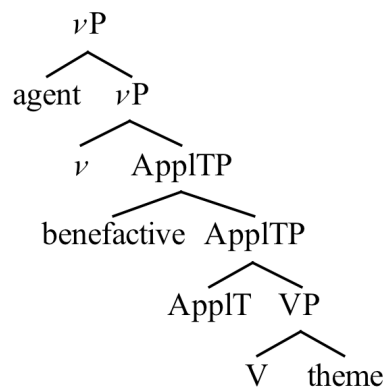
I assume that derivational heads, like Appl, are defined just like lexical items for the arguments they select and the direction in which they merge and features they carry. I assume a feature driven syntax, which means syntactic operations like movement are motivated by features such as EPP feature, wh-feature, and so on. Agree is assumed to be established between a probe, P and a goal, G within the domain of the probe, D. Case is ‘assigned’ to NPs within their domain via Agree. I assume that Merge (External Merge) must take place before Move (Internal Merge) (Chomsky 1995, 2000). This ordering will become relevant when discussing the object properties of applicatives in chapters 3 and 4.

2.4.1. Overview of proposed analysis

In this thesis, I extend the proposal that there is more than one applicative head (Pylkkänen 2008, Georgala 2012). I argue for three types of applicative heads rather than two. First, I argue that benefactive applied objects are selected by Thematic Appl. Second, dative applied objects, which include goals, recipients, and sources, are selected by the lexical verb itself and involve movement of the dative object to an expletive applicative projection, ApplE. This is what Georgala calls a Raising Applicative. ApplE is different from ApplT in that it has no semantic content and does not select an object, while ApplT does. Finally, I propose that oblique applied objects, such as instruments and locatives, involve a third, new applicative head which I call Oblique Appl (ApplO). ApplO is different from ApplT because it merges down from the VP level placing it lower than the verb and any theme object present, following the work of McGinnis (2005). ApplO is different from ApplE in that it has semantic content, selects an argument, and assigns it a theta role.

The three structures proposed are as follows:

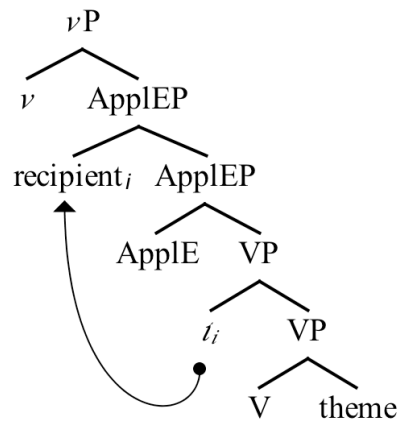
(94) Thematic Applicative



I adopt Georgala's thematic applicative for benefactive applicatives in Wolof. The theme merges with the verb. ApplT merges and selects the benefactive object. The benefactive object receives Case from ν and the theme receives Case from ApplT.

Dative applicatives in Wolof are of the raising applicative type. The verb selects both the theme and dative objects. The dative always merges above the theme since it is affected by the event defined by the V+Theme combination. ApplE merges with the VP and the dative object raises to ApplEP for licensing. The applied object is licensed and receives Case from v while the theme object receives case from ApplE.

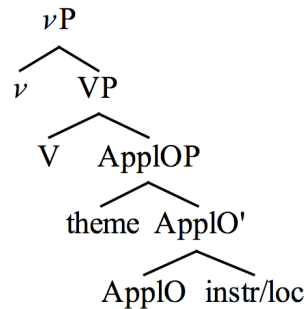
(95) Raising Applicative



The structure of raising applicatives, illustrated in (95) is similar to the structure proposed for Wolof benefactive and dative applicatives by Dunigan, illustrated in (91). In both structures, the applied object is generated as the specifier of the verb. The difference is that Dunigan assumes that both benefactive and dative objects are generated in [Spec,VP], while I follow Georgala in assuming only dative objects are. I argue that benefactive applied objects are thematic applicatives. Additionally, Dunigan does not assume movement of the dative object to the higher Appl projection.

The derivation of ApplO involves downward Merge and follows McGinnis (2005). The lexical verb merges first with the theme object. Then ApplO merges with the VP node in a downward fashion and the theme is reanalyzed as part of the ApplO phrase. The instrumental or locative applied object then merges, again downward, placing it in the domain of the theme. The instrumental or locative applied object receives Case from ApplO since it are within its domain and the theme receives Case from v .

(96) Oblique Applicative



Dunigan's proposal for instrumental and locative applicatives is similar. In both structures the theme merges with the verb first and then the instrumental or locative merges and the instrument or locative is in the lower object position by the end of the derivation. Dunigan accomplishes this by raising the of the theme while I assume, as in (96), the downward merge and reanalysis places the instrument lower than the theme.

I will show in chapter 4 how the ApplO analysis explains the in-between nature of instruments and locatives discussed in section 2.2.2. As oblique applicatives, they merge outside the VP so they behave similar to applied benefactives and subjects. Since they merge down they end up within the minimal VP, so they behave similar to themes as well.

Chapters 3 and 4 contain the detailed analyses and discussion of the proposed ApplT, ApplE, and ApplO structures.

2.5. Conclusion

In this chapter, I have presented a typology of applicatives from different languages while focusing on their object and c-command properties. Applicatives, rather than languages, are classified as symmetrical or asymmetrical based on evidence from Kinyarwanda (and other languages) where benefactive applicatives are symmetrical but locative applicatives are asymmetrical. Several major approaches to applicatives within the Minimalist

framework were presented and although promising, they were unable to capture all types of applicatives cross-linguistically. I then looked at three previous articles on Wolof applicatives. Finally, I presented a brief overview of the proposed analysis, which will be discussed in detail in the next two chapters. Chapter 3 focuses on benefactive and dative applicatives. Chapter 4 treats instrumental and locative applicatives.

CHAPTER 3

3. BENEFACTIVE AND DATIVE APPLICATIVES

In this chapter, I explore the syntactic properties of Wolof benefactive and dative applicatives in more detail using objecthood tests, quantifier binding, reflexivization, and weak cross-over tests. Instrumental and locative applicatives will be addressed in chapter 4.

Syntactic tests will show that benefactive and dative applicatives pattern together for quantifier binding, reflexivization, and weak cross-over but differ for morphology, selectional restrictions, and semantic interpretation. To account for the differences, I adopt the distinction between Thematic and Raising Applicatives of Georgala (2012). More specifically, I argue that Wolof benefactive and dative applicatives involve different derivations. Benefactive applicatives involve Thematic Appl (ApplT) while dative applicatives involve the expletive head, ApplE, of raising applicatives.

The chapter is structured as follows: Object properties of benefactive and dative applicatives are described and compared in section 3.1. Syntactic tests for determining c-command are evaluated in section 3.2 and shown to be amenable to Wolof. The tests are then applied to Wolof benefactive and dative applicatives to determine the c-command relationship between the objects. The analysis of these applicatives is presented in section 3.3.

3.1. Object Properties

As mentioned in chapter 2, the object properties shown in applicative constructions are useful to classify and describe applicatives. In what follows, I briefly show benefactive and dative applicatives in Wolof exhibit symmetrical object properties such as free word order of the objects, pronominalization, and extraction. Passivization data are not included because Wolof has no syntactic passive construction as we saw in chapter 1.

3.1.1. Word Order

The word order of the objects in benefactive and dative applicatives is variable. I assume this is an instance of object scrambling as it is a case of a change in word order without any (apparent) effects on meaning. Either the theme object or the applied object can be the first object in benefactive and dative applicatives. The benefactive object in (1), *xaritam* ‘his/her friend’ (underlined) can either precede the theme object *xar mi* ‘the sheep’ or follow it. The meaning does not change between the different orders. The same thing is seen with the dative object *xale bi* ‘the child’ in (2).

- (1) a. Rey-al na xarit-am xar mi.
 pay-BEN 3SG friend-3SG.POSS sheep DEF
 ‘He/she killed the sheep for his/her friend.’
- b. Rey-al na xar mi xarit-am.
 kill-BEN 3SG sheep DEF friend-3SG.POSS
 ‘He/she killed the sheep for his/her friend.’
- (2) a. Damay jox xale bi neexal.
 1SG.PFOC give child DEF gift
 ‘I gave the child a gift.’
- b. Damay jox neexal xale bi.
 1SG.PFOC give gift child DEF
 ‘I gave the child a gift.’

These data contrast with the English applicative examples discussed in Chapter 2. In English, the dative object must precede the theme. Object scrambling is not permitted. Remember from chapter 2 that English applicatives are asymmetrical.

- (3) a. Sally gave Bill a book.
- b. *Sally gave a book Bill.

In Wolof, word order between the two objects is free, suggesting the applicatives are symmetrical.

3.1.2. Pronominalization

In Wolof, there is no ‘object marking’ via verbal prefixes like the languages discussed in chapter 2. Instead Wolof uses clitics to pronominalize objects and these can be used to distinguish between oblique and direct objects. The clitic object pronouns are used for direct objects of the verb. Objects that are contained in a prepositional phrase or in a cleft or other position not directly following the verb are pronominalized using strong pronouns. Although direct object clitics do not affix morphologically to the verb when pronominalized, as in Bantu languages, we can use the distinction between clitic and strong pronouns to identify oblique and direct objects in Wolof and determine if the objects have symmetrical or asymmetrical properties.

The use of clitic pronouns in Wolof is similar to the strong and weak pronouns in French. In French, weak, or clitic object pronouns, like *te* ‘you’ are used when pronominalizing arguments of the verb and not complements of prepositional phrases. They must appear directly to the left of the verb as seen in (4a). If they appear separated from the verb, in a prepositional phrase, clitic pronouns are not licit (4b). Instead, the strong pronoun form, *toi* ‘you’, is required as shown in (4c).

- (4) a. Je te vois souvent.
 I see you often. (lit. I you see often.)
- b. *Je pense souvent à te.
 I often think of you.
- c. Je pense souvent à toi.
 I often think of you.

This is also true for Wolof objects. Lexical NP objects that appear in a cleft position or within a prepositional phrase can only be replaced by a strong pronoun while direct objects are replaced by a clitic pronoun.

The sentences in (5) show a transitive sentence with the direct object *jën yi* ‘the fish’. The direct object is pronominalized using the clitic pronoun *leen* ‘them’ (5b). In contrast, the oblique object in (6b) must be pronominalized with the strong pronoun *moom* ‘him/her/it’. The last sentence (6c) shows the prepositional benefactive object cannot be replaced by a clitic. Note also, that clitics in Wolof must follow the subject marker, *naa* in these examples.

- (5) a. Japp naa jën wi.
 catch 1SG fish DEF
 ‘I caught the fish.’
- b. Japp naa ko.
 catch 1SG 3SG.OBJ
 ‘I caught it.’
- (6) a. Japp naa jën yi ngir Ousmane.
 catch 1SG fish DEF.PL for Ousmane
 ‘I caught the fish for Ousmane.’
- b. Japp naa jën yi ngir moom.
 catch 1SG fish DEF.PL PREP 3SG.OBJ
 ‘I caught them for him.’
- c. *Japp naa ko jën yi.
 catch 1SG 3SG.OBJ fish DEF.PL
 ‘I caught the fish for him.’

The forms of the strong and clitic object pronouns are given in Table 1.

Table 1: Object Pronouns

	Clitic	Strong
1SG	ma	man
2SG	la	yow
3SG	ko	moom
1PL	nu	nun
2PL	leen	yeen
3PL	leen	ñoom

Comparing transitive and prepositional complement sentences in Wolof in (5) and (6) respectively, we see that oblique objects of the verb are pronominalized with strong pronouns, unlike the direct object.

Turning to pronominalization of objects in applicatives, we see that applied objects behave the same as the direct object in transitive sentences. Example (7b) shows the benefactive applied object (underlined) replaced with a clitic pronoun. In (7c) the theme object *toggukay bi* ‘the chair’ has been replaced. Note that the same object clitic *ko* has been used for both the benefactive and the theme in these examples.

- (7) a. Daaj-al naa Badara toggukay bi.
 construct-APPL 1SG Badara chair DEF
 I constructed the chair for Badara.
- b. Daaj-al naa ko toggukay bi.
 construct-APPL 1SG 3SG.OBJ chair DEF
 I constructed the chair for him/her.
- c. Daaj-al naa ko Badara.
 construct-APPL 1SG 3SG.OBJ Badara
 I constructed it for Badara.

The same pattern is seen in the dative example in (8b), where the dative applied object has been pronominalized with the clitic pronoun *ko* ‘him/her/it’. In (8c) the theme object

has also been replaced by *ko*. Both objects can be pronominalized with clitics simultaneously as well (8d).¹

- (8) a. Jox naa xale bi neexal.
 give 1SG 3SG.OBJ DEF gift
 I gave a present to him/her.
- b. Jox naa ko neexal.
 give 1SG 3SG.OBJ gift
 I gave a present to him/her.
- c. Jox naa ko xale bi.
 give 1SG 3SG.OBJ child DEF
 I gave it to the child.
- d. Jox naa ko ko.
 give 1SG 3SG.OBJ 3SG.OBJ
 I gave it to him/her.

The fact that both object can simultaneously be pronominalized will be relevant in chapter 4. These data illustrate the benefactive and the theme object have the same object status when it comes to pronominalization, indicating symmetrical applicatives.

3.1.3. Extraction

In this section, I consider data from extraction in applicatives. Before looking at applicatives, it is important to note that the direct object of a transitive verb can be extracted for focus (9) and questioning (10) in Wolof.

¹ The acceptability of both objects being pronominalized in benefactives (10) is not entirely clear. Some speakers did not accept the sentence in (i) but this judgement was not unanimous.

(i) Daaj-al naa ko ko.

The reason for the difference in acceptability between (i) and (14d) is also unclear.

- (9) Jën wi laa taxañ.
 fish DEF 1SG.OFOC wrap
 ‘It was the fish that I wrapped.’

- (10) Lan laa taxañ?
 what 1SG.OFOC wrap
 ‘What did I wrap?’

On the other hand, benefactive objects contained in a prepositional phrase cannot be extracted either for questioning (11) or focus (12). Recall that dative objects are not found in prepositional phrases, only as the applied object in applicatives, which is why there are no corresponding dative examples.

- (11) *Ngir kan laa taxañ jën wi?
 for who 1SG.OFOC wrap fish DEF
 ‘For whom did I wrap the fish?’

- (12) *Ngir Bintou laa taxañ jën wi.
 for Bintou 1SG.OFOC wrap fish DEF
 ‘It was for Bintou that I wrap the fish.’

Looking now at applicatives, in benefactive and dative applicatives, either object, theme or applied, can be questioned (13) or focused (14). The benefactive applied object has been extracted in (13a) and (14a). The theme has been extracted in (13b) and (14b).

Benefactive - questioning applied

- (13) a. Kan laa taxañ-al jën wi?
 who 1SG.OFOC wrap-APPL fish DEF
 ‘For whom did I wrapped the fish?’

Benefactive - questioning theme

- b. Lan laa taxañ-al Bintou?
 what 1SG.OFOC wrap-APPL Bintou
 ‘What did I wrap for Bintou?’

Benefactive - focus applied

- (14) a. Bintou laa taxañ-al jen wi.
 Bintou 1SG.OFOC wrap-APPL fish DEF
 'It was Bintou for whom I wrapped the fish.'

Benefactive - theme applied

- b. Jën wi laa taxañ-al Bintou.
 fish DEF 1SG.OFOC wrap-APPL Bintou
 It was the fish that I wrapped for Bintou.

Extraction in dative applicatives follows the same pattern. Either object can be questioned (15) or focused (16).

Dative - questioning applied

- (15) a. Kan laa jox neexal?
 who 1SG.OFOC give gift
 'To whom did I give a gift.'

Dative - questioning theme

- b. Lan laa jox xale bi.
 what 1SG.OFOC give child DEF
 'What did I give to the child?'

Dative - focus applied

- (16) a. Xale bi laa jox neexal.
 child DEF 1SG.OFOC give gift
 'It was the child to whom I gave a gift.'

Dative - focus theme

- b. Neexal laa jox xale bi.
 gift 1SG.OFOC give child DEF
 'It was a gift that I gave to the child.'

The data from applicatives indicate that applied objects and direct objects have the same object status in Wolof. Both objects can be placed as the first object, both can be

extracted for focus or questioning. Since both objects have direct object status, benefactive and dative applicatives are symmetrical in Wolof.

3.1.4. *Object omission*

Up to this point, benefactive and dative applicatives have patterned together. The purpose of this section is to outline a syntactic difference that does exist between the two. In benefactive applicatives, themes can be omitted without altered verbal morphology but in dative applicatives, the theme cannot be. It can only be omitted via deletion using a detransitivizing suffix, *-e*.² For the purposes of this discussion, I assume that in benefactives, object omission is an example of unspecified object deletion.

Unspecified object deletion refers to a process by which (one of) a predicate's object(s) is not realized overtly.

- (17) a. Bill ate \emptyset while driving to work.
 b. Bill ate breakfast while driving to work.

In (17a), no direct object is mentioned but it is understood that there was some food item or meal that Bill ate. I assume null objects are represented in the syntax, following Roberge and Cummins (2005). This means that I do not take unspecified object deletion to be a valency-decreasing operation.

In Wolof, many verbs share the property of allowing object omission, which I take to be unspecified object deletion as in English.

Unspecified object deletion

- (18) a. Dama-y jàng.
 1SG.PFOC-IMP read/study
 ‘I am reading/studying.’

² This suffix is not to be confused with the homophonous instrumental/locative applicative morpheme, *-e*, which will be discussed in chapter 4.

Theme object realized

- b. Dama-y jàng téere bi.
 1SG.PFOC-IMP read/study book DEF
 ‘I am reading/studying the book.’

In benefactive applicatives, theme objects can be omitted without rendering the sentence ungrammatical. Again, what makes this unspecified object deletion is that there is no valency decreasing morphology present.

- (19) a. Daaj-al naa Tapha Ø.
 construct-APPL 1SG Tapha
 ‘I constructed (something) for Tapha.’

Dative applicatives, on the other hand, are judged as incomplete to the point of being unacceptable when either the dative or theme object is left unspecified.

- (20) a. Jox na ma xaa^{lis}.
 give 3SG 1SG.OBJ money
 He/She gave me money.
- b. *Jox na xaa^{lis}.
 give 3SG money
 He/She gave money.
- c. *Jox na ma.
 give 3SG 1SG.OBJ
 He/She gave me (something).

In order to omit one of the objects of such a verb, one must add a detransitivizing suffix, -*e*, to the verb.

Theme object suppressed

- (21) a. Jox-e na ma.
 give-DETRAN 3SG 1SG.OBJ
 He/She gave me (something).

Dative object suppressed

- b Jox-e na xalis.
 give-DETRAN 3SG money
 He/She gave money.

Some other verbs that behave the same way are *wan* ‘to show’, *may* ‘to offer’, and *yooñee* ‘to send’.

As an interesting side note, there is at least one verb that is optionally dative or transitive, the verb *bind* ‘to write’. It allows a dative applied object but does not require it like the dative verbs just mentioned, as shown by (22a) and (b). I note that *bind* is similar to other dative verbs because the additional object, *Omar* in (22a), is assigned a dative theta role (either source or goal) and there is no overt applicative morphology on the verb. Interestingly, when *bind* is used transitively as in (22b), unspecified object deletion is allowed, as seen in (22c).

- (22) a. Dama-y bind Omar bataaxal.
 1SG.AFF-IMP write Omar letter
 “I am writing Omar a letter. / I wrote a letter to Omar.”
- b. Dama-y bind bataaxal.
 1SG.AFF-IMP write letter
 “I am writing a letter.”
- c. Damay bind.
 1SG.AFF write
 ‘I am writing.

Even though unspecified object deletion of the theme is allowed, it is ungrammatical when there is a dative object present, as illustrated in (23a). In these cases, the theme object can only be omitted if the detransitivizing morpheme *-e* is present on the verb like

the other dative verbs. The presence of the dative object turns the verb into a dative and unspecified object deletion is not longer possible, just as with other dative applicatives.

- (23) a. *Dama-y bind Omar.
 1SG.AFF-IMP write-APASS Omar
 “I am writing to Omar.”
- b. Dama-y bind-e Omar.
 1SG.AFF-IMP write-APASS Omar
 “I am writing to Omar.”

Optionally ditransitive verbs are not very productive in Wolof. Only the verb *bind* ‘to write’ has been identified, to the best of my knowledge, as allowing an optional dative, although other similar verbs may exist.

In summary, benefactive applicatives allow deletion of the theme object. In dative applicatives, the theme cannot be deleted via unspecified object deletion. The objects must be suppressed by a detransitivizing suffix *-e*. The reason for the difference in acceptability of unspecified object deletion between the two types of applicatives will be discussed in section 3.3.2.

3.1.5. *Summary of object properties*

In benefactive and dative applicatives, both direct and applied objects show similar object properties. Either can be placed directly after the verb. Both objects are pronominalized using clitic pronouns and can both be pronominalized simultaneously, a fact that will be relevant in chapter 4. Finally, either object can be extracted for focus or questioning. Based on these tests, I conclude benefactive and dative applicatives both involve two true “direct” objects with equal status. They are therefore both instances of the symmetrical applicative type.

One difference does exist between the two types of applicatives. Unspecified object deletion in benefactives is possible with the theme object while dative applicatives

require the suffix *-e* to suppress either the theme or dative object. This difference is important because it shows that benefactive and dative applicatives must be different in some way syntactically. More evidence for separating the analyses of benefactive and dative applicative will be outlined in section 3.3.2.1.

3.2. C-command

We have just seen that Wolof dative and benefactive applicatives are symmetrical applicatives differing in object behaviour only for unspecified object deletion. Nevertheless, we still don't know the precise nature of the structural relationship between the two objects (e.g. theme and dative or theme and benefactive). In the literature on applicatives, the structural relationship between the two objects is a topic of much interest. There are many tests available to determine the c-command relationship between objects. The most common ones used in the literature are quantifier binding, reflexivization, weak cross-over, negative polarity items, superiority effects, and reciprocal phrases like *each...the other*. (See Barss and Lasnik 1986 and Larson 1988 for further discussion of these tests.) Some of these tests are amenable to Wolof but not all. Quantifier binding, reflexivization and weak cross-over are amenable to Wolof and are discussed below.

3.2.1. Tests

Before applying quantifier binding, reflexivization and weak cross-over to Wolof applicatives, I evaluate the validity of these tests in Wolof. In the following subsections, I first show that these tests do target c-command relationships using transitive sentences and then I apply the tests to benefactive and dative applicatives.

3.2.1.1. Quantifier Binding

Previous research has established that a quantified applied object can bind an anaphor in the theme object but not vice versa. Larson (1988) shows this for English (24) and

Marantz (1993) for Swahili (25). In (24a) the applied object is quantified, *every worker*, and binds the possessive anaphor in the theme, *his*. The sentence in (24b) shows that a quantified theme object, *every paycheck*, cannot bind the possessive anaphor in the applied object, *its*.

- (24) a. I sent every worker_i his_i paycheck.
 b. *I sent its_i owner every paycheck_i.

The same is true in (25). The quantified applied object in (25a), *kila mwandishi* ‘each author’, binds the possessive anaphor *chake* ‘his’. However, the quantified theme in (25b) does not bind the anaphor in the applied object, *wake* ‘its’.

- (25) a. Ni-li-m-som-e-a [kila mwandishi]_i kitabu chake_i.
 SP-pst-OP-read-APPL-fv each author book his
 ‘I read each author his book.’
 b. *Ni-li-m-som-e-a [kila kitabu]_i mwandishi wake_i.
 SP-pst-OP-read-APPL-fv each book author its
 ‘*I read its author each book.’ (Marantz 1993:117)

In Swahili, and other Bantu languages, the applied object can scramble to the right and follow the theme, giving the opposite linear object order: Theme - Applied (see chapter 2, section 2.1.3). Even though the surface word order has changed, the original binding relationship is maintained. The quantified applied object still binds the possessive anaphor in the theme object. The following example shows that the quantified applied object *kila mwandishi* ‘each author’ has been placed after the theme, *kitabu chake* ‘his book’ yet still binds it.

- (26) Ni-li-m-som-e-a kitabu chake_i [kila mwandishi]_i.
 SP-pst-OP-read-APPL-fv book his each author
 ‘I read each author his book.’ (Marantz 1993:117)

Marantz (1993) assumes that it has been right-adjoined to the VP via Heavy NP Shift, although the specific analysis of the rightward movement is not the focus here. What is important is that modifying the word order does not allow the theme to c-command the applied object. Sentences in Swahili with a quantified theme object and a possessed applied object are not grammatical regardless of the order of the objects. This shows that binding and by extension, c-command relationships are not determined by linear order of the objects in Swahili (compare 27 and 25b to 25a).

- (27) *Ni-li-m-som-e-a mwandishi wake_i [kila kitabu]_i.
 SP-pst-OP-read-APPL-fv author its each book
 “*I read its author each book.”

Based on quantifier binding on applicatives, theorists have concluded that the applied object is generated higher in the VP than the theme object cross-linguistically. Now let's see if this generalization holds in Wolof.

The Wolof quantifier used here has the form *X bu nekk* where X represents the quantified noun. This quantifier is a distributive universal quantifier with similar characteristics to *every* in English as opposed to a collective universal quantifier like *all*. For example, subjects with *every* require third person singular agreement on the verb, while subjects with *all* require plural agreement.

- (28) Every boy eats cake.
 *Every boy eat cake.

- (29) All boys eat cake.
 *All boys eats cake.

In Wolof, when the subject contains *X bu nekk*, the verb is marked with third person singular morphology (30), not plural agreement. Additionally, NPs within the *bu nekk* construction can occur as possessors (31), indicating they represent individuals and not a collective entity. The quantifier cannot be the subject of a collective predicate like

daje ‘meet’ (32), again indicating that it does not refer to a collective entity or group but rather induces a distributive reading. It also cannot be the subject of a verb containing the suffix *-andoo* which means roughly ‘together’ (33) (Tamba et al. 2012:920-923).

3SG verbal agreement

- (30) Nit ku nekk lekk na ceeb.
 person C_{REL} exist eat 3SG rice
 “Each/every person ate rice.”

Possessor

- (31) xaj-u xale bu nekk
 dog-POSS child C_{REL} exist
 “every child’s dog”

Collective predicate

- (32) *Xale bu nekk daje nañu.
 child C_{REL} exist gather 3PL
 intended: “*Every child gathered.”

“together”

- (33) *Xale bu nekk lekk-andoo na ceeb bi.
 child C_{REL} exist eat-together 3SG rice DEF
 intended: “*Every child ate together.”

Now that the Wolof quantifier used here has been described, I turn back to quantifier binding in Wolof. Quantifier binding relies on the assumption that quantifiers which are coreferential with a possessive anaphor must bind said anaphor. Binding requires the quantifier c-command the anaphor, assuming binding requires c-command (Reinhart 1976). The c-command requirement is confirmed in Wolof for the universal quantifier *X bu nekk* ‘every/each (lit. X that exists)’ by looking at the binding of subjects and objects in transitive sentences. Since we know independently that subjects c-command objects in Wolof (Torrence 2012, Dunigan 1994, Russell 2007), if a quantifier in object position is able to bind an anaphor in subject position, then we can rule out that

binding requires c-command. In Wolof, this result does not arise. As shown in example (34b), a quantified object cannot bind the anaphor in subject position.

- (34) *Jëkër-am_i nob na jabar bu nekk_i.
 husband-3SG.POSS love 3SG wife C_{REL} exist
 intended: ‘Her_i husband loves every wife_i.’

On the other hand, when the quantified expression *góor gu nekk* ‘every man’ is in subject position and the possessive anaphor *jabar-am* ‘his wife’ is in object position, the sentence is grammatical with a bound interpretation, as seen in example (35a). When the object *jabaram* ‘his wife’ appears in a focus position which is higher than a subject as in (35b), the quantifier no longer binds the object anaphor. The sentence in (35b) means every man loves some man’s wife. There is only one wife that is loved by all instead of the bound interpretation where there are multiple wives, each loved by her own husband.

- (35) a. Góor gu nekk_i nob na jabar-am_i.
 man C_{REL} exist eat 3SG.PRF wife-3SG.POSS
 “Every man_i loves his_i wife.”
- b. Jabar-am_{j/*i} la góor [gu] nekk_i nob.
 wife-3SG.POSS 3SG.OFOC man C_{REL} exist love
 “It’s his_{j/*i} wife that every man_i loves.”

To ensure that c-command is indeed responsible for the absence of a bound reading of (34) and (35b), and not due to linear precedence in the sense of Grodzinski and Reinhart (1993), the quantifier is placed in a position which precedes the anaphor but does not c-command it in (36). The quantified expression is embedded in a relative clause, so although the quantifier, *jigeen ju nekk* ‘every woman’, precedes the anaphor -*am*, it does not c-command it. The binding possibilities in this sentence for the possessive anaphor -*am* ‘his/her’ are the subject, *góor* ‘man’, or a third party not directly referenced in the sentence. The anaphor *këram* ‘his/her house’ cannot be bound by the quantified

expression *jigeen ju nekk* ‘every woman’ even though the quantified expression precedes the anaphor.

- (36) Góor_i [gi jigeen ju nekk_j nob] dem na kër-am_{i/*j/k}.
 man C_{REL} woman C_{REL} exist love go 3SG house-3SG.POSS
 “The man_i that every woman_j loves went to his/her_{*j/k/i} house.”

Based on this evidence, I conclude the lack of a bound interpretation results from the lack of c-command rather than the lack linear precedence.

The semantic interpretation of *X bu nekk* reinforces the conclusion that the bound interpretation of quantified expressions requires c-command. Evidence from semantic judgements allows us to confirm speakers are not accepting or rejecting sentences based on other referential possibilities such as a discourse salient third party or another NP in the sentence. In the following example, the quantifier is contained within an embedded clause but the sentence has been paired with a context that pushes for a bound interpretation. The sentence is unacceptable in this context because the quantified object, *ku nekk naw* ‘everyone’ does not c-command the anaphor so a bound interpretation is not possible.

- (37) You passed the day in the village and you are recounting what happened. You talked to an old woman, a woman selling peanuts, and a woman who every man admires. The admired woman visited each man that admired her. She went to each man’s house to say hello and ask about his news.

- a. #Jigéen ji_i [k-u_j nekk naw] dem na kër-am_i.
 woman DEF H-COMP exist admire go 3SG house-3SG.POSS
 The woman_i who everyone_j admires went to her_i/*his_j house.

The interaction between the context and the sentence in (37a) show an embedded quantifier cannot be interpreted as binding an anaphor in the matrix clause even though the quantifier precedes it.

Having now presented several lines of evidence that binding involving the quantifier *X bu nekk* indeed relies on c-command in Wolof, we know that quantifier binding can be used to test the structural relationships between objects in applicatives. I now turn to quantifier binding in benefactive and dative applicatives.

In Wolof applicatives, quantifier binding gives unexpected results. Binding depends on the linear order of the objects in the sentence. It is not correlated with the theta role of the object, like in Swahili. Quantified applied objects can bind theme objects and quantified theme objects can bind applied objects as long as the quantified object is first. This is surprising since it was just established that quantifier binding in Wolof doesn't rely on linear precedence but on c-command.

In (38a) the applied object *góor gu nekk* 'every man' binds the anaphor *-am* 'his/her'. Placing the applied object to the right leads to unavailability of the bound reading as seen in (38b) for benefactives and (39b) for datives. The (b) sentences are grammatical, but not on the bound interpretation. The possessive anaphor can only refer to a discourse referent not mentioned in the sentence.

- (38) a. Bind-al naa góor gu nekk_i bataaxal-am_i.
 write-APPL 1SG.PRF man C_{REL} exist letter-3SG.POSS
 "I wrote his_i letter on behalf of every author_i."
- b. Bind-al naa bataaxal-am*_{i/j} góor gu nekk_i.
 write-APPL 1SG.PRF letter-3SG.POSS man C_{REL} exist
 "I wrote his_j/*_i letter on behalf of every author_i."
- (39) a. Yóonee naa góor gu nekk_i xalis-am_i.
 send 1SG.PRF man C_{REL} exist money-3SG.POSS
 "I sent every man_i his_i money."

- b. Yóonee naa xaalis-am^{*i/j} góor gu nekk_i.
 send 1SG.PRF money-3SG.POSS man C_{REL} exist
 ‘I sent his_j/^{*i} money to every man_i.’

The linear position of the object thus affects the c-command relationship it holds with the other object.

Looking now at a quantified theme object (underlined in 40 and 41), it can bind the applied object when the applied object follows the theme. In the following examples, the quantified theme *téere bu nekk* ‘every book’ binds the possessive anaphor *-am* ‘his/her’ in the benefactive object (40a) and the dative object (41a).

- (40) a. Bind-al naa téere bu nekk_i bindekat-am_i.
 write-APPL 1SG.PRF book C_{REL} exist author-3SG.POSS
 ‘I wrote every book_i for its_i author.’
- b. Bind-al naa bindekat-am^{*i/j} téere bu nekk_i.
 write-APPL 1SG.PRF author-3SG.POSS book C_{REL} exist
 ‘I wrote every book_i for its^{*i/j} author.’
- (41) a. Yoonee naa téere bu nekk_i bindekat-am_i.
 send 1SG.PRF book C_{REL} exist writer-3SG.POSS
 ‘I sent every book_i to its_i author.’
- b. Yoonee naa bindekat-am^{*i/j} téere bu nekk_i.
 send 1SG.PRF writer-3SG.POSS book C_{REL} exist
 ‘I sent every book_i to its^{*i/j} author.’

Thus far, I conclude from quantifier binding data that, in Wolof, the first object (in a linear sense) c-commands the second object regardless of thematic role. Varying the word order leads to different c-command relationships and different binding patterns. Note that this is unlike what Marantz (1993) reports for Swahili, where modifying the word order does not change the binding relationships.

3.2.1.2. Reflexivization

I now turn to data from reflexivization. Reflexivization is a standard test for c-command (Larson 1988) because in many languages a reflexive anaphor must be bound by the noun phrase with which it is coreferential. Wolof has a reflexive pronoun which agrees with the number and gender of its antecedent. It is a compound anaphor made up of the noun *bopp* ‘head’ and the appropriate possessive anaphor. The forms of the reflexive pronoun are given in Table 2.

Table 2: Wolof reflexive pronouns

1SG	sama bopp	1PL	sunu bopp
2SG	sa bopp	2PL	seen bopp
3SG	bopp-am	3PL	seen bopp

Since there is no morphologically “most simple” form from which the others are derived, I will use the third person singular form *boppam* as the default form when referring to the reflexive anaphor. In (42), the reflexive pronoun *boppam* ‘himself/herself’ is in object position and is coreferential with the subject pronoun *dafay* ‘he/she’. Since the bound reading is available, we can deduce that the subject c-commands the object, as expected.

- (42) Dafa- y_i sang boppam $_i$.
 3SG.PFOC-IMP wash REFL
 ‘She washes herself.’

If the reflexive anaphor precedes the subject, as in (43a), the sentence is ungrammatical. The anaphor, *sama bopp* ‘myself’, is in a topic position and the bound interpretation of *sama bopp* is unavailable. On the other hand, in (b), the reflexive anaphor is in a topic position but this time, a topicalized subject pronoun, *man* ‘I/me’ precedes it. The reflexive anaphor then can be bound by the higher subject pronoun and as a result, the sentence is grammatical.

- (43) a. *Sama bopp, dem naa fa...
 1SG.POSS head go 1SG LOC
 'Myself, I go there...'
- b. Man, sama bopp, dem naa fa...
 1SG 1SG.POSS head go 1SG LOC
 'Me, myself, I go there...'

The examples in (43) show that the phrase *boppam* must be bound, which is one criteria for anaphora, but it does not show which binding domains are possible. Based on the interpretations available in embedded clauses, (44), the anaphor *boppam* can only be bound by an antecedent in the same clause (44a). Binding from the matrix subject is ungrammatical (44b).

- (44) a. Wax naa [ni wat ngeen_i seen_i bopp.]
 speak 1SG COMP shave 2PL 2PL.POSS head
 ✓ 'I said that you shaved yourself.' (reflexive)
 ✓ 'I said that you shaved my head.' (non-reflexive)
- b. Wax naa_i [ni wat ngeen sama bopp*_i.]
 speak 1SG COMP shave 2PL 1SG.POSS head
 ✗ 'I said that you shaved myself.' (reflexive)
 ✓ 'I said that you shaved my head.' (non-reflexive)

The sentence in (b) is only grammatical under the non-reflexive reading of *boppam*, 'I said that you shaved my head'. As a reflexive anaphor, *boppam* must be bound locally. When there is no appropriate local antecedent, *boppam* is interpreted as a simple possessed noun. These data show the reflexive pronoun *boppam* is an anaphor that is sensitive to c-command and clausal boundaries. This sensitivity allows us to apply it to applicative objects to explore the c-command relationship between objects.

In Wolof applicatives, the first object can be the antecedent for a reflexive anaphor in the second object. This confirms what was seen earlier with quantifier

binding: different word order implies different structural relationships. Since the object order in benefactive and dative applicatives is variable, either the applied or theme object can be the antecedent for a reflexive anaphor.

In benefactive applicatives, the reflexive anaphor, *boppam*, in second position can be bound by the preceding applied object, *Boris* as in (45a). When the anaphor, *boppam*, appears before the applied object, the sentence is ungrammatical on the bound interpretation (45b).

- (45) a. Sang-al nga Boris_i boppam_i.
 wash-APPL 2SG Boris REFL
 ‘You washed himself_i for Boris_i.’
 ‘You washed his*_{i/j} head for Boris_i.’
- b. Sang-al nga boppam*_{i/j} Boris_i.
 wash-APPL 2SG REFL Boris
 ‘*You washed himself*_{i/j} for Boris_i.’
 ‘You washed his*_{i/j} head for Boris_i.’

This is true for dative applicatives (46) as well.

- (46) a. Wan naa Boris_i bopp-am_i.
 show 1SG Boris REFL
 ‘I showed Boris_i himself_i.’
 ‘I showed his*_{i/j} head to Boris_i.’
- b. Wan naa bopp-am*_{i/j} Boris_i.
 show 1SG REFL Boris
 ‘*I showed himself_i to Boris_i.’
 ‘I showed his*_{i/j} head to Boris_i.’

The binding relationship is lost when the antecedent *Boris*, be it dative or benefactive or theme, appears to the right. The bound interpretation of the (b) examples

remains unacceptable regardless of whether *Boris* is interpreted as the applied object or the theme. It is unclear what the difference between the two readings would be. Whether you wash *Boris for himself* or wash *himself for Boris* (or *show Boris to himself* in the dative example), in both readings, the effect is the same, Boris is washed for Boris. Both readings are subject to the same linearity effect in which the first object c-commands the second. Whether the reflexive anaphor in the (b) examples is replacing the theme or the applied object, the result is always an ungrammatical sentence on the bound interpretation.

Reflexivization data confirm the quantifier binding data and the conclusion that the first object c-commands the second regardless of thematic role. The conclusion drawn from these data is not expected considering previously studied languages with applicatives like Swahili, discussed in 3.2.1.1. Data from weak cross-over tests show that in Wolof applicatives, the theme is in fact generated below and within the c-command domain of the applied object, as in Swahili. The variable word order and c-command facts will be explained in section 3.3.3.

3.2.1.3. Weak Cross-Over

Another test used to identify c-command relationships between NPs is Weak Cross-Over (Larson 1988). When a sentence contains a wh-phrase and an anaphor, there are two possible outcomes for the interpretation. Either a coreferential reading between the wh-phrase and the anaphor is possible or it is not. The unavailability of a coreferential reading is said to result from a weak cross-over violation.

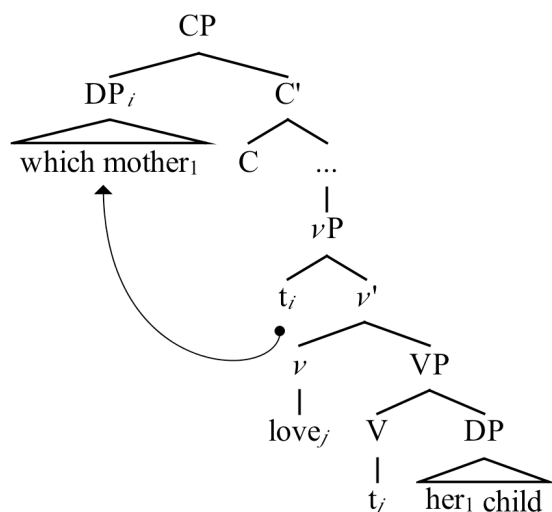
A weak cross-over violation arises when the trace of a wh-phrase is c-commanded by an NP containing a coreferential anaphor. Using this, if a coreferential interpretation between the wh-phrase and the anaphor is not available, then one knows a weak cross-over violation has occurred. The violation indicates that the trace, and by extension the original position of the wh-phrase, is c-commanded by the anaphor. If a coreferential

reading is available, then we can conclude the anaphor does not c-command the trace of the wh-phrase.

To see how this works, let's look at an example from English. The wh-expression in (20a) is coreferential with the anaphor in the direct object. The wh-expression, *which mother*, raises from subject position to CP without ever crossing the anaphor, *her*, in object position, as we see in the structure in (47b). The trace of the wh-phrase is not c-commanded by the anaphor, *her*.

(47) a. Which mother₁ loves her₁ child?

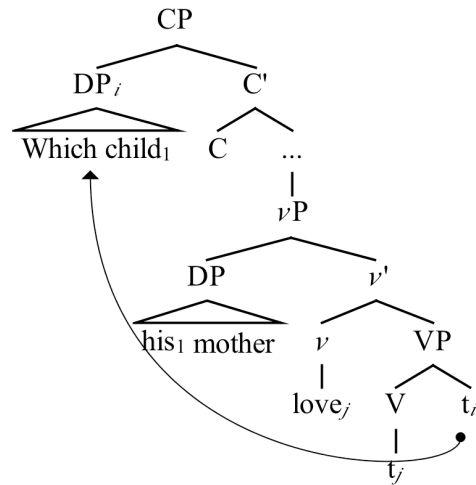
b.



On the other hand, the sentence in (48a) is the only acceptable if *his* refers to a male not mentioned in the sentence. The coreferential interpretation in (48a) is unavailable because the wh-expression, *which child*, raises across the anaphor, *his*, in subject position on its way to CP. In the illustrations, movement is tracked with alphabetic indices and coreference with numerical indices to avoid confusion. In this case, the trace of the wh-phrase is c-commanded by the anaphor *his*.

(48) a. Which child₁ does his_{*1/2} mother love *t*?

b.



Applying this test to applicatives in English, the applied object can be questioned and fronted when the theme is co-referential (49a). A weak cross-over effect arises when a theme wh-expression moves over a pronoun in the applied NP (49b) (taken from Larson 1988). This contrast is taken to mean the applied object asymmetrically c-commands the theme object.

- (49) a. Which man_i did you send *t* his_i paycheck?
 b. Whose_i pay did you send his_i mother *t* ?

If Wolof grammar is sensitive to weak cross-over, then we expect to see the same contrasts observed for English in (47) and (48). This is in fact what occurs in Wolof.

To start, the Wolof sentences in (50) are analogous to the English examples in (47) and (48).

- (50) a. Ban yaay_i *t_i* mo nob doom-am_i?
 which mother 3SG.SFOC love child-3SG.POSS
 “Which mother_i loves her_i child?”
 b. Ban doom_i yaay-am_{i/j} mo nob *t_i* ?
 which child mother-3SG.POSS 3SG.SFOC love

Which child_i does his_{*i/j} mother love?’

- c. Yaay-am_{*i/j} mo nob ban doom_i?
 mother 3SG.SFOC love which child
 ‘His/her_{*i/j} mother loves which son/daughter_i.’

In (50a) the wh-expression, *ban yaay*, is in subject position and is coreferential with the anaphor *doom-am* ‘her child’ in object position. The sentence is acceptable with the coreferential reading, meaning no weak cross-over violation has occurred. In (50b) the object wh-expression is questioned and thus appears in a focus position, c-commanding the anaphor in subject position and the coreferential reading is blocked. This confirms that the trace of the wh-expression is c-commanded by the the NP containing the anaphor. In (28c), the anaphor, *yaay-am*, is in subject position and the in situ wh-phrase, *ban doom*, is in object position. In this example, like (50b), the coreferential reading is not available. Even though the wh-phrase remains in situ overtly, I assume it moves over the subject to the left periphery at LF to receive its interpretation, leaving a trace behind in object position following Huang (1982). It is this trace that is c-commanded by the anaphor, thereby causing the weak cross-over violation and ultimate ungrammaticality of the coreferential reading.

As expected, a wh-expression that is coreferential with an anaphor cannot be generated in a position c-commanded by the anaphor in Wolof. These sentences show weak cross-over does target c-command in Wolof and can be applied to other structures like applicatives. By placing an anaphor and a wh-expression in each object position, weak cross-over identifies which object is generated in the c-commanding position and which in the lower, c-commanded position.

As I show below, weak cross-over data from Wolof applicatives show the applied object in benefactive and dative applicatives c-commands the theme and it is not possible for the theme to c-command the applied object. Only the applied object can be questioned while still being coreferential with the anaphor in the theme object position. Unlike

quantifier binding and reflexivization, the linear order of objects is irrelevant since only one object appears post-verbally, and one in the left periphery.

Coreference possibilities and weak cross-over effects are shown for a dative applicative in (51). When the wh-phrase is in the applied object, *gan góor* ‘which man’ as in (51a), no weak cross-over violation occurs. Coreference between the two objects is available. The (b) sentence, however, shows a weak cross-over violation that blocks coreference when the wh-phrase is the theme object, *bataaxalu kan* ‘whose letter’.

Applied object questioned

- (51) a. *Gan góor_i nga yónnee t_i bataaxal-am_i?*
 which man 2SG send letter-3SG.POSS
 ‘Which man_i did you send his_i letter?’

Theme object questioned

- b. *Bataaxal-u kan_i nga yónnee bindekat-am*_{i/j} t_i ?*
 letter-CS who 2SG send author-3SG.POSS
 Whose_i letter did you send to its*_{i/j} author?’

I conclude that the applied object, *gan góor*, does not cross over the theme, *bataaxalam* as it raises to the left in (51a). In (51b) however, we know the unacceptability is due to weak cross-over because the sentence is acceptable with a non-coreferential reading. This means the theme, *bataaxalu kan* ‘whose letter’, must cross over the applied dative object when it raises to the left, leaving its trace c-commanded by the anaphor in applied object, *bindekatam* ‘its author’. Unlike quantifier binding and reflexivization, these weak cross-over data show the theme object is always generated below the applied object, as argued by previous analyses (Marantz 1993; Ngonyani 1996, 1998; Pylkkänen 2008).

Example (52) shows similar facts for benefactive applicatives. First, let’s look at example (a). In (52a) the benefactive wh-object (underlined) has raised to the left periphery and the sentence is acceptable with the coreferential interpretation between the

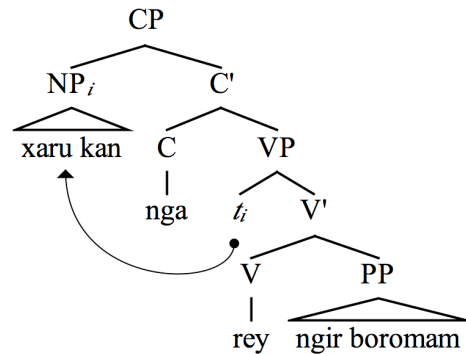
wh-phrase, *ban jigéen* ‘which woman’, and the possessive anaphor in the theme object, *xaram* ‘her sheep’. This means, as with the dative example, the anaphor *xar-am* doesn’t c-command the trace of the benefactive applied wh-phrase. Looking at the sentence in (b), where the wh-phrase appears as the theme object, coreference is disallowed due to a weak cross-over violation. After the theme object, *bataaxalu kan* ‘whose letter,’ raises to the left, its trace is c-commanded by the anaphor in the applied object, and the coreference is blocked. From this we can deduce that the wh-phrase was generated within the c-command domain of the applied object.

- (52) a. Ban jigéen_i nga rey-al *t_i* xar-am_i?
 which woman 2SG.OFOC kill-APPL sheep-3SG.POSS
 ‘For which woman_i did you kill her_i sheep?’
- b. Xar-u kan_i nga rey-al borom-am_i/*_i *t* ?
 sheep-CS who 2SG kill-APPL owner-3SG.POSS
 ‘Whose sheep_i did you kill for his/her*_{i/j} owner?’

In contrast, when a benefactive object is contained in a prepositional phrase, the wh-phrase theme can be coreferential with an anaphor in the oblique benefactive object. In this construction, the theme is generated outside the c-command domain of the oblique benefactive object. In (53) the theme wh-phrase *xaru kan* ‘whose sheep’ binds the anaphor *-am* attached to *borom*, the benefactive object. Since coreference is possible, we know the anaphor *-am* doesn’t c-command the trace of the wh-phrase.

- (53) a. Xar-u kan_i nga rey *t* ngir borom-am_i?
 sheep-CS who 2SG kill for owner-3SG.POSS
 ‘Whose sheep_i did you kill for its_i owner?’

b.



The weak cross-over facts presented in this section indicate that in applicatives, the applied object asymmetrically c-commands the theme object and I conclude that it is consistently generated in the higher position.

3.2.1.4. Summary of c-command tests

The c-command tests used in this section give unexpected results. According to quantifier binding and reflexivization, the theme can c-command the applied object or vice versa. However, weak cross-over facts indicate that only the applied object c-commands the theme object. Why the theme object can c-command the applied object in quantifier binding and reflexivization tests but not in weak cross-over tests will be addressed in detail in section 3.3.3. In the next section of this chapter, I argue the applied object is always generated above the theme object. Instances of the theme c-commanding the applied object are due to scrambling of the theme object and do not reflect the merge positions of the objects.

3.3. Analysis

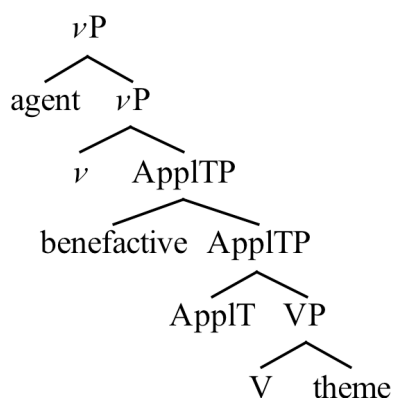
In this section, I show that two types of Appl functional heads account for syntactic properties of benefactive and dative applicatives. As stated in chapter 2, I do not adopt High/Low Appl structures of Pylkkänen (2008) for benefactive and dative applicatives. Instead, I adopt the proposal put forth in Georgala (2012) in which there are two types of

applicatives: thematic and raising.³ The differences in thematic and raising applicative types arise from selectional differences of the predicates they merge with. I argue benefactive applicatives in Wolof are of the thematic type. Benefactive applied objects are selected by ApplT, above the minimal VP. Dative applicatives, on the other hand, are raising applicatives. Dative objects are selected by the verb and merge within the minimal VP. The dative object then raises to the ApplE projection for licensing. Once raised, the dative object is in the same structural position as the benefactive applied object, which explains the syntactic similarities between the two. I explain the two types below in more detail.

3.3.1. Benefactives

Recall from chapter 2 that thematic applicatives involve a predicate (VP) and a functional head called ApplT. Recall also from Chapter 2, that the benefactive object is not a defining part of the event (Marantz 1993). This translates to it merging outside of the event syntactically, with the event as the semantic equivalent of the VP. ApplT merges with VP and establishes a relationship between its object, the benefactive, and the event, the VP.

(54)



³ The third applicative structure sketched out in chapter 2 will be addressed in detail in chapter 4.

Case assignment is straightforward using the current Minimalist approach to Case assignment, whereby it is assigned via functional heads only. ApplT assigns Case to the object in its domain, the theme object, and v assigns case to the object in its domain, the benefactive object.

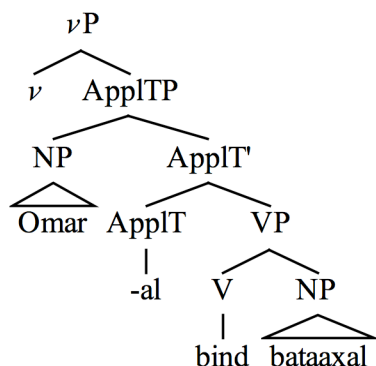
The analysis presented here for benefactives does not differ significantly from previous analyses of benefactive applicatives. My analysis is adopted directly from Georgala (2012) and the data from benefactive applicatives in Wolof does not necessitate many changes to the theory.

I now provide a complete derivation of a benefactive applicative using ApplT. The sentence in (55a) shows a benefactive applicative and its syntactic representation is given in (55b). The first step in the derivation of such a sentence is the merging of theme object and the verb which compositionally defines the event (Marantz 1993). ApplT then merges with the VP via Event Identification (Pylkkänen 2008). The ApplT head takes the VP as its complement, selects for the benefactive object *Omar*, and relates the object and the event to each other. This allows the speaker and listener to identify the particular occurrence of the event, in this case, *writing a letter*. In this sentence we can exclude other occurrences of letter writing that are not for the benefit of Omar. The verb then raises to Appl and *-al* attaches to the verb. Once this is complete, the agent is added to the structure by another syntactic head in the extended verbal projection, v .⁴ The default word order, that of Verb - Benefactive - Theme, obtains when the verb raises from ApplT to v .

- (55) a. Damay bind-al Omar bataaxal.
 1SG.AFF write-APPL Omar letter
 ‘I wrote a letter on behalf of Omar.’

⁴ Kratzer’s Voice (1996) is also a candidate for this job. The choice of Voice or v does not affect the analysis here and the use of v in this thesis is arbitrary.

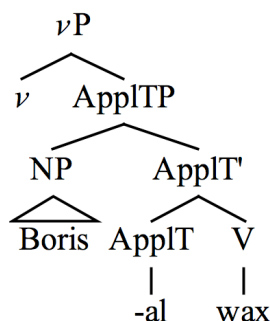
b.



This analysis also accounts for the compatibility of benefactive applicatives with both transitive and intransitive predicates. Since ApplT takes an event as its complement, it is not sensitive to the transitivity of said predicate. A benefactive applicative used with an intransitive verb is given in (56a) and its representation in (56b).

- (56) a. Dafa-y wax-al Boris.
 3SG.PFOC-IMP speak-APPL Boris
 'He/she is speaking for/on behalf of Boris.'

b.



A thematic applicative approach correctly accounts for the fact that the benefactive object c-commands and precedes the theme object in ditransitive applicatives (those involving two objects). It also accounts for the fact that a benefactive object is compatible with an

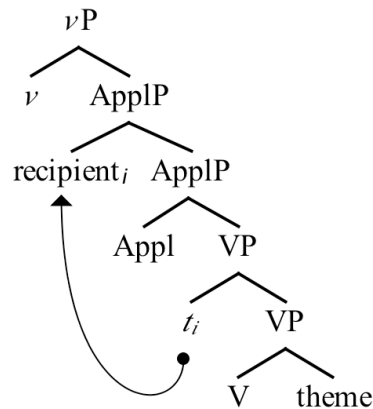
intransitive predicate. By selecting a VP as its complement, ApplT is insensitive to the presence of additional objects.

3.3.2. *Datives*

I now turn to the structure of dative applicatives. Data from word order and binding show that dative applicatives have a lot in common with benefactive applicatives. Nevertheless, there is one important difference between the two: unspecified object deletion as presented in 3.1.4. In this section, I argue that datives are derived differently than benefactives and are better analyzed as raising applicatives (Georgala 2012). The raising applicative analysis is advantageous because it accounts for the selectional differences between the two types - benefactive applied objects are optional while datives are not - while still accounting for their structural similarities (e.g. c-command).

Recall from chapter 2 that raising applicatives result from a ditransitive verb that merges with an expletive Appl (ApplE), allowing the dative object to raise out of the VP to the specifier of ApplE (Georgala 2012). This Appl is an expletive head because it does not select an argument and has no semantic content. The relationship the dative object plays in the event is encoded by the verb.

(57)



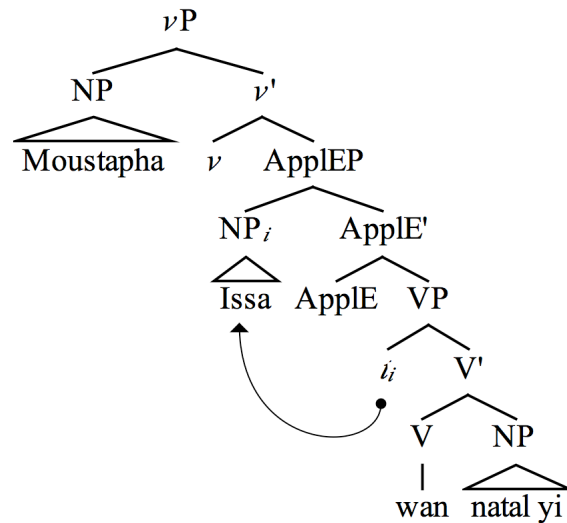
The dative object, then, is not really an applied object in the same sense as a benefactive object because it is selected by the verb and not a functional head. However, it shares properties with applied objects like benefactives because it occupies the same position, the specifier of an Appl phrase merged with the VP. The dative object raises to the specifier of Appl to check the EPP feature on ApplE and receive Case. Assuming Case is assigned via Agree with functional heads to NPs within their domain, the dative object receives Case from *v* once in [Spec,ApplP] and the theme receives Case from ApplE.

Let us see how this analysis works in Wolof dative applicatives using the sentence in (48). The ditransitive verb *wan* ‘to show’ selects two objects. First, it merges with the theme object *natal yi* ‘the photos’. Then the VP merges with the dative object, *Issa*. Then the ApplE head merges. ApplE has an EPP feature that needs to be satisfied either by Merge or Move (see McGinnis 2001, 2003 for arguments in favor of an EPP feature on Appl). The dative object moves from the VP to the specifier of the ApplE phrase and checks the EPP feature of ApplE. The movement of the dative object produces a structure that parallels the benefactive applicative structure. The structure is illustrated in (58b).⁵

- (58) a. Moustapha wan na Issa natal yi.
 Moustapha show 3SG Issa photo DEF.PL
 ‘Moustapha showed Issa the photos.’

⁵ The verb movement and subject movement to higher projections are not shown in the tree for simplicity. The final word order seen in (48a) obtains once these movements take place.

b.



Although some dative verbs are not obligatorily ditransitive, like *bind* ‘to write’, I adopt the same structure for all ditransitive verbs with dative objects. The sentence in (59a) below is formed via the same process. The verb merges with the theme object, *bataaxal* ‘a letter’, then merges with the dative object. Like the *wan* example in (58), the verb selects both objects. Then the Appl head merges with an EPP feature and the dative object moves to its specifier to check the EPP feature and be licensed.

- (59) a. Damay bind Omar bataaxal.
 1SG.AFF write Omar letter
 ‘I wrote Omar a letter. / I wrote a letter to Omar.’

The transfer of possession relationship between *bataaxal* ‘letter’ and *Omar* is encoded by the verb *bind* ‘to write’ since ApplE has no semantic content.

One motivation for the presence of ApplE in dative applicatives is Case assignment. Without the Appl head, one must assume the verb assigns Case to one or both of the objects. This contradicts current assumptions about the role of functional heads in Case assignment in the Minimalist framework, adopted here. Case is assigned via functional heads to NPs within their domain. In simple transitive sentences, the object receives case from ν . In ditransitive applicative sentences, ν assigns case to the dative

to the specifier of the ApplE projection. Analogous examples are not available for Wolof, but I assume the same structures.

Finally, I assume that datives involve the ApplE head because there is evidence for a functional projection between the VP and the *v*P in Wolof. The theme object, *bataaxal bi*, can appear before the dative object, *Omar*, but still after the verb, *bind* (62).

- (62) Dama-y bind bataaxal bi Omar.
 1SG-IMP write letter DEF Omar
 ‘I wrote the letter to Omar.’

There must be some projection above VP but below *v*P, that hosts this movement. The ApplE phrase is the natural choice for this functional projection. The combination of evidence from Case assignment, cross-linguistic comparison, and variable word order support the presence of ApplE in the structure of Wolof dative applicatives.

Now that I have shown the need for ApplE in dative applicatives, I show that the dative object must be generated in VP rather than simply merging in ApplE. In other words, dative applicatives cannot be analyzed successfully as thematic applicatives. Generating the dative object within the minimal VP in raising applicatives, is supported by the ungrammaticality of omitted theme objects. I assume the lack of unspecified object deletion in dative applicatives results from the transfer of possession relationship between the two objects which is encoded by the verb. The theme object is transferred to the dative object. Not specifying one of the objects involved in the transfer of possession is unacceptable because the transfer of possession fails, either there is nothing to be transferred or no one to receive it. Either way, a semantic condition of the verb is violated and the sentences are judged to be unacceptable.

Unspecified object deletion of dative object

- (63) a. *Moustapha wan na natal yi.
 Moustapha show 3SG photo DEF.PL
 ‘Moustapha showed (someone) the photos.’

Unspecified object deletion of theme object

- b. *Moustapha wan na Issa.
 Moustapha show 3SG Issa.
 ‘Moustapha showed Issa (something).’

No unspecified object deletion

- c. Moustapha wan na Issa natal yi.
 Moustapha show 3SG Issa photo DEF.PL
 ‘Moustapha showed Issa the photos.’

The need to specify both objects is seen in English as well, where dative applicatives also resist transitive usage.

- (64) a. I gave Sally a present.
 b. *I gave Sally \emptyset .
 c. *I gave \emptyset a present.

If the dative object were selected by and related to the event by a functional head, say ApplT, then the unacceptability of unspecified object deletion is mysterious in (63) and (64). Remember that ApplT does not create a relationship between the applied and theme object. It merely associates the applied object with the event. In the case of benefactives, the theme does not need to be explicit for such an association to occur. Since benefactives are not related to the theme object, so leaving the theme unspecified is grammatical.

- (65) a. Daaj-al naa Tapha \emptyset .
 construct-APPL 1SG Tapha
 I constructed (something) for Tapha.

As a second argument in favour of distinguishing benefactives from datives in terms of the applicative head, benefactive and dative applicatives have different morphology. The morphology of benefactive and datives is determined by the Appl head.

ApplT is realized by the morpheme *-al* which is added to the verb via head movement of the verb. ApplE has a null morpheme so no additional suffix appears in dative applicatives.

The quantifier binding, reflexivization, and weak cross-over facts presented in 3.2. fall out naturally from the thematic and raising applicative structures illustrated in (54) and (57). The applied object, be it benefactive or a raised dative, asymmetrically c-commands the theme, which allows it to bind the theme. A quantified applied object can therefore bind an anaphor in the theme object. The applied object can also be the antecedent for a reflexive anaphor in the theme object. Weak cross-over violations are the result of wh-movement by the theme over the applied object. I now turn to an explanation of how variable word order in applicatives is achieved within the Thematic/Raising Appl analysis.

3.3.3. *Variable Word Order*

In this section, I argue that the variable word order, in which the theme precedes the benefactive or dative object, is the result of A-scrambling of the theme to a higher position within the ApplT or ApplE projection. Recall that when the theme precedes the applied object, the former c-commands the latter, as shown by quantifier binding and reflexivization facts (3.2.2.1 and 3.2.2.2). Therefore, the theme must have moved via A-movement to a higher projection in order for binding to be affected, as opposed to the benefactive object moving rightward to a VP adjunct position, as proposed for Swahili by Marantz (1993).

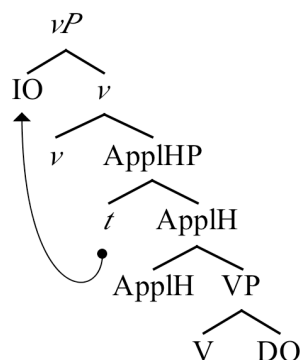
In order to analyze object scrambling, I draw on work on passivization in symmetrical and asymmetrical languages. McGinnis (2001, 2003) argues that the analysis of symmetrical and asymmetrical passives relies on the notions of an Escape Hatch and Phase Theory. She proposes that High Appl (ApplT in the terminology adopted here) is a phase head along with *v* and C. As a phase head, ApplH has an EPP feature. In fact, it can

have multiple EPP features associated with it and this results in object scrambling in Wolof and the symmetrical/asymmetrical passive behavior seen in Bantu applicatives.

McGinnis claims that asymmetrical passives involve only one EPP feature associated with ApplH. ApplH with one EPP feature only has one specifier position. This position is filled and the EPP feature is checked when the benefactive argument merges. Assuming Merge occurs before Move (Chomsky 1995, 2000), the theme object cannot move to check the EPP feature because Merge of the applied object will have already checked the feature.

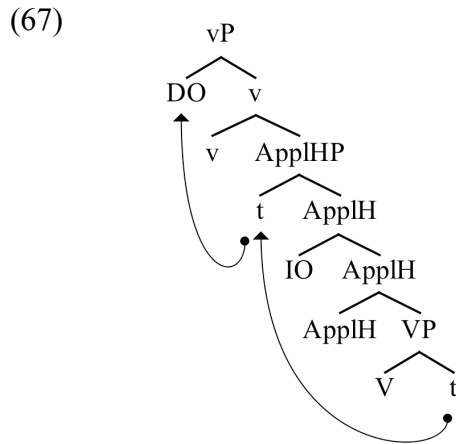
Since ApplH constitutes a phase head, passive v can only “see” NPs that are at the edge of ApplH, with the edge being informally defined as the specifier positions. The applied object is available to the v probe because it is at the edge of ApplH phase. It can raise to the specifier of v P and from there become the subject of a passive sentence. The theme object, however, cannot raise to v P since it is contained in the domain of the lower ApplH phase which is closed to v .

(66)



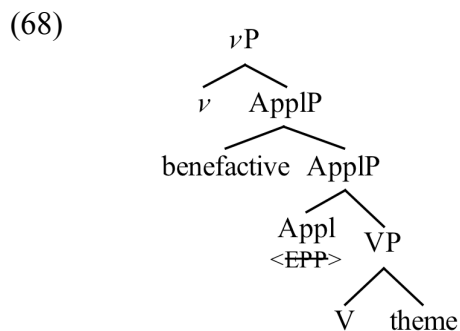
Symmetrical passives, in which either object can become the subject of a passive sentence, arise when ApplH has two EPP features. Two EPP features allow both objects to occupy specifier positions in the ApplH projection, placing both objects at the edge of the phase. First, the benefactive merges and checks off the first EPP feature. Then the theme moves to ApplH and checks the second EPP feature.

Since both objects are in the specifier, they are both available goals for the v probe. Since the theme is above the benefactive, it represents the closest target for the passive v probe. The theme thus moves to [Spec, v P] and from there on to the subject position. The benefactive remains in situ in this case because the EPP feature on v is checked by the theme. The structure up to v P is shown in (67).



In languages with symmetrical passives, one or two EPP features on Appl are equally possible. When one EPP feature is present, the applied object becomes the subject; when two EPP features are present, the theme becomes the subject.

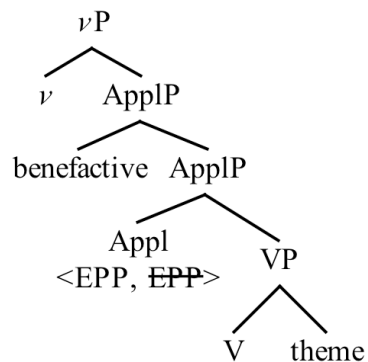
Now let us consider how McGinnis' analysis of symmetrical passives can help explain object scrambling in Wolof. The benefactive - theme word order results when ApplT has one EPP feature, which is satisfied when the benefactive object merges with it.



At this point, ApplT has no more EPP features to be checked so the derivation continues with the merge of *v*. This means that the benefactive precedes and c-commands the theme object.

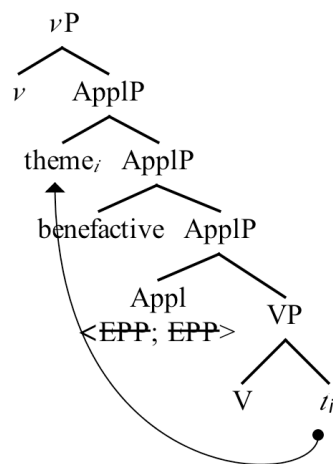
The theme - benefactive word order results when ApplT has two EPP features. The first feature is checked when the benefactive argument merges but there is still an EPP feature that needs to be checked.

(69)



The only available goal that can check the second EPP feature is the theme object. It moves into a second specifier position of the ApplT projection and checks off the remaining EPP feature.⁶

(70)



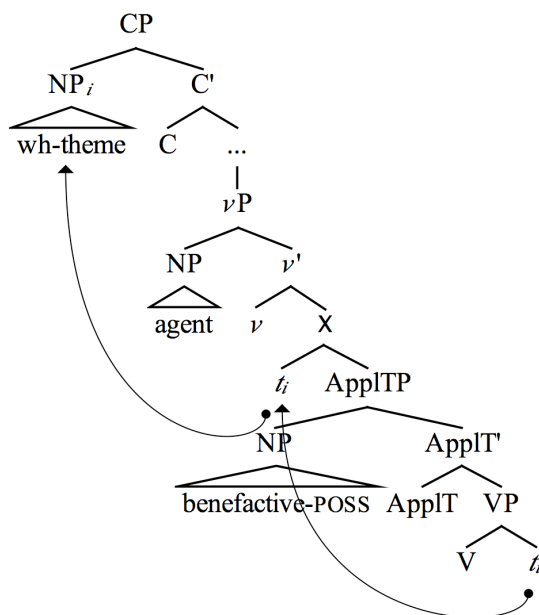
⁶ No 'Tucking-in' (Richards 1999) assumed here.

This places the theme above the benefactive object. In this configuration, the theme now surfaces as the first object and asymmetrically c-commands the applied object. Binding from the theme to the applied object is now possible, as we saw in sections 3.2.2.1. and 3.2.2.2.

The movement of the theme object also provides an explanation for the weak cross-over violations seen when a theme is questioned (section 3.2.2.3). Recall that a weak cross-over violation occurs when the trace of a wh-expression is c-commanded by a coreferential anaphor. Even if the wh-theme A-scrambles to the ApplT or ApplE phrase before raising to CP, it still leaves a trace in its merge position as the complement of the verb. This trace is c-commanded by the anaphor in the applied object, as shown in (71), leading to a weak cross-over violation.

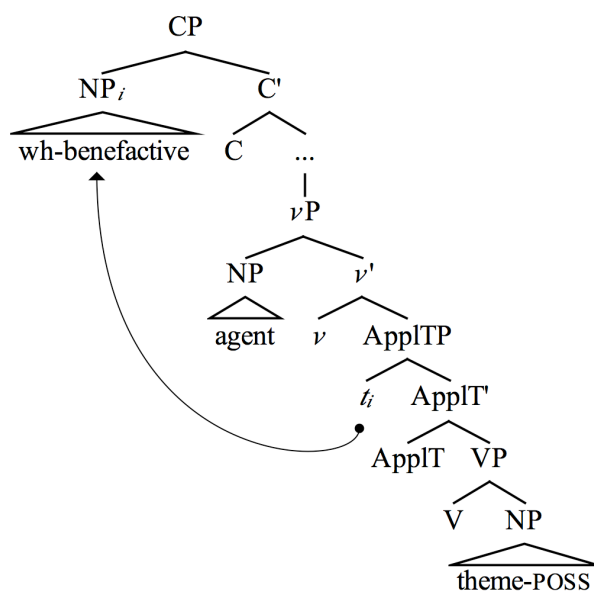
When the applied object contains the wh-phrase and the anaphor is in the theme object, scrambling of the theme still incurs a weak cross-over violation. The wh-phrase in the applied object raises at LF for interpretation, which means its trace is in the c-command domain of the scrambled theme object. The LF positions of the objects are given in the simplified tree in (71).

(71)

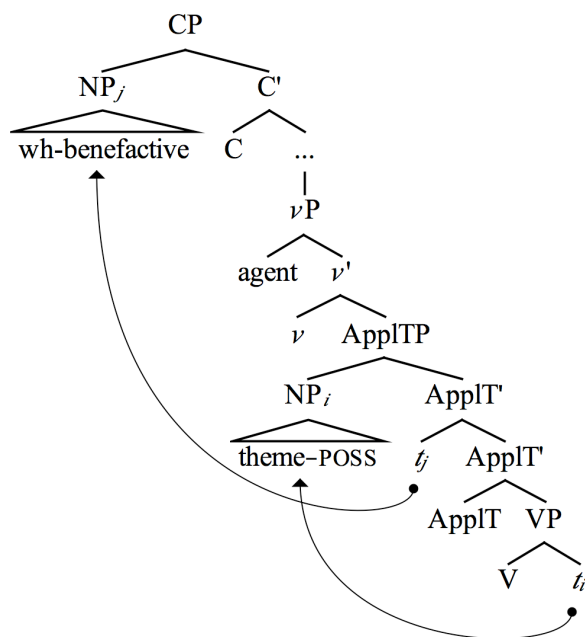


I argue that when the applied object is questioned and the theme object has the anaphor, the only grammatical derivation is the one without object scrambling. The theme never leaves the complement of V so it never c-commands the trace of the wh-applied object. The illustration in (72a) shows this derivation. To contrast, (72b) shows a derivation involving scrambling of the theme to ApplTP before the wh-benefactive moves to CP. Since there is a grammatical form, we never see the weak cross-over effects with a questioned benefactive that arise from a structure like (b).

(72) a.



b.



The structure for dative applicatives is more or less the same except using ApplE instead of ApplT and the extra step of the dative object raising to ApplEP, and so datives show the same behaviour vis-à-vis weak cross-over.

As for quantifier binding and reflexivization, even if scrambling has occurred, the theme's trace does not pose a problem because traces do not affect binding relationships. Binding is determined by the final c-command relation between the theme object and the anaphor. So in the quantifier binding and reflexivization examples, the scrambled theme c-commands the applied object and thus can bind it, regardless of the fact that its trace is in the c-command domain of the applied object.

3.3.3.1. Object scrambling

A final note on object scrambling in applicatives is in order here. The underlying reason for the scrambling in Wolof is unclear at this point. Object scrambling in other languages has been correlated with specificity (Diesing 1992, Diesing and Jelinek 1993, Thráinsson 2007). Preliminary data on definiteness and specificity from my semantic and pragmatic field research on Wolof applicatives are inconclusive. Looking at the literature, I am

unaware of any articles that treat object scrambling in Wolof, other than Schwartz (1975), who argues that definiteness determines word order.

Schwartz claims that definite objects must be adjacent to the verb and the definiteness determines which object is the direct object and which is the indirect object. According to Schwartz, whichever object is definite appears first and is interpreted as the applied object. In his examples, cited here as (73), the object interpreted as the dative object is the object that is marked definite, *xale bi* ‘the child’ in (73a) and *muus mi* ‘the cat’ in (73b) (see Schwartz 1975:223 for a more detailed explanation). Note that these examples do not constitute a case of object scrambling because of the change in meaning of the two sentences.

- (73) a. góór gi jox ně xale bi muus.
 man DEF give 3SG child DEF cat
 ‘the man gave a cat to the child.’
 *‘the man gave a child to the cat.’
- b. góór gi jox ně muus mi xale.
 man DEF give 3SG cat DEF child
 ‘the man gave a child to the cat.’
 *‘the man gave the cat to a child.’

The speakers consulted for this thesis, however, do not accept the interpretations given by Schwartz in example (73). They interpret (a) as given but (b) is interpreted as “*The man gave a child the cat. / The man gave a cat to a child.*” The interpretation “*The child gave a child to the cat*” is rejected. Even though *muus mi* ‘the cat’ is in first object position and definite, Saint Louis speakers still interpret it as the theme.

There are several other problems with Schwartz’ conclusion. The first problem is that he not only alternated which object was definite in his examples, he alternated the word order as well. Since there are two variables present in his examples, one cannot be sure if the theta role assignment is based on definiteness or position. One would need to

know what interpretations are available for (74a) and (74b), which are not included in Schwartz' article, in order to determine if the interpretation of being the 'applied object' (the indirect object in Schwartz' terminology) is truly dependent on definiteness.

- (74) a. góór gi jox ně muus xale bi.
 man DEF give 3SG cat child DEF
 'The man gave the child a cat.'
- b. góór gi jox ně xale muus mi.
 man DEF give 3SG child cat DEF
 'The man gave a child the cat.'

My consultants found these sentences to be acceptable. The only interpretation possible for (74a) is 'The man gave the child a cat.' The only interpretation for the available for (b) is 'The man gave a child the cat.' In both examples, *xale* (*bi*) 'child' is interpreted as the dative object and *muus* (*mi*) 'cat' is the theme object. These examples show that the applied object can be indefinite and it can follow the theme.

According to judgments from the Saint Louisien consultants, the thematic interpretation seems more sensitive to 'humanness' than definiteness. In (73b) the object *muus mi* 'the cat' is definite and the object *xale* 'child' is not definite. Despite this, *xale* 'child' is interpreted as the recipient and instead of *muus mi* 'the cat'. Speakers did not accept the interpretation in which a child was given to the cat because *xale* 'child' is human while *muus mi* 'the cat' is an animal and it is pragmatically odd at best to give a child to a cat.

Evidence from speakers consulted for this dissertation do support that definiteness does play a role in applicative formation, just not in the exact way Schwartz proposed. It cannot be the case that both objects are indefinite and unspecified as shown in example (75).

- (75) a. *Góór gi jox ně muus xale.
 man DEF give 3SG cat child
 Intended: ‘The man gave a child to a cat.’
- b. *Góór gi jox ně xale muus.
 man DEF give 3SG child cat
 Intended: ‘The man gave a cat to a child.’

From these examples, I conclude that one of the objects must be definite. However, given the definite object can be located in either first or second object position (see 73 and 74), it is not possible to maintain the hypothesis that scrambling is directly related to definiteness. If it were, we would expect the definite object to appear in the same position in varying sentences but this is not the case, as seen in (76).

- (76) a. Damay jox xale bi neexal.
 1SG.AFF give child DEF gift
 ‘I gave the child a gift.’
- b. Damay jox neexal xale bi.
 1SG.AFF give gift child DEF.PL
 ‘I gave the child a gift.’

The analysis presented in this chapter correctly captures syntactic processes seen in the data from Wolof. The role that definiteness and specificity play in object scrambling requires much additional research before any conclusions can be drawn.

In the rest of this section, I address other approaches to analyzing alternating word order of objects and show they are not able to correctly account for the Wolof data.

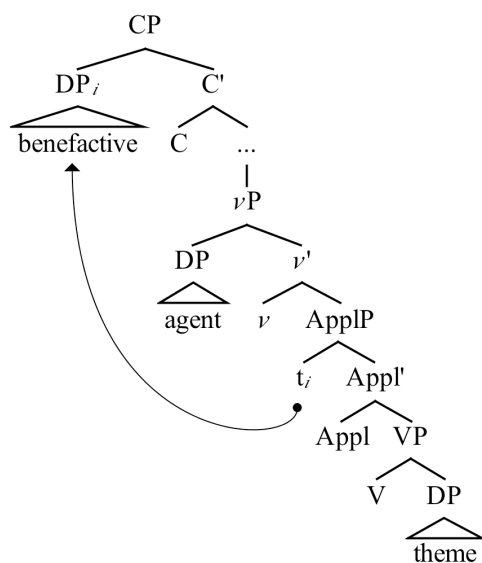
3.3.3.2. Different merges

An alternative approach to variable word order is allowing the objects to merge in different orders, e.g. the theme could merge with the verb or the applied object could

merge with the verb, rather than the object scrambling. When the theme merges first, it surfaces in the second object position and is c-commanded by the applied object. If the applied object merges with the verb first, it surfaces as the second object and is c-commanded by the theme. However, weak cross-over indicates the variable merge hypothesis is not plausible in Wolof applicatives.

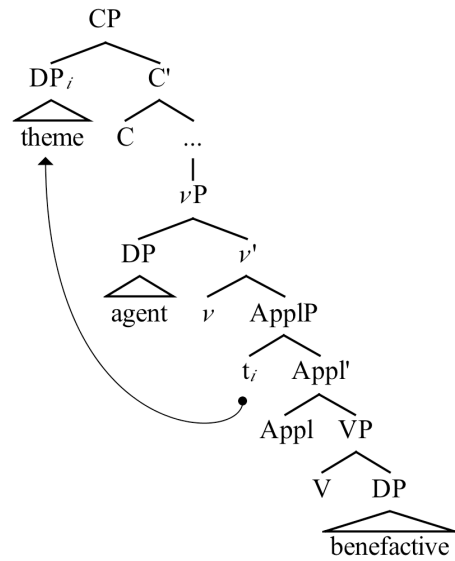
If the arguments could be merged in either order, then we would expect no weak cross-over effects in applicatives. If the theme merged first, then it would be lower than the applied object. From such a structure the applied object could be questioned without incurring a weak cross-over violation (77).

(77)



If the applied object could merge with the verb, the theme object would be in the higher position. The theme would be allowed to be questioned without incurring a weak cross-over violation.

(78)



Such sentences however, are ungrammatical due to weak cross-over as already pointed out in 3.1.2.3 (examples repeated from 51 above).

Applied object questioned

- (80) a. Gan góor_i nga yónnee t_i bataaxal-am_i?
 which man 2SG send letter-3SG.POSS
 ‘‘Which man_i did you send his_i letter?’’

Theme object questioned

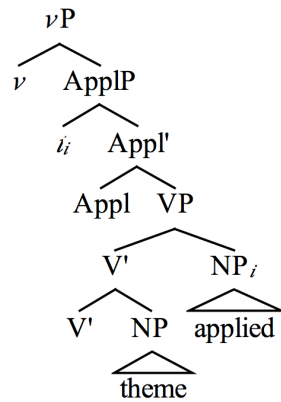
- b. Bataaxal-u kan_i nga yónnee bindekat-am*_{i/j} t_i ?
 letter-CS who 2SG send author-3SG.POSS
 Whose_i letter did you send to its*_{i/j} author?’

Variable word order in Wolof therefore can’t arise from variable Merge orders. The combined data from all three c-command tests show the objects in applicatives have a fixed merge order: theme before applied. I conclude that the variable binding is better accounted for via object scrambling.

3.3.3.3. Rightward Adjunction

A second proposal for variable word order in applicatives comes from work on Bantu languages. Binding evidence in these languages, like Swahili, points to the applied object moving rightward to an adjunct position which still c-commands the theme object. The variable word order of benefactive applicatives is argued to be the result of rightward adjunction.

(81)



In Bantu languages variable c-command does not obtain like it does in Wolof. For example, in Swahili, when the applied object follows the theme object, it still binds an anaphor in theme position. The quantified applied object, *kila mwandishi* ‘each author’ still binds the anaphor in the preceding theme object, *kitabu chake* ‘his book’.

- (82) Ni-li-m-som-e-a kitabu chake_i [kila mwandishi]_i.
 SP-pst-OP-read-APPL-fv book his each author
 “I read each author his book.” (Marantz 1993:117)

In Swahili, the linear position of the object does not affect the binding possibilities of the objects like it does in Wolof.

Additionally in Swahili, a quantified theme can never bind an anaphor in the applied object regardless of word order unlike Wolof (example cited from Marantz 1993:117).

- (83) a. *Ni-li-m-som-e-a [kila kitabu]_i mwandishi wake_i.
 SP-pst-OP-read-APPL-fv each book author its
 “*I read its author each book.”
- b. *Ni-li-m-som-e-a mwandish wake_i [kila kitabu]_i.
 SP-pst-OP-read- author its each book
 “*I read its author each book.”

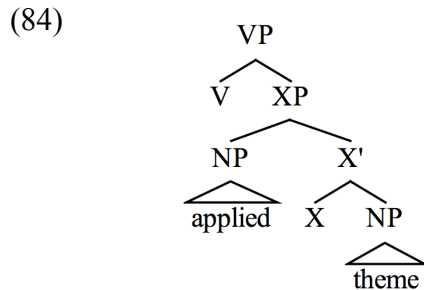
We know from these data that theme objects in Swahili cannot c-command the applied object. Thematic role of the object seems a more relevant determiner of binding and c-command than linear position in Swahili. I conclude that variable word order in Swahili and variable word order in Wolof result from different processes as rightward adjunction does not account for the c-command facts found in Wolof.

3.3.4. A ‘small clause’ problem

Before ending the discussion on dative and benefactive applicatives, I would like to briefly look at one other type of analysis of applicatives that has been proposed in the literature. Several linguists have proposed using a small clause structure embedded within the minimal VP to account for applicatives (Harley 2002; Beck and Johnson 2004). I also include Pytkänen’s Low Appl (2002, 2008) in this section because the structure of Low Appl is essentially a type of small clause. In this section, I illustrate the problems associated with adopting such an analysis for Wolof applicatives and show that the thematic and raising applicative analysis is more fruitful for Wolof.

An applicative formed via a small clause has the following structure. The label of the X head varies across analyses but the small clause structures proposed are parallel.

For example, Pylkkänen (2008) calls XP Low ApplP, while Harley (2002) calls it P_{HAVE}. The label is not important here, it's the structure that is relevant.



The first problem for a small clause analysis is the compatibility of benefactive applicatives with intransitive predicates. Whether headed by Low Appl or some type of null preposition like P_{HAVE}, a small clause relates two entities to each other, either an object to an object or an object to a property. This means that in order to be licit in applicatives, there must be two objects present. Benefactive applicatives productively apply to intransitive predicates, leading to a sentence with only one object. This is one line of evidence that benefactive applicatives cannot involve a small clause. One could argue intransitive verbs with a benefactive applicative could be the result of unspecified object deletion or a null anaphor in theme position. However, this assertion cannot be maintained in the face of unaccusative and unergative examples like *dem* ‘to go’ or *wax* ‘to speak’.

- (85) a. Wax-al naa Boris.
 speak-APPL 1SG Boris
 ‘I spoke for/on behalf of Boris.’
- b. Dem-al naa fa Boris.
 speak-APPL 1SG LOC Boris
 ‘I went there for/on behalf of Boris.’

One cannot argue that applicatives involving these verbs are the result of unspecified object deletion or a null anaphor because unaccusative verbs don't select a theme object⁷ in any circumstances yet are still compatible with benefactive applicatives.

As for dative applicatives that do require two objects, Larson (2010) highlights a problem with Pylkkänen's Low Applicative analysis. According to Pylkkänen, the recipient (dative object) is not semantically related to the verb. She explains, "Low applied arguments bear no semantic relation to the verb whatsoever: they bear only a transfer-of-possession relation to the direct object" (2008:14). Larson points out that the semantic definition of Low Appl leads to vacuous quantification and false entailments. The following sentences to show the semantic analysis of Low Appl leads to entailments which do not hold. The entailment in (86b) is not true of the applicative sentence in (86a).

- (86) a. John wrote Mary that letter.
 b. John wrote that letter and Bill gave Mary that letter.

Under Pylkkänen, (b) should be an entailment of (a), given that the low applied object (Mary in this case) bears no relation to the verb. All that matter is that Mary gets the letter. However, (b) is not an entailment of (a). Larson argues that Pylkkänen's departure from the Neo-Davidsonian analysis of applicatives results in the entailment problems. Low Appl is therefore not a tenable approach to dative applicatives.

Aside from the problem with the semantics of Low Appl brought forth by Larson, the lack of other types of small clauses like resultatives and *to*-datives in Wolof are problematic for any small clause analysis. Snyder (2001) and Beck and Johnson (2004) argue the presence of resultatives clauses and *to*-datives correlates with the presence of double object constructions (applicatives) in a given language, since they involve the

⁷ The term 'theme object' used here is not to be confused with 'theme argument'. Unaccusative verbs do select a theme argument, which appears in subject position, but they select no additional arguments that could appear in object position.

same small clause structure. Conversely, if a language does not have resultative or *to*-datives, it is expected not to allow applicatives.

Synder (2001) proposes a principle, which he calls Principle R, which facilitates the combination of a small clause with an event of a different semantic type. Assuming resultatives and double object constructions (applicatives) both have the same structure in the syntax, the small clause, both require the presence of Principle R in the language in order to be felicitous. So if a language has resultatives then it should also allow double object constructions (applicatives) and vice-versa. Conversely, if a language does not have resultatives, or any other type of small clause construction, then it is expected not to allow double object constructions.

Preliminary data suggest a total absence of resultatives and *to*-datives in Wolof. First, resulting states in Wolof cannot be expressed using a small clause, as seen in (87a) unlike its equivalent in English. The adjective *ubbiku* ‘open’ must be contained in a relative clause with an overt complementizer, *mu*, shown in (87b).

Resultative Small clause

- (87) a. *Bay naa bunt bi ubbiku.
 leave 1SG door DEF open
 ‘I left the door open.’

Relative clause

- b. Bay naa bunt bi mu ubbiku.
 leave 1SG door DEF C_{REL} open
 ‘I left the door open.’

Second, dative objects cannot be expressed in a prepositional phrase. The preposition *ci* which roughly translates to *to* in English is used with locative objects not recipients like *Omar* in (88a). Instead, to express dative objects, an applicative structure is used as shown in (b).

to-Dative

- (88) a. *Yonnee naa bataaxal ci Omar.
 send 1SG letter to Omar
 ‘I sent a letter to Omar.’

Dative applicative

- b. Yonnee naa Omar bataaxal.
 send 1SG Omar letter
 ‘I sent a letter to Omar. (I sent Omar a letter.)’

I thus conclude that complex predicates with embedded small clauses are not possible in Wolof. Resulting states in Wolof are expressed using relative clauses as in (87b). Prepositional datives do not exist. Dative objects are only expressed using an applicative type structure. Adopting the work of Synder (2001), this suggests Wolof does not have Principle R in the interpretational component of the grammar. I therefore conclude that the lack of resultative and *to*-dative small clauses excludes a Low Applicative or small clause analysis for dative applicatives. The applicative head proposed by Georgala (2012) for raising applicatives, AppLE, combines with the predicate via Event Identification and therefore does not need Principle R.

3.4. Conclusion

In this chapter, I have shown that both benefactive and dative applicatives are symmetrical and they share object and c-command properties. Despite these similarities, dative applicatives do not allow unspecified object deletion. They require an detransitivizing morpheme, *-e*, for the one of the objects to be suppressed while benefactive applicatives allow unspecified object deletion of the theme object. Due to this difference, I conclude that benefactive and dative applicatives do not share the same structure; they result from different derivations.

I argue that benefactive applicatives have a Thematic Applicative structure and datives have a Raising Applicative structure (Georgala 2012). Benefactive objects are selected by the ApplT head while dative objects are selected by the lexical verb and raise to the ApplE projection. As we will see in the next chapter, instrumental and locative applicatives will require a third type of applicative structure.

Chapter 4

4. OBLIQUE APPLICATIVES

This chapter deals with the two remaining types of applicatives found in Wolof: instrumental and locative. These applicatives exhibit variation in form and behavior to a much higher degree than their benefactive and dative counterparts. Because of this variation I have included data from all types of instrumental and locative constructions, applicative and non-applicative. The main focus, however, will be on what I call the *in situ* applicative since this is the closest to the benefactive and dative applicatives and will show the most about VP structure. In section 4.4, I argue instrumental and locative *in situ* applicatives involve a third type of Appl head, Oblique Appl (abbreviated as ApplO). Oblique Appl is similar to Thematic Appl in that it relates an individual to an event but unlike ApplT, it merges downward with the VP.

4.1. Oblique objects in Wolof

To begin the discussion of Wolof instrumental and locative applicatives, let's consider the different types of constructions that can express instrumental and locative objects. First, in *in situ* applicatives the applied object appears *in situ* within the VP. The form of the applicative suffix in instrumental and locative sentences is *-e*.¹ The instrumental object, *big* 'pen', appears to the right of the theme *bataaxal bi* 'the letter'.

- (1) Moustapha dafa-y [bind-e bataaxal bi big]_{VP}.
 Moustapha 3SG.AFF-IMP write-APPL letter DEF pen
 'Moustapha is writing the letter with a pen.'

In the second type of oblique constructions, the applied object is focused and appears in a sentence initial position outside of the VP in conjunction with object focus morphology on the subject marker, *laa* in the following example.

¹ Not to be confused with the homophonous detransitivizing morpheme, *-e*, discussed in chapter 3.

- (2) Big laa [bind-e bataaxal bi]_{VP}.
 pen 1SG.OFOC write-APPL letter DEF
 It's a pen with which I wrote the letter.'

Third, instrumental and locative objects can also be expressed without using an applicative verb. In such cases, the instrument or locative is contained within a prepositional phrase similar to English, such as *ak big* 'with a pen' below.

- (3) Dama-y [bind bataaxal bi [ak big]_{PP}]_{VP}.
 1SG.AFF-IMP write letter DEF with pen
 'I am writing the letter with a pen.'

A fourth way of expressing instrumental and locative objects combines the *in-situ applicative* and the prepositional variant. I call these *hybrid applicatives*. Hybrid applicatives have the applicative suffix *-e* associated with the verb but the "applied" object is still contained in a prepositional phrase.

- (4) Dama-y [bind-e bataaxal bi [ak big]_{PP}]_{VP}.
 1SG.AFF-IMP write-APPL letter DEF with pen
 'I am writing the letter with a pen.'

I will discuss *in-situ applicative* first, followed by *hybrid applicatives* because these tell the most about applicative VP structure. I outline the prepositional variant as well since it will be contrasted with *in situ* and *hybrid applicatives* throughout the chapter. I discuss the *fronted applicatives* last because they do not show anything about VP structure but are frequently used in spoken and written Wolof.

The object properties of instrumental and locative applicatives are given in section 4.2. Section 4.3. presents c-command facts about instrumental and locative applicatives. The analysis of the instrumental and locative applicatives is presented in 4.4.

4.1.1. *In situ applicatives*

In-situ applicatives contain applicative morphology and allow two post verbal direct objects like benefactive and dative applicatives. Their productivity is limited and sentences of this type are deemed marginal by native speakers. However, they aren't judged to be ungrammatical and speakers do have intuitions about them so therefore I include them, setting aside the question as to why they are less natural than benefactive and dative applicatives. In situ applicatives in Wolof are also mentioned in the literature by Dione (2013) for both instrumental and locative applicatives.

Instrumental in situ applicative

- (5) Dama-y bind-e bataaxal bi big.
 1SG.AFF-IMP write-APPL letter DEF pen
 'I am writing the letter with a pen.'

Locative in situ applicative

- (6) Ma ngi-y jàng-e téere bi sama kër.
 1SG 1SG.IMP read-APPL book DEF 1SG.POSS house
 'I am reading the book at my house.'

Unlike benefactive and dative applicatives, applied instrumental and locative objects can only appear following the theme object. When the instrumental or locative object is adjacent to the verb as in (7), where *big* 'pen' precedes *bataaxal bi* 'the letter', the sentence is categorically rejected (compare to 5).

- (7) *Damay bind-e big bataaxal bi.
 1SG.AFF write-APPL pen letter DEF
 'I am writing the letter with a pen.'

Dione (2013) also confirms that instrumental and locative objects must follow the theme.

Similarly, the applied locative object *sama kër* 'my house' cannot precede the theme object *téere bi* 'the book', as seen when comparing (8) and (6) above.

- (8) *Ma ngi-y jàng-e sama kër téere bi.
 1SG 1SG-IMP read-APPL 1SG.POSS house book DEF
 ‘I am reading at my house the book.’

This rigid word order is not seen in benefactive or dative applicatives, as we saw in chapter 3, section 3.1.1.

In situ applied objects are compatible with intransitive predicates. Again, the applicative suffix *-e* is associated with the verb. The applied object, *yet* ‘cane’ in (9) and *kër ga* ‘the house’ in (10), appears without a preposition.

- (9) Dama-y dox-e yet.
 1SG.AFF-IMP walk-APPL cane
 ‘I am walking with a cane.’
- (10) Dama-y togg-e kër ga.
 1SG.AFF-IMP cook-APPL house DEF
 ‘I am cooking at the house.’

I note here that there is one example of a locative verb that is obligatorily ditransitive, the verb *gunge* ‘to accompany’. Unlike the other in situ applicatives we’ve seen, there is no applicative morphology on *gunge*. Despite these differences, the word order is fixed, theme - locative, like other in situ locative applicatives.

- (11) Dama-y gunge Issa Dakar.
 1SG.AFF-IMP accompany Issa Dakar
 ‘I am accompanying Isa to Dakar.’
- (12) *?Dama-y gunge Dakar Issa.
 1SG.AFF-IMP accompany Dakar Issa
 ‘I am accompanying Isa to Dakar.’

Kinyarwanda Instrumental

- (15) a. Umukoôbwa a-ra-andik-iish-a íbárúwa íkárámu.
 girl she-PRES-write-INSTR-ASP letter pen
 ‘The girl is writing a letter with a pen.’

Kinyarwanda Instrumental

- b. Umubooyi a-ra-kat-iish-a inyama ícyúuma.
 cook she-PRES-cut-INSTR-ASP meat knife
 ‘The cook is cutting meat with a knife.’

(Kimenyi 1980:32)

The data from Wolof match Kiswahili and Kinyarwanda and show the applied object, be it instrumental or locative, cannot appear adjacent to the verb. This is the opposite pattern from what was seen with benefactive and dative applicatives in chapter 3 and will be taken into consideration in the analysis proposed in section 4.4. Now, I turn to hybrid applicatives.

4.1.2. Hybrid Applicatives

The hybrid construction involves the applicative suffix *-e* on the verb used in conjunction with a prepositional phrase. Dione (2013) and Creissels (2004) calls these constructions non-canonical applicatives because they contain an object, in the form of a PP, that the same non-derived verbs can license. This construction is accepted by all consultants unlike the in situ applicative examples.³

Instrumental hybrid applicative

- (16) Damay bind-e bataaxal bi ak big.
 1SG.AFF write-APPL letter DEF with pen
 ‘I am writing the letter with a pen.’

³ At this point, it is unclear if there is a semantic or pragmatic difference between the hybrid applicatives and in situ applicatives. Schwartz (1975) and Dunigan (1994) suggest that, at least in locative constructions, the suffix *-e* signals that the prepositional phrase is an argument of the verb.

Locative hybrid applicative

- (17) Sindax bi laa rey-e sa garab ba.
 lizard DEF 1SG.OFOC kill-APPL at tree DEF.DIST
 ‘It was a lizard that I killed under the tree.’

Hybrid applicatives also have *theme - instrument/locative* default word order like we saw above for in situ applicatives. It is unclear if the instrumental PP is allowed to intervene between the verb and the theme. Grammaticality judgements of my data are simply too varied to draw a conclusion.

4.1.3. Prepositional instruments and locatives

I now discuss the simple prepositional variant, which involves a prepositional phrase and no applicative morphology on the verb. The verb takes two complements, a direct object and a prepositional phrase. This structure is analogous to prepositional complement sentences in English. In (18) the theme object, *bataaxal bi* ‘the letter’, is the direct object of the verb and is followed by a prepositional phrase which contains the instrument, *ak big* ‘with a pen’. A prepositional locative, *ci kër ga* ‘in/at the house’, is shown in (19).

Instrument

- (18) Dama-y bind bataaxal bi [ak big]_{PP}.
 1SG.AFF-IMP write letter DEF with pen
 ‘I am writing the letter with a pen.’

Locative

- (19) Dama-y nafar téere [ci kër ga]_{PP}.
 1SG.AFF-IMP read book in/at house DEF
 ‘I am reading a book at the house.’

Instrumental and locative prepositional phrases are also compatible with intransitive predicates.

Instrument

- (20) Dama-y dox [ak yet]_{PP}.
 1SG.AFF-IMP walk with cane
 ‘I am walking with a cane.’

Locative

- (21) Dama-y togg [ci kër ga]_{PP}.
 1SG.AFF-IMP cook in/at house DEF
 ‘I am cooking at the house.’

Prepositional constructions do allow the instrumental PP (22) and locative PP (23) to intercede between the verb and the theme.

Instrument

- (22) Dama-y bind [ak big]_{PP} bataaxal bi.
 1SG.AFF-IMP write with pen letter DEF
 ‘I am writing the letter with a pen.’

Locative

- (23) Jél naa [sa ja ba]_{PP} ay natal.
 take 1SG at market DEF.PL photo
 ‘I took photos at the market.’

This behaviour is different than in situ applicatives, where the instrument or locative cannot precede the theme.

4.1.4. Fronted Oblique Objects

As previously mentioned, applied instrumental and locative objects often appear at the beginning of the sentence in a focus position. Applicative morphology on the verb is required for the sentence to be grammatical.

- (24) Big laa bind-*(e) bataaxal bi.
 pen 1SG.OFOC write-APPL letter DEF
 It's a pen with which I wrote the letter.'

In (24), the instrumental applied object, *big* 'a pen', is in the fronted position, and object focus morphology is used, *laa*. The applicative suffix *-e* is attached to the verb, *bind* 'to write' and the theme object, *bataaxal bi*, is in its canonical position following the verb. The sentence is ungrammatical without the suffix *-e*. Locative objects follow the same pattern as illustrated in (25) and (26).

- (25) Sama kër laa-y jàng-e téere bi.
 1SG.POSS house 1SG.OFOC-IMP read-APPL book DEF
 'It is at my house where I am reading the book.'

- (26) Kër Boris laa togg-e ceebu-jën.
 house Boris 1SG.OFOC cook-APPL rice-fish
 'It was at Boris' house where I cooked ceebu-jën (a rice and fish dish).'

Fronted instrumental and locative objects are also compatible with intransitive predicates. Instrumental examples are shown in (27)-(28) and (29) shows an analogous locative example.

- (27) Woto laa dem-e.
 car 1SG.OFOC go-APPL
 'I went by CAR.'
- (28) Yet laa-y dox-e.
 cane 1SG.OFOC-IMP walk-APPL
 I walk with a CANE.'

- (29) Kër Boris laa togg-e.
 house Boris 1SG.OFOC cook-APPL
 ‘It was at Boris’ house where I cooked.’

Before continuing, it is worth noting that locative objects can be associated with some intransitive verbs without a preposition or applicative morphology. For example, one can say “I am going to Dakar” without the use of a prepositional phrase in Wolof.

- (30) Dama-y dem Ndakaaru.
 1SG.AFF-IMP go Dakar
 ‘I am going to Dakar.’

With this verb, the locative object can also be fronted without applicative morphology (31).

- (31) Ndakaaru laa dem.
 Dakar 1SG.OFOC go
 lit: ‘It is to Dakar that I am going.’

In fact, using a preposition, like *ci*, or the applicative suffix, *-e*, with the verb *dem* ‘to go’ gives rise to an unacceptable sentence.

- (32) a. *Dama-y dem ci Ndakaaru.
 1SG.AFF-IMP go to Dakar
 ‘I am going to Dakar.’
 b. *Dama-y dem-e Ndakaaru.
 1SG.AFF-IMP go-APPL Dakar
 ‘I am going to Dakar.’

These examples are similar to the *gunge* example given in (11) through (13). The difference is that the locative object associated with *gunge* is obligatory while the locatives in (30) and (31) are optional. This pattern of locative objects surfacing without a

preposition is found with certain deictic verbs in Wolof. This class of verbs deserves further study but for present purposes, despite the lack of morphology, I assume they are applicatives but leave aside their relation to morphologically derived and ditransitive locative applicatives.

4.2. Object Properties

This section looks at the object properties in in situ and hybrid applicatives and in prepositional phrases. We've already seen that word order in instrumental and locative applicatives is fixed. This section shows instrumental and locative applicatives show other symmetrical applicative behaviour with a twist. Both object can be pronominalized with clitics but only the applied object can be A-bar extracted.

4.2.1. Pronominalization

Recall from chapter 3 that clitic pronouns in Wolof can replace applied objects like they replace direct objects in transitive sentences. Instrumental objects can only be pronominalized with a clitic in in situ applicatives. Locative pronouns have a different form than instrumental objects in both the clitic and strong pronoun paradigms and will be shown to be insensitive to objecthood. Instrumentals will therefore be discussed first, followed by the locative pronominalization data.

Instrumental objects are replaced with clitic pronouns in in situ applicatives, illustrated in (33) and (34), just like benefactive and dative applied objects (see chapter 3, section 3.1.2).

- (33) Dama ko-y bind-e bataaxal bi.
 1SG.AFF 3SG.OBJ-IMP write-APPL letter DEF
 'I am writing the letter with it.'

- (34) Dama ko-y dox-e.
 1SG.AFF 3SG.OBJ-IMP walk-APPL
 ‘I am walking with it.’

Strong pronouns are used when the instrument is contained in a prepositional phrase or is fronted, as illustrated in (35). The instrument has been pronominalized with the strong pronoun *moom* ‘he/she/it’. The clitic pronoun *ko* cannot be used in either case.

- (35) a. Dama-y dox ak moom/*ko.
 1SG.AFF-IMP walk with 3SG.OBJ
 ‘I am walking with it.’
- b. Moom/*ko laa-y dox-e.
 3SG.OBJ 1SG.OFOC-IMP walk
 ‘I am walking with IT.’ (lit: It is it with which I am walking.)

Theme objects are also replaced by the clitic pronoun *ko* ‘him/her/it’ in in situ applicatives (36a) as well as in prepositional complement sentences (36b).

- (36) a. Dama ko-y bind-e big.
 1SG.AFF 3SG.OBJ-IMP write-APPL pen
 ‘I am writing it with a pen.’
- b. Dama ko-y bind ak big.
 1SG.AFF 3SG.OBJ-IMP write with pen
 ‘I am writing it with a pen.’

When both objects are pronominalized with the 3SG clitic pronoun *ko*, as in (37a), speakers find the sentence odd. Speakers preferred the version with only one pronoun, *ko*, replacing the applied instrumental object and the theme object left unspecified (37b).

- (37) a. ?Dama ko ko-y bind-e.
 1SG.AFF 3SG.OBJ 3SG.OBJ-IMP write-APPL
 'I am writing it with it.'
- b. Dama ko-y bind-e.
 1SG.AFF 3SG.OBJ-IMP write-APPL
 'I am writing (something) with it.'

Given that two *ko*'s are permitted in benefactive and dative applicatives, it is not likely that two *ko*'s are blocked in instrumental applicatives for purely phonological reasons.

- (38) Bind-al na ko ko.
 write-APPL 3SG 3SG.OBJ 3SG.OBJ
 'He/she wrote it for him/her.'

These data indicate that instrumental applicatives are symmetrical because like dative and benefactive applicatives, either object can be pronominalized with the clitic pronoun. Unlike benefactive and dative applicatives, only one object can be pronominalized at a time. Looking at extraction in 4.2.2., we will see that these applicatives exhibit a mix of properties, both symmetrical and asymmetrical.

Turning now to locative constructions, the pronominalization patterns for locative objects are different from the other types of objects. Recall that benefactive, dative, and instrumental applied objects are all pronominalized using the clitic pronouns listed in Table 1 from chapter 3, repeated here for convenience.

Table 1

	Clitic	Strong
1SG	ma	man
2SG	la	yow
3SG	ko	moom
1PL	nu	nun
2PL	leen	yeen
3PL	leen	ñoom

Locative objects cannot be replaced by pronouns in this paradigm, neither clitic nor strong. They are replaced by either the locative clitic pronoun *fi/fa* ‘here/there’ or the strong locative pronoun *foofu* ‘there’. Unlike the pronouns in Table 1, the choice of a clitic or strong locative pronoun isn’t determined by object status of the object. Unlike clitic and strong pronouns in Table 1, *fi/fa* and *foofu* are not in complementary distribution with each other. The speaker has the choice as to which form to employ. To see this, I have created question-answer pairs that target locative expressions. In (39a) the locative is an object, not contained in a PP, while in (40a) the locative, *butig ba* ‘the store’ is inside a PP. The (b) sentences show that in both cases, answers using either *fa* or *foofu* are grammatical.

- (39) a. Gis nga ma dëkk ba?
 see 2SG 1SG.OBJ village DEF.DIST
 ‘Did you see me at the village?’
- b. Waaw, gis naa la fa/foofu.
 yes see 1SG 2SG.OBJ there
 ‘Yes, I saw you there.’
- (40) a. Jënd nga suukër ak meew ca butig ba?
 sell 2SG sugar and milk PREP store DEF.DIST
 ‘Do you sell sugar and milk at the store?’
- b. Waaw, jënd naa leen fa/foofu.
 yes sell 1SG 3PL.OBJ there
 ‘Yes, I see them there.’

Thus, pronominalization is not a very useful test for the objecthood of locative objects because the choice of pronoun does not reveal if the locative is an object of the verb or the object of a preposition.

Looking at the data from pronominalization tests, the applied and theme objects can be pronominalized using clitic pronouns in instrumental in situ applicatives. In hybrid applicatives and prepositional complement sentences the theme can be replaced with a clitic pronoun but the applied must be replaced with a strong pronoun. This means that in in situ applicatives, both objects behave as direct objects of the verb while in hybrid applicatives and prepositional complements only the theme does. This confirms my decision to focus the analysis on in situ applicatives and leave the structure of hybrid applicatives for a later date.

4.2.2. *Extraction in oblique applicatives*

I now look at extraction of objects in instrumental and locative applicatives and we will see that only the applied object can be extracted. In in situ applicatives, the applied object, either locative or instrumental, can be questioned or focused, but the theme object cannot.

Locative questioned

- (41) a. Fan nga togg-e ceebu-jën?
 where 2SG cook-APPL ceebu-jën
 ‘Where did you cook ceebu-jën?’

Theme questioned

- b. *Lan nga togg-e kër Boris?
 what 2SG cook-APPL house Boris
 ‘What did you cook at Boris’ house?’

Locative focused

- (42) a. Kër Boris laa togg-e ceebu-jën
 house Boris 1SG.OFOC cook-APPL rice.and.fish
 ‘It was at Boris’ house where I cooked rice and fish.’

Theme focused

- b. *Ceebu-jën laa togg-e kër Boris
 rice.and.fish 1SG.OFOC cook-APPL house Boris
 ‘It was rice and fish that I cooked at Boris’ house.’

Instrument questioned

- (43) a. Lan nga rey-e mbóot mi?
 what 2SG kill-APPL roach DEF
 With what did you kill the cockroach?’

Theme questioned

- b. *Lan nga rey-e dàll bi?
 what 2SG kill-APPL shoe DEF
 What did you kill with the shoe?’

Instrument focused

- (44) a. Paakaa bi laa dagg-e yàpp yi.
 knife DEF 1SG.OFOC cut-APPL meat DEF.PL
 It was the knife with which I cut the meat.’

Theme focused

- b. *Yàpp yi laa dagg-e paakaa bi.
 meat DEF.PL 1SG.OFOC cut-APPL knife DEF
 ‘It was the meat that I cut with the knife.’

The (a) sentences show extraction of the locative and instrumental objects. Each of these sentences is grammatical so we know the applied object can be extracted in Wolof. The (b) sentences show extraction of the theme object. None of these sentences are grammatical leading to the conclusion that the theme cannot be extracted. This is unlike benefactive and dative applicatives which allow extraction of either object (see chapter 3, section 3.1.3).

In prepositional complement sentences, the results are different. The theme can be questioned or focused but not the instrument or locative object. Prepositional locatives are considered first in examples (45) and (46). Prepositional instruments are shown in examples (47) and (48).

Theme questioned - locative

- (45) a. Lan nga togg ci kër Boris?
 what 2SG cook at house Boris
 ‘What did you cook at Boris’ house?’

Locative questioned

- b. *Fan nga togg ceebu-jën?
 what 2SG cook rice.and.fish
 ‘Where did you cook rice and fish?’

Theme focused

- (46) a. Ceebu-jën laa lekk sa ja ba.
 ceebu-jën 1SG.OFO cook at market
 It was ceebu-jën that I ate at the market.’

Locative focused

- b. *Sa ja ba laa lekk ceebu-jën.
 at market 1SG.OFO eat rice.and.fish
 C
 ‘It was at the market where I ate rice and fish.’

Prepositional instruments show the same pattern as prepositional locatives. In the prepositional complement sentence, only the theme, *yàpp yi* ‘the meat’ can be extracted for questioning or focus.

Theme focused

- (47) a. Yàpp yi naa dagg ak paakaa bi?
 meat DEF.PL 1SG cut-APPL with knife DEF
 ‘It was the meat that did you cut with the knife?’

Instrument focused

- b. *Paakaa bi naa dagg yàpp yi?
 knife DEF 1SG cut meat DEF.PL
 ‘With what did you cut the meat?’

Theme questioned

- (48) a. Lan nga bind ak big?
 what 2SG write with pen
 ‘What did you write with the pen?’

Instrument questioned

- b. *Lan nga bind bataaxal bi?
 what 2SG write letter DEF
 ‘With what did you write the letter?’

Sentences with an extracted instrument or locative prepositional phrase, like (48b), cannot be saved by realizing the preposition either fronted or stranded after the theme.

Extracted full PP

- (49) a. *Ak lan nga dagg yàpp bi?
 with what 2SG cut meat DEF
 ‘With what did you cut the meat?’

Stranded preposition

- b. *Lan nga dagg yàpp bi ak?
 what 2SG cut meat DEF with
 ‘With what did you cut the meat with?’

Their ungrammaticality means the the prepositional phrase cannot be extracted. Next I look at extraction of instrumental and locative PPs in hybrid applicatives.

Hybrid applicatives are in between prepositional complements and in situ applicatives. They allow the theme to be extracted like we saw above for prepositional complements. They also allow a full locative PP to be focused as seen in (50), unlike prepositional complement sentences.

Theme focused

- (50) a. Xale bi laa dóor-e sa ja ba.
 child DEF 1SG.OFOC hit-APPL at market
 ‘It was the child that I hit at the market.’

Locative PP focused

- b. Sa géej ba laa napp-e ay jën.
 at beach DEF 1SG.OFOC catch-APPL DEF.PL fish
 ‘It was at the beach where I caught fish.’

Themes can also be extracted in instrumental prepositional complements, as seen with *yàpp yi* ‘the meat’ (51a). Extracting an instrumental PP, like *ak yet bi* ‘with the cane’, even in the hybrid applicative, is questionable but not categorically rejected by speakers.

Theme focused

- (51) a. Yàpp yi laa dagg-e ak paakaa bi.
 meat DEF.PL 1SG.OFOC cut-APPL with knife DEF
 ‘It was the meat that I cut with the knife.’

Instrumental PP focused

- b. ?Ak yet bi laa dóor-e xale bi.
 with cane DEF 1SG.OFOC hit-APPL child DEF
 ‘It was the cane with which I hit the child.’

Only applied objects can be extracted in in situ applicatives. Both the theme and applied PP object can be extracted in hybrid applicatives although some speakers disagree with extracted instruments. Finally, only theme objects can be extracted in

prepositional complement sentences. The relevant patterns of extraction are illustrated in Table 2.

Table 2. Extraction of objects			
	In-situ	Hybrid	Prepositional
Theme (in locatives and instrumentals)	N	Y	Y
Locative	Y	Y	N
Instrument	Y	Y*	N
	*Allowed but marginal		

Summing up, the tests for the object properties of instrumental and locative applicative structures reveal mixed results for theme and applied objects. Instrumental and locative objects in in situ applicatives overwhelmingly pattern with direct objects. They are pronominalized with clitic pronouns like direct objects. They can be questioned and focused like direct object of a transitive verbs. On the other hand, they are not allowed to intervene between the theme object and the verb, which does not match the behaviour of direct objects in transitive sentences. Turning now to the theme, it is pronominalized with a clitic pronoun just like direct objects of transitive verbs and appears adjacent to the verb, but it cannot be extracted, unlike objects of transitive sentences. So in instrumental and locative applicatives, the applied object looks like a direct object except verb adjacency and the theme looks like a direct object except for extraction. The analysis presented in section 4.4 will account for these facts. Although I classify instrumental and locative in situ applicatives as symmetrical, I acknowledge that the properties considered are not uniform in Wolof, raising again the question of the usefulness of binary opposition between “symmetrical” and “asymmetrical”.

4.3. C-command

Recall from chapters 2 and 3 that certain tests can be used to determine the c-command relationship between two objects in an applicative structure. In this section, I apply

quantifier binding and weak cross-over tests to instrumental and locative applicatives to identify the c-command relationships in in situ and hybrid applicatives, and in prepositional complement constructions. Data from the applicatives show theme objects asymmetrically c-command applied objects. The c-command results for fronted applicatives do not offer insight to the structure of the VP so they are not included.

4.3.1. Quantifier Binding

In what follows, I use comparative judgements of acceptability to test for quantifier binding between the objects. To start with, an applied instrumental object cannot bind a theme object. That is to say, a universal quantifier associated with the applied instrument cannot bind an anaphor in the theme. In (52a) the theme object appears first since applied instrumental and locative objects follow themes, as we saw earlier. The quantified instrumental object, *paaka bu nekk* ‘every knife’ cannot bind the anaphor of the theme object, *borom-om* ‘its owner’. If the anaphor in theme position *-om* ‘its’ is not interpreted as coreferential with the quantified instrument, then the sentence is grammatical.

- (52) a. Dagg-e naa borom-om*_{i/j} paaka bu nekk_i.
 cut-APPL 1SG owner-3SG.POSS knife C_{REL} each
 I cut its*_{i/j} owner with every knife_i.’

Binding cannot be achieved by placing the instrument before the theme, as seen in (53). As already shown in section 4.1.1. above, object scrambling in instrumental and locative applicatives is not permitted; instrumental and locative applied objects cannot precede theme objects. The sentence in (53) is therefore ungrammatical, whether or not the pronoun is interpreted as bound.

- (53) *Dagg-e naa paaka bu nekk_i borom-om_i.
 cut-APPL 1SG knife C_{REL} each owner-3SG.POSS
 ‘I cut with every knife_i its_i owner.’

Quantifier binding thus shows that in Wolof an applied instrumental object does not c-command the theme object. The same results obtain for locative in situ applicatives. Quantified locative objects cannot bind anaphors in the theme object.

- (54) a. Gunge naa dawalkat-am*_{i/j} oto bu nekk_i.
 accompany 1SG driver-3SG.POSS car C_{REL} exist
 'I accompanied its_i driver to every car_i."

Now I look at the possibility of the theme c-commanding the applied object. A quantified theme object can bind an anaphor in the applied object. In the following example, the quantified theme, *xale bu nekk* 'every child', binds the anaphor in the applied instrumental object *paakaam* 'his knife'.

- (55) Dagg-e naa xale bu nekk_i paaka-am_i.
 cut-APPL 1SG child C_{REL} exist knife-3SG.POSS
 'I cut each child_i with his_i knife.

Locative applicatives show the same pattern as instrumentals. Quantified themes can bind the anaphor in the locative object (56a).

- (56) a. Gunge naa góor [gu] nekk_i kër-am_i.
 accompany 1SG man C_{REL} exist house-3SG.POSS
 "I accompanied every man_i to his_i house."
- b. *Gunge naa kër-am_i góor [gu] nekk_i
 accompany 1SG house-3SG.POSS man C_{REL} exist
 "I accompanied every man_i to his_i house."

These data are similar to Kinyarwanda instrumental applicatives. McGinnis (2005) provides examples showing a theme object c-commands the instrumental object in Kinyarwanda, much like the theme object in Wolof. The quantified theme *buri muryango* 'each door' binds the anaphor in the instrumental NP *úrufunguz rwáwo* 'its key'. In (57b) the sentence is ungrammatical under a coreferential reading as indicated by the indices.

A. Rutayoberana (p.c.); cited in McGinnis (2005:195)

- (57) a. N-a-fúngul-ish-ije buri muryango_i úrufunguzo rwáwo_i.
 I-PST-open-INST-ASP each door key its
 ‘I opened each door_i with its_i key.’
- b. N-a-fúngul-ish-ije umuryano wáyo_i buri rufunguzo*_{ij}.
 I-PST-open-INST-ASP door its each key
 ‘I opened its_i door with each key_j/*_i.’

This confirms the hypothesis that the theme c-commands the instrument as in Wolof.

Given these data, I conclude that the theme asymmetrically c-commands the applied object, be it instrumental or locative.

4.3.2. *Weak Cross-Over*

Recall from section 4.2.2. that theme objects cannot be questioned in in situ applicative constructions. This is not entirely accurate. Speakers consider questioning non-D-linked themes ungrammatical (58a). If the theme is D-linked, the question improves dramatically (b).

Non D-linked theme

- (58) a. *Lan nga dagg-e *t* paakaa bi?
 what 2SG cut-APPL knife DEF
 ‘What did you cut with the knife?’

D-linked theme

- b. ?Ban yàpp nga dagg-e *t* paaka bi?
 which meat 2SG cut-APPL knife DEF
 ‘Which meat did you cut with the knife?’

Non D-linked theme - in situ locative applicative

- (59) a. *Lan nga togg-e *t* kër Boris?
 what 2SG cook-APPL house Boris
 ‘What did you cook at Boris’ house?’

D-linked theme

- (b) ?Ban yàpp nga togg-e *t* kër Boris.
 which meat 2SG cut-APPL knife DEF
 ‘Which meat did you cook at Boris’ house?’

Now that we have a way to question theme objects in applicatives in Wolof, we can use Weak Cross-Over to investigate c-command. No weak cross-over violation arises when the theme object is questioned and fronted. The theme, *ban góor* ‘which man’ is coreferential with the instrument, *paakaam* ‘knife’ in (60a). On the other hand, questioning the applied object leads to a weak cross-over violation. The applied object, *yetu kan* ‘whose cane’ cannot be referential with the theme, *yaayam* ‘his/her mother’ in (60b).

- (60) a. Ban góor_i nga d-oon dagg-e *t* paaka-am_i?
 which man 2SG IMP-PST cut-APPL knife-3SG.POSS
 ‘‘Which man_i were you cutting with his_i knife?’’
- b. Yet-u kan_i nga dóor-e yaay-am*_{i/j} *t* ?
 cane-CS who 2SG hit-APPL mother-3SG.POSS
 ‘(With) whose cane did you hit his mother?’

Similar facts obtain for locative applicatives. The sentence in (61) is deemed grammatical but marginal when the wh-phrase *kan* ‘who’ is coreferential with the anaphor in the locative object *këram* ‘his house’. When the applied object is questioned, however, it cannot be coreferential with the anaphor in the theme object indicating a weak cross-over violation. If the wh-phrase and anaphor are not coreferential, the sentence is grammatical.

- (61) a. ?Xarit_i-u kan_j nga gunge t kër-am_j?
 friend-CS who 2SG accompany house-3SG.POSS
 “Whose_i friend did you accompany to his_i? house?”
- b. Kër-u kan_i nga gunge xarit-am*_{i/j} t ?
 house-POSS who 2SG accompany friend-3SG.POSS
 “To whose_i house did you accompany his*_{i/j} friend.”

I note here that I was unable to test for weak cross-over with locative applicatives with overt morphology, like *daaj-e* ‘nail’. The sentences, such as (62) were all considered ungrammatical. Even in English, the equivalent sentences are not acceptable, perhaps because of the inanimacy of the theme object.

- (62) *Toggukay-u kan_i nga daaj-e béréb-u liggeykay-am_i?
 chair-CS who 2SG nail-APPL site work-3SG.POSS
 “*Whose chair_i did you nail (together) at his_i workshop?”
- (63) *Which fish_i did you catch in its_i ocean?

These sentences were simply too odd to be acceptable so testing with such predicates did not provide any information about VP structure.

For comparison, let’s look at weak cross-over in the prepositional complement construction. Like in situ applicatives, the theme is allowed to be questioned without incurring a weak cross-over violation (64a). The oblique object cannot be questioned because PPs cannot be extracted and the sentence in (b) does not reveal anything about weak cross-over or VP structure.

- (64) a. Ban xale_i nga dóor t ak yet-am_i?
 which child 2SG hit with cane-3SG.POSS
 ‘Which child_i did you hit with his_i cane?’

- b. *Ak yet-u kan_i nga dóor doom-am_i t ?
 with cane-CS who 2SG hit child-3SG.POSS
 ‘With whose_i cane did you hit his/her*_{i/j} child?’

Instrumental and locative applicatives share the same c-command pattern as the prepositional complement construction, where the theme consistently c-commands the instrument or locative. This pattern is different than what was seen with benefactive and dative applicatives.

4.3.3. Conclusion

C-command patterns for instrumental and locative applicatives do not match the c-command patterns of benefactive or dative applicatives. There are two differences between dative and benefactive applicatives on the one hand and instrumental and locative applicatives on the other vis-à-vis c-command. First, benefactive and dative applicatives show variable c-command depending on the linear order of the objects for quantifier binding and reflexivization. The first object c-commands the second regardless of theta role. However, variable c-command is not seen in instrumental and locative applicatives with quantifier binding since object scrambling is not possible. The second difference is revealed through weak cross-over. In benefactive and dative applicatives, the applied object asymmetrically c-commands the theme. The opposite is true of instrumental and locative applicatives; the theme asymmetrically c-commands the applied object.

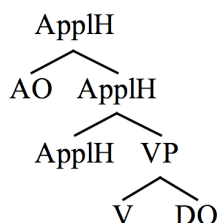
4.4. Analysis

In chapter 3, it was established that a single Appl structure for all applicative types is not tenable. Benefactive and dative applicatives motivated two Appls: thematic for benefactive applicatives and raising for dative applicatives. The instrumental and locative data presented thus far in chapter 4 also support a multiple Appl approach to applicatives but are not adequately accounted for using only Thematic and Raising Appls. I argue in

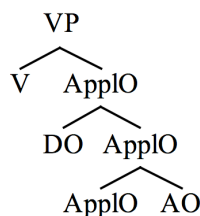
this section that instrumental and locative applicatives involve a third type of Appl structure. This Appl, which I will call Oblique Appl (ApplO), selects an event and an instrumental or locative object, much like Thematic Appl but with one crucial difference. Oblique Appl merges with the VP in a downward fashion, following the work of McGinnis (2005) (see also Philips (2003) and Richards (2002) for more on downward merge).

Recall from chapter 2 (section 2.4) that McGinnis argues Merge can occur upward or downward and that two elements can merge without necessarily becoming sisters. This is the case with ApplO. The figure in (63a) shows the representation of Appl that has merged upward with the VP. The figure in (63b) shows the representation of Appl which has merged downward with the VP (AO stands for applied object).

(65) a.



b.

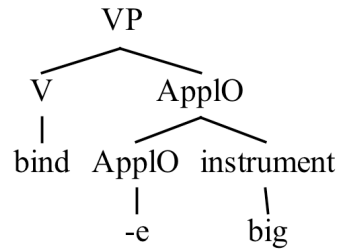
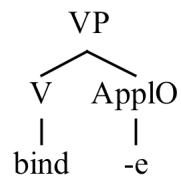


In both examples, the DO receives the theme role because it merges with V. This relationship is obvious in (63a) but more opaque in (63b). The opacity is because the subsequent merge of the ApplO head leads to a reanalysis of the existing structure and the DO becomes the specifier of ApplO. The relationship created from the original V + DO merge is not broken by the reanalysis, however, and the DO retains its theme role. Having merged outside the event at the level of VP, ApplO introduces the instrumental or locative object as a VP-external object, like benefactive objects. The fact that the applied object is merged above the VP and is never a sister to a V projection is important and will be discussed further in 4.4.3.

Let's see how this works in Wolof. I start with an intransitive verb (64) for clarity and then extend the analysis to transitive verbs. Since the verb doesn't select an object, it merges directly with ApplO. Then the instrument *big* 'pen' merges downward with ApplO.

- (66) a. Damay bind-e big.
 1SG.AFF write-APPL pen
 'I am writing with a pen.'

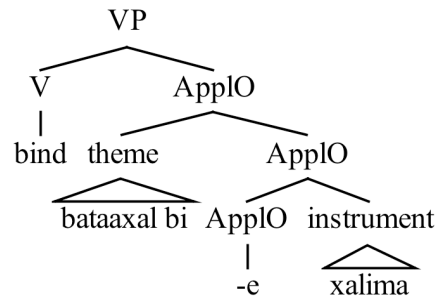
- (67) a. b.



Now let's look at a transitive example. In (68), there are two objects, the theme *bataaxal bi* 'the letter' and the instrument *big* 'pen'.

- (68) a. Damay bind-e bataaxal bi big.
 1SG.AFF write-APPL letter DEF pen
 'I am writing the letter with a pen.'

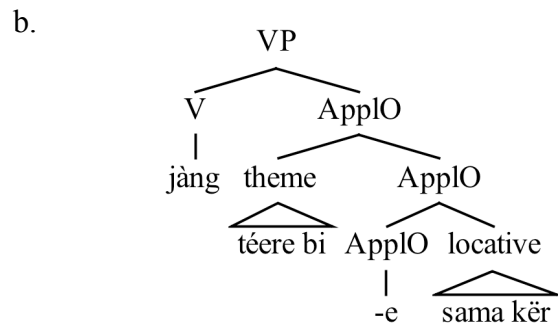
- b.



First, the verb merges with the theme object *bataaxal bi* ‘the letter’, defining the event and forming the VP. Then ApplO merges with VP but does not merge up. Instead it merges downward. Since the theme object is already in the complement of V position, the merging of ApplO causes a reanalysis: both ApplO and the theme cannot occupy the complement of V position simultaneously. The theme object ends up “inside” the ApplO phrase. Then the applied object merges with ApplO. Again, the applied object merges downward, which places the theme in the higher position in the phrase, the specifier. So although the structure of ApplO looks very similar to Pylkkänen’s Low Appl, its derivation is very different.

Locative applicatives involve the same head as instrumental applicatives, ApplO. This explains why they exhibit the same morphology and object and c-command properties. The derivation proceeds in the same fashion as the instrumental example in (68).

- (69) a. Ma ngi-y jàng-e téere bi sama kër.
 1SG 1SG-IMP read-APPL book DEF 1SG.POSS house
 ‘I am reading the book at my house.’



4.4.1. Lack of object scrambling

Now that the formation of instrumental and locative applicatives has been outlined, I show how object and c-command properties are accounted for under this analysis. It was

shown that the word order of the objects in instrumental and locative applicatives is fixed. The theme always precedes the applied object, unlike benefactive and dative applicatives, which allow object scrambling leading to variable word order of the objects. Adopting the analysis presented here, the lack of object scrambling in instrumental and locative applicatives results from the structure. Theme objects always precede oblique applied objects in Wolof because there is no position available above the theme to which the applied object could scramble. I explain this restriction in detail below.

In benefactive and dative applicatives, it was argued that the word order varies because the lower object, the theme, scrambles to a position to the left of the applied object, the second specifier of ApplT in benefactives or ApplE in datives. ApplT and ApplE, as phase heads, were argued to have either one or two EPP features. These EPP features target the theme object and cause it to raise to the Appl projection from its original position in the VP. In instrumental and locative applicatives, the lower object is already contained within the ApplO projection. Movement from its complement to its specifier violates anti-locality (Grohmann 2003) and is thus not permitted. This results in the fixed word order exhibited by instrumental and locative applicatives. Since theme objects in benefactive and dative applicatives move to a new projection, ApplE or ApplT, when they scramble, they do not violate anti-locality.

As with the structures we saw in chapter 3, the next step in the derivation is the merger of v , which selects an external argument, the agent. In Wolof, v does not have extra EPP features so there is no trigger for A-movement of the instrument or locative to v . As for wh-movement, I assume EPP features which trigger A-movement to be different than wh-features. In wh-movement, v inherits a wh-feature from C and this inherited feature triggers movement of the wh-phrase to v and from there is attracted to C.

4.4.2. Extraction

Turning to extraction, I address why the theme object, which is the high object, is unavailable to wh-extraction and focus while the instrumental or locative object, which is low, is available.

Instrumental - Instrument focused

- (70) a. Paakaa bi laa dagg-e yàpp yi.
 knife DEF 1SG.OFOC cut-APPL meat DEF.PL
 'It was the knife with which I cut the meat.'

Locative - Theme questioned

- b. *Lan nga togg-e kër Boris?
 what 2SG cook-APPL house Boris
 'What did you cook at Boris' house?'

Instrumental - Theme focused

- (71) a. *Yàpp yi laa dagg-e paakaa bi.
 meat DEF.PL 1SG.OFOC cut-APPL knife DEF
 'It was the meat that I cut with the knife.'

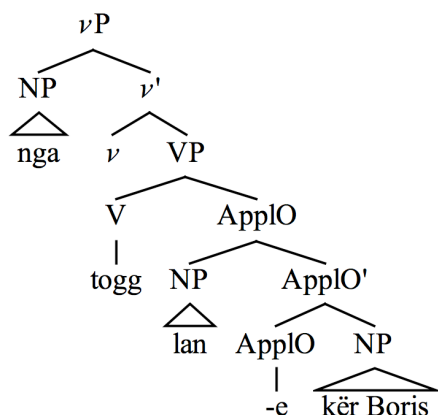
Locative - Locative questioned

- b. Fan nga (>Foo) togg-e ceebu-jën?
 where 2SG cook-APPL ceebu-jën
 'Where did you cook ceebu-jën?'

In instrumental and locative applicatives, the theme cannot be extracted as evidenced by the ungrammaticality of the sentences in (70) while the applied instrumental or locative object can as seen in (71) (examples repeated from 4.2.2. for convenience).

The lower object can be A-bar extracted past the higher object as long as the higher object does not have wh-features (McGinnis 2001). The higher object only acts as intervener if it has a wh-feature. This explains why the lower object can be extracted past the higher object as in (71). However, this does not explain, why a higher object with wh-features cannot be extracted as seen in (70), illustrated without movement in (72).

(72)



What blocks the NP *lan* from raising to CP through ν P in (72) is not known. Remember that the lower object, the locative, can move as seen in the sentences in (71b). I tentatively suggest that the theme object is blocked in Wolof due to the nature of downward merge and the reanalysis the theme undergoes. More evidence is needed to make a firm claim about the extraction facts in instrumental and locative applicatives. English shows a parallel pattern where the higher object, the dative, is blocked from A-bar extraction.

In English, the dative object is the high object relative to the theme but cannot be extracted for questioning or focus.⁴

- (73) a. I gave Alex a book.
 b. *Who did you give a book?
 c. *It was Alex who I gave a book.

There are some English speakers who accept sentences like (73b) and (c) but there is a general consensus⁵ that such sentences are worse than sentences with extracted theme objects like in (74a) and (b). Remember that in English the theme is the lower object.

⁴ It cannot be extracted for syntactically marked focus like a cleft. It can be focused with a phonologically marked focus placing an accent on the object while in situ. Since the discussion here is on extraction, the accented focus is not relevant.

⁵ See Hudson 1992 for a more in-depth discussion about the debate surrounding the acceptability of extraction of the dative object in English applicatives.

- (74) a. What did you give Alex?
 b. It was a book that I gave Alex.

The pattern where the high object is unavailable for extraction while the low object is what is seen in Wolof locative and instrumental applicatives. There is currently no good account in the literature for this phenomenon. For English, Hallman (2015) is forced to stipulate the absence of movement from vP_1 , the higher vP in his structure while movement can take place from vP_2 , the lower vP . He says this appears to be an specific instance of the more general observation that A-bar movement targets lower elements over higher elements.⁶ However, given Minimality, the opposite is expected; as an intervener, the higher object should be targeted first provided it contains the correct feature. In the case of Wolof and English, the higher object is clearly an intervener making the fact that it can't move while the lower object can even more surprising. Additionally, assuming movement is blocked from the higher vP_1 (analogous to Appl) does not explain the extraction facts seen between benefactive and dative applicatives. Either object can be extracted so we know movement is not blocked by the Appl phrase. Thus, although the extraction restriction remains a mystery, it is a mystery that is present elsewhere in applicatives cross-linguistically.

4.4.3. The in-between nature of instruments and locatives

The ApplO analysis proposed above reconciles the contradictory nature of instruments and locatives. Recall from chapter 2 that cross-linguistically instrumental and locative objects do not act entirely like VP-external objects (benefactives) nor do they behave entirely like VP-internal objects (themes) (see chapter 2, section 2.2.2.). Changing the instrument or locative object does not change the event described or the semantic role of the theme object, whatever it may be. The 'NP' in both (75) and (76) is propelled through the air regardless of how that action was initiated or where it occurred.

⁶ See Chomsky 1981, Huang 1982, and Lasnik and Saito 1984 for details on the preference of A-bar movement of objects over subjects.

(75) a. I threw NP with a ball launcher.⁷

b. I threw NP with my hand.

(76) a. I threw NP in the park.

b. I threw NP at the stadium.

Contrasting this with themes, we see that changing the theme object can change the event and the relationship between the event and the other participants.

(77) a. I threw a ball at the arena.

b. I threw a fight at the arena.

So instruments and locatives behave differently than themes in this regard. Now comparing instruments and locatives to VP-external objects, like benefactives, shows they don't pattern with VP-external objects either. Instruments and locatives can incorporate into adjectival passives, unlike benefactive objects.

- | | | | |
|------|----|-------------------------|-------------------------|
| (78) | a. | hand-made cookies | <i>instrument</i> |
| | b. | spoon-fed children | <i>instrument</i> |
| | c. | home-made cookies | <i>locative</i> |
| | d. | *children-baked cookies | <i>benefactive</i> |
| | e. | *boss-given flowers | <i>goal/benefactive</i> |

(Marantz 1993:147)

Under the ApplO analysis, the instrument or locative is not selected by the verb and merges with the VP, not V, so it doesn't share the same behaviour as theme objects, which are selected by the verb and merge with V. For example, because instruments and locatives are not sisters of V, they are not involved in defining the event as themes are. However, instruments and locatives do not behave like other VP-external objects, like benefactives, because they end up within the minimal VP due to downward merge. Since

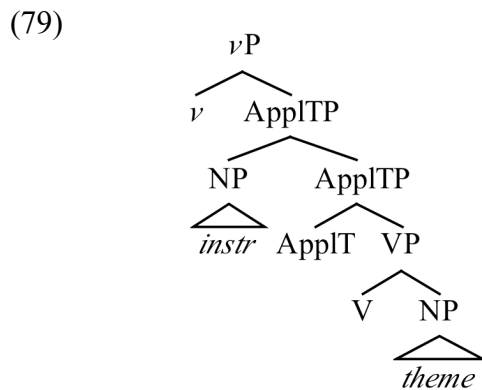
⁷ A ball launcher is used to increase the throwing range of a ball, typically when playing with dogs.

they are inside the domain of the verb, they can be incorporated into adjectival passives and are intuitively part of the event.

4.4.4. Other applicative proposals

In this section I show that thematic and raising applicative structures are not able to account for instrumental and locative applicatives. I also show Marantz' multiple merge orders for instruments and locatives fail to capture these constructions. The fact that these analyses don't explain these applicatives supports my proposal in which another applicative head, which I argued to be ApplO, must be involved.⁸

Although useful in analyzing dative and benefactive applicatives as seen in chapter 3, neither Raising nor Thematic Appl are able to account for instrumental and locative in situ applicatives in Wolof. Looking at each structure, Thematic Appl would seem the most likely choice for instrumental and locative applicatives because they are compatible with intransitive predicates. Unfortunately, ApplT's structure predicts the wrong word order and c-command. As seen in (79), the instrumental (or locative) object c-commands and precedes the theme object.

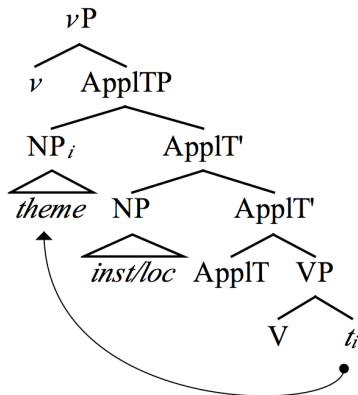


As we have seen, the theme precedes and c-commands the instrument. A second specifier position on ApplT, which I used to explain variable word order in benefactive

⁸ Predicates which involve both instrumental and benefactive applicatives and the interaction of the different applicative affixes may also shed light on the structure of applicative VPs. Such sentences do exist in Wolof (see Buell and Sy 2005, 2006) but I leave this more complex issue to future research.

and dative applicatives, cannot save the structure here. I argued in chapter 3 that ApplT can have an extra EPP feature, which when present triggers movement of the theme to the ApplT projection. Since the theme moves after the applied object has merged, it ends up to the left of the applied object and c-commands it. One could argue that the theme - applied word order in instrumental and locative applicatives results from the same movement process of the theme to a second specifier. However, there are two problems with such an analysis. Weak cross-over data (see section 4.3.2.) indicate the theme is never in a position c-commanded by the instrument. We know this because the theme can raise to the left for questioning without incurring a weak cross-over violation, meaning the applied object does not c-command the trace of the theme. If the theme were generated as the complement of V and always raised to the specifier of ApplT, its trace would still be c-commanded by the applied oblique object and we would expect weak cross-over effects to be present when the theme is questioned.

(80)



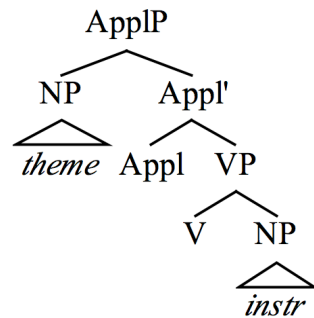
Thus, weak cross-over provide strong evidence against an analysis involving ApplT and obligatory scrambling of the theme object. An object scrambling analysis for instrumental and locative applicatives has a second problem. Since the theme never appears to the right of the instrument or locative, the object scrambling would have to be obligatory in the case of instrumental and locatives, but optional in the case of benefactive and dative applicatives. There is no way to define ApplT as having two

obligatory EPP features when combined with an instrument or locative while simultaneously defining it as optionally having two EPP features when combined with a benefactive.

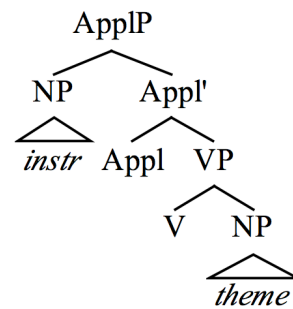
Finally, a raising applicative analysis is untenable because instrumental and locative applied objects are compatible with intransitive predicates while raising applicatives are only compatible with predicates that encode a transfer of possession as per Georgala (2012). A raising applicative structure is not possible for instrumental and locative applicatives because of its expletive nature. It has no semantic content and cannot assign a role to the instrument or locative. Given these objects can be omitted, they can't be selected by the verb like dative objects can.

Now that thematic and raising applicative analyses have been ruled out for instrumental and locative applicatives in Wolof, I turn to Marantz' (1993) proposal according to which the instrument or locative can merge in two different positions: either as the sister of V with the theme as the sister of Appl' as in (81a) or as the sister of Appl' with the theme as the sister to V as in (b).

(81) a.



b.



The different merge orders result in the variable object orders seen in some languages, like Chicheŵa and Chaga (see Marantz 1993). In these languages, unlike Wolof, either object can be adjacent to the verb. When the theme precedes the instrument or locative, the instrument merges first as in (81a). When the instrument or locative precedes and c-

commands the theme, the theme merges first as in (81b). For Wolof, however, one would have to stipulate that the theme never merges first.

The major drawback of Marantz' analysis is that when the instrument merges first, as illustrated in (81a), the theme is severed from the verb and introduced by Appl.

According to his proposed structure, the theme is now selected by the Appl head and lies outside the minimal VP. Although the structure does capture the word order and c-command facts of Wolof instrumental applicatives, severing the theme object is counter-intuitive given the role the theme plays in defining the event. If the theme merges outside the minimal VP, we lose the intuition about V+Theme complex that motivated Semantic Compositionality in the first place (Marantz 1984, 1993).

The ApplO analysis captures the VP-internal aspects of instrumental and locative objects - they end up inside the domain of the verb - while generating them at the VP level. The theme stays selected by the verb in this analysis and appears within the minimal VP in keeping with the notion a compositionally defined event. Finally, the theme c-commands and precedes the instrument.

4.4.5. Movement out of VP

Before ending the discussion on instrumental and locative applicatives, I would like to address the preference of fronted instrumental and locative objects over in situ applicatives. Although fronted applicatives have not been the focus of this chapter, they are considered more natural and are used far more commonly than in situ applicatives. As mentioned previously, in situ applicatives are deemed marginal by Saint Louis speakers. The main strategy for facilitating an instrumental or locative applied object is to focus it so it appears in the left periphery outside the VP, described in section 4.1.4.⁹

⁹ See Torrence 2012 for a detailed analysis of focus and the left periphery in Wolof.

Wolof instrumental applicative

- (82) Paaka bi laa dagg-e yàpp.
 knife DEF 1SG.OFOC cut-APPL meat
 ‘It was with a knife that I cut the meat.’

Wolof locative applicative

- (83) Kër Boris laa togg-e ceebu-jën.
 house Boris 1SG.OFOC cook-APPL rice-fish
 ‘It was at Boris’ house where I cooked ceebu-jën.’

Why instrumental and locative applied objects resist staying in the VP is unclear. The phenomenon, however, is not limited to Wolof.

Kiswahili instrumental applicatives resist two post-verbal objects like Wolof. Regardless of word order, a Kiswahili applicative with both a post-verbal theme and applied instrument is not grammatical, as shown in (85a) and (b). One strategy to allow applied instrumental objects is to move the instrument to a topic position at the beginning of the sentence, as seen with *kisu* ‘knife’ in (85c) (examples from Ngonyani 1998:81-83).

Kiswahili - Instrument > Theme

- (84) a. ??wa-toto wa-li-vunj-i-a ma-we ch-ungu.
 2-child 2-PST-break-APP-FV 6-rock 7-pot
 ‘The children broke the pot with rocks.’

Kiswahili - Theme > Instrument

- b. ??wa-toto wa-li-vunj-i-a ch-ungu ma-we.
 2-child 2-PST-break-APP-FV 7-pot 6-rock
 ‘The children broke the pot with rocks.’

Kiswahili - Topicalized instrument

- c. ki-su, wa-li-kat-i-a nyama.
 7-knife 2-PST-cut-APPL-FV 9.meat
 ‘The knife, they cut the meat with (it).’

This is similar to the focus position applied instruments occupy in Wolof.

A another Bantu example of an applied instrumental object appearing outside the VP is from Chicheŵa. The instrument must surface as the subject of a passive sentence with the causative morpheme attached to the verb. If the instrument, *khásu* ‘hoe’, remains an object in the VP instead of raising to subject position via passivization, then the sentence is ungrammatical.

Chicheŵa instrumental

- (85) a. Khásu lí-ma-(li-)lim-its-ídw-a (ndí Jóni).
hoe SP-HABIT-(OP-)farm-CAUS-PASS-IND by John
‘The hoe is farmed with (by John).’

- b. *Jóni á-ma-(yi-)lemb-éts-a péni.
John SP-HABIT-(OP-)write-CAUS-IND pen
‘John writes with a pen.’

(Marantz 1984:245-246)

Looking outside of the Niger-Congo language family, several Austronesian languages, also require the applied object to appear outside the VP, in the topic/subject position in the case of Tagalog (McGinnis 2005) and Malagasy (Paul 2000).

In Tagalog the applied object moves out of the VP and into the subject position, marked by the article *ang* and oblique topic morphology on the verb. If the instrument is not marked as the subject, then the sentence is ungrammatical.

Tagalog

- (86) a. I-pinang-lakad ng lalaki ang tungkod.
 OBL-ASP-walk CS man ANG stick
 ‘The man walked with a stick.’
- b. *Nag-lakad ng tungkod ang lalaki.
 NOM.ASP-walk CS stick ANG man
 ‘The man walked with a stick.’

(Rackowski 2002 cited from McGinnis 2004:192)

Like Tagalog, Malagasy requires applied objects to appear in topic position which places them outside the VP. In sentence (87a), there is no applied object. The benefactive is contained in a prepositional phrase *hoan’ny vehivavy* ‘for the woman’. If the benefactive object in an applicative structure is left in situ, as in (87b), the sentence is ungrammatical. Circumstantial topic (CT), which makes the benefactive object the topic, must be used for the applied object, *ny vehivavy* ‘the woman’ to be licit as shown in (87c). This means that the benefactive *ny vehivavy* ‘the woman’ is the topic, which is analogous to subject position in Wolof. In the examples, the applied object is italicized and the topic is underlined.

- (87) a. Nahandro ny trondro hoan’ny vehivavy ny lehilahy.
 PST.AT.cook DET fish for.GEN.DET woman DET man
 ‘The man cooked fish for the woman.’
- b. *Nahandro *ny vehivavy* ny trondro ny lehilahy.
 PST.AT.cook DEF woman DET fish DET man
- c. Nandrahoan’ny lehilahy ny trondo ny vehivavy.
 PST.CT.cook.GEN.DET man DET fish DET woman
 ‘The man cooked fish for the woman.’

(Paul 2000:120)

The reason that applied objects are not allowed to surface within the VP in certain languages is not well understood. The point of this section is simply to show that similar behaviour is seen in applicatives cross-linguistically.

4.5. Conclusion

In this chapter, we have seen that instrumental and locative applicatives show different c-command and object properties than benefactive and dative applicatives. Instrumental and locative applicatives show a mix of symmetrical and asymmetrical properties. Only the theme is allowed to appear adjacent to the verb which points to the theme as the true direct object. However, the instrument or locative, and not the theme, can be extracted, pointing to the applied object as having direct object status. As for pronominalization, either object can be replaced with a clitic pronoun, but only one at a time. Sentences where both objects are clitic pronouns are not grammatical. To contrast, benefactive and dative applicatives, allow either object to appear adjacent to the verb, allow either object to be extracted, and both objects can be pronominalized with clitics simultaneously.

C-command in locative and instrumental applicatives also differs from benefactive and dative applicatives. In benefactive and dative applicatives, the object adjacent to the verb c-commands the second object. In instrumental and locative applicatives, we've seen using quantifier binding and weak cross-over that the theme asymmetrically c-commands the applied instrumental or locative object. The applied object does not c-command the theme.

I argued that a third Appl head, ApplO, is involved in the formation of instrumental and locative applicatives. This head merges with the VP in a downward fashion following McGinnis (2005). The downward merge places the applied instrument or locative to the right of the theme and within its c-command domain explaining the word order and c-command facts in Wolof.

CHAPTER 5

5. CONCLUSION

In this thesis, I have investigated a particular piece of Wolof syntax: the structure of applicative predicates and their properties. To this end, I presented a review of basic properties of Wolof clauses and their syntax.

In chapter 2, I presented a typology of applicatives from different languages while focusing on their object and c-command properties. Applicatives, rather than languages, are classified as symmetrical or asymmetrical based on evidence from languages where certain applicatives are symmetrical but other applicatives are asymmetrical. Several major approaches to applicatives within the generative framework were presented and although promising, they were unable to capture all types of applicatives cross-linguistically. I argued that a subtler approach hitherto was needed to account for the full range of data in Wolof applicatives. I thus proposed a new Appl head, Oblique Appl for instrumental and locative applicatives, in addition to adopting Georgala's Thematic and Raising Appls (2012) for benefactive and dative applicatives respectively.

In chapter 3, I showed that both benefactive and dative applicatives are symmetrical applicatives and they share object properties and c-command configurations. Despite these similarities, I also showed dative applicatives do not allow unspecified object deletion which distinguishes them, along with morphology and semantic role, from benefactive applicatives, which do allow unspecified object deletion. Due to these differences, I conclude that benefactive and dative applicatives do not share the same structure; they result from different derivations involving different Appl heads.

I argued that benefactive applicatives have a Thematic Applicative structure and datives have a Raising Applicative structure. Benefactive objects are selected by the ApplT head while dative objects are selected by the lexical verb and raise to the ApplE projection. This approach to applicatives accounts for the syntactic similarities and object properties

of benefactive and dative applicatives because the applied object is licensed in the same position in both benefactives and datives. However, it also accounts for the differences in selectional restrictions since the applied objects are selected in different ways. Different morphology between the two types also falls out naturally since they involve different heads and ApplT and ApplE have different morphological realizations.

As we saw in chapter 4, instrumental and locative applicatives cannot be accounted for using Thematic or Raising Applicatives. They require a third type of applicative structure which I call Oblique Applicative. Instrumental and locative applicatives show different c-command and object properties than benefactive and dative applicatives. Instrumental and locative applicatives show a mix of symmetrical and asymmetrical properties. Only the theme is allowed to appear adjacent to the verb, which points to the theme as the true direct object. However, the instrument or locative, and not the theme, can be extracted, pointing to the applied object as having direct object status. As for pronominalization, either object can be replaced with a clitic pronoun, pointing toward symmetrical applicatives but only one object can be pronominalized at a time. To contrast, benefactive and dative applicatives, which I argued to be symmetrical, allow either object to appear adjacent to the verb, allow extraction of either object, and both objects can be pronominalized with clitics simultaneously.

C-command in locative and instrumental applicatives also differs from benefactive and dative applicatives. In benefactive and dative applicatives, the object adjacent to the verb c-commands the second object: scrambling of the theme object to a position preceding the applied object results in a change in c-command. In instrumental and locative applicatives, I showed that the theme asymmetrically c-commands the applied instrumental or locative object and the applied object cannot c-command the theme.

The object properties and c-command of instrumental and locative applicatives motivated a more fine-grained approach to applicatives. I argued that a third Appl head, ApplO, is involved in the formation of instrumental and locative applicatives. This head merges

with the VP in a downward fashion following McGinnis (2005). The downward merge places the applied instrument or locative to the right of the theme and within its c-command domain, explaining the word order and c-command facts in Wolof.

In the ApplO analysis, I adopted the non-standard operation of Downward Merge (McGinnis 2005). Given that I posit distinct positions for the distinct applicatives (benefactive and dative merging upwards and instrumental and locative merging downwards), further evidence and support for existence Downward Merge might come by exploring the interactions between these affixes in verbs with multiple applicatives (like the *-al* of benefactives and the *-e* of obliques). Such sentences are possible in Wolof although I left these more complex issues for future research.

The analysis proposed here reconciles the presence of one merge site for Appl heads while accounting for the different properties exhibited amongst the different type of applicatives. It is argued that the three Appl heads, ApplT, ApplE, and ApplO all merge above the lexical VP. The differences between the three types of applicatives arise from selectional differences (raising applicatives and thematic applicatives) and the direction of Merge (oblique applicatives).

Although I described multiple constructions that are used in Wolof to express instrumental and locative object, I only proposed an analysis for in situ applicatives. I did this because the in situ applicatives showed the most about VP structure in applicatives which is the focus of this dissertation. I left the issue of hybrid applicatives, called non-canonical applicatives by Dione (2013) and Creissels (2004), for later study. These data deserve further study as they have much to tell us about the augmentation of predicates.

Another issue that also merits further study is the extraction of objects in applicatives, particularly in instrumental and locative applicatives. These data are not limited to Wolof, but found in applicatives across diverse languages. The issue has been discussed in the literature for many years and such data still resist formal explanation. Expanding the conversation on extraction asymmetries to include languages typologically different than

English can provide new insight to not only applicatives but syntactic movement in general.

REFERENCES

- Aoun, Joseph and Yen-hui Audrey Li. 1989. Scope and constituency. *Linguistic Inquiry* 20:141-172.
- Alsina, Alex and Sam A. Mchombo. 1993. Object asymmetries and the Chicheŵa applicative construction. In *Theoretical aspects of Bantu grammar*, ed. Sam A. Mchombo, 17-45. Stanford: CSLI Publications.
- Baker, Mark. 1988. Theta theory and the syntax of applicative constructions in Chicheŵa. *Natural Language and Linguistic Theory* 6:353-389.
- Baker, Mark. 1992. Thematic conditions on syntactic structures: Evidence from locative applicatives. In *Thematic Structure: Its Role in Grammar*, ed. Iggy Roca, 23-46. New York: Foris Publications.
- Baker, Mark. 1996. On the structural position of themes and goals. In *Phrase structure and the lexicon*, eds. Johan Rooryck and Laurie Zaring, 7-35. Dordrecht: Kluwer.
- Barry, Boubacar. 2012. *The kingdom of Waalo: Senegal before the conquest*. New York: Diaspora Africa Press.
- Barss, Andrew and Howard Lasnik. 1986. A note of anaphora and double objects. *Linguistic Inquiry* 17:347-354.
- Beck, Sigrid and Kyle Johnson. 2004. Double objects again. *Linguistic Inquiry* 35:97-124.
- Beck, Sigrid and William Snyder. 2001. The resultative parameter and restitutive 'again'. In *Auditur vox sapientiae: A festschrift for Arnim von Stechow*, eds. Caroline Féry and Wolfgang Sternefeld, 48-69. Berlin: Akademie Verlag.

- Bobaljik, Jonathan. 2000. The ins and outs of contextual allomorphy. In *The University of Maryland Working Papers in Linguistics* 10: 35-71. College Park, MD: University of Maryland.
- Boskovic, Zeljko. 1997. Superiority effects with multiple wh-fronting in Serbo-Croatian. *Lingua* 102: 1-20.
- Bresnan, Joan, and Lioba Moshi. 1990. Object asymmetries in comparative Bantu. *Linguistic Inquiry* 21:147-185.
- Bruening, Benjamin. 2001. QR obeys superiority: Frozen scope and ACD. *Linguistic Inquiry* 32:233-273.
- Buell, Leston and Mariame Sy. 2005. A fixed hierarchy for Wolof verbal affixes. *BLS 31: Special Session on Languages of West Africa*, 25-36.
- Buell, Leston and Mariame Sy. 2006. Affix ordering in Wolof applicatives and causatives. In *Selected proceedings of the 35th Annual Conference on African Linguistics: African languages and linguistics in broad perspectives*, eds. John Mugane, John P. Hutchison, and Dee A. Worman, 214-224. Somerville, MA: Cascadilla Proceedings Project.
- Buell, Leston, Mariame Sy, and Harold Torrence. 2008. The syntax of Mirror Principle violations in Wolof. Paper presented at *International Morphology Meeting*. Vienna. Available at <http://www.fizzylogic.com/users/bulbul/school/BuellTorrenceSy-2008-handout.pdf>.
- Carlson, Greg. 1998. Thematic roles and the individuation of events. In *Events and grammar*, ed. Susan Rothstein, 35-51. Boston: Kluwer Academic Publishers.
- Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.

- Chomsky, Noam. 1993. A minimalist program for linguistic theory. In *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger*, eds. Kenneth Hale and Samuel Jay Keyser, 1-52. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1998. *Minimalist inquiries: The framework*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2000. *The architecture of language*, eds. Nirmalangshu Mukherji, Subudhendra Narayan Patnaik, and Rama Kant Agnihotri. New Delhi and New York: Oxford University Press.
- Chomsky, Noam. 2013. Problems of projection. *Lingua* 130:33-49.
- Creissels, Denis. 2004. Non-canonical applicatives and focalization in Tswana. In *Symposium on Syntax of the World's Languages*, Leipzig. 5-8 August. Available at http://www1.ddl.ish-lyon.cnrs.fr/fulltext/Creissels/Creissels_2004d.pdf.
- Creissels, Denis and Sylvie Nougier-Voisin. 2004. The verbal suffixes of Wolof coding valency changes and the notion of co-participation. Presented at Reciprocity and Reflexivity, FU Berlin, 1-2 October. Available at: http://www.ddl.ish-lyon.cnrs.fr/fulltext/Creissels/Creissels_2004e.pdf
- Diesing, Molly. 1992. *Indefinites: Linguistic Inquiry Monographs 20*. Cambridge, MA: MIT Press.
- Diesing, Molly and Eloise Jelinek. 1993. The syntax and semantics of object shift. *Working Papers in Scandinavian Syntax* 51:1-54.
- Dione, Cheikh Bamba. 2013. Valency change and complex predicates in Wolof: An LFG account. In *Proceedings of the LFG13 Conference*, eds. Miriam Butt and Tracy Holloway King. CSLI Publications. Available at <http://>

web.stanford.edu.proxy1.lib.uwo.ca/group/cslipublications/cslipublications/LFG/18/papers/lfg13dione.pdf.

Diouf, Jean Léopold. 2002. *Dictionnaire wolof-français*. Dakar: Karthala Editions.

Dunigan, Melynda. 1994. On the clausal structure of Wolof. Doctoral dissertation, The University of North Carolina at Chapel Hill.

Fal, Aram. 1999. *Précis de grammaire fonctionnelle de la langue wolof*. Dakar.

Georgala, Effi. 2012. Applicatives in their structural and thematic function: A minimalist account of multitransitivity. Doctoral Dissertation, Cornell University.

Grewendorf, Günther. 2001. Multiple wh-fronting. *Linguistic Inquiry* 32:87-122.

Grimshaw, Jane. 1990. *Argument structure*. Cambridge, MA: MIT Press.

Grodzinsky, Yosef and Tanya Reinhart. 1993. The innateness of binding and coreference. *Linguistic Inquiry* 24:69-101.

Grohmann, Kleanthes K. 2003a. German is a multiple wh-fronting language! In *Multiple wh-fronting*, eds. Cedric Boeckx and Kleanthes K. Grohmann, 99-130. Amsterdam: John Benjamins.

Grohmann, Kleanthes K. 2003b. *Prolific domains: On the anti-locality of movement dependencies*. Philadelphia: John Benjamins Publishing Co.

Gropen, Jess, Steven Pinker, Michelle Hollander, and Richard Goldberg. 1991. Affectedness and direct objects: The role of lexical semantics in the acquisition of verb argument structure. *Cognition* 41:153-195.

Gruber, J. 1965. Studies in lexical relations. Doctoral dissertation, Massachusetts Institute of Technology, Cambridge, Mass. Reprinted in *Lexical Structures in Syntax and Semantics*, North-Holland, Amsterdam, 1976.

- Halle, Morris and Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In *The view from building 20*, eds. Kenneth Hale and Samuel Jay Keyser, 111-176. Cambridge: MIT Press.
- Hallman, Peter. 2015. Syntactic neutralization in double object constructions. *Linguistic Inquiry* 46:389-424.
- Harley, Heidi. 2002. Possession and the double object construction. In *Linguistic Variation Yearbook 2*, ed. Johan Rooryck, 31-70. Amsterdam: John Benjamins Publishing Co.
- Huang, 1982. Logical relations in Chinese and Theory of Grammar. Doctoral dissertation, Massachusetts Institute of Technology.
- Hudson, Richard. 1992. So-called 'double objects' and grammatical relations. *Language* 68:251-276.
- Jackendoff, Ray. 1977. *X-bar syntax: A study of phrase structure*. Cambridge, MA: MIT Press.
- Jackendoff, Ray. 1987. The status of thematic relations in linguistic theory. *Linguistic Inquiry* 18:369-411.
- Ka, Omar. 1987. Wolof phonology and morphology: A non-linear approach. Doctoral dissertation, University of Illinois at Urbana-Champaign.
- Kayne, Richard. 1984. *Correctedness and binary branching*. Dordrecht: Foris.
- Kimenyi, Alexandre. 1980. *A Relational Grammar of Kinyarwanda*. Berkley: University of California Press.
- Kimenyi, Alexandre, 1995. Kinyarwanda applicatives revisited. Paper presented at the 8th Niger-Congo Syntax Semantics Workshop. Boston University, 25–26 October,

1995. Available at <http://www.kimenyi.com/kinyarwanda-applicatives-revisited.php>
- Kirparsky, Paul. 1987. On theory and interpretation. In *Linguistics and Literary Theory*, ed. F. Newmeyer. Manchester: Manchester University Press.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase structure and the lexicon*, eds. Johan Rooryck and Laurie Zaring, 109-137. Dordrecht: Kluwer Academic Publishers.
- Larson, Richard K. 1988. On the double-object construction. *Linguistic Inquiry* 19:335-391.
- Larson, Richard K. 1990. Double objects revisited: Reply to Jackendoff. *Linguistic Inquiry* 21:589-632.
- Lasnik, Howard and Mamoru Saito. 1984. On the nature of proper government. *Linguistic Inquiry* 15:235-289.
- Lewis, M. Paul, Gary F. Simons, and Charles D. Fennig, eds. 2014. Wolof. In *Ethnologue: Languages of the World, Seventeenth edition*. Dallas, Texas: SIL International. Online version: <http://www.ethnologue.com>. Accessed Dec. 5, 2014.
- Marantz, Alec. 1984. *On the nature of grammatical relations*. Cambridge, MA: The MIT Press.
- Marantz, Alec. 1993. Implications of asymmetries in double object constructions. In *Theoretical aspects of Bantu grammar 1*, ed. Sam A. Mchombo, 113-151. Stanford: CSLI Publications.
- Martinovic, Martina. 2013. Wh-morphology and cyclicity in Wolof. Available at http://ling.auf.net/lingbuzz/001874/current.pdf?_s=QpMDJutiHFYSZjvi

- Matthewson, Lisa. 2004. On the methodology of semantic fieldwork. *International Journal of American Linguistics* 70:369-415.
- McLaughlin, Fiona. 2004. Is there an adjective class in Wolof? In *Adjective classes: A crosslinguistic typology*, eds. R.M.W. Dixon and Alexandra Y. Aikhenvald 242-262. Oxford: Oxford University Press.
- McCloskey, James. 1991. Clause structure, ellipsis and proper government in Irish. *Lingua* 85:259-302.
- McGinnis, Martha. 2001. Phases and the syntax of applicatives. In *NELS 31*, eds. Minjoo Kim et Uri Strauss, 333-349. Amherst: University of Massachusetts.
- McGinnis, Martha and Donna B. Gerdts. 2003. A phase-theoretic analysis of Kinyarwanda multiple applicatives. In *Proceedings of the 2003 Annual Conference of the Canadian Linguistic Association*, 154-165. Available at <http://homes.chass.utoronto.ca/~cla-acl/2003/McGinnis-Gerdts>
- McGinnis, Martha. 2005. UTAH at Merge: Evidence from multiple applicatives. *MIT Working Papers in Linguistics* 49:183-200.
- Nakanishi, Kimiko. 2001. Frozen scope and weak crossover in ditransitives. In *Formal Approaches to Japanese Linguistics 3: MIT Working Papers in Linguistics* 41, eds. M. C. Cuervo, D. Harbour, K. Hiraiwa, and S. Ishihara. Cambridge: MITWPL.
- Ngonyani, Deo. 1996. The morphosyntax of applicatives. Doctoral dissertation, UCLA.
- Ngonyani, Deo. 1998. Properties of applied objects in Kiswahili and Kinendeule. *Studies in African Linguistics* 27:67-95.
- Ngonyani, Deo and Peter Githinji. 2006. The asymmetric nature of Bantu applicative constructions. *Lingua* 116:31-63.

- Njie, Codu Mbassy. 1982. *Description syntaxique du wolof de Gambie*. Dakar: Nouvelles éditions africaines.
- Nouguier-Voisin, Sylvie. 2002. Relations entre fonctions syntaxiques et fonctions sémantiques en wolof. Doctoral dissertation, Université Lumière Lyons 2.
- Otani, Kazuyo. and John Whitman. 1991. V-raising and VP-ellipsis. *Linguistic Inquiry* 22:345-358.
- Oyharçabal, Beñat. 2010. Basque ditransitives. In *Argument structure and syntactic relations: A cross-linguistic perspective*, eds. Maia Duguine, Susana Huidobro, and Nerea Madariaga, 233-260. Philadelphia: John Benjamins.
- Payne, Thomas. 1997. *Describing morphosyntax*. Cambridge: Cambridge University Press.
- Paul, Ileana. 2000. Malagasy clause structure. Doctoral dissertation, McGill University.
- Paul, Waltraud and John Whitman. 2010. Applicative structure and Mandarin ditransitives. In *Argument structure and syntactic relations: A cross-linguistic perspective*, eds. Maia Duguine, Susana Huidobro and Nerea Madariaga, 261-282. Philadelphia: John Benjamins.
- Phillips, Colin. 2003. Linear order and constituency. *Linguistic Inquiry* 34:37-90.
- Polinsky, Maria. 2013. Applicative constructions. In *The World Atlas of Language Structures Online*, eds. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology.. Available at <http://wals.info/chapter/109>, Accessed on 2015-08-08.
- Pylkkänen, Liina. 2002. Introducing arguments. Doctoral dissertation, Massachusetts Institute of Technology.

- Pylkkänen, Liina. 2008. *Introducing arguments*. Cambridge, MA: MIT Press.
- Reinhart, Tanya. 1976. Quantifier scope: How labor is divided between QR and Choice Functions. *Linguistics and Philosophy* 20:335-397.
- Richards, Norvin. 1999. Feature cyclically and ordering of multiple specifiers. In *Working Minimalism*, eds. Samuel D. Epstein and Norbert Hornstein, 127-158. Cambridge, MA: MIT Press.
- Richards, Norvin. 2002. Very local A-bar movement in a root-first derivation. In *Derivation and exploration in the Minimalist Program*, eds. Samuel D. Epstein and T. Daniel Seely, 227-248. Malden, MA: Blackwell Publishing.
- Roberge, Yves and Sarah Cummins. 2005. A modular account of null objects in French. *Syntax* 8:44-64.
- Robert, Stéphanie. 1991. *Approche énonciative du système verbal: Le cas du Wolof*. Paris: Editions du CNRS.
- Russell, Margaret. 2007. The syntax and placement of Wolof clitics. Doctoral dissertation, University of Illinois at Urbana-Champaign.
- Schwartz, Arthur. 1975. Wolof: A language with no direct object. *The Journal of West African Linguistics* 10:219-267.
- Sportiche, Dominique. 1988. A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19:425-449.
- Synder, William. 2001. On the nature of syntactic variation: Evidence from complex predicates and complex word-formation. *Language* 77:324-342.
- Tamba, Khady, Harold Torrence, and Malte Zimmerman. 2012. Wolof Quantifiers. In *Handbook of quantifiers in natural language*, eds. Edward L. Keenan and Denis Paperno, 891-940. New York: Springer.

- Taylor, Jill. 1995. Code switching in Dakar. *La Linguistique* 31:63-78.
- Thráninsson, Höskuldur. 2007. *The syntax of Icelandic*. Cambridge: Cambridge University Press.
- Torrence, Harold. 2012. *The clause structure of Wolof: Insights into the left periphery*. Philadelphia: John Benjamins Publishing Company.
- Zeller, Jochen and Jean Paul Ngoboka. 2006. Kinyarwanda locative applicatives and the Minimal Link Condition. *Southern African Linguistics and Applied Language Studies*, 24:101-124.
- Zribi-Hertz, Anne and Lamine Diagne. 2002. Clitic placement after syntax: Evidence from Wolof person and locative markers. *Natural Language and Linguistic Theory* 20: 823-884.

Curriculum Vitae

Name: Christen Harris

**Post-secondary
Education and
Degrees:** Utah State University
Logan, UT, USA
2005 - 2009 B.A.

Western University
London, Ontario, Canada
2009 - 2015 Ph.D.

**Honours and
Awards:** Western Graduate Research Scholarship
Western University
2009 - 2014

Graduate Research Award
Western University
2013 - 2014

Graduate Thesis Research Award
Western University
2013 - 2014

**Related Work
Experience** Teaching Assistant
Western University
2009 - 2014

Publications and Presentations:

Harris, Christen. 2014. "Applicative Theory Applied to Wolof." Presentation at *The Annual Conference on African Linguistics 45*. University of Kansas. 17-19 April.

Harris, Christen. 2014. "Describing Wolof applicatives and theoretical implications." Invited speaker at *Linguistics Talks at Western*. Western University Canada. 6 March.

Harris, Christen. 2012. "Contextual Allomorphy in the Wolof Past Tense." Presentation at *Canadian Linguistics Association Annual Conference*. Wilfrid Laurier University. 26-28 May.

- Harris, Christen. 2011. "Le système focus-topique en Wolof." Presentation at *L'exemple et le contre-exemple en littérature et en linguistique*. Western University Canada. 21-22 October.
- Harris, Christen. 2011. "The Structural Category of Past Tense (w)oon in Wolof." *Working Papers of the Linguistics Circle of the University of Victoria* 21, 34-42.
- Harris, Christen. 2011. "The Structural Category of Past Tense (w)oon in Wolof." Presentation at *27th Northwest Linguistics Conference*. University of Victoria. 19-20 February.
- Andrighetti, Michelle, Roronhiakehte Deer, **Christen Harris**, Caelan Marr, Andrew McKishnie, Philbert Musanganya, and Ileana Paul. 2010. "Is it a cleft? What constructions can tell us about cross-linguistic differences." Presentation at *The 14th Bilingual Workshop in Theoretical Linguistics*. University of Toronto. 8-9 December.
- Paul, Ileana, Michelle Andrighetti, Roronhiakehte Deer, **Christen Harris**, Caelan Marr, Andrew McKishnie, and Philbert Musanganya. 2010. "Is it a cleft? What constructions can tell us about cross-linguistic differences." Poster presentation at *Canada Research Chairs Thinking Ahead for a Strong Future*. Toronto, Canada. 24-25 November.
- Harris, Christen. 2009. "Searching for Identity in African Francophone Films." Presentation at *Utah Academy of Sciences, Arts and Letters Annual Conference*. Brigham Young University. 10 April.
- Harris, Christen. 2009. "Generational Differences Between North African Francophone Literatures: The New Stories of Immigrants in France." *Undergraduate Honors Theses*. Paper 6. <http://digitalcommons.usu.edu/honors/6>.
- Harris, Christen. 2009. "Generational Differences Between Beur and North African Francophone Literatures: The New Stories of Immigrants in France." Presentation at *Utah State University Student Showcase*. Utah State University. 25 April.
- Harris, Christen. 2008. "Searching for Identity in African Francophone Films." Presentation at *Utah State University Languages, Philosophy and Speech Communication Annual Symposium*. Utah State University. 14 March.