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ASPECTS OF MANDINGO GRAMMAR

BY

MALLAFE DRAME

Lic., Université de Dakar, 1975
A.M., University of Illinois, 1978

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Linguistics
in the Graduate College of the
University of Illinois at Urbana-Champaign, 1981

Urbana, Illinois

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

THE GRADUATE COLLEGE

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WE HEREBY RECOMMEND THAT THE THESIS BY

MALLAFE DRAME

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BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR

THE DEGREE OF DOCTOR OF PHILOSOPHY

_____
Director of Thesis Research

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Head of Department

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† Required for doctor's degree but not for master's.

O-517

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TO MY MOTHER

Binetou Kouyaté

and

IN MEMORY OF MY FATHER

Mody Dramé, 1915-1971

ACKNOWLEDGEMENTS

The writing of a doctoral thesis is a tedious job which requires a lot of courage, perseverence and personal sacrifices from the part of the student. In my case these sacrifices extended from the very day I set foot in this country in 1976 to August 1981 when this thesis was finally completed. However, along the way, I have benefitted from the assistance of various individuals and institutions without whom the successful completion of this work would not have been made possible. I would like to seize this opportunity to express my personal gratitude to all of them.

I would like to express my gratitude to the Senegalese government for providing me this opportunity to further my academic training. A special debt of gratitude goes to the African-American Institute which, through their AFGRAD fellowship program, sponsored my studies in this country from 1976 to the completion of my studies. I am also endebted to the department of Linguistics and the African Studies Center of the University of Illinois at Urbana-Champaign for providing me with a teaching assistantship while I was continuing my training.

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The research reported here was carried out practically during all of my graduate training years at the University of Illinois at Urbana-Champaign. Much of the data comes from my own idyolect. However I am greatful de Dr. Denis Creissels and Sidia Jatta of the <u>Université des Langues et Lettres de Grenoble</u> for making available to me the results of their investigation on the language.

ABSTRACT

ASPECTS OF MANDINGO GRAMMAR

Mallafé Dramé, Ph.D.
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The present study attempts to provide a general description of the Grammar of Mandingo. Since the language has not been submitted to extensive linguistic investigation, the thesis will essentially be subdivided into three major parts: (1) A general background description of the morpho-tonology of the language; (2) a grammatical overview of simple sentences; and (3) an examination of the structure of complex sentences. In particular, Chapter II analyzes the morphology and the tonology of nouns, adjectives, verbs in an attempt to uncover general properties characteristic of all major Mandingo constituents. This chapter not only facilitates the reading of subsequent chapters, but it offers a description that is crucial for the understanding of the rest of the thesis.

Chapter III examines the syntax of simple sentences. In particular, three areas are covered in this chapter: (a) word order, (b) nominals such as nominal possession marking and nominalized sentences, and (c) movement transformations.

Chapter IV focuses on the syntax of complex sentences. Several questions are raised including (1) whether Mandingo conjunction fits within the Immediate Dominance/Non-immediate dominance dichotomy, proposed by Tai (1969) and Sanders and Tai (1972), (2) can a unitary account be found for Mandingo relative clause formation, that is do the two relative clause types exhibited in this language share the same deep structure, (3) what

types of complement clauses the language has , and what are their deep structures, (4) whether or not a single rule can account for all Mandingo complement types, and (5) how can we account for the expletive pronoun a 'it' which surfaces in some complement clauses. A tentative solution is finally proposed that permits the derivation of both relative and complement clauses by a single rule.

Chapter V concludes the thesis and discusses a number of theoretical issues raised in the previous chapters.

It is our hope that this study, although by no means exhaustive, will bring some insight into our knowledge of the structure of Mande languages, and in so doing increase our understanding of African languages and the nature of human languages in general.

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CHAPTER I

INTRODUCTION

1.0 Purpose and Scope of the Study.

The main concern of this study is to present a general description[1]of

the major characteristics of Mandingo, a Western Mande language spoken

mainly in Southern and Eastern Sénégal, The Gambia, Guinée-Bissau and Ma-

li. Even though the thesis is geared primarily toward the syntactic as-

pect of the language, it is necessary to investigate the morpho-phonololy

of the language not only for the purpose of elucidating subsequent data, but

because there is an intimate relationship between the various components

of the grammar of this language. More specifically, in the area of morpho-

logy and phonology, we examine the internal structure of various consti-

tuent types both at the segmental and suprasegmental levels, in an attempt

to show that there is a high degree of morpho-phonological unity between

nouns, adjectives and verbs. The conclusion this leads to is that there

is very little morpho-phonological evidence here in support of the catego-

rial distinction traditionally made between nouns, adjectives and verbs.

The syntactic part covers two chapters : Chapter III, which is devo-

ted to simple sentences, and Chapter IV, which deals with complex senten-

ces. In particular, Chapter III covers three major areas: Word order, nomi-

nals and movement transformations. With regard to word order, we show

that Mandingo is an SOV language and that its word order generally re-

mains fixed. It is also argued that adjectives must be subcategorized

along morpho-semantic and syntactic lines, that the three-way nominal

possession system exhibited in this language is best accounted for in

a pragmatically based framework and that nominals have no sentence charac-
teristics and that both their syntactic and morphological behavior seems
to favor a base-generation over a transformational derivation. In the
area of movement rules, we show that only movement rules that leave a re-
placive pronoun in the initial position of the moved constituent are gene-
rally allowed in this language. Passive is then analyzed and an attempt
is made to show that because of its polarization and marked meanings, this
process may not be a transformation in Mandingo. Chapter III ends with a
survey of question formation, which,our analysis shows, does not involve
any constituent reordering in this language.

Chapter IV considers two types of complex sentences: coordinate and
subordinate constructions. With regard to coordinate constructions, we
examine the distributions of various conjunctions in an effort to establsih
that Mandingo conjunction-reduction does not fit within the Immediate Do-
minance/Non-immediate Dominance dichotomy proposed by Tai (1969) and San-
ders and Tai (1972) to account for conjunction reduction in the world's lan-
guages. We then proceed to examine relative clause. formation. A distinc-
tion is made between two types of relative clauses. To account for the
derivation of these clauses, a survey of RCF in Mande languages is offered
and alternative solutions are discussed. The chapter ends with an analysis
of Mandingo complement system.

Chapter V summarizes the preceding chapters and further discusses the
issues of categorial distinctions and the Immediate Dominance theory.

1.1 Theoretical Framework. This study is being conducted in the
transformational-generative framework, in particular the version of the
Standard Theory known as the Lexicalist Hypothesis (Chomsky, 1971) and

the Extended Standard Theory (EST) as developed in Bresnan (1972), Chomsky (1971, 1973, 1976). In particular, it is assumed "that a grammar consists of base rules, transformational rules, phonological rules and (semantic) interpretive rules"(Chomsky, 1976, 71 ff). It will be further assumed that "the base generates an infinite class of deep structures (initial phrase markers)" and that " the transformational component of the grammar generates derivations D : $(K_1, \ldots, K_n)$ where K_1 is a base-generated deep structure, K_{i-1} is formed from K_i by a transformation, and no obligatory transformation is applicable to K_n" (Chomsky, 1976, 72 ff). Finally, following Mathews (1974) and Aronoff (1976), and as a working principle, we shall assume that phonology and morphology are two separate levels of grammar.

1.2 <u>Related Works on Related Languages</u>. Mande languages have benefited from a very limited number of studies up till now. Most of these studies were mainly concerned with genetic classification. Among them, one could cite : Delafosse (1954), Houis (1966), Greenberg (1966), Welmers (1973). Of these studies, very few were devoted to an actual description of languages; the most extensive descriptions are perhaps Rowlands (1959), Bird (1966, 1968), Spears (1965) and Creissels (1979). Among the studies of the last group, only two were devoted to Mandingo, namely Rowlands (1959), which offers a sketchy account of a few morphological, phonological and intonation patterns of the Gambian dialect of Mandingo, and Creissels (1979) which is a lengthy but often impressionistic description of various syntactic structures of the language. Consequently, very little is known about the general structure of Mandingo at the present time. Because of the lack of analysis on the language, it has long been assumed

that most of the grammatical features of Mandingo are amenable to those of Bambara, a closely related Mande language, and that the language has nothing else to offer to the linguistic theory, since Bambara has been extensively investigated. In this study, we hope to disprove this commonly held view, and show that the data[2] on morphology and complex sentences have serious theoretical implications on the notions of syntactic categories and noun phrases respectively.

1.3 Notations. In addition to the language specific notations, I shall indicate three types of sentence deviancies: (1) ungrammatical, (2) grammatical for a context other than the one under consideration and (3) questionable grammaticality or non-preferred construction or reading. Here is the list of these abbreviatory notations:

(1)	*	Ungrammatical
(2)	*	Grammatical for a context other than the one under consideration.
(3)	?	Questionable grammaticality, or non-preferred construction or reading
(4)	AP	Alienable Possession Construction
(5)	CT	Compounding tone pattern
(6)	DA	Deficent adjective
(7)	FS	Front-shifted relative clauses
(8)	Fut	Future tense
(9)	GEN	Genitival possession construction
(10)	GP	General pluralization marker
(11)	GSP	General specification and pluralization constraint
(12)	IP	Inclusive plural marker
(13)	IPo	Inalienable possession construction

(14)	Loc	Locative noun phrase
(15)	MP	-Maa-possession construction
(16)	NA	Nomino-adjective
(17)	NC	Non-compounding
(18)	NCT	Non-compounding tone pattern
(19)	NGEN	Non-genitival possession construction
(20)	NT1	Nominalized form type I
(21)	NT2	Nominalized form type II
(22)	P	Postposition
(23)	PIT	Phrase internal tone pattern
(24)	PP	Postpositional phrase
(25)	Pt Hab	Present Habitual
(26)	Q	Question morpheme
(27)	RS	Rear-shifted relative clause
(28)	SP	Specifier
(29)	S-rel	Relative clause
(30)	TA	Tense/aspect marker
(31)	TAD	True adjective

The transcription adopted in this study is generally that proposed by the Senegalese government,[3] which is based on the International Phonetic Alphabet. This means that all the illustrative examples, including proper nouns, are given in broad phonetic transcriptions, unless otherwise indicated.

FOOTNOTES TO CHAPTER I

1. The decision to write a descriptive rather than a theory-oriented thesis is done by design based upon the fact that there is a paradigmatic instability in the linguistic theory and an exclusively theory-

oriented study runs the risk of becoming absolete in a short time. Subsequently, there is no a priori decision to make the data fit or support one particular approach, however, if the facts concur with a universal or a claim, a statement will be made to this effect. I am indebted to my advisors, Professors Bokamba and Kisseberth for encouraging me in this approach.

2. The data presented here is drawn largely from the author's own dialect since he is a native speaker of Mandingo. Additional data was drawn from Rowlands (1959), Creissels (1979), Creissels and Jatta (1979) and from three recorded texts (La culture de l'arachide en Gambie, Un fragment de l'épopée de Sunjata and Deux Contes de l'hyene et du lievre) transcribed by Creissels and Jatta and made available to me through the assistance of Professor Bokamba. I am deeply indebted to all three.

3. This alphabet is reproduced in its entirety in Chapter II with a discussion on a number of symbols that we do not use in this study.

CHAPTER II

MORPHO-TONOLOGY

2.0 Introduction

The main purpose of this chapter is to present a general overview of

the segmental and suprasegmental aspects of Mandingo. Such an undertaking

is deemed necessary on three grounds: (i) the language has never been sub-

mitted to extensive linguistic investigation, meaning that at the present

time, very little is known about its morphology, phonology and tone system;

(ii) the structural properties discussed here are not only needed for a

better understanding of later chapters, but (iii) they raise a number of

questions that have a strong bearing on syntactic issues that will be

dealt with in Chapters III and IV.

Subsequently, the chapter will be divided into four main sections:

In Section (2.1), the sound system of Mandingo will be presented, and the

writing system adopted in this study will be discussed. This section will

also include a discussion of varoious phonological processes, such as ge-

mination, nasal and vowel assimilation. Section (2.2) will deal with

structural tones, and attempt to state the rules necessary for the deriva-

tion of the surface internal tone patterns of Noun Phrases. Section (2.3)

will discuss the basic properties of nominal and verbal morphologies, with

a special emphasis on the internal organization of Noun Phrases, specifi-

cation, pluralization and compounding. This section will also cover as-

pects of verbal morphology, and attempt to establish some similarities

between verbal and nominal morphology. Finally, section (2.4) will pre-

sent morpho-tonological rules that rearrange the Phrase-final tonal shape

of nominals and nominalized verbs as well, subsequent to the morphological process of specification, pluralization and compounding, as stated in the preceding section. The chapter will then be summarized and concluded in section (2.5).

2.1 SEGMENTAL PHONOLOGY

A As a working hypothesis, and in an effort to arrive at an ordered treatment of the various sound and tone changing rules operative in this language, it will be assumed along with Aronoff (1976) and Mathews (1974) that phonology and morphology are two separate levels of grammar, even though the phonological aspect of the language is being treated under the general heading of MORPHO-TONOLOGY. One consequence of this distinction is that much of what is being trated under phonology could be argued to really belong in morphology.

The history of the writing system of Mandingo is relatively recent. In Sénégal, where the language is predominant in the Southern region, Casamance, it was not until 1971 that a presidential decree (No: 71-566 of May 21, 1971) was published to provide a unified alphabet for Mandingo and the other five national languages of Sénégal. Here is a reproduction of the official alphabet and accompanying illustrations:

(1)

Official Number [1]	Symbols	Illustrations	Gloss
2	a	faa	'father'
3	b	bato	'bottle'
6	c	caabó	'key'
8	d	dabo	'hoe'
10	e	beño	'arrow'
11	é	keeké	'milk'
13	f	fentaŋ	'poor'
14	g	galo	'pearl'
16	h	haajo	'need'
17	i	sillo	'street'
19	j	jio	'water'

20	k	keloo	'war, fight'
21	l	loolo	'star'
22	m	muso	'woman'
23	n	nono	'yogourt'
24	ñ	ñaa	'eye'
25	ŋ	kuŋo	'head'
26	o	dolo	'alcoholic bev.'
27	ó	dókó	'stick'
28	p	purpura	'dove'
31	r	foro	'free man'
32	s	sembo	'force'
33	t	tato	'fortress'
35	u	bulo	'arm'
37	w	wolo	'partridge'
38	x	xaro	'moon'
39	y	yiró	'tree, medecine'

The symbols in (1) are phonetically based. The same decree states that long vowels and geminated consonants shall be indicated by a doubling of the symbol used, in an effort to differentiate in the lexicon pairs, such as:

(2)   Saama   'tomorrow'
        samáà   'the rain'

(3)   sika   'lift'
        sikka   'mistrust, suspicion'

It is also stated, in the same decree, that prenasalization is to be rendered by a homorganic nasal before the consonant, as exemplified in (4):

(4) mb   mbíroo   'the wrestler'
    nd   ndiŋ   'small'
    nt   ņ-te   'me' (emphatic)
    ñj   Njaay   'personal name'
    ŋg   ŋgembóò   'underwear'

Even though the present study attempts, for obvious reasons, to follow very closely the official senegalese writing system, a few minor changes are deemed necessary. More specifically, symbols (11) and (27) will not be used in our transcription, because of their inconsistent use of the acute

accent diacritic. They will be replaced respectively by ε and ɔ. The

acute accent will be used instead to indicate high tones. The velar

fricative x, (No: 38), shall not figure in our consonant system, simply

because it does not exist in the dialect under consideration. Consequently,

the following consonant and vowel charts are proposed for Mandingo:

Table 1: Consonant System of Mandingo

Manner of Articulation	Manner of Articulation	Bilabial	Labio-dental	Alveo-dental	Alveolar	Lateral	Non-lateral	Palatal	Velar
STOP	Voiceless	p		d					k
	Voiced	b		d					g
FRICATIVE	Voiceless		f		s				h
	Voiced								
AFFRICATE	Voiceless							c	
	Voiced							j	
LIQUID						l	r		
NASAL		m		n				ñ	ŋ
GLIDE		w						y	

Table 2: Vowel System of Mandingo

		Front	Central	Back
High		i, ii		uu, u
	tense	ε		ɔ
	lax	e, ee		oo, o
Low			a, aa	

TABLEAU I

Liste des graphes employés pour les principales
langues du Sénégal

Numéro	Lettres minusc.	Lettres majusc.	Wolof	Sereer	Pulaar	Joola	Malinke (Mandinka)	Soninke (Sarakole)
1...	ʼ	ʼ				ʼ		
2...	a	A	a	a	a	a	a	a
3...	à	À	à					
4...	b	B	b	b	b	b	b	b
5...	ɓ	ʙ		ɓ	ɓ			
6...	c	C	c	c	c	c	c	c
7...	cʼ	Cʼ			cʼ			
8...	d	D	d	d	d	d	d	d
9...	ɗ	ᴅ			ɗ	ɗ		
10...	e	E	e	e	e	e	e	e
11...	é	É	é			é	é	
12...	ë	Ë	ë			ë		
13...	f	F	f	f	f	f	f	f
14...	g	G	g	g	g	q	g	g
15...	gʼ	Gʼ			gʼ			(1)
16...	h	H		h	h	h	h	h
17...	i	I	i	i	i	i	i	i
18...	í	Í				í		
19...	j	J	j	j	j	j	j	j
20...	k	K	k	k	k	k	k	k
21...	l	L	l	l	l	l	l	l
22...	m	M	m	m	m	m	m	m
23...	n	N	n	n	n	n	n	n
24...	ñ	Ñ	ñ	ñ	ñ	ñ	ñ	ñ
25...	ŋ	ᴅ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ
26...	o	O	o	o	o	o	o	o
27...	ɔ	Ɔ	ɔ			ɔ	ɔ	
28...	p	P	p	p	p	p	p	p
29...	pʼ	Pʼ			pʼ			
30...	q	Q	q	q	q			
31...	r	R	r	r	r	r	r	r
32...	s	S	s	s	s	s	s	s
33...	t	T	t	t	t	t	t	t
34...	ƭ	ᴛ			ƭ			
35...	u	U	u	u	u	u	u	u
36...	ú	Ú				ú		
37...	w	W	w	w	w	w	w	w
38...	x	X	x	x			x	x
39...	y	Y	y	y	y	y	y	y
40...	yʼ	Yʼ		yʼ	yʼ			

(1) Réservé aux ouvrages scientifiques, ailleurs : q

TABLEAU II

Tableau général des consonnes des langues du Sénégal

	Labiales	Dentales	Palatales	Vélaires	Uvulaires	Glottales
Occlusives.....	b	d	j	g		
	p	t	c	k	q	
Implosives ou glottalisées.	ɓ	ɗ	ʏ	gʼ		
	pʼ	ƭ	cʼ			
Constrictives..	f	s		x		h
Latérales......		l				
Vibrantes......		r				
Nasales........	m	n	ñ	ŋ		
Semi-voyelles.	w		y			

TABLEAU III

Voyelles des principales langues du Sénégal

	Antérieures	Centrales	Postérieures	
Fermées tendues...	ɨ		ʉ	
Fermées	i		u	
Mi-fermées	é	ë	ɔ	
Mi-ouvertes ou moyennes..........	e		o	I. Brèves
Ouverte...........		a		
Maximale..........		à		
Fermées tendues...	ɨɨ		ʉʉ	
Fermées...........	ii		ii	
Mi-fermées........	éé	ëë	ɔɔ	
Mi-ouvertes ou moyennes..........	ee		oo	II. Longues
Ouverte...........		aa		

TABLEAUX IV ET V

Groupes consonantiques particuliers des principales
langues du Sénégal

I. Complexes a nasales

mb	nd	nj	ng
mp	nt	nc	nk	nq

All consonants are phonemic, although some occurrences of nasals are predictable, as we shall see shortly. Prenasalized consonants do not figure in the chart for two main reasons. Frst, in Mandingo, like in many other Mande languages, most obstruents do occur prenasally. Secondly, prenasalized consonants do not contrast with their non-pre-nasalized counterparts. In fact, other than geminated consonants, pre-nasa-. lization is the only other type of consonant cluster generally admitted in this language. For instance, when a borrowed word contains a non-geminated and non-nasalized consonant cluster, it is usually split up by an epenthetic vowel, as examplified in (5):

(5)   French   Mandingo   Gloss.

        taxi [taksi:]   tákísoo   'taxi-cab'
        lettre [lɛ:trə]   léétároo   'letter'
        montre [mɔntrə]   mɔ́ntɔ́roo   'watch'

With respect to gemination, it must be pointed out that, despite the heated debate which opposed Senghor and Sembene in recent years about the correct way of writing Ceddo[2](Cedo, or Ceddo), this process does exist not only in Mandingo, but in other Mande laguages as well, and that its faithful transcription is lexically important, as pointed out by Jatta (1979). Without gemination, the pairs below would not be lexically diffe-rentiated, since the word in each pair are exactly similar otherwise, except in their geminated and non-geminated consonants.

(6) a.   sila   'fear, or monkey'
          silla   'proper name'

    b.   síká   'lift'
          síkká   'mistrust, suspicion'

As for the vowel chart, let us point out that the distiction made between long and short vowels is phonemic, as can be observed in the fol-

lowing pairs:

(7) a. táálaa   'he who is leaving, going'
        tálaa   'the seperation, the division'

    b. bata   'bottle, water-bottle'
        bataa   'fatigue, tiredness'

    c. dásá   'to be short of'
        dáásáá   'to sell at retail'

This. explains why both long and short vowels were entered in table 2.

However, the distinction between mid tense and lax vowels is definitely

phonetic for front vowels, and probably so for back vowels, since tense

vowels tend to occur in closed syllables, while lax vowels tend to occur

exclusively in open syllables. In addition, tense vowels tend to occur

only in their short forms, which explains why long tense vowels are not

included in the vowel chart.

An other common feature of Mandingo sound system is nasal assimilation.

In this language, non-final nasal are always realized homorganically to

the following consonant, as illustrated in (8):

(8) a. Bambóò   'the crocodile'
        kaŋkuráŋo   'Mandingo mask'
        káñjoo   'the okra'

    b. A mán taa   'He did not go'
        A mám balaŋ   'he did not refuse'
        A maŋ kati   'it did not break'

    c. Karáŋ   'learning, study'
        moo   'person'
        karam-moo   'teacher'

As attested in (8a, c and b), nasal assimilation occurs word-internally,

across stem-boundary as well as across word-boundary.

Among nasals, a special status must be given to the velar nasal ŋ.

In addition to its assimilation to the point of articulation feature of

a following obstruent, ŋ is the only cosonant allowed stem-finally in

Mandingo. Furthermore, the velar nasal is realized phonetically as a

liquid whenever it is followed by a liquid, as examplified in (9).

(9)   A mâŋ rooroo   ⟶ a mâr rooroo 'it isn't shreded'
        A mâŋ lafi   ⟶ a mâl lafi   'he doesn't want'

However, the velar nasal remains unchanged when it occurs sentence-final-

ly, or when it is followed by a vowel such as the specifier -o, as in

(10) below:

(10)   tántáŋ+o   ⟶   tántáŋo : 'the drum'
        búŋ+o   ⟶   búŋo   : 'the house'
        siŋ+o   ⟶   siŋô   : 'the leg'
        faŋ+o   ⟶   faŋô   : 'the machete'

Finally, ŋ is probably the only tone bearing consonant in the language.

The falling tone on siŋô and faŋô can be accounted for adequately only

if we assume that the stem-final ŋ in these nouns bears an underlying

low tone. This will be consistent with our analysis of the tone pattern

of specified nouns, as we shall see later.

To this list, let us add one more sound change, vowel assimilation.

This change is more of a phonetic detail at this point; it applies verti-

cally by allowing lower vowels to assimilate higher vowels. The most com-

mon of these assimilation processes are the following:

(11) a.   e ⟶ a / ⸺ # a
          Sádáá ye a je   ⟶ Sádáá yaa je
          S.   TA it see
          (Sádáá saw it)

     b.   i ⟶ a / ⸺ # a
          Safíí si ál kili   ⟶ Safíí saal kili
          S.   TA you call
          (Safíí shall call you)

     c.   i ⟶ e / e # ⸺
          Wulóó be i bayi la ⟶ wulóó bee bayi la
          dog-SP TA you chase TA
          (The dog will chase you)

The sequences undergoing the next rule must further undergo (11c) to obtain

the right output.

  d. a ⟶ e / ⟶ # i
     Musóó ka i kontoŋ ⟶ *Musoo kei kontoŋ ⟶ musóó kee kontoŋ
     wom.-SP TA you greet
     (The woman greets them)

Vowel assimilation also applies to long vowels occurring stem-finally

with the difference that three-vowel sequences are further truncated into

two to comply with the mora structure allowed by the language. By applying

(11c) in (12b) and (11d) and (11c) to (12a), and further reducing the three-

vowel sequences into two, we obtain the following sentences:

(12) a. Sirá ye kódoo taa i bulu ⟶ *.... teee bulu.. ⟶...tee bulu.
    S. TA money take you from
    (Sirá took the money from you)

  b. Sádáá maŋ a safee i ye ⟶ *..safee e ye.. ⟶..safee ye..
    S. Neg/TA it write you for
    (Sadaa did not wirite the letter for you)

Statistically, vowel assimilation seems to be primarily a front-vowel pro-

cess , since a and aa are the only non-front vowels it applies to. Howe-

ver, there is a morphological process (specification) which involves a

similar assimilation process but applies to back vowels as well. This

raises the question whether the two processes should not be treated as one.

 So far only segmental phonology has been dealt with. In this respect

it has been shown that the sound system of Mandingo can be adequately trans-

cribed with the 26 symbols proposed in tables (1 & 2), and that the various

sound processes that exist in the language, such as consonant gemination,

nasal and vowel assimilation, can be characterized relatively easily. It

was also seen that vowel assimilation is basically a vertical process, in

which the general tendency is for lower vowels to assimilate higher vowels

and that it occurs phonetically more often with front vowels.

The simplicity of the segmental phonology might lead one to expect an equally simple suprasegmental component. The fact of the matter, however, is that the suprasegmental component of Mandingo is much more complicated.

2.2   TONOLOGY

Like most African languages, Mandingo has a fairly rich suprasegmental component, which includes tones as well as intonation. Even though the domain of tones is yet to be fully dtermined, they can tentatively be divided into three categories: (i) underlying tones, defined on various types of stems, and which are given in the lexicon (and thus will not be dealt with here, since they are not phonologically derived), (ii) phrase-internal tones (PIT), and (iii) morpho-tones, derived via specification. The present section will deal with tones under (ii), postponing the treatment of morpho-tones until section (2.4). However, before going any further, an inventory of the most common surface tone patterns is inoorder.

There are basically five tones or tone combinations in Mandingo: the level high (represented by /′/), the low tone (indicated by the absence of any diacritic over the segment), the falling tone /^/, the rising tone /ⱽ/ and the low-high-low combination /ⱽ^/. Illustrations of the occurrences of these tones will be provided at various points in this and the next sections.

To return to the problem at hand, the following generalizations can be made about phrase-internal tones: (a) their domain is generally the whole noun stem, (b) they can be subdivided into compounding (CT) and non-compounding tones (NCT). Compounding tones are initially phrase-internal tones characteristic of compound nouns formed by two or more noun stems. However, since many combinations of noun plus adjectives display similar

tone pattern, the expression <u>compound tone</u> will be used in a general sense
to describe any string of nominals (i.e. noun stems or noun stems plus ad-
jectives) that a single-NP reading and whose internal tone melody is as-
signed by tne following rules:

(13) a. $LT_x \longrightarrow L_x H$

 b. $HT_y \longrightarrow H_{y-1}$

Rules (13a & b) state that a compound whose initial noun stem is low fol-
lowed by any combination of tones and x number of nominal stems will deve-
lop x number of low tones and a phrase-final high tone stem, while a com-
pound starting with a high tone stem will be high all through. As we shall
see in the discussion on the examples in (14) through (16), rules (13a & b)
are not phonological rules.

In a two-stem compound, if the first stem is low, the second will inva-
riably be high regardless of its basic tone, as illustrated in (14b, c):

(14) a. jata   'lion'   sólí   'leopard'
         kulu   'skin'   kúlú   'bone'

 b.   jata-kúlú(LL) 'lion-skin'   c. jata-kúlú(LH) 'lion-bone'
      sólí-kúlú(HL) 'leopard-skin'   sólí-kúlú(HH) 'leopard-bone'

On the other hand, if the first stem is high, the second will also be high
in a compound. Consequently, the compound tonal pattern does not permit
any surface distinction between sequences of (LH) and (LL), and sequences
of (HL) and (HH). Underlying (LL) and (LH) both end up as (LH), while (HL)'
and (HH) both become (HH), as evidenced in (14a, b, c). In examples such
as above, where the final stems in the compound are near-minimal pairs, dif-
ferentiated only in their basic tones, ambiguous structures are created.
For instance, in (14), <u>jata-kúlú</u> can mean either 'lion-skin' or 'lion-bone';
similarly, <u>sólí-kúlú</u> can equally mean 'leopard-skin' or 'leopard-bone' .

In a three-stem phrase exhibiting a compound pattern, if the first stem is low, the second stem will also be low and the last one high, as shown in (15):

(15) a.   jaŋa-mââ   'the tall one'   jaŋ (L)   'tail, long'
          kûlí-maa   'the heavy one' kûlíŋ(H) 'heavy'

     b.   jata-kulu jâŋ   'long lion-skin' (LLL) or
                           'long lion-bone' (LHL)

          *jata-kûlû jaŋ
          *jata kûlû jâŋ   'lion with long bones' (LHL)

     c.   jata-kulu kûlíŋ 'heavy lion-skin' (LLH) or
                           'heavy lion-bone' (LHH)

          *jata-kûlû kuliŋ
          *jata kûlû kûlíŋ 'lion with heavy bones' (LHH)

In a sense, the internal compounding is overriden by the external compound structure, suggesting that we are probably not dealing with cyclically derived tones. Notice in the last structures in (15b & c) that the difference in meaning correlates with a structure where the compound tone rule would have applied between the second and the third stems, the resulting structure would in turn be compounded to the first stem. Our contention is that these structures , which clearly show a meaning difference, are not derived by sequencing compounding stems one after an other, as is involved in real compounding, but rather that they come from an underlying relative clause source via a "WH.....have" reduction type of rule. Finally, it should be noted that the ambiguity mentioned in connection with (14b & c) is not neutralized in (15b & c), when a third compounding stem is added; rather, it is perpetuated.

However, when a three-stem phrase with a compound pattern starts with a high tone stem, every compounding stem that follows will invaria-

bly be high, as evidenced in (16a & b):

(16) a. Sólí-kúlú jáŋ   'long leopard-skin' (HLL) or
                                     'long leopard-bone' (HHL)

         *Sólí-kúlú jaŋ
         *sólí-kulu jaŋ
         *Sólí kulu jáŋ   'Leopard's long skin'

     b. Sólí-kúlú kúlíŋ   'heavy leopard-skin' (HLH) or
                                     heavy leopard-bone

         *Sólí-kúlú kuliŋ
         *Sólí-kulu kuliŋ
         *Sólí kulu kúlíŋ   'Leopard's heavy skin'

Similarly to the structures in (15), the internal tone rearrangement in
the structures in (16) is entirely controlled by the tone on the first
stem. If this stem is high, any following stem will be high, or else the
resulting structure will be ill-formed, as illustrated in (16a & b). No-
tice in Sólí kulu jáŋ 'Leopard's long skin' and Sólí kulu kúlíŋ 'Leopard's
heavy skin', where the compound tone pattern is exhibited only between the
second and last stems, the meaning obtained is that of two NPs standing
in a non-genitival possession construction, the possessor being the proper
noun Sólí, and the possessees being respectively kulu jáŋ 'long skin' and
kulu kúlíŋ 'heavy skin'. The two possessees are internally well-formed
and consistant with rule (13a).

Much longer phrases with a compound tone pattern are possible,both
with noun stems and nouns combined with adjective stems, with no limit on
the number of stems that can be added, except one's own processing ability.
In Mandingo, most phrases of the sort described above exhibit tonally a
compound structure, as stated in rules (13a & b), even if not all the
stems involved are nouns per se. There is however, one small group of
nominal stems (i.e. nouns and adjectives) that must be considered excep-

tions to this generalization, which justifies our labeling them non-compounding stems. These include a small number of nouns, descriptive adjectives (most of which are compounds themselves) and numerals. When such a stem follows a phrase-initial noun stem (compounding or not), the compounding tone rule does not apply. Instead, two alternatives develop depending on whether the initial nominal stem is underlyingly high or low. In the first case, no internal tone restructuring takes place on either the first or second stem, as illustrated in (17b & c):

(17) a. Dánná   (L)   'hunter'
         kunnadíí (NC) (L   'lucky'
         fula   (NC) (L)   'two'

   b.   Dánná kunnadíí   'lucky hunter'
         *Dánná kúnnádíí

   c.   Dánná fula   'two hunters'
         *Dánná fúlá

The ill-formed NPs in (17b & c) result from attempts to make these structures fit the frames defined by rule (13). When the initial stem in a structure formed by a noun stem followed by a non-compounding element is underlyingly low, it develops a syllable-final high, as in (18b & c):

(13) a. Wulu   (L)   'dog'
         kononto   (L)   'nine'

   b.   Wulú kononto   'nine dogs'
         *wulu kónóntó

   c.   wulú kunnadíí   'lucky dog'
         *wulu kúnnádíí

The high tone on the initial stem must be restricted to the final syllable, a characteristic that differentites Non-compound tones with compound tones, since the former seem to be defined on syllable structure, while the latter are defined on nominal stems. Furthermore, other than the high tone

generated on the final syllable of initial low stems, non-compounding

elements do not trigger any tone change even in instances such as (19),

where the **phrase-initial** noun stem is followed by more than one non-com-

pounding adjectives.

(19) a.   Wulu kunnadíí fula   'two lucky dogs'
        *wulu kunnadii fúlá
        *wulu kúnnádíí fúlá
        *wulu kúnnádíí fula

One question that might be asked at this point is what happens in

tonally mixed NPs, that is NPs that contain both compounding and non-com-

pounding nominals.

In mixed noun phrases, that is noun phrases containing both compoun- ·

ding and non-compounding elements, compounding elements are always ordered

first. And since the last nominal stem in a compound is always high, the

addition of one or more non-compounding elements does not affect the in-

ternal tone structure of the preceding compound. In other words, in a

mixed complex NP of the type illustrated in (20b & c), compounding applies

up to the point where the first non-compounding element is met:

(20) a.   tolirín   (NC)   'rotten'

    b.   [jata-kulu jáŋ] tolirín fula   'two rotten long lion-bones'
        [*jata-kulu jaŋ tólírín] fula
        [*jata-kulu jaŋ tolirin fúlá]

    c.   [jata-kulu kúlíŋ] tolirín fula   'two rotten heavy lion-skins'
        [*jata-kulu kuliŋ tólírín] fula
        [*jata-kulu kuliŋ tolirin fúlá]

Finally, let us point out that non-compounding nominal stems are sta-

tistically few. . The most common are the numerals <u>fula</u> 'two', <u>saba</u> 'three',

<u>kononto</u> 'nine', and a number of descriptive adjectives, such as <u>kunnadíí</u>

'lucky', <u>nete-múŋkú</u> 'yellow', <u>maraa-maa</u> 'left-handed', which for the most

part are the results of compounding themselves. Nouns and the majority of descriptive adjectives are tonologically compounding, even in cases where the nominal is generated through some earlier compounding process.

To summarize, it was shown that the internal tone structure of Mandingo complex NPs formed by sequences of nominal stems can, for the most part, be accounted for by the two compounding rules stated in (13). However, when non-compounding stems occur in the NP, they are ordered last, and they do not generate the tone changes predicted by rules (13a & b). In fact, such stems generate very few changes in the tonal shape of the preceding structure. Various observations on complex NPs discussed in (15) through (20) have also demonstrated that tones are crucial for determining NP well-formedness. In general, compounding stems must have their internal tones assigned by rules (13a, b), or else ill-formed NPs are generated.

In addition to tones, morphology is an other crucial component in determining NP well-formedness, as we shall see in the next section.

2.3 BASIC MORPHOLOGICAL STRUCTURES

This section will focus on a discussion of nominal and verbal morphology. To achieve this goal, the main emphasis will be on the following points: (i) a discussion of specification and pluralization particularly the rules involved in deriving specified nouns, (ii) a discussion of the basic morphological features of other nominals such as demonstratives, possessives, adjectives and numerals, (iii) an examination of aspects of verbal morphology including aspectual morphology, nominalization, verbal extensions and other suffixation processes commonly observed with Mandingo verbs, and finally (iv) a comment on similarities between nominals

and verbs, which has at times brought up speculations that perhaps all these elements belong to the same morphological category. Let us begin by examining nominal morphology.

2.3.1 Nominal Morphology. Under this heading shall be examined two categories of nominals: Nouns in section (2.3.1.1) and adjectives in (2.3.1.2).

2.3.1.1 Nouns. The morphology of Mandingo nouns is fairly simple, compared to other African languages such as Bantu. Mandingo nouns exhibit four main morphological processes that deserve attention : (i) specification (SP), (ii) pluralization, (iii) compounding and (iv) duplication. But before we go any further, a few remarks on the syllable structures in Mandingo seem to be in order.

Mandingo has three common syllable structures, which are : CV, CVV, and CVC. Except in borrowed words (mostly from Arabic), there is no vowel-initial stem in this language. In addition, ŋ is the only consonant allowed stem-finally, and it also appears to be the only tone-bearing consonant in Mandingo.

(21) a.   Sǎŋ³   'sky'
            saŋ   'year'
            tántâŋ   'drum'

      b.   kambaani 'boy'
            kêêkêê   'fresh milk'
            daramba   'hoe'
            kóŋkó   'hunger'
            musu   'woman, wife'

Generally, open syllables are preferred, which explains why consonant clusters containing no nasals tend to be broken up in borrowed words by the insertion of an epenthetic vowel as part of the nativization process as exemplified in (5) earlier. The final syllable of these noun stems

are modified in certain ways when they are followed by the specifier.

Specification[4] in this language is basically a morphological process, whereby the specifier -o is suffixed to a noun stem. Depending on the final segment in the noun stem, various assimilation processes take place subsequent to the suffixation to rearrange the final syllable, as summarized in (22):

(22) a. $o \longrightarrow a / aa + \underline{\quad} \#$

b. $V \longrightarrow o / C \underline{\quad} + o \#$

c. $V_i \longrightarrow \emptyset / \underline{\quad} V_i + V \#$

To derive the correct surface specified form, (22a) must be ordered before (22c), and (22b) before both (22a & c). In addition, all three rules must be applied before the morpho-tonological rule stated in (61), to obtain the correct surface tone. The application of rules (22a-b) will be illustrated in the structures in (23) through (25)

(23) a. saasaa   'sickness';   saasââ   'the sickness'
         kordaa   'house'   ;   kordââ   'the house'

b. sâdââ   'charity' ;   sâdaa   'the charity'
    tûûrââ   'bull'   ;   tûûraa   'the bull'

To derive the specified forms in the right hand side of (23a), (22a) will apply to generate three a stem-finally, which will then be reduced to two by (22c). Similarly, to derive the specified forms in (23b), rules (22a & c) will have to apply. Evidently specification has a tonal component, which assigns the proper tonal contour in the final syllable after that syllable has been rearranged segmentally by (22a-c). The rules necessary for the derivations of these tones will be given in (2.4).

The derivation of the specified form of a noun requires more steps when the stem ends in a long vowel than in short vowels or ŋ; often

the only clue to whether a noun is specified or not are the syllable-final tone, as in (23), or in non-opaque cases, the -o ending, as in (24):

(24) a.
Saajii	'sheep'	;	saajío	'the sheep'
kooree	'herd'	;	kooréo	'the herd'
kuruu	'kola nut'	;	kurúo	'the kola nut'

b.
| sánjíí | 'rain' | ; | sánjío | 'the rain' |
| fútúú | 'marriage' | ; | fútúo | 'the marriage' |

The specified forms in (24a) are derived by the application of the morphological rule in (22c). When the noun stem ends in short vowel or ŋ, its derivation is much easier, because it is more transparent. What is needed is either a forward assimilation to the -o of the specifier, in the case of vowel-final stems, or no segmental rearrangement when the final segment is ŋ. These two points are illustrated in (25a & b) respectively.

(25) a.
sáŋ+o	⟶	sáŋo	'the sky'
tántáŋ+o	⟶	tántáŋo	'the drum'
saŋ+o	⟶	saŋô	'the year, the death'

b.
kambaani+o	⟶	kambaanôô	'the boy'
musu+o	⟶	musôô	'the woman, the wife'
súŋgútú+o	⟶	súŋgútoo	'the girl'
kóŋkó+o	⟶	kóŋkoo	'the hunger'

Assuming that the above segmental analysis of specification is correct, let us now consider pluralization.

Mandingo has two types of plural markings: General Pluralization (GP) by suffixation of the morpheme -lu to indicate that there is more than one of the entity being pluralized, and Inclusive Pluralization (IP), by use of the suffix -ñolu, to indicate an entity and the group of similar entities it belongs to. These two plural markings have very distinct distributions.

Of the two, Inclusive pluralization is the most restricted, since it tends to occur only with proper nouns and possessees in what is often re-

ferred to as "Inalienable Possession constructions". When a proper noun
is inclusively pluralized, it conveys the meaning of 'Mr or Mrs x.. and
company, as illustrated in (26):

(26) a. Sidáát-ñolu,   'Sidáát and company'
     b. Sidáát nin Asán-ñolu   'Sidáát, and Asán and company'
     c. Sidáát-ñolu nin Asán-ñolu 'Sidáát & co,, and Asán & co.'
     d. Sidáát wara Asán-ñolu   'Sidáát, or Asán & co.'
     e. Sidáát-ñolu wara Asán-ñolu 'Sidáát & co., or Asán & co.'

It is interesting to note that when two nouns are linked by a logical con-
nective, such as nin 'and', or wara 'or', the inclusive reading relates
only to the noun to which -ñolu is suffixed. In other words, (26b) does
not have the reading of (26c), and similarly (26d) does not have the rea-
ding of of (26e), which seems to indicate that the inclusive plural marker
cannot be deleted in either term of a conjoined structure. This characte-
ristic is also shared by the general plural marker.

In the Mandingo dialects that admit the occurrence of IP with common
human nouns, -ñolu must be suffixed to the non-specified form of the noun.
The reading obtained is such cases is either that of a general plural, or
an inclusive plural, as shown in (27a & b):

(27) a. A musú-ñolu
         he wife IP
         (His wives, or his wife/wives and those of his brother(s))

     b. A diñ-ñolu
         he child IP
         (His children, or his child/children and those of his brother(s))

The second ocuurence of -ñolu with common nouns is with possessees marked
by -maa; this is more common than (27a, b).

(28) a. M   bárim-máá-ñolu
         we   uncle MP   IP
         (Our uncles, or our uncle(s) and company)

b.　Ál　báá-máá-ñolu
　　you　mother MP IP
　　(your mothers, or your mother and company)

Possessees in a genitival possession type, which are for the most part

non-human, never take the inclusive plural marker.

In all remaining cases of pluralization, Mandingo uses GP with the

noun being pluralized in either its non-specified or specified form. In

the former case, the unspecified pluralized noun preserves the marked

meaning ' such - Noun' generally associated with non-specified nouns, as

can be seen in (29a, b):

(29) a.　musu+lu　———→　musúlú　'such women...'
　　　　kambaani+lu———→　kambaanílú　'such boys....'
　　　　kordaa+lu　———→　kordáálú　'such houses...'
　　　　saajii+lu　———→　saajíílú　'such sheep...'

　　b.　súŋgútú+lu ———→　súŋgútúlú　'such girls...'
　　　　sádáá+lu　———→　sádáálú　'such charities...'
　　　　fútúú+lu　———→　fútúúlú　'such marriages...'

Non-specified nouns (singular or plural) have a very limited distribution,[6]

unlike English indefinites. Consequently, most Mandingo nouns are general-

ly pluralized in their specified form, as illustrated in (30a & b):

(30) a.　musóò+lu　———→　musóólu　'the women'
　　　　kambaanóò+lu ——→　kambaanóólu　'the boys'
　　　　kordáà+lu　———→　kordáálu　'the houses'
　　　　saajío+lu　———→　saajíolu　'the sheep'

　　b.　súŋgútoo+lu———→　súŋgútoolu　'the girls'
　　　　sádaa+lu　———→　sádaalu　'the charities'
　　　　fútúo+lu　———→　fútúolu　'the marriages'

No further morphological complication is involved when a specified noun

is pluralized.

In view of this analysis, a fully inflected Mandingo noun may be re-

presented in the following schema:

(31) a.   Stem$_1$ + (Specifier) + (GP)

b.   Stem$_2$ + (IP)

c.   *Specifier + GP + Stem$_1$
d.   *Specifier + Stem$_1$ + (GP)
e.   *GP + Specifier + Stem1
f.   *Stem$_1$ + GP + Specifier
g.   *GP + Stem$_1$ +(Specifier)
h.   *IP + Stem$_2$

It is evident from the schemas in (31a-h) that there is a strict ordering

between the noun and its different inflections, and that this order cannot

be altered under any circumstances.

Two other characteristics of nouns that deserve special attention are

compounding (the tonological aspect of which was dealt with in the prece-

ding section) and duplication. The morphological aspect of compounding

will cover not only real compounds, such as the ones decribed in the struc-

tures in (14) though (16) abobe, but it will also include a discussion

of nominal gender-marking since the two processess share the same morpho-

logical characteristics.

Basically compounding exhibits three main morphological characteristics

which are the following: First, in a compound formed by two or more nomi-

nal stems, only the last stem in the compound may be specified. This is

examplified in (32a-f) below:

(32) a.   Sólí-kûloo   'the lion-skin'
     b.   *Sóloo kulóò   'the skin of the lion'

c.   Sálí-déndíkoo   'the praying shirt'
f.   *Sáloo dendikóò   'the shirt for the prayer'

d.   Moo-bee-kódoo   'the public money' from móò 'person';
                           bee 'all'; kódoo 'the money'

e.   *Móó-bee-kodoo
f.   *moo-béé-kodoo

If the specifie is suffixed to a non-phrase-final stem, the resulting

structure will be either ill-formed, as in (32e & f), or it will have

a nominal possession reading, as in (32b & c').

Secondly, only the last stem in a compound may be pluralized, as illustrated in (33)

(33) a.   Búlû-kónó-ndíŋolu   'the fingers', from <u>búlû</u> 'arm, hand';
                                        <u>kono</u> 'inside'; <u>ndíŋ</u> 'small, offspring'.
   b.   *Búloolu-kónóndíŋo(lu)
   c.   *Bulu-konoolu-ndiŋo(lu)
   c.
   d.   siŋ-káloolu   'the legs',from <u>siŋ</u> 'foot', <u>kala</u> 'handle'.
   e.   *siŋólu-kalóó(lu)   'the handles of the foot/feet'

Again the pluralization of any non-final stem usually results in an ill-

formed structure, or a non-desired reading.

Thirdly, compounding is accomplished either by sequencing nominal

stems one after the other, or with a medial postposition separating two

stems. In either case, all non-final stems must be left unspecified and

non-pluralized.

(34) a.   Kun-na-díyaa   'the good luck', from <u>kuŋ</u> 'head', <u>la</u>
                                  'of, by'; <u>díyáá</u> 'sweetness'
   b.   *kuŋó(lu) la díyaa   'the good taste of the heads'

   c.   Búlû-tó-kódoo(lu)   'the bracelet(s)', <u>to</u> 'at, to,on'; <u>kódoo</u>
                                  'the money, silver'.
   d.   *Búloo-to-kódoo   'the money on the hand'

Pluralizing and/or specifying a non-phrase-final stem always results in

breaking the compound structure, as attested in (34b & d).

One morphological extension of compounding is nominal gender marking,

the only type of gender marking allowed in this language. Basically, no-

minal gender marking operates the same way as simple compounding (i.e.

sequencing of nominal stems one after the other without any intervening

postposition) with the semantic function of making male or female nouns

that are generally unmarked for gender. In the gender-marked compound,

the noun to be marked always comes first and the noun marking gender

last, as shown in (35):

(35) a.   kotóò   'the older sibling'
          dókoo   'the younger sibling'

    b.   kotoo-músoo   'the older female sibling, or older sister'
    c.   *musu kótoo   'the old woman'

    d.   kotoo-kêo   'the older male sibling, or older brother'
    e.   *kee kótoo   'the old man'

    f.   dókó-músoo   'the younger female sibling, or younger sis.'
    g.   *musu-dókoo

    h.   dókó-kêo   'the younger male sibling, or younger brother'
    j.   *kee-dókoo

If the order Noun +gender marker is reversed, the resulting structure will

not be a gender marked Noun Phrase, as attested in (35c,e, g and j). No-

tice in (35c & e) that the well-formed reading or the NP is due to the

fact that kotoo has a double meaning of 'older sibling' and 'old'. The

two gender-marker músu 'female, woman, wife', and kee 'male, man, husband'

are nouns in every respect, and they do function as such when used sepa-

rately. In addition, musu and kee also typify the opposite lexical or-

ganization between Mandingo and English. In English, gender is provided

in the lexicon while age is derived periphrastically, wheras in Mandingo

it is age that is part of the lexical entry and gender is derived.

Nominal gender-marking is nct restricted to human nouns alone; it

extends to animals and even to some categories of plants. Similarly, the

scope of compounding is not restricted to nouns; it also covers adjectives

and verbs without any major morphological differences, as we hope to show

later.

Finally, nouns can also be duplicated in Mandingo, generally to con-

vey the notion of 'any/each + Noun'. Duplicated nouns have a very limi-

ted distribution. Morphologically, duplication is a compounding of some sort with the following qualifications : (i) unlike real compounds, the same stem occurs in both parts of a duplicated noun; (b) both stems must remain unspecified and cannot be pluralized; (c) the two noun stems are always separated by the infix wǒ; and (d) tonewise, the phrase final stem is always low, while underlying low tone stems develop a syllable-final high in the first stem. To our knowledge, any noun can be duplicated, even though the process is less frequent with proper nouns. (36a-e) provide illustrations of these points:

(36) a.   Díndíŋ-wǒ-dindiŋ   'each/any child'

b.   *díndíŋ-wǒ-díndíŋ

c.   Kambaaní-wǒ-kambaani   'each/any boy'

d.   *kambaaní-wǒ-kámbáání

e.   *kambaani-wǒ-kambaanı

(36b & d) are ill-formed because their second stem has a high tone, whereas the ungrammaticality of (36e) is to the fact that the last syllable in the first stem has not been raised.

One constituent type that has a lot in common with nouns in terms of morphology is adjectives. And in the next section, we shall attempt to provide a general description of its morphology.

2.3.1.2 <u>Adjectives</u>. Based on their distribution with respect to the head noun in a noun phrase, Mandingo adjectives can be divided into two categories: (i) prenominal adjectives, which include demonstratives and possessives, and (ii) postnominal adjectives, which include ordinals, cardinals , cardinal-like quantifiers (i.e. quantifiers that behave the same way as cardinals with respect to specification and pluralization),

and <u>bee</u> 'all, whole'. We shall start by examining the first prenominal

type of adjectives, namely demonstratives.

Mandingo has two demonstratives : <u>wo</u> 'that', to indicate remoteness

from the speaker, and <u>ñiŋ</u> 'this' to indicate closeness to the speaker.

Both <u>wo</u> and <u>ñiŋ</u> can occur alone or followed by a noun phrase, as illustra-

ted in (37a, c):

(37) a.
wo	'that'
wolu	'those'
ñiŋ	'this'
ñinnu	'these'

   b.
   *woo
   *ñiŋo
   *woolu
   *ñiŋolu

   c.
   | Wo/ñiŋ bálíŋo | 'that/this farm' |
   | wo/ñiŋ bálíŋolu | 'those/these farms' |

   d. *wo/ñiŋ bálíŋ (lu)
   e. *woo/ñiŋo bálíŋ(lu)
   f. *woo/ñiŋo bálíŋo(lu)

   g. *wolu/ñinnu bálíŋ(lu)
   h. *wolu/ñinnu bálíŋo(lu)

When alone, <u>wo</u> and <u>ñiŋ</u> may be general pluralized but they cannot be speci-

fied, as attested by the ill-formedness of the structures in (37b). When

the demonstratives precede[7] a noun, that noun must be specified (cf. 37d)

and may be general pluralized, but the demonstrative itself must remain

unspecified, as attested by the ungrammaticality of the structures in

(37e, f), regardless of whether the noun is pluralized or not. Further

when the demonstrative occurs with a plural noun, only the noun is allowed

to bear the plural suffix; pluralizing the demonstrative in this occurren-

ce results in an ill-formed NP, as evidenced in (37g, h). From this data,

it would seem that specification and pluralization are noun properties.

The second type of prenominals, that is possessives, are more diffi-
cult to characterize for the simmple reason that Mandingo does not real-
ly have an independent set of elements that one could call 'possessive
adjectives'. In this language, possession is marked by a periphrastic
construction in which the possessor is always first and the possessee se-
cond. Depending on semantic conditions holding between the possessor and
the possessee (which shall be clarified in Chapter III, section (3.3)),
three distinct possession constructions types are abtained: (a) the Geni-
tival Possession type(GEN), in which the possessor and the possessee are
separated by the postposition la 'of', as in (38a), (b) the Non-genitival
Possession construction type (NGEN), in which the possessee is directly
sequenced after the possessor, and (c) the Maa-Possession type (MP), in
which the possessee directly follows the possessor, but unlike NGEN, it
bears a -maa suffix, as illustrated in (38c):

(38) a.   í lá kufóò   (GEN)
         you of the bag
         (Your bag)

     b.   í   hákkíloo   (NGEN)
         you the mind
         (Your mind)

     c.   í   barim-maa   (MP)
         you uncle MP
         (your uncle)

In a nominal possession construction, the possessor can be either a pronoun
as above, or a noun, as in (39). As (39a-c) show, the same schema applies
whether the possessor is a pronoun or a noun.

(39) a.   Sángáréé   la kufóò
         Dánnoo
         Possessor   of the bag
         (Sángáréé's/the hunter's bag)

     b.   Táálíboo   hákkíloo
         (the student's mind)

c. Suntukûŋ barim-maa
(Suntukûŋ's uncle)

There are two basic morphological constraint on the structure of nominal

possession constructions:

First, in any possession construction, the possessor is either a pro-

per noun, as in (39a & c), or a personal pronoun, as in (38a-c) or a spe-

cified common noun. No unspecified noun is allowed in possessor position

if that possession construction is to keep an unmarked meaning, as can be

observed in the following:

(40) a.   *Kambaaní[8]   la kufôô
           boy   of the bag
           (A boy's bag, or the bag of a boy)
           Grammatical if meaning: Kambaaní's bag.

     b.   *Táálíbê   hâkkíloo
           (the mind of a student)
           But grammatical if meaning: the student mind'

     c.   *Kambaani bârîm-maa
           (the uncle of a boy)
           But well-formed if meaning : a boy with/who has an uncle.

Secondly, all possessees except in Maa-Possession, must bear the specifica-

tion suffix. Failure to specify the possessee in GEN and NGEN and speci-

fication of possessee in MP automatically results.in an ill-formed struc-

ture, as evidenced in (41a-c):

(41) a.   *Kambaanôô la kufa
     b.   *Táálíboo hâkkílí
     c.   *Kambaanôô bârîŋo-maa

Finally, all common noun possessors and the possessees in GEN and NGEN

can be pluralized via GP, but possessors that are proper nouns and the

possessee in MP can be pluralized only by IP, as stated in connection with

(26) and (28) earlier.

To summarize what we have learned on Mandingo adjectives thus far, two

prenominal adjectival constructions, namely demonstratives and possessives, have been presented. In this regard, it has been shown that demonstratives never bear the specifier or the plural marker in their adjectival function. In addition, when a demonstrative precedes a noun, that noun must be specified, and may be pluralized via GP. With respect to possessives, it was pointed out that Mandingo does not really have a set of morphologically unified adjectives, as compared to languages such as English or French. This language uses instead a set of three periphrastic constructions to mark possession. These constructions, the distributions of which are governed by various semantic factors to be determined later, are subject to a number of specification and pluralization constraints discussed in connection with the structures in (40) and (41).

Demonstratives and possessives, together with nouns, provide us with only a partial picture of what a Mandingo NP looks like. The next step in attempting to outline the major morphological characteristics of Mandingo Noun Phrases is to examine postnominal adjectives, which will constitute the subject matter of the remaining of this section.

Of all the elements that occur postnominally in a Noun Phrase, descriptive adjectives constitute perhaps the category that shares the most with nouns. Like nouns, descriptive adjectives are composed of a stem, which bears the underlying tone, and to which all other inflections are attached. And like nouns, they are specified, as in (42b) and pluralized (exclusively by GP) as in (42c), in a manner similar to nouns:

(42) a.　　kotoo　　　　　'old'
　　　　　toolee　　　　　'stupid'
　　　　　kérê　　　　　　'unripe'

　　　b.　　kotoo+o　　⟶　kotóõ　　'the old one, the elder'

	tooleeᐩo	⟶ tooléo	'the stupid one'
	kéréᐩo	⟶ kéroo	'the unripe one'
c.	kotóòᐩlu	⟶ kotóólu	'the old ones, the elders'
	tooléoᐩlu	⟶ tooléolu	'the stupid ones'
	kérooᐩlu	⟶ kéroolu	'the unripe ones'

An other important set of features is the display of a number of suffixes such as -maa, and -yaa with certain descriptive adjectives. The occurrence of the suffixes -maa and -yaa seems to correlate with semantic classification of descriptive adjectives, and for this reason their discussion will be postponed until the next chapter.

But undoubtedly the most crucial point in the morphology of descriptive adjectives is their structural ordering with respect to specification and pluralization. This structural ordering can be summarized as follows:

(43)   In a string of nominals formed by a noun and any number of descriptive adjectives, only the last adjective in the string can bear the specifier and the plural marker, if this string is to be assigned a single-NP reading.

In other words, if specification and/or pluralization is assigned to any other stem than the last in a structure formed by a noun stem and any number of descriptive adjectives, that structure cannot be interpreted as a single NP.

The predictions made by (43) are generally borne out when the noun stem is followed by just one adjective. In addition, the presence or absence of the -maa suffix (a suffix attached to certain adjective types in epithet[9] position) does not seem to affect the specification and pluralization restrictions stated in (43):

(44) a.   Mansa fátíŋo/fátí-maa   'the courageous king'
     b.   *Mansóò fátíŋo/fátí-maa   'the king when (he was) courageous'

     c.   Mansa fátíŋolu/fátí-maalu   'the courageous kings'
     d.   *Mansóólu fátíŋo(lu)/fati-maa(lu) 'the most courageous of the
                                            kings'

In (44b), specifying the phrase-initial noun stem does not yield an ill-formed structure but the structure does not have the desired reading. In fact I would argue that structures of this type are reduced relative clauses of some sort and that they are not derived by morphological rules. What rules or rule is responsible for their reduction has yet to be determined. Similarly, pluralization of the noun stem in (44d) breaks the single-NP reading to result in a superlative type construction. One conclusion that can be drawn from observing the behaviors of pluralization and specification is that they often act as indicators of NP boundaries, specially in NPs formed by long nominal strings of which the internal NP-boundaries have not been set up by independent morphemes. The role of the specifier in particular becomes crucial in the interpretation of similar strings when they occur in sentences. In (45b & c), the interpretation of the string formed by subu 'meat' and kêrê 'raw' relies heavily on whether the noun subu is specified or not:

(45) a.   subu   'meat'
          kêrê   'raw, fresh'

     b.   Idríísa lafi ta subu kéroo   la
          I.   want TA meat fresh SP P
          (Idríísa wants (the) fresh meat)

     c.   Idríísa lafi ta subóó kéroo   la
          I.   want TA meat SP raw SP P
          (Idríísa wants the meat fresh/raw)

In sentence (45c) the adjective kêrê lost its epithet reading precisely because the noun it accompanies is specified. My contention is that structures such as subóó kéroo come from a bi-sentential source, while subu kéroo is derived morphologically in agreement with the constraint stated in (43). Put differently, subu kéroo is a legitimate NP, while subóó kéroo is not.

(43) holds equally when a noun is accompanied by more than one adjective. As indicated by the ungrammaticality of the forms in (46b & c), only the last stem may be specified and pluralized when a noun is followed by two descriptive adjectives:

(46) a. Búlú jáŋ méséŋo   'the skinny long arm'
         búlú jáŋ méséŋolu   'the skinny long arms'

    b. *búlú jáŋ(o) méséŋ
        *búloo jáŋ(o) méséŋo
        *búloo jáŋ(o) méséŋ
        *búlú járo méséŋo

    c. *búloo(lu) jáŋ(o)(lu) méséŋo(lu)
        *búlú járo(lu) méséŋo(lu)
        *búloolu jáŋ méséŋ
        *búloolu járolu méséŋ

    d. *búlú járólu méséŋo   'the skinniest of the long arms'
        ⁼búlú járolu méséŋolu   'the skinniest ones among the long arms'

The structures in (46b,c) are ill-formed because they violate the internal structuring constraint on NPs stated in (43). On the other hand, the deviant reading in the structures in (46d) stems from the fact that there is not one but two NPs (búlú járolu versus méséŋo(lu)), each of which is internally well-structured.

Evidently, the number of adjectives occurring in an NP can theoretically be increased, and theoretically there is no upper limit to that number. However, from the limited data presented thus far, an interesting observation can be made. The specifier and the plural marker are not properties of nouns exclusively; they extend to descriptive adjectives as well. Furthermore, the decision on what stem should bear the specifier and/or plural marker seems to depend not on the prominence of the stem in the Noun Phrase, but on its location. The specifier and the plural marker are borne only by the last stem in the string. This seems to suggest that speci-

fication and pluralization are more easily derived in a linear approach, such as the one mentioned in (43), rather than in a dominance structure. Such an analysis will not only account for the surface forms of complex NPs formed by a noun plus any number of descriptive adjectives, but it will also make the correct prediction when the NP is preceded by a demonstrative, or when the NP is the result of compounding. One question that might arise is how general is the application of (43). For instance, does it apply to all postnominal adjectives, including quantifiers.? We shall attempt to answer this question immediately below.

Mandingo quantifiers can be divided into three basic morphological types: (i) ordinals, (ii) cardinals and cardinal-like quantifiers, and (iii) the quantifier bee 'all, whole'.

Ordinals are in many respects similar to descriptive adjectives. Morphologically, all ordinals (except the ordinal for 'first' which is fóloo) are derived by adding the suffix -njaŋ to the corresponding cardinal, as indicated below:

(47) a.   kiliŋ   'one'   foloo   'first'

b.   fula+njaŋ   ——> fulanjáŋ   'second'
     saba+njaŋ   ——> sabanjáŋ   'third'
     kononto+njaŋ ——> konontonjáŋ 'ninth'

c.   náání+njaŋ   ——> nááninjáŋ   'fourth'
     lúúlú+njaŋ   ——> lúúlúnjáŋ   'fifth'
     wóóró+njaŋ   ——> wóórónjáŋ   'sixth'
     táŋ+njaŋ   ——> tánjáŋ   'tenth'

Notice that all the morphologically derived ordinals in (47b, c) display a compound pattern tonewise. Ordinals are pluralized via GP and their specified forms are derived the same way as specified nouns, that is by suffixation of the specifier -o to the ordinal stem. Similarly to descriptive adjectives, ordinals obey the pluralization and specification

constraint stated in (43). Two other characteristics of Mandingo ordinals, that are more relevant to semantics and syntax than to morphology are: (i) in noun phrases that contain both descriptive adjectives and ordinals, ordinals tend to be ordered last, which suggests that they will general- ly bear the specifier and plural marker in such NPs, (ii) ordinals can also function as verbs to convey the idea of a repeated action (the agent having performed the last repetition indicated by the ordinal.[10]

The second type of quantifiers, cardinals and cardinal-like quantifiers, also shares some properties of descriptive adjectives. Like descriptive adjectives, they are tonally either compounding or non-compounding, as can be observed in (17) through (20). The three clear cases of non-compoun- ding cardinals are fula 'two', saba 'three' and kononto 'nine'. However, unlike descriptive adjectives, cardinals and cardinal-like quantifier occur more often unspecified and non-pluralized, specially if there is no indication of contextual determination (i.e. a demonstrative, a possessive or an earlier reference in context). In such cases, the cardinal or car- dinal-like quantifier must remain unspecified and non-pluralized, if a single-NP reading is to be maintained, as evidenced by the meaning of the structures in (48) and (49):

(48) a. Looloo wóóró   'six stars'
     b. móórí naani   'four marabouts'
     c. duutá saba   'three mangoes'

     d. Looloo jámáá   'many stars'
     e. móórí dántán   'a few marabouts'
        duuta jámáá   'many mangoes'

(49) a. Loolóó-lu wooro   *'six stars'
                                'six of the stars'
     b. móóroo-lu naani   *'nine marabouts'
                                'nine of the marabouts'
     c. Loolóó-lu jamaa   *'many stars'
                                'many of the stars'

d.   duutóó-lu dantaŋ   *'a few mangoes'
                                      'a few of the mangoes'

e.   *duutálú saba
f.   *moorilu dantaŋ

As the structures in (49) show, if the noun that the quantifier or cardinal follows is specified and pluralized, a possessive reading is assigned to the resulting structure, wheras when the noun is simply pluralized, the resulting structure will be ill-formed as attested in (49e, f).

In contextually determined NPs which contain a cardinal or cardinal-like quantifier, both specification and pluralization are required in general, and they apply the same way as for nouns and descriptive adjectives.

(50) a.   Ń   ná   kufá   fulóó-lu
        I   of   bag   two SP GP
        (My two bags)

    b.   Wó kufa náánoo-lu
        that bag four SP GP
        (those two bags)

    c.   Kufa   náánoo-lu
        (the four bags)
        *(four bags)

    e.   Wó julu   jámaa-lu
        that string many SP GP
        (those many strings)

    f.   Ñiŋ yírí   dántáŋo-lu
        this tree   few SP GP
        (these few tree)

    g.   Julu jámaa-lu
        (the many strings)
        *(many strings)

Specification and pluralization of such NPs means that the specifier and the GP marker must be attached to the last element in the NP, in this case the cardinal or cardinal-like quantifier. Notice in (50c, g), that the presence of the specifier and the GP marker ultimately forces out for

these NPs a reading where they would not be contextually determined.

Finally, cardinals over ten are formed by conjunction. The order of occurrence of the different components of higher figures is the same as in English, but in Mandingo thousands, hundreds, tens and units must each be separated by the connective niŋ 'and'. To derive the corresponding ordinals of such figures, the -njaŋ suffix is attached to the last component of the figure, as indicated in (51d-f):

(51) a.   Tán niŋ kiliŋ   '11'
     b.   keme níŋ tán niŋ saba   '113'
     c.   kemé-fula niŋ tán-saba niŋ fula   '232'

     d.   tán niŋ kílínjáŋo   'the 11th'
     e.   keme níŋ tán niŋ sabanjáŋo   'the 113rd'
     f.   kemé-fula niŋ tán-saba niŋ fulanjáŋo 'the 232nd'

But of all quantifiers, bee 'all, whole' undoubtedly displays the most striking dissimilarity with descriptive adjectives: To be specific, it is the only postnominal element to violate the structural constraint stated in (43), because when it occurs in an NP (where it will in general be ordered last), it is the stem that precedes it that must be specified and may be pluralized. Failure to observe this requirement results in ill-formed structure, as evidenced in (52b, d):

(52) a.   Siiséo bee   'the whole chicken'
       saatéo bee   'the whole village'
       bentéŋo bee   'the whole plat-form'

     b.   *siiséé béé
       *saatéé béé
       *bentéŋ béé

     c.   Siiséolu bee   'all the chickens'
       saatéolu bee   'all the villages'
       bentéŋolu bee   'all the plat-forms'

     d.   *siiséélú béé
       *saatéélú béé
       *benténnú béé

The behavior of the quantifier bee and cardinals seems to indicate that
the specification and pluralization constraint stated in (43) must be
modified if its application is to also cover quantifiers. The new gene-
ralized specification and general pluralization constraint can be stated
as follows:

(53)   Generalized Specification and Pluralization Constraint (GSP).

    a.   If an NP contains bee, the penultimate constituent must be spe-
          cified and may be pluralized. However, when it contains a car-
          dinal or cardinal-like quantifier but is not contextually deter-
          mined, the noun phrase must remain unspecified and non-plura-
          lized.

    b.   If none of the above situations is obtained, the last consti-
          tuent in the NP may be specified and pluralized.

As stated, GSP seems to extend beyond the simple domain of morphology.
More specifically, it hinges upon semantics, since the distribution of
the specifier and the plural marker varies depending on whether the last
constituent of the noun phrases is a descriptive adjective, a cardinal or
cardinal-like quantifier or bee.

As a final note before closing this section, let us mention that Man-
dingo allows for adjective compounding in a manner similar to noun com-
pounding. In this regard, there are two basic types of compound adjec-
tives: those derived through compounding of various nominal stems, and
those derived by derivational suffixation. With respect to the first type,
the adjective may be derived either by direct compounding of two or more
stems, as in (54a, b), or by compounding two stems separated by a post-
position, as in (54c, d):

(54) a.   jáátá   'body'   kéndé   'in good condition'
           jáátá-kéndé   'healthy'

     b.   nete   'variety of tree' muŋku 'powder'
           nete-múŋkú   'yellow'

c.   kuŋ   'head'; la 'of, by'; díí 'sweet, pleasant'
     kun-na-dii   'lucky'

d.   kúú   'sour, unpleasant'
     kun-na-kuu   'unlucky'

Notice that compound adjectives exhibit the same segmental and supraseg-

mental characterstics as nouns, and that like nouns, the derived compound

may in turn be compounding or non-compounding. Non-compounding compound

adjectives tend like quantifierssto be ordered last in the NP.

The second type of adjectives that must be considered as compounds

(mainly because of their surface tone structure) are those derived through

derivational suffixes. The suffix may be attached either to a noun, adjec-

tive or verb stem to derive a compound adjective, as in (55a-e):

(55) a.   -riŋ : verb suffix; temporal durational
          sii-ríŋ   'while sitting'
          táá-ríŋ   'after... leaving'
          siinoo-ríŋ   'while sleeping'
          diyaamu-ríŋ   'after speaking'

     b.   -taa : verb suffix; potential (= _able_ in English)
          dómó-táá   'edible'
          kanu-táá   'lovable, for love'
          sílá-táá   'to be feared'

     c.   -bali: noun and verb suffix; negative potential
          dómó-bálí   'non-edible'
          kanu-bálí   'unloving'
          sílá-bálí   'fearless'

     d.   _-laa_ : verb suffix; functional; derives both adjectives and
                   nouns.
          dómórí-láá   'eater'
          diyaamu-láá   'speaker'
          siinoo-láá   'sleeper'
          bori-láá   'runner'

     e.   -ntaŋ: noun suffix; negative possession.
          kódí-ntáŋ   'without any money, pennyless'
          musu-ntáŋ   'without a wife, unmarried'
          báráká-ntáŋ   'without any courage/wealth, lazy'
          baŋku-ntáŋ   'without a country/land'

Similarly to the compound adjectives of the first type, these adjectives

are in turn either compounding or non-compounding.

As a general conclusion on nominal morphology, it would seem that Mandingo noun phrases are highly structured morphologically, whether they are formed by a single noun stem, a series of noun stems in a compound, or a noun preceded or followed by various adjective types. It would also seem that most of the structure ordering rules, such as (22),(31) and constraints, such as (43) and (53), operate linearly. In that regard, it was shown that most Mandingo NPs are specified and pluralized on the last constituent in the NP. It was also shown that the different component of an NP, such as possessives, demonstratives, descriptive adjectives and quantifiers, are strictly ordered vis-à-vis the head noun. This issue, which touches upon syntax and semantics will be further examined in the next chapter. Finally, **our analysis** also showed that the morphology of various nominals evolves essentially around the same basic features, which provides a certain degree of morphological unity among the various components of the Mandingo noun phrase.

One question the morphological unity of nominals might lead to is how much of the properties described thus far is typically nominal, and how much is shared with other constituent types, such as verbs. In the section that follows, we **attempt to answer this question.**

2.3.2 <u>Verbal morphology</u>. Verbs are perhaps the most controversial and contested contituent type in Mandingo and this **is for various** reasons: (i) their morphology is strikingly similar to that of nominals, and (ii) other than in the area of syntax and semantics, verbs have very few features that dissociate them from nouns and adjectives. It was mainly for these two reasons that linguists such as Creissels (1979), who did

one of the most extensive studies on the morphology of Mandingo, suggested that verbs be considered as a subcategory of nominals. A number of arguments can be offered in support of this view.

First, Mandingo verbs do not have a special ending or prefix that can be identified as the infinitive marker. The forms that are generally referred to as infinitive markers, are in fact no more than the two nominalization suffixes -ri (NT2) and -∅ (NT1), as can be observed in (56) below:

(56) a.   dômô+o   ⟶   dômoo   'the eaten, the food'
          kuntu+o   ⟶   kuntóò   'the cut'

     b.   boyi+o   ⟶   boyóò   'the falling, the fall'
          tààmà+o   ⟶   tààmoo   'the walking, the trip'

     c.   kanu+o   ⟶   kanóò   'the loving, the love'
          síí+o   ⟶   sío   'the reaching, catching up with'

     d.   domo+ri+o   ⟶   dômóroo   'the eating, to eat'
          kuntu+ri+o ⟶   kunturóò   'the cutting, to cut'

     e.   *boyi-roo
          *tààmà-roo

     f.   *kanu-roo
          *sii-roo

Verbs with an NT1 ending can be specified and pluralized to function as regular nouns. The same principle applies with verbs that admit an NT2 ending, although the -ri suffix generally occurs only with active transitive verbs, as indicated by the ill-formedness of the structures in (56e & f).

Secondly, what is known in other languages as the finite form of the verb is essentially the unspecified NT1 form of the verb in Mandingo. This form usually occurs in all tenses, except for progressive tenses, in which the nominalized form must be specified, as can be observed in (57):

(57) a.   Kínoo   <u>tabi</u> !
          the food cook (NTl)
          (Cook the food !)

    b.   *kínoɔ táboo
          (the cooking of the food)

    c.   <u>Fúntí</u>   bántá !
          go out   outside
          (Get out !)

    d.   *Fúntoo   banta
          ((the) getting outside)

    e.   A be kínoo <u>táboo</u>   la
          he TA the food cook SP TA
          (he is cooking the food)

    f.   A   be   kinoo <u>tabi</u> la
          he TA the food cook TA
          (he will cook the food)
        *(he is cooking the food)

As shown in (57e & f), the only major difference between the present progressive and the future tense is the presence or absence of specification on the verb. Ultimately, the notion of finite verb has very little significance in describing the morphology of Mandingo verbs.

Thirdly, unlike many African languages, Mandingo verbs do not have any agreement morphemes. Gender differentiation is obtained only through nominal gender marking, and it applies only to nouns.

Fourthly, nominalized verbs not only functions syntactically as nouns, but they also have the same morphological features as nouns. To be more specific, their specified and pluralized forms are derived the same way as nouns, and their internal tone structure is the same as nouns.

Besides their syntactic and semantic function of predicate, there are only two morphological properties that distinguish verbs from nouns and adjectives: (i) conjugated verbs are accompanied by a tense-aspect marker (TA) and (ii) only verbs can be extended by the causative extension suffix.

The TA marker of most tenses in Mandingo is a separate morpheme, and except for ta (in tge past tense) and la (in the future and present progressive), TA usually occurs preverbally, as can be seen in (58a, b, d):

(58) a.　　A　　ye　·fúdoo　　siti
　　　　　　he　　TA the bundle tie
　　　　　　(he tied the bundle)

　　　b.　　A　　be　　búwaa　　danka　　la
　　　　　　he　　TA the witch　curse　　TA
　　　　　　(he will curse the witch)

　　　c.　　Saná　　taa　ta　súo　　　　kono
　　　　　　Saná　　go　　TA the house inside
　　　　　　(Saná went home)

　　　d.　　Siréé　be　　taa　la　súo　　　　kono
　　　　　　Siréé　TA　go　　TA the house inside
　　　　　　(Siréé will go home)

When a verb is transitive, the preverbal TA occurs before the direct object complement, as shown in (58a,b). Intransitive verbs also generally have preverbal TA, but in the past tense the TA ta is postverbal even though its transitive counterpart ye is preverbal, as evidenced in (58a). Finally, there are tenses such as the future that use a double tense marking one TA before the verb and the other after. Even though the preverbal TA in such tenses seems to clearly function as an independent morpheme as the sentences.in (58b & d) show, it is not clear whether the postverbal TA should be treated as a separate morpheme or simply as a suffix.

The shape of the tense marker varies when the verb is negated, since negation and the TA are morphologically unified, which also explains the variation of the negative marker with the tense, as shown below:

(59) a.　　A　　man　　fúdoo　　siti
　　　　　　he Neg/TA　the bundle tie
　　　　　　(he did not tie the bundle)

b.   Kana   búwaa   daŋka !
        Neg/TA   the witch   curse
        (Don't curse the witch !)

c.   Saná   buka   taa   súo   kono
        Saná   Neg/TA   go   the house   inside
        (Saná does not go home (habitually))

d.   Siréé   te   taa   la   suo   kono
        Siréé   Neg/TA   go   TA   the house   inside
        (Siréé will not go home)

The variation in the shape of the negative marker according to tense is

evidently a polarization that makes the Mandingo tense-aspect morphology

a little more complicated, since there are more forms to be memerized.

Finally, Mandingo verbs can be extended by the causative extension.

The causative extension suffix -ndi is attached either to the NT2 form

if the verb is active transitive, as in (60a), or to the NT1 form other-

wise. In addition each extended verb may further take the NT2 suffix -ri

since all extended verbs are considered active transitive.

(60) a.   Dómó-ri-ndi-ri-o   ⟶   dómóríndíroo   'to make eat, to
        V   NT2 CAU NT2 SP   poison'
        *dómó-ndi-ri-o   ⟶   *dómóndíroo

    b.   kanu-ndi-ri-o   ⟶   kanundiróò·   'to make someone love,
         NT1 CAU NT2 SP   to encourage to love'
         *kanu-ri-ndi-ri-o   ⟶   *kanurindiróò

To our knowledge, the causative is the only extension in this language.

All the other extensions, such as the Applied, the Reciprocal and the

Reversive, commonly found in Bantu languages, are rendered in Mandingo

by periphrastic constructions.

In conclusion, there seems to be more common properties between verbal

and nominal morphology than there are differences. In this respect, we

attempted to show that the most basic properties, such as infinitival

and finite forms, that distinguish verbs morphologically, can in this

language be better described in the frame already outlined for nouns and adjectives. A final feature that verbs, nouns and adjectives share in common is the application of morpho-tonological rules subsequent to specification to assign the tone on their last syllable.

2.4 <u>Morpho-tonology</u>. Morpho-tones are the last piece in building a specified nominal (be it a noun, adjective or a nominalized verb). Their analysis has been left until this point because they apply after the internal segmental ordering of NPs and after the internal tone structuring. What is involved basically is that morpho-tones rearrange the final syllable of a stem which has been specified, in the manner described in (61a & b):

(61)[11] a.   L $\longrightarrow$ H / L + ___ L #

    b.   H $\longrightarrow$ L / H = ___ L #

The application of these morpho-tonological rules derives the stem-final tone contour in the following nouns:

(62) a.   kambaani+o $\longrightarrow$ kambaanóò   ⁚the boy'
          musu+o $\longrightarrow$ musóò   'the woman, the wife'
                                            *kambaanoo
                                            *musoo

     b.   súngútú+o $\longrightarrow$ súngútoo   'the girl'
          sání+o $\longrightarrow$ sánoo   'the gold'
                                            *súngútóó
                                            *sánóó

The starred nouns in (62a & b) show that the non-application or the misapplication of rules (61a & b) predictably yields ill-formed nouns. The tonal structure of nouns, adjectives and verbs may be further modified superficially, specially when nouns, adjectives and verbs are used in larger constituents such as sentences. However, this aspect of the tonology of Mandingo will not be pursued here, primarily because it is in our

judgement outside the scope of the present study.

2.5 <u>Conclusion</u>. In this chapter, we attempted to present an integrated account of the basic morphological structures of nominals and verbs in Mandingo. In particular, we tried to show that the morphologies of nouns, adjectives and verbs evolve around the same general processes. For instance, it was shown that nominals and verbs are essentially composed of a stem or stems which may be inflected for specification or pluralization, or left unspecified, as in some non-nominalized uses of verbs. Both specification and pluralization are argued to apply linearly.

The specifier and the plural marker are strictly ordered within the NP, as stated in (53a,b). In addition, it was shown that specification includes both segmental and suprasegmental rules, as stated in (53) and (61).

In attempting to characterize the internal tone structure of complex NPs, we were brought to make a distinction between compounding and non-compounding stems. It was shown that this distinction, which correlates with a semantic classification of descriptive adjectives to be clarified later, has a serious impact on the tonal structure of complex NPs.

Finally, section (2.3.2) outlined the main properties of verbal morphology and attempted to show that verbs can be characterized morphologically in the same frame as nominals, since their morphology and that of nouns and adjectives evolve around the same general features.

Whether or not our views of nominal and verbal morphologies are correct remains to be determined by future research on Mandingo. Evidently, Mandingo incorporates more information in its morphology than the present study can pretend to capture. However, from the limited data presented

here, a number of intersting questions can be raised that might call for speculation.

First, qualification to NPhood seems to be as much morphological as syntactic in this language. Generally, in addition to internal structuring, an NP is often externally delineated on morphological basis by the location of the specifier and/or plural marker in a string of nominals. Pertinent examples have been provided in which a two- or single-NP reading is the direct result of the placement of the specifier and the plural marker at a specific location in the string. Consequently, the proper understanding of morphology is a prerequisite in defining the characteristics of a well-formed noun phrase in this language.

Second, traditionally, nouns, verbs and adjectives are subcategorized on the basis of not only syntax and semantics, but mostly on morphology.. It was shown in this chapter that nouns, adjectives and verbs share the same general morphological characteristics in this language. Further, it was shown that most of the inflections (such as noun class, agreement and verbal extensions) that ordinarily serve to dissociate nouns, adjectives and verbs, are non-existent in this language. Given this similarity, on what basis can we subcategorize these elements as is normally suggested in the literature ? I do not have an answer to this question at this point, but an examination of the syntactic distribution of nouns, v verbs and adjectives might shed some light on the matter.

FOOTNOTES TO CHAPTER II

1. The numbering gaps are due to the fact that the Mandingo alphabet is only a section of the official alphabet proposed by the Senegalese

government for the transcription of the six national languages of this country, namely Wolof, Seereer, Pulhaar, Soninke, Diola and Mandingo. The missing numbers correspond to those symbols that figure on the general official alphabet but which represent sounds that do not exist in Mandingo.

2. The Ceddo contreversy is a perfect example of the politization of the transcription of Senegalese languages. It developed from an ideological fight that opposed the Senegalese government and the Senegalese novelist and film-maker Sembène Ousmane, when he made a movie intitled <u>Ceddo</u> (with a geminated <u>d</u>). The movie dealt with very sensitive political and religious issues; under the pretext that the title of the movie was misspelt (it should have been written <u>Cedo</u> according to the then president L. S. Senghor, a linguist himself), the government banned the distribution of the movie in Sénégal, despite testimony from the most knowledgeable linguists in the country indicating that the proposed spelling is correct and despite the fact that gemination was called for in cases of strong consonants in the government's decree on the transcription of Senegalese languages.

3. Underlying tones are important for lexical differentiation, specially when pairs such as the ones below are involved.

sâŋ	'sky'
saŋ	'year'
bââ	'mother'
baa	'goat'
jala	'fishing net'
jala	'variety of tree'
sâní	'gold'
sani	'burnt rice crouton'

For this reason and because underlying tones are needed for the formulation of phrase-internal tone structuring rules of complex NPs, they must be included in the lexicon.

4. There are important meaning differences between the Mandingo specified and unspecified forms on the one hand, and what is known in Indo-European languages as the definite and the indefinite articles on the other hand. For instance, unlike definite nouns, the occurrence of specified nouns is not restricted to environments where the noun is clearly determined contextually. In addition, mass nouns and non-countable nouns are most often used specified. In contrast, unspecified nouns have a marked meaning of " such - Noun" when they occur alone or outside the scope of negation. For these reasons, the terms specified (thus specifier) and unspecified forms have been preferred to definite and indefinite articles or forms.

5. The development of the falling tone on sarŝ 'the year' can be accounted for in a princpled manner only if we assume that its final ŋ is
t   tone-bearing (i.e. has an underlying low tone). The presence of an underlying low tone on this segment would enable the development of a stem-final falling tone by the application of rule (61).

6. Outside the scope of negation (which is the only environment where unspecified nouns are not marked for "such - Noun), unspecified nouns occur only when a special emphasis is needed.

7. Ñiŋ also occurs postnominally to indicate contextual definiteness. In this function, ñiŋ has the same function as the English or French definite article.

8. A number of Mandingo proper names can be derived from common nouns, by leaving the common noun unspecified with a syllable-final high tone.
by   The names on the right hand side below are obtained this way from th their corresponding common nouns on the left hand side:

Common Nouns		Proper Names
suntukûṛo	'the garbage disposal'	Suntukûŋ
Sâdaa	'the charity'	Sâdââ
Jatôò	'the lion'	Jatâ
Sôloo	'the leopard'	Sôlí

9. The concepts of epithet and attribute are borrowed from traditional French structuralist-based grammar. An adjective is in epithet posithet position when it immediately precedes or follows the NP with which it occurs. On the other hand, an adjective is said to be in attribute position when it is in a structure introduced by a copula or by an attribute verb, such as become, seem, appear, look etc..

10. As verbs, ordinals are transitive. The notion conveyed is, as stated that the agent performed the repeated action indicated by the corresponding cardinal. He may or may not have performed the previous actions.

M   maŋ   a   foloo
I   Neg/TA   it   first/start
(I did not start it)

A   ye   a   fulanjaŋ
he   TA   it   twice/repeat
(He repeated it)

A   ye   a   tanjaŋ
(He did it the tenth time)

11. Morpho-tones seem to treat the plural marker as a separate word, since their application does not extend to -lu and the addition of this suf-

fix does not affect phonologically the tone contour assigned by rule (61a).

CHAPTER III

GRAMMATICAL OVERVIEW

3.0 Introduction

The syntax of Mandingo simple sentences involves a number of interesting phenomena. These phenomena seem to cover three major areas: (i) word order, (ii) nominals and (iii) movement rules. Accordingly, this chapter will be divided into three major parts. The first part (3.1), will deal with the word order in simple sentences in an attempt to show that the order of the different constituents in Mandingo sentences is generally SOV and that very few alterations are allowed in this word order. The second part which extends from section (3.2) to (3.4), picks up a number of issues raised in the previous chapter in connection with nominals such as adjectives, possession constructions and nominalized verbs. In this respect, we shall try to describe the distribution of various adjective and possessive construction types as well as determine the status of nominalized sentences in Mandingo. Finally, in the last part, (3.5) through (3.7), we shall examine a number of so-called movement rules and the effects of their application in this language. We begin with the examination of the word order in Mandingo simple sentences.

3.1 WORD ORDER

Mande languages have generally been assumed to be S O V (Subject-Direct object-Verb) languages. (Cf. Delafosse, 1954; Rowlands, 1959; Houis, 1966; Bird, 1966; Greenberg, 1966; Welmers, 1973; Creissels, 1979). Our aim in this section is not to disprove or substantiate this assumption, but rather to establish the basic word order in simple sentences in an

attempt to ellucidate subsequent discussion.

3.1.1 <u>Intransitive constructions</u>. In the generative-transformatio-nal model, it is generally assumed that the underlying structure of a sentence is the same as its surface structure, unless it can be proved otherwise (cf. Bach (1974)). Assuming that this view is correct, then the facts in (1a)-(1d) show that the underlying word order in Mandingo intransitive constructions is S V:

(1) a.   Deenaanóô   boyi   tá   (S V TA)
           the baby   fall   TA
           (The baby fell)

    b.   *Deenaanóô ta boyi   (S TA V)
    c.   *Ta boyi deenaanóô   (TA V S)
    d.   *Boyi ta deenaanóô   (V TA S)

As evidenced in (1a-d), there is a strict ordering between the subject, the intransitive verb and the tense/aspect marker. In addition, as shown by the ungrammaticality of (1c, d), the subject and the verb cannot be inverted in this language. When an intransitive construction contains a locative, it generally occurs after the verb, and it is obligatorily followed by a postposition, as evidenced in the following:

(2) a.   Mansa-dír,o   loo   ta   dimbáá   bala (S V TA Loc P)
           king son SP stand up TA   the fire by
           (The prince stood by the fire)

    b.   *Mansa-dír,o loo ta dimbáá ∅   (S V TA Loc ∅)
    c.   *Dimbáá bala, mansa-dír,o loo ta   (Loc P S V TA)
    d.   *Dimbáá, mansa-dír,o loo ta ∅ bala (Loc S V TA ∅ P)

(2b-d) are ungrammatical because they violate in various ways the word order in (2a).

3.1.2 <u>Transitive constructions</u>. Like intransitives, transitive cons-tructions also have a rather fixed word order. This order can be presen-ted as follows:

(3) a.   Single-object verbs: S TA DO V

    b.   Double-object verbs: S TA DO (IO P)

Let us consider each transitive construction in turn.

3.1.2.1   <u>Single-object verbs</u>. The word order in a single-object

construction given in (3a) is invariable. This is illustrated in (4a):

(4) a.   Wo kímoo   ye mansa-díŋo   dimiŋ   (S TA DO V)
            that word TA the prince   hurt
            (That word hurt the prince)

    b.   *Wo kímoo mansa-díŋo ye Ø dimiŋ   (S DO TA V)

    c.   *Wo kímoo ye dimiŋ mansa-díŋo   (S TA V DO)

    d.   *Ye dimiŋ wo kímoo mansa-díŋo   (TA V S DO)

In a transitive construction, the direct object must not only occur pre-

verbally, but it must also be located between the tense-aspect marker and

the verb. Any alteration in this basic word order generally results in

an ungrammatical sentence, as attested in (4b). In addition, the ungram-

maticality of (4c) and (4d) shows that the two other most common word or-

ders in the world's languages, namely S V O and V S O, are not allowed

in this language. Furthermore, the direct object cannot be omitted in a

transitive construction, if the sentence is to be assigned a non-passive

reading. This can be seen in the following examples:

(5) a.   Jatóó   ye sulóó faa   (S TA DO V)
            the lion TA the monkey kill
            (The lion killed the monkey)

    b.   Jatóó ye   Ø faa   (S TA Ø V)
      *(The lion killed)
            (That the lion be killed)

    c.   Jatóó   ye faaróó   ke   (S TA DO V)
            the lion TA the killing do
            (The lion did (some) killing, i.e. the lion killed)

By omitting the direct object in (5b), we do not obtain the expected ab-

solute transitive reading <u>the lion killed</u> but rather the subjunctive passive <u>that the lion be killed</u>. To obtain the absolute transitive reading, one has to use the nominal form of <u>faa</u> as direct object to the verb <u>ke</u> 'do' thus conforming the S TA DO V word order of single-transitive verbs. The non-omissibility of the direct object in transitive constructions is linked to the fact that Mandingo transitive verbs are strongly transitive, and thus always require a direct object.

3.1.2.2 <u>Double-object verbs</u>. Similarly to single-object and intransitive constructions, double-object constructions generally have a fixed word order. The S TA DO V (IO P) order, illustrated in (6a & b) admits very few alterations.

(6) a.   Baabûŋ   ye   léétároo   kii Samba ye (S TA DO V IO P)
        B.   TA   the letter   send Samba to
        (Baabûŋ sent a letter to Samba)

    b.   Karandiriláá ye kódoo dii a   baa-maa la (S TA DO V IO P)
        the teacher   TA money-SP give he mother-MP to
        (The teacher gave (some) money to his mother)

Like the locative innintransitive constructions, the postposition accompanying the beneficiary of a double-object verb cannot be omitted (cf 7a, b), nor can the beneficiary be dative-moved, as illustrated in (7c, d). If the beneficiary surfaces in DO position, it will be interpreted as the DO.

(7) a.   *Baabûŋ ye léétároo kii Samba ∅ (S TA DO V IO ∅)

    b.   *Karandiriláá ye kódoo dii a baa-maa ∅ (S TA DO V IO ∅)

    c.   Baabûŋ ye Sambá kii léétároo   ye (S TA IO V DO P)
        *(Baabûŋ sent Sambá the letter)
        (Baabûŋ sent Sambá to the letter)

    d.   Karandiriláá ye a baa-maa dii kódoo la (S TA IO V DO P)
        *(The teacher gave his mother (some) money)
        (The teacher gave his mother to money)

In summary, the data considered above show clearly—that the word

order in Mandingo simple sentences is fixed regardless of the verb type.

From these facts, it can be concluded that the common word order in

Mandingo simple sentences is S TA DO V (IO P).

3.2   ADJECTIVAL CONSTRUCTIONS

One constituent type that needs to be considered with regard to the

word order in Mandingo simple sentences is adjectives. In addition to

their role in the determination of word order, adjectives in Mandingo sh

share many patterns with nouns, verbs and adjectives. They raise there-

fore a number of interesting questions that call for discussion. In this

section, we shall attempt to give an outline of the major syntactic, mor-

pho-syntactic and morpho-semantic features of Mandingo descriptive adjec-

tives.

In addition to verbs, adjectives are perhaps the most contreversial

constituent type in Mandingo. Part of this controversy seems to stem from

the fact there are fewer and less strong syntactic, morpho-syntactic and

semantic arguments in support of treating adjectives as a separate syntac-

tic category than there are against such a treatment. Evidence in support

of this claim comes mainly from the morpho-syntactic and semantic charac-

teristics of typical descriptive adjectives. In particular, we shall out-

line in (3.2.1) morpho-syntactic and semantic properties typical of des-

criptive adjectives in this language, and in (3.2.2) some pieces of evi-

dence that argue against treating adjectives as a separate class. We also

examine the distribution and the issue of derivation in these sections.

3.2.1 Adjective Classes. Traditionally, adjectives have been distin-

guished from other syntactic categories by their inflectional properties,

their position vis-à-vis the head noun, the applicability of various syntactic and semantic rules and so on. In the analysis that follows, we shall attempt to show that Mandingo adjectives do not fit quite right within this general characterization of adjectives, and that there is reason to doubt if adjectives should be considered as a separate category in this language.

3.2.1.1 _Morpho-syntactic classification._ Based on their general morphology and behavior in epithet and pre-copula position, Mandingo descriptive adjectives can be divided into three groups : (i) True Adjectives, (TAD), (ii) Nomino-Adjectives (NA) and Deficient Adjectives (DA). To understand the substance of this division, let us examine each of these adjective types in turn.

(i) _True-Adjectives._ True Adjectives have a complete distribution, in that they can be epithets or attributes; however, when a TAD occurs in attribute position or functions as a noun, it must bear the _-yaa_ suffix, and it optionally takes the suffix _-maa_ in epithet position. These points are examplified in (8a-c) below:

(8) a. Ñiŋ   búŋo   jaŋa-yaa   ta
                           *jaŋ(a)
         this building-SP tallness   TA
         (This building is tall)

    b. Ñiŋ   búŋo   la   jaŋa-yáà
                                *jaŋó
         this building-SP of   tallness-SP
         (The tallness of this building)

(ii) _Nomino-Adjectives._ Similarly to TADs, Nomino-Adjectives have a complete distribution. However, they seem to have more noun characteristics than True Adjectives in that they never take the _-yaa_ suffix in noun or attribute positions, or _-maa_ in epithet position. Sentences (9a-c) illustrate these points:

(9) a. Jío   kandi   ta
                  *kandi-yaa
        water-SP   hot   TA
        (The water is hot)

    b. jío   la   kandóò
                    *kandi-yáà
        water-SP of heat-SP
        (The heat of the water)

    c. Jíí   kándoo
                   *kándí-maa
        water   hot-SP
        (The hot water)

The distribution of the suffixes -yaa and -maa is primarily what distin-guishes True Adjectives from Nomino-Adjectives. Both TADs and NAs have a complete distribution, which distincguishes them from Deficient Adjectives.

(iii) Deficient Adjectives (DA). Deficient Adjectives constitute more of a squishy category in that they really comprise three sets of adjectives whose morpho-syntactic behaviors make it impossible to classify them among the two previous categories. What unites the adjectives belonging to these three sets is that they all have incomplete or almost incomplete distribu-tions. Basically they are (a) epithet adjectives, which occur only in epithet position, (b) attribute adjectives, which occur exclusively in attribute position, and (c) a number of monosyllabic adjectives that behave like True Adjectives, with the exception that they take an obligatory -maa when occurring as epithets. The adjectives in (a) and (b) tend to occur in pairs, one member of the pair allowed only as epithet while the other functions exclusively as attribute. This is the case of the wara/baa 'big' and doo/ndin 'small' pairs, as illustrated in (10a & b) and (11a,b) below:

(10) a. Kordáá   wara   ta
                     *baa
         house-SP   big   TA
         (The house is big)

b. kordaa   { *wároo }
              { báà   }
    house   big SP
    (the big house)

(11) a. Mbíroo   { *ndiŋ(yaa) }   ta
                  { doo-yaa   }
         wrestler SP smallness   TA
         (The wrestler is small)

b. Mbiri   { *dóó-maa }
            { ndíŋo   }
    wrestler small SP
    (the small wrestler)

In the wara/baa pair, only wara can function as an attribute while baa
occurs exclusively in epithet position. Similarly, in the doo/ndiŋ only
doo is allowed in attribute position, while ndiŋ functions only as epithet.

3.2.1.2. Morpho-semantic classification. Alongside the morpho-syntac-
tic classification, Mandingo descriptive adjectives must also be classi-
fied morpho-semantically as compounding or non-compounding. This classi-
fication, whose most salient features are the internal tone structuring
that it involves, as described in the previous chapter, also has some
semantic correlations.

First, in a mixed NP, that is an NP in which both compounding and
non-compounding adjectives occur, non-compounding adjectives must occur
phrase-finally. This ordering restriction seems to me to indicate that
semantically non-compounding adjectives are ranked "secondary" compared
to compounding adjectives, which occur closer to the heand noun. In
fact , this semantic ranking would not be restricted to the compounding/
non-compounding dichotomy. For instance, among compounding adjectives,
concrete adjectives normally occur closer to the head noun than abstract
adjectives, as illustrated in (12):

(12) a. Karandiŋ   jaŋ bétoo
         student   tall good SP
         (the tall good student)

b.　?Karandiŋ　bete　jáŋɔ

c.　Kee　jaŋ　kende　fatíŋɔ
　　man　　tall　healthy　audacious
　　(the tall healthy audacious man)

d.　?Kee fatiŋ kende jáŋɔ

The question marks before (12b & d) indicate that these constructions,
even though structurally correct, are less acceptable to a Mandingo spea-
ker than the ones in (12a & c) in which adjectives conveying abstract no-
tions are ordered last.

Secondly, compounding adjectives are considered as a"more natural
extension"of the head noun than non-compounding adjectives. This is re-
flected not only in the ordering of compounding and non-compounding ad-
jectives within the NP, but it comes out more clearly in the tonal struc-
tures of the two adjective types. Compounding adjectives are treated
tonologically the same way as noun stems compounded to a phrase-initial
noun stem. In other words, other than their semantic readings, there is
very little difference between an NP formed by a number of noun stems com-
pounded to a head noun and an NP formed by a head noun followed by any
number of compounding adjectives, which explains why the notion of com-
pounding has been extended to include those adjectives that display the
same internal tone structures as compounds formed by noun stems.

Finally, the majority of non-compounding adjectives are the result
of an earlier compounding process, which not only seems to suggest that
there is an upper limit to the compounding process, but it also might
explain why non-compounding adjectives must be ordered last in mixed NPs.

However, outside the morpho-syntactic and morpho-semantic components,
there is very little that argues for a separate treatment of adjectives.

First, there are striking morpho-semantic similarities between nouns and adjectives. In the preceding chapter, it was shown that both the segmental and suprasegmental components of adjectival morphology are derived by the same rules as nouns. In addition, it was demonstrated that like noun stems certain adjectives must be treated as compounding. Compounding adjectives seem to have more noun-like characteristics both morphologically and semantically than non-compounding adjectives. The quasi-morphological identity displayed between nouns and adjectives clearly suggests that nouns and adjectives belong together, at least at the morphological level.

Secondly, there are a number of adjectives that function as nouns without any additional morphological changes. In addition, when these adjectives occur in attribute position they are structurally undistinguishable from intransitive verbs, as evidenced in (13c & d):

(13) a.　Jíí　　kândoo　　　(kandóò　:　adj.)
　　　　water　hot SP
　　　　(The hot water)

　　b.　Jío　　la　　kandóò　　(kandóò　:　noun)
　　　　water SP of　heat SP
　　　　(The heat of the water)

　　c.　Jío　　　kandi　ta　　(kandi　:　attr. adj.)
　　　　water SP　hot　TA
　　　　(The water is hot)

　　d.　Âbdû　　sali　ta　　(sali　:　intr. verb)
　　　　Âbdû　　pray　TA
　　　　(Âbdu prayed)

The similarity between the words for <u>hot</u> and <u>heat</u> in (13a & b) seems to indicate that we are dealing with the same lexical item which happens to assume different grammatical functions. Ultimately we suggest that <u>kandóò</u> and words that exhibit a similar behavior (namely NAs) be doubly marked

in the lexicon, both as nouns and adjectives.

Thirdly, Mandingo descriptive adjectives do not show agreement in gender or number. As shown earlier, pluralization and specification in an NP do not consist in copying the number of the head to the adjectives that occur with it. Rather, these two morphological processes operate linearly by suffixing the specifier and/or plural marker to the last stem in the noun phrase, regardless of whether it is a noun or an adjective. In addition if the string is to be assigned a single-NP reading, only the phrase-final stem can be specified and/or pluralized. However, when an adjective is functioning as an attribute, it is never specified or plura-lized, as evidenced by the ungrammaticality of (14b & d) below:

(14) a. Í   la   dondikóó   koyi   ta
         you   of   shirt SP   white   TA
         (Your shirt is white)

     b. *Í   la   dondikóó   koyoo   ta
                      SP   SP

     c. Í   la   dondikóólu   koyi ta
         you of   shirt SP PL white TA
         (Your shirts are white)

     d. *Í   la   dondikóólu   koyilu/koyoolu   ta
                      SP PL   PL   SP Pl

Fourth, nominal gender-marking, the only gender-marking allowed in this language, does not extend beyond nouns. Consequently, adjectives are never nominal gender-marked in eiter epithet or attribute position, as shown by the ungrammaticality of (15b, d) and (16b, d):

(15) a. Ninsi-musu   kóyoo
         cow   female white SP
         (The white female cow)

     b. *Ninsi-musu {kóyí-músoo}
                      {músú-kóyoo}

c. Ninsi-músoo koyi ta
    cow female-SP white TA
    (The female cow is white)

d. *Ninsi-músoo kóyí-musu ta
                  musu-kóyí

(16) a. Ninsi-tuuraa fiŋo
         cow   male black-SP
         (The black male cow, i.e. the black bull)

b. *Ninsi-tuuraa fín-túúraa
                   túúráá-fíŋo

c. Ninsi-túúraa fin ta
    the bull   black TA
    (The male cow/bull is black)

d. *Ninsi-túúraa fin-tuuraa ta
                   tuuraa-fi

Finally, to our knowledge, there is no cooccurrence restrictions separating adjectives from nouns.

To summarize, it has been suggested that Mandingo descriptives can be cross-classified along two lines based on their morpho-syntactic and semantic characteristics. Evidence has also been presented to cast doubt on treating adjectives as a separate syntactic category.

Assuming for the purpose of argumentation that adjectives are to be treated as a separate syntactic category, a question one might as is how does the cross-classification proposed fit within the traditional WH-IZ deletion analysis under which epithet constructions are generally derived ? More specifically, will all three morpho-syntactic classes of adjectives be derived from a single or separate underlying representations ? There seems to be two alternatives: (i) the WH-IZ deletion analysis and (ii) a deep structure analysis that would assume that the surface differences between various adjective types are deep structure generated. Recall that under the WH-IZ deletion analysis, black cat is derived from cat which is

black by deletion of which and the copula is. If such an analysis was to
be adopted for Mandingo adjectives, it might possibly work for NAs since
no morphological rearrangement would be needed after WH-IZ deletion. The
rule would have to be formulated in such a way that it would delete only
min and ta in (17a) to obtain the surface structure in (13a):

(17) a.   Jío   min kandi ta ....
        water-SP wh hot   TA
        (The water that is hot...)

    b.

Subsequent to the WH-IZ deletion rule, a specifier movement rule would
have to apply to remove the specifier from the head noun jío and attach
it to the phrase-final adjective kandi to obtain a surface well-formed NP
as illustrated in (17b). However because of the morphological similarity
between NAs and intransitive verbs, WH-IZ deletion would have to be fur-
ther complicated so that it would apply only when the constituent between
min and the TA is an adjective. One alternative to this movement rule
could simply consist in assuming that the application of WH-IZ deletion
is followed by a reanalysis whereby the NP is restructured and the speci-
fier is put adjacent to the adjective kandi. This is basically pruning
and restructuring a la Ross (1967). However, additional morpho-syntactic
rules would be needed to optionally insert -maa to TADs, to delete -yaa
prior to the application of WH-IZ deletion and to assign the appropritate
internal tone structure to the newly derived noun phrase. These problems
make the WH-IZ analysis very complicated and therefore less probable.

    The strongest argument against the WH-IZ deletion analysis however, is
that the relative clause and its antecedent do not form an NP but an S

node, and as we shall show in Chapter IV, sentences in this language behave differently from NPs in that, unlike NPs, they never assume argument functions. Ultimately, by positing a relative clause construction for the deep structure of epithet constructions, one would derive be deriving well-formed surface structures from underlyingly ungrammatical structures.[3]

In the second alternative, epithets will be base-generated in their surface position along with the specifier by a phrase structure rule that can be tentatively be formulated as (17c) below:

(17) c.   NP -------- N (Adj) SP

To complete the derivation process, morpho-semantic rules can be proposed to insert the appropriate suffixes to the appropriate adjective types.

In conclusion, even though it is assumed here as a working principle that there is an adjective class in Mandingo, we have attempted to show that there are actually very strong evidence suggesting that adjectives could conceivably be considered in this language as a subclass of nouns. Future research on Mandingo constituent structure may well reveal further evidence in favor of a non-separate treatment of adjectives in this language. Finally, assuming that adjectives form a separate constituent type, the WH-IZ deletion analysis seems less preferrable to a base-generation, because of the unnecessary complications it would involve. One construction which also has strong bearing on NP-well-formedness is possession.

3.3   POSSESSIVE CONSTRUCTIONS

There are two ways of indicating possession in Mandingo: (a) nominally or sententially, as examplified in (18) and (19) respectively:

(18) a.   Síyaaka   la   wotóõ
           Síyaaka   of   car-SP
           (Síyaaka's car)

b.   Síyaaka   búlooo
        S.   arm-SP
        (Síyaaka's arm)

c.   Síyaaka   musu-maa
        S.   wife/woman
        (Síyaaka's wife)

(19) a.   Síyaaka ye wotóó soto
          S.   TA   car-SP have/acquire
          (Síyaaka has/acquired a car)

b.   Wotóó   be   Síyaaka bulu
        car-SP TA/be S.   in the hands of
        (The car is in Síyaaka's hands, or Síyaaka has the car)

Nominal possession is marked by three types of constructions, as amplified in (18a-c). In all three constructions the possessor occurs before the possessee. In the first type, illustrated by (18a), the possessor and the possessee are separated by a _la_ postposition. The possessee immediately follows the possessor in the second type, whereas the possessee immediately follows the possessor but bears a _-maa_ suffix, as illustrated in (18b & c) respectively. On the other hand, to indicate possession sententially, one has the choice between two constructions: (a) by using the _be_ copula plus a "locative" followed by the postposition _bulu_, or (b) through the verb _soto_, as examplified in (19a, b) respectively. For ease of reference, and to borrow the terminology developed by Hinnebusch and Kirshner (1980), constructions of the types in (18a & b) shall be referred to respectively as Genitival (GEN) and Non-Genitival (NGEN) constructions, while (18c) type structures shall be called -Maa Possession constructions (MP). Semantically, NGEN and MP tend to occur when the possessee is family relation or a body part, which are often referred to in the literature as Inalienable Possession while other types of nominal possession are referred to as Alienable Possession. Given such a distribution, what is avai-

lable in the literature that might apply to the derivation of Mandingo

nominal possession constructions ?

3.3.1 __Nominal Possession.__ A number of analyses of possessive cons-

tructions have been proposed in the literature, but none of these can ade-

quately account for the Mandingo data. We shall review here three of

these studies : Chomsky (1970), Voeltz (1976) and Bird (1972), and examine

the problems that arise in attempting to extend them to the Mandingo facts.

3.3.1.1 __Chomsky's Phrase Structure Analysis.__ The first analysis we

will review is Chomsky (1970). In this analysis,the semantic differences

between the so-called Alienable and Inalienable possessions is argued to

be a deep structure property. Thus, Chomsky prpposes that the possessor

in an inalienable possession be dominated by a determiner node, whereas

alienable possession constructions would be derived from relative clause

sources by some sort of relative clause reduction. For instance, (20a & b)

would be derived respectively from (21a & b) under this analysis.

(20) a.   John's eyes

b.   John's bag
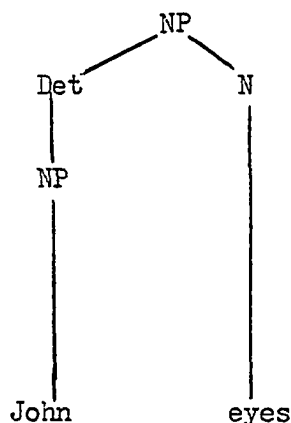
(21) a.   b.
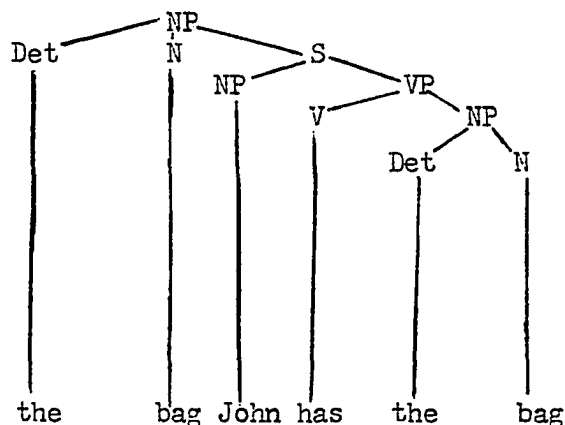
If one were to extend Chomsky's analysis to Mandingo nominal possess-

sion, a number of difficulties would arise.

First, Chomsky's analysis was not intended to account for a three-way nominal possession system such as the Mandingo system. It was meant for languages such as English which have a somewhat clear-cut two-way distinction between alienable and inalienable possession. Consequently no prevision is made for the derivation of a third possession construction type. This means that one possession type would be left underived, if this analysis were to be extended to Mandingo.

.Second, Chomsky's analysis would have no principled way of accounting for the overlaps found between three nominal possession constructions in Mandingo, since his analysis assumes a one-to-one correspondence between the two nominal possession constructions and the two deep structures he proposed. Consequently, the surface overlaps (that we shall illustrate later) would have to be attributed to a phenomenon outside the transformational component.

The issue of one-to-one correspondence was also raised by Bird (1972). In his paper, Bird rejected the claim that all AP constructions come from a determiner structure such as in (21a), since there are legitimate surface relative clauses expressing inalienable possession, as evidenced in (22a, b):

(22) a.   The brain that John has leaves much to be desired.

    b.   The eyes that Helen had sank a thousand ships.

Thirdly, if alienable possession was to be derived from an underlying relative clause construction in Mandingo, the difference in word order between the relative clause and its head noun , and the nominal possession construction cannot.be adequately explained. Given a typically fronted · relative clause, such as (23a) and its left-branched underlying represen-

·tation in (23c), to derive the nominal possession construction in (23b),

the relative clause and its head noun would have to be moved back into

the position from which they have been moved.

(23) a.   [$_{RC}$ Sitafáá ye welóó miŋ soto],   Sáálíû ye a je
               S.   TA bike SP wh have   Sáálíû TA it see
          (Sáálíû saw the bicycle that Sitafáá has)

    b.   Sáálíû ye [Sitafáá la welóó] je
          S.   TA   S.   of bike SP   see
          (Sáálíû saw Sitafáá's bicycle)

    c.   Sáálíû ye [$_S$ [$_S$ Sitafáá ye welóó soto] welóó] je (DS)

What the defronting transformation would accomplish is to move the relative

construction back into the position where it was initially generated.

There is no independent motivation for the defronting rule, and in addition

its application would result in a case of surface opacity.

Finally, nominal possession constructions are Noun Phrases, while the

relative clause and its head noun are dominated by an S node. And , as

stated earlier, sentences do not have the distributions of NPs. Based on

the evidence thus presented, one has to conclude that Chomsky's analysis

cannot account for Mandingo nominal possessive constructions

      3.3.1.2 <u>Voeltz (1976): the Part-Whole analysis</u>. A second analysis

has been proposed by Voeltz (1976). This analysis, suggested for Sotho,

a Bantu language, is based on the idea that there must be a "part-whole"

relation between the possessee (the part) and the possessor (the whole)

in an inalienable possession construction. In addition to this relation-

ship, the two NPs standingoin a possession relation must meet a number of

selectional restrictions such as the following:

(24) a.   The object (the part) must meet the selectional restrictions
          of the verb; conversely, the <u>whole</u> need not be strictly subca-
          tegorized vis-à-vis the verb.

b.   The verb must be an action verb or a verb of change and causa-
        tion. The verbs belonging to this set could be called affective
        verbs.

The first selectional restriction proposed by Voeltz (1976) seems to suggest

that nominal possession constructions must be derived from sentential

sources in which possessees must be direct objects. Assuming that this

is correct, (19b) type sentences must be excluded as possible underlying

representation to nominal possessions, since the possessee in this senten-

ce is functioning as a subject and the possessor as a beneficiary. This

leaves out only one sentential possession construction. If we assume that

both the non-genitival and -maa-possession mark some sorts of inalienable

possession, Voeltz'analysis could not possibly derive both possession cons-

truction types.

Further, the requirement that the possessee be part of the possessor

(the whole) does not generally hold in Mandingo for either NGEN or MP. For

instance, it is clear that the leg is part of the table in (25a), but it

would be hard to maintain that the son is part of the man in (25b), or that

the mother is part of Sidíí in (25c):

(25) a.   Táábúloo   siŋo
           table SP   leg SP
           (The leg of the table)

     b.   Keó   díŋ-kéo
           man SP child male SP
           (the man's son)

     c.   Sidíí   baa-maa
           Sidíí   mother MP
           (Sidíí's mother)

It should be pointed out that neither NGEN nor MP require any selectional

restriction similar to (24b). Both possession constructions can be direct

objects to non-affective verbs, such as je 'see' and kuliyaa 'respect' in

(26a, b) respectively:

(26) a.   Séêfoo   ye [a díɲo] je
           chief   TA   he child SP see
           (The chief saw his son)

    b.   Sunjátá ye [a baa-maa] kuliyaa
           Sunjátá TA   he mother MP   respect
           (Sunjátá respects his moter)

In addition, Voeltz' analysis is devoted entirely to cases where the ina-lienable possession construction is in object position, which leaves open the question of whether or not his generalizations were meant to equally hold for non-object occurrences of inalienable possession constructions. Ultimately, it is not clear if his inalienbale possession constructions would be submitted to the same restrictions (which is very unlikely) in various non-object positions.

One alternative solution (within the "part-whole" framework) which has been suggested by Voeltz and rejected is a system of hierarchical listing of all possible parts of a lexical item. As pointed by Voeltz, such a solution is unpractical because the list of possible parts of a lexical item cannot be exhaustive. In view of these difficulties, the "part-whole" analysis proposed by Voeltz cannot be applied to the Mandingo data.

3.3.1.3 The Interpretive approach: Bird (1972). A third analysis has been proposed by Bird (1972). Formulated in an attempt to account for no-minal possession in Bambara, a closely related Mande language, Bird's ana-lysis consists in deriving nominal possessions from underlying sentential possession such as (19a, b) via a sophisticated system of interpretation.

Unlike Mandingo, Bambara has a two-way nominal possession system, with one alienable possession (AP) and one inalienable possession (IPo) form (our genitival and non-genitival constructions respectively), as exampli-

fied in (27a & c) with occasional overlappings, as evidenced by the struc-

tures in (28a & b) below:

(27) a.   Baba   ka   so   (AP)
          Baba   GEN   house
          (Baba's house)

     b.   *Baba   so   (IP_0)

     c.   Baba   ba   (IPo)
          Baba   mother
          (Baba's mother)

     d.   *Baba ka ba   (AP)

(28) a.   Baba   ka   bolo   (AP)
          Baba   GEN   arm
          (Baba's arm)

     b.   Baba bolo   (IP_0)
          (Baba's arm)

In Bird's (1972) analysis, the above nominal possession constructions

are to be derived from underlying sentential possession constructions

using the sentential possession markers <u>bolo</u>, <u>fɛ</u> or <u>kuŋ</u> in frames of the

structure <u>NP1   aux   (k)   NP2   (bɔlo, fɛ, kuŋ)</u>, via interpretive rules. In

table (1), we reproduce the bundle of features associated with each sen-

tential possession marker, as proposed by Bird.

Table 4: Sentential Possession Markers, Bird (1972)

	fɛ	bolo	kuŋ
PRESUPPOSE	NP1 -concrete	NP1 -conrete	NP1 -concrete
	NP2 -human	NP2 -human	NP2 -human
			NP2 is location for NP1
ASSERT	NP2 CONTROL NP1	NP2 CONTR. NP1	NP2 CONTROL NP1
	NP2 TITLE NP2		EXISTENTIAL

In this framework, each surface nominal possession construction has three

possible underlying representations, depending on whether its sentential

possession marker is fɛ, bolo or kuŋ. In other words, (29a) can be deri-
ved either from (29b, c or d) depending on whether it is assigned the
interpretation in (30a., b, or c).

(29) a.   Baba   ka   wari   (AP)
              Baba   GEN money
              (Baba's money)

     b.   Wari   be   Baba   fɛ
             money   is   Baba

     c.   Wari be Baba bolo

     d.   Wari be Baba kuŋ

(30) a.   [Baba   ka   wari]
                  CONTROL
                  TITLE
                  ALIENABLE

     b.   [Baba   ka   wari]
                  CONTROL
                  ALIENABLE

     c.   [Baba   ka   wari]
                  CONTROL
                  EXISTENTIAL
                  LOCATION
                  ALIENABLE

One major advantage of Bird's analysis is to do away with the wrong
prediction made in Chomsky (1970) that there must be a one-to-one corres-
pondence between sentential possession and nominal possession. In this
analysis, the deep structure of a nominal possession construction is de-
termined on the basis of the interpretation it is assigned. However, its
predictions are objectionable on more than one account.

First, Bird's analysis predicts a surface ambiguity that is never
realyzed. In his account, each alienable possession construction should
exhibit a three-way ambiguity, since it can be derived from three different
underlying structures, depending on the interpretation it is assigned.

To my knowledge, this ambiguity is never realyzed in either Bambara or Mandingo, and the so-called alienable possession construction simply and always indicates ownership.

Secondly, Bird's analysis seems to have missed the point. The issue in the nominal possession system of Mande languages is not to simply offer an explanation for alienable possession patterns, but rather how to account for the two- or three-way nominal possession system exhibited in these languages. The main question is why certain possession relations are expressible in only one way and not the other, and what this polarization in nominal possession marking really means. Bird's analysis seems to have missed this point. Further it can account only for inalienable possession.

Thirdly, if Bird's analysis were to be applied to Mandingo as it stands, at least one nominal possession construction would be left underived, since Mandingo has a three-way nominal possession while Bambara, the language which served as basis for Bird's analysis, only has a two-way niminal possession.

Fourth, of the three sentential possession markers described by Bird, only bolo (bulu in Mandingo) functions as a sentential possession marker. Kun always bears its primary meaning of 'head', while NP1 aux (k) NP2 fee does not render a sentential possession, but rather translates as 'NP1 supports/favors NP2, with the restriction that the subject NP1 must be human contrary to (29b)

(31) a. *Kôdoo   be   Baba   fee
      money SP be   Baba   for ?
      (money supports/favors Baba)

     b. Modibo be   Baba   fee
       Modibo be   Baba   for
       (Modibo supports/favors Baba)

Since neither _fee_ nor _kuŋ_ functions as sentential possession markers in Mandingo, Bird's analysis cannot be applied to Mandingo as it stands, for it would mean deriving all three nominal possession construction types from the same underlying structure.

Fifth, the fact that _-maa_ does not mark possession in Bambara, but rather functions as a derivational suffix equivalent roughly to the English _-hood_ suffix, as shown in (32a, b), would constitute a further complication to the application of Bird's analysis to Mandingo.

(32) a.   Baba   deŋ-maa   (Bambara)
           (Baba's childhood)
           *Baba's child.

     b.   Baabá   dim-maa   (Mandingo)
           (Baabá's child')
           *Baabá's childhood

Finally deriving nominal possession constructions from underlying sentential sources would mean transformationally deriving noun phrases from sentences for which there is no basis since sentences never assume noun phrase functions in this language. In conclusion, none of the three solutions examined here seems adequate to account for the distributions of Mandingo nominal possession constructions. This leaves the question of derivation still unanswered.

3.3.2 _Proposed Solution._ In answer to this question, we would like to propose a pragmatically based solution. We need to account for both the semantics and syntax of Mandingo possession. To do this, we propose to use the following features: [CONTROLLED] and [UNIQUE]. The CONTROL feature has to do eith the nature of a particular possession relationship, while UNIQUE describes the status of possessee. Both terms are tentatively de- defined as follows:

(33) a.   <u>CONTROLLED</u>

A CONTROLLED possession relationship is one in which, in the speaker's judgement or to his knowledge, the possessee stands as an experiencer to or is owned by the possessor.

b.   <u>UNIQUE</u>

The UNIQUE feature describes a possessee which, in the speaker's judgement or to his knowledge, is unique in relation to the possessor in the status expressed in the possession construction.

To these definitions, one distributional constraint must be added:

(34)   The CONTROLLED feature does not allow any internal overlaps, that is no possession construction can be marked alternatively as [+ CONTROLLED] and [-CONTROLLED].

Subsequent to (33) and (34), the genitival and the non-genitival possession constructions shall be marked respectively as [+CONTROLLED] and [-CONTROLLED], while -maa-type constructions shall be assigned the feature [+UNIQUE]. Finally, possessions marked [+UNIQUE] will be allowed only one external overlap with either CONTROL feature. This combined with (34) aims at limiting to one the number of overlaps with each nominal possession construction. We will assume in this analysis that the two members of the possession construction are generated in the base in the order <u>pos-</u> <u>sessor possessee</u>, and that the pragmatic rules simply insert the appropriate possession markers while obeying the restrictions stated above.

A pragmatically based analysis appears to us to be descriptively more adequate. To see this, let us reconsider nominal possession. In any proposal on Mandingo nominal possession, at least five characteristics must be taken into account. First, of the three nominal possession types, only GEN can be substituted for by a possessive pronoun[4] because possessive pronouns clearly express ownership, and only GEN expresses owenership.

Secondly, in a nominalized sentence, the possession is rendered in

GEN or NGEN depending on whether the possessor is an agent or an experiencer in the possive construction. The agent/experiencer dichotomy, which correlates with our two CONTROL features, helps explainsthe meaning difference between (35a) and (35b) in which the same lexical items occur.

(35) a.   Jatóó   la   faaróò   (GEN)
           lion SP of killing SP
           (The lion's killing, i.e. the lion : the killer)

     b.   Jatóó   fàâ   (NGEN)
           lion SP killing SP
           (The lion's killing, i.e. the lion : the victim)

Notice also that the passive mominal form _fàâ_ occurs in the sentence where the possessor is an experiencer, whereas the active nominal form _faaróò_ occurs in the structure which has an agent possessor. What this pairing seems to indicate is the fact that genitival constructions tend to indicate an active possession where the possession relation is often viewed as the result of an action initiated by the possessor in a more or less free manner, while the non-genitival construction tends to describe possession that are not controlled by the possessor. Clearly, determining whether the possessor "controls" the possession relation depends crucially on information on and knowledge of the context in which the possession relation is envisaged. For instance, to determine that body parts, family relations etc.. generally stand in a "non-controlled" possession relation vis-à-vis their possessors, one must know or assume that these things are usually determined outside the will power of the individual or individuals concerned. This explains why possessions of these elements is often expressible only in NGEN and MP possession constructions.

Thirdly, all possessors can be freely relativized, whereas MP possessees accept only non-restrictive relative clauses, as evidenced by the

ungrammaticality of (36b):

(36) a.   Keô   musu-máá, míŋ bo   ta   Kaolack.....
           man SP wife MP   who come from TA Kaolack
           (The man's wife, who is from Kaolack...)

    b.   *Keô musu-maa miŋ bo ta Kaolack

Furthermore, as indicated in the previous chapter, only inclusive plura-
lization is allowed with possessees in MP constructions, as illustrated
below:

(37) a.   Kurá   bárím-máá-nolu
           Kurá   uncle MP   IP
           (Kurá's uncle and company)

    b.   *Kurá bárím-maa-lu
           Kurá   uncle MP GP

One reason why only inclusive pluralization and non-restrictive relative
clause formation are allowed with MP-possessees is that it is clear to the
Mandingo speaker that the MP-possessee is unique in (36) and (37); this
makes restrictive relative clause formation redundant and general plura-
lization impossible, since restrictive relative clauses are further deter-
mination of the antecedent, while GP serves to indicate that there is more
than one of the pluralized entity.

The UNIQUE feature also enters into play in cases of overlap between
MP and the two remaining possession constructions types. For instance,
in (38) Jeerê can have only one mother, which explains why his relation
to his mother can be expressed only in an MP construction, as evidenced
by the ill-formedness of (38b, c). However, the relationship between
Jeerê and his wife is expressed alternatively in MP or GEN depending on
whether the speaker knows or assumes that Jeerê is monogamous or polyga-
mous:

(38) a. Jeerê baa-maa (MP)
(Jeere's mother)

b. *Jeerê la bââ (GEN)

c. *Jeerê bââ (NGEN)

(39) a. Jeerê musu-maa (MP)
(Jeerê's wife) Jeerê : monogamous

b. Jeerê la musóò (GEN)
(Jeerê's wife) Jeerê : polygamous

c. *Jeerê musóò (NGEN)

Fourth, given two NPs in a nominal possession relation, only one external overlap is allowed. In other words, no nominal possession can be expressed in all three types of constructions. If more than one overlap was allowed, there would be no principled way of making a semantic distinction between the three types of nomonal possession in Mandingo.

Finally, all possessors and all possessees, except that of MP, must be specified, or else a deviant or ungrammatical reading is obtained. These two points are illustrated in the structure in (40) through (43) below:

(40) a. Mansóò la baŋkóò (GEN)
king SP of land/kingdom SP
(The king's kingdom)

b. *Mansâ lâ baŋkóò
well-formed only if meaning : such a king's kingdom...

c. *Mansâ lâ baŋkû

(41) a. Tââbúloo siŋô (NGEN)
table SP leg SP
(The leg of the table)

b. *Tââbúlú siŋo
well-formed only if assigned a compound reading: the table-leg

c. *Tââbúlú siŋ

(42) a.　　Keô　　musu-maa　　　　　(MP)
　　　　　　man SP　wife MP
　　　　　　(The man's wife)

　　　b.　　*Kee　musu-máà
　　　　　　well-formed if meaning : a man with a wife, a man who has a
　　　　　　　　　　　　　　　　　　　wife, or a married man

(43) a.　*⎰Mansâ ⎱ la baŋkú
　　　　　　⎱Mansóò⎰

　　　b.　*⎰Táábûlû ⎱ siŋ
　　　　　　⎱Táábûloo⎰

　　　c.　*⎰Kee⎱ ⎰musóò-maa⎱
　　　　　　⎱keô⎰ ⎱musu-máà ⎰

A possible explanation for the specification requirement on both the pos-
sessee and the possessor could be that the language does not allow asso-
ciating in a possession construction two NPs whose identities are not de-
termined. In that sense specification is a redundant feature for MP-pos-
sessees since their identity is generally already known.

In final analysis, the pragmatic solution proposed here seems to pre-
sent several advantages over the three solutions previously examined in
sections (3.3.1.1) through (3.3.1.3).

First, unlike Chomsky (1970), Bird (1972) and Voeltz (1976), our so-
lution will not only be able to account for all three nominal possession
types, but it also offers a principled explanation for the numerous over-
laps observed between different nominal possessions in Mandingo and other
Mande languages.

Second, contrary to the general trend followed in all three papers
cited above, our solution does not advocate a derivation from sentential
deep structures. This not only helps preserve the irrefutable meaning
differences that exist between sentential possession constructions and
nominal possessions, but it also attests to the fact that sentences and

noun phrases do not share the same syntactic functions in this language, and thus should not be derived from one another.

Finally, contrary to the view advocated by Voeltz (1976), the features that determine nominal possession are not semantic features in Mandingo, because as illustrated earlier, neither the CONTROLLED or UNIQUE features hold all the time, and determining their value requires a knowledge of, or an assumption about the context of possession from the part of the speaker.

3.4 NOMINALIZATION

One particular type of structure which interacts crucially with nominal possession construction is nominalization, and we will now turn our attention to this issue.

There are three aspects to Mandingo nominalization that deserve a special attention: (i) the morphology of nominalized verbs, (ii) the derivation of nominals, and (iii) the interaction of nominalization with the three-way nominal possession system just discussed. Point (i) has already been dealt with in section (2.3.2) of the preceding chapter. In that case, a distinction was made between two nominalized forms, namely nominalized type I (NT1) and type II (NT2). NT1 and NT2 are realyzed respectively as a -$\emptyset$ and a -ri suffix attached to the verb stem. In addition, NT1 forms tend to have a passive meaning, while NT2 forms generally have an active reading when they occur alone. Both NT1 and NT2 forms can be freely specified and general-pluralized, as illustrated in (44a-d):

(44) a. Dómó-o   ———→ dómoo   'that which is eaten, the food'
         sáféê-o   ———→ sáféo   'that which is written, the
                                    talisman'
     b. dómoo-lu   ———→ dómoolu 'the foods'
         sáféo-lu   ———→ sáféolu 'the talismans'

c. dómó-ri-o   ——→ dómóroo   'the eating, to eat'
    saféé-ri-o   ——→ safééroo   'the writing, to write'

d. dómóroo-lu   ——→ dómóroolu 'the eatings'
    safééroo-lu   ——→ safééroolu 'the writings'

In terms of distribution, intransitive and stative transitive verbs can
be nominalized only by NT1, while active transitive verbs may assume both
nominalization forms. When the transitive active verb is preceded by a
direct object complement, it must assume an NT1 form but when its direct
object position is empty it must be nominalized by NT2. This is evidenced
by the ungrammaticality of (45b & d):

(45) a. [Niŋ kínoo táboo] maŋ diyaa
       this food SP cook SP Neg/TA easy
       (Cooking this food is not easy)

    b. [Niŋ kínoo tábíroo] maŋ diyaa
                 NT2

    c. Tábíroo   maŋ diyaa
       cook NT2 SP Neg/TA easy
       (Cooking is not easy)

    d. *Táboo   maŋ diyaa
       well-formed if meaning: being cooked is not easy.

Notice that the well-formed reading of (45d), in which the NT1 form occurs
with an empty DO position, corresponds to a passive reading.

The distribution of possession in nominalized sentences is fairly
straightforward. First, only two possession constructions are allowed
in nominalized sentences, namely GEN and NGEN. MP-type possession never
occurs in nominalized sentences. Second, when the possessor is agent to
the nominalized verb, GEN applies, but when it is an experiencer, the pos-
session relation is rendered by NGEN. This is illustrated in (46) and
(47) below:

(46) a.   Sunjátá   la bóó   Mandiŋ   (GEN)
        S.   of leave SP Mandiŋ
        (Sunjátá's leaving/departure from Mandíŋ)

     b.   *Sunjátá bóó   Mandiŋ   (NGEN)

     c.   *Sunjátá bóó-maa Mandiŋ   (MP)

(47) a.   Tiyô   senóô   (NGEN)
        peanut SP farm SP
        (The farming of peanut)

     b.   *Tiyô la senóô   (GEN)

     c.   *Tiyô sene-máà   (MP)

The ungrammaticality of (46b, c) and (47b, c) show (i) that nominalized sentences do not allow overlaps in possession and (ii) that MP never occrs in nominalized sentences. It should be pointed , however, that the NT1/NT2 dichotomy is not to be equated with the gerundive/derived nominal distinction made by Lees (1961), Fraser (1970), Chomsky (1971) and others with respect to English nominalization. The main reason for this is that there is no one-to-one correspondence between the distributions of Mandingo and English nominals. Given the distributional patterns exhibited in (45) through (47), a question that comes to mind is how are Mandingo nominals to be derived ?

Within the transformational generative literature, there are two main approaches to the derivation of nominals: one transformational, as proposed by Lees (1961), Fraser (1970) and others, which argues for deriving nominals transformationally from sentential deep structures, the other lexicalist adopted by Chomsky (1971), which proposes a dual treatment of nominalization, gerundives being derived transformationally while so-called derived nominals would be base-generated.

As stated earlier, the gerundive/derived nominal distinction does not

apply in Mandingo. In this respect, NT1 and NT2 verbs are differentiated purely on semantic grounds. Further, nominals and sentences do not share the same syntactic distribution, in that sentences are islands to grammatical relations while nominals are not. This is evidenced by the ungrammaticality of (48c, d) from which (48a, b) would be derived transformationally:

(48) a. Súmángúrú   maŋ [$_{NP}$ Sunjátá la boo Mandíŋ] kalamuta
        Subj   Neg/TA   DO   V
      (Súmángúrú did not discover [Sunjátá's departure from Mandíŋ])

     b. [$_{NP}$Sunjátá la boo Mandíŋ] ye Súmángúrú   terendi
                Subj   TA   DO   V
      ([Sunjátá's departure from Mandíŋ] surprised Súmángúrú)

     c. *Súmángúrú maŋ [$_S$ kó Sunjátá bo ta Mandíŋ] kalamuta
            Subj Neg/TA   DO   V
      (Súmángúrú did not discover [that Sunjátá had left Mandíŋ])

     d. *[$_S$ kó Sunjátá bo ta Mandíŋ] ye Súmángúrú terendi.
              Subj   TA   DO   V
      ([That Sunjátá had left Mandíŋ] surprised Súmángúrú)

Sentence (48c) is ungrammatical because the complement clause occurs in direct object position. Similarly, (48d) is ungrammatical because the complement clause appears in subject position. It will be shown in the next chapter that Mandingo complement clauses cannot bear any grammatical relation with the main verb. Ultimately, deriving nominals from underlying complement clauses would result in an opaque derivation since there is no evidence that the surface nominal started out in the position its underlying representation would have to occupy. Furthermore, since there is no compelling reason that Mandingo nominals derive from underlying representations such as (48c, d), the transformationally analysis will be abandoned in favor of the base-generation. In the last part of this chapter, we shall submit the data to a number of so-called movement rules

to determine the extent to which they alter the basic SOV word order.

3.5   TOPICALIZATION

In the literature, there are a number of movement rules that are obser-

ved to change the word order in simple sentences: rules such as subject or

object reasing, dative movement subject-object inversion, topicalization

etc. But in Mandingo, only few are allowed, and dislocation is one of them.

3.5.1 <u>Dislocation</u>.- Like in English, the Mandingo dislocated NP can

be moved to the right or to the left, as illustrated in (49b, c) below:

(49) a.   Tubááboolu   buka   Mandiŋka-káŋo   fo
           European SP PL TA/Neg Mandingo lang.SP speak
           (Europeans do not speak Mandingo)

     b.   Mandiŋka-káŋo, Tubááboolu buka <u>a</u> fo
           (Mandingo, Europeans do not speak <u>it</u>)

     c.   Tubááboolu buka a fo, Mandiŋka-káŋo
           (Europeans do not speak it, Mandingo)

Statistically, NPs are more often dislocated to the left than to the right;

right-dislocation occurs generally as an afterthought to a preceding sta-

tement. Dislocation can apply to move a subject, a direct object, a bene-

factive or a locative, as examplified in (50a, b), (49b, c), (50c, d) and

(50e, f) respectively:

(50) a.   Kódoo,   a búka néémoo   dii móólu la
           money SP it TA   happiness SP give people to
           (Money, it does not bring happiness to peaple)

     b.   A búka   néémoo dii móólu la, kódoo
           (It does not bring happiness to peaple, money)

     c.   Móólu, kódoo búka   néémoo dii i la
           (People, money does not bring happiness to them)

     d.   Kódoo búka néémoo dii i la, móólu
           (Money does not bring happiness to them, people)

     e.   Sinsíŋo, kurúolu   be a kono
           basket SP the kola nuts be it inside
           (The basket, the kola nuts are in it)

f. Kurúolu   be <u>a</u> kono, sinsíŋo
(The kola-nuts are in <u>it</u>, the basket)

The dislocated noun phrase may also be moved over a variable, as attested

in (51b, c), derived from (51a):

(51) a. A ye i ñiniŋkáá fo i ye a lôn ne kô dánnoo ye samôô
he TA them ask   if theyTA it know CL that hunter TA eleph.
barama
wound
(He asked them if they knew that the hunter had wounded the ele-
phant)

b. Samôô, a ye i ñiniŋkaa fô i ye a lôn ne kô dánnoo ye <u>a</u> barama
(The elephant, he asked them if they knew that the hunter had
wounded it)

c. A ye i ñiniŋkáá fô i ye a lôn ne kô dánnoo ye a barama, samôô
(He asked them if they knew that the hunter had wounded it, the
elephant)

3.5.2 <u>Topicalization.</u> One transformation whose application is gene-

rally very similar to dislocation is topicalization. However this rule

does not occur in Mandingo, as attested by the ungrammaticality of (53b)

below:

(52) a. Bambôôlu   buka tiyo   domo
crocodile SP PL TA peanut SP eat
(Crocodiles do not eat peanut)

b. *Tiyo, bambôôlu buka ∅ domo
(Peanut, crocodiles don't eat)

The main reason why topicalization is disallowed in this language is that

only movement rules that leave a resumptive pronoun in the position vaca-

ted by the moved constituent are generally admitted in Mandingo. Conse-

quently, the major impact of the movement rules observed thus far has been

primarily the creation of a focus reading, leaving word order unchanged.

3.6   PASSIVIZATION

An other problematic transformation in Mandingo is passivization. The

problem with passivized sentences is not so much proving their existence in this language; rather it seems to lie in their derivations and interpretation. This will become clear when we examine the data in (54a-d). First, when the agent of a simple transitive construction is undetermined, it may be deleted after the sentence has been passivized to obtain an agentless passive as illustrated in (53b):

(53) a.   Moo   dóǒ   ye   kídoo   sósó   nuŋ
          pers. some TA gun SP load   before
          (Someone loaded the gun)

      b.   Kídoo sósó tá nuŋ
          gun SP load TA/be before
          (The gun was loaded)

To derive (53b) from (53a), passivization must apply to move the initial direct object into subject position and convert the verb <u>soso</u> into a passivized verb by inserting <u>ta</u> after it. Subsequent to this process, the unspecified agent <u>moo dóǒ</u> would then be deleted. However, when the subject is a specified agent, passivization becomes a little more complicated, in that the sentence may be passivized three ways and each of the three derived passive sentences will have a marked meaning. This is illustrated in (54b, c & d):

(54) a.   Dánnoo   ye   jatóǒ   barama
          hunter SP TA lion SP wound
          (The hunter wounded the lion)

      b.   Jatóǒ barama ta dánnoo <u>bulu</u>
          lion SP wound TA hunter SP <u>by mistakingly</u>
          (The lion was wounded <u>by the hunter by mistake</u>)

      c.   Jatóǒ barama ta dánnoo   <u>fee</u>
          Lion SP wound TA hunter SP <u>by regretfully</u>
          (The lion was wounded <u>by the hunter but he regreted it</u>)

      d.   Jatóǒ barama ta dánnoo   <u>la</u>
          lion SP wound TA hunter SP <u>by</u> i.e. hunter : instrument
          (The lion was wounded by (the instrument) the hunter)

In (54b) the _bulu_ complement and agent performed the wounding on a mista-

ke; in (54c) _fee_ indicates that the agent felt regret after performing

the action, whereas _la_ in (54d) makes the hunter the instrument that was

used to wound the lion. These sentences clearly show meaning differences

with the non-passivized sentence in (54a) from which they are supposed to

be derived. If we assumed the ST position that transformations are meaning-

preserving operations, then we would be forced to conclude that Mandingo

passives must be generated in the base,[5] unless some device can be found

to account for the meaning differences observed with respect to the three

passive forms described above.

3.7 CLEFTING

In addition to dislocation, topicalization and passivization, clefting

is an other transformation that has been observed to change word order in

some languages, is clefting. Two interesting properties of this rule in

Mandingo are the following: (i) clefting does not involve any movement in

this language, and (ii) nouns as well as verbs can be clefted. To start

with, let us examine noun clefting.

3.7.1 Noun Phrase Clefting. In Mandingo nouns are clefted by inserting

the cleft marker _le_ immediately to their right, as shown in (55b, c):

(55) a.   Díndíŋo ye wuló6   damfu
           child SP TA   dog SP   kick
           (The child kicked the dog)

     b.   Díndíŋo le ye wuló6   damfu
           child SP CL TA   dog SP kick
           (It is the child whi kicked the dog)

     c.   Díndíŋo ye wuló6 le damfu
           (It is the dog that the child kicked)

In addition, there does not seem to be any functional restriction to the

application of clefting. In this regard, clefting applies to subjects, direct objects (cf. 55b, c) as well as benefactives, locatives and instrumentals. This is examplified in (56a, b, d):

(56) a.   Mansóó   ye   suó   saŋ   a   dim-maa   le   ye
           king SP TA horse SP buy he child MP CL for
           (It is for his child/son that the king bought the horse)

     b.   A   ye   kódoo   tara yíroo   le   koto
           he TA money SP find tree SP CL under
           (It is under the tree that he found the money)

     c.   A   ye   a   barama   muróó   le   la
           he TA it wound knife SP CL with/by
           (It is with a knife that he wounded it)

One general tendency observed with the cleft marker le is that, when the clefted noun is followed by a postposition, as in (56a-c), it generally occurs between the noun and the postposition. When le occurs after a postposition (thus sentence-finally) its meaning seems to be distributed over the whole sentence, and this happens usually when the sentence is meant to be an answer to a previous question. The occurrence of le in this position adds an emphasis similar to do or did in front of a finite verb in an affirmative sentence in English, as in (57a, b):

(57) a.   Mansóó ye suo saŋ a dim-máá ye   le
           (The king did buy a horse for his son)

     b.   A ye a barama muróó la le
           (He did wound it with the knife)

In addition, clefting can apply to an embedded noun, as in (58b, c):

(58) a.   Labéo   ye a   lóŋ   kó   móóroolu   buka dolóó   miŋ
           priest SP TA it know that marabout SP PL TA alcohool drink
           (The priest knows that marabouts do not drink alcohol)

     b.   Labéo ye a lóŋ kó móóroolu le buka dolóó miŋ
           (The priest knows that it is the marabouts who do not drink alcohol)

c.   Labéo ye a loŋ móóroolu buka dolóó <u>le</u> miŋ
(The priest knows that it is alcohol that the marabouts do not
drink)

Finally, unspecified nouns cannot be clefted, as attested by the ungramma-
ticality of (59a, b):

(59) a.   *Díndín <u>ne</u> ye wulóó damfu
(It is <u>a boy</u> that kicked the dog)

    b.   *Dindiŋo ye <u>wulu</u> le damfu
(It is <u>a dog</u> that the boy kicked)

One possible reason for the non-occurrence of clefting with unspecified
nouns is that clefting being a focusing operation of some sort, it requi-
res that the identity of the noun on which it applies   be contextually
determined.

3.7.2 <u>Finite Verb Clefting</u>. The major peculiarity of clefting in
this language is probably its application to finite verbs. The process
involved is structurally the same as with nouns, that is a finite verb is
clefted by inserting <u>le</u> immediately at its right, except when the verb is
followed by a postverbal future or past tense marker (in which case **the**
TA marker precedes <u>le</u>). This is examplified in (60a, b, d, f) below:

(60) a.   A ye kódoo   kíí <u>le</u>   a baa-maa   ye
he TA money SP send <u>CL</u>   he mother MP to
(Lit: it is send money to his mother that he did)

    b.   A son tá <u>le</u> a teeri-maa   ma
he agree TA <u>CL</u> he friend MP   with
(Lit: it is agree with his friend that he did)

    c.   *A són ne ta a teeri-maa   ma
            V   <u>CL</u> <u>TA</u>

    d.   A be kínoo domo la <u>le</u> búŋo kono
he TA food SP eat   TA <u>CL</u> room SP inside
(It is eat the food inside that he will do)

    e.   *A be kínoo dómó <u>le</u> la búŋo kono
                 V   <u>CL</u> TA

f.   A be kínoo dómoo   <u>le</u> la búŋo kono
       he TA food SP eat NT1 SP <u>CL</u> TA   room SP inside
       (Lit: it is eating the food inside that he is doing)

g.   *A be kínoo domoo la <u>le</u> búŋo kono
                    V NT1 TA <u>CL</u>

Sentences (60c, e) are ungrammatical because their postverbal tense-aspect

marker is separated from the verb by <u>le</u>. On the other hand, (60g) is ill-

formed because <u>le</u> is placed after the TA marker <u>la</u>. The occurrence of the

cleft marker <u>le</u> with finite verbs is further evidence that in this language

the distinction between categories such as nouns and verbs is not as clear-

cut as it is in English.

3.8 QUESTION FORMATION

One other type of construction that often requires the presence of the

cleft marker is question formation, and we would like to examine this br

briefly. Like many languages, Mandingo has two types of questions: Yes/No

questions and the so-called Wh-questions. Consider first the Yes/No ques-

tions.

3.8.1 <u>Yes/No questions</u>. There are basically five ways to form a Yes/

No question in Mandingo. These can be observed in the following sentences:

(61) a.   Í yé káánoo   ke duuráŋo kono.
           you TA pepper SP make/put sauce SP inside
           (You put pepper in the sauce)

    b.   (Muná) í yé   káánoo   ke duuráŋo   kónó le   <u>baŋ</u> ?
           <u>Q</u>   you TA pepper SP put sauce SP   inside CL   Q
           (Did you put pepper in the sauce ?)

    c.   Muná í yé káánoo ke duuráŋo kónó   le Ø ?
           (Did you put pepper in the sauce ?)

    d.   Ø Í yé káánoo ke duuráŋo kono Ø Ø ?
           (You put pepper in the sauce ?)

    e.   <u>Korí</u> í yé káánoo ke duuráŋo kono <u>ko</u> ?
           <u>Q</u>   you TA pepper SP put sauce SP in   <u>Q</u>
           (Did you put pepper in the sauce ?)

f. Korí í yê kâânoo ke duuráṇo kono Ø ?
    (Did you put pepper in the sauce ?)

That is, given the structure underlying the declarative sentence in (61a),
five corresponding question sentences can be derived as indicated in (61b-
(61b-f). All five question sentences have the same SOV order. In addi-
tion, two sentences, namely (61b, e) have a double question marking, one
question morpheme at the begining of the sentence and the second one at
the end.[6] The absence of baṇ in (61c) does not create any substantial mea-
ning difference from (61b); similarly, the presence or absence of ko sen-
tence-finally does not bring about any major difference in the meaning of
(61e & f). However, there is a significant meaning difference between
Muná-type and korí-type questions. Specifically, muná-type questions
are general yes/no questions, that is they can be asked any time, and the
speaker has no higher expectation for a yes- or no-answer. In a korí-
type question however, the speaker has a higher expectation for a no-
than a yes-answer. Further, question sentences such as (61d), in which
neither le nor any question morpheme occurs, serve to indicate echo ques-
tions. The distributions of muná and korí have two cooccurrence restric-
tions on them, namely muná always requires le in the sentence in which it
occurs, while korí never cooccurs with le. This explains the ungrammati-
cality of (62a, b) below:

(62) a. *Muna í yê kâânoo ke duuráṇo kónó Ø (baṇ) ?

     b. *Korí í yê kâânoo ke duuráṇo kónó le ?

Finally, muná and korí never occur sentence-finally, and baṇ and ko never
occur sentence-initially in question sentences. The existence of a seman-
tic distinction coupled with the cooccurrence restrictions stated in (62)

seems to indicate that echo-questions and <u>munâ-</u> and <u>korí-</u>type questions cannot be derived from one another.

3.8.2 <u>Wh-questions</u>. This subsection will deal mainly with wh-question formation in simple sentences, leaving the analysis of wh-complementizers to next chapter. Similarly to yes/no questions, wh-question formation involves no constituent reordering in this language. Furthermore, wh-question words differ from both the relative pronoun <u>min</u> and wh-complementizers, as can be seen in (63):

(63)

Wh-Question words	Wh-Complementizers	Gloss
Jumáá		'who, which +N'
múŋ		'what'
muntóó	dá-miŋ	'where'
ñáá-dii	ñá-miŋ	'how'
tumâ jumaa	tumá-miŋ	'when'
mún ne ye a tinna; mún ne ye a tinna		'why, what caused it'

The wh-question words for <u>who</u> and <u>what</u> have no complementizer counterparts, while <u>why</u> is rendered by a periphrastic construction introduced by the wh-word <u>muŋ</u> 'what'. Furthermore, like yes/no questions, wh-questions generally require the presence of the cleft marker <u>le</u>. When <u>le</u> is missing in a wh-question, the sentence is automatically interpreted as an echo question. This is exemplified in (64):

(64) a.   Jíí-boroo   ye   ñoo-féo   tiñaa
water run SP   TA   milet farm   destroy
(The erosion destroyed the milet plantation.

b.   Mún   ne   ye   ñoo-féo   tiñaa ?
<u>what</u>   CL   TA   milet farm destroy
(What destroyed the milet-farm ?)

c.   Mún   ∅   ye ñoo-féo tĩnaa. ?
(What destroyed the milet farm ?)

d.   Jíí-boroo   ye ñoo-féo   tiñaa   ñáá-dii   le ?
erosion SP TA milet farm destroy how   CL
(How did the erosion destroy the milet farm ?)

e.   Jíí-bóroo   ye   ñoo-féo   tíñáá   ñáá-dii Ø ?
(The erosion destroyed the milet-farm how ?)

(64c, e), in which le does not occur, consistently have an echo-question

reading, while (64b, d) are general wh-questions. That wh-question words

cannot be moved into sentence-initial position is evidenced by the ungram-

maticality of (65a,c):

(65) a.   *Ñ̃áá-dii (le) jíí-bóroo ye ñoo-féo tiñaa ?
       how   CL   S   TA DO   V

    b.   Jíí-bóroo ye ñoo-féo   tíñáá   muntóó   le
       (Where did the erosion destroy a milet-farm ?)

    c.   *Muntóó (le) jíí-bóroo ye ñoo-féo tiñaa ?
       where   CL   S   TA DO V

The lack of wh-question movement rule in Mandingo (thus the identity in

word order between declarative and interrogative sentences) is consistent

with Greenberg (1963)'s universal (12) which states that:

(66)   If a language has dominant order VSO in declarative sentences,
        it always puts interrogative words or phrases first in interro-
        gative word questions; if it has dominant order SOV in declara-
        tive sentences, there is never such an inversion rule. (Uni-
        versal 12).

Finally, Wh-question formation can apply to a subject noun, a direct

object as well as an indirect object, a beneficiary or a locative. This

is exemplified in (67) and (68) below:

(67) a.   Jíí-bórií jumáá   le ye ñoo-féo tiñaa ?
       (Which erosion destroyed the milet-farm ?)

    b.   Jíí-bóroo ye ñoo-féé jumáá le   tiñaa
       (Which milet-farm did the erosion destroy?)

(68) a.   Karandiriláá   ye báyoo   kii a faa-máá   ye kúnnéo kono
       teacher SP   TA material send he father   to trunk   in
       (The teacher sent some material to his father in a trunk)

    b.   karandiriláá ye báyoo kii jumáá le ye kúnnéo kono ?
       (To whom did the teacher send material in a trunk ?)

c. Karandirilåå ye båyoo kii a faa-måå yé kûnnéé <u>jumåå</u> le
    kono ?
    (In which trunk did the teacher send material to his father ?)

3.9 <u>Summary and Conclusion.</u> The general purpose of this chapter has

been to present an overview of a variety of phenomena characteristic of

Mandingo simple sentences. In this regard, three areas have been investi-

gated, namely word order, movement rules and nominals. With respect to

the first area, it was shown that the basic SOV order remains generally

fixed in this language and that it allows very few alterations. In parti-

cular, it was shown that clefting and questioning, which ordinarily move

constituents, do not involve any reordering in this language. Furthermore,

of the two focusing transformations examined here, namely topicalization

and dislocation, only the latter is permitted in Mandingo precisely because

it leaves a replacive pronoun in the position vacated by the moved NP,

thus preserving the basic word order. Another movement rule, passivization

was examined. It was demonstrated that not only is passivization highly po-

larized in this language, but passivized sentences present substantial

meaning differences from their affirmative counterparts. The difficulty

in incorporating these meaning differences into the transformational appa-

ratus led to the speculation that maybe there is no passive transformation

in this language. Finally, with respect to nominals, our analysis showed

that Mandingo adjectives require two separate subcategorizations, one mor-

pho-semantic and the other morpho-syntactic to account for their various

distributional constraints. The three-way nominal possession system was

then examined and a pragmatic solution proposed contrary to the claims

made in Chomsky (1970), Bird (1972) and Voeltz (1976). Nominalized sen-

tences were finally examined and an attempt was made to show that they

cannot be transformationally derived from underlying sentences.

Even though our analysis does not pretend to constitute an exhaustive description of the properties of Mandingo simple sentences, nevertheless it raises a number of interesting questions that will have important implications on our analysis of relative and complement clauses in Chapter IV . One of these questions has to do with the status of so-called nominalized sentences. In this language, nominalized sentences clearly behave like NPs, and thus do not have the same distributions as sentences. Since nominalized sentences as well as relative and complement clauses are often all analyzed under the heading of complementation, one question that comes to mind is whether or not there is any ground for treating nominalyzed sentences together with relative and complement clauses in this language.

A second issue is that since Mandingo does not seem to allow movement rules that leave no replacive pronoun in the initial position of a moved NP, one prediction that can be made with respect to complementation and relative clause formation is that if they involve any movement of constituents, one would expect that this movement would be followed by the creation of a resumptive pronoun to hold the position from which the constituent would have been moved.

Finally, it was shown that Mandingo transitive verbs are strongly transitive, that is they always require the direct object position to be filled. One prediction that this distributional constraint makes is that in so-called object relativization and complementation one should expect the complement and the relative clauses to occur preverbally in DO position, if indeed complement clauses and relatives are NPs. To

ascertain the correctness of these predictions, an extensive investigation

of relative and complement clauses in Mandingo will be necessary.

<center>FOOTNOTES TO CHAPTER III</center>

1. When an indicative transitive verb has an empty DO position, it is automatically interpreted as a subjunctive passive. This explains why <u>Jatóó ye Ø faa</u> cannot be translated as 'the lion killed', but rather as 'that the lion be killed'.

2. One might wonder if <u>baa</u> and <u>ndiŋ</u> could not be analyzed as augmentative and diminutive suffixes respectively. However, since they are not always located immediately after the noun stem in an NP, this analysis cannot hold.

3. While admittedly there is no statement or restriction in the Standard Theory of syntax for deriving sentences from ungrammatical deep structures, many analysts appear to assume that there is a well-formedness condition for deep structures (cf. Givon,1976: 328).

4. Mandingo does not really have a set of morphologically unified elements that one could call possessive pronouns. Unlike English, French and other languages, this language uses a periphrastic construction whose first component is always a personal pronoun and the second the noun <u>táà</u> 'share, belonging'. Here is the list of these possessives:

Table 5: Mandingo possessive "pronouns":

Personal Pronouns			Possessive "pronouns"		
Simple	Emphatic		Simple	Emphatic	
ń	ń-te	'I/me'	ń taa	ń-té taa	'mine'
í	í-te	'you(sg)'	í taa	í-té taa	'yours'
a	a-te	'he/she/it him/her'	a táà	a-te táà	'his/hers/its'
n	n-telú	'we/us'	n táà	n-telú taa	'ours'
ál	ál-telu	'you(pl)'	ál taa	ál-telu táà	'yours'
i	i-telu	'they/them'	i táà	i-telu táà	'theirs'

The structure obtained is an NGEN type of possession construction, and <u>taa</u> can be freely pluralized by GP as a regular possessee in an NGEN possession construction.

5. The findings of Welmers (1978), in which the author presents a survey of passivization in a number of Mande languages, seem to concur with our conclusions.

6. In addition to the presence of question morphemes, there are intonation differences between question sentences and declarative and exclamatory sentences. Declarative sentences typically start with a leveled high intonation pattern which is maintained though about two thirds of the sentence, and ends in a fall. Like declaratives, exclamatory sentences start with a leveled high intonation, but they are raised one step higher at about the same position where declaratives would experience a fall. Interrogative sentences on the other hand also start out withna high, but they culminate in a suspended fall, which does not go as far down as declarative sentences. These three intonation patterns can be summarized as follows:

Declarative:

Exclamatory:

Interrogative:
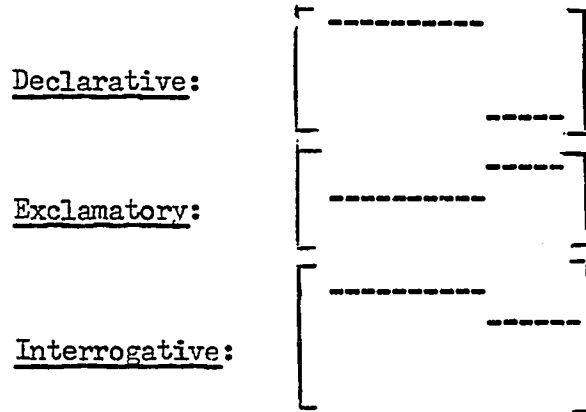
CHAPTER IV

COORDINATION AND SUBORDINATION

4.0 Introduction.

The main purpose of this chapter is to investigate the structure and

the derivation of complex sentences in Manddingo. This investigation

will cover three basic types of complex sentences : conjoined structures,

relative and complement clauses. We will attempt to show that there is

evidence in this language to support the view that most of the structures

generally assumed to be derived through embedding could be argued to be

cases of conjoining. To do this, we consider first the structure of con-

joined sentences.

4.1 COORDINATION AND CONJUNCTION REDUCTION.

4.1.1 Coordination. Like English, Mandingo creates coordinate structures

by using various types of conjunctions among which wara(nte) 'or', bari 'but',

nin 'and' and the /,/. Of these four conjunctions, wara/warante, bari

and /,/ seem to form a subgroup in that they allow for sentence conjoining

in a manner similar to their English counterparts, as examplified in (1a-c):

(1) a.   Deenaanóó ka a baa-maa suutee wara   a ka a faa-maa suutee
          baby-SP   TA he mother recognize or   he   TA he father recog-
          (The baby recognizes his mother or he recognizes his father)

    b.   Ibíliísa feere ta, bari Álá le feere ta a ti
          the devil smart TA   but   God CL smart TA he be
          (The devil is smart, but God is smarter than him)

    c.   Kántárílaa   naa   ta, a   ye ninsóó je
          shepherd-SP come   TA he TA cow-SP   see
          (The shepherd came, he saw the cow)

In contrast, nin 'and' tends not to allow for sentential conjoining. When

it conjoins two sentences, a pronoun a must appear in the first term of

the conjunction, as shown in (2b), or else the conjoined structure will be

ungrammatical, as attested in (2a) below:

(2) a. *Deenaanóó ka a baa-maa suutee nin̩ a ka a faa-maa suutee.
        (The baby recognizes his mother and he recognizes his father)

    b.   Deenaanóó ka a baa-maa suutee a nin̩ a ka a faa-maa suutee.
        *(The baby recognizes his mother it and he recognizes his father)

Let us add that a invariably cooccurs with nin̩ in conjoined sentences re-

gardless of the verb-type. The re

The requirement that the pronoun a be present before nin̩ in the first

conjunct poses one major problem with respect to the deep structure of

conjunct-reduced structures involving nin̩. The question one has to ask is:

Where does this pronoun come from ? If one assumes that (2b) is formed by

simply conjoining two separate sentences, then one must conclude that a

is not base-generated since it does not surface in the first conjunct when

it occurs as an independent sentence, as attested by the ungrammaticality

of (3a):

(3) a. *Deenaanóó ka a baa-maa suutee a
        *(The baby recognizes his mother it)

    b.   Deenaanóó ka a baa-maa suutee
        (The baby recognizes his mother)

If a is not base-generated as (3a, b) seem to indicate, then one must as-

sume that it is the result of some sort of pronominalization process which

has yet to be explained. One possible explanation is that there is a co-

occurrence restriction which requires an NP as the first conjunct to nin̩,

and that whenever the first conjunct is initially a sentence, it must un-

dergo an obligatory pronominalization before it can be conjoined by nin̩.

This would mean that the real first conjunct of nin̩-conjoined structures

such as (2b) is never a sentence but its anaphor a which always occurs im-
mediately before nin. This solution seems to be more plausible. However,
if it goes through, it will serious consequences on the analysis of con-
junction reduction in Mandingo. For one thing the universality of the va-
rious conjunctions reductions rules such as Ross (1967), Tai (1969) and
Sanders and Tai (1972) is seriously contested. Second, it may be the case
that in this language, conjunct-reduced sentences involving nin at least
must be base-generated. If this is the case then conjunction reduction
clearly becomes a non-issue, at least for nin. In the section that follows,
we are going to assume for the sake of discussion that wara/waránte, bari,
/,/ as well as nin regularly conjoin sentences, and examine the issue of
Immediate Dominance, as proposed by Tai (1969) and Sanders and Tai (1972),
with respect to the Mandingo data.

4.1.2   Conjunction Reduction. In his study of coordinate deletion, Tai
(1969) divides the world's languages into two groups with respect to Con-
junction Reduction: (1) Immediate Dominance languages, which allow only
the deletion of identical constituents immediately dominated by the S node
in either conjunct (that is the Subject noun phrase and the verb phrase,
but not the verb or the object noun phrase), and Non-Immediate dominance
languages, in which either the subject noun phrase, the verb phrase, the
verb and/or the object noun phrase may undergo deletion under identity.
Tai (1969) further claims that the reduction of an identical element in
either conjuncts " is independent of the categorial properties of consti-
tuents". In addition, Tai argues that the rule of Gapping and Conjunction
reduction as proposed by Ross (1967) can be collapsed into a single rule
which can be formulated in "two ordered steps" as follows:

(4) a. <u>Identity Deletion</u>:

Delete one of the two highest indentical constituents in the
pair of conjuncts under consideration according to the follo-
wing principle: if these two identical constituents are left-
branches, deletion operates forward; if they are right-branches,
it operates backward.

b. <u>Regrouping</u>:

Chomsky-adjoin the remaining highest constituents of the reduced
conjunct (except the conjunct itself) onto the corresponding
constituents of the unreduced conjuncty. This process is optio-
nal, if the reduced conjunct is still branching; it is obliga-
tory, if the reduced conjunct is no longer branching.

According to the diectionality principle adopted here by Tai, if we have

a structure such as (4c) below, where the subject NPs are identical, dele-

tion should apply on to the subject in the second conjunct, wnereas in (4d)

where the VPs are identical, deletion can apply only to the first VP.

(4) c.
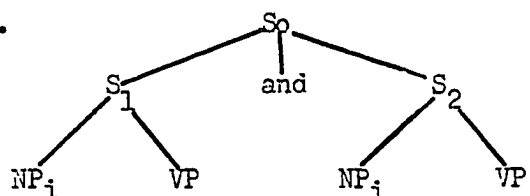
d.
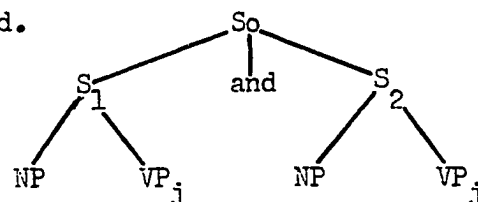
In the section that follows, we shall attempt to demonstrate that (i) the

Mandingo data does not fit within the division proposed by Tai (1969) and

Sanders and Tai (1972), and that (ii) it would pose a serious problem to

any transformational analysis, assuming that the base generation approach

proposed above for <u>niŋ</u> were to be rejected. Let us now examine in details

the distribution of <u>niŋ</u> 'and'.

The distribution of <u>niŋ</u> contrasts sharply with that of its English

counterpart <u>and</u> in that many of the reductions allowed by the latter are

not allowed by the former. For instance, Mandingo does not allow subject-

or object-reduced sentences with <u>niŋ</u>, as attested in (5a,b) and (5c,d)

(5) a.   *Deenaanóó ka a baa-maa suutee <u>nin</u> ka a faa-maa suutee.
         (The baby recognizes his mother <u>and</u> recognizes his father)

    b.   *Deenaanóó ka a baa-maa suutee <u>wara</u> ka a faa-maa suutee.
         (The baby recognizes his mother <u>or</u> recognizes his father)

    c.   *Músáá ye Ø buuñaa <u>nin</u> Sádáá ye lúntáɲo kontoŋ
         (Músáá welcomed and Sadaa greeted the visitor)

    d.   *Músáá' ye Ø buuñaa <u>wara</u> Sádáá ye lúntáɲo kontoŋ
         ?(Músáá welcomed <u>or</u> Sádáá greeted the visitor)

    e.   * Ø ka a baa-maa suutee niŋ <u>deenaanóó</u> ka a faa-maa suutee.
         Subj   Subj

    f.   *Músáá ye <u>lúntáɲo</u> buuñaa niŋ Sádáá ye Ø kontoŋ
                 DO   DO

The ungrammaticality of the sentences in (5a-d) and (5e, f) show that a subject and an object cannot be reduced regardless of whether they are located in the first or second conjunct. In the case of the direct object one might expect that if its reduction was allowed, it would take place in the second conjunct, according to the directionality principle as proposed by Ross (1967), Tai (1969) and Koutsoudas (1971), since the direct object **occurs** on the left of the verb in Mandingo. However, as attested by the ungrammaticality of (5c) this is not the case. Furthermore, the non-deletability of <u>deenaanóó</u> and <u>lúntáɲo</u> in the sentences above does not seem to be connected with their respective subject and direct object functions. As can be seen in (6) below, Mandingo does not allow the reduction of an indirect object, a

(6) a.   *Karandiriláá ye kódoo kii Ø (ye) <u>nin</u> Safíí ye léétároo dii
         teacher-SP   TA money send   p   <u>and</u> S.   TA letter-SP give
         <u>a baa-maa</u>   la
         he mother-MP P
         (The teacher sent money(to) and Safíí gave the letter to <u>his mother</u>)

    b.   *Wuloo dun ta Ø (kono) <u>nin</u> a maarii-máá funti ta <u>buŋó</u> kono.
         (The dog entered and his master came out of <u>the house</u>)

c. * Músáá siró nin Ø búloo   (NGEN)
      M.   leg-SP and   arm-SP
   *(Musaa's leg and arm)

d. *Músáá la kufóó nin kitááboo   (GEN)
      M.   of bag-SP and book-SP
   *(Músáá's bag and book)
      Grammatical if meaning : Músáá's bag and the book.

e. *Músáá baa-maa nin Ø faa-maa   (MP)
      M.   mother-MP and   father-MP
   (Músáá's mother and father)

Since Mandingo does not allow the reduction of the subject and the direct

object, as examplified in (5a-f), as well as the reduction of the indirect

object, the locative NP and the possessor in a conjoined structure, as

attested by the ungrammaticality of the structures in (6a), (6b) and (6c-e),

respectively, it seems more acurate to conclude that Mandingo simply does

not allow NP reduction in conjoined structures, regardless of the gramma-

tical function of the NP involved. In light of this, one has to say that

it is the NP category and not the grammatical function that is relevant

to conjunction reduction in Mandingo, contrary to the claim made by Tai

(1969). An additional deletion that is not allowed in Mandingo conjoined

structures is verb reduction or Gapping. This is attested by the ungram-

matical sentences in (7a-b):

(7) a. *Músáá (ye) dendikóó Ø nin Sádáá ye nafóó san
           M.   TA shirt-SP   and S.   TA hat-SP buy
        *(Músáá a shirt and Sádáá bought a hat)

    b. *Nankúmoo dun ta búro kono nin wulóó Ø (ta) waañéo kono
          cat-SP   enter TA house-SP in and dog-SP   TA kitchen-SP in
       (The cat entered the house and the dog the kitchen)

    c. *Músáá ye dendikóó san nin Sádáá (ye) naafóó Ø
       (Músáá bought a shirt and Sádáá a hat)

    d. *Nankúmoo Ø (ta) búro nin wulóó dun ta waañéo kono
       *(The cat the house and the dog entered the kitchen)

The ungrammaticality of (7a,b) and (7c,d) shows that the non-deletability of the verb has nothing to do with the direction of the deletion process, since it cannot apply in either first or second conjunct. Further, the verb cannot be reduced whether it is transitive, as in (7a, c) or intransitive, as in (7b, d).

To summarize, nin does not allow the reduction of an NP regardless of its function in either conjunct; nin also does not allow verb-reduction in conjoined structures. Ultimately, if we assume Tai's division of the world's languages as either Immediate Dominance or Non-Immediate Dominance with respect to conjunction, and assuming that nin is considered as a sentence conjunction, we must conclude that Mandingo is not an Immediate Dominance language, since it does not allow the reduction of an NP (subject or not) in a conjoined structure meeting the identity requirement. If Mandingo is not an Immediate Dominance language, then we would expect it to behave like a Non-Immediate language, that is it should allow the reduction of either the subject NP, the VP, the verb and/or the object NP. As we have already shown, neither the subject, nor the object or the verb can be conjoined reduced in a nin-structure.

This leaves out only one possibility according to Tai (1969), namely VP reduction. As it so happens, the language does allow VP reduction in nin coordinates, as can be seen in (8a, b) below:

(8) a.   Músáá   ∅   nin   Sádáá   ye dendikóó   san   (san : trans.)
           M.   and S.   TA shirt-SP   buy
           (Músáá and Sádáá bought the shirt)

     b.   Músáá   ∅   Sádáá lafi   ta   dendikóó   la   (lafi: intrans.)
           M.   S.   want   TA   shirt-SP   P
           (Músáá and Sádáá want/like the shirt)

     c.   *Músáá   ye dendikóó   san   nin   Sádáá   ∅
          *(Músáá   bought the shirt and Sádáá ∅)

d. *Músáá lafi ta dendikóó niŋ Sádáá Ø la
   *(Músáá wants/likes the shirt and Sádáá Ø)

The ungrammaticality of (8c,d) shows that VP deletion must obey the direc-
tionality principle as stated in Ross (1967) and Tai (1969). The possi-
bility of deleting a VP under identity in a conjoined structure would
seem to indicate that Mandingo is clearly a Non-immediate Dominance lan-
guage. However, there is one final complication that was not predicted
in Tai (1969), namely the subject NP (which we previously showed could
not be deleted) can be reduced together with an identical verb in a con-
joined structure. That is subject NP and VP can be reduced if the subjects
of the two conjuncts are the same. Or stated differently, Gapping is pos-
sible only if the subjects of the conjuncts are the same, as in (9a):

(9) a.   Deenaanóó ye a baa-maa   suutee
         baby-SP   TA he mother-MP recognize
         (The baby recognized his mother)

    b.   Deenaanóó ye a faa-maa suutee
         (The baby recognized his father)

    c.   Deenaanóó ye a báá-máá niŋ a faa-maa suutee.
         (The baby recognized his father and his mother)

The application of conjunction reduction to the subject together with the
verb cannot be accounted for in any of the frameworks proposed thus far,
specially in light of the fact that the subject and the verb cannot be
reduced separately. Furthermore, the subject and the verb generally do
not form a constituent type. Consequently, one must assume that Mandingo
is not a Non-immediate Dominance language in the strictest sense since it
allows for a reduction process not predicted in the definition of Non-im-
mediate Dominance languages. Finally, there is a principled way of accoun-
ting for the reduction process exhibited in (9c) but it differs substan-

tially from presently proposed analyses. That is subject reduction and verb reduction are permitted only if they occur simultaneously, and if the subjects of the two conjuncts are identical. Similarly, object reduction in <u>niŋ</u> structures is allowed only if both object and verb are reduced simultaneously in the first conjunct, and if the verb and the object meet the identity requirement.

(10) a.   Sádáá ye dendikóó saŋ
         S.   TA shirt-SP buy
        (Sádáá bought the shirt)

    b.   Músáá ye dendikóó saŋ
        (Músáá bought the shirt)

    c.   Sádáá ∅ niŋ Músáá ye dendikóó saŋ
        (Sádáá ∅ and Músáá bought the shirt)

(11) a.   Sádáá ye móntóroo saŋ
        (Sádáá bought a watch)

    b.   Sádáá ye dendikóó fuu
        (Sádáá borrowed a shirt)

    c.   *Sádáá ye móntóroo saŋ niŋ Músáá (ye) dendikóó ∅
        (S. bought a watch and Musaa a shirt)

    d.   *Sádáá (ye) móntóroo ∅ niŋ Músáá ye dendikóó saŋ
        *(Sádáá a watch and Musaa bought a shirt)

    e.   *Sádáá ye dendikóó fuu niŋ Músáá ye ∅ saŋ
        (*Sádáá borrowed a shirt and Músáá bought ∅)

    f.   *Sádáá ye ∅ fuu   niŋ Músáá ye dendikóó saŋ
        (Sádáá borrowed and Músáá bought the shirt)

The ungrammaticality of (11c, d) shows again that Gapping is not allowed independently, regardless of the direction of the deletion process. Similarly, object reduction cannot occur independently as attested by the ungrammatical sentences in (11e, f). Nevertheless object reduction is allowed when it is simultaneous with Gapping, as in (10c). To conclude, we can say that the patterns in <u>niŋ</u>-reduced sentences strongly suggest that

Mandingo is not an Non-Immediate Dominance language in the strictes sense.

Furthermore, the presence of the pronoun a in the first conjunct (cf. 2b)

seems to argue for a base-generation of niŋ-reduced sentences.

4.1.3 Bari 'but'. Unlike niŋ, bari seems to be able to conjoin only sen-

tences. In (12c) below, it conjoins the two independent sentences in

(12a, b):

(12) a.   Ibíliísaa feere ta
        The devil smart TA
        (The devil is smart)

    b.   Álá le feere tá a ti
        God CI. smart TA he be
        (Lit: It is God who is smarter than him)

    c.   Ibíliísaa feereeta, bari Álá le feere tá a ti
        (Lit: The devil is smart, but it is God who is smarter than him)

But like niŋ, bari does not allow the reduction of the subject or the di-

rect object, as attested by the ungrammaticality of (13a, b):

(13) a.   *Deenaanóó maŋ a baa-maa suutee, bari Ø ye a faa-maa suutee
        (The baby did not recognize his mother but recognized his fa-
        ther)

    b.   *Músáá maŋ dendikóó saŋ, bari Sádáá ye Ø saŋ.
        *(Músáá did not buy the shirt but Sádáá bought)

However, unlike niŋ , bari allows for the reduction of the benefactive

and the locative provided that the postposition accompanying the benefac-

tive or locative is also reduced, as in (14a, b) respectively. If the

postposition is not reduced, the resulting structure will be ungrammati-

cal, as attested in (14c, d):

(14) a.   Karandiriláá maŋ kódoo kii Ø bari a ye báyoo kii a baa-maa ye
        teacher-SP Neg/TA money send but he TA mater. send he mother p
        (The teacher did not send money but he sent some material to
        his mother)

b. Wuloo maŋ duŋ   Ø bari a fúntí ta buọ́ kono
    dog-SP Neg/TA enter   but it come out TA house-SP in
    (The dog did not enter but it came out of the house)

c. *Karandirilââ maŋ kôdoo kii Ø ye bari a ye bâyoo kii a baa-maa
                                   p   but
    ye.

d. *Wuloo maŋ duŋ Ø kono bari a funti ta búọ kono
                        p   but

One possible explanation for the deletion of the benefactive and the lo-
cative and the non-deletability of the subject and the indirect object
in coordinate structures conjoined by bari is that the deletion of the
benefactive and the locative still results in two independent sentences,
whereas the deletion of the subject or the direct object destroys the sen-
tence status of the conjunct in which it occurs. That is the grammatica-
lity restrictions observed in (14a,b) and (13a,b) are due to the fact that
the reduced conjuncts can occur independently in (14a,b) but not in (13a,b).

(15) a.   Karandirilââ maŋ kôdoo kii
           (The teacher did not send any money)

     b.   Wuloo maŋ duŋ
           (The dog did not enter)

     c.   * Ø ye faa-maa suutee
           *(Ø recognized his father)

     d.   *Sâdââ ye Ø saŋ
           *(Sâdââ bought)

As can be seen in (15a, b) the reduced conjuncts in (14a,b) are grammati-
cal when occurring independently, but the reduced conjunct in (13a, b),
namely (15c, d) are ungrammatical when occurring separately. However, it
is not clear whether all bari-reduced conjunctions of the types in (14a,b)
are to be derived from coordinate structures such as (16a, b) because the
reduced conjuncts in (14a, b) are structurally ambiguous : (14a) can be

interpreted as a case of benefactive deletion in the first conjunct, (in which case the two conjuncts would semantically share the same benefactive baa-maa), or it can be understood as involving two separate benefactives (the benefactive of the first conjunct being omitted for some particular reason). Similarly the two conjuncts in (14b) can be interpreted as having a single or separate locatives. In general, the preferred interpretation of such conjoined structures is one in which the "reduced" constituent is different in the two conjuncts, and the whole sentence understood as a conjunction of two independent sentences. Thus, like niŋ, bari does not seem to allow NP-reduction in conjoined structures. An additional characteristic shared by niŋ and bari is that like niŋ, bari does not allow Gapping, as attested in the ungrammatical sentence in (16c):

(16) a.　　ŋ　　te　　kinóó　domo　la
　　　　　I　　Neg/TA　food-SP　eat　TA
　　　　　(I will not eat the food)

    b.　　ŋ́　　be　　ñéo　　　domo　la
　　　　　I　　TA　　fish-SP　eat　TA
　　　　　(I will eat the fish)

    c.　　*ŋ́　te　kínoo　∅　(la)　bari　ŋ́　bé　ñéo　domo　la
　　　　　*(I will not ∅ the food but I will eat the fish)

    d.　　*ŋ́　té　kínoo　domo　ta bari　ŋ́　(be)　ñéo　∅
　　　　　(I will not eat the food but the fish)

The ungrammaticality of both (16c & d) shows that the non-deletability of the verb has no connection with the direction of the deletion rule.

4.1.4. __Comma.__ Besides separating focused elements[2] from the clause they originally belonged to, the comma can be used to conjoin two or more sentences, as examplified in (17c) .

(17) a.　　Kántárílaa　　naa　ta
　　　　　shepherd-SP　　come　TA
　　　　　(The shepherd came)

b.   Kántárílaa ye ninsóó je
    shepherd-SP TA cow-SP see
    (The shepherd saw the cow)

c.   Kántárílaa naa ta, kántárílaa/a ye ninsóó je
    (The shepherd came, the shepherd/he saw the cow)

But like bari and nin, the comma does not allow for gapping in Mandingo.

This is illustrated in (18c) below:

(18) a.   Músáá ye dendikóó san
    (Músáá bought a shirt)

b.   A téérí-máá yé naafóó san
    he friend-HP TA hat-SP buy
    (His friend bought a hat)

c.   *Músáá (ye) dendikóó Ø , A téérí-máá yé naafóó san
    *(Músáá Ø a shirt, his friend bought a hat)

d.   *Músáá ye dendikóó san, a téérí-máá (ye) naafóó Ø
    (Músáá bought a shirt , his friend Ø a hat)

The ungrammaticality of (18d) shows again that Gapping is not allowed, regardless of the direction of its application. Like nin and bari, the comma does not allow subject or object NP reduction, as attested by the ungrammatical sentences in (19a,b):

(19) a.   *Kántárílaa naa ta, Ø ninsóó je
    (The shepherd came, saw the cow)

b.   *Músáá ye naafóó je, Sádáá (ye) Ø san
    *(Músáá saw the hat, Sádáá bought Ø)

c.   *Músáá (ye) Ø je, Sádáá ye naafóó san
    (Músáá saw and Sádáá bought the hat)

Again the (19b, c) show that the direct object NP cannot be reduced whether its reduction applies forward or backward. However, like bari, the comma seems to allow the occurrence of conjunct-reduced sentences in which the benefactive or the locative is reduced in one of the conjunct. This would explain why (20a, b) are grammatical:

(20) a. Karandiriláá maŋ kódoo kii Ø, a ye báyoo kii a baa-maa ye
(The teacher did not send money Ø, he sent some material to his mother)

b. Wuláó maŋ duŋ Ø , a fúntí tá búŋo kono
(The dog did not enter Ø , it came out of the house)

c. *Karandiriláá maŋ kódoo kii Ø ye, a ye báyoo kii a baa-maa ye
p

d. *Wuláó maŋ duŋ Ø kono, a fúntí tá búŋo kono
p

The behavior of the comma in (20a-d) parallels that of <u>bari</u> in (14a-d).

That is the conjoined structure is ill-formed if the postposition is left

stranded after the benefactive or the locative has been reduced in the

first conjunct. Furthermore, the structures in (20a & b) are preferrably

interpreted as involving two separate benefactives and locatives, this

reading being induced in part by the fact that the first conjuncts in

(20a, b) can, as in (14a,b), occur independently. Ultimately, it is not

clear if sentences such as (20a,b) should be considered as derived through

the reduction of the benefactive and the locative in the two conjuncts.

Finally, the comma does not allow VP reduction, nor does it allow the si-

multaneous reduction of the subject and the verb, unlike <u>niŋ</u>. This is

illustrated in (21a & b) below:

(21) a. *Músáá , Sádáá ye dendikóó saŋ
?(Músáá , Sádáá bought a shirt)
Grammatical if meaning: Músáá !, Sádáá bought a shirt.)

b. *Deenaanóó ye a baa-maa, a faa-maa suutee
?(The baby recognized his mother, his father)

c. *Músáá, Sádáá, Saná ye dendikóó saŋ.
?(Músáá, Sádáá, Saná bought a shirt)
Grammatical if meaning: Músáá !, Sádáá !, Saná bought a shirt.

d. Músáá,(niŋ) Sádáá níŋ Saná ye wotóó saŋ
(Músáá, Sádáá and Saná bought a car)

The only correct reading of a VP-reduced structure such as (21a,c) is

one in which only the NP immediately preceding the verb phrase is the actual subject of the verb, the remaining NP or NPs being understood as direct addressees to whom the information contained in the statement is being conveyed. To obtain a conjoined subject reading in such structures, one need to insert nin at least before the NP immediately preceding the verb, as illustrated in (21d).

4.1.5. Wara/warante 'or'. Wara and warante have the same distribution and do not seem to have any meaning difference. Hence only one of them shall be used in our illustrations, and it shall be understood that whatever generalizations hold for one also hold for the other. Like bari and the comma, wara can conjoin sentences, as illustrated in (22):

(22)   Karandirilåå si kôdoo kii a baa-maa ye, wara-a si båyoo kii a
ye
(The teacher shall send money to his mother or he shall send s
some material to her)

The distribution of wara also seems to mirror that of bari 'but' to a great extent. Like bari it does not allow for subject and object NP-reduction, as attested by the ungrammaticality of (23a,b):

(23) a.   *Deenaanôô si a faa-maa suutee wara Ø (si) a baa-maa suutee.
(The baby shall recognize his father or recognize his mother)

    b.   *Mûsåå si naafôô san wara Sådåå (si) Ø san
*(Mûsåå shall buy the hat or Sadaa shall buy Ø)

But like bari, it seems to allow for the occurrence of benefactive and locative-reduced conjunction only when the two conjuncts are interpreted as having different benefactives and locatives. This is exemplified in the sentences in (24a, b):

(24) a.   Karandirilåå si kôdoo kii Ø wara a si lêêtåroo kii a baa-maa
ye
(The teacher shall send money or he shall send a letter to his

mother)

b.   Wulóó   ka   duŋ Ø <u>wara</u> a ka fúntí búŋo kono
    (The dog enters Ø or it comes out of the house)

Like (14a, b) and (20a, b), the structures in (24a, b) are preferrably in-
terpreted as having separate benefactive and locative NPs in the two con-
juncts. Consequently, there does not seem to be any conjunction-reduction
but simply coordination of two independent sentences. Further, <u>wara</u> does
not allow Gapping, as can be seen from the ungrammaticality of the sentence
in (25a) below:

(25) a.   *Músáá (si) dendikóó Ø , wara a téérí-máá si naafóó saŋ
       *(Músáá a shirt, or his friend shall buy a hat)

    b.   *Músáá si dendikóó saŋ, wara a téérí-máá (si) naafóó Ø
       (Músáá shall buy a shirt and his friend a hat)

The ungrammaticality of both (25a, b) shows again that like <u>bari</u>, <u>wara</u>
desallows Gapping irrespective of the direction of its application. Fi-
nally, <u>wara</u> allows for VP-reduction and the simultaneous reduction of the
subject and the verb under identity, similarly to <u>niŋ</u>, as can be seen in
(26a & b):

(26) a.   Músáá wara Sádáá si dendikóó saŋ
       (Musaa or Sadaa shall buy the shirt)

    b.   Deenaanóó ye a báá-máá wara a faa-maa suutee
       (The baby recognized his mother or his father)

To conclude, of the four conjunctions examined here, <u>niŋ</u> seems to be
basically an NP conjunction, whereas the remaining three, that is <u>bari</u>
'but', <u>wara</u> 'or' and /,/ are used for sentential as well as other types
of phrasal conjoining. To be more specific, the evidence on the distri-
bution of <u>niŋ</u> strongly suggests that niŋ-reduced sentences are not trans-
formationally derived but rather must be base-generated. Furthermore the

evidence from conjunct-reduced sentences involving all four conjunctions seems to clearly indicate that Mandingo cannot be classified as an Immediate Dominance or Non-Immediate Dominance language, as proposed by Tai (1969) and Sanders and Tai (1972) since the conjunct-reduced patterns exhibited in this language do not parallel quite right those predicted by the Immediate Dominance and Non-Immediate Dominance dichotomy. In final analysis, Conjunction reduction may turn out to be a non issue for Mandingo indicating by the same token that conjunction reduction is far from being a universal process.

4.2   SUBORDINATION

Unlike the complex sentences discussed in the previous section, subordinate constructions usually involve one or many clauses in some sort of subordinate relationship with one main clause or with one another. The two most common processes of creating subordinate constructions undoubtedly are Restrictive Relative clause formation (RCF) and complementation. These two processes will constitute the focus of this section. Let us begin by examining RCF in Mandingo.

4.2.1 <u>Relative Clause Formation</u>. Traditionally, RCF has generally been analyzed as a process of subordination by embedding whereby the subordinate clause is embedded within a head noun generally located in the main clause. As we shall see shortly, Mandingo RCF offers a much more complited picture.

The language has basically two types of relative clauses: Forward relatives, in which the relative clause precedes the main clause, and Backward relative clauses, which generally follow the main clause. These two types are illustrated in (27a & b) respectively:

(27) a.   Suŋólu <u>minnu</u> ye lííbúroo suuñaa, Íssáá ye i je
          thieves <u>wh-PL</u> TA book-SP steal , I.   TA them see
          (Lit: the thievs who stole the book, Íssáá saw them)
          (Issaa saw the thieves who stole the book)

    b.   Íssáá ye suŋólu je, <u>minnu</u> ye lííbúroo suuñaa
          (Lit: Issaa saw the thieves, (the ones) who stole the book)
          (Issaa saw the thieves who stole the book)

In Forward Relative clauses (FR), both the antecedent and the relative pronoun[3] surface within the relative clause while an anaphoric pronoun occurs in the main clause position where one would expect the head noun to be. In Backward relative on the other hand, the relative clause follows the main clause and the head noun remains in position in the main clause while a relative pronoun appears in the relative clause. Let us examine in turn some of the surface characteristics of these two types of relative clauses.

    4.2.1.1 <u>Forward Relative clauses</u>. In a Forward relative clause such as (27a), both the head noun and the relative pronoun are on the surface constituents of the relative clause. In (27a), one might think that the head noun <u>suŋólu</u> has simply been fronted but is still a constituent of the main clause, in which case the correct P-marker for (27a) would be (28a). However, this is not the case because (i) the anaphoric pronoun <u>a</u> is inomissible, and (ii) when the relativized NP is a DO, both the head noun and the relative pronoun surface in preverbal DO position within the relative clause and they are separated from the main clause by the verb of the relative clause (or some larger variable), making it impossible for the head noun to be a constituent of the main clause.

(28) a. b.
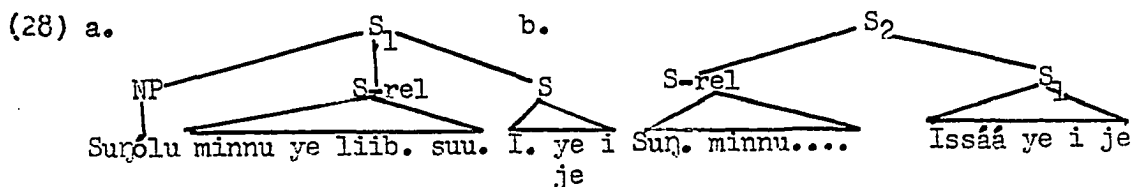
c.   Suŋɔ́lu   ye <u>lííbúroo</u> <u>miŋ</u> suuñaa, Íssáá ye a je
       thieves TA <u>book-SP</u> wh steal   I.,   TA it see
       (Lit: the book that the thieves stole, Issáá saw it)
       (Issaa saw the book that the thieves stole)

d.

Suŋɔ́lu ye lííbúroo miŋ suuñaa   Íssáá ye a je
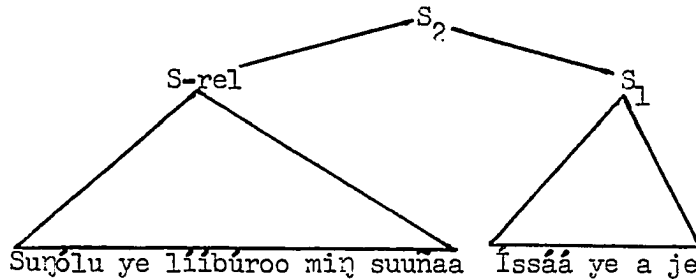
In (28d) the structure <u>lííbúroo miŋ</u> can only be part of the relative clause, and thus the sentence in (28c) cannot be represented by a P-marker similar to (28a), in which the head noun <u>lííbúroo</u> would be part of the main clause S_1. Since (28c) cannot be represented by a P-marker similar to (28a) and since the same type of relative clause formation strategy is involved in both (28c, a), one has to conclude that the correct P-marker for the surface structure in (27a) is not (28a) but (28b). In addition to the branching issue, Forward relative clauses present a number of surface distributional characteristics that need careful discussion. First, unlike other Mande languages (cf. Bird, 1968), there is no limit to the number of Forward relative clauses that may occur with a main clause. However, as we shall see when we examine the paper on RCF by Bokamba and Dramé (1978), multiply-embedded Forward relative clauses must occur in a very specific order.

Secondly, as shown in (27a) and (28b,c & d), the word order remains SOV in the relative clause as well as in the main clause. When the relativized NP is subject, it occurs clause-initially followed by <u>miŋ</u>, as illustrated in (27a); however, when it is a direct object, it occurs in DO

position together with miŋ. This is illustrated in (28c, d). In the data

in (30a-c), we shall see that the head noun and miŋ surface in indirect

object, locative or object of comparative particle positions when the head

noun is respectively an indirect object, a locative or an object of com-

parative particle. Consequently, Mandingo RCF does not seem to require

that the relative pronoun occurs clause-initially in the relative clause.

Thirdly, the head noun of a Forward relative clause must always be s

specified, as shown by the ungrammaticality of (29b). According to Andrews

(1972), this phenomenon is probably universal. A similar behavior has been

observed by Bokamba (1981) (in preparation) in Dzamba, a Bantu language

spoken in the Republic of Zaire and a number of other languages which ex-

press definiteness.

(29) a.　　Súngútoo miŋ bo　　　　ta　Dakar, Hammadi ye　a　kanu
　　　　　　girl-SP　who come from TA　Dakar, H.　　　TA her love
　　　　　　(Hammadi loves the girl who comes from Dakar)

　　b.　　Suŋgutu　miŋ bo　　　ta　Dakar, Hammadi ye a kanu
　　　　　　girl　　　who come from TA　Dakar　H.　　　TA her love
　　　　　　(Hammadi loves a girl who comes from Dakar)

Finally, the Forward relativized NP can assume any grammatical rela-

tion on the Accessibility Hierarchy. It was already shown in (27a) and

(28c) that the head noun and miŋ can be subject or direct object in the

relative clause. In (30a-c), we show that they can also be indirect ob-

ject, locative, and object of comparative particle.

(30) a.　　Karandiriláá ye kódoo　　dii keó miŋ na,　a　mu a faa-maa ti
　　　　　　teacher-SP　　TA money-SP give man who to　he TA he father-MP be
　　　　　　(The man to whom　the teacher gave the money is his father)

　　b.　　Naŋkúmoo be lááriŋ　　yíroo miŋ koto,　ń-té le ye a tutuu
　　　　　　cat-SP　　TA lie-ing tree-SP wh　under　I　CL TA it plant
　　　　　　(It is I who planted the tree under which the cat is lying)

c.   Mandí   tariyaa   ta <u>borilàá</u> <u>miŋ</u> <u>ti</u>,   a   fóloó   futa   ta
      M.   fast   TA runner-SP who be   he   first arrive TA
    *(The runner that Mandi is faster than arrived first)

4.2.1.2   <u>Backward Relative Clauses</u>. These clauses share many of the dis-

tributional characteristics of Forward relatives. For instance, Backward

relativization can apply to a subject (cf. 27b), a direct or indirect ob-

ject, a locative or object of comparative particle, as examplified in (31a-

(31a,b,c & d) respectively:

(31) a.   Íssáá   ye   líibúroo   je ,   suŋólu   ye   <u>miŋ</u>   suuñaa
         (Lit: Issaa saw the book, (the one) which the thieves stole)

    b.   Keó   mu   karandiriláá   faa-maa   ti,   a ye   kódoo   dii   <u>min</u>   na
         (Lit: the man is the teacher's father, (the one) to whom he gave
         the money)

    c.   Ñ-tê le ye yíroo   tutuu,   ñaŋkúmoo   be   lááriŋ   <u>miŋ</u>   koto
         (It is I who planted the tree, (the one) under which the cat is
         lying)

    d.   Boriláá   fóloó futa ta, Mandi tariyaa ta <u>miŋ</u> ti
         *(Lit: the runner arrived, (the one) whom Mandi is faster than)

In addition, Backward relative clauses maintain the SOV word order in both

main clause and relative clause. That is the relative pronoun surfaces

in the position dictated by their function in the relative clause. It

occurs clause-initially when functioning as subject, as indicated in (27b),

preverbally after the preverbal TA marker if the structure is a direct

object, as in (31a), postverbally followed by a postposition if the struc-

ture is an indirect object or a locative, as in (31b, c) respectively, and

after the comparative adjective and followed by the copula <u>ti</u> when func-

tioning as complement of comparative particle. Notice that the position

of the relative pronoun within the relative clause violates Givon (1972)'s

Pronoun Attraction principle, since the relative pronoun in (31a-d) cannot

occur initially in the relative clause, as attested by the ungrammaticali-

ty of (32a-d):

(32) a. *Issaa ye lííbúroo je, min suŋó ye   suuñaa

   b. *Keó mu karandiriláá faa-maa ti, min na a ye kódoo dii
                                        min a ye kódoo dii la

   c. *Ń-té le ye yíroo tutuu, min koto naŋkúmoo be laariŋ
                                min naŋkúmoo be laariŋ koto

   d. *Boriláá foloo futa ta, min Mandi tariyaa ta ti

In (32b,c), the sentence remains ungrammatical whether the postposition

is fronted along with min or left stranded in its initial position. In

addition to preserving the SOV word order and allowing relativization on

all positions on the Accessiblity Hierarchy, Backward relative clauses

share with Forward relatives the requirement that the head noun be always

specified. If it is unspecified, the resulting sentence will be ungramma-

tical, as in (33a,b):

(33) a. *Hammadi ye súŋútú kanu, míŋ bo ta Dakar
         (Hammadi loves a girl, who comes from Dakar)

   b. *Lííbúrú be nuŋ taabuloo kaŋ, suŋólu ye miŋ suuñaa
        Book   TA/be before tabl.-SP on thief-SP-PL TA wh   steal
        (There was a book on the table, which the thieves stole)

The requirement that the antecedent be always specified does not seem to

be connected to the syntactic function of min or to that of the head noun.

Nevertheless, it is consistent with the semantic function of relative clau-

ses in general. Since relative clauses basically add a further determina-

tion to the head noun, it seems contradictory that they would be allow to

occur with a head noun whose identity is unknown to the speaker. This is

probably one reason why Mandingo does not allow relativizing on an unspe-

cified NP.

However, besides their ordering with respect to the main clause, Back-

ward relative clauses are different from Forward relative clauses in

at least three areas: (i) the location of the head noun vis-a-vis the relative clause and the relative pronoun, (ii) the identity of the noun the relative pronoun refers to may be ambiguous in Backward relatives, and (iii) Backward relativization tends to avoid multiple-embedding, as pointed out in.Bird (1968). Let us discuss these points in turn.

In comparing the Backward relative clauses in (31a-d) to their Forward counterparts in (28c), (30a-c) respectively, one notices the striking dissimilarity that while min always occurs immediately after the head noun in Forward relatives, the head noun and the relative pronoun surface in different clauses in Backward relative clauses. That is unlike Forward relatives, the head noun of a Backward relative remains a constituent of the main clause, while min occurs in the relative clause. This raises questions about the function and category of min. Is it really a relative pronoun or some sort of focus marker, or a conjunction of subordination. It is not characteristic of relative pronouns to occur away or in a different clause from their head noun. But when a special emphasis is needed, the head noun may be repeated in front of min in the relative clause to create sentences such as :

(34) a. Tááliboo ye keó je , keó min ye kaboo dii Baabá la
         student-SP TA man-SP see man-SP who TA bt.-SP give B.   to
         (Lit: The student saw the man, the man who gave the bottle to B.)

     b. Tááliboo ye kaboo je, keó ye kaboo min min dii Baabá la
         (Lit: the student saw the bottle, the bottle which the man gave
         to Baabá)

It should be pointed out that although this type of relative clause often occurs as afterthought (and thus might be accounted for pragmatically), its distribution is not limited to this context. This leads to a second issue, as we shall see shortly.

In general, when the main clause of a Backward relative contains more than one NP that equally qualify as potential antecedent to the relative pronoun, and when there is no clue to which NP is the head noun, the Backward relative clause acquires an ambiguous meaning. For this reason, the sentences in (34a) would have two possible readings if the head noun had not surface in the relative clause: one consistent with the meaning indicated in the original glossing, and the other in which min would be referring to the second NP in the main clause, as indicated in (35a)

(35) a.   Tááliboo ye keó je, min ye káboo dii Baabá la
        (The student saw the man who gave the bottle to Baabá), or
        (The student who gave the bottle to Baabá saw the man)

    b.   Tááliboo ye káboo je, keó ye miñ dii Baaba la
        (The student saw the bottle which the man gave to Baabá)
    *(The student whom the man gave to Baabá saw the bottle)

The second reading of (34b), which is not impossible in principle, might be rejected on general pragmatic grounds, that is one generally gives animals and inanimate objects but not a human being to another human being (at least under normal circumstances). Because Backward relative clauses often often exhibit this kind of ambiguity, they are generally avoided in Mandingo and other Mande languages. There is one alternative to this dr rather drastic measure, and it consists precisely in repeating the head NP before min in the Backward relative clause, as shown in (34a, b), thus eliminating the ambiguity observed in (35a).

Finally, Mandingo shows a preference for allowing only one Backward relative clause per main clause, thus avoiding multiple-embedding in Backward relative clause formation. If more than one Backward relative occurs after the main clause, the preferred reading is generally one in which the main clause embeds all the Backward relatives which are in turn interpre-

ted as conjoined to one another. To see this, consider the following

sentences:

(36) a.   Sáálíú ye keó   je, miŋ ye lííbúroo saŋ, Saná ye miŋ tara
    S.   TA man-SP see wh   TA book-SP buy   S.   TA wh   find
    banta.
    outside.
    (Sáálíú saw the man who bought the book, and whom Sana found
    outside)
    ?(Sáálíú saw the man who bought the book which Saná found outside)

  b.   Sidíí   ye keó je, miŋ ye lííbúroo saŋ, Saná ye miŋ fili.
    *(Sidíí saw the man who bought the book and whom Saná lost)
    (Sidíí saw the man who bought the book which Saná lost)

In (36a) the conjoined reading is preferred over the multiple-embedding

reading partly because there is no cooccurrence restriction between tara

'find' and lííbúroo 'the book'which the DO miŋ would refer to in a multi-

ple-embedding reading. On the other hand, the coordinate reading is rejec-

ted in (36b) because keó'the man' would have tc antecedent to the second

miŋ, which is semantically and pragmatically inconsistent, since people

are more likely to lose books than human beings.

In final analysis, the preference for a coordinate reading over a mul-

tiple-embedding reading in Backward relative clauses does not seem to me

to represent a deep structure constraint in Mandingo and other Mande lan-

guages, contrary to the claim made in Bird (1968) and Dwyer (1979). This

preference seems to me to stem from a difficulty in identifying the head

noun in Backward relative clauses, since miŋ and the head noun occur in

different clauses and since other than the plural marker there is no other

clue to help identify the head noun.

Before closing, let us add that Mandingo, like other Mande languages,

does not allow mixed relativization, that is the occurrence of Forward and

Backward relative clauses with the same main clause. Given facts such as

these, one of the questions that arises is how to account for the deriva-
tion of RCs in Mandingo. That is where do they come from and what rules
are involved in their derivation ?. Before proposing a possible answer
to this question, let us review three studies that have dealt with RCF in
Mande languages, nemely Bird (1968), Bokamba & Dramé (1978) and Dwyer (1979).

4.2.1.3 <u>Bird's analysis</u>. In his analysis of RCF in Bambara, another
Western Mande language, Bird argues that Forward and Backward relatives
come from different, sources. Backward relatives would derive from (37a):

(37) a. T1: (appositional relative clause embedding)
SD: $[_{NP}$ N Num Art, #, $[_S$ X, N Num Art, Y $_S]$, # $_{NP}]$, Z
1   2   3   4   5   6   7

b. SC: $[_{NP}$ N Num Art,/ $[_S,$ X, miŋ, Y $_S]$,$_{NP}]$ Z
1   3   5   7

Cond: 1 : 4
X, Y and Z are variables which may not contain # (senten-
ce boundary), but may be equal to zero.

(38) a. T2: (rear shifting of appositional relative clauses), optional
in Bambara, obligatory in Maninka

SD: $[_S$ X $[_{NP}$ Y , / S $_{NP}]$, Z $_S]$, #
1   2   3   4

b. SC: $[_S$ X $[$ Y $]_{NP}$, Z , [/ S] , $_S]$ #
1   3   2   4
Cond: Z does not contain miŋ

To derive the surface rear-shifted relative clause, two transformations
are needed: the first changes the embedded noun into <u>miŋ</u>, as indicated
in (37b), then the rear-shifting movement rule applies on the structure
in (38a) to move the embedded clause sentence-finally, as stated in
(38b). Bird also indicates that rear-shifting is optional in Bambara but
obligatory in Maninka, an Eastern dialect of this language spoken mainly

in Eastern Mali and in Upper Volta. Similarly to rear-shifted relative clauses, Bird proposes a two-stage derivation for Forward relative clauses. Bird argues that Forward relative clauses come from an underlying "adjunctive" construction in which the relative clause is located on the right of the antecedent and is dominated by a determiner node, as can be seen in the structural description in (32a) below:

(39) a.　T3:　adjunctive relative clause embedding
SD:　X , $[_{NP}$ N , $[_D$ # , $[_S$ Y , N , ` , Z $_S]$ , #, ` $_D]$ Num] , Q
NP
　　　　　1　　2　　3　　4　5　6 · 7　　8　　　9　10

b.　SC:　X , $[_{NP}[_S$ Y , N , miɲ, Z,$_S]$ $_{NP}]$ Q
　　　　1　　　4　5　　7　　　10
Cond: X, Y, Z and Q are variables which do not contain sentence boundary markers (#).

(40) a.　T4:　Bambara obligatory front-shifting
SD:　#, $[_S$ X, $[_{NP}$ $[_S$ Y N miɲ Z $_S]$ $_{NP}]$, Q $_S]$
　　　1　2　　　　3　　　　　　4

b.　SC:　# $[_S$ Y N miɲ Z $_S]$, / , X , $[_o$] , Q $_S]$
NP
　　　1　　　3　　　2　　4
Cond: 1. X does not contain miɲ (i.e. relative clause)
　　　　2. Y or Z contains miɲ (a relative clause)

To derive front-shifted relative clauses, the right-branched embedded noun in (39a) is relative pronominalized as shown in (39b), then a final relative fronting transformation moves the relative clause containing both the relative pronoun and its antecedent in sentence-initial position, as indicated by (T4). Subsequent to the statement of (T4), Bird makes the following qualification:

(41)　　Rule T4 obligatorily shifts the embedded adjunctive clause (3) to sentence initial position if that embedded relative clause dominates another relative clause, as stated in Condition 2. However, if there has already been a relative clause shifted into sentence initial position the rule will block the P-marker from becoming a sentence.

Bird adds further that:

(42)　　　　When all the conditions are satisfied, the embedded relative clause is front-shifted, a clause intonation marker (/) is inserted between the relative clause and the base sentence, the noun phrase slot in the base sentence is filled with the pronoun ô 'that one', and lastly, <u>the relative clause is shifted from domination by the noun phrase node to domination by the sentence node.</u> (Emphasis : added, MD)

A final transformation is then added to the already long list of rules:

(43)　　　　T5 : adjunctive relative clause front-shifting
　　　　　　　　　optional in Bambara
　　　　　　　　　obligatoty in Maninka

What (41) and (42) try to accomplish is to limit to one the number of front-shifted relative clauses allowed per base sentence. A similar restriction is also suggested for rear-shifted relative clauses. Finally, notice that T3 also deletes the head noun (2) either simultaneously with or after min-pronominalization, because otherwise every appositional relative pronoun would be preceded by two antecedents. To sum up Bird's analysis, Bambara would seem to have four types of relative clauses in the surface: (i) appositional relative clauses, (ii) rear-shifted relative clauses, (iii) adjunctive relative clauses and (iv) front-shifted relative clauses. The relative clauses in (i) and (ii) would come from the same source, while (iii) and (iv) would also be derived from the same underlying structure. These two underlying representations would be the appositional and the adjunctive relative clauses respectively. Furthermore, even though Maninka has no appositional and adjunctive relative clauses, Bird treats its rear-shifted and front-shifted relative clauses the same way as in Bambara. Namely, he argues that these relative clauses must also be derived from underlying appositional and adjunctive representations, in the same fashion as Bambara relative clauses. This consti-

tutes one of the major flaws in Bird's analysis, for front-shifted and rear-shifted relative clauses being the only kinds of relative clauses allowed in Maninka, arguing that this language derives its relative clauses from underlying appositional and adjunctive embedded structures such as (37a) and (39a) simply amounts to creating unnecessary and opaque underlying representation, which are never realized synchronically in the language. Consequently, Bird's underlying representations may be helpful in explaining the facts in Bambara RCF, but they are totally uncalled for in Maninka and in Mandingo, since these two languages exhibit roughly the same kinds of relative clauses on the surface. Furthermore, as stated earlier, there is no surface evidence in Mandingo suggesting that min and its antecedent in the main clause form a single constituent when the relative clause is rear-shifted. On the other, the antecedent of a front-shifted relative clause remains a constituent of that relative clause. This is supported by the facts in (28b, d) and (31a-d). Therefore, there does not seem to be a need for deriving the head nouns anywhere other than where they appear on the surface. This point will be further strengthened when we present later restrictions on the distribution of relative clauses in Mandingo.

One important fact that Bird seems to have realized is that on the surface, front-moved relative clauses must be dominated by an S node rather than an NP node, since the relative clause is conjoined to the main clause rather than being embedded in it. However, his "domination shift" approach stated in (42) does not seem convincing since it is the whole relative clause that is being moved by the shifting without any deletion. In fact Bird's comment could have been extended to cover rear-shifted relative

clauses as well as <u>miŋ</u> and its antecedent clearly do not for an NP constituent in these clauses. Based on these observations, the analysis proposed in Bird (1968) is inadequate for the Mandingo data.

4.2.1.4 <u>Bokamba and Dramé (1978)</u>. A second analysis of RCF in a Mande language is presented in Bokamba and Dramé (1978). This analysis is more more of a progress report rather than a final solution in that it dealt only with Forward relative clauses. In this paper, it is proposed that Mandingo relative (i.e. Forward) clauses come from an underlying left-branched P-marker via the application of two major rules:

(44) RCF proper and Left Extraposition from NP. RCF proper includes three sub-rules: (1) Rel-Pronominalization, commonly known as Wh-Pronominalization; (2) Rel-Fronting; and (3) Anaphorization. This rule copies a pronoun of the fronted Rel. Pronoun into the position just vacated by the latter. Left Extraposition from NP moves an embedded relative clause cyclically to sentence initial position. All these rules must apply sequentially to the structure in which the embedded clause branches to the left of the embedding NP.

Notice that the rule of relative pronominalization does not pronominalize the embedded NP but the head. To see how this analysis works, consider the following sentence:

(45) Suŋó ye ye lííbúroo miŋ suũaa, Mamadou ye a je.
      thief-SP TA book-SP wh steal M   TA it see
      (Mamadou saw the book which the thief stole)

The underlying structure of this sentence will be represented as follows:

(46) a. [$_{S_2}$ Mamadou ye [$_{S_1}$ suŋó ye lííbúroo suũaa$_{S_1}$] lííbúroo je$_{S_2}$]

To derive the surface structure in (45), relative pronominalization will apply on S_2 and change NP_1 to the relative pronoun <u>miŋ</u>. Then relative pronoun fronting will move the relative pronoun <u>miŋ</u> into the position immediately after NP_2 leaving behind a "shadow pronoun"[4] which the rule of Anaphorization will realize as <u>a</u> 'it'. To complete the derivation, Left

Extraposition from NP will then move S₁ into sentence-initial position
and Chomsky-adjoin it to S₂. This will yield the surface structure in
(45c) below:

(45) b.

Mamadou   ye suŋó ye lííbúroo suuñaa lííbúroo je

c.

Suŋó ye lííb. miŋ suuñaa Mamadou ye   a   je
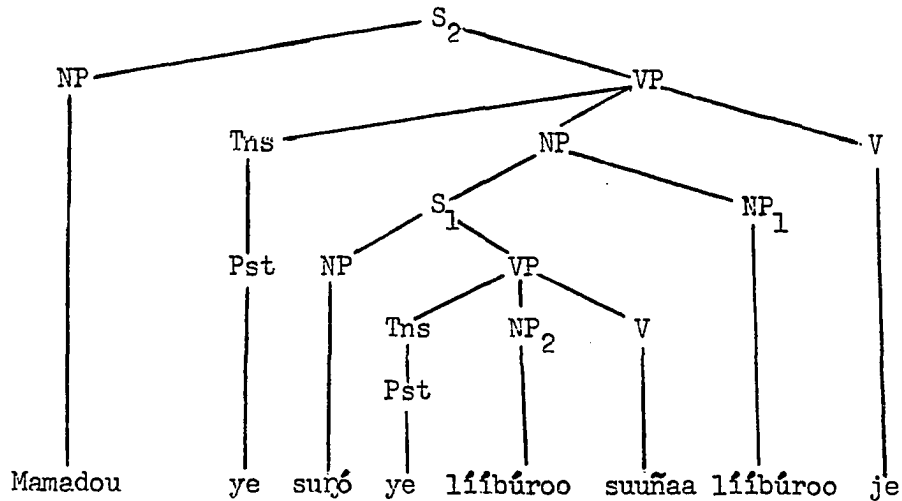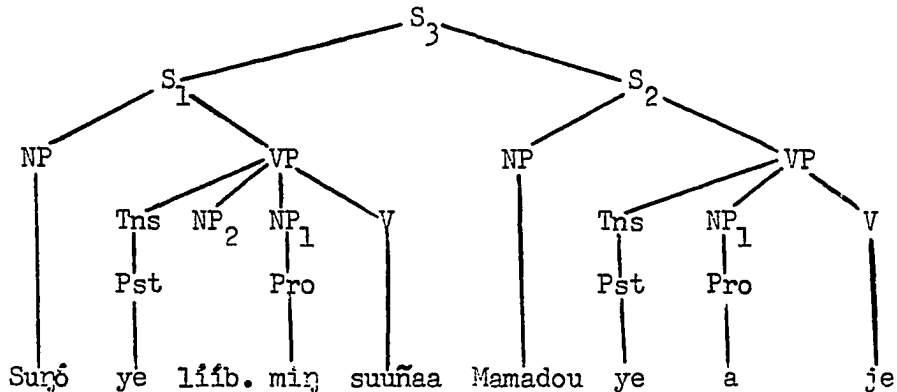
When the relative clause is embedded in a THAT - S complement structure,
Extraposition from NP may move the relative clause all the way up to
sentence initial position, or only up to the complementizer. This ex-
plains why both (46b) and (46c) are grammatical.

(46) a. [$_{S_3}$Sáálíú ye a moy [$_S$ko [$_{S_2}$Íssáá ye [$_{S_1}$Keó ye lííb. suuñaa$_{S_1}$] keó

je $_{S2}$] $_S$] $_{S_3}$]

b.   Sáálíú ye a moy (ko) keó miŋ ye lííb. suunaa, Íssáá ye a je
      S.   TA it hear that man wh TA book   steal I.   TA him see
      (Sáálíú heard that Íssáá saw the man who stole the book)

c. Keó miŋ ye lííbúroo suuñaa, Sáálíú ye a moy (kó),I. ye a je
(Lit: The man who stole the book, Sáálíú heard that Issáá saw
him)
(Sáálíú heard that Issáá saw the man who stole the book)

When there is multiple-embedding, the surface order of Forward relative

clauses is the mirror-image order of their embedding. That is the most

deeply embedded relative clause occurs first,followed by the second most

deeply embedded and so on. To account for this order, it is proposed that

Forward relative clause formation applies cyclically and that the rule of

Relative clause fronting moves the relative clause only one cycle up and

Chomsky adjoins it to the first S node met. To see how this will work,

consider the derivation of (47a) from the deep structure in (47b):

(47) a. Issáá ye lííbúroo miŋ saŋ, suŋó miŋ ye a suuñaa, Sáálíú ye a je
(Lit: the book that Issaa bought, the thief who stole, Sáálíú
saw him)

b. $[_{S_3}$ Sáálíú ye $[_{S_2}$ suŋó ye$[_{S_1}$ Issáá ye lííbúroo saŋ $_{S_1}]$ lííbúroo
suuñaa $_{S_2}]$ suŋó je $_{S_3}]$

Assuming that Relative Pronominalization, Relative Fronting and Anaphori-

zation apply sequentially on each cycle in the order indicated in (44),

to derive (47a), Left Extraposition from NP will move S_1 up one cycle and

Chomsky adjoin it to S_2. At this point the two relative clauses will oc-

cur in the order S_1 S_2 but they will still be embedded in S_3. To obtain

the correct S_1 S_2 S_3 order exhibited in (47a), the newly Chomsky adjoined

structure will have to be moved up sentence initially and be Chomky ad-

joined to the main clause. Sentences involving more embedding Forward

relative clauses will be derived in a similar fashion. A number of cri-

ticisms have been formulated against this analysis, particularly in Dwyer

(1979). To understand the nature of these criticisms, let us examine

Dwyer's paper.

4.2.1.5 <u>Dwyer's analysis.</u> In his analysis, based primarily on comparative and diachronic data from other Mande languages, Dwyer rejects the solution proposed in Bokamba and Dramé on the following grounds: (i) the rule of relative pronominalization"converts the head noun rather than the subordinate noun into a relative pronoun", (ii) "Relative Fronting moves the relative pronoun into a position which is identical to that normally occupied by the demonstrative", (iii) Left Extraposition has the effect of"converting the relative clause into a coordinate structure". Dwyer adds further that " the putative relative pronoun is seen as a demonstrative which is closely related or perhaps derived from the demonstrative meaning <u>that</u>". With respect to the derivation of <u>miŋ</u>, Dwyer claims that "the restrictive marker need not be inserted by transformation for it has lexical meaning which is essentially identical to the demonstrative pronoun from which it is so closely linked". Based on these observations, Dwyer proposes a coordinate deep structure such as the following for Mandingo relative clauses:

(48) a.

Issáá ye liibúroo miŋ saŋ suŋó miŋ ye a suuñaa Sáálíú ye a je
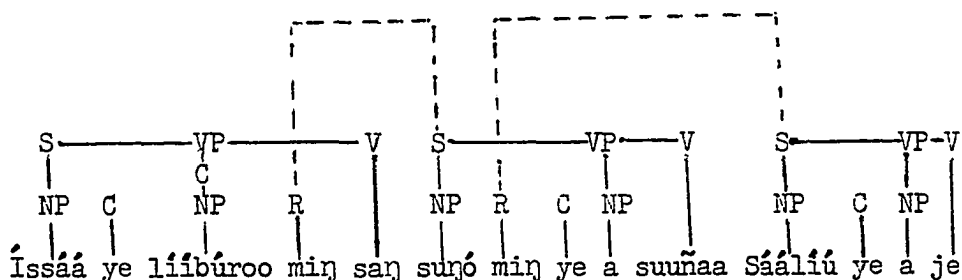
Finally Dwyer explains the occurrence of the anaphoric pronoun as an instance of simple anaphorization of the repeated occurrence of a coreferential NP.

Although Dwyer's criticisms reflect a sincere desire to derive Mande

relative clauses from sources that are as close to the surface structure
as possible, thus avoiding any kind of opaque derivation, his justifica-
tions are objectinable on more than one account. First, there is no syn-
chronic evidence in Mandingo to the claim relative to the similarity in
meaning and distribution between min and the demonstrative for that, name-
ly wǒ. As shown in Chapter II, this demonstrative always occurs before
the noun it accompanies but never after it. In addition wo never bears
the plural marker when it occurs with a noun. If the demonstrative analy-
sis is to be adopted, it will be hard to explain these distributional
facts. Furthermore, in a language such as Bambara, in which nested rela-
tive clauses occur to a certain extent and parallel in meaning with For-
ward relative clauses, this parallelism will have to be treated as acci-
dental.

One notational device that could be used within the Bokamba and Dramé
(1978) framework to differentiate on the surface regular coordinate struc-
tures from relative clause constructions, would be the $\bar{\bar{S}}$ notation. It
could be proposed that relative constructions must be dominated by an $\bar{\bar{S}}$
node while relative clauses would be dominated by an $\bar{S}$ node. This device
will not express the semantic embedding relation that still holds between
the relative clause and the main clause (although it is structurally des-
troyed after Left Extraposition from NP), but it serves to indicate that
there is still a subordination relationship between the two. If such an
analysis is to be adopted, it will acurately account for Forward relative
clauses. As for Backward relative clauses, their occurrence can be attri-
buted to Pragmatics, as suggested in connection with (34a-b).

An alternative to Bird (1968), Bokamba (1978) and Dwyer (1979), could

consist in inserting min as a focus marker and to propose a .unitary deep
structure for Forward and Backward relative clauses. This solution will
be explored in the next section.

4.2.1.6 An alternative solution: the insertion analysis. This solution
will be based on the following assumptions: (i) Given the synonymy general-
ly observed between Forward and Backward relative clauses, and given the
parallelism between the application of both Forward and Backward relativi-
zation to all position in the Accessibility Hierarchy, it is desirable
that Forward and Backward relative clauses should be derived from the same
underlying representation; (ii) min is probably not a relative pronoun,
specially in light of its distribution in Backward relative clauses. Min
must be analyzed as a relative marker that is inserted[7] by rule similarly
to the cleft marker le discussed earlier, to add some emphasis to the NP
at the right of which it occurs. We will tentatively adopt the symbol
S-rel to differentiate relative clauses from their main clauses. In such
a framework, the Forward and Backward relative clauses in (49a & b) respec-
tively would be derived from an underlying representation as in (49c):

(49) a.   Suŋólu minnu ye lííbúroo suuñaa, Issáá ye i je
           (Issaa saw the thieves who stole the book)

     b.   Ìssáá ye suŋólu je , mínnu ye lííbúroo suuñaa
           (Ìssáá saw the thieves who stole the book)

     c. $[_{s2}[_{S1}$ Ìssáá ye suŋólu je] $[_{S-rel}$ suŋólu ye lííbúroo suuñaa]]

To derive Backward relative clauses, the following rules will be needed:
(i) min-Insertion after the antecedent in the relative clause, and (ii)
optional antecedent deletion in the relative clause. The optionality of
this rule will account for instances where the head noun surfaces in the
relative clauses as examplified in (34a, b). To derive Forward relative
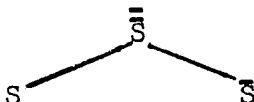
clauses, the relative clause is optionally moved sentence-initially by a relative fronting rule followed by Anaphorization which turns the main clause occurrence of the head noun into an anaphoric pronoun. To derive multiply-embedded clauses, we will assume that the fronting rule moves the relative clauses sequentially as proposed in Bokamba and Dramé (1978), that is it moves it only up to the next sentence on the left and Chomky adjoin it to it and them moves the newly created structure rightward one more S node and so on. We will further assume that a later rule will optionally assign the plural marker to min when it is preceded by a plural NP. Notice that although Relative fronting is different from both Extraposition and Left Extraposition from NP as proposed in Bokamba and Dramé (1978) the rule applies in a manner somewhat similar to the latter since they both move the relative clause containing min and the head noun into sentence-initial position. In any case the rule of relative clause fronting as well as min-Insertion is optional, therefore its application does not create any opacity, unlike Left Extraposition from NP as proposed in Bokamba and Dramé (1978). Anaphorization on the other hand is attested elsewhere in the language, so that its inclusion in RCF does not involve creating a new rule. The only rule that seems to need further justification is probably min-Insertion. The question that arises is: is there any evidence other than the distribution of min in Backward relative clauses to support the view that min should not be derived by relative pronominalization but via insertion rule ?   Recall that relative pronominalization requires at least two clauses: a main clause in which the head noun is located and an embedded clause containing the coreferential NP to be relativized. If we can show that the occurrence of min does not always

involve this kind of bi-sentential construction, then we would have proven that min is not a relative pronoun, and therefore has to be inserted by some sort of focus rule.

It so happens that such a construction exists in Mandingo. In this occurrence, the sentence containing min constitutes a complete statement which needs no main clause. In addition, min adds to the noun it follows a focus reading similar to that assigned by the cleft marker le. Finally, in this function, min never agrees in plural and can occur with a proper noun, a common noun or a pronoun, as illustrated in (50a-c) respectively:

(50) a.   Músáá min ye tántáŋ-kósoo   noo !
           M.   ?   TA drum-beating-SP know how
        ((Músáá does know how to play the drum !)

     b.   A ye siiséo   min   kanatee !
         he TA chicken-SP ?   slaughter
        (He did slaughter the chicken !)

     c.   A ye wo min baŋ   kara la !
         he TA that ?   finish sew   TA
        (He has finished sewing that already !)

The meaning the focus min adds to the simple sentence by occurring after one of its constituent NPs can only be approximated in English, however its occurrence in sentences such as (50a-c) seems to clearly indicate that min may not be a relative pronoun since the structural description for the derivation of a relative pronoun is not met in either sentence. Assuming that this conclusion is correct, the underlying representation in (49c) can be translated into an $\bar{\bar{S}}$ schema as follows:

(51) a. $\bar{\bar{S}}$ $\longrightarrow$ S $\bar{S}$

     b.

$$\bar{\bar{S}} \diagup S \qquad \diagdown \bar{S}$$

Although this schema does not capture embedding, contrary to the view gene-

rally held in analyzing RCF in other languages, it presents certain ad-
vantages. First, it enables to make a distinction between an S dominating
a regular coordinate structure (i.e. S ⟶ S conj S) and an S dominating
two clauses that look on the surface as regularly conjoined structures but
are in fact a subordinate and a main clause. In so doing, it captures the
idea that there is still a subordinate relationship between the two clauses
even though the surface representation does not reflect structurally the
existence of any embedding relationship between the main clause and the
relative clause. Furthermore, it is consistent with the fact that the re-
lative clause and its head NP never assumes grammatical functions general-
ly associated with NPhood, such as being a subject, a direct or indirect
object and so on. It also provides a unitary account for both Forward and
Backward relative clauses. Finally, its adoption would permit the formula-
tion of a single rule for deriving both relative and complement clauses.

4.3.1 Complementation[5]. Mandingo has two types of complementizers.
Among the complementizers of type I, also known as clause-initial (CI)
complementizers, five will be dealt with here. They are : kó 'that',fó
'if, whether, that', nìŋ 'if, when', kabíriŋ '(ever) since, when', and jan-
nìŋ 'before'. Type II complementizers (henceforth called non-initial (NI)'
complementizers) are : dá-mìŋ 'where', ñá-mìŋ 'how' and tumá-mìŋ 'when'.
Consider first clause-initial complementizers.

4.3.1.1 Clause-initial complementizers. The occurrence of these
complementizers is examplified in (52a-e) below:

(52) a.   Músáá   ye   a loŋ   (kó)   kídoo   soso   ta   (le)
          M.   TA   it know that   gun-SP load   TA   CL
          (Músáá knows that the gun is loaded)

b.   Músáá ye ń niniŋkaa <u>fó</u>   kídoo soso ta (le)
        M.   TA me ask   if/whether gun-SP load TA CL
        (Músáá asked me if the gun was loaded)

c.   Músáá te   a   lon na <u>níŋ</u> kídoo   soso   ta   (le)
        M.   Neg/TA it know TA <u>if</u> gun-SP   load   TA   CL
        (Músáá will not know if the gun is loaded)

d.   A nene máŋ funti   <u>kabírín</u> wotóó ye a la wulóó faa
        he never Neg/TA **go out** <u>ever since</u> car-SP TA he of dog-SP kill
        (He never went out <u>ever since</u> a car killed his dog)

e.   I la samatóó wuraŋ <u>jannín</u> í ka duŋ búŋo kono
        you of shoe-SP take off before you TA enter room-SP inside
        (Take off your shoes before you enter the room)

Sometimes more than one CI complementizers may occur in the same environ-

ment, however, they do not always share the same distribution, as can be

seen in (53):

(53) a.   Músáá   laa ta $\left\{\begin{array}{l}\text{*kabírín} \\ \text{*fó} \\ \text{(kó)} \\ \text{*níŋ} \\ \text{*janniŋ}\end{array}\right\}$ kídoo soso ta (le)
        M   Certain TA   gun-SP load TA   CL

    b.   Músáá ye ń ñiniŋkaa $\left\{\begin{array}{l}\text{kabiriŋ} \\ \text{*ko} \\ \underline{\text{fó}} \\ \text{*niŋ} \\ \text{*janniŋ}\end{array}\right\}$ kídoo soso ta
        M.   TA me   ask   gun-SP load TA

    c.   N si   naa   a je $\left\{\begin{array}{l}\text{*kabírín} \\ \text{*ko} \\ \text{niŋ} \\ \text{fo} \\ \text{jannín}\end{array}\right\}$ í faa-maa be son na !
        we Fut come it see   you father-MP Fut agree TA

Various factors combine to explain the grammaticality restrictions in

(53a-c). The ungrammatical structures in (53a) are due to the fact that

<u>laa</u> 'be certain' cannot cooccur with either <u>kabírín, fó, níŋ</u> or <u>jannín.</u>

A similar observation can be made for the verb <u>ñiniŋkaa</u> ' ask' and <u>kó</u> and

<u>níŋ</u> in (53b). However, the ill-formedness of <u>janniŋ</u> in this sentence is

due to a wrong tense agreement in the embedded clause, for when the verb

is used in the Present Habitual as in (54a) below, the verb <u>ñiniŋkaa</u> can

cooccur with this complementizer. Kó is ungrammatical in (53c) because
of the future tense in the main clause; the same thing is true for kabírin
as we can observe in (54b, c) respectively.

(54) a. Músáá ye[6] ñ ñinirkaa <u>jannín</u> kídoo ka soso
         Músáá TA me ask <u>before</u> gun-SP Pt Hab load
         (Músáá asked me before the gun was loaded)

    b. ŋa a je kó í faa-maa son ta (le)
        we/TA it see that you father-MP agree TA CL
        (We see/saw that your father agreed)

    c. ŋa a je <u>kabírin</u> í faa-maa son ta
        we/TA it see <u>when</u> you father-MP agree TA
        (We saw it when your father agreed)

From these observations it appears that there are cooccurrence restric-
tions between verbs and complementizers in Mandingo, since not every verb
takes every complementizer. Therefore, it will be necessary to either sub-
categorize complementizers with respect to verbs, as suggested by Lakoff
(1971) and others, or subcategorize verbs with respect to complementizers
as suggested by **Kiparsky and Kiparsky** (1970), Bresnan (1972) and Karttunen
(1974). In a study on predicate complement clauses in Bambara, a closely
related Mande language, Amadou Touré (1975) presents an analysis that fol-
lows the semantic categorization proposed by Karttunen for English. It
is not known at this point how applicable a similar analysis could be to
the Mandingo data, and the issue cannot be settled here without going
beyond the scope of the present study. In addition to verb class, the
sentences in (52a) through (54c) also show that the choice of the comple-
mentizer is sensitive to the tense of the main verb. A final feature that
that bears crucially on the occurrence of complementizers is negation.
When sentence (52a) is negated, it admits both fó and kó but not nin, as
can be observed in (55a,b, c) respectively. Conversely, when (54b) is

negated , as is done in (55a-c), neither <u>kó</u> nor <u>fó</u> or <u>nín</u> is admitted.

(55) a.   Músáá man a lon (kó) kídoo soso ta (le)
       M. Neg/TA it know that gun-SP load TA CL
       (Músáá does not know that the gun is loaded)

    b.   Músáá man a lon <u>fó</u> kídoo soso ta (le)
        (Músáá does not know <u>if</u> the gun is loaded)

    c.   *Músáá man a lon <u>nín</u> kídoo soso ta (le)
        (Músáá does not know <u>if</u> the gun is loaded)

(56) a.   *M mán a je <u>kó</u> í faa-maa son ta (le)
       (We did not see <u>that</u> your father agreed)

    b.   *M mán a je <u>fó</u> í faa-maa son ta (le)
       (We did not see <u>whether</u> your father agreed)

    c.   *M mán a je <u>nín</u> í faa-maa son ta (le)
       (We did not see <u>if</u> your father agreed)

Given the cooccurrence restrictions observed thus far, and given the fact that the semantic class of the main verb, its tense and the presence or absence of negation with the main verb bear crucially not only on the acceptability of various complementizers, but on the propositional content of the embedded clause, one is inclined toward a base-generation for complementizers, as proposed by Bresnan (1972), assuming that transformations are meaning-preserving operations as suggested in Partee (1971).

Having settled the issue of level of derivation, the next question that we shall address ourselves to is how do we account for the pronoun <u>a</u> 'it' that surfaces in the direct object position of (52a) repeated below for convenience.

(57) a.   Músáá ye <u>a</u> lon (kó) kídoo soso ta (le)
       M.   TA <u>it</u> know that gun-SP load TA CL
       (Lit: Músáá knows <u>it</u> that the gun is loaded)
       (Músáá knows that the gun is loaded)

    b.   *Músáá ye Ø lon (kó) kídoo soso ta (le)

As attested by the ungrammaticality of (55b), this pronoun is not omissi-

ble. This fact raises two questions: (i) how do we derive the pronoun a;'
(ii) how do we derive the object complement postverbally given the fact
that regular direct object complements always occur preverbally, a posi-
tion usurped by a in this case. Two alternative solutions can be sugges-
ted: (a) to assume that a is a dummy, with no semantic content, generated
in the base to fill the DO position, because for some reason (to be speci-
fied), the object complement cannot appear in this position, or (b) to as-
sume that it is derived transformationally subsequent to a movement of
the complement clause to the right. Let us examine these two proposals
in turn.

If a is to be derived transformationally, then the deep structure of
(57a) would look as follows:

(58) a.


```
                        S₂
         NP₁                      VP
              TA          NP₂          V
                           S
                   COMP              S₁

        Músáá   ye    kó    kídoo  soso  ta (le) loŋ
```
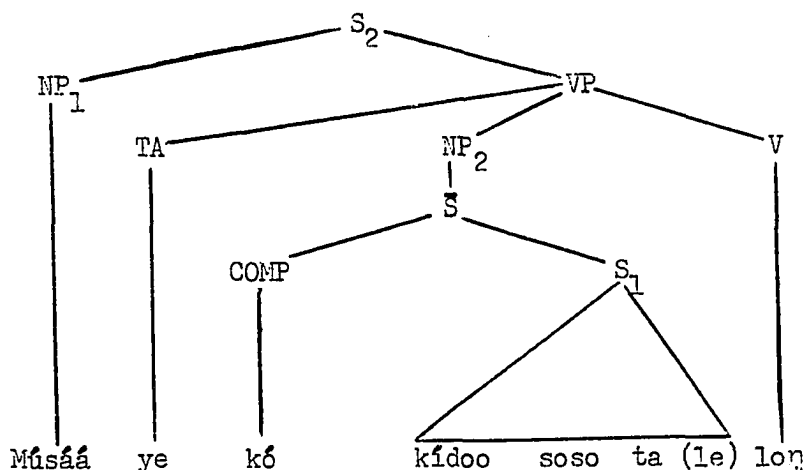
To dirive the correct surface structure, an obligatory right-dislocation
rule would apply to NP_2 and sister-adjoin it to VP; subsequent to this mo-
vement, a pronoun copy of NP_2 would be created the position just vacated
by NP_2. The result of this operation would yield the surface structure
in (57a), represented by the P-marker in (58b). Such an approach would
not be unprecedented in Mande languages, since it has been adopted by

b.

S₂

NP₁   VP

TA   NP₂   V   NP₂

COMP   S

S₁

Mûsáá   ye   a   loŋ   kó   kídoo   soso   ta   (le)
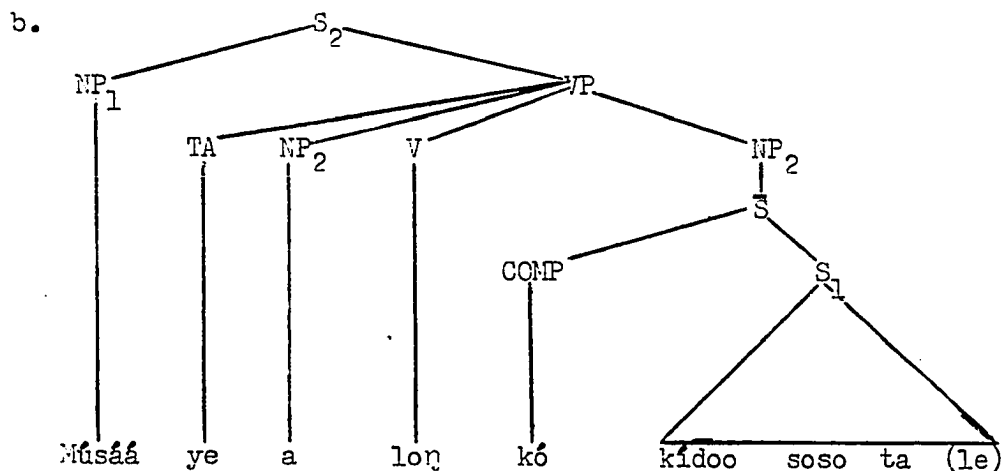
Touré (1975) for the derivation of Bambara object complement clauses. It also follows the intuitive notion that object complement clauses general-ly having the reading of direct object complements, they ought to be ge-nerated in DO position in Mandingo, that is preverbally. Furthermore, to require that the moved complement clause leave a pronoun copy in its ini-tial location is consistent with the fact that only movement rules that leave a replacive pronoun are allowed in this language, as demonstrated in Chapter III.

Though attractive, this solution presents a major flaw in that it would' involve a derivation from an ungrammatical deep structure, as attested in (58c) the underlying structure for (57a).

(58) c.   *[$_{S_2}$ Mûsáá   ye [$_{NP_2}$ [$_S$ kó kídoo soso ta (le)$_S$] NP₂] loŋ $_{S_2}$]

That is, while there is no explicit statement in the current theory preven-ting the derivation of Ss from ungrammatical Ss, the practice seems unusual. Furthermore, if the movement analysis were to be adopted, right-dislocation would have to be an obligatory rule, which is not supported elsewhere in in the language.

In light of this, a movement analysis such as the one outlined above will not be favored.

If, on the other hand, the complement clause is to be generated post-verbally, the deep structure of (57a) will look like (58a):

(59) a.

Mûsáá ye a lòŋ kó kídoo soso ta (le)
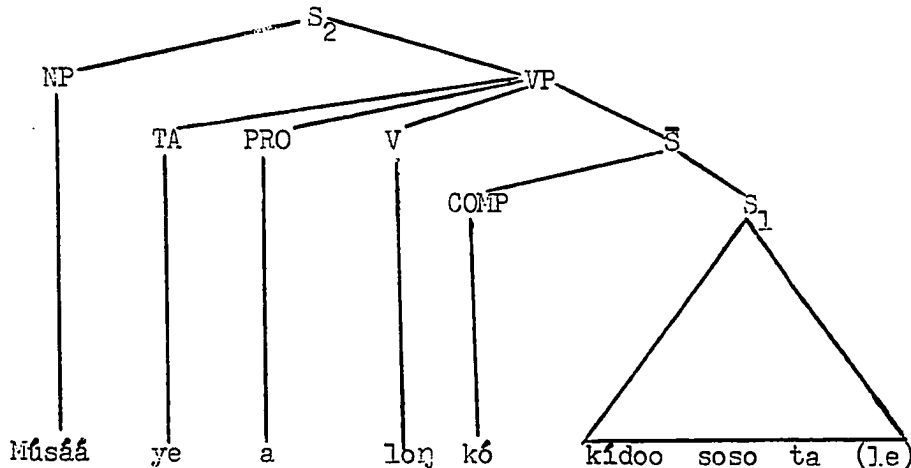
PRO will be, as mentioned earlier, a dummy pronoun, generated in the base to occupy the direct object position, since, as shown in (58d), complement clauses cannot appear in DO position in this language. The requirement that the DO position must be filled stems from the fact that transitive verbs are strongly transitive, that is they do not preserve their non-passive reading when their DO is missing, as attested in the readings of (60b) below:

(60) a.　Saajío　ye　ñaamóó　ñimi
shepp-SP TA　grass-SP　chew/eat
(The sheep ate the grass)

b.　Saajío　ye　∅　ñimi
*(The sheep ate)
(That the sheep be eaten)

c.　Saajío　ye　ñímíroo　ke
Sheep-SP TA　eat-NT?-SP　do
(The sheep did (some) eating, or the sheep ate)

The omission of the direct object in (60b) leads to a passive reading.

To obtain the absolute transitive reading 'the sheep ate', the verb ñimi has to be nominalized and used as the direct object of the verb ke 'do', which confirms our contention that transitive verbs always require a surface direct object.

A second piece of evidence in suppesrt of generating a in DO position in the base is passive. Since passivization generally involves the movement of a subject into object position preceded by a by preposition, while the original object becomes subject and tne verb is passivized, one would expect a to surface in subject position after passivization has applied to (61a).

(61) a.   Moo   dóó   yé a loŋ kó lúntáŋo táá tá (le)
            person some   TA it know that visitor-SP leave TA CL
            (Someone knows that the visitor has left)

     b.   A lon   ta kó lúntáŋo   táá tá (le)
           It know TA that vis.-SP leave TA   CL
           (It is known that the visitor has left)

     c.   *Kó lúntáŋo táá ta (le) lon ta
           That vis.-SP leave TA CL known TA
           (That the visitor has left is known)

As shown in (61b,c) respectively, the pronoun a can appear in subject position after passivization and unspecifued agent deletion, but the complement clause cannot.

Finally, a never surfaces when the main verb is intransitive, like lafi 'want', in (62):

(62) a.   Músáá lafi ta   dendikóó la
            M.   want TA   shirt-SP p
            (Músáá wants the shirt)
                        ye dendikóó lafi
     b.   *Músáá   dendikóó lafi ta (la)

     c.   Músáá lafi ta fó lúntáŋo si taa
           Músáá want TA COMP vis.-SP TA leave
           (Músáá wants that the visitor leave)

d. *Músáá $\left\{\begin{array}{ll}\text{ye} & \text{a lafi} \\ \text{a lafi} & \text{ta (la)}\end{array}\right\}$ fó lúntáŋo si taa

As expected, the pronoun <u>a</u> cannot surface with the verb <u>lafi</u> in (62d), because, as attested by the ungrammaticality of (62b), this verb is intransitive. It follows from this observation that the presence of <u>a</u> in sentences such as (57a) must be linked to the fact that the main verb in this sentence is transitive. In addition, the simple fact that we can obtain an object complement clause with intransitive main verbs is evidence that it is not a direct object underlyingly, and thus should not be generated in DO position in Mandingo.

So far only clause-initial complentizers have been dealt with. However, unlike many languages, Mandingo has a second type of complementizers, namely non-clause-initial complementizers, as we shall see in the next section.

4.3.1.2 <u>Non-Clause-Initial Complementizers</u>. In addition to displaying the expletive pronoun <u>a</u> in object position when the main verb is transitive, these complementizers share the following characteristics: First, they all end in <u>min</u>, which makes them resemble English Wh-Complementizers, since <u>miŋ</u> is the relative marker in this language. The ocurrence of these complementizers is examplified in (63a-c):

(63) a. Músáá ye a loŋ $\left\{\begin{array}{l}\text{f*kó}\\ \text{Ø}\end{array}\right\}$ lúntáŋo táá tá <u>ñá-min</u>
           M.   TA it know   visitor-SP leave TA <u>how</u>
        (Músáá knows how the visitor left/went)

b. Músáá ye a loŋ $\left\{\begin{array}{l}\text{f*kó}\\ \text{Ø}\end{array}\right\}$ lúntáŋo táá tá <u>tumá-min</u>
        (Músáá knows <u>when</u> the visitor left)

c. Músáá ye a   loŋ $\left\{\begin{array}{l}\text{f*kó}\\ \text{Ø}\end{array}\right\}$ lúntáŋo táá tá <u>dá-min</u>
        (Músáá knows <u>where</u> the visitor went)

The three words <u>ñá-min</u> 'how', <u>tumá-min</u> 'when' and <u>dá-min</u> 'where' seem to function as genuine complementizers, since <u>kó</u> 'that' which was previous-

ly accepted by the verb lon in the same tense in (57a) cannot cooccur

with this verb when ñá-min, tumá-min or dá-min is present in the comple-

ment clause. The arguments that were presented with regard to the choice

of initial complementizers being affected by verb class, tense and nega-

tion also apply to non-initial complementizers; thus they will not be

repeated here. Consequently, to the extent that the base-generation of

initial complentizers is accepted, min-complementizers must also be gene-

rated in the base postverbally.

The second characteristic common to min-complementizers is that they

never occur clause-initially. When a min-complementizer is moved into

clause-initial position in the embedded clause, the meaning obtained is

one in which the complementizer is a constituent of the higher clause,

making this clause a subordinate clause in need of a main clause. Eviden-

ce that the fronted complementizer is no longer a constituent of the lower

clause is that that clause takes an independent complementizer, as exam-

plified in (64a-c):

(64) a.   Músáá ye a lón ñá-min (kó) lúntáno táá tá (le)
          M.   TA it know how   that visitor-SP leave TA CL
          (... how Músáá knew that the visitor has left)

     b.   Músáá ye a lón tumá-min (kó) lúntáno táá tá (le)
          (...When Músáá knew that the visitor has left)

     c.   Músáá ye a lón dá-min (kó) lúntáno tááa tá (le)
          (...where Músáá knew that the visitor has left)

By occurring at the end of the higher clause, the min-complementizer makes

it subordinate, which is natural, given its distributional characteristic.

The sentences in (64) need to be embedded in a higher clause to be com-

plete. This is illustrated in (65) below:

(65) a. Safíí ñina ta Músáá ye a lóŋ $\begin{Bmatrix} \text{tumá-miŋ} \\ \text{ña-miŋ} \\ \text{dá-miŋ} \end{Bmatrix}$ (kó) lúntáɔo taa ta
S. forget TA M TA it kn that Vis. SP leave TA
(Safíí forgot when/how/where Músáá knew that the visitor has left)

Third, no miŋ-complementizer is omissible. In fact, only kó is omissible in this language, so that whenever there is a missing complementizer it is automatically interpreted as kó.

Fourth, miŋ-complement clauses are preferred in their nominalized forms, shown in (66a-c).

(66) a. Músáá ye lúntáɔo táá-ñaa   loŋ
M. TA visitor-SP leave manner/way know
(Lit: Músáá knows the visitor's manner/way of going)

b. Músáá ye lúntáɔo táá-túmoo   loŋ
M. TA vis.-SP leave time-SP kknow
(Músáá knows the visitor's leaving/departure time)

c. Músáá ye lúntáɔo táá-dúlaa loŋ
M. TA vis.-SP go place-SP know
(Músáá knows the visitor's whereabouts)

Finally, like complementizer-initial clauses, the clauses in which miŋ-complementizers occur cannot function as subjects or direct objects, as evidenced by the ungrammatical sentences in (67a, b) respectively:

(67) a. *Músáá ye [lúntáɔo táá tá $\begin{Bmatrix} \text{dá-miŋ} \\ \text{tumá-miŋ} \\ \text{dá-miŋ} \end{Bmatrix}$] loŋ
Subj TA   DO   V

b. *[Lúntáɔo táá ta $\begin{Bmatrix} \text{dá-miŋ} \\ \text{tumá-miŋ} \\ \text{ña-miŋ} \end{Bmatrix}$] ye ñ jaakali
Subj   TA DO V
(Where/when/how the visitor left/went baffled me)

c. [Lúntáɔo táá tá $\begin{Bmatrix} \text{dá-miŋ} \\ \text{tumá-miŋ} \\ \text{dá-miŋ} \end{Bmatrix}$] , wó ye ñ jaakali
(Where/when/how the visitor left/went, that baffled me

Sentences (67a & b) are ungrammatical because the complement clause occupies respectively a direct object and subject positions. The only way out of (67a) is to generate the complement clause postverbally and let

the expletive pronoun a occupy the DO position, as examplified in (63a-c).
Similarly, the only way the subject complement clause in (67b) can be made
grammatical is by positioning it on the left, in some sort of focus envi-
ronment,while the demonstrative wo 'that' functions as the real subject.
A similar phenomenon has already been observed with complementizer-initial
clauses.

Given such a distribution, two possible analyses come to mind for the
derivation of miŋ-complement clauses. The most straightforward would be to
consider miŋ-complementizers as regular complementizers, and device some
mechanism to generate them in the base. Whether they should be generated
separately or together with clause-initial complementizers is an issue to
be sttled somehow. The second alternative would be to treat them as ins-
tances of relative clause formation; this would be based on the fact that
miŋ functions independently as a relative marker in this language. Such
an analysis would consider the first morpheme in each miŋ complementizer
as a separate NP. Let us examine these two alternatives starting with
the relative clause analysis.

If miŋ-complementizers were legitimate relative markers, one would
expect the embedded clause to be able to occur on the left as well in a
manner similar to front shifted relative clauses. However, as attested
by the ungrammaticality of (68a), this is impossible in Mandingo. The
only front-shifted occurrence of miŋ-clauses is one in which the embed-
ded clause represents an echo question to which the main clause would
be the answer, as illustrated in (68b).

(68) a. *[_S Lúntáŋo táá tá dá-miŋ] ñ maŋ a loŋ

b.　　Lúntáro táá tá dá-miŋ ? M̌ máŋ a loŋ.
　　　(Where the visitor went ? I don't know)

In addition if miŋ-complementizers were to be broken into a structure

formed by NP ✦ miŋ , a very important constraint on relativization would

be violated, namely only specified NPs can be relativized in this langua-

ge. As evidenced by the segmental and suprasegmental shapes of their

final syllable, tumá, ñaa, dáá (and not ñá and dá) are the unspecified

forms of tumóo 'the period', ñáa 'the eye, the manner/way', dáa 'the door,

the mouth, the opening'. Historically, the NP ✦ miŋ analysis is undoub-

tedly correct. However, there is no synchronic evidence in support of

breaking these complementizers into an NP ✦ miŋ structure; in fact ñá-miŋ

and dá-miŋ are completely frozen and would not make much sense if broken

down, since dá and ñá are no valid nouns. In light of this evidence, the

relative clause analysis must be abandoned in favor of the complementizer

treatment.

4.3.1.4 The deep structure of complement clauses. Since miŋ-comple-

mentizers never occur clause-initially, Mandingo can rightfully be treated

as a language that has two types of complementizers. The issue then is

how to generate miŋ-complementizers in the deep structures. Two alterna-

tive solutions can be suggested: (i) let the phrase structure rules gene-

rate all complementizers clause-initially and have miŋ-complementizers

moved postverbally by a later rule, or (ii) generate the two complementi-

zer types separately in their respective surface locations. Let us exa-

mine these two solutions in turn starting with the second.

If the second alternative is to be adopted, both complement clause

types could be generated by a single-two-part phrase structure rule such

as (69) below:

(69) a.   S̄ $\longrightarrow$ $\begin{Bmatrix} \text{COMPx} & \text{S} \\ \text{S} & \text{COMPy} & \text{Z} \end{Bmatrix}$

   b.   COMPx $\longrightarrow$ (kó, fó, nîŋ, kabíríŋ, janníŋ)

   c.   COMPy $\longrightarrow$ (ñá-miŋ, tumá-miŋ , dá-miŋ)

Under this formulation, (69) should be able to generate most if not all

Mandingo complement clauses. The variable Z stands for materials such as

adverbial constructions that tend to occur clause-finally after miŋ-com-

plementizers as shown in (70):

(70) a.   Músáá ye a loŋ Karím taa ta $\begin{Bmatrix} \text{*kúnuŋ} & \underline{\text{dá-miŋ}} \\ \text{dá-miŋ} & \underline{\text{kúnuŋ}} \end{Bmatrix}$
          (Músáá knows where Karim went <u>yesterday</u>)

Rule (69) recognizes that Mandingo has two types of complement clauses ,

this based on the surface distributional characteristics of their comple-

mentizers. However, as we saw in (57), (61) and (67), and as we shall see

later, the two types of complement clauses share a striking similarity

which is their inability to function as subject or direct object. This

suggests that there is a potential generalization on complement clauses

that must be captured by the grammar. Within the framework just examined

this similarity will be treated as accidental. The ideal solution then

would be the first alternative, namely the one that argues for deriving

both complementizer types clause-initially and have miŋ-complementizers

moved by a later rule to a position after the verb phrase. The phrase

structure rule needed then for the derivation of Mandingo complement

clauses is S̄, as proposed by Bresnan (1972), namely:

(71)   S̄ $\longrightarrow$ COMP   S

One advantage of the adoption of this rule is that it can be extended to

cover relative clauses as well, if we assume that Forward relative clauses

derive from an underlying Backward structure. Under this analysis,rela-

tive clauses will be considered as subordinate clauses with an empty COMP.

Further evidence in support of this unitiary analysis is that both relative

and complement clauses cannot be subject, direct or indirect object, a lo-

cative or object of comparative particle. The sentences in (72) show that

both complement and relative clauses cannot function as subjects and DO.

(72) a.   *[$_{S-rel}$Sunó miŋ ye líibúroo suuñaa] ye Issáá je
                      Subj   , TA DO V
           ([The thief who stole the book]saw Issáá)

      b.   *Paate ye [$_{S-rel}$dánnoo miŋ ye jatóó faa] kontoŋ
            Subj TA   DO   V
           (Paaté greeted [the hunter who killed the lion])

      c.   *[Kó a si ñiŋ líibúroo baŋ] ye ń terendi
                    Subj   TA DO V
           ([That he would finish this book] surprised me)

      d.   *Sáálíú ye [kó kídoo soso ta] loŋ
            Subj TA   DO   V
           (Sáálíú knows [that the gun is loaded])

Similarly, complement and relative clauses cannot be indirect objects, lo-

catives or objects of the comparative particle, as evidenced by the ungram-

maticality of (73a,b), (74a,b) and (75a,b) respectively:

(73).a.   *N ñantá n na bálúo seyi la [kó Álá balafaa ta n ye] la
           we must we of surviv. att. TA that G. mercy TA we on to
           (We must attribute our survival to [(the fact) that God had
           mercy on us)

      b.   *A ye kumfáá yitandi [$_{S-rel}$musóó miŋ ye dendika kóyoo duŋ] la
            he TA shop-SP show   wóm-SP who TA dress white-SP wear P
           (He showed the shop to [the woman who wore the white dress])

(74) a.   *A be lááríŋ [sáá be lááríŋ dá-miŋ] koto
           he TA lie-ing snake TA lie-ing where   under
           (He is lying under [where the snake is lying])

      b.   *Wulóó dun ta [$_{S-rel}$a maarii-máá be siiriŋ búŋo miŋ kono]
            dog-SP enter TA   it master-MP TA sit-ing house Wh in
            kono
            in
           (The dog entered[the house in which his master is sitting])

(75) a. *Kódoo diyaa ta ń ñe [kó ń too ye bo] ti
money-SP pref. TA I to that I name TA go out be
(I would rather have money than [that I become famous])

b. *Ñ táriyáá tá [boriláá miŋ fóloó futa tá] ti
I fast TA runner-SP who first arrive TA be
(I am faster than[the runner who arrived first])

Finally, both complement and relative clauses may be conjoined by a comma but never by niŋ 'and'. This explains why (76a,b) are grammatical while (76c,d) are not:

(76) a. A ye a loŋ kó kídoo soso ta le, kó a maŋ ñan na a maa la
he TA if kn.COMP gun loadTA CL COMPhe TA must TA it touch TA
(He knows that the gun is loaded, that he must not touch it)

b. A ye musóó kontoŋ, miŋ dun ta kumfáá kono, miŋ ye súkúroo
he TA wom.-SP greet who ent. TA shop-SP in who TA sug.-SP
saŋ
buy.
(He greeted the lady who entered the shop, who bought sugar)

c. *A ye a lóŋ kó kídoo soso ta le niŋ kó a máŋ ñan na a maa la
(He knows that the gun is loaded and that he must not touch it)

d. *A ye musóó kontoŋ, míŋ dun ta kumfáá kono niŋ miŋ ye súkúroo
saŋ
(He greeted the lady who entered the shop and who bought sugar)

The fact that complement and relative clauses can be conjoined by a comma, the sentence conjoiner but not by niŋ 'and', which is strictly an NP conjunction in Mandingo, is further evidence of the distributional similarity between relative clauses and complement clauses. The solution proposed above captures this generalization.

4.4 Summary and Conclusion. The structure of complex sentences in Mandingo certainly needs further investigation, but we hope to have suggested one possible analysis that might account for the facts considered here. Different facts were presented about coordination, conjunction-reduction, complement and relative clauses. More specifically, it was shown

that of the four conjunctions examined here, bari 'but', wara 'or' and /,/ are allowed to coordinate sentences, but the fourth nin 'and' is not allowed to. Further, the behavior of these conjunctions with respect to conjunction reduction in general reveals that Mandingo does not fit within the Immediate Dominance/Non-immediate Dominance dichotomy proposed by Tai (1969) and Sanders and Tai (1972) to account for conjunction reduction in the world's language. A similar conclusion was arrived at in Bokamba (1975), in which it is shown that Dzamba, Lingala and Swahili, three Bantu languages spoken in Central and Eastern Africa, do not fit within the subcategorization proposed by Tai (1969) and Sanders and Tai (1972), and that " they constitute a third group that Sanders and Tai (1972) fails to predict".

With respect to relative clauses, two types are distinguished: Forward clauses, in which the head noun surfaces in the relative clauses which occur before the main clause, and Backward relative clauses which follow their main clause and in which the relative pronoun min and its head noun occur in different clauses. To account for the derivation of these clauses, three analyses have been examined. The first analysis proposed by Bird (1968) for Bambara argues for deriving Backward and Forward relative clauses from two different underlying structures. This solution has been discussed and rejected partly because it creates an unwarranted polarization and cannot account for the synonymity observed between the two types of relative clauses. A second analysis proposed by Bokamba and Dramé (1978) to account for Forward relative clauses is then discussed. This solution assumes a matching framework, and it attempts to derive Forward relative clauses from an underlying left-branched source. This analysis cannot, however, be extended to Backward relative clauses (which the paper did

not cover). Evidence on the distribution of Backward relative clauses was presented to support this approach.

A third analysis proposed by Dwyer (1979) was then discussed. This analysis advocates a base-generation of the relative marker and the relative clause in a coordinate structure. It also rejects the solution proposed in Bokamba and Dramé (1978) on the basis that "it results in a opaque derivation". However, the justifications offered by Dwyer for base-generating min are not borne out in Mandingo. Furthermore, like Bird (1968), the solution proposed by Dwyer (1979) results in a polarization of RCF in Mandingo and also fails to account for the synonymity observed between the two types of relative clauses. In view of these shortcomings, an alternative solution was then proposed in which min is inserted by a rule similar to the rule that inserts the cleft marker le. This analysis was not only argued to be consistent with the fact that min does not seem to behave like a pronoun, but also that its adoption will facilitate the formulation of a single rule for the derivation of both relative and complement clauses.

After the discussion of relative clauses, we investigated complement clauses. Two series of complementizers were distinguished in this respect, namely clause-initial and non-clause-initial. These complementizers bear distributional relationships within and accross the series. For instance it was shown that the choice of the complementizer is sensitive to semantic features such as verb class, Negation and tense. To the extent that these features are to be specified in the base, it is proposed that Mandingo complementizers must be generated in the base à-la Bresnan (1972). The analysis of complementizers led naturally to an examination of the structures underlying complement clauses. We saw in this regard that the

main clause of a complement construction contains an expletive pronoun preverbally whenever the main verb is transitive. The occurrence of this pronoun raised a question about its probable source, and we argued that it should be generated in the base. We also attempted to show that complement clauses may not be generated from a structure dominated by an NP node because complement clauses cannot assume argument functions generally associated with NPs. Because a similar behavior is also observed with relative clauses, it is proposed that the two constructions could be generated by a single rule, namely $\bar{S}$ as formulated by Bresnan (1972).

Whether our account of Mandingo complex sentences is correct or not will be determined by future research on the language. However, the distribution of complement and relative clauses raises serious questions about the way the language is organized with respect to its complex sentences, and thus with respect to certain rules of its deep structure. Since complement clauses and relative clauses do not behave on the surface as noun phrases, it may well turn out that Mandingo does not allow deriving sentences off noun phrases. This issue will be further examined in the next chapter.

FOOTNOTES TO CHAPTER IV

1. This quotation is from Bokamba (1975).

2. Cf. dislocated NPs in Chapter III, Section (3.5.1)

3. The term pronoun is not indicative of a resolution of the status of min. The distribution of this morpheme is more complex that that of regular relative pronouns in other languages. Therefore the word pronoun must be considered as a purely conventional term at this point.

4. We are assuming here with Perlmutter (1972) that the relative fronting rule does not actually move the NP but copies it while leaving a "shadow"pronoun" in its initial position.

5. Much of the data and the analysis in this section has been published in an earlier paper in SLS 9,2 and from my paper on Complex Structure Conspiracy and the Grammar of Mandingo Complementation, read at the 11th Annual Conference on African Linguistics, Boston University,Boston.

6. The time reference of the ye/ta tense marker seems to vary with the verb class, and the tense agreement between the main verb and the verb in the subordinate clause. In general, when the verb is active, ye/ta will assign it a past time reference, whereas its time reference will be present if the verb is stative.

CHAPTER V

CONCLUSIONS AND THEORETICAL IMPLICATIONS

5.0 Summary and Conclusion.

The main purpose of this study has been to present an overall description of the grammar of Mandingo. To achieve this goal, we discussed facts related to the phonology, morphology and syntax of the language. Thus in Chapter II, we presented an outline of the basic morpho-phonological characteristics of nouns, adjectives and verbs. In this regard, it was shown that the morphologies of nouns, adjectives and verbs evolve around the same general features, namely specification and pluralization. These two processes, which involve both segmental and suprasegmental rules, are argued to apply linearly in this language. In characterizing the internal tone structure of complex NPs, we made a distinction between compounding and non-compounding stems. This distinction not only explains the internal tone structuring of various NPs, but it also explains the ordering of various nominals within a complex noun phrase. Section (2.3.2) then gave an outline of verbal morphology in an attempt to show that verbs can be characterized in the same morphological frame as nouns and adjectives.

Chapter III examined a variety of phenomena characteristic of simple sentences. Three major areas were covered, namely word order, nominals and so-called movement rules. With respect to word order, it was shown that Mandingo is basically an SOV language, and that this basic order remains generally fixed. In particular, it was shown that rules such as clefting and questioning, which often move constituents, do not affect the basic word order since they do not move any constituent in this lan-

guage. Further, of the two focusing transformations examined, that is

topicalization and dislocation, only the latter is permited in this lan-

guage precisely because it preserves the basic word order by leaving a

replacive pronoun in the position vacated by the moved NP. One additio-

nal movement rule, passive, was examined . In this regard, it was demons-

trated that not only is this rule polarized in Mandingo, but passivized

sentences show substantial meaning differences from their affirmative

counterparts. Because of the difficulties that would arise in attempting

to incorporate these meaning differences into the transformational com-

ponent of the grammar, it was speculated that maybe there is no passive

transformation in Mandingo, as suggested by Welmers (1978). With respect

to nominals, our analysis showed that Mandingo adjectives must be cross-

categorized along morpho-semantic and syntactic lines to account for their

various distributional constraints, and that the three-way nominal posses-

sion system exhibited in this language is best characterized in a pragma-

tic approach contrary to the claims made in Chomsky (1970), Bird (1972)

and Voeltz (1976). Nominalized sentences were then examined and an at-

tempt was made to show that they should be base-generated.

Chapter IV dealt with complex sentences. Two types were examined,

namely conjoined sentences and subordinate structures. The chapter began

with a discussion of various conjunctions and their distributions in Man-

dingo. In this regard, we showed that the distributions of Mandingo con-

junctions does not fit within the Immediate Dominane/Non-immediate Domi-

nance dichotomy proposed by Tai (1969) and Sanders and Tai (1972) to ac-

count for conjunction reduction in the world's languages. It follows

from this that the creation of a third category of languages might be

come necessary, as suggested by Bokamba (1975) to accomodate languages

such as Mandingo. We then proceeded to examine relative clause formation.

In this regard, we showed that Mandingo has two types of relative clauses:

Forward relative clauses which always precede their main clause, and Back-

ward relative clauses which follow the main clause. To account for the

distribution of these clauses, three analyses were reviewed, namely Bird

(1968), Bokamba and Dramé (1978) and Dwyer (1979). Each of these solutions

was evaluated, and an alternative was proposed which enables the formula-

tion of a single rule for both complement and relative clauses. This led

to an examination of complement clauses. In this regard, a distinction

was made between two types of complementizers. We also argued that the

occurrence of the expletive pronoun a which surfaces in the DO position

of some main verbs is a result of a deep structure constraint on transi- ·

tive verbs. We finally proposed that both complement clauses and relative

clauses could be derived by S̄ as formulated by Bresnan (1972), if we as-

sume that Mandingo relative clauses do not derived from underlying embed-

ded structures.

Whether the conclusions arrived at here are correct will be determined

by future research on Mandingo and Mande languages. However, this study

raises a number of theoretical questions that we would like to discuss a

bit further in the next section.

5.1 <u>Theoretical implications</u>. One major issue that deserves a further

investigation is the notion of syntactic category. In general, nouns, ad-

jectives and verbs are distinguished on morphological as well as syntactic

and semantic grounds. In this language, the morphology seems to have

failed completely, as we attempted to show in Chapter II and III. More

specifically, it was shown in Chapter II that beside the existence of spe-
cialized derivational suffixes with adjectives and verbs, nominal and
verbal morphologies evolve around the same general features, namely speci-
fication and pluralization. In this respect, the morphological descrip-
tion of nouns, adjectives and verbs consisted generally in stating in which
environments or where in the phrase the noun or noun phrase, the adjective
or verb must be specified and/or pluralized. Furthermore, it was shown
that the NT1 and NT2 nominalized forms have all the morphological and syn-
tactic characteristics of nouns. In Chapter III, we showed that the line
between descriptive adjectives and nouns is very thin since certain adjec-
tives function as nouns without any morphological change. In the same
chapter, we saw that a transformation such as clefting, which is generally
associated with nouns and noun phrases, applies equally to finite verbs
in Mandingo. The question then arises, is there any solid basis for assu-
ming the existence of categorial distinctions between nouns, verbs and ad-
jectives in this language as is customary in the transformational-genera-
tive theory ? Further evidence questioning the correctness of this assump-
tion is that in this language a nominal bearing the -yaa suffix can func-
tion as a noun, adjective or verb, as illustrated in (1c,d), (1e, f) and
(1g,h) respectively:

(1) a.

Jaŋ	:	'tall'	jaŋa-yáà	'the tallness'
kútá	:	'new'	kútá-yaa	'the newness'
táríŋ	:	'fast'	tárí-yaa	'the fastness'
sutuŋ	:	'short'	suti-yáà	'the shortness'

b.

moo	:	'person'	moo-yáà	'the humanness,com- passion'
wulu	:	'dog'	wuli-yáà[1]	'the lie'
musu	:	'woman/wife'	musu-yáà	'femaleness/womanness or female sex'

c. <u>Musu-yáá</u>   maŋ diyaa
   woman-ness Neg/TA easy
   (Womanness or being a woman is not easy)

d. Í búka   ñiŋ <u>jaɲa-yaa</u>   fásóŋo je lúŋ-wó-luŋ
   you Neg/TA this tallness   kind-SP see any day
   (You don't see this kind of <u>tallness</u> every day)

e. Wotóó le^2 <u>tari-yaa</u> ta welóó ti
   car-SP CL fast   TA bike-SP be
   (The car is faster than the bicycle)

f. A   la dendikóó kuta-yaa ta
   he of shirt-SP new   TA
   (His shirt is new)

g. A moo-yaa ta
   (He is compassionate, or he became a human being)

h. A musu-yaa ta
   (She became a (mature) woman)

The nominal followed by the <u>-yaa</u> suffix generally describes either a tran-
sient or a final state. However, our decision to treat <u>musu-yaa</u> and <u>jaɲa-</u>
<u>yaa</u> as nouns in (1c, d), <u>tari-yaa</u> and <u>kuta-yaa</u> as adjectives in (1e,f) and
<u>moo-yaa</u> and <u>musu-yaa</u> as verbs in (1g,h) is based on no solid grounds other
than our knowledge of syntactic categories in other languages. Consequent-
ly it is not clear if these categorial distinctions really hold in Mandin-
go. Part of the problem is that there is no clear test for differentia-
ting syntactically intransitive verbs from structures formed by a copula
plus an adjective or a noun. In fact the forms generated in (1a,b) can
be extended by the causative extension <u>-ndi</u> to become transitive verbs,
as attested in (2a,b) below:

(2) a. Búŋ-lóó-laa   ye búŋo jaɲa-yaa-ndi
       house-build-er-SP   TA house-SP tall- -CAU
       (The mason made the house become tall)

   c. A   ye a la móóroo   wuli-yaa-ndi
       he TA he of marabout-SP dog-   -CAU
       (He made his marabout lie)

From these examples and the data presented in Chapters II and III, it would seem that nouns, adjectives and verbs belong to some sort of squishy category in which the transition from one constituent type to the other is easily accomplished through a simple (sometimes no) morphological process.

Another issue that is an extension of the problem of syntactic categories has to do with the status of sentences and noun phrases. From the behavior of relative and complement clauses, there seems to be a sentence conspiracy at work here. This conspiracy not only prevents sentences from appearing in nested DO positions, as hinted at by Dwyer (1979), but it also prevents them from holding any grammatical relation or any function generally associated with NPhood. This conspiracy can be explained in different ways. One possible explanation could be that there is a parsing difficulty when relative or complement clauses occur in nested DO position as suggested by Dwyer (1979) because there is a "suspension of information" if we assume that SOV languages have a left branching in the deep structure of their relative clause. The parsing difficulty would increase even more for the processing of multiply-embedded sentences of the type in (3) below because the volume of the "suspended information" would increase with each embedding.

(3) $[_{S5}\cdots\ [_{S4}\cdots\ [_{S3}\cdots[_{S2}\cdots[\cdots_{S1}\cdots]\cdot\cdot_{S2}]\cdot\cdot_{S3}]\cdot\cdot_{S4}]\cdot\cdot_{S5}]$

In such structures, all the verbs would be on the right of S1. To avoid this processing difficulty, the language might do one of two things: (i) to derive complement and relative clauses in non-nested positions (a-la Dwyer or as we suggested in our miŋ-insertion analysis and in our analysis of complement clauses); or (ii) to have a nested deep structure but

adopt a global or output constraint that would prevent complement and relative clauses from surfacing in grammatical relation-bearing position. The adoption of the second solution would complicate the transformational component of the grammar but it would have no effect on the deep structure. However, if the first solution (either Dwyer's or ours) is adopted, it will exclude from the deep structure of Mandingo the following recursive rules:

(4) a.   S ———> NP S   (Bird (1968))

    b.   S ———> S NP   (Bokamba and Dramé (1978))

One unfortunate consequence of this would be the claim that there is no embedding in Mandingo, and that relative clauses must be derived either through a successive application of the S̄ rule, or from a conjoined structure of some sort or maybe through a pragmatic account.

An other explanation might be that the language is involved in a syntactic change whereby a systematic delineation is being made between sentences and NPs. This might explain why relative and complement clauses are still perceived semantically as noun phrases but behave syntactically strictly as sentences. Regardless of the approach one takes, a number of facts still remain unexplained on complement clauses and relative clauses.

One final issue raised by the Mandingo data has to do with the universality of Immediate Dominance/Non-immediate Dominance dichotomy proposed by Tai (1969) and Sanders and Tai (1972). As indicated in Chapter IV, t this generalization fails to predict the existence of the kind of conjunction reduction exhibited in Mandingo. In addition, the distribution of the various conjunctions in Mandingo casts doubts on the existence of any conjunction reduction process at all. The occurrence of most of the

conjunctions seems to be purely dictated by the nature of the structures to be conjoined, thus does not seem to reflect any deep structure reality. In final analysis, there is probably more need for pragmatics when expected or when generally accepted criteria fail.

FOOTNOTES TO CHAPTER V

1. Some of these nouns are now completely frozen and their meaning cannot be traced back to that of their respective components. But the majority are still transparent.

2. The distribution of the cleft marker does not always parallel that of English clefting, even in cases where it occurs with nouns or noun phrases.

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