

Issues in Zimbabwean Ndebele relatives and relativisation

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Dedication

To my wife, daughter, and son.

Acknowledgements

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Abstract

This study discusses issues in relatives and relativisation in Ndebele, a Nguni language that is mainly spoken in western parts of Zimbabwe. The study focuses on four major issues: (1) the status and the position of the prefix *a-* that occurs in Ndebele relative clauses, (2) the relation between the relative operator/head noun and the resumptive pronoun inside the relative clause, (3) the morphosyntax of predicative adjectives, and (4) the derivation of attributive adjectives in Ndebele. These issues are examined within the parameters of the Distributed Morphology framework (Halle, 1990; Halle & Marantz, 1993; Marantz, 1995; Embick & Noyer, 2007; Embick, 2010; 2012 and others). My main submissions in this thesis are the following: (1) the *a-* prefix that occurs in Ndebele relative clauses is a complementiser marker. I argue that there is Complementiser-to-Tense head movement that lowers the complementiser head after syntax in the formation of strategy 1 relatives. The lowering of the complementiser head to the Tense head results in the complementiser appearing in an unexpected position in strategy 1 relatives. (2) The relative operator merges as a complement of a resumptive pronoun in an n^*P . The relative operator is then extracted and copied to spec C leaving the resumptive pronoun stranded in the relativisation site. I maintain that resumptive pronouns are realisations of the n^* layer that selects DPs and that the n^* head can be realised as *pro*, as a resumptive clitic or as a full resumptive pronoun. (3) The subject of the adjective is merged as the argument of the root, and then moves to its surface position. (4) There are three types of adjectives, and all the three types of adjectives are complements of copular verbs. I maintain that the attributive function of adjectives is fulfilled by a relative clause construction rather than by an attributive word mainly because Ndebele does not have an attributive adjective word group.

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List of abbreviations

1PL:	first person plural
1SG:	first person singular
2PL:	second person plural
2SG:	second person singular
a:	adjectiviser head
Ā-feature:	anti-agreement feature
ABS:	absolute pronoun
ADV:	adverb
AGR:	agreement marker
AM:	adjective marker
aP:	adjective phrase
APPL:	applicative marker
ASP:	aspect marker
Asp-to-v:	aspect-to-verb lowering
ASS:	associative marker
AUG:	augment
c:	complementizer categorizer head
C:	complementiser
CA:	complementiser agreement
c-command:	constituent command
COP:	copula verb
CP:	complementiser phrase
C-to-T:	complementiser-to-tense head lowering
CV:	consonant vowel
D:	determiner
DEM:	demonstrative
DIM:	diminutive marker
DIS:	disjoint marker
DM:	distributed morphology
DO:	direct object
DP:	determiner phrase
D-to-T:	determiner-to-tense head lowering
EM:	emphasis marker

EPP:	extended projection principle
EXCL:	exclusive aspect marker
EXPL:	expletive
F-morpheme:	functional morpheme
FTN:	functional terminal node
FV:	final vowel
FVI:	functional vocabulary item
G:	glide
GV:	glide vowel
HSR:	high subject restriction
i:	interpretable
i-phi:	interpretable relative feature
i-rel:	interpretable relative feature
ID:	indirect object
INF:	infinitive mood marker
L-morpheme:	lexical morpheme
LOC:	locative
Lnk:	linker
Lnk-to-T:	linker to tense head lowering
LVI:	lexical vocabulary item
m-merger:	morphological merger
MS:	morphological structure
n:	nominaliser head
NDM:	noun deverbaler morpheme
NEG:	negation marker
n*P:	noun phrase
Num:	number
OM:	object marker
OP:	operator
P:	prepositional head
PAS:	passive marker
PF:	phonetic form
POS:	possessive
PP:	prepositional phrase

Pr:	predicate head
PrP:	predicative phrase
Pr-to-T:	predicate-to-tense head raising
PROG:	progressive aspect marker
QM:	qualificative marker
RC:	relative clause
RCM:	relative clause marker
REF:	reflexive marker
REL:	relative marker
RM:	relative marker
RP:	resumptive pronoun
RS:	relative suffix
RTN:	root terminal node
SM:	subject marker
Spec:	specifier
SUB:	subjunctive
T:	tense head
TAM:	tense aspect mood
TNS:	tense marker
TP:	tense phrase
Top-to-C:	topic-to-complementiser head lowering
T-to-C:	tense-to-complementiser head raising
T-to-v:	tense-to-verb
V:	verb
v:	verbaliser
VI:	vocabulary insertion
VP:	verb phrase
V-to-v:	verb-to-verb head raising
u:	uninterpretable
u-phi:	uninterpretable phi feature
u-rel:	uninterpretable relative feature
u-T:	uninterpretable tense feature

CHAPTER ONE: INTRODUCTION

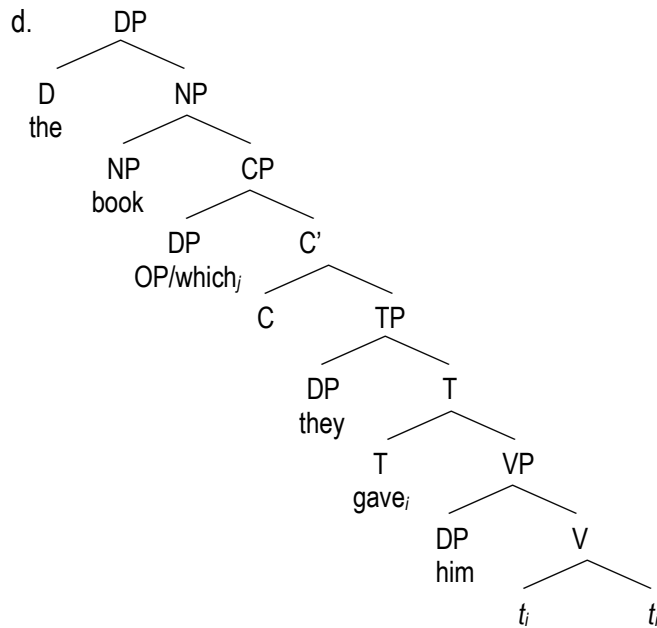
Relatives and relativisation in Ndebele raise a number of questions regarding the position of the relative marker (/)a-, agreement, morpheme order, internal structure of the relative predicate and word order in relative clauses. The novel approach of this thesis will be to answer most of these questions via syntactic movement operations (head raising and stranding) and morphological operations (head lowering, fusion, agreement node addition) that apply at a post-syntactic level. In chapter 1, I will briefly discuss the key issues that will be tackled in the thesis.

Chapter 1 comprises of four sections. In section 1.1, I present the key issues that are examined in this study. In sections 1.2 and 1.3, I present the objectives of this study, and the background to the Ndebele language respectively. In section 1.4, I present an overview of the whole thesis.

1.1 Research problem

The study examines relatives and relativisation in Ndebele, a Nguni language that is spoken in Zimbabwe. The study focuses on the morphology and syntax of Ndebele relative clauses. A relative clause (RC) is a subordinate sentence introduced by a relative pronoun/relative operator (OP)/relative complementiser (C) that serves to modify a noun inside the main sentence (head noun). In English, for example, a RC can be introduced by a relative complementiser *that* (1a), a relative pronoun *which* or may be introduced by a null element \emptyset (1c). The head noun *book* has a correlate grammatical role in the RC (a gap marked in (1) by the symbol *t* (for "trace")), which is co-indexed with the relative pronoun/operator:

1. a. the book [**OP**; **that** they gave him *t*]
- b. the book [**which**_i they gave him *t*]
- c. the book [**OP**_i they gave him *t*]



(1) illustrates the standard relative clause analysis (Quine, 1960; Montague, 1974; Partee, 1975; Chomsky, 1977). The standard relative clause analysis posits that a head noun is generated outside the RC and that a relative pronoun/OP moves from a position corresponding to the grammatical role of a head noun to a RC-initial position, leaving a gap behind.

However, in Ndebele, the form of RCs is slightly different from English RCs, which raises interesting questions for the analysis of relative clauses and theories of morphology and syntax. This study discusses themes and subthemes of relativisation in Ndebele: the morphosyntax of relative clause markers, the strategies of resuming the OP, agreement variations and the morphology of relative predicates.

First, there is no obvious relative pronoun in Ndebele relative clauses. There is element in the relative constructions where the relative marker *a-* (RM attaches to the relative verb (Poulos' (1982) strategy 1 relatives) and in the relative constructions where the RM *a-* attaches to the relative subject noun (Poulos' (1982) strategy 2 relatives):

2. a. i-n-doda [u-m-fazi w-a-y-o o-ya-gul-a-yo] (strategy 1)
 AUG-9-man AUG-1-wife 1AGR-POS-9AGR-it 1RM-DIS-sick-FV-RS
 'a man whose wife is sick'
- b. i-n-doda [e-m-fazi w-a-y-o u-ya-gul-a] (strategy 2)
 AUG-9-man 9RM-1-wife 1AGR-POS-9AGR-it 1SM-DIS-sick-FV
 'a man whose wife is sick'

I argue that Ndebele has no overt relative pronoun. Rather, there is an OP that merges inside the relative clause and then it is extracted from the relativisation site and copied to the initial relative clause position.

Second, the RM *a-* that could be analysed as a C in strategy 2 where it precedes the RC subject noun occurs in an unfamiliar position in strategy 1 relatives, it follows and agrees with the RC subject (2a). In strategy 2 relatives, the RM has its agreement marker and it seemingly replaces the augment of the subject noun while the RM seems to be prefixed to the relative verb and adjusts to the subject marker in strategy 1 relatives. This raises questions about the role and the position of the RM in Ndebele RCs. I contend that the RM *a-* is a relative complementiser and that Ndebele has two types of complementiser heads: the C-head that has an uninterpretable relative feature, extended projection principle feature (EPP feature) and weak T(ense) features that participate in the formation of strategy 1 relatives, and the C-head that has an uninterpretable relative feature, EPP features and uninterpretable phi features that participates in the formation of strategy 2 relatives. The uninterpretable phi features of C are valued by the OP and are spelled out by the complementiser agreement marker in strategy 2. This inflected C attaches to the relative subject. In contrast, the C-head of strategy 1 relatives has a weak u-T that requires C to merge with T. I argue that the weak u-T of C is valued after syntax by lowering to the Tense head. The lowering of C derives the *Subject – Complementiser+Verb* word order in which C appears in an unfamiliar position.

Third, some RCs in Ndebele include a *resumptive pronoun* that agrees with the head noun of the RC construction (see *lona* in (3a)). This resumptive pronoun occurs in a position where one would expect to find a gap corresponding to a moved OP (compare the trace t_i in (1)). (3a) shows that the strong resumptive pronoun *lona* does not agree with the relative verb. In contrast, a gap occurs in (3b) where the extracted OP is resumed by an object agreement marker (OM):

3. a. i-bhuku a-ba-fana a-ba-m-nik-e l-o-na (strategy 1)
 5-book AUG-2-boy RM-2SM-1OM-give-TNS 5AGR-it-EM
 ‘the book that the boys gave him’
- b. i-n-doda a-ba-fana a-ba-yi-gwaz-ile-yo (strategy 1)
 AUG-9-man AUG-2-boy RM-2SM-9OM-stab-TNS-RS
 ‘the man whom the boys stabbed’

The question is why resumptive pronouns are required in a construction such as (3a), but not in a construction such as (3b), which is an object relative clause where the relative predicate bears an object agreement marker agreeing with the corresponding grammatical role of the head noun (see Zeller, 2004; 2014). In other words, could an object marker in (3b) be interpreted as a resumptive pronoun that has been incorporated into the relative verb? I argue that the object marker is an antifocus agreement marker rather than an incorporated object pronoun. I maintain that the object marker spells out the phi features of the functional head X that are valued by the object marked noun phrase that would have moved to spec X. When the OP is extracted from spec X, it leaves the n^* head stranded in the relativisation site. The stranded n^* is spelled out as *pro* if and only if it is identified by the object marker. I argue that a resumptive pronoun is the spellout of an n^* head that is not identified by a object agreement marker.

Fourth, there are instances where the main meaning of the relative clause lies in the adjective rather than

in the verb. These constructions are called attributive adjectives/relatives word category (Doke, 1927; Hadebe, 2001; Khumalo, 2003; Ndebele, 2004; Mawadza, 2009). These adjectives take verbal prefixes such as the subject marker, tense markers, negation markers and mood markers like verbs:

4. a. u-phondo [o-lu-sa-se-lu-khulu]
11-horn RM-11SM-PROG-EXCL-11AM-big
'the horn that is still big'
- b. i-hloka [e-li-sa-se-bu-khali]
5-axe RM-5SM-PROG-EXCL-14-sharp
'the axe that is still sharp'
- c. i-hloka [e-li-sa-se-nzima]
5-axe RM-5SM-PROG-EXCL-heavy
'the axe that is still heavy'

In contrast, adjectives can be selected by a copula verb *-b-* 'be' and when this copula is involved it takes some verbal suffixes such as the final vowel (FV), negation and tense like verbs. Crucially, whenever the copula *-b-* is involved in the formation of these constructions, the adjective appears in its basic form:

5. a. u-phondo [o-se-lu-za-ku-b-a lu-khulu]
 11-horn RM-EXCL-11SM-TNS-INF-be-FV 11AM-big
 'the horn that will now be big'
- b. i-hloka [e-li-nga-b-i bu-khali]
 5-axe RM-5SM-NEG-be-NEG 14-sharp
 'the axe that is not becoming sharp'
- c. i-hloka [e-se-li-za-ku-b-a nzima]
 5-axe RM-EXCL-5SM-INF-be-FV heavy
 'the axe that will now be heavy'

The following questions arise: why is the subject marked twice in (4a) and (5a) and once in other examples, what is the status of an invariant morpheme in (4b) and (5b), and why is the adjective in (5c) monomorphemic; where is the OP generated and how are these constructions derived? I argue that Ndebele has no attributive adjectives. Rather, these constructions are relative clauses. The OP merges as the argument of the root and moves to the initial clause position. I suggest that Ndebele has two types of adjectiviser heads; the one that has uninterpretable phi features that are spelled by the adjective marker (the Type 1 adjectives that are represented by examples 4a and 5a), and the other that has no phi features. The adjectiviser head that has no phi features can either derive adjectives from nouns (Type 2 adjectives) or it can derive adjectives from acategorical roots (Type 3 adjectives represented by by examples in (4b) and (5b)). The former has an invariable class marker (4b and 5b) while the latter is monomorphemic (5c).

The purpose of this thesis is to provide a comprehensive study of the morphology and syntax of relative clauses in Ndebele that answers the questions and addresses the problems raised by examples such as those in (2)-(5).

1.2 Research objectives

The main objective of this study is to provide a comprehensive study of the morphology and syntax of Ndebele relative clause constructions. The study seeks to:

1. examine the role and position of the relative marker *a-* in Ndebele RCs.
2. analyse the strategies of expressing the link between a RC and a head noun in Ndebele.
3. explain agreement variations in Ndebele relative clauses.
4. investigate the morphosyntax of adjectives

1.3 Background to the Ndebele language

This study focuses, as already stated in the topic and in the abstract, on the Zimbabwean Ndebele language. The Ndebele language is a Southern Bantu language spoken in Zimbabwe. The total estimated number of Ndebele speakers is 2.2 million.

Ndebele belongs to the Nguni language family group together with Zulu (spoken in South Africa), Xhosa (spoken in South Africa and Zimbabwe) and Swati (spoken in South Africa and Eswatini). Guthrie (1971) classifies the Nguni languages as follows:

Table 1: Nguni languages according to Guthrie's classification

Language Group	Language Zone	Language
S	41	Xhosa
S	42	Zulu
S	43	Swati
S	44	Ndebele

(Adopted from Hadebe, 2006, p. 28)

According to Guthrie's (1971) classification, Zimbabwean Ndebele is a dialect of Nguni just like Zulu, Xhosa and Swati.

Of particular interest to this study is the affinity between Zimbabwean Ndebele and Zulu. The two languages are mutually intelligible. Zimbabwean Ndebele and Zulu share probably over 96% of their lexicon (Hachipola, 1998; Hadebe, 2006; Ndhlovu, 2009; Sibanda & Kadodo, 2011; Ndlovu, 2020). Rycroft (1980) argues that the differences between Zulu and Ndebele are minimal when considering tone and the pronunciation of vowels and consonants. Rycroft maintains that Ndebele has retained the proto forms of pronunciation while Zulu has changed from proto-Nguni. It is against this backdrop that I am going to be referring more to Zulu than Xhosa and Swati in this study.

Like other Bantu languages, the noun class system plays a key role in the structure of a Ndebele sentence construction. Ndebele has 13 noun classes (class 1 to class 11, class 14 and class 15) and 4 locative classes (class 16 pha-, 17 ku-, 24 ka- and class 25 e-/o-). The noun has a basic structure *augment + class prefix + noun stem*. The augment does not occur in classes 16, 17 and 24 (class 25 is the only locative class that has a vocalic class prefix) while class prefixes are null in class 1a and class 2a. There are class prefixes that commence with nasal consonants (called "nasal classes/ weak classes" by Canonici, 1995, p. 10) and those that commence with oral consonants (called "non-nasal classes/ strong classes" by Canonici, 1995, p. 10). Following Canonici (1995), I will refer to classes 1, 3, 4, 6 and 9 as nasal classes and classes 2, 5, 7, 8, 10, 11, 14 and 15 as strong classes/non-nasal classes. The following table shows the structure of Ndebele nouns:

Table 2: The morphology of the noun class prefix

Noun class	Augment	Class prefix	Noun stem	Noun	Gloss
1	u- u-	-mu- -m-	-ntu -fana	umuntu umfana	'a person' 'a boy'
1a	u-	-∅-	-baba	ubaba	'father'
2	a- a-	-ba- -be-	-fana -lungu	abafana abelungu	'the boys' 'the whites'
2a	o-	-∅-	-bahba	obaba	'the fathers'
3	u- u-	-mu- -m-	-thi -fula	umuthi umfula	'the medicine' 'a river'
4	i-	-mi-	-thi	imithi	'medicines'
5	i- i-	-li- -∅-	-zwe -gazi	ilizwe igazi	'a country' 'blood'
6	a-	-ma-	-zwe	amazwe	'countries'
7	i- i-	-si- -s-	-gqoko -andla	isigqoko isandla	'a dress' 'a hand'
8	i- i-	-zi- -z-	-gqoko -andla	izigqoko izandla	'dresses' 'hands'
9	i- i- i-	-n- -m- -∅-	-ja -phi -mota	inja impi imota	'a dog' 'a war' 'a car'
10	i- i- i- i-	-zin- -zim- -zing- -∅-	-ja -phi -xoxo -mota	izinja izimpi izingxoxo izimota	'dogs' 'wars' 'coversations' 'cars'
11	u- u- u-	-lu- -lw- -∅-	-thi -andle -phondo	uluthi ulwandle uphondo	'a stick' 'a sea' 'a horn'
14	u- u- u- u-	-bu- -b- -tsh- -tshw-	-de -oya -ani -ala	ubude uboya utshani utshwala	'height' 'fur' 'grass' 'beer'
15	u- u- u-	-ku- -kw- -k-	-dla -akha -ona	ukudla ukwakha ukona	'food' 'to build' 'to sin'
16		pha-	-ndle	phandle	'outside'
17		ku-	-de	kude	'far away'
24		ka-	uDlodlo	koDlodlo	'at Dlodlo's place'
25	e-		-khaya	ekhaya	'at home'

As shown in Table 2, the augment vowel and the vowel of the class prefix are identical in most classes except in some class 2 nouns. The vowel of the class prefix may be deleted when the stem commences with a vowel (class 7, 8, 14 and 15) or when the stem is polysyllabic (class 1 and 3). The class prefix does not occur in class 1a, class 2a and class 25. A null class prefix occurs in class 5 and class 11 only if these class prefixes combine with multisyllabic stems.

Note that there are instances where the noun appears without an augment in a word/phrase/sentence construction:

6. a. **Augment loss in compound nouns**

i-m-buzi-ma-wa

AUG-9-goat-6-mountain

'a klisringer'

b. **Vocative nouns**

Baba

[1]-father

'father'

c. **Locatively inflected**

e-khanda

LOC-head

'in the head'

d. **As Negative Polarity Items**

a-ku-hlek-i

mu-ntu

NEG-17SM-laugh-NEG

1-person

'nobody is laughing'

Noun class agreement obtains in classes 1 to 15 only. The noun controls agreement with a demonstrative pronoun (DEM), a quantitative pronoun (QUANT) and a possessive (POS) in a determiner phrase (DP):

7. a. la-ba b-onke a-ba-fana
 DEM-2AGR 2AGR-all AUG-2-boy
 'all these boys'
- b. i-zin-ja z-a-mi
 AUG-10-dog 10AGR-POS-my
 'my dogs'

The noun also agrees with verbal and nominal predicates in a Ndebele sentence:

8. a. u-m-fana u-za-yi-phath-el-a i-khekhe i-n-kazana
 AUG-1-boy 1SM-TNS-9OM-bring-APPL-FV 5-cake AUG-9-girl
 'the boy will bring a cake for the girl'
- b. u-m-fana w-a-yi-phath-el-a i-khekhe i-n-kazana
 AUG-1-boy 1SM-TNS-9OM-bring-APPL-FV 5-cake AUG-9-girl
 'the boy brought a cake for the girl'
9. a. i-mi-thetho i-za-ku-b-a mi-nengi
 AUG-4-law 4SM-TNS-INF-be-FV 4AGR-many
 'the laws will many'
- b. i-m-ithetho ka-yi-z-uku-b-a mi-nengi
 AUG-4-law NEG-4SM-TNS-INF-be-FV 4AGR-many
 'the laws won't be many'

In (8), the verb agrees with the subject DP and the object DP. The class 1 subject marker appears as *u-* in (8a) and *w-* in (8b). The class 9 object DP is marked by the class 9 object marker *-yi-* in (8). In (9), the class 4 subject noun phrase agrees with the nominal predicate. The subject agreement is marked by *i-*, *mi-* and *-yi-* in (9).

In first person and second person classes, we have person agreement rather than noun class agreement.

The pronoun controls person agreement on the quantitative pronoun and predicates:

10. a. m-i-na ngi-za-bhal-a ng-edwa
 1SG-it-EM 1SG-TNS-write-FV 1SG-alone
 'I will write alone'
- b. th-i-na si-za-bhal-a s-odwa
 1PL-it-EM 1PL-TNS-write-FV 1PL-alone
 'we will write alone'

Like person classes, the class 17 locative pronoun *khona* controls agreement between locatives and predicates. The class 17 agreement marker *ku-* is a default locative agreement:

11. a. kh-o-na la-pha pha-ndle ku-mnyama
 17AGR-it-EM DEM-16AGR 17-outside 17SM-dark
 'outside here it is dark'
- b. kh-o-na la-pha ko-Dlodlo ku-hle
 17AGR-it-EM DEM-16AGR 24-[1]-Dlodlo 17SM-nice
 'here at Dlodlo's homestead it is nice'

c.	kh-o-na	la-pha	e-mot-eni	ku-ya-tshis-a
	17AGR-it-EM	DEM-16AGR	25-car-LOC	17SM-DIS-hot-FV
	'it is hot here in the car'			

The following table shows person/noun classes/locative and agreement markers found in the Ndebele language:

Table 3: person/ noun/locative class and agreement markers in Ndebele

Person/class	ABS ¹	DEM	QUANT	POS	ADJ	SM	OM
1SG	mi-	--	ng-	--	--	ngi-	-ku-
1PL	thi-	--	s-	--	--	si-	-si-
2SG	w-	--	w-	--	--	u-	-ku-
2PL	li-	---	l-	--	--	li-	-li-
1 um(u)-	y-	-wu, ∅	y-	w-	m(u)-	(w)u-	-m(u)-
2 aba-, abe-	b-	-ba	b-	b-	ba-	ba-	-ba-
3 um(u)-	w-	-wu, ∅	w-	w-	m(u)-	(w)u-	-wu-
4 imi-	y-	-yi, ∅	y-	y-	mi-	(y)i-	-yi-
5 ili-, i-	l-	-li	l-	l-	li-	li-	-li-
6 ama-	w-	-wa, ∅	w-, ∅	w-, ∅	ma-	(w)u-	-wu-
7 isi-	s-	-si	s-	s-	si-	si-	-si-
8 izi-	z-	-zi	z-	z-	zin-, zim-	zi-	-zi-
9 in-, im-, i-	y-	-yi, ∅	y-	y-	in-, im-	(y)i-	-yi-
10 izin-, izim-	z-	-zi-	z-	z-	zin-, zim-	zi-	zi-
11 ulu-, ulw-	l-	-lu	l-	lw-	lu-	lu-	-lu-
14 ubu-, ub-, utsh(w)-	b-	-bu	b-	b-	bu-	bu-	-bu-
15 uku-	kh-	-khu	k-	kw-	ku-	ku-	-ku-
16 pha-	kh-	-pha	--	kw-	ku-	ku-	
17 ku-	kh-	-pha	--	kw-	ku-	ku-	
24 ka-	kh-	-pha	--	kw-	ku-	ku-	
25 e-	kh-	-pha	--	-	ku-	ku-	

Note that demonstrative pronouns, possessives and adjectives do not express person agreement and that there is no locative agreement inside the locative determiner phrase. Importantly, the class prefixes and the agreement markers are homophonous in strong classes. In contrast, agreement markers in the

¹ ABS in an abbreviation for absolute pronoun. The absolute pronoun is also known as a person pronoun or a strong pronoun.

nasal classes are either vocalic or commence with glides.

1.4 Chapter breakdown

Chapter 2 discusses the theoretical tools that are employed in this thesis. The chapter details concepts of the Distributed Morphology framework; the categorization assumption, feature valuation, Head Lowering, agreement node addition, fusion and vocabulary insertion. The Distributed Morphology framework is important in explaining the relation between word categories, head raising and the mismatch between syntactic structures and morphological structures. The chapter discusses the probe-goal view and syntactic operations. These concepts are vital in explaining syntactic operations that are at play in the derivation of sentences. The chapter also discusses the antifocus agreement theory, the unified head movement theory and the Big DP theory and the little hypothesis. The antifocus agreement theory is essential in the study of subject agreement and object agreement in Ndebele. The unified head movement theory is valuable in explaining head to head movement while the Big DP theory is handy in analysing resumption.

Chapter 3 discusses the position, status and the shape of the relative clause marker in Ndebele. I show that the relative clause marker is made up of the RM and the class agreement marker. I argue that the RM *a-* is a Complementiser head that is derived from a categorised functional complementiser root $\sqrt{(L)A-}$. On the occurrence of the Complementiser head after the subject in object relatives, I maintain that head lowering moves the Complementiser head to the Tense head in the morphological structure in the formation of Poulos' (1982) strategy 1 relatives. I further propose that the Complementiser head adjusts to the verbal agreement marker in strategy 1 relatives while the Complementiser head adjusts to complementiser agreement in strategy 2 relatives. Crucially, I argue that C licenses either a left dislocated augmentless object to occur in spec Top or an augmentless relative subject to occur in spec T of a strategy 2 relative clause.

Chapter 4 examines the morphology of resumptive pronouns and the relation between the relative operator and resumption in Ndebele relative clauses. I maintain that the relative operator starts as a complement of a resumptive pronoun and the operator is extracted and copied to spec C leaving the resumptive pronoun stranded in the relativisation site. The stranded resumptive pronoun is spelled out as 1. *pro* when the n* head is identified by either a subject marker or by an object marker. 2. A clitic when the n*P is selected by a prepositional element. 3. A full resumptive pronoun when the n*P is focused.

Chapter 5 presents the morphological and the syntactic properties of Dokes “adjectives” and “relatives”. The chapter focuses on the derivation of the adjective stems/relative stems, agreement marking and relativisation. I argue that adjectives are derived from acategorial roots by directly merging with the adjectiviser (little *a*). I identify three types of adjectives: Type 1 adjectives (Doke’s “adjectives”), Type 2 adjectives (one type of Doke’s “relatives”) and Type 3 adjectives (another type of Doke’s “relatives”). I argue that Type 2 and Type 3 adjectives have no adjective markers because they merge with the little *a* that has no phi features. I argue maintain that attributive adjectives are derived from predicative adjectives by affixing the complementiser to the predicate. Chapter 6 presents the summary of the findings.

CHAPTER TWO: THEORETICAL FRAMEWORK

2.1 Introduction

Chapter 2 discusses the theoretical tools that are employed in this study. I present the Distributed Morphology framework (Halle, 1990; Bonet, 1991; Halle & Marantz, 1993; Marantz, 1995; Pfau, 2000; Embick & Noyer, 2007; Embick, 2010; 2012; Siddiqi, 2009; 2010; Arregi & Nevins, 2012), the probe-goal view (Chomsky 1993; 1995; 2000; 2001), the antifocus agreement theory (Zeller, 2008; 2014), the unified head movement theory (Matushansky, 2006) and the Big DP theory (Kayne, 1972; 1994; Torrego, 1986; Uriagereka, 1988; 1995; Cecchetto, 2000; Boeckx, 2003 and others). The greater part of the chapter presents the key assumptions of the Distributed Morphology framework such as the structure of the grammar, the categorisation assumption, syntactic operations, morphological operations and vocabulary insertion.

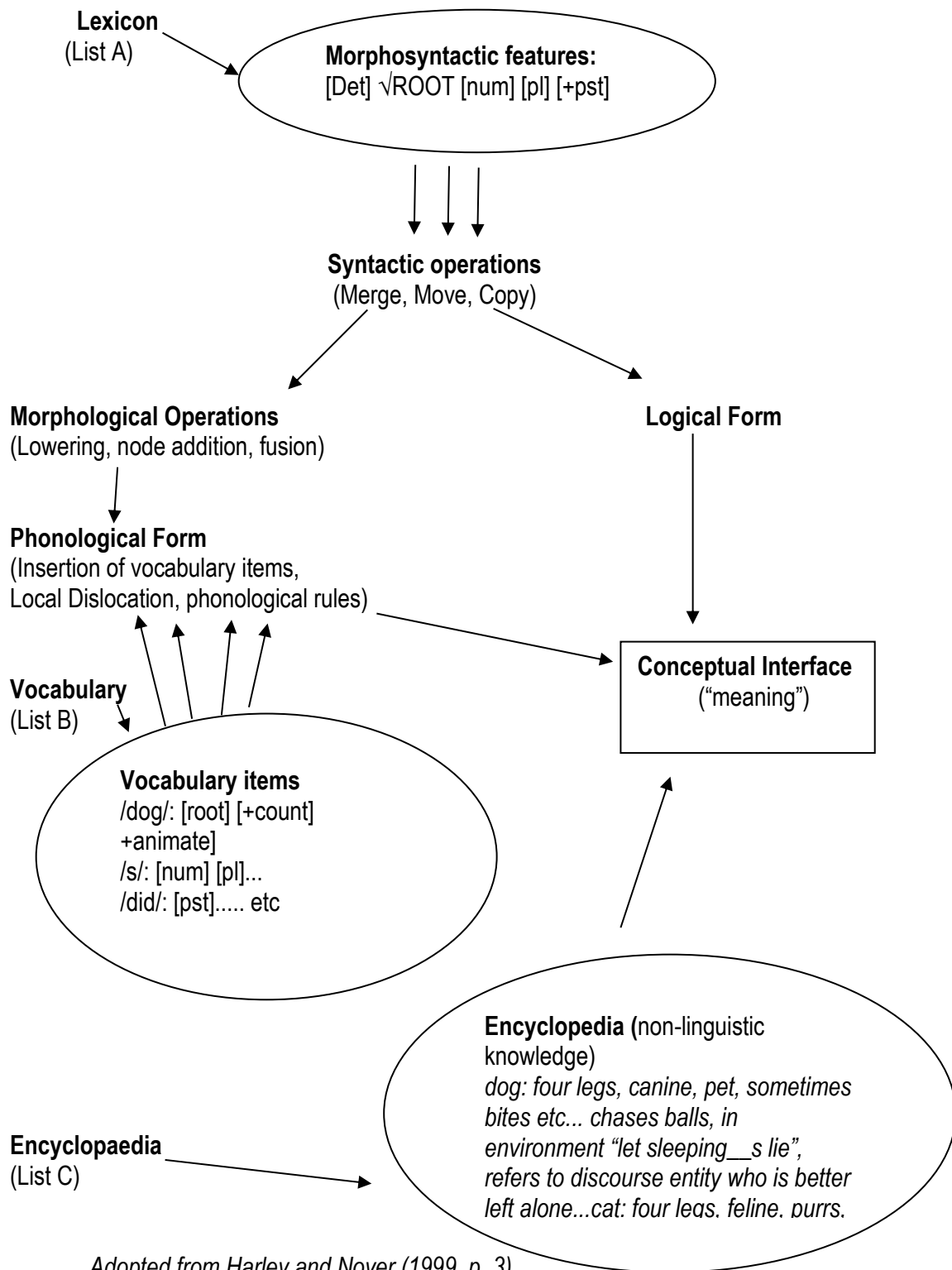
2.2 The Distributed Morphology Framework

The Distributed Morphology (henceforth DM) framework was propounded in the early 1990s. The key proponents are Halle (1990), Bonet (1991), Halle and Marantz (1993), Marantz (1995), (1997), Harley and Noyer (1999), Embick and Noyer (2008) among others. The name 'Distributed Morphology' first appeared in Halle and Marantz (1993). Unlike the predecessor generative theories that assumed that a lexicon consisted of meaningful units of grammar and minimal pairings of sound and function, DM refutes the existence of, and the functions that were attributed to, the lexicon. DM distributes the morphology and the role that was traditionally assigned to the lexicon across three lists: narrow lexicon (List A), Vocabulary (List B) and Encyclopaedia (List C).

The lexicon contains a list of abstract class neutral roots ($\sqrt{\text{DOG}}$, $\sqrt{\text{GO}}$, $\sqrt{\text{TALL}}$) and functional morphemes such as [plural], [nominaliser], [number], [verbaliser], [past], [present], [future], [adjectiviser] among others. Syntax then combines roots and functional morphemes to form words and phrases via

Merge and Move. According to DM, both words and phrases reflect the syntax that is at play in the derivation of these linguistic units. Crucially, DM holds that there are morphological operations that apply after spell-out in the morphological structure (MS) which create morphology-syntax mismatches. Some of these morphological operations include agreement node addition, head lowering and fusion. According to DM, the phonological material of roots and morphemes is supplied in the Phonological Form (PF). Syntax manipulates abstract morphemes and roots that are devoid of phonological material. "Vocabulary contains vocabulary items, which are rules of correspondence between a phonological exponent and an underspecified set of morpho-syntactic features and other contextual instructions" (Marantz, 1997, p. 203). In the mapping of syntax to phonology, the vocabulary insertion operation supplies exponents to the terminal nodes created by syntax. Lastly, the Encyclopaedia contains Encyclopaedia entries, which are rules of correspondence between a phonological exponent and a set of world-knowledge properties (*cat*, for instance, means "fuzzy animal", "domestic animal"). The structure of grammar, according to DM is as follows:

1. The architecture of grammar



The narrow lexicon supplies syntax with acategorical roots and functional morphemes that have no phonological material. The acategorical roots are categorised in the narrow syntax by combining with

nominalisers (little n), verbalisers (little v) and adjectivisers (little a). Other than categorising class neutral roots, syntax creates hierarchical structures (through Merge and Move) and then the derived structure is sent to the PF branch and the LF branch. Along the PF branch (in the morphological structure), there are morphological operations that can modify the derived structure and produce a syntax-morphology mismatch. The morphological operations operate on the output of syntax, which is still hierarchically represented. Vocabulary insertion serves two functions: it inserts exponents into the terminal nodes and it converts the hierarchical structure into a linear structure.

There are hence three types of operations that are defined in relation to spell-out and vocabulary insertion. These are 1) *syntactic* operations, which apply prior spell-out, 2) *morphological* operations, which apply after spell-out but prior to vocabulary insertion, and 3) *phonological* operations, which apply after vocabulary insertion (Arregi & Nevins, 2008, p. 2):

2. Syntactic OP → spell-out → morphological OP → vocabulary insertion → phonological OP

The inclusion of syntactic operations in the DM framework shows that DM is more than just a theory of the syntax-morphology interface although its major contribution is in post-syntactic operations. Describing DM, Matelláan (2010, p. 49) says:

A glance at such works as Marantz 1995, 1997 or Harley and Noyer 1999, 2000 reveals that Distributed Morphology is not simply a theory of morphology, although maybe its motivation were, in the beginning, of a morphological nature (see Halle, 1992, 1997 Halle & Marantz, 1993): it implies a revision of the generative model of grammar, with particular attention to the syntax-morphology interface, and basically assuming a minimalist design (Chomsky, 1995f).

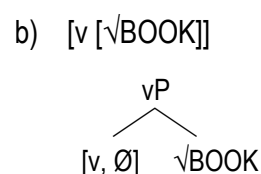
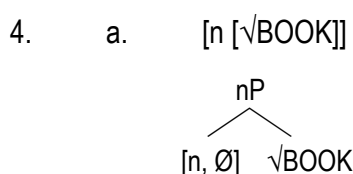
In the following sections I discuss in detail the specifics of DM that are relevant to the present study. My major aim is to discuss category assignment, Merge, Move, head lowering, agreement addition, fusion, and vocabulary insertion.

2.2.1 Lexical-morpheme hypothesis

DM holds that a narrow syntactic lexicon has a list of morphosyntactic features consisting of functional morphemes (f-morphemes) and lexical morphemes (L-morphemes). L-morphemes correspond to traditional roots while f-morphemes correspond to inflectional morphemes and closed classes. The L-morpheme hypothesis (Marantz, 1997; Embick, 1997; 1998a, 1998b; Harley, 1995; Harley & Noyer, 1998) is also known as the categorisation assumption (Embick & Marantz, 2008; Embick, 2000). The underlying assumption of this hypothesis is that roots are class-neutral, i.e. not inherently specified as verbal, nominal or adjectival etc. De Belder and Craenenbroeck (2015, p. 641) state that:

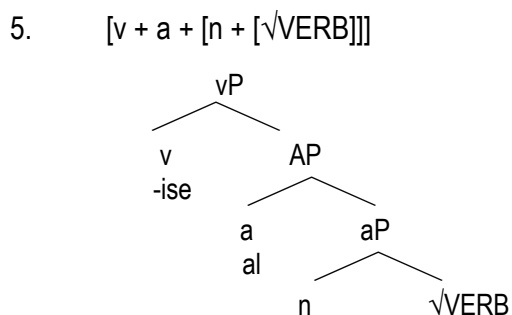
3.
 - a. Roots have no grammatical features.
 - b. Roots have no grammatical category.
 - c. Roots are defined structurally, not lexically.
 - d. Roots are merged lower than functional material.

Roots, according to this analysis, are categoryless and featureless. A root is only assigned a category by merging with a categoriser functional head such as a nominaliser (n) or a verbaliser (v). For example, a root $\sqrt{\text{BOOK}}$ can be categorised as either a noun (4a) or a verb (4b) as shown below:



The categorial status of $\sqrt{\text{BOOK}}$ is determined by the c-commanding categoriser head. The acategorial root $\sqrt{\text{BOOK}}$ becomes a noun when it is c-commanded by little n and it becomes a verb when it is c-commanded by the little v as shown in (4).

The L-morpheme hypothesis also allows secondary derivation whereby a category B can be formed from a category A. In this scenario, two categoriser heads occur in a word form. The first categoriser merges directly with the root, deriving a stem, while the second categoriser merges with the derived stem. For example, in English, the verb *verbalise* is derived from a noun stem *verb* when the little a merges directly with the noun stem to derive an adjective *verbal* and the little v merges directly with the adjective stem to derive the verb *verbalise* as follows:



In (5), the adjective *verbal* and the verb *verbalise* are instances of secondary derivation because the adjective is derived from the noun stem *verb* and the verb is derived from the adjective *verbal*.

The DM framework holds that the difference between functional morphemes (closed classes) and L-morphemes (content morphemes) is that the latter are roots whereas the former are not (Siddiqi, 2009, p. 18). As such, functional morphemes/closed classes are not the object of study as the L-morpheme hypothesis strictly focuses on lexical morphemes (content morphemes/open classes).

However, De Belder and Van Craenenbroeck (2014) challenge the traditional view that Lexical

Vocabulary Items (LVIs) are inserted into Root Terminal Nodes (RTNs) whereas Functional Vocabulary Items (FVIs) are inserted into Functional Terminal Nodes (FTNs). Basing on instances where functional elements assume the function of lexical elements in several languages, De Belder and Van Craenenbroeck (2014) argue that FVIs may be inserted into RTNs and that LVIs may be inserted into FTNs too. According to De Belder and Van Craenenbroeck (2014, p. 179), Dutch has a *ge-* derivational morpheme which typically selects roots as in (6a). In (6b), however, the derivational morpheme *ge-* selects a FVI *ik*. *Ik* normally realises a pronoun:

6. a. het getik van de klok (De Belder & Van Craenenbroeck, 2014, p. 179)
the ge-tick of the clock
'the ticking of the clock.'
- b. Ik hoef al dat ge-ik niet. (De Belder & Van Craenenbroeck, 2014, p. 180)
I need all that ge-I not
'I do not like all this egocentricity.'

The selection of a FVI *ik* by a derivational morpheme *ge-* which selects roots shows that FVI can be categorised just like roots.

Moreover, De Belder and Van Craenenbroeck (2014) report that there are instances where a LVI is inserted into the FTN in Dutch. The LVI *heel* can be inserted either into a RTN in (7a) and realise an AP, or into a FTN in (7b), where it functions as a quantifier. The following examples are taken from (De Belder & Van Craenenbroeck, 2014, p. 187):

7. a. Het **heel**-e bord is veel waard, het kapot-e bord niet.
 the whole-INFL plate is much worth the broken-INFL plate not
 'the intact plate is worth a lot, the broken one isn't.'
- b. Ik heb **heel** het huis gepoetst.
 I have whole the house cleaned
 'I have cleaned the entire house.'

The examples (7a) and (7b) show that a FVI can realise a RTN and that a LVI can realise a FTN in Dutch. This suggests that categoriser heads can merge with a functional morpheme and license the insertion of a FVI into a root position.

Moreover, the distinction between functional and lexical classes is not obvious in Nguni languages. In Nguni languages, roots occur in both functional and lexical classes contra the standard view that L-morphemes correspond to traditional roots while f-morphemes correspond to inflectional morphemes and closed classes. In Nguni, for example, the demonstrative pronoun consists of a root /a- and an agreement marker (van Eeden, 1956; Mabuza, 2012; Dube & Ndebele, 2014).

Table 4: Structure of first position demonstrative pronouns

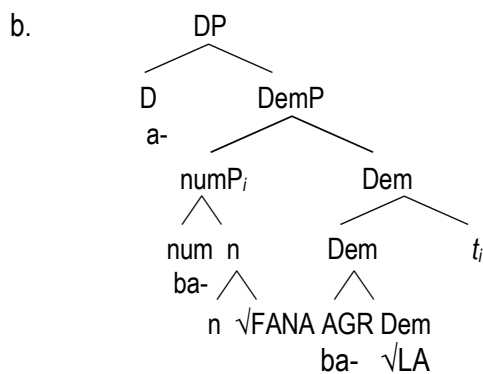
Noun class	Demonstrative pronoun
1. umu-	la- + -wu > lo(wu) DEM-1AGR 'this'
2. aba-	la- + -ba > laba DEM-2AGR 'these'
3. umu-	la- + -mu > lo(wu) DEM-3AGR 'this'
4. imi-	la- + -yi > le(yi) DEM-4AGR 'these'
5. ili-	la- + -li > leli DEM-5AGR 'this'
6. ama-	la- + -wa > la(wa) DEM-6AGR 'these'
7. isi-	la- + -si > lesi DEM-7AGR 'this'
8. izi-	la- + -zi > lezi DEM-8AGR 'these'

The occurrence of roots in functional classes suggests that the categorization assumption must be extended to cover languages that have lexical roots and functional roots.

In my thesis, I extend the categorisation assumption to cover functional classes too. This extension is premised on (1) the fact that there are FVIs that realise RTNs in languages such as Dutch (see 7b) and

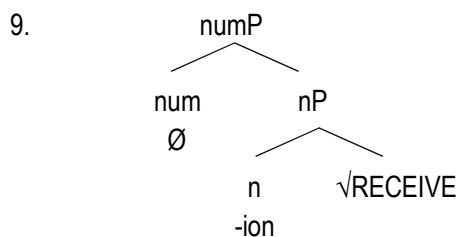
(2) that there are functional and lexical roots in Ndebele (Table 4). The functional roots participate in the formation of functional classes while lexical roots participate in the formation of lexical classes in Ndebele. I follow Kučerová and Szczegielniak (2019) and assume that there are roots that have syntactic features and those that are devoid of syntactic features. Recall from example (3) that lexical roots do not have grammatical features and category features and that lexical roots attain these features by merging with categoriser heads. A categoriser head and a lexical root combine to form a phrasal constituent which means that the derived root can neither act as a head nor project because phrasal constituents do not act as heads. In contrast to lexical roots, functional roots have grammatical features and category features which means they do not need to merge with categoriser heads in the course of the derivation. In fact, a functional root acts as a head and it projects. In the following example, the lexical root $\sqrt{\text{FANA}}$ is selected and categorised by the nominalizer which then projects whereas the functional root $\sqrt{\text{LA}}$ 'this' projects:

8. a. a-ba-fana la-ba
 AUG-2-boy Dem-2AGR
 'these boys'

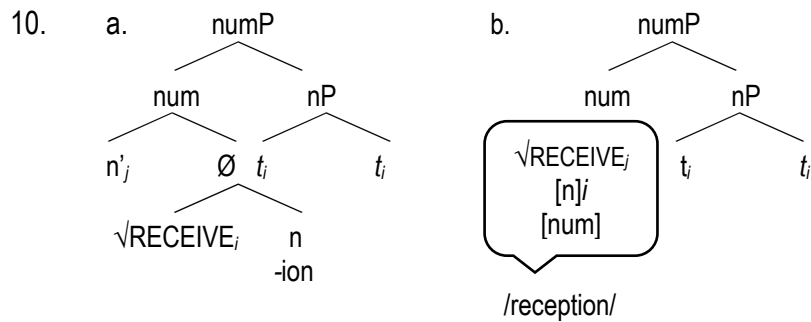


Note that the AGR node in the demonstrative pronoun is added after spell out via the agreement node adding operation. I assume that the demonstrative root has an uninterpretable number that probes and agrees with numP and an EPP feature that attracts numP to spec Dem.

In traditional DM, there is morphological allomorphy and phonological allomorphy. The former identifies with functional morphemes whereas the latter identifies with roots. This distinction is premised on the assumption that functional morphemes compete with each other during insertion while roots do not compete with each other. According to the traditional DM view, there are phonological adjustment rules that alter the phonological form of a given root as a result of morphological conditioning (Siddiqi, 2009, p. 25). For example, the root $\sqrt{\text{RECEIVE}}$ can either be realised as *receive* or as *recept*. The former obtains when $\sqrt{\text{RECEIVE}}$ is conditioned by the little *v* whereas the latter obtains when $\sqrt{\text{RECEIVE}}$ is conditioned by the little *n* *-ion*. Thus, according to this view, the exponents *receive* and *recept* are realisations of an abstract root $\sqrt{\text{RECEIVE}}$. Siddiqi (2009) notes that the phonological readjustment rule alters /v/ to /p/ and shortens the vowel /i/ to /ɛ/ in the derivation of the noun *reception* (p. 25).



Following Pfau (2000), who argues that roots compete with each other just like functional morphemes, Siddiqi (2010) proposes a fusion-based analysis of root allomorphy (the fusion operation is discussed in detail in 2.2.2). The fusion-based analysis of root allomorphy posits that a root moves and adjoins to the functional head c-commanding it in the narrow syntax. The categoriser head attracts the root and the derived head is attracted to the next head (10a) and then the fusion operation collapses the root and the heads into a single node (10b). The fusion operation applies in the PF branch (refer to 1).

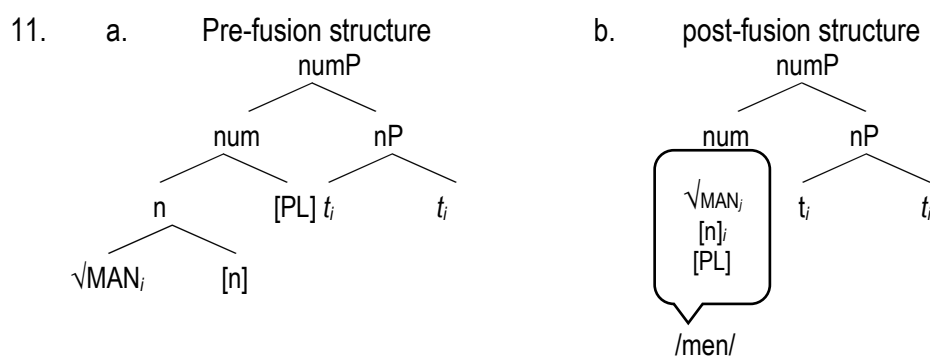


(10a) shows the structure of the word form *reception* in the syntactic module while (10b) shows the structure after the application of the fusion operation in the MS. In (10a), the root moves to the nominaliser head and the derived head moves to the number head. Fusion incorporates the root, the features of the nominaliser head and the number features into a single head as shown in (10b). In the mapping of syntax to phonology, the exponent *reception* is inserted into the complex head created in (10b). Thus *receipt*, *receive* and *reception* compete to realise the node in (10b). Note that, according to root allomorphy, exponents compete with each other to realise an abstract root whereas with readjustment rules, there is one exponent for the root.

Following Siddiqi (2009), I adopt the fusion-based account of root allomorphy and I assume that the root always fuses with the formal features of its categoriser head to form a stem.

2.2.2 Fusion

In DM, fusion occurs after syntax but before vocabulary insertion. The fusion operation fuses two terminal nodes standing in a sisterhood relation into a single terminal node (Halle & Marantz, 1993, p. 136; Halle & Marantz, 1994, p. 277; Hale, 1997, p. 148). Fusion obliterates morpheme boundaries between fused terminal nodes and the operation reduces the number of terminal nodes (Kandybowicz, 2007, p. 86). As a result of node fusion, vocabulary insertion inserts one vocabulary item instead of two or more vocabulary items. For example:



In the pre-fusion structure (11a), head movement raises the root to the nominaliser head and to the number head, which carries the feature [+PL]. Fusion then combines the root, the nominaliser head and the number head into a single head (11b). This single derived head incorporates the features of the root and the plural specification of the number head, and is realised by the exponent /men/.

2.2.3 The Head Lowering hypothesis

In this thesis, I employ the Head Lowering hypothesis in discussing the relation between C and T in Ndebele. The standard DM does not motivate the head lowering operation (Halle & Marantz, 1993; Marantz, 1995; 1997; Harley & Noyer, 1999; Embick & Noyer, 2008). In the standard DM analysis, head Lowering is a morphological operation that applies in the PF branch before linearisation but after all syntactic operations have applied. According to the Head Lowering hypothesis, “All Lowering in Morphology follows all Raising in Syntax. Lowering can never remove an environment for Raising” (Embick & Noyer, 1999, p. 275). Recall that morphology interprets the output of syntax, thus Head Raising has to take precedence over head lowering because the former is a syntactic operation while the latter is a morphological operation.

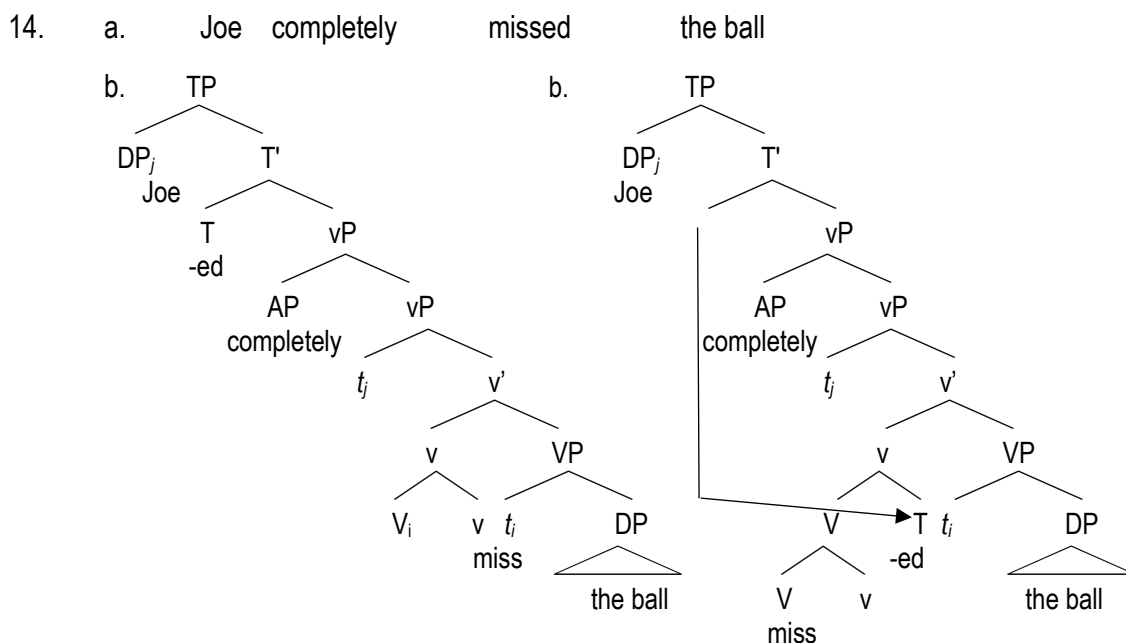
Head lowering morphologically combines two syntactic heads to form a complex head. A lowering head moves and combines with the head of its complement. Embick and Noyer (2001) argue that the lowering head strictly adjoins to the highest maximal head projection of its complement as follows:

12. $[_{XP} X^0 \dots [_{YP} \dots Y^0 \dots]] \rightarrow [_{XP} \dots [_{YP} \dots [_{V^0} Y^0 + X^0] \dots]]$ (Embick & Noyer, 2001, p. 269)

The realisation of tense on the verb in English, according to Embick and Noyer (2001), is an instance of Tense-to-Verb (T-to-V) head lowering:

13. Joe $[_{TP}$ t_i $[_{vP}$ miss-ed $_i$ the ball $]]$

Crucially, an adjunct that intervenes between the lowering T head and the target head v does not block the Head Lowering operation from applying mainly because Head Lowering is insensitive to locality. For example, T *-ed* skips the intervening adverb *completely* and combines with the v head:



(14a) shows a pre-Spell-out structure while (14b) shows a post-Spell-out structure after Head Lowering has combined T and v. As (14b) shows, for T^0 to be able to lower and morphologically combine with v^0 , the head of the complement vP, it does not necessarily have to be local to v^0 . An adjoined element may intervene between the two heads (Bobaljik, 1995; Tseng, 2009).

Skinner (2008; 2009) presents an alternative to the standard implementation of the Lowering hypothesis. The alternative analysis holds that Lowering is a feature-checking mechanism that applies where head raising is impossible. Skinner (2009) couched the lowering hypothesis within the phase head theory (Chomsky, 2000; 2001; Nissenbaum, 2000). A phase head is a functional head (like C, v) at which syntactic operations and feature valuation apply before the domain is spelled out (Hale, 2001; Richards, 2007). When a phase head merges, it spells out its complement phrase. Spell out applies after a raising head has moved to the phase head (such V-to-v and T-to-C head raising movements) or after the movement of a phrase to specifier of the phase head (such as movements to spec v and spec C).

Narrow syntactic operations such as head raising are impossible for phrases that have been spelled out. Rather, the members of the spelled out phrase can only participate in post-syntactic operations such as head lowering. Skinner (2009) argues therefore that lowering is a result of Phase Head Impenetrability Condition:

15. **Phase Head Impenetrability Condition**

Features embedded within a complex phase head α become unavailable for further narrow syntactic feature-checking transformations as a result of Spell-out of αP . Only the features of α itself and its specifier(s) will be visible after Spell-out (p.111).

In Skinner's (2009) analysis, the probing head β checks its uninterpretable features by Lowering to the complex head α of the complement. This theory assumes that the Head Lowering operation occurs in order to rescue the derivation from crashing and that, in the case of a lowering head taking a complex phase head as its complement, the lowering head can combine with any head which is a part of α .

16. a. a head β carrying an uninterpretable feature takes a phase complement, and
- b. the corresponding interpretable feature that can check β 's uninterpretable feature is embedded within the phase head α of the complement of β due to previous narrow syntactic head movement (p. 112).

According to Skinner (2009), head lowering is driven by spell out effects on the phase head. Thus, uninterpretable features that are not valued in the narrow syntax can be valued in the PF branch prior to phonology. This is where head lowering operation takes place which means head lowering is a last resort operation that applies in PF.

Lastly, Skinner (2009, p. 108) argues that head lowering strictly involves the movement of non-phase heads to phase heads (e.g T-to-v, Asp-to-v, Top-to-C)". This means that phase heads do not lower which rules out the possibility of having movements such as C-to-T.

Following Skinner (2008; 2009), I adopt the view that Head-to-Head Lowering is a feature-checking driven operation that applies where head raising failed to take place in the narrow syntax. However, I reject the claim that lowering strictly moves non-phase heads to phase heads and that a phase head never lowers. I argue that a probing head may have either a strong feature or a weak feature. Strong features must be checked in the narrow syntax via head raising while weak features are checked in morphology via head lowering. This assumption is premised on the understanding that "[a] strong feature must be eliminated (almost) immediately upon its introduction into the phrase marker; otherwise, the derivation cancels" (Chomsky, 1995a), while "...weak features are deleted in the PF component so that PF rules can apply to the phonological matrix that remains" (Chomsky, 1993, p. 216). This means that a phase head that has weak features can lower and merge with the head of its complement phrase. Thus C-to-T head

lowering is possible. Crucially, Linker-to-Determiner-to-Complementiser-to-T head lowering is reported for Ndebele by Arregi and Pietraszko (2018).

2.2.4 Vocabulary insertion

Recall that there are three lists in DM. List A contains morphosyntactic features (roots and functional morphemes); List B contains vocabulary items (phonological features) and list C is the Encyclopedia. The roots and the morphemes in List A do not have phonological content. The phonological content of roots and morphemes is supplied in the PF branch, which means that the narrow syntax manipulates morphemes with no phonetic content. The phonological features are supplied by the Vocabulary insertion operation. Embick and Noyer (2007) note that:

The *Vocabulary* is the list of the *phonological exponents* of the different abstract morphemes of the language, paired with conditions on insertion. Each such pairing of a phonological exponent with information about the grammatical (i.e. syntactic and morphological) context in which the exponent is inserted is called a *Vocabulary Item* (p. 297).

This means that there is an intricate relation between a *Vocabulary Item* (VI) and the context where that VI may be inserted.

17. Vocabulary Item schema

signal ↔ context of insertion (Harley & Noyer, 1999, p. 4)

Vocabulary insertion matches the structure created by syntax and/or morphological operations that take place prior to Vocabulary insertion with phonological signals available in a given language. A VI has to specify the morpho-syntactic features and the morpho-syntactic context of the abstract morpheme that is

The phonological exponent of a Vocabulary Item is inserted into a position if the item matches all or a subset of the features specified in that position. Insertion does not take place if the Vocabulary Item contains features not present in the morpheme. Where several Vocabulary Items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen (p. 128).

Regardless of the number of VIs available for insertion, the vocabulary insertion operation only licenses the insertion of one VI per terminal node. In line with Halle (1997), Siddiqi (2009, p. 15) outlines five conditions that regulate the insertion of VIs:

20. a. The VI that has the most features matching the node features is inserted.
- b. The node may contain more features than the VI is specified for, but the VI may not be more highly specified than the node.
- c. Since DM is an underspecification model, the “elsewhere condition” (or default) is the VI in the appropriate competition that is specified for the fewest features.
- d. The VI may be sensitive to features in surrounding nodes, as well as to features on their loci of insertion.
- e. The operation of insertion is usually taken to be cyclic (Bobaljik, 2002), allowing stems to be inserted before affixes.

Condition (20a) captures the subset principle (that a VI that matches most of the features contained by the target node is inserted ahead of the less specific candidates). Condition (20b) rules out the insertion of a VI that has more features than those contained in the target node whilst (20c) rules that a less specified VI is inserted in more environments than a specified VI. The condition in (20d) captures that the choice of a VI may be determined by the morpho-syntactic features of the adjacent nodes. Lastly, (20e)

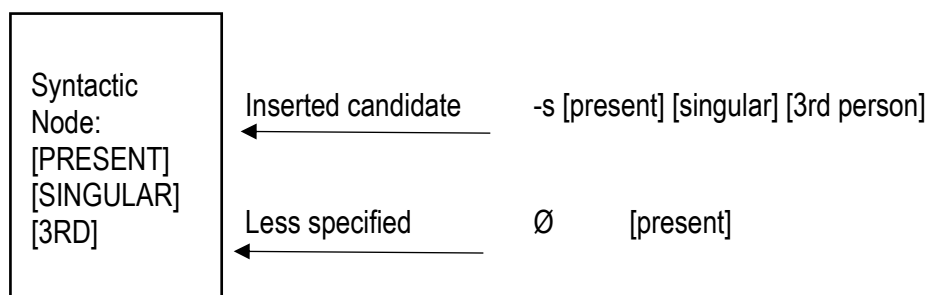
holds that roots are assigned phonological features ahead of functional morphemes.

Returning to example (19), the present tense exponent /s/ is specified for the features [present], [singular] and [3rd person] whereas the zero morpheme is only specified for the feature [present]:

21.	a.	Exponent		Syntactic node
		-s	↔	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>PRESENT</p> <p>SINGULAR</p> <p>3RD PERSON</p> </div>
	b.	Exponent		Syntactic node
		∅	↔	[PRESENT]

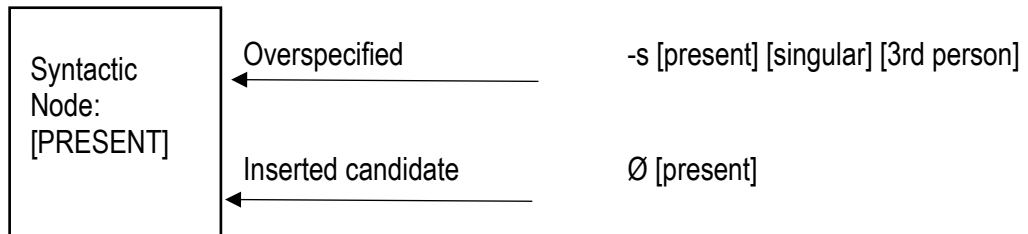
The VIs -s and ∅ compete to realise an agreement node in English. When syntax provides a context where T is specified for, say, 3rd person, singular and present, the insertion of both VIs is licensed in principle, as both meet the conditions for insertion. However, the subset principle allows only for insertion of -s because -s is specified for all the features on the target node while ∅ is less specified because it only specifies for the [present] feature.

22. Competition into *He kick-s the ball.*



However, when the target T node is only specified for, say, [present], then the subset principle allows for the insertion of zero, and bans the insertion of –s, because –s is overspecified for the target node.

23. Competition into *I kick the ball*.



In fact, the VI Ø is an elsewhere item because it can realise a T node that is specified for 1st person (24a-b), 2nd person (24c) and 3rd person (24d), and singular (24a & 24c) and plural features (24b & 24d) while the exponent –s is specified for present, singular and 3rd person (25e):

- 24. a. I kick-Ø the ball.
- b. We kick-Ø the ball.
- c. You kick-Ø the ball.
- d. They kick- Ø the ball.
- 25. a. *I kick-s the ball.
- b. *We kick-s the ball.
- c. *You kick-s the ball.
- d. *They kick-s the ball.
- e. He kicks the ball.

The zero morpheme Ø is a default agreement VI whereas the present tense suffix -s is specified for present, singular and 3rd person (25e).

2.2.5 Agreement node addition

DM assumes that concordial agreement is a morphological rather than a syntactic operation. Syntax generates structures that do not have agreement morphemes. Agreement marking is a parameter for languages such as Bantu and Latin. In these languages, for example, agreement nodes are added after syntax but before vocabulary insertion (Embick & Noyer, 2007). Marantz (1991) argues that:

AGR is a morpheme added to I(nflection) at morphological structure (MS) for those languages that demand morphological agreement to create a well-formed inflectional verb as a word: agreement is a morphological property of certain languages (p. 26).

An agreement node is only added to a syntactic head that had its u-phi features valued in syntax. A head bearing i-phi features values the u-phi features of the probing head and then moves to the specifier of the probing head in most Bantu languages. Crucially, agreement nodes are introduced without any features and a feature that was present in the narrow syntax is then copied onto the added node in PF (Embick & Noyer, 2007, p. 309). In the case of subject-verb agreement, for example, the u-phi features of the T head are valued in the syntax, and an AGR-node is then added to T at PF, so that an exponent of agreement can be linked to a terminal node. An AGR node copies the phi value of the subject from T rather than directly from the subject.

2.3 Probe-goal view

DM adopts the standard minimalist notions of Merge, Match/Agree and Move although scholars tend to focus more on the operations that take place at PF (Halle, 1990; Bonet, 1991; Halle & Marantz, 1993; Marantz, 1995; Pfau, 2000; Embick & Noyer, 2007; Siddiqi, 2009; 2010; Embick, 2010; 2012; Arregi & Nevins, 2012). DM assumes the minimalist mechanism of weak-strong distinctions of syntactic features articulated by Chomsky (1995). Embick and Noyer (2007) state that roots and functional morphemes

such as T(ense), aspect, number and categorisers among others bear uninterpretable and interpretable features in the syntax module (p. 309). The uninterpretable features and interpretable features are contained in functional heads such as T, *v*, *n* and *a* among others.

In this thesis I conflate the two minimalist mechanisms, namely the strong/weak distinction of Chomsky (1993; 1995) and the probe-goal system of syntactic relations of Chomsky (2000/2001) and others. An uninterpretable feature can either be strong or weak. A strong feature must be checked in syntax while a weak feature may be checked after syntax (Chomsky, 1995). The probe-goal system is based on Match, Agree and Move. The uninterpretable features on a probing head must correspond and be valued by the interpretable features on a goal. For feature valuation to take place, the probing head must search for a goal with corresponding features. The goal must be in the c-command domain of the probing head. The following conditions should obtain for agreement between the probing head P and the goal G to obtain:

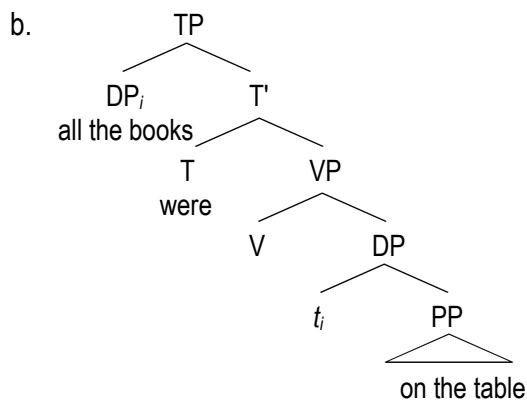
26. A probing head P agrees with a goal G only if:
 - a. P c-commands G (the *c-command condition*)
 - b. There is no intervening maximal projection with matching features between P and G (the *intervention condition*).
 - c. Features of P and G are of the same type (Match).
 - d. A feature of P is valued by a feature of G (Agree).

Condition (26a) posits that agreement obtains when the probing head c-commands a while condition (26b) specifies that the probing head must not c-command an intervening goal (Intervention condition). (26c) states that the features of the probing head (P) and the goal must correspond and (26d) captures that agreement only obtains when the feature of the goal values that of the probing head.

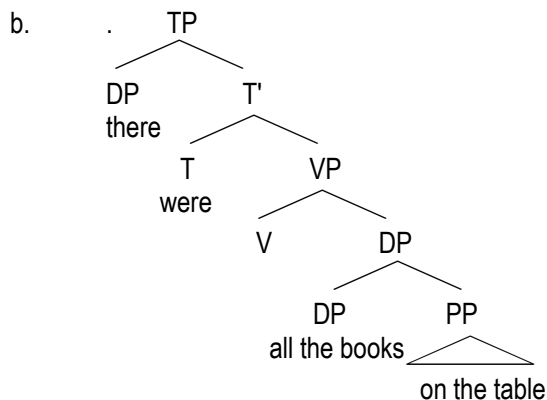
There are some languages like English that permit a goal to agree with the probe without moving to the

specifier of the probe. I adopt Chomsky's (1982) EPP proposal that requires spec T to be occupied. The EPP requirement is satisfied by either moving the subject to spec T or by merging an expletive in spec T. In subject-verb agreement, for example, T can agree with either a preverbal subject, as in (27), or with a post verbal subject, as in (28):

27. a. All the books were on the table.



28. a. There were all the books on the table



In (27), the uninterpretable phi-features on T probe the c-command domain of T and find corresponding interpretable phi-features of the subject DP, *all the books*. An Agree relation obtains between T and the subject DP *all the books* and the subject moves to spec T to satisfy the EPP requirement on T. In (28), in contrast, the uninterpretable phi-features on T probe the c-command domain of T and agree with the subject DP while the subject remains in-situ. An expletive *there* is merged at spec T to satisfy the EPP requirement on T.

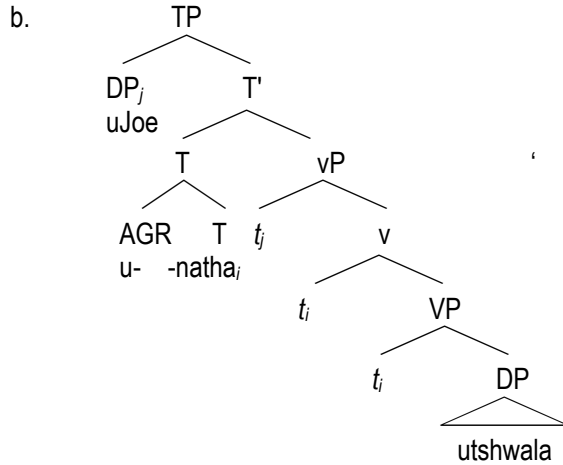
In contrast to English where a probe can agree with an in-situ goal, Agree is contingent on Move in most Bantu languages. This is common in languages that have a canonical Subject – Verb word order. In these languages, T bears uninterpretable phi features and an EPP feature. When T merges, the uninterpretable features of T probe the derivation for the corresponding interpretable phi features and finds the subject that is at spec v. The EPP feature attracts the subject to spec T and then feature valuation obtains in a specifier – head relation (Kinyalolo 1991; Baker 2003; 2008; Collins 2004; Carstens 2005). Collins (2004) states that:

Agreement Parameter

Let Agree (X, YP), where X contains the probe (uninterpretable phi features) and YP contains the goal, then X has an EPP feature that is satisfied by YP (p. 116).

The agreement parameter stipulates that Agree is dependent on Move in Bantu. Subject agreement, for example, obtains when the subject moves from spec v to spec T to generate a Subject – Verb – Object word order (29a):

29. a. u-Joe u-nath-a u-tshw-ala
 1a-Joe 1SM-drink-FV aug-14-beer
 ‘Joe is drinking beer’



As illustrated in (29b), the subject moves from spec vP to spec T for subject – verb agreement to obtain and this movement generates the S-V-O word order. This means that an in-situ subject never agrees with T (30a). Rather, an expletive subject agreement marker *ku-* merges directly at spec T when the logical subject is in-situ to derive Verb -Subject- Object word order (30b):

- 30 a. *u-nath-a u-Joe u-tshw-ala
 1SM-drink-FV 1a-Joe aug-14-beer
 Intended: ‘Joe is drinking beer’
- b. ku-nath-a u-Joe u-tshw-ala
 17SM-drink-FV 1a-Joe aug-14-beer
 ‘Joe is drinking beer’

(30a) is ungrammatical because the subject DP did not vacate spec vP which shows that indeed agreement is dependent on movement in Bantu.

However, there are some Bantu languages that permit an agreeing subject to remain in spec v. Van Der Wal (2012) reports that Montego (N13, spoken in Tanzania), and Matumbi (G402, spoken in Tanzania) allow the agreeing subject to remain in a VP-internal position. For example:

31. a. **N13, Matengo** (Yoneda 2011, p. 763)

ju-a-teleka	María	wâ:le.	VSO
1SM-past-cook/sf	1.Maria	9.rice	
'Maria cooked rice.'			

b.	?*juateleka	wáli	Marí:a	*VOS
	1SM.past-cook/sf	9.rice	1.Maria	
Intended: 'Maria cooked rice.'				

32. a. **G402, Matuumbi** (Odden 1996, p. 75)

aakátite	Sinanduúgu	kaámba	VSO
1SM-cut	Sinanduugu	rope	
'Sinanduugu cut rope.'			

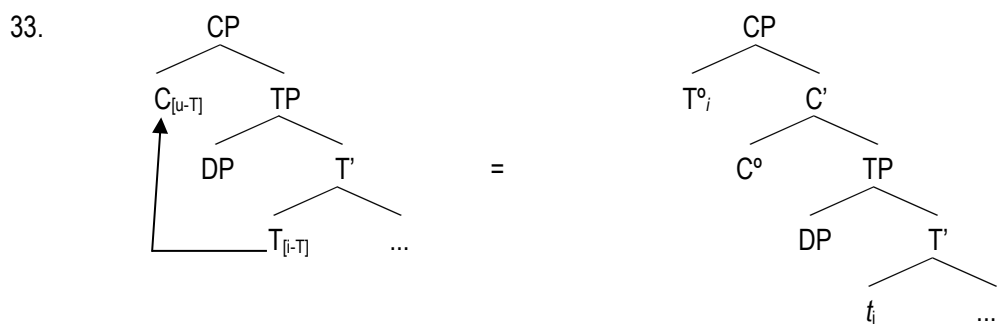
b.	*aakátite	kaámba	Sinanduúgu	*VOS
	he.cut	rope	Sinanduugu	
'Sinanduugu cut rope.'				

These data serve to show that there are some Bantu languages where Agree is independent of Move. In the transitive constructions in (31a) and (32b), subject DPs occur in between verbs and object DPs (VSO).

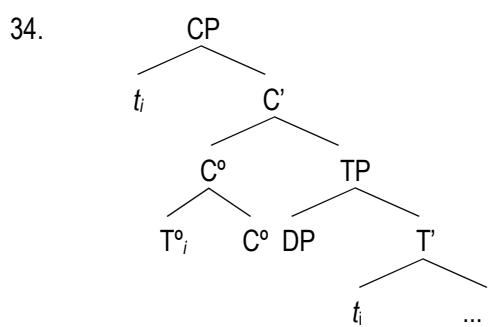
2.4 Matushansky's (2006) head movement theory

In this thesis, I adopt the head movement theory propounded by Matushansky (2006). Matushansky (2006) argues that head movement consists of two operations, syntactic movement of a head X to the

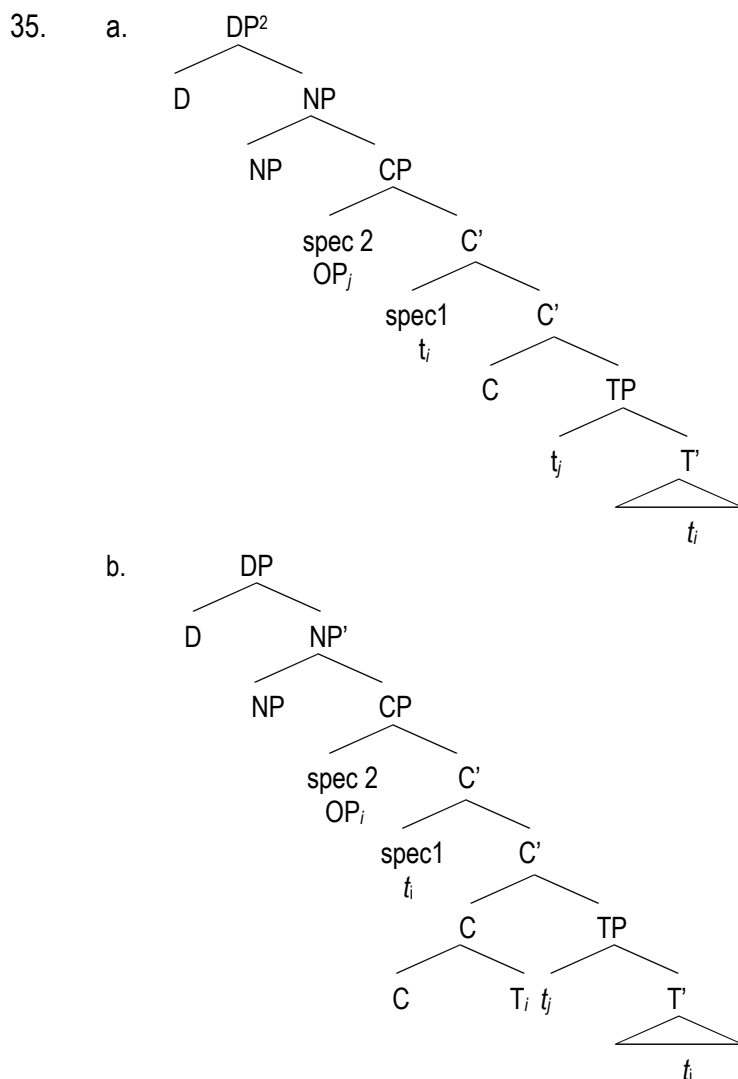
specifier of the target head Y, and morphological merger of X and Y. Syntactic movement, according to Matushansky (2006), is triggered by uninterpretable categorial features such as u-N, u-A and u-V. The probing head categorially selects (c-selects) the head of its complement that bears a corresponding interpretable category feature (Matushansky, 2006, p. 76). In the DM framework, these interpretable category features are categorisers *n*, *a* and *v* (Marantz, 2001; 2007). A c-selected head is attracted to the root of the c-selecting head as follows:



While the movement of the c-selected head to the root of the c-selecting head occurs in syntax, there is an operation that morphologically combines the two heads in the morphology module. This operation is known as morphological merger (m-merger). M-merger is a PF operation and combines two heads just like Head Lowering. In contrast to Head Lowering discussed in 2.2.3 where a lowering head moves and combines with the head of its complement, m-merger strictly operates on two adjacent heads in a specifier-head configuration. M-merger morphologically combines the two heads to derive a simplex head. The following example illustrates T-to-C head movement:



A head may bear two uninterpretable features that require the movement of two elements. For example, a C-head may bear u-T and u-rel features that correspond to the i-T on the T head and i-rel on a relativised subject-DP (a relative pronoun, or a null operator) in spec T. The u-T feature on C then requires the T head to move to spec C while the u-rel feature attracts the relative operator bearing the i-rel-feature to spec C. Matushansky (2006) posits that the probing head may attract the first goal to spec 1 and the second goal to spec 2. When one of the moved elements is a head which has to m-merge with the attracting head, this head will always be copied to spec 1, which is the specifier that is most local to the attracting head, because an intervening head would block the application of m-merger:



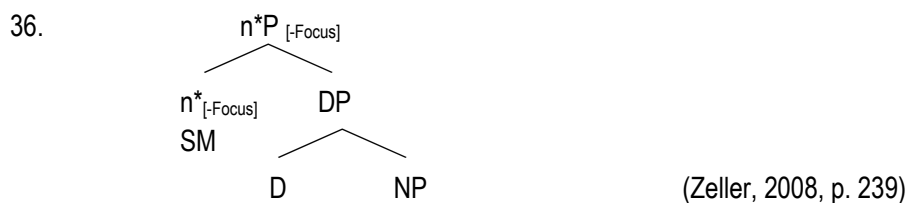
²In keeping with the standard analysis of relative clauses, I assume that relative clauses are CPs adjoined to the head noun.

The u-T feature on C c-selects the T-head and triggers the movement of T to spec 1 while the u-rel feature on C c-selects the DP bearing i-rel and extracts the OP from TP and copies it to spec 2 as shown above. Note that, even if the relative operator were a simplex element (i.e. a head), this head in spec 2 could not M-merge with the C-head because the T-head in spec 1 intervenes between the two heads.

2.5 Antifocus agreement theory

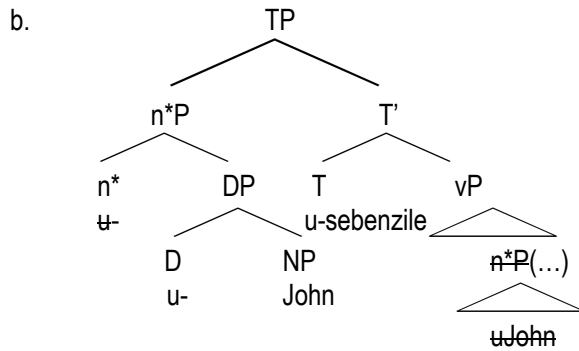
The antifocus agreement theory is propounded by Zeller (2008; 2014; 2015). The antifocus agreement theory is premised on the idea that an antifocus marked n*P must move out of a vP and that subject/object agreement only obtains when an antifocused n*P moves to spec T/spec X respectively.

In subject – verb word order, Zeller (2008) argues that a subject DP is selected by an n*-head which is spelled out as a subject marker and that this n*P first merges at spec v and then moves to spec T. The movement of the subject from spec v to spec T is connected to the n*-head bearing an antifocus feature. An n*-head marks the subject DP as antifocused and triggers the movement of the subject from spec v.



Zeller (2008) contends that T has an antifocus feature that probes and agrees with an antifocus marked n*P in vP. The EPP feature on T then extracts the antifocus marked n*P and copies it to spec T. Agreement takes place when the targeted n*P is closer to, and is in the c-command domain of T. Crucially, Zeller (2008) argues that the n*-head incorporates into T and morphologically combines with the verb (p. 228):

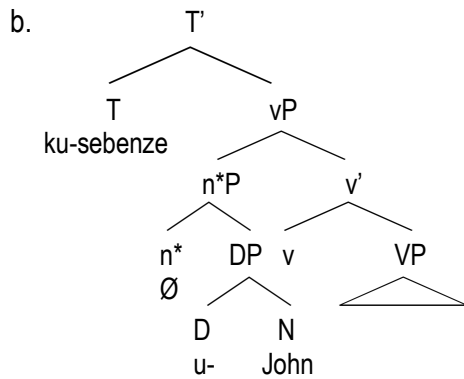
37. a. u-John u-sebenz-ile (Zulu; Zeller, 2008, p. 228)
 1a-John 1SM-work-TNS
 ‘John worked’



The example illustrates the movement of the subject n*P from spec v to spec T and the morphological merger of the SM *u-* to the verb.

The analysis posits that a subject that does not have an overt SM cannot move out of a vP mainly because the [-Focus]-feature that causes movement is expressed by an overt SM only. Therefore, the movement of a subject n*P out of a vP is not motivated if the SM is not overt. Importantly, Zeller argues that when an n*P cannot be extracted from vP an expletive marker is prefixed to the verb. The following example from Zeller (2008) illustrates the insertion of the expletive marker *ku-* and an in-situ subject n*P:

38. a. ku-sebenz-e u-John. (Zulu; Zeller, 2008, p. 229)
 EXPL17-work-TNS 1a-John
 'John worked'

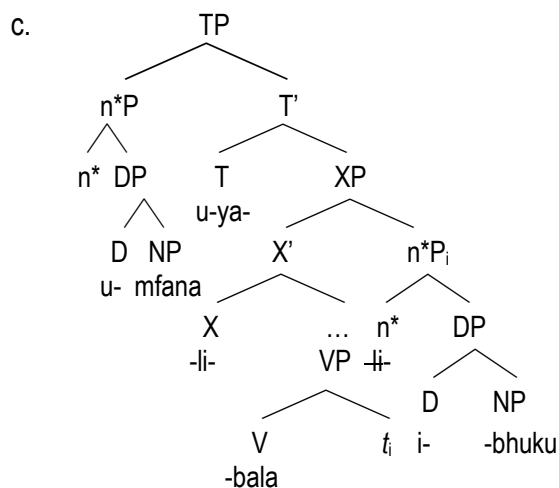


The subject n*P does not vacate spec v because there is no explicit antifocus SM that licenses the movement of the subject n*P from spec v-to-spec T.

Zeller (2014, 2015) argues that object agreement in Zulu is a result of antifocus agreement between a probing functional head and an object n*P bearing interpretable antifocus features. The analysis posits that the EPP feature on the extracting head is responsible for the movement of an antifocus n*P out of the vP. Zeller (2014) postulates that there is a functional projection that is located above vP which extracts antifocus-marked object n*Ps from vP. Zeller (2014) refers to this functional head as the extractor head (X). The X head bears uninterpretable antifocus features, EPP features and u-phi features, which do not probe, but are parasitic on X's antifocus feature. The uninterpretable antifocus features on X probe and agree with an object n*P bearing corresponding interpretable antifocus features. The EPP feature on X attracts an n*P that agrees with X. An n*P that moves to spec X is the one that agrees with X in terms of antifocus and consequently values the u-phi features on X. In the Ndebele example in (39), the moved n*P *ibhuku* 'book' is merged to the right of X and the n*-head *-li-* incorporates into X and combines with the verb as shown in (39b). The disjoint marker *-ya-* and an object marker are prefixed to the verb stem when a corresponding object marked object has vacated VP. The occurrence of a disjoint marker *-ya-*

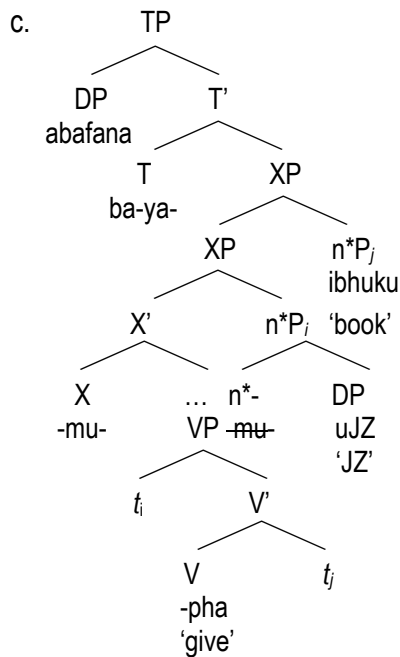
and a class 5 object marker *-li-* that corresponds to the class 5 object *ibhuku* ‘the book’ in (39b) is evidence that the object marked n*P has dislocated to the right. Thus the object n*P in (39a) is inside the VP because there is neither an object marker nor a disjoint marker prefixed to the verb stem:

39. a. u-m-fana u-bal-a ibhuku
 AUG-1-boy 1SM-read-FV 5-book
 ‘the boy is reading the book’
- b. u-m-fana u-ya-li-bal-a t_i]_{VP} i-bhuku_i
 AUG-1-boy 1SM-DIS-5OM-read-FV 5-book
 ‘the boy is reading the book’



As shown in (39), an agreeing object vacates VP and is copied to spec X and then the n*-head incorporates into X.

In ditransitive verb constructions, X moves an antifocus agreeing n*P out of a vP to the right of X, potentially leaving a focused, non-agreeing object n*P inside vP. This proposal implies that a focused indirect object (IO) that intervenes between X and the direct object (DO) does not block antifocus feature agreement (40a). Note that the extraction of the DO to spec X is only possible when the intervening IO does not possess the required interpretable antifocus feature. Thus X can agree with, and attract, a DO

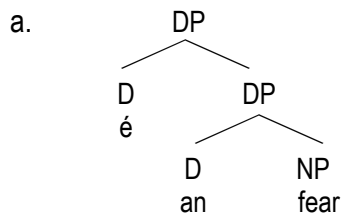


Zeller (2014) shows that when a DO follows an agreeing IO, both objects are dislocated. The agreeing IO has moved to the right-branching specifier of X, while the non-agreeing DO is adjoined to the right of XP, as shown in (41c). Finally, the n*-head of the object marked n*P incorporates into X and morphologically combines with the verb.

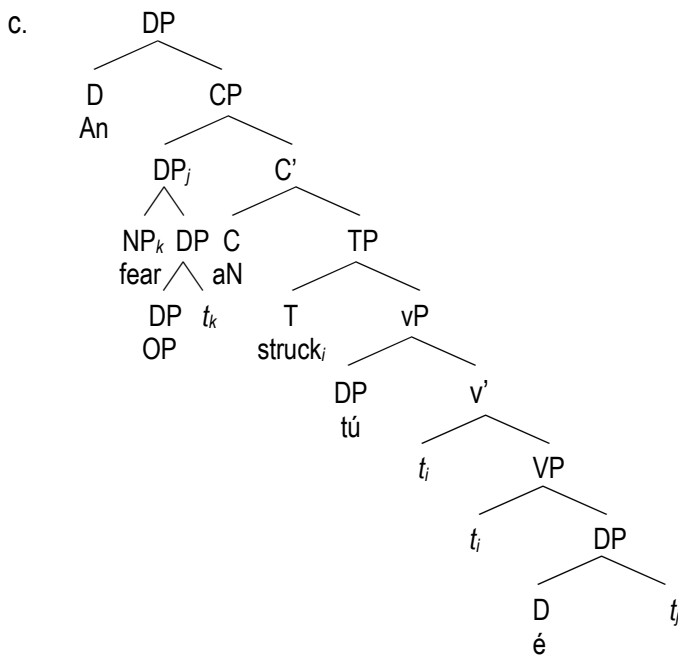
2.6 “Big” DP theory

The “Big” DP theory (Kayne, 1972; 1994; Torrego, 1986; Uriagereka, 1988; 1995; Cecchetto, 2000; Boeckx, 2003 & others) posits that a resumptive pronoun (RP) and its antecedent DP merge as one constituent (42a) and split later in the derivation when the antecedent DP is extracted and copied to spec C leaving the resumptive pronoun stranded in the extraction site (42b-c). Note that (42c) shows the head raising analysis (Brame, 1968; Schachter, 1973; Vergnaud, 1974; Kayne, 1994; Bianchi, 1999 among others) version of resumptive pronoun stranding, which posits that the head noun of a relative clause is generated in the RC and moves to its surface position via spec C:

42.



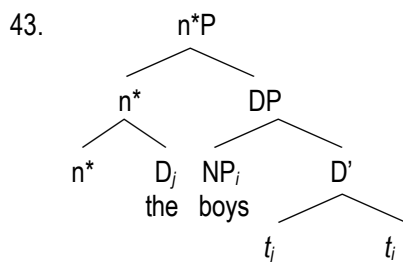
- b. An fear aN bhuaíl tú é. (Irish, Boeckx, 2003, p. 68)
 the man C struck you him
 'The man that you struck (him)'



The example in (42a) illustrates the structure of the Big DP prior to the stranding of the resumptive pronoun. (42c) shows stranding of the resumptive pronoun *é*, the extraction of the complement DP *an fear* from the big DP and the raising of the head noun *fear* to spec DP. I adopt the resumptive pronoun analysis although I reject head raising analysis articulated in (42c). As stated in chapter 1, I adopt the standard relative clause analysis which posits that the head noun is base generated outside the relative clause.

I follow the little n^* hypothesis (Chomsky, 2008; Zeller, 2008; Bruening, 2009), and assume that there is a functional n^* that selects DPs. The little n^*P hypothesis holds that what is usually referred to as a DP

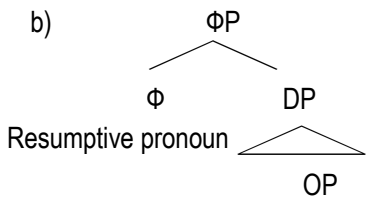
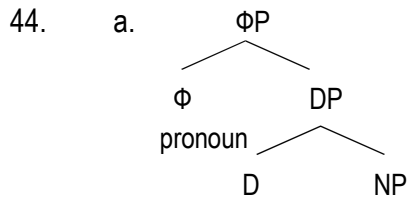
consists of a little nP shell and a DP. The n* head is the highest head in an n*P and this n* head is analogous to the v head in a vP. The n*-head selects the complement [X (YP)] where X is a D(eterminer) and YP is a NP (Chomsky, 2007, p. 26). Chomsky (2007) argues that D inherits the features of the n*-head although he does not specify the type of features. Crucially, Chomsky argues that YP raises to spec D while the D head moves to n*.



According to the little n*P hypothesis, the n*-head is not spelled out as shown in (43).

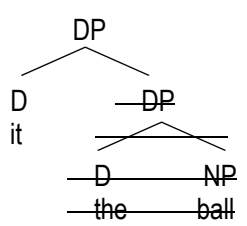
In Bantu, according to Zeller (2008), n* is spelled out by a subject marker in a subject – verb word order but n* is null when the word order is verb - subject. The subject marker that spells out n* incorporates into T (see 37).

I adopt Klein's (2017) view that the phi head (n* head in my analysis) that selects DPs bears number and person features. In keeping with the Big DP proposal, Klein (2017) develops a phi Phrase theory (ΦP) which holds that all DPs consist of a phi head and a complement DP. The phi head bears person and number features and it selects the DP that has nominal features. D inherits number and person features from the phi head. Crucially, Klein (2017) adopts the standard RC analysis (Quine, 1960; Montague, 1974; Partee, 1975; Chomsky, 1977) and assumes that the phi head selects an operator marked DP in the formation of RCs (44b):



The complement DP of Φ in (44b) is extracted and copied to spec C leaving the phi head stranded in the relativisation site. Klein adopts the structure of pronouns proposed by Sauerland (2008). Sauerland (2008) argues that the syntax of every pronoun looks like (45) and consists of the pronoun and a complement DP that is deleted by PF-deletion rules. For example, the complement DP ~~the ball~~ is deleted in the following example:

45. The boy kicked it ~~the ball~~



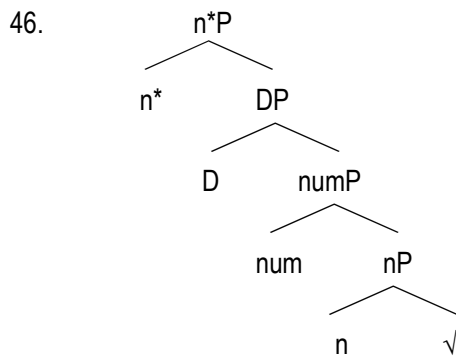
As (45a) shows, Klein (2017) adopts the general syntactic structure of pronouns proposed by Sauerland (2008) and he extends the analysis by arguing that operators escape PF-deletion by moving away from the phi head in the formation of resumptive relative structures. According to Klein's (2017) analysis, the differences between resumptive pronouns and pronouns are; (1) that resumptive pronouns occur in the relativisation site while pronouns occur elsewhere, and (2) that the phi head is incorporated into D (Klein does not further develop this aspect in his analysis) in the course of the derivation in non-resumptive structures whereas the phi head gets an independent exponent in resumptive structures.

In this study, I assume that: 1. all DPs are selected by an n^* functional head. This n^* head is realised by a pronoun/ resumptive pronoun (= a pronominal root that is specified for person and number features).

2. agreement between n*P and T/X is controlled by the n* head. 3. the complement DP is extracted from the n*P leaving n* stranded in the relativisation site. 4. subject agreement and object agreement are driven by antifocus agreement between the T-head/ X-head and the antifocused subject n*P/object n*P respectively. 5. the head noun is base generated outside the relative clause while the relative operator merges as the complement DP of the n* head and the operator is attracted to spec C leaving n* stranded in the relativisation site.

2.7 A note on Ndebele syntax

I assume that arguments have an n*P structure in Ndebele. A simple n*P consists of an n* head, a determiner phrase, a number phrase (numP), a nominaliser head (little n) and a root. The little n selects and categorises a root as a noun stem and then the num head selects the noun phrase (nP) which is then selected by the determiner (D). Lastly, the n* head selects the DP as shown below:

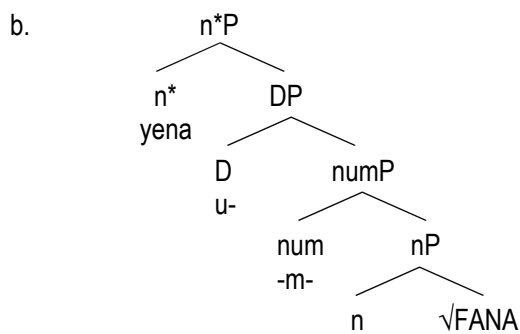


The n* head can either be null or be spelled out by a pronoun. The D head is spelled out by an augment while the number head is spelled out by the class marker. The nP is realised by the traditional root. Note the difference between the little n and the n* head. The little n is a nominaliser head whose role is to categorise roots and to recategorise stems. The little n assigns gender to the featureless root and it has no exponent in Ndebele. In contrast, the n* head is the highest head of an n*P that bears person and number features. I maintain that n* is responsible for person agreement (subject agreement and object

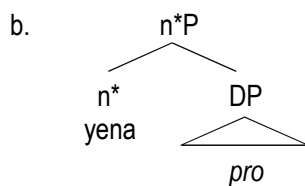
agreement).

There is an emphatic n*P and a non-emphatic n*P in Ndebele. An emphatic n*P is the one whereby the n* head is spelled out as a strong pronoun regardless of whether the complement DP is overt (47) or *pro* (48):

47. a. y-e-na u-m-fana
 1AGR-it-EM AUG-1-boy
 ‘(him) the boy’

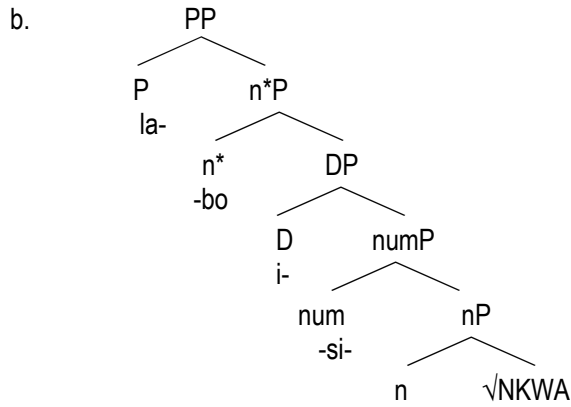


48. a. y-e-na
 1AGR-it-EM
 ‘him’

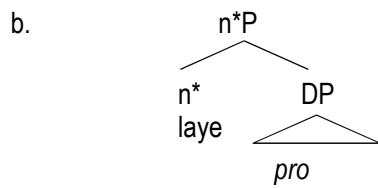


A non-emphatic n*P is the one whereby the n* head is either a clitic pronoun or null. A clitic pronoun realises n* when a prepositional head selects either a full n*P that has an overt complement DP (49) or an n*P that selects complement *pro*-DP (50).

49. a. la-y-e u-m-fana
 and-1AGR-it AUG-1-boy
 'and (him) the boy'

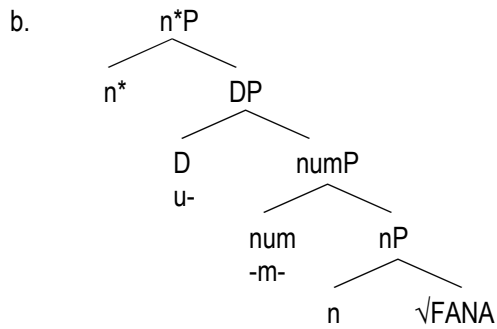


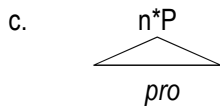
50. a. la-y-e
 and-1AGR-it
 'him/her'



I assume that a bare DP (51a) and a *pro* n*P (51c) are selected by a null n*:

51. a. u-m-fana
 AUG-1-boy
 'the boy'





Ndebele has an unmarked subject – verb – object (SVO) word order. In an SVO word order, the subject n*P always vacates vP while the object n*P can either occur inside the VP (52a) or it may vacate VP (52b):

52. a. u-m-fana u-dlal-a i-bhola
 AUG-1-boy 1SM-play-FV 5-ball
 'the boy plays the ball'
- b. u-m-fana u-ya-li-dlal-a i-bhola
 AUG-1-boy 1SM-DIS-5OM-play-FV 5-ball
 'the boy plays the ball'

The subject n*P may right dislocate to derive either a V-O-S (53a) or a V-S-O (53b) word order:

53. a. u-dlal-a i-bhola]_{VP} u-m-fana
 1SM-play-FV 5-ball AUG-1-boy
 'the boy plays the ball'
- b. u-ya-li-dlal-a]_{VP} i-bhola u-m-fana
 1SM-DIS-5OM-play-FV 5-ball AUG-1-boy
 'the boy plays the ball'
- c. u-ya-li-dlal-a]_{VP} u-m-fana i-bhola
 1SM-DIS-5OM-play-FV AUG-1-boy 5-ball
 'the boy plays the ball'

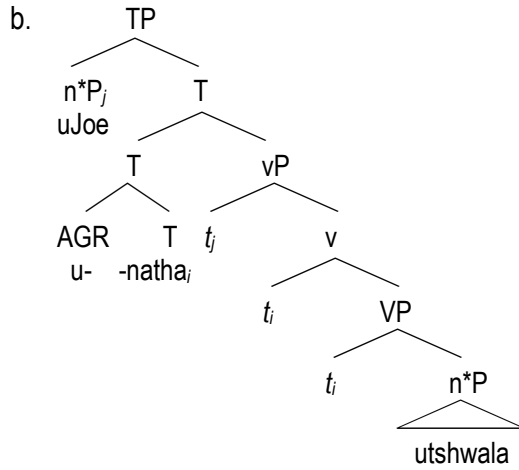
The object n*P can left dislocate to derive an O-S-V (54a), S-O-V (54b) or O-VS (54c) word order as follows:

54. a. i-bhola u-m-fana u-ya-li-dlal-a]_{VP}
 5-ball AUG-1-boy 1SM-DIS-5OM-play-FV
 'the boy plays the ball'
- b. u-m-fana i-bhola u-ya-li-dlal-a]_{VP}
 AUG-1-boy 5-ball 1SM-DIS-5OM-play-FV
 'the boy plays the ball'
- c. i-bhola u-ya-li-dlal-a u-m-fana]_{VP}
 5-ball 1SM-DIS-5OM-play-FV AUG-1-boy
 'the boy plays the ball'

In (54), both the subject and the object have vacated VP and they control verbal agreement.

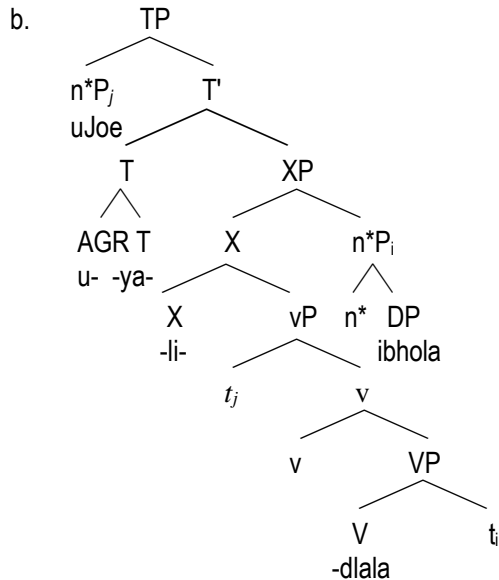
I assume that agreement is a result of antifocus agreement between the probing functional head and the antifocused n*P. In subject-verb agreement, the uninterpretable antifocus features of T probe the derivation and agree with the antifocused subject n*P in spec v and then EPP attracts the antifocused subject n*P to spec T to derive S-V-O word order. The uninterpretable phi features on T are valued by the antifocused subject n*P that has moved to spec T in a spec-head relation. When the derivation is spelled out, a featureless AGR node is added to the T head and the AGR node gets its features from T. The AGR node is spelled out as a subject marker.

55. a. u-Joe u-nath-a u-tshw-ala
 1a-Joe 1SM-drink-FV AUG-14-beer
 ‘Joe is drinking beer’



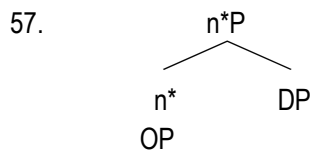
Object agreement only obtains when the object n*P is antifocused. I assume following Zeller (2014), that vP is selected by a functional category X that bears EPP features, uninterpretable antifocus features and uninterpretable phi features. The uninterpretable antifocus features on X probe the derivation and agree with an antifocused object n*P and the antifocused object moves to spec X to satisfy the EPP feature on X. The uninterpretable phi features of X are valued by the object n*P that has moved to spec X and an agreement node is added to X to spell out the valued phi features:

56. a. u-Joe u-ya-li-dlal-a i-bhola
 1a-Joe 1SM-DIS-5OM-play-FV 5-ball
 ‘Joe plays the ball’



An antifocused object n*P moves from VP to spec X where it triggers object agreement. The agreement node on X is added by the agreement adding operation at PF to spell out the valued u-phi features of X.

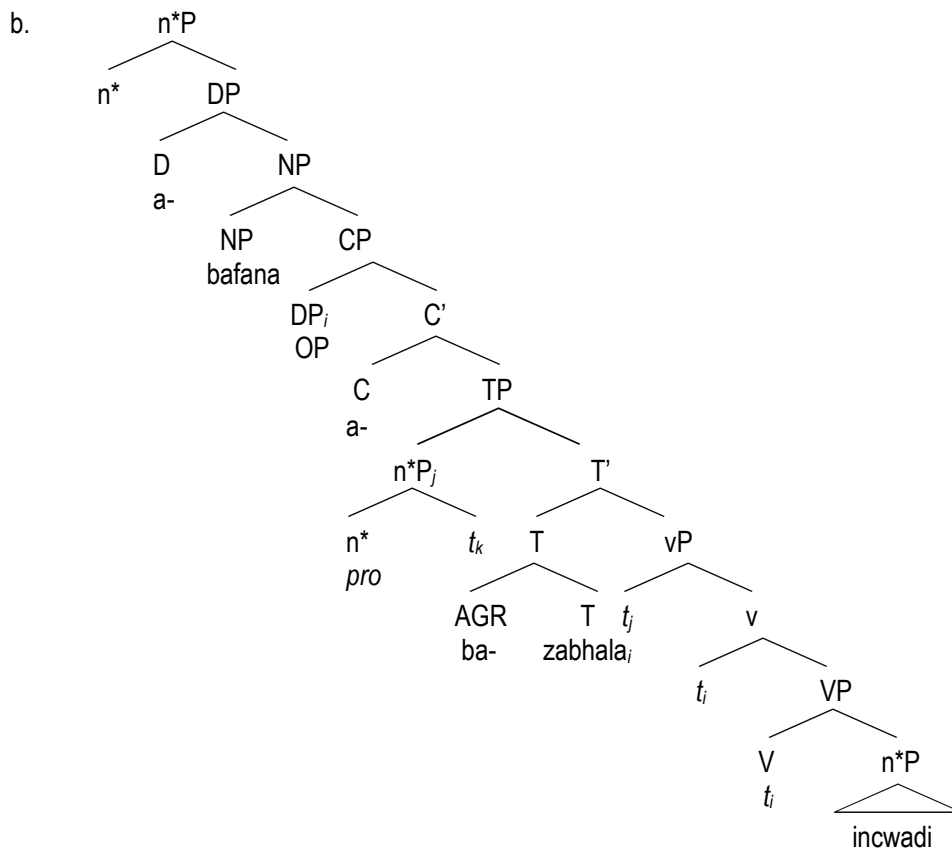
I follow the standard relative clause analysis, and assume that the head noun is base generated outside the relative clause and that the relative operator merges as a complement of n*.



I maintain that the n* head is the one that controls agreement between the n*P and T/X. Object and subject agreement only obtain when n* moves to spec X and spec T respectively. n* is realised as *pro* when it is identified as subject and object by T and X respectively. In the formation of subject relative clauses, for example, I assume that the subject n*P is introduced by v at spec v, agrees with T and moves

to spec T where it values the u-phi features of T. When C merges with TP, the uninterpretable relative feature of C probes the derivation and agrees with the operator marked DP and the EPP feature attracts the operator marked DP to spec C. The extraction of the operator marked DP leaves n* stranded in spec T.

58. a. a-ba-fana a-ba-za-dlal-a i-bhola
 AUG-2-boy C-2SM-play-FV 5-ball
 'the boys that will play soccer'



In (58), the focused object n*P is in a VP-internal position and the verb raise to T via v. The subject n*P moves from spec v to spec T after agreeing with T and the operator marked DP is extracted from the subject n*P and copied to spec C. The agreement adding operation adds the agreement node to T in

order to spell out the valued u-phi features of T that were valued in syntax.

2.8 Summary

The chapter has presented the DM approach to grammar, the Head Movement approach, the antifocus agreement theory and the Big DP approach to resumption. The chapter has discussed the structure of grammar from a DM perspective and the major assumptions of the DM framework that were applied in this study. First, it was argued that there are functional roots and lexical roots. It was shown that a lexical root is categorised by moving to the categoriser head and by fusing with the formal features of the categoriser head. It was argued that functional roots are specified for grammatical and category features before they enter syntax. Second, morphological operations such as head-to-head lowering, agreement node addition and fusion create a mismatch between syntactic representation and morphological representation. Importantly, it was argued that the head lowering operation serves to value weak uninterpretable features and that the operation only applies where head raising would have failed to take place in the narrow syntax. It was also argued that agreement nodes are added to the heads that would have checked their u-phi features in syntax and that the AGR node addition is a morphological requirement in Bantu languages. The fusion operation reduces the number of nodes by collapsing two nodes into one prior to vocabulary insertion. Lastly, it was shown that vocabulary insertion converts the syntactic structure into a linear structure and that the operation supplies exponents to nodes in accordance with the subset principle.

The chapter also briefly discussed the minimalist program concepts of Merge, Agree and Move. It was shown that merge and move are driven by syntactic features in the narrow syntax. The chapter also discussed the head movement theory. It was argued, following Matushansky (2006), that head movement is triggered by uninterpretable categorial features of the probing head and that head movement proceeds in two steps: head movement to the specifier of the probing head, and m-merger. Head movement takes

place in syntax where the goal moves to the specifier of the probing head while m-merger takes place in morphology. M-merger affixes the head in the specifier of the probing head to the probing head to derive a complex head. Crucially, it was shown that a head can have two probing features that select two different goals and that in this situation a goal that m-merges with the attracting head is the one that occupies the lower spec 1 while the other goal occupies the higher spec 2.

The antifocus agreement theory was also discussed. According to this theory, T and X bear uninterpretable antifocus features that probe and agree with an antifocus marked n*P in vP. After the establishment of antifocus agreement, an EPP feature on the probe extracts the antifocus marked n*P from vP and copies it to spec T/ spec X. Finally, the moved n*P in spec T/ spec X values the u-phi features on the T/ X and the valued features are realised as subject markers/ object markers at PF.

The big DP theory and its descendent theories (the little n*P theory and the phi phrase theory) were also discussed. The theory assumes that the “big” DPs have an n* layer that houses phi-features. The operator marked DP can strand the n* layer in the formation of relative clauses. The stranded n* head is then spelled out as a resumptive pronoun. In this analysis, it is assumed that all DPs are selected by an n* head and that the n* head is spelled out as a resumptive pronoun in resumptive structures.

CHAPTER 3: THE RELATIVE CLAUSE MARKER IN NDEBELE

3.1 Introduction

The purpose of this chapter is three-fold. Firstly, the chapter describes the main characteristics of Ndebele relative clauses. Secondly, the chapter reviews the analyses that have been done on relative clause formation in Bantu. Lastly, the chapter discusses the structure and syntax of the relative clause marker. I argue that (/)a- is an affixal relative complementiser and that the position assumed by (/)a- in Ndebele relative clauses is determined by the feature structure of the relative complementiser (C). I identify two types of C-heads in Ndebele relative clauses, the one that contains uninterpretable relative features and uninterpretable agreement features and the other that contains uninterpretable relative features and a weak uninterpretable Tense feature. The former identifies with strategy 2 where C is prefixed to the subject of the relative clause while the latter identifies with strategy 1 where C is prefixed to the relative verb. In the formation of strategy 1 relatives, I argue that the complementiser (/)a- lowers to the tense head in the PF branch in order to value its weak uninterpretable Tense feature and that the vowel element of the lowering complementiser head (/)a- adjusts to the height of the vowel element of the subject marker. I further argue that the relative operator values the uninterpretable phi-features on the complementiser head (/)a- that participates in the formation of strategy 2 and that the valued uninterpretable phi-feature is realised as complementiser agreement. The vowel element of the complementiser head (/)a- adjusts to the height of the vowel element of the complementiser agreement marker. Finally, I contend that C (/)a- is a case head. C assigns case to either the left dislocated augmentless object or the augmentless subject of the relative clause in the formation of strategy 2 relatives.

3.2 A description of Ndebele relative clauses

This section describes the main characteristics of Ndebele relative clauses. The focus of the section is on the morphology of the relative clause marker and word order in Ndebele relative clauses.

3.2.1 The relative clause marker

The relative clauses in Ndebele are formed by relative morphology. Descriptively, this morphology is the relative clause marker (RCM), which has also been labelled a “relative concord” (Khumalo, 2003; Ndebele, 2004 & Mawadza, 2009) and a “composite relative prefix” (Pietraszko, 2019). Table 5 illustrates the structure of the RCM:

Table 5: Structure of the RCM

Noun class	RCM	RM	Agreement Marker
1 SG	engi-	e-	-ngi-
2 SG	o-	o-	-u- → -∅-
1 PL	esi-	e-	-si-
2 PL	eli-	e-	-li-
1	o- (subject relatives) a- (non-subject relatives)	o- a-	-u- → -∅- -a- → -∅-
2	aba-	a-	-ba-
3	o-	o-	-u- → -∅-
4	e-	e-	-i- → -∅-
5	eli-	e-	-li-
6	a-	a-	-a- → -∅-
7	esi-	e-	-si-
8	ezi-	e-	-zi-
9	e-	e-	-i- → -∅-
10	ezi-	e-	-zi-
11	olu-	o-	-lu-
14	obu-	o-	-bu-
15	oku-	o-	-ku-

Morphologically, the RCM consists of a RM and either a subject marker (in strategy 1) or a complementiser agreement marker (in strategy 2). The underlying RM *a-* adjusts to the vowel of the agreement marker by a process that looks like vowel coalescence. The RM *a-* is realised as *a-*, *e-* and *o-*

when the vowel of the agreement marker is *a-*, *i-* and *u-* respectively (I discuss in detail the process which alters the RM in section 3. 4). There are two RCMs in class 1, *o-* and *a-*. The RCM *o-* appears in subject relatives while the RCM *a-* appears in non-subject relatives. While it is obvious that the class 1 subject RCM adjusts to the shape of the class 1 regular agreement marker *u-*, the influence of the vowel of the agreement is unclear in the non-subject RCM.

Lastly, the structure of the RCM depends on whether the RCM is in nasal or non-nasal classes. The agreement element of the RCM is overt in non-nasal classes (2, 5, 7, 10, 11, 14 & 15) but the agreement marker element of the RCM is always deleted in nasal classes (1, 3, 4, 6 & 9). Column 2 shows that only the vowel elements (*a-*, *e-*, *o-*) of the RCMs appear in the nasal classes. Interestingly, the underlying RM always adjusts to the vowel of the agreement marker regardless of whether the agreement marker is overt or deleted.

The agreement markers, whether overt or deleted, have different sources. An agreement marker that agrees with the head noun is a complementiser agreement marker (CA) and it is associated with a relative complementiser head while the one that agrees with the relative subject is a regular subject agreement marker associated with a tense head (T). These two options give rise to two strategies of RC formation in Ndebele, which are discussed in the following sections 3.2.2 and 3.2.3.

3.2.2 Strategy 1 relative clauses

The term “strategy 1” refers to the standard strategy of forming Nguni relative clauses, where the RCM is prefixed to the relative verb (Poulos, 1982). Generally, there are two types of strategy 1 relatives, namely, subject relatives and non-subject relatives also known as the direct relative and an indirect relative respectively (see Doke, 1954; Zeller, 2004). Subject relatives are those constructions where the head noun corresponds to the grammatical role of the subject noun while in non-subject constructions

the head noun corresponds to any constituent other than the subject.

When the head noun corresponds to the grammatical role of subject, the subject is not overtly realised in the relative clause. The relative verb becomes the first element of the relative clause and the RM is prefixed to the relative verb. The RM agrees with both the head noun and the subject:

1.
 - a.

u-mu-ntu		o-hlek-a-yo
AUG-1-person		RM-[1SM] ³ -laugh-FV-RS
'the person who is laughing'		
 - b.

a-ba-ntu		a-ba-hlek-a-yo
AUG-2-person		RM-2SM-laugh-FV-RS
'the people who are laughing'		
 - c.

i-n-doda	e-hlek-a	u-baba
AUG-9-man	RM-[9SM]-laugh-FV	1-father
'the man who is laughing at my father'		
 - d.

i-sotsha	e-li-hlek-a	kakhulu
5-soldier	RM-5SM-laugh-FV	a lot
'the soldier that laughs a lot'		
 - e.

i-jaha	e-li-sa-hlek-a-yo	
5-young man	RM-5SM-PROG-laugh-FV-RS	
'the young man who is still laughing'		

The relative suffix *-yo* is another important feature of Nguni RCs. The relative suffix is licensed if the

³The glosses in brackets refer to a 'deleted agreement marker'.

relative is the terminal element in a VP (1a, 1b & 1e).

A RM is prefixed to a relative verb in non-subject relatives just like it is the case with subject relatives. The major difference between subject and non-subject relatives is that in the former the head noun corresponds to a subject while in the latter the head noun corresponds to any constituent other than the subject. Therefore, in non-subject relatives, the subject of the relative clause separates the head noun and the RM+relative verb (unless if the subject is extraposed as in (2b)). When the head noun corresponds to an object, an object marker must appear in the relative verb and a gap appears in the object position:

2. a. i-n-dlu u-m-balis-i a-yi-theng-ile-yo
 AUG-9-house AUG-1-teach-NDS RM-[1SM]-9OM-buy-TNS-RS
 ‘the house which the teacher bought’
- b. i-n-dlu a-yi-theng-ile-yo u-m-balis-i
 AUG-9-house RM-[1SM]-9OM-buy-TNS-RS AUG-1-teach-NDS
 ‘the house which the teacher bought’
- c. *i-n-dlu u-m-balis-i a-yi-theng-ile-yo i-n-dlu
 AUG-9-house AUG-1-teach-NDS RM-[1SM]-9OM-buy-TNS-RS AUG-9-house
 Intended: ‘the house which the teacher bought’
- d. o-gogo u-m-fana o-w-a-ba-ph-a i-zi-wiji
 2-grandmother AUG-1-boy RM-1SM-TNS-2OM-give-FV AUG-8-sweet
 ‘the grandmothers to whom the boy gave the sweets’

An object marker is mandatory in object relatives as it resumes the relativised object in the RC. Therefore, a relativised object n*P cannot appear in the relativisation site hence the ungrammaticality of (2c). When

the object is marked, a gap occurs in the object position and the object marker agrees with the head noun while a RM agrees with the subject noun.

The head noun can also correspond to an object other than the one which is object marked in the case of ditransitive relative verbs. Ndebele, like Zulu and other Bantu languages that do not permit object agreement with multiple object n*Ps (see Henderson, 2006, p. 185), only permits the marking of one object. While a gap appears in an argument position of a marked object n*P (3a, 3b, 3d & 3e), a strong pronoun assumes the position of an unmarked object if an unmarked object corresponds to the grammatical role of the head noun (3c) (see Zeller, 2014 for Zulu).

3. a. u-m-fund-i a-ba-zali a-ba-m-theng-el-e i-zin-gwalo
 AUG-1-student-NDS AUG-10-parent RM-2SM-10M-buy-APPL-TNS AUG-10-book
 ‘the student who the parents bought books for’
- b. u-m-fund-i a-ba-zali a-ba-m-theng-el-e z-o-na
 AUG-1-student-NDS AUG-2-parent RM-2SM-10M-buy-APPL-TNS 10AGR-it-EM
 ‘a student who the parents bought them for’
- c. u-m-fund-i a-ba-zali a-ba-zi-theng-el-e y-e-na
 AUG-1-student-NDS AUG-10-parent RM-2SM-10OM-buy-APPL-TNS 1AGR-it-EM
 ‘the student who the parents bought them for’
4. a. i-zin-gwalo a-ba-zali a-ba-zi-theng-el-e u-m-fund-i
 AUG-10-book AUG-2-parent RM-2SM-10OM-buy-APPL-TNS AUG-1-student-NDM
 ‘the books that the parents bought for the student’
- b. i-zin-gwalo a-ba-zali a-ba-zi-theng-el-e y-e-na
 AUG-10-book AUG-2-parent RM-2SM-10OM-buy-APPL-TNS 1AGR-it-EM
 ‘the books that the parents bought for her’

- c. i-zin-gwalo a-ba-zali a-ba-m-theng-el-e z-o-na
 AUG-10-book AUG-2-parent RM-2SM-10OM-buy-APPL-TNS 10AGR-it-EM
 'the books that the parents bought for her'

Ndebele is "symmetrical" with respect to relativisation. The head noun can correspond to the grammatical role of either an indirect object (3) or a direct object (4). When one object is relativised, and the other pronominalised, there are two options: either the head noun is linked to the object marker, and the non-relativised object is a strong pronoun (3b, 3d & 4b), or the non-relativised object is *pro* and linked to the object marker, in which case the head noun needs to be resumed with a strong pronoun (3c & 4c).

The head noun can also correspond to the grammatical role of a possessor. If the head noun corresponds to the grammatical role of the possessor, a clitic pronoun (agreement marker + pronoun marker) appears in the position of a possessor n*P and is affixed to an associative marker. The clitic pronoun always agrees with the head noun.

5. a. i-n-doda u-mama a-nath-e u-tshw-ala b-a-y-o
 AUG-9-man 1-mother RM-[1SM]-drink-TNS AUG-14-beer 14AGR-POS-9AGR-it
 'the man whose beer my mother drank'
- b. o-gogo e-ngi-hlal-a e-n-dl-ini y-a-b-o
 2-grandmother RM-1SG-stay-FV LOC-9-house-LOC 9AGR-POS-2AGR- it
 'the grandmothers in whose house I stay'
- c. i-n-komo i-thole l-a-y-o e-li-f-ile-yo
 AUG-9-cow 5-calf 5AGR-POS-9AGR-it RM-5SM-die-TNS-RS
 'the cow whose calf died'

The head noun can correspond to the possessor of an object n*P (5a), possessor of a locative n*P (5b) and a possessor of a subject n*P (5c).

The head noun can also correspond to the grammatical roles of other complement objects. When a head noun corresponds to the grammatical role of an object of a locative or an associative preposition, just like when it corresponds to the grammatical role of the possessor, a clitic pronoun agrees with the head noun and complements the respective preposition:

6. a. i-n-kazana a-ba-fund-i a-se-be-fund-a ki-y-o
 AUG-9-girl AUG-2-study-NDS RM-EXCL-P SM-learn-FV LOC-9AGR- it
 'the girl from whom students are now learning'
- b. a-ma-doda i-n-kazana e-dlal-a la-w-o
 AUG-6-man AUG-9-girl RM-[9SM]-play-FV ASS-6AGR- it
 'the men with whom the girl plays'

A clitic pronoun commences with either a glide or a consonant of an agreement marker and ends with a pronominal vowel marker *-o/-e*. A clitic pronoun occupies the position of an n*P and in relative constructions, the grammatical role of a clitic pronoun corresponds to that of the head noun, which poses a question on the relation between the head noun and the clitic pronoun. The relation between the head noun and pronouns and gaps will be discussed in chapter 4.

A RCM can appear in a discontinuous form when the relative takes an exclusive aspect marker *-s(e)-*. An exclusive aspect marker can separate the RM and the agreement prefix. The discontinuous form of a RCM is observable in nasal classes and in non-nasal classes. For example:

7. a. u-lu-thi o-se-lu-gob-ile
 AUG-11-stick RM-EXCL-11SM-bend-TNS
 'a stick that is now bending'
- b. u-ku-dla o-se-ku-tship-ile
 AUG-15-food RM-EXCL-15SM-cheap-TNS
 'the food that is now cheap'
- c. u-m-fula o-s-u-gelez-a
 AUG-1-river RM-EXCL-1SM-flow-FV
 'the river that is now flowing'
- d. i-n-kosi e-s-i-khal-a
 AUG-9-king RM-EXCL-9SM-cry-FV
 'the king who is now crying'

The exclusive aspect marker –s(e)- 'now' intervenes between the RM and the agreement marker in non-nasal noun classes (7a - 7b). In nasal classes (7c - 7d), just like in non-nasal classes, the exclusive aspect marker intervenes between the RM and the agreement marker but the exclusive aspect marker appears as -s- instead of -se- and the agreement marker is a vowel rather than a consonant and a vowel. Here, the vowel agreement marker replaces the vowel of the exclusive aspect marker.

3.2.3 Strategy 2

Ndebele has an archaic strategy of forming relative clauses which, following Poulos (1982), is usually referred to as strategy 2 in the Nguni linguistic literature. Remnants of strategy 2 relative clause constructions are found in some Ndebele bible versions and traditional praise poetry which is, unfortunately, scarcely documented. The examples that will be used here are taken from the praises of King Mzilikazi, Nkulumane, Lobhengula and their generals.

Strategy 2 is based on the subject possessor in Ndebele. The head noun always corresponds to the grammatical role of the possessor, and the RCM agrees with the head noun. The RCM occurs in the relative-clause initial position and is prefixed to the subject noun. The following sentences show the features of strategy 2 relative clauses:

8. a. i-n-gqungqul' e-ma-dol' a-bomvu
 AUG-9-eagle RM-[9AGR]-6-knee 6AGR-red
 'the eagle whose knees are red' (Mpofu, 1973, p. 16)
- b. u-m-fitshane o-n-jobo ka-zi-nyathel-w-a
 AUG-1-short RM-[1AGR]-10-loin cloth NEG-10SM-step-PASS-FV
 'the short one whose loin cloths cannot be stepped on' (Ndhlukula, 1980, p. 92)
- c. u-mu-ntu o-n-tam' y-ehlul' a-ba-gongodi
 AUG-1-person RM-[1AGR]-9-neck 9AGR-[T]-overcome-[FV] AUG-2-executor
 'the person whose neck overwhelmed the executors' (Mpofu, 1973, p. 124)
- d. i-n-dod' e-gama l-a-y-o ng-u-Lozi
 AUG-9-man RM-[9AGR]-[5]-name 5AGR-POS-9AGR-it COP-1-Rhodes
 'the man whose name is Rhodes' (Mpofu, 1973, p. 154)

When the head noun is in nasal classes (1, 3, 4, 6 and 9), the relative clause is marked by the vowels *o-* (class 1 and 3), *e-* (for class 4 and 9) and *a-* (for class 6). The class agreement marker does not appear in RCMs in these classes, just like in strategy 1 relatives. Example (8) also indicates that the possessor itself can either be covert (8a – 8c) or overt (8d), but the grammatical role of the head noun always corresponds to that of the possessor, regardless of whether a possessor is covert or overt.

An overt class agreement marker appears when the head noun is in non-nasal classes (2, 5, 7, 8, 10, 11, 14 and 15):

9. a. u-vevani o-lu-ma-bala a-y-i-zi-bhadu
 11-butterfly RM-11AGR-6-colour 6AGR-COP-AUG-8-big spot
 'the butterfly whose spots are big' (Mpofu, 1973, p. 16)
- b. i-qili e-li-n-tethe z-os-iw-a muva
 5-trickster RM-5AGR-10-locust 10SM-roast-PAS-FV last
 'the trickster whose locusts are roasted last' (Mhlabi, 1978, p. 135)
- c. i-si-lo e-si-n-hliziyo y-e-juba
 AUG-7-lion RM-7AGR-9-heart 9AGR-POS+1-dove
 'the lion whose heart is of a dove' (Mhlabi, 1978, p. 138)
- d. i-thole li-ka-Ndaba e-li-zi-tho zi-bu-tshelezi
 5-calf 5AGR-POS-[1]-Ndaba RM-5AGR-8-body part 10SM-14-smooth
 'Mr Ndaba's son whose body parts are smooth' (Mhlabi, 1978, p. 138)

In (9), just like in (8), the head noun corresponds to the possessor of the subject and in all the sentences in (9) the possessor is covert. As noted prior, Ndebele speakers are no longer making use of strategy 2 in speech which makes it difficult for the native speakers to pass judgment on the acceptability and unacceptability of strategy 2 relative constructions. Although I did not come across instances where a head noun in strong classes corresponds to an overt possessor, according to my grammaticality judgments, it is possible to have an overt possessor corresponding to the grammatical function of a head noun. The addition of an overt possessor *zalo* to (9b) (shown in 10 below) maintains the acceptability of the sentence:

10. i-qili e-li-n-tethe z-a-l-o z-os-iw-a muva
 5-trickster RM-5AGR-10-locust 10AGR-POS-5AGR-it 10SM-roast-PAS-FV last
 'the trickster whose locusts are roasted last'

Strategy 2 has also been documented for Zulu by Poulos (1982), Ziervogel, Louw and Taljaard (1985), Poulos-Msimang (1998), van der Spuy (2001) and Zeller (2003). In contrast to Ndebele, where the head noun corresponds only (at least according to the available Ndebele literature) to either an overt or covert subject possessor, the head noun in Zulu can correspond to the possessor of a subject (11a) or an object (11b), but also to a direct object (11c) or the object of a preposition (11d). According to Poulos (1982), the relative verb in Strategy 2 in Zulu is in the indicative mood and does not take the relative suffix:

11. a. i-n-kosi e-m-ntwana w-a-y-o u-ya-gul-a
 AUG-9-king RM-[9AGR]-1-child 1AGR-POS-9AGR-it 1SM-DIS-ill-FV
 'the chief whose child is ill' (Zulu; Poulos, 1982, p. 111)
- b. i-n-doda e-baba u-shay-e i-zin-ja z-a-y-o
 AUG-9-man RM-[9AGR]-[1]-father 1SM-hit-TNS AUG-10-dog 10AGR-POS-9AGR-it
 'the man whose dogs my father hit' (Zulu; Poulos, 1982, p. 171)
- c. i-n-doda e-baba u-ya-yi-thand-a
 AUG-9-man RM-[9AGR]-[1]-father 1SM-DIS-9OM-like-FV
 'the man whom my father likes' (Zulu; Poulos, 1982, p. 119)
- d. i-n-tombi e-nina u-zi-hluph-a nga-y-o
 AUG-9-girl RM-[9AGR]-[1]-mother 1SM-REF-worry-FV ADV-9AGR-it
 'the young woman whose mother worries about her' (Zulu; van der Spuy, 2001, p. 56)

The Strategy 2 relative clause sentence types in (11b-c) are not occurring in the available Ndebele

literature. Ndebele has a shorter literary history spanning from 1866 (Hadebe, 2006) compared to Zulu which already had published works prior to 1860. The sentence types in (11) are only marginally acceptable in contemporary mainstream Zulu (Zeller, 2003, p. 7) which could be an indication that the sentences are a remnant of earlier Zulu.

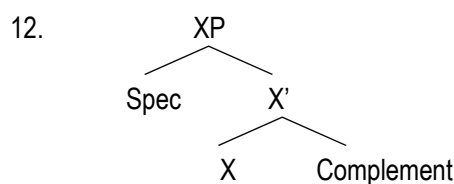
3.3 Previous accounts of Bantu relative clause formation

The RM and relative word order have been a subject of study in Nguni and in other Bantu languages. The focus of many of these studies is on the origin, structure, status and, position of the RM and its relation to the first position demonstrative pronoun. In the review that I will carry out in the following subsections, I will mainly focus on what scholars have said about the structure, status and position of *la-* and relative word order.

3.3.1 The specifier analysis (Poulos, 1982 for Zulu)

Poulos (1982) observes that RCs in Zulu lack overt relative clause markers which can be analysed as either relative complementisers or relative pronouns. Poulos contends that the complementiser node is empty in Zulu. Pertaining to the status of RCs in Zulu, Poulos argues that RCs specify head nouns and that the RM (*la-*) is the specifying element in the RCs.

The RM is analysed as a specifier on the basis that the role of the RC is to specify the head noun. Poulos's argument is that the RM is the specifying element in the RC. The term "specifier" is not used in the standard generative sense where a specifier is that element occupying the Spec position of a head:



Although Poulos does well to identify the different positions assumed by (*l*)*a*- in the strategy 1 and strategy 2 relatives, he does not explain why (*l*)*a*- is prefixed to the predicate in strategy 1 while it is prefixed to the subject of the RC in strategy 2. For example, the occurrence of a relative clause marker after the relative subject is not unique to Zulu. In Zimbabwean Tonga (S62), C follows the relative subject and attaches to the relative verb like in the Zulu strategy 1 relative constructions. The only notable difference is that the C-head in Tonga agrees with the head noun while the (*l*)*a*- in Zulu strategy 1 agrees with the relative subject. The following example shows the occurrence of C inside the RC:

15. S62 Tonga (Mumpande et al, 2017, p. 34)
- | | | |
|---------|----------|-----------------------|
| i-bbwe | ba-lombe | n-di-ba-ta-bon-e |
| 5-stone | 2-boy | C-5CA-2SM-TNS-see-TNS |
- 'the stone that the boys will see'

This example shows that the occurrence of C in an unexpected position does not change its status. Rather, what should be explained here are the processes that dislocate C and derive the subject-C+verb relative word order in Tonga and Nguni strategy 1 relatives. The other issue that begs for explanation could be why the C element agrees with the head noun/OP while the Nguni equivalent agrees with the relative subject.

Also, the possible link between the occurrence of the specifier (*l*)*a*- in Zulu and the 'vacant' relative complementiser node is not explored. For instance, the fact that we get the "specifier" in exactly those languages which do not have relative complementisers, while languages with relative pronouns and complementisers do not have the specifiers, suggests that there is a link between the two (i.e. that the specifier is a complementiser). For example, Nsenga (N41) has a relative pronoun and a relative complementiser but does not have Poulos' (1982) specifier:

16. li-tanga [l-amene la-w—a- pik-a Tombi] (Simango, 2006, p. 280)
 5-pumpkin 5REL 5C-1SM-TNS-cook-FV [1]-Tombi
 'the pumpkin which Tombi cooked.'

Nsenga has a relative pronoun *lamene* and a clitic C that attaches to the relative verb. The Nsenga relative word order is *relative pronoun – C+V- S*. Crucially, Nsenga does not have the specifier element. I therefore I reject the specifier analysis.

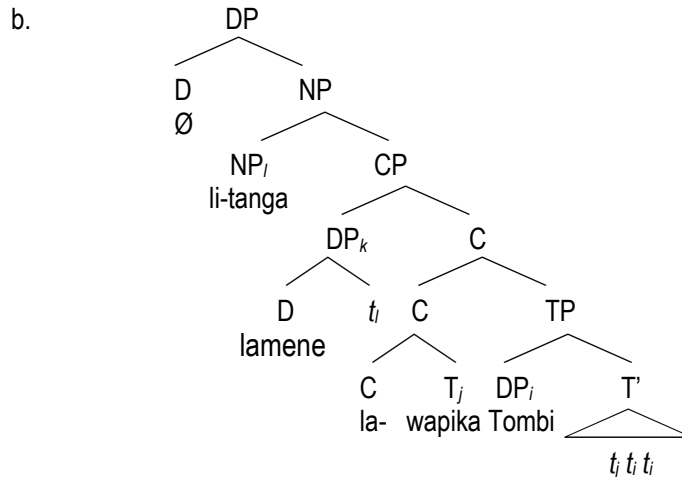
3.3.2 The relative pronoun analysis

The relative pronoun has been suggested for Nsenga (N 41, spoken Zambia, Malawi, Mozambique and Zimbabwe) by Simango (2006), Lunda (K22, spoken in Congo, Angola and Zambia) and Chokwe (K11, spoken in Congo, Angola and Zambia) by Kawasha (2008). The relative pronoun analysis holds that the complementiser merges in its surface position while the relative pronoun merges in the relativisation site. The Tense-to-C operation raises the relative verb to C to derive the C+V-S word order. Lastly, the relative pronoun is extracted from the relativisation site and copied to spec C. The main property of these languages is that the head noun agrees with both the relative pronoun and C:

17. a. Nsenga, K41 (Simango, 2006, p. 280)
 li-tanga [l-amene la- w –a- pik-a Tombi]
 5-pumpkin 5REL 5C-1SM-TNS-cook-FV [1]-Tombi
 'the pumpkin which Tombi cooked.'
- b. Chokwe, K11 (Kawasha, 2008, p. 58)
 chi-úma [ochu chi-á-a-tén-ení-yi]
 7-thing 7REL 7C-1SM-TNS-mention-TNS-RP
 'the thing that he mentioned'

The following example illustrates the formation of an object relative clause in Nsenga:

18. a. li-tanga [l-amene la-w-a-pik-a Tombi] (Simango, 2006, p. 280)
 5-pumpkin 5.REL 5C-1SM-TNS-cook-FV [1]-Tombi
 'the pumpkin which Tombi cooked.'



In the formation of the object relative clause in (18), the subject *Tombi* moves from spec v to spec T, and the inflected verb *wapika* moves to C *la-*. Finally, the relative pronoun is extracted from the VP-internal position and copied to spec C. Note that the relative pronoun *lamene* does not agree with the verb. Rather, the relative pronoun agrees with the head noun and the C-head *la-*.

Canonici (1995) suggested a relative pronoun analysis for Zulu. He argues that the RM *a-* is a relative pronoun element like English *who*, *which* and *whose* which, although it is prefixed to predicates, is not a part of the predicative inflection. The RM and the SM are two separate morphemes as shown below:

19. a. i-qembu e-se-li-win-a
 5-team 1RM-EXCL-5SM-win-FV
 'the team that is now winning'

- b. u-hlany-a o-se-lu-hamb-a lu-fund-ile
 11-mad person-NDS RM-EXCL-11SM-go-FV 11-learn-TNS
 ‘the mad person who is now going is educated’

In subject relatives, the RM is the first element of a RC, always agrees with the head noun and it adjusts to the height of the vowel of the subject agreement marker. The RM is realised as *e-* if the vowel of the agreement is a [+high, +front] *i-* and it is realised as *o-* if the vowel of the agreement is [+high, +back] *u-*. Canonici’s “relative pronouns” *e-* and *o-* in (19) are not part of verb morphology although their shape is determined by the height of the verbal subject agreement markers. The intervening exclusive aspect marker *-se-* supports the view that the “relative pronoun” *a-* does not form a composite complex concord with the subject marker. I will adopt the view that the RM is not part of verbal morphology and that the RM adjusts to the height of the subject agreement marker.

However, I reject the analysis of the RM as a relative pronoun. Syntactically, relative pronouns are base generated inside relative clauses and then they move to spec C. Relative pronouns link the RC to the head noun, agree with the head noun and fulfill a syntactic role in a RC (Quine, 1960; Ross, 1967; Partee, 1975; Smith, 1964; Vergnaud, 1974; Kayne, 1994; Bianchi, 1999; Lees, 1960; Sauerland, 1998; Salzmann, 2006; among others). The relative pronoun analysis of the RM *a-* seems to work well with subject relatives and strategy 2 relatives because the RM is the initial element of a clause, agrees with the head noun and plays a grammatical role in the RC. For example:

20. a. i-n-doda e-m-fana w-a-y-o u-ya-gul-a
 AUG-9-man RM-[9AGR]-1-boy 1AGR-POS-9AGR-it 1SM-DIS-ill-FV
 ‘a man whose boy is ill’

- b. u-m-fana o-gul-a-yo
 AUG-1-boy RM-[1AGR]-ill-FV-RS
 'the boy who is ill'

The RM in the above examples is the initial RC element and agrees with the head noun. The RM agrees with the possessor in (20a) while in (20b) it agrees with the subject n*P. This analysis, although it works well with strategy 2 relatives and subject relative clauses, makes incorrect predictions when employed in the analysis of non-subject relatives. Canonici's relative pronoun in non-subject strategy 1 relatives typically occurs after the subject n*P (except when the subject n*P is extraposed as in (21c) where it is preceded by the verb) and agrees with the subject n*P. Compare the English (21a) and the Ndebele (21b and 21c) examples below:

21. a. the book *which* the children are now seeing
 b. u-gwalo i-z-alukazi e-se-zi-lu-bon-a
 11-book AUG-8-grandmother RM-EXCL-8SM-11OM-see-FV
 'a book which the grandmothers are now seeing'
 c. u-gwalo e-se-zi-lu-bon-a i-z-alukazi
 11-book RM-EXCL-8SM-11OM-see-FV AUG-8-grandmother
 'a book which the grandmothers are now seeing'

In contrast to subject relatives and strategy 2 relatives, the RM is not the initial element of the relative clause and it does not agree with the head noun in strategy 1. The relative pronoun analysis must be rejected on the basis of the occurrence of the RM inside a RC. A relative pronoun analysis would have to account for why the RM agrees with the head noun in subject relatives but not in non-subject relatives.

3.3.3 Complementiser analysis

Another alternative analysis that has been suggested for Bantu is to analyse RM as a complementiser residing in the C-position (Demuth & Harford, 1999; Harford & Demuth, 1999; Ngonyani, 1999; 2001; 2006; Henderson, 2006). A relative complementiser heads a relative clause and is merged in its surface position. There are two implementations of this analysis. The first implementation of the analysis works well for the languages that have the C – S- V relative word order whereas the second implementation identifies with languages that invert the canonical C –S – V word order.

The relative clauses of the first type preserve the canonical *complementiser - subject – verb* word order (C – S – V word order). The C in these languages is autonomous. These constructions are common in Southern Sotho (S33) and Kiswahili (G 40). The following examples illustrate the a C – S - V word order:

22. a. Southern Sotho (Demuth & Harford, 1999, p. 42)
- | | | | | |
|---------|-------|---------|-----------------------|--------|
| se-tulo | se-o | ba-sadi | ba-se-rek-ile-ng | kajeno |
| 7-chair | 7CA-C | 2-woman | 2AGR-7OBJ-buy-PST-REL | today |
- ‘the chair which the women bought today.’
- b. Kiswahili (Ngonyani, 1999, p. 61)
- | | | | | | |
|---------|----------|------|-----------------|-----|-----------|
| vi-tabu | amba-vyo | Juma | a-li-nunu-a | ni | ghali |
| 8-book | AMBA-8C | Juma | 1AGR-PST-buy-FV | COP | expensive |
- ‘the books Juma bought are expensive.’

In (22), C is a self-standing word form, agrees with the head noun/OP and precedes the relative subject.

Like the relative pronoun analysis, this analysis works well with the so-called strategy 2 relatives and

subject relatives where (/)a- is always the initial element of a relative clause as evident in the above examples. The difference between strategy 2 relatives and the Southern Sotho and Kiswahili examples given in (22b.) is that RM in Nguni attaches to the relative subject and seems to replace the augment of the relative subject.

In contrast to strategy 2 relatives, the strategy 1 relatives are incompatible with the complementiser analysis that has been presented above. The appearance of (/)a- after the subject n*P militates against the relative complementiser analysis. Moreover, (/)a- seems⁴ to agree with the subject rather than with the head noun in object relatives (21b & 21c), which is not what one would expect if the RM was a complementiser.

The second implementation of the complementiser analysis corresponds to languages that have a C+V-S-O word order. In these languages the RM is indeed located in the C-position, but that the relative verb moves out of the TP to the C position where it subsequently merges with the RM to derive the word order [C+V]-S-O as follows:

23. Head noun [CP [C' (L)A- + SM-verb_i [TP subject [T' *t_i* object]

The analysis in (23) has been suggested for Shona object relative clause by Demuth and Harford (1999), and Harford and Demuth (1999). This analysis holds that a fully inflected verb raises from TP and morphologically merges with C to make one word. The raising of the verb to C inverts the canonical word order C-S-V-O to [C+V]-S-O. The analysis is therefore known as the subject-verb inversion analysis. The following Shona examples are from Harford and Demuth (1999, p. 50):

⁴I will later argue that the strategy 1 (/)a- is not an agreeing element, but adopts phonological properties of the subject marker.

24. a. va-kadzi v-aka-son-er-a mw-eng-a mbatya
 2-woman 2SM-TNS-sew-APPL-FV 1-bride [10]-Cloth
 'women sewed clothes for the bride'
- b. mbatya dz-a-v-aka-son-era va-kadzi mw-eng-a
 [10]-Cloth 10CA-C-2SM-TNS-sew-APPL-FV 2-woman 1-bride
 'the clothes which the women sewed for the bride'
- c. ?mbatya va-kadzi dz-a-v-aka-son-a mw-eng-a
 10clothes 2-woman 10CA-C-2SM-TNS-sew-FV 1-bride
 'the clothes which the women sewed for the bride'

The canonical word order in Shona is S-V-O as shown in (24a) while the standard word order in RCs is V-S-O (24b). This word order is expected if the inflected verb moves to the C-position, which precedes the subject position. Note that in Shona RCs, the word order S-V-O is only marginally acceptable in object relatives, as shown by (24c). In (24b) and (24c), the RM agrees with the head noun even when the RM is in a non-initial position as in (24c).

The subject-verb inversion analysis has been suggested for Kiswahili object relative clause by Ngonyani (1999; 2001; 2006) too. In contrast to the C+V- S word order that obtains in Shona, the raised verb is prefixed to C to derive the word order V+C – S in Kiswahili. Following the head movement theory, I assume that the verb moves to spec 1 C in both Shona and Swahili and then m-merger places the verb after C to derive C+V structure (24b) or places the verb before C to derive V+C structure (25):

25. vi-tabu a-li-nunu-a-vyo Juma ni ghali
 8-book 1AGR-PST-buy-FV-8C Juma COP expensive
 'the books Juma buys are expensive.'

However, the subject-verb inversion analysis is not applicative to Ndebele data. The following examples illustrate that the V-S-O word order is untenable in Ndebele objective relatives:

25. a. a-ba-fazi ba-thung-el-e u-makoti i-m-pahla
 AUG-2-woman 2SM-sew-APPL-TNS 1-bride AUG-10-cloth
 'women sewed clothes for the bride'
- b. *i-m-pahla e-zi-ba-thung-el-e a-ba-fazi u-makoti
 AUG-10-cloth RM-10AGR-2SM-sew-APPL-TNS AUG-2-woman 1-bride
 Intended: 'the clothes which the women sewed for the bride'
- c. *i-m-pahla a-ba-thung-el-e a-ba-fazi u-makoti z-o-na
 AUG-10-cloth RM-2SM-sew-APPL-TNS AUG-2-woman 1-bride 10AGR-it-EM
 Intended: 'the clothes which the women sewed for the bride'

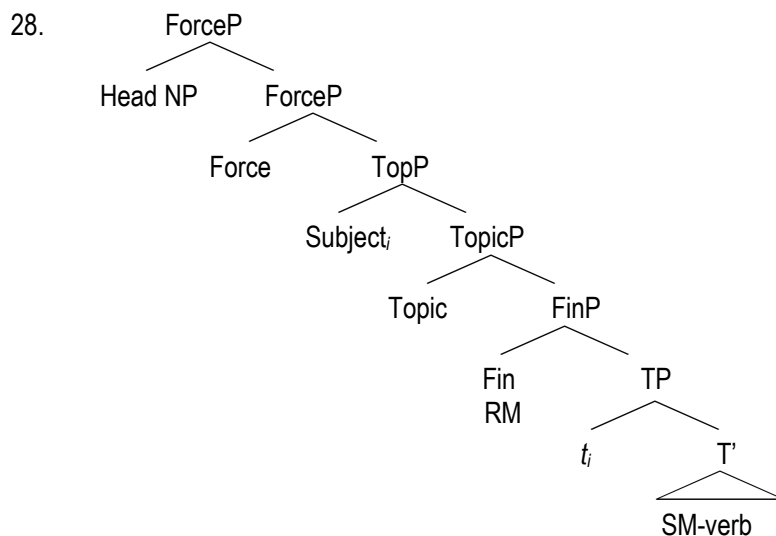
The constructions in (26b) and (26c) both show that VSO word order is not possible in Nguni relative clauses. (26b) mirrors the Shona example in (24b), where a complex RCM that agrees with the head noun is attached to the inflected verb (which agrees with the class 2 subject). The agreement type in (26b) is not acceptable in Ndebele. In Ndebele, when a RM and its agreement marker agree with the head noun, they must be prefixed to the subject (in the formation of strategy 2 relatives) rather than to the relative verb. Thus the ungrammaticality of (26b) is partly because the RM and its agreement marker have been prefixed to the relative verb. (26c) shows that even with the typical strategy 1 agreement (where the RCM agrees with the subject) the VSO word order is not possible in Ndebele. This suggests that the T-to-C movement analysis, which Demuth and Harford (1999) suggest for Shona, is not possible for Ndebele.

However, another suggested alternative which would rescue the analysis of the RM as a complementiser

located in the C-position assumes that the subject n*P of the relative clause moves out of TP to the spec Topic (Top). The movement of the subject n*P out of TP inverts the C-S-V word order to derive the word order S-C-V, as illustrated in (27):

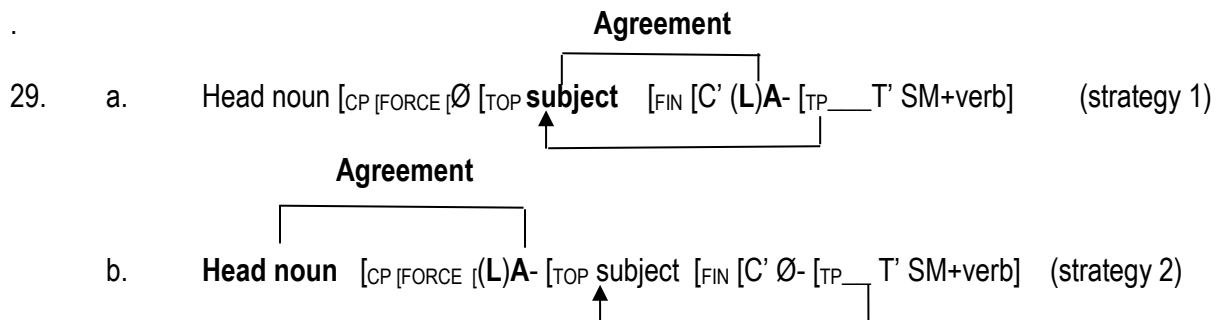


Henderson (2006) argues for the complementiser analysis of (/)a- along the lines of the preceding alternative. In Henderson's analysis, the CP-domain of sentences in Nguni is split into different projections (Force > Topic > Focus > Finite; cf. Rizzi, 1997) and the subject moves to a topic position. In fact, Henderson (2006) contends that all subject n*Ps are topics in Nguni. The treatment of subject n*Ps as topics implies that the subject n*Ps in both relative clauses and in plain sentences are dislocated to the left leaving a copy in their base position (p. 75).



When the RM is a complementiser which is located in Fin, the topicalisation of the subject alters the word order C-S-V-O to S-C-V-O regardless of whether the verb remains in TP or raises to C. There is no problem with affix order, since C is now adjacent to V. When the topicalised subject precedes (/)a- which resides in Fin, strategy 1 relatives are derived, where the relative complementiser appears in an

‘unexpected’ surface position following the subject (29a). According to Henderson (2006), (l)a- can also be realised in Force. When this is the case, the RM still precedes the topicalised subject, deriving the word order corresponding to Strategy 2 (29b):



The subject topicalisation analysis is based on the hypothesis that all preverbal subjects are topics in Nguni and that there is a preverbal subject position restriction that bans the occurrence of focused subjects in the preverbal position. For example, the Wh-subject is impermissible in the preverbal position (30a) but it is acceptable when it occurs either in ex-situ in a cleft (30b) or after the verb (30c):

30. a. *o-bani ba-ya-hlek-a?
 2-who 2SM-DIS-laugh-FV
 Intended: ‘who are laughing?’
- b. ng-o-bani a-ba-hlek-a-yo
 COP-2-who RM-2SM-laugh-FV-RS
 ‘who are they that are laughing?’
- c. ku-hlek-a o-bani?
 17EXPL-laugh-FV 2-who
 ‘who are they that are laughing?’

However, even though these data seem to support the aspect of Henderson’s analysis according to which

all preverbal subjects in Nguni are topics, there are problems with the argument illustrated by (30). Pietraszko (2019) contends that in main clauses, subjects are "high", in topic positions, and therefore cannot be focused, while in RCs, they are "low" in spec T and can be focused. As observed in Pietraszko (2019), there are instances where the occurrence of a Wh-subject is grammatical in RC in Ndebele. Pietraszko (2019) therefore rejects Henderson's (2006) subject topicalisation analysis and maintains that subject Wh-phrases are permissible in RCs, and that the ban on focused phrases only applies to matrix subjects (31a) rather than to relative subjects (31b).

31. a. *u-bani u- phek-e i-n-yama? (Pietraszko 2019, p. 96)
 1-who 1SM-cook-TNS AUG-9-meat
 Intended: 'who cooked the meat?'
- b. u-dl-e i-n-yama u-bani a-yi-phék-ile-yo? (Pietraszko 2019, p. 96)
 2SG-eat-TNS AUG-9-meat 1-who RM-[1SM]-9OM-cook-TNS-RS
 'who is such that you ate the meat that they cooked?'

The occurrence of the preverbal wh-subject *ubani* 'who' in the relative clause (31b) indicates that the subject n*Ps occur in the preverbal subject position in the Ndebele relative clauses.

The occurrence of the relative subject immediately before the focus particle is the other evidence that supports the view that relative subject n*Ps are not topics. The focus particle *kuphela* 'only' co-occurs with a focused subject. The following examples illustrate that subject Wh-phrases are permissible in Ndebele relative clause:

32. a. *u-Lolo kuphela u-dl-é i-khabe le-li
 1-Lolo only 1SM-eat-TNS 5-watermelon DEM-7AGR
 Intended: ‘only Lolo ate this watermelon’
- b. li-khabe le-li u-Lolo kuphela a-li-dl-ile-yo
 COP-5-watermelon DEM-5AGR 1-Lolo only RM-[1SM]-5OM-eat-TNS-RS
 ‘it is the watermelon that only Lolo (nobody else) ate’

(32a) affirms the view that subjects of matrix clauses are topics whereas (32b) shows that the ban on focused phrases only applies to matrix subjects rather than to relative subjects. Following Pietraszko’s (2019) analysis, I reject the subject topicalisation hypothesis of Henderson (2006) and uphold the view that the subject of the relative clause is in spec T.

3.3.4 The relative concord analysis

The relative concord analysis (see Zeller, 2003; 2004 & 2006) rejects the view that (/)a- is a complementiser affix by upholding that (/)a- “enters the derivation as part of the verbal morphology” (Zeller, 2006, p. 229). Zeller (2006) suggests that the RM + *agreement* in relative clauses developed from demonstrative pronouns in Nguni. The near speaker demonstrative pronoun, the pronoun and the genitive linker are proposed to be the sources of both relative pronouns and relative complementisers in some Bantu languages (Nsuka-Nkutsi 1982; van der Velde forthcoming). For Nguni languages, Zeller argues that near speaker demonstrative pronouns have grammaticalised into relative pronouns/complementisers and further grammaticalised into relative clitics (in strategy 2 relatives) and then later into relative concords (in strategy 1 relatives). According to this analysis, the relative markers in strategy 2 are syntactically independent though they are phonologically leaning on the subject NP (relative clitics) while the ones in strategy 1 are synchronically relative concords ((/l)a- + subject agreement marker). The morpheme (/l)a- of relative concords is the only element that is historically connected to the

first position demonstrative pronoun in strategy 1 relatives although the (/)a- is synchronically devoid of its original syntactic function. According to this proposal, Nguni relative markers have gone through past three stages (stages A, B and C):

33. a. Stage A:

[Head noun] [CP [C' **relative complementiser** [TP subject [T' predicate]]]]

b. Stage B: (strategy 2)

[Head noun] [CP [C' **relative clitic-** [TP subject [T' predicate]]]]

c. Stage C: (strategy 1)

[Head noun] [CP [C' [TP subject [T' **relative concord - predicate**]]]] (Zeller, 2006, p. 229)

In stage A the relative complementiser/relative pronoun was autonomous while in stage B (which corresponds to Strategy 2) it is a clausal affix expressing agreement between the whole relative clause and the head noun. In stage C, the relative marker is inside the Inflectional Phrase where it merges with the subject marker to form a morphologically complex unit called a relative concord.

Zeller's analysis accounts for how the synchronic relative concords developed from independent relative pronouns/relative complementisers, but it does not account for why Zulu uses a different relative concord (/)o- in class 1 subject relatives and a relative concord (/)a- in class 1 object relatives. Furthermore, in contrast to the claim that the relative marker and the subject marker form a single complex unit, we have already seen evidence of instances where the exclusive aspect marker –se- intervenes between (/)a- and a verbal subject marker. For example:

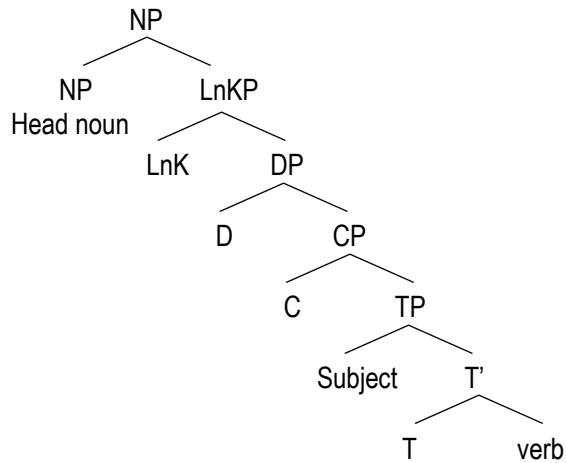
34. i-si-nkwa e-se-si-bol-a
 AUG-7-bread RM-EXCL-7AGR-rot-FV
 ‘the bread that is now stale’

If the RM and the SM formed a single complex unit, as claimed by Zeller (2006), then the exclusive aspect marker would not intervene between the RM and the SM unless it is claimed that the aspect marker itself is part of the complex unit (which would be an unusual assumption), or if there is a provision allowing the splitting of the RCM. The relative concord analysis should be rejected on the basis that (*l*)*a-* does not form a single composite with a subject marker, contrary to Zeller’s (2006) claim.

3.3.5 The linker analysis

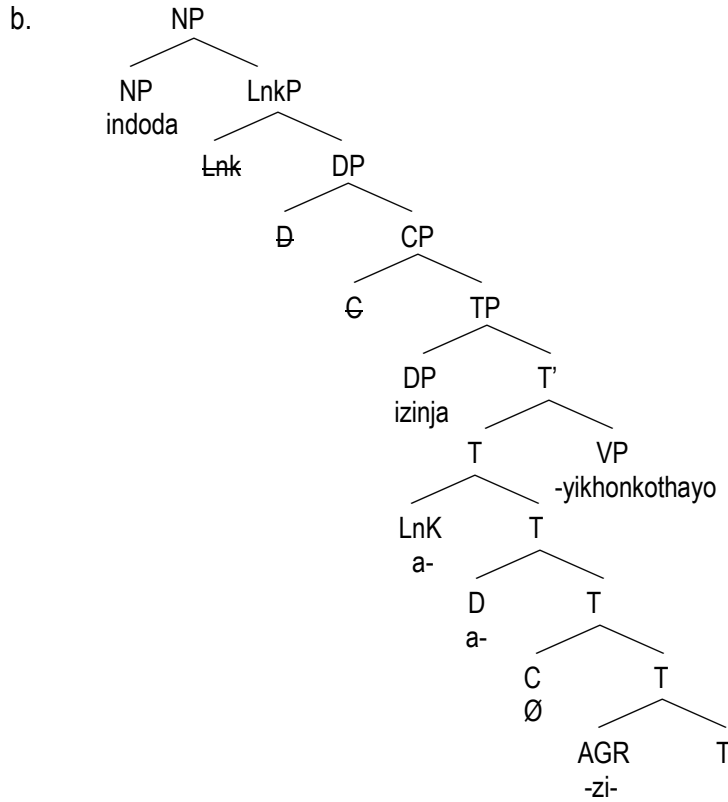
Pietraszko (2019) argues that the RM (*l*)*a-* merges at a position higher than C, in the position of a “linker”, and then lowers at the PF module to affix to T. Pietraszko argues that RCs, like nominal clauses and possessives, project a mandatory external augment DP-shell whose head agrees with a relative clause-internal T°. As a result, the augment vowel in D is always realised in the shape of the vowel of the subject marker. Furthermore, according to Pietraszko, there is a linker phrase (LnkP) headed by a linker element (*l*)*a-* between the head noun and the CP. The linker *a-* introduces the RC, links the clause to the head noun and modifies the head noun. Crucially, Pietraszko argues that the linker never agrees with the head noun in Ndebele relative clauses. Pietraszko assumes that C is null in Ndebele. The following example illustrates the syntactic structure of a Ndebele relative clause according to Pietraszko’s (2019) analysis:

35.



According to Pietraszko (2019), the linker, D(eterminer), C and T (the subject marker) form a relative concord. Head lowering plays a crucial role in the formation of relative agreement prefixes. Pietraszko proposes that head lowering takes place in a bottom up fashion: C-to-T head lowering, D-to-T head lowering and LnK-to-T head lowering as illustrated in (36b). Of note is that the head lowering operation takes place at PF and lowers a head to the head of its complement.

36. a. i-n-doda i-zin-ja e-zi-yi-khonkoth-a-yo
 AUG-9-man AUG-10-dog RM-10SM-9OM-bark-FV-RS
 'the man that dogs are barking at'



Finally, Pietraszko (2019) argues that vowel coalescence is deployed to solve vowel hiatus that arises during the formation of the relative agreement markers. Recall that she assumes that C is null in Ndebele and that relative agreement consists of the linker *a-* (LnK), an augment vowel that assumes the shape of the vowel of the subject marker (D) and a subject marker (T). The linker merges with an augment in the formation of a RCM in non-nasal classes as follows:

Table 6: Formation of relative agreement prefixes

Noun class	Linker	+	augment	+	agreement	Relative agreement
class 1	a-		u-		u-	o-
class 2	a-		a-		ba-	aba-
class 3	a-		u-		u-	o-
class 4	a-		i-		i-	e-
class 6	a-		a-		a-	a-
class 7	a-		i-		si-	esi-
class 8	a-		i-		zi-	ezi-
class 9	a-		i-		i-	e-
class 10	a-		i-		zi-	ezi-
class 11	a-		u-		lu-	olu-
class 14	a-		u-		bu-	obu-
class 15	a-		u-		ku-	oku-

As shown in Table 6, two vowels follow each other when a subject marker commences with a consonant (in the formation of class 2, 5, 7, 8, 10, 11, 14 and 15 relative agreement prefixes) while three vowels sequence when a subject marker is a vowel (in the formation of class 1, 3, 4, 6 and class 9 relative agreement prefixes). Crucially, Pietraszko argues that the linker *a-* coalesces with the augment when the subject marker commences with a consonant. Thus vowel coalescence solves the hiatus where two vowels are in sequence. In the derivation of relative agreement prefixes of classes 1, 3, 4, 6 and 9, Pietraszko argues that hiatus is solved in two steps. First, the identical vowels (the augment and the vocalic subject agreement marker) coalesce to form a singleton vowel (37a) and then the derived vowel coalesces with the linker *a-* to form surface vowels *a-*, *e-* and *o-* (37b):

37. a. u + u > u i + i > i a + a > a
 b. a + a > a a + u > o a + i > e

In the formation of relatives that are in the past tense, a high front vowel /i/ is realised as a palatal glide

/y/ when preceded by a low vowel /a/ (38a) and a high back vowel becomes a labio-velar glide when it is preceded by a low vowel /a/ (38b) (Sibanda, 2004; Pietraszko, 2019):

38. a. $u \rightarrow w / __ V_{[+high]}$
 u-m-fana a-u-u-a-hlek-a kakhulu (> owa-hleka)
 AUG-1-boy RM-AUG-1SM-TNS-laugh-FV a lot
 'the boy that laughed a lot'
- b. $i \rightarrow y / __ V_{[+high]}$
 i-n-ja a-i-i-a-khonkoth-a ebusuku (> eya-khonkothayo)
 AUG-9-dog RM-AUG-9SM-TNS-bark-FV at night
 'the dog that barked at the night'

Crucially, a high back vowel /u/ becomes a labio-velar glide /w/ when preceded by a high front vowel /i/ (39a) and a mid back vowel /o/ may become a labio-velar glide /w/ when preceded by a mid front vowel /e/ (39b):

39. a. $u \rightarrow w / __ V_{[+high + front]}$
 e-zulu-ini > e-zulw-ini
 LOC-heaven-LOC
 'in heaven'
- b. $o \rightarrow w / __ V_{[+mid + front]}$
 e-l(i)-ihlo-eni > e-l-ihlw-eni
 LOC-5-eye-LOC
 'in the eye'

In the formation of relative forms that are in the past tense, Pietraszko (2019, p. 106) argues that the relative agreement prefix consists of four vowels: linker, augment, subject agreement marker and the past tense vowel (T) *-a-*. According to Pietraszko (2019), the vocalic subject agreement marker is realised as a glide in front of the remote past tense marker and then the augment and the linker coalesce as follows:

40. Relative prefix in the past tense

Class 1: [a^{LNK} [u^{aug} [uSM [a^T]]]] → [a^{LNK} [u^{aug} [wa]]] → [a [uwa]] → owa-

Class 9: [a^{LNK} [j^{aug} [iSM [a^T]]]] → [a^{LNK} [j^{aug} [ya]]] → [a^{LNK} [iya]] → eya-

According to Pietraszko's analysis, the vowel agreement *i-* glides before the past tense *a-* and becomes /y/ (40a) and the vowel agreement *u-* glides and becomes /w/ (40b). The gliding analysis works well for classes 1, 3, 4 and class 9.

However, the class 6 RCM poses a problem for the gliding analysis in general. According to the gliding analysis, the class 6 relative marker *a-w-a-* in (41a) consists of four identical vowels: linker /a/, augment /a/, subject agreement /a/ and a past tense marker /a/ as illustrated in (41b):

41. a. i-n-to a-ma-jaha a-a-a-a-yi-xotsh-a-yo (> awa-yi-xotsh-a-yo)

AUG-9-thing AUG-6-youngmen RM-AUG-6SM-TNS-chase-FV-RS

'the thing that the youngmen chased'

b. [a^{RM} [a^{aug} [a^{6SM} [a^{TNS}]]]] → [a^{RM} [a^{au g} [*wa]]] → [a [awa]] → awa

As (41) shows, in a RC with a class 6 subject in the remote past tense, the relative agreement is expressed as *awa-*. According to Pietraszko's analysis, the shape of this agreement is derived via gliding:

the class 6 agreement marker *a-* must become a glide and turns into *w-* when preceded by the past tense marker *a-*. The problem with this analysis, however, is that the gliding of /a/ is unattested in Bantu. A vowel changes into a glide if the first vowel (V₁) in a sequence is either a high vowel /i, u/ or a mid vowel /o/ (Ngunga, 2000; Hyman, 2003; Jones, 2018; Dube & Ndebele, 2014; Sabao, 2015). In other words, a front mid vowel /e/ and a low central vowel /a/ cannot become a glide. The change of the class 6 agreement /a/ to a labio-velar /w/ (*a > w) is not motivated in Ndebele phonology and thus the occurrence of a glide /w/ is a problem for Pietraszko's gliding analysis.

Moreover, Pietraszko does not discuss strategy 2 at all. Recall that Pietraszko argues that the linker /a/ does not agree with the head noun in the formation of relatives in Ndebele and there is a post syntactic head lowering that dislocates the linker by moving it to a lower head via LNK-to-T head lowering. Importantly, she argues that the linker adjusts to the height of the augment via vowel coalescence. If Pietraszko's analysis was applied to Strategy 2, explaining the position and shape of the RM and the occurrence of an augmentless subject becomes problematic. The postulation of an augment whose shape is determined by the vowel of the subject agreement marker is problematic for the analysis of strategy 2 relatives anyway, as becomes clear in constructions in which the head noun and the relative subject belong to two different classes. Here it is evident that the RM agrees with the head noun; its shape is not derived via coalescence with the head of a DP-shell:

42. a. i-n-doda e-m-fazi u-f-ile
 AUG-9-man RM-[9AGR]-1-wife 1SM-die-TNS
 'the man whose wife died'
- b. *i-n-doda o-m-fazi u-f-ile
 AUG-9-man RM-[1AGR]-1-wife 1SM-die-TNS
 Intended: 'the man whose wife died'

If the syntax of a strategy 2 relative included a DP-shell whose head takes the form of the vowel of the subject agreement marker, then this head would be realised as *u-* in (42), and coalescence would then derive the RM *o-* in (42b). The ungrammaticality of (42b) shows that this is not what happens in strategy 2 relatives, where the RM agrees with the head noun. In the formation of strategy 2 relatives, it seems the shape of the RM is determined by the class agreement marker of the head noun rather than the augment of the DP-shell of the RC. The head-to-head lowering operation employed in the analysis of strategy 1 relatives cannot be extended to strategy 2 relatives. Recall that head-to-head lowering moves a higher head to a lower head (the head of the complement), whereas the relative agreement affixes are attached to the relative subject, rather than the head T, in strategy 2 relatives.

In this section 3.3 I have briefly discussed the problems with existing analyses of Nguni relative clause formation. I discussed the specifier analysis, relative pronoun analysis, relative concord analysis and several versions of the complementiser analysis. There are conflicting views on the synchronic status of the relative complementiser node in Nguni and the syntactic status of *(l)a-*. The complementiser analysis posits that *(l)a-* is C while the linker analysis, relative pronoun analysis, relative concord analysis and the specifier analysis consider the C node to be vacant in Nguni. The key question in the debate around *(l)a-* is what causes the change of its phonological shape into *a-*, *e-* or *o-*: do you need to postulate a separate element that coalesces with the RM, as in Pietraszko's analysis, or can the phonology be explained via vowel raising, which is triggered by the shape of the subject marker? The occurrence of glide commencing agreement markers and the appearance of tense markers between the RM and SMs also present problems for the reviewed analyses. In the following section I will attempt to provide solutions for the problems that I have identified in this section.

3.4 The morphological form of the RCM in Ndebele

In this section 3.4 I discuss the internal structure of the RCM in Ndebele. The RCM, as discussed in 3.2.1, consists of the RM and an agreement morpheme. The main claim I am making here is that there are

consonant-initial agreement markers present in all noun classes, even in the nasal classes, where the consonant are not overt, and that the vowel *a-* of the RM adjusts to the height of the vowel /i/ and /u/ of the agreement markers. The RM surfaces in relative clauses as *a-* in class 2 and class 6, as *e-* in class 4, 5, 7, 8, 9 and 10 and as *o-* in class 1, 3, 11, 14 and 15 (see Table 6).

I assume that the surface forms *a-*, *o-* and *e-* developed from the functional root /*a-*. The initial consonant /l/ of (/)*a-* has been dropped in Ndebele, Xhosa and Zulu. As a result, the RM is expressed by the vowel *a-* in Ndebele, Zulu and Xhosa. Swati has retained the original RM /*a-*. The following examples illustrate that Swati uses the consonant – vowel RM /*a-* (43a) while Ndebele/Zulu (43b) and Xhosa (43c) use the vowel RM:

43. a. u-m-fati **lo**-hamb-a-ko (Swati, Ziervogel, 1952, p. 59)
 AUG-1-woman RM-[1SM]-walk-FV-RS
 ‘the woman who is walking’
- b. u-m-fazi **o**-hamb-a-yo Ndebele/Zulu
 AUG-1-woman RM-[1SM]-walk-FV-RS
 ‘the woman who is walking’
- c. i-n-doda a-ma-khwenkwe a-yi-bon-ile-yo (Xhosa, Zeller, 2004, p. 79)
 AUG-9-man AUG-6-boy C-[6SM]-9OM-see-TNS-RS
 ‘the man whom the boys saw’

Loss of a sound segment ((/)*a-* > *a-*) is preferred to the addition of a sound (*a-* > /*a-*) in sound change (Poulos, 1982, p. 85), which supports the claim that the synchronic RM *a-* in Ndebele developed from a proto Nguni (/)*a-*.

The RM merges with an agreement marker and adjusts to the height of the vowel of the agreement marker. The question so far is whether the phonological process that derives RM surface forms is vowel raising (Khumalo, 1992) or vowel coalescence (Pietraszko, 2019). Following Khumalo (1992), I argue that the raising rule changes the RM *a-* to *e-* and *o-* when the class agreement marker has a vowel *i-* and *u-* respectively. Khumalo (1992) argues that the RM adjusts to the height of the vowel of the class agreement and vowel raising is followed by subject agreement deletion in nasal classes as follows:

Table 7: The morphophonology of RCM (The preliminary version)

Noun class	RM	SM	RCM
1	a-	u-	o- u - > o-
2	a-	ba-	aba-
4	a-	i-	e- i - > e-
5	a-	li-	eli-
6	a-	a-	a- a - > a-
7	a-	si-	esi-
8	a-	zi-	ezi-
9	a-	i-	e- i - > e-
11	a-	lu-	olu-
14	a-	-bu-	obu-
15	a-	-ku-	oku-

The main claim in Khumalo's analysis is that vowel coalescence is not involved in the adjustment of the RM. However, the appearance of glides /w, y/ in RCMs of class 1, 3, 6 and 9 when the relative verb is in the past tense is a problem when Khumalo's analysis is adopted.

44. a. u-mu-ntu o-w-a-f-a-yo
 AUG-1-person RM-1AGR-TNS-die-FV-RS
 'the person who died'
- b. i-n-ja e-y-a-f-a-yo
 AUG-9-dog RM-9AGR-TNS-die-FV-RS
 'the dog which died'

- c. a-ma-sotsha a-w-a-ba-tshay-a-yo
 AUG-6-soldier RM-6SM-TNS-2OM-bash-FV-RS
 ‘the soldiers that bashed them’

The vowel raising analysis predicts that the vowel of the subject marker triggers the raising of the vowel element of the RM, and then the vowel subject marker changes to a glide. This analysis works well in accounting for the occurrence of glides in (44a) and (44b). However, as already noted in section 3.3.5 above, the glide /w/ in (44c) poses a problem for this analysis. Recall that the mid back vowel /o/ and the high vowels /u/ and /i/ are the only vowels that glide in Ndebele. As a result, the labio-velar glide /w/ in (44c) is not an allomorph of a vocalic subject agreement marker. I therefore refine Khumalo’s analysis by assuming that the agreement markers may be vocalic or commence with either a consonant or a glide in Nguni. The vocalic subject agreement marker and the glide commencing subject agreement markers occur in nasal classes while the consonant commencing subject agreement markers occur in non-nasal classes. The vocalic subject agreement marker and the glide commencing agreement marker are allomorphs. The vocalic subject agreement marker occurs when the subject marker is the initial morpheme in a verb (45a) whereas glide commencing subject agreement marker occurs when the subject agreement marker follows a negation marker in declarative sentences (45b) or when the subject marker immediately precedes the past tense marker -a- (45c).

45. a. a-ma-sotsha a-tshay-a a-ba-ntu
 AUG-6-soldier 6SM-bash-FV AUG-2-person
 ‘the soldiers are bashing people’
- b. a-ma-sotsha ka-wa-ba-tshay-i
 AUG-6-soldier NEG-6SM-2OM-bash-NEG
 ‘the soldiers are not bashing them’

- c. a-ma-sotsha a-w-a-ba-tshay-a-yo
 AUG-6-soldier RM-6SM-TNS-2OM-bash-FV-RS
 'the soldiers that bashed them'

In (45), class 6 subject agreement is marked by the vocalic subject agreement marker *a-* (45a), a glide plus a vowel element of the subject agreement marker *-wa-* (45b) and a glide alone *w-* (45c). I assume that these 3 class subject agreement markers *a-/wa-/w-* are allomorphs.

I suggest that the vocalic subject agreement marker is deleted in all contexts in the formation of relative clauses (46a-c). When the relative verb is in past tense, the vowel element of the glide commencing subject agreement markers is replaced by the past tense marker *-a-* (47a-c).

46. a. u-m-fazi o-bhal-a-yo < o-~~u~~-a-bhal-a-yo
 AUG-1-woman RM-[1SM]-write-FV-RS
 'the woman who is writing'
- b. i-n-ja e-f-a-yo < e-~~i~~-f-a-yo
 AUG-9-dog RM-[9SM]-die-FV-RS
 'the dog which is dying'
- c. a-ma-sotsha a-ba-tshay-a-yo < a-a-ba-tshay-a-yo
 AUG-6-soldier RM-[6SM]-2OM-bash-FV-RS
 'the soldiers that are bashing them'
47. a. a-ma-sotsha a-w-a-ba-tshay-a-yo < a-wa-a-ba-tshay-a-yo
 AUG-6-soldier RM-6SM-TNS-2OM-bash-FV-RS
 'the soldiers that bashed them'

- | | | | |
|----|-----------------------|------------------------|--------------------|
| b. | u-m-fazi | o-w-a-bhal-a-yo | < o-wu-a-bhal-a-yo |
| | AUG-1-woman | RM-1SM-TNS-write-FV-RS | |
| | 'the woman who wrote' | | |
| c. | i-n-ja | e-y-a-f-a-yo | < e-yi-a-f-a-yo |
| | AUG-9-dog | RM-9SM-TNS-die-FV-RS | |
| | 'the dog which died' | | |

Recall that the agreement markers of the nasal classes are also deleted in the standard analysis proposed by Khumalo (1992) for Zulu. In Ndebele, as illustrated in (46), the vocalic agreement markers *u-*, *a-* and *i-* are deleted when the relative verb is not in past tense. The examples in (47) indicate that glide elements of the class 6 and class 9 agreement markers remain while their vowels are deleted when the verb is in past tense. The deletion of the vocalic subject agreement marker and the deletion of the vowel element of the glide commencing subject agreement markers is expected because the vowel sequence is not allowed in a Nguni syllable. This analysis rejects the role of vowel coalescence and the occurrence of vowel agreement markers in the formation of RCMs. Crucially, I maintain Khumalo's (1992) view that the shape of the RM is determined by vowel raising.

Alternatively, one may suggest that the subject agreement markers that participate in the formation of relative clauses always commence with glides in the nasal classes. This means that what is deleted is the glide commencing subject marker rather than the vocalic subject agreement. This analysis is compatible with Khumalo's (1992) vowel raising analysis and subject agreement deletion. The major difference here is that in this analysis one has to assume that the glide commencing subject agreement marker gets deleted while Khumalo (1992) is of the view that what is deleted is the vocalic subject agreement marker.

However, the glide commencing subject agreement deletion analysis is not phonologically motivated. There is no phonological rule that explains why the glide commencing subject agreement markers must be deleted in the formation of relative clauses. In contrast, the deletion of vocalic subject agreement markers is in sync with the phonological rule that disallows the occurrence of two or more vowels in a Nguni syllable. In the absence of a phonological rule that disallows the occurrence of the glide commencing subject agreement markers in the formation of relative clauses, I uphold the standard view that vocalic subject agreement markers participate in the formation of relative clauses and further suggest that every vocalic subject agreement marker has an allomorphic variant that is glide commencing which only occurs when the relative verb is in past tense. I maintain that there are three types of subject agreement markers that participate in the formation of relative clauses: the consonant commencing subject agreement markers, the glide commencing subject agreement markers and the vocalic subject agreement markers.

Table 8: Noun class and subject agreement marker

Noun class	SM
1	u- wu-/w- a-
2	ba-
4	i- yi-/y-
5	li-
6	a- wa-/w-
7	si-
8	zi-
9	i- yi-/y-
11	lu-
14	bu-
15	ku-

I adopt the argument by Sibanda (2011) and Dube and Ndebele (2014) that the synchronic vowel agreement markers developed from glide agreement markers and that the glide commencing agreement markers are relics of the proto Nguni nasal agreement markers. This analysis suggests that the onset glide of the agreement marker can be lost in some cases where the agreement marker is the initial marker in a word form.

I therefore propose that the RM adjusts to the height of the vowel of the subject agreement marker and then the vocalic subject agreement marker is deleted in the formation of RCMs of classes 1, 3, 4, 6 and 9 as illustrated below in Table 9. The glide commencing and the consonant commencing agreement markers are never deleted:

Table 9: The morphophonology of RCM

Noun class	RM	SM	RCM
1	a-	-u-	o- u - > o-
	a-	-wu-	o-w u - > ow-
2	a-	-ba-	aba-
4	a-	-i-	e-i > e-
	a-	-yi-	e-yi > ey-
5	a-	-li-	eli-
6	a-	-a-	a-a > a-
	a-	-wa-	a-wa > aw-
7	a-	-si-	esi-
8	a-	-zi-	ezi-
9	a-	-i-	e-i > e-
	a-	-yi-	e-yi > e-
10	a-	-zi-	ezi-
11	a-	-lu-	olu-
14	a-	-bu-	obu-
15	a-	-ku-	oku-

This analysis is straightforward in all classes except in the formation of class 1 non-subject relative

clauses. The class 1 RCM is *a-* rather than the expected *o-*. The appearance of a RM *a-* instead of an *o-* RM in these relatives appears to counter the analysis proposed above. The RM should be *o-* rather than *a-* because the class 1 agreement *u-* should cause the underlying RM *a-* to be realised as *o-*. However, in contrast to this expectation, the RM is always appearing as *a-* in non-subject relatives if the relative subject is in class 1. For example:

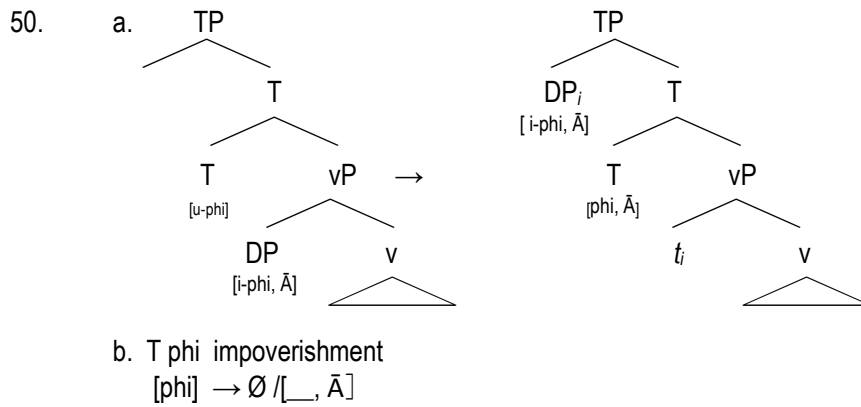
48. a. u-m-fana u-ya-yi-zond-a i-n-ja
 AUG-1-boy 1SM-DIS-9OM-hate-FV AUG-9-dog
 'the boy hates the dog'
- b. *i-n-ja u-m-fana o-yi-zond-a-yo
 AUG-9-dog AUG-1-boy RM-[1SM]-9OM-hate-RS
 Intended: 'the dog that the boy hates'
- c. i-n-ja u-m-fana a-yi-zond-a-yo
 AUG-9-dog AUG-1-boy RM-[AAE]-9OM-hate-RS
 'the dog that the boy hates'

In (48a), the regular class subject marker is prefixed to the verb and (48b) shows that the regular class 1 subject marker is not involved in the formation of non-subject relatives. (48c) shows that the RM appears as *a-* rather *o-* if the relative subject is in class 1. I maintain that the RM is prefixed to an *a-* agreement marker and that this *a-* agreement marker is deleted just like the vocalic agreement markers. Following Henderson (2009) and Asiimwe (2019), I assume that the *a-* agreement marker that is involved in the formation of the construction in (48c) is an Anti-Agreement Effect (AAE) morpheme. AAE only occurs when the subject of the non-subject relative clause is a class 1 noun. In Dzamba, a C32 language spoken in Zambia and Democratic Republic of Congo, the regular class subject marker is *a-* (49a) while the RM is *ó-* and the AAE is *ò-*. When the relative verb is negated, the negation marker intervenes between the

RM and the AAE marker (49b):

49. a. o-moto a-kpa:ki i-mundondo. (Dzamba, Bokamba 1976)
 AUG-1person 3SG-took AUG-jug
 'the person took the jug.'
- b. o-moto ó-ta-ò-kpa:ki i-mundondo
 AUG-1person 1C-NEG-AAE-took AUG-jug
 'the person who did not take the jug'

The regular class 1 subject marker and the AAE marker are in complementary distribution. The AAE marker strictly occurs in non-subject relative clauses where the relative subject is in class 1 whereas the regular class 1 subject marker is an elsewhere exponent. Schneider-Zioga (2007) argues that AAE is triggered by the \bar{A} -feature on the goal. In this analysis, the phi-feature on the head probes the derivation for a corresponding feature and agrees with a goal that bears both phi-features and an \bar{A} -feature. The phi-features and the \bar{A} -feature are copied to the head and the impoverishment operation deletes the phi-features on the head in morphology. Impoverishment is a posyntactic operation that deletes morphosyntactic features from nodes prior to vocabulary insertion (Bonet, 1991; Noyer, 1997; Halle & Marantz, 1993; 1994; Bobaljik, 2002; Embick & Noyer, 2007). The deletion of certain features results in the insertion of less specified exponents. In the case of a class 1 agreement node, the deletion of the phi-features leaves the \bar{A} -features which are then spelled out as AAE (50b):



In (50a), the u-phi feature on T probes the structure for a corresponding match and finds the subject DP in spec v. The subject is copied to spec T and T copies the phi-features and the \bar{A} -feature in a specifier - head configuration. (50b) illustrates the deletion of the phi features on the T head in morphology.

The main claim I am making here is that the vowel *a-* of the RM adjusts to the height of the vowel of the agreement marker and that there is always the deletion of the vocalic subject agreement marker in the formation of the RCMs of classes 1, 3, 4, 6 and 9. The following table makes this claim explicit by showing a list of agreement markers in all noun classes. As column 2 illustrates, the RM is followed by either a vocalic subject agreement marker or a consonant/ glide commencing subject agreement marker. In either case, the vowel of the RM adjusts to the height of the vowel of the agreement marker. When the RM and the vocalic subject agreement marker combine in the derivation of a RCM we get an adjacent partial progressive assimilation. This is so because the target (the RM) and the trigger (the vocalic subject agreement marker) are adjacent to each other thereby giving us a case of adjacent assimilation. Since the target comes before the trigger, this is a case of progressive assimilation, and since the target vowel partly copies the feature +high, assimilation is partial and since the target and the trigger are adjacent, this is a case of adjacent assimilation.

However, there is always either a consonant or a glide between the vowel of the agreement marker and the vowel of the RM whenever consonant commencing agreement markers and glide commencing

agreement markers are involved in the formation of the RCM. Because of this consonant/ glide, the process of vowel assimilation takes place at a distance. Since the target comes before the trigger, this is a case of progressive assimilation, and since the target vowel partly copies the feature +high, assimilation is partial. This means that vowel adjustment which occurs in the formation of Ndebele relative clause markers can be described as either an *adjacent partial progressive* kind of assimilation or a *distant partial progressive* kind of assimilation. The second column in Table 10 presents the RM and the agreement markers prior the application of the vowel raising rule whereas column 3 presents the surface structure of the RCM in Ndebele. As column 3 illustrates, the vocalic subject agreement marker and the vowel element of the glide commencing agreement marker are deleted during the formation of the RCM:

Table 10: Noun classes, RM, agreement marking and RCM in Ndebele

Noun class	RM + agreement marker	RCM
1	a- + -u- a- + -wu- a- + -a- (AAE)	ou- > o- owu- > ow- aa- > a-
2	a- + -ba-	aba-
3	a- + -u- a- + -wu-	ou- > o- ow- > o-
4	a- + -i- a- + -yi	ei- > e- ey- > ey-
5	a- + -li	eli-
6	a- + -a- a- + -wa	aa- > a- aw- > a-
7	a- + -si	esi-
8	a- + -zi	ezi-
9	a- + -i- a- + -yi	ei- > e- ey- > ey-
10	a- + -zi	ezi-
11	a- + -lu	olu-
14	a- + -bu	obu-
15	a- + -ku	oku-

In summary, I claim that vowel coalescence and glide formation do not occur in the formation of relative clause markers. Instead, I argue that the RM can combine with a vocalic subject agreement marker, or a consonant commencing subject agreement marker or a glide commencing agreement marker in the formation of RCMs. The vowel of the agreement marker triggers the vowel of the RM to assimilate the +high feature from the trigger such that there is harmony between the RM and the vowel of the agreement marker. The vocalic subject agreement markers of the nasal classes are then deleted after the raising of

the vowel of RM, a process to which I return below.

However, the morpho-syntactic analysis of strategy 1 and strategy 2 relatives raises two issues pertaining to the status of the RM and agreement markers in strategy 1. Firstly, the RM is prefixed to the relative subject in strategy 2 while it is prefixed to the relative verb in strategy 1. Secondly, the RM agrees with the head noun in strategy 2 whereas it agrees with the relative subject in strategy 1. I will discuss these issues at length in the following sections.

3.5 A Distributed Morphology-analysis of Ndebele relative clauses

In this section I discuss the structure of Ndebele relative clauses within the Distributed Morphology framework. I discuss the relative word order in the context of the morpho-syntactic features of the RM. In this section I briefly discuss the status of the RM within the DM parameters. I argue that the RM is a relative complementiser that is derived from an acategorial base $\sqrt{(L)A-}$ by merging with a categoriser complementiser head (the little *c*) to derive the complementiser stem ($\sqrt{(L)A-} + c$). This derived stem is spelled out as $(l)a-$ in Nguni. The little *c* bears the EPP feature, the uninterpretable relative features (u-rel), u-phi features and uninterpretable Tense features (u-T):

51. $C_{EPP, u-rel, u-phi, u-T}$

These features play a crucial role in determining the structure and word order in relative clauses. Of particular interest in this study is the position of the relative complementiser $(l)a-$ in Ndebele relative clauses. However, before discussing the position of the relative complementiser in Ndebele, I will briefly discuss the feature structure of the relative complementiser and the word order in Bantu relative clauses.

3.5.1 The feature structure of relative complementisers in Bantu

This section discusses the feature structure of C and the role of C in the formation of Bantu relative clauses. The discussion is based on Swahili (G40, Swahili language group), Shona (S10, Shona language group), Chewa (N30, Chewa-Nyanja group), Chokwe (K10, Ciokwe-Luchazi group), Bemba (M40, Bemba group), Dzamba (C322, Bangi-Ntomba group), Nsenga (N41, Senga-Sena group), Tonga (S62, Copi group), Southern Sotho (S33, Sotho-Tswana group) and Ndebele (S44, Nguni group). Basing on the feature structure of C in the selected languages, I argue that there are four types of relative complementiser heads that correspond to the four ways of forming relative clauses in Bantu.

The feature structure of relative complementisers in Bantu varies from one language to another. The features relevant for this present study are: (1) uninterpretable relative features (u-rel), (2) uninterpretable agreement features (u-phi) and (3) an uninterpretable Tense feature (u-T) and (4) an EPP-feature. Generally, there are four types of C heads found in Bantu relative clauses:

52. a. **Type A:** $C_{EPP, u-rel, u-phi}$; $C - S - V$ word order.
- b. **Type B:** $C_{EPP, u-rel, u-phi, u-T (strong u-T)}$; $C+V - S$ word order
- c. **Type C:** $C_{EPP, u-rel, u-phi, u-T (weak u-T)}$; $S - C+V$ word order
- d. **Type D:** $C_{+EPP, u-rel, u-T (weak u-T)}$; $S-C+T$ word order

The u-phi features and u-T feature are parameterized whereas the +EPP feature and the u-rel feature are common in all the types listed above.

Each feature has a unique role in the derivation. The feature u-rel on C establishes a probe-goal relation between C and the relative operator inside the RC which bears an interpretable rel (i-rel) feature. The OP is extracted from the relativisation site and copied to spec C to satisfy the EPP property of C as shown below:

53. a. Head noun [CP [C' \sqrt{la} -_[u-rel+EPP] [TP subject [T verb OP_[i-rel]]]]]
 b. Head noun [CP OP_[i-rel] [C' \sqrt{la} -_[u-rel,+EPP] [TP subject [T verb _____i]]]]

The u-rel feature is valued by i-rel as soon as the probe finds the relative operator in the RC. The relative operator is bound by the head noun and after movement binds a variable in the base position. I assume that Agree between C and the OP, and the movement of relative operator to spec C, are universal features of RCs, and necessary to establish the predicative semantics of RCs at LF. I will discuss the valuing of the u-rel feature on C in chapter 4 where I analyse resumption in Ndebele.

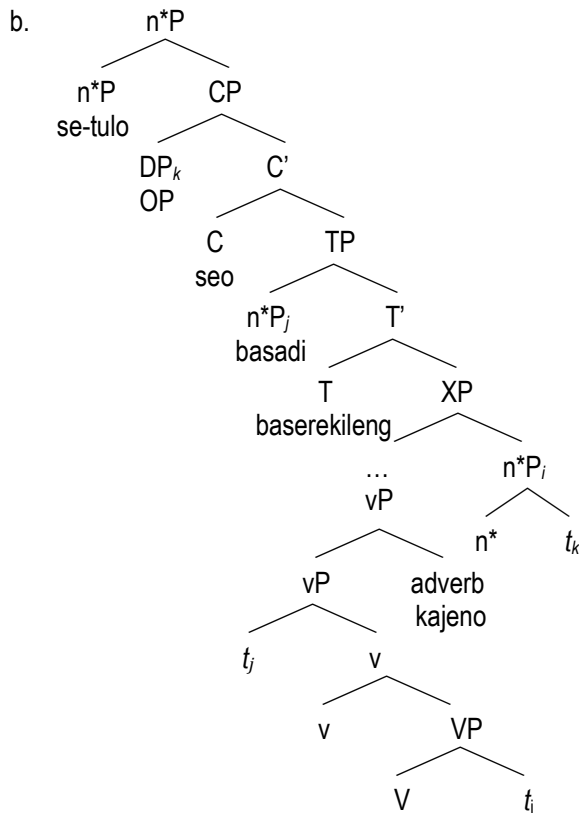
Type A: *C*_{EPP, u-rel, u-phi}; *C – S – V* word order. The languages that have a Type A C-head have an autonomous *C* and a *Complementiser – Subject – Verb* (*C – S – V*) word order:

54. a. S33 Southern Sotho; (Zeller, 2004, p. 77)
 se-tulo se-o ba-sadi ba-se-rek-ile-ng kajeno
 7-chair 7CA-C 2-woman 2SM-7OM-buy-TNS-RS today
 'the chair which the women bought today'
- b. M40 Bemba (Bokamba, 1976)
 lbuku ilyo umulumendo a-ka-belenga
 5book 5C 1boy 1SM-TNS-read
 'the book that the boy will read'
- c. N31 Chewa: (Simango 2006, p. 284)
 Njonda yi-mene atsikana a-ma-yi-khumbil-a ndi ya-chuma
 9.guy 9CA-C 2.girls 2AGR-TNS-9OM-admire-FV COP ASSOC-wealth
 'the guy whom the girls admire is wealthy.'

- d. G40 Swahili: (Ngonyani, 1999, p. 61)
- | | | | | | |
|---------|----------|--------|-----------------|-----|-----------|
| vi-tabu | amba-vyo | Juma | a-li-nunu-a | ni | ghali |
| 8-book | AMBA-8CA | 1-Juma | 1AGR-TNS-buy-FV | COP | expensive |
- 'the books Juma bought are expensive.'

In these languages, the u-rel feature on C probes the structure and establishes a probe-goal relation with the relative operator which bears an i-rel feature. The relative operator values both the u-rel features and the u-phi features of C and then the OP is extracted from the relativisation site and copied to spec C.

55. a. se-tulo se-o ba-sadi ba-se-rek-ile-ng kajeno
 7-chair 7CA-C 2-woman 2SM-7OM-buy-TNS-RS today
 'the chair which the women bought today' (Southern Sotho; Zeller, 2004, p. 77)



The C head then receives an agreement node in morphology in accordance with a morphological

requirement in Southern Sotho which stipulates that an agreement node be added to a head that has had its u-phi features valued in syntax. The agreement node that is added to C copies the phi features from the relative operator. I call this agreement node "complementiser agreement".

The C head in Type A languages always expresses agreement with the relative operator and the head noun. Crucially, C does not affix to any element and it is always the initial element in the RCs of these languages as shown in (55). Therefore, the relative word order in RCs is *Complementiser-Subject-Verb* (C-S-V) in these languages.

Type B: *C*_{EPP, u-rel, u-phi, u-T (strong u-T)}; *C+V – S* word order. The Type B languages have a clitic C-head and a *Complementiser+Verb – Subject* (C+V – S) word order. The C-head in these languages agrees with the head noun and morphologically merges with the inflected relative verb. For example:

56. a. G40 Swahili (Ngonyani, 1999, p. 61)
- | | | | | |
|---------|--------------------|------|-----|-----------|
| vi-tabu | a-li-nunu-a-vyo | Juma | ni | ghali |
| 8-book | 1AGR-PST-buy-FV-8C | Juma | COP | expensive |
- 'the books Juma buys are expensive.'
- b. N41 Nsenga (Simango, 2006, p. 280)
- | | | | |
|-----------|----------|-----------------------|---------|
| li-tanga | [I-amene | la- w –a- pik-a | Tombi] |
| 5-pumpkin | 5-REL | 5C-1AGR-HDPST-cook-FV | 1 Tombi |
- 'the pumpkin which Tombi cooked.'
- c. K11 Chokwe (Kawasha, 2008, p. 58)
- | | | |
|---------|-------|---------------------------|
| chi-úma | [ochu | chi-á-a-tén-ení-yi] |
| 7-thing | 7REL | 7C-1SA-TNS-mention-TNS-RP |
- 'the thing that he mentioned'

- d. S10 Shona (Harford & Demuth, 1999, p. 50)
- | | | | |
|------------|-----------------------------|----------|---------|
| mbatya | dz-a- v-aka-son-er-a | va-kadzi | mw-enga |
| [10]-cloth | 10AGR-C-2SM-TNS-sew-APPL-FV | 2-woman | 1-bride |
- 'the clothes which the women sewed for the bride'

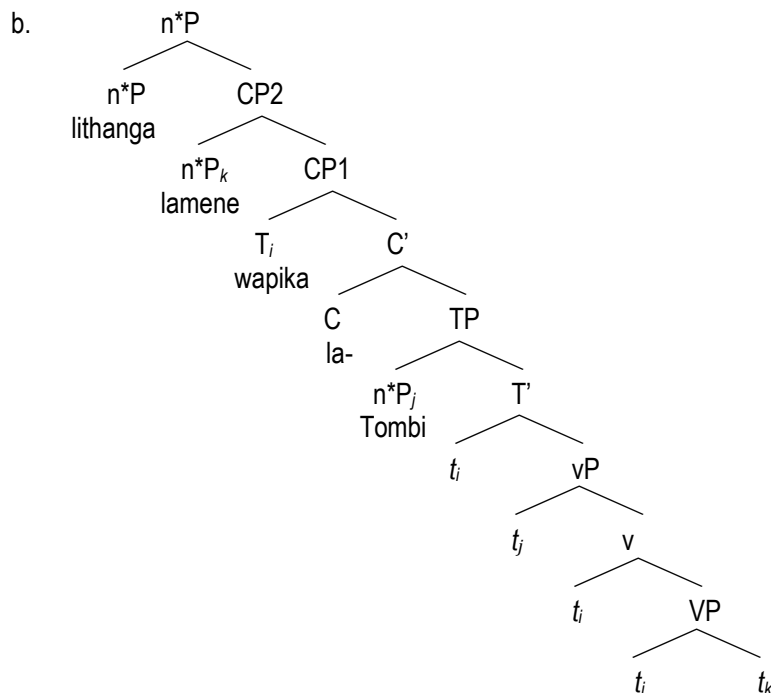
In Type B languages, the C head also has u-rel and u-phi features and a strong u-T feature. Like in Type A languages, the u-rel probes the derivation for the goal bearing i-rel and agrees with the operator marked DP and then the relative operator moves to spec C where it values the u-phi features of C. As a result, C agrees with the relative operator and the head noun like in Type A languages. However, in contrast to Type A languages, the C head also has a strong u-T feature. The strong u-T feature on C triggers Tense-to-Complementiser head movement (T-to-C head movement). This type of head movement takes place in the narrow syntax. I adopt Matushansky's (2006) theory of head-to-head movement. Recall that Matushansky (2006) argues that head movement is a two-step process: movement to spec, and m-merger in the morphology. According to this theory, movement to spec happens in the narrow syntax while m-merger takes place in the morphological module. I assume that T-to-C head movement precedes the movement of the relative operator to spec C and that T moves to spec 1 while the relative operator moves to spec 2.

In order to illustrate how the proposed system works, consider the Shona example in (56d). First, the C head in (56d) expresses agreement with the head noun, which is an indication that C has an u-phi features in Shona. Thus C values its u-phi features against the relative operator and then receives CA in morphology. Secondly, T and C constitute a single word form which precedes the subject of the relative clause. I assume that T moves to spec 1 in the narrow syntax and that m-merger combines T and C in the morphology module. Crucially, the T-to-C movement operation inverts the canonical word order C-S-V to C-V-S as shown above. Thirdly, the relative operator moves to spec C after valuing the u-rel feature

of C.

Nsenga is another Type B language. In Nsenga, for example, the word order in relative clauses is: *relative pronoun - C+relative verb - relative subject*. There is agreement between the head noun, the relative pronoun and C, and there is agreement between the relative subject and the relative verb. I assume that the C head in Nsenga has the features: u-rel, u-phi, EPP and a strong u-T feature. I further assume that the relative pronoun *lamene* first merges in the relative clause and then moves to its surface position in the course of the derivation:

57. a. li-tanga I-amene la-w-a-pik-a Tombi (Simango, 2006, p. 280)
 5-pumpkin 5REL 5C-1AGR-TNS-cook-FV [1]-Tombi
 'the pumpkin which Tombi cooked.'



C probes the derivation and agrees with the relative pronoun which values the u-phi and u-rel features on C. The relative pronoun then moves to spec C to satisfy the EPP requirement. The u-T feature on C

then triggers T-to-C head raising. I assume that T first moves to spec C1 in syntax and then morphological merger combines T *wapika* and C *la-* in morphology to derive a complex head *lawapika*. T-to-C head raising inverts the canonical C-S-V word order to C+V-S. Unlike Shona that has a C head *-a-* and an OP, Nsenga has a relative pronoun *lamene* and a C head *la-*.

Type C: *C* _{EPP, u-rel, u-phi, u-T (weak u-T)}; *S* – *C+V* word order. A Type C has a S-C+V relative word order and a C-head that has EPP, u-rel, u-phi and a weak uT feature. . The relative subject intervenes between the head noun and C, C agrees with the head noun and clitics to the inflected relative verb as shown by the following examples:

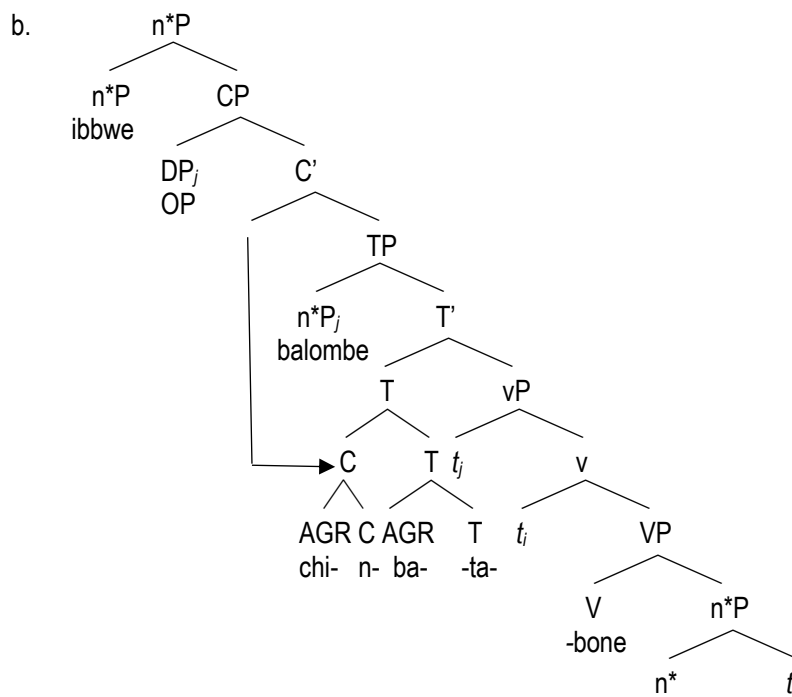
58. a. S62 Tonga (Mumpande et al, 2017, p. 34)
- | | | |
|---------|----------|-----------------------|
| i-bbwe | ba-lombe | n-di-ba-ta-bon-e |
| 5-stone | 2-boy | C-5CA-2SM-TNS-see-TNS |
- ‘the stone that the boys will see’
- b. S16 Ikalanga (Letsholo, 2009, p. 133)
- | | | |
|---------|---------|-------------------|
| Ngumbá | Lúdo | ya-á-ká-báka |
| 9-house | 1a.Ludo | 9C-1SM-past-build |
- ‘the house that Ludo built’
- c. JE15 Luganda (Ashton et al, 1954:144)
- | | | |
|----------|---------|------------------|
| emikeeka | abawala | gye-ba-a-luka |
| 4-mat | 2-girl | 4C-2SM-TNS-plait |
- ‘the mats the girls plaited are unsuitable’

The C-head that participates in the formation of these relative clauses has an EPP feature, u-rel and u-phi features just like the C-head of Type B. The difference between the C head in Type B and the one in

Type C languages is that the former has a strong u-T while the latter has a weak u-T. As argued in chapter 2, section 2.2.3, a strong u-T feature requires the T head to be spelled out in C while a weak u-T feature requires C to be spelled out in T. As a result, the C in Type C agrees with the head noun/relative operator but is lowered to T and therefore comes after the relative subject.

In order to illustrate how the proposed system works, consider the following Tonga example:

59. a. i-bbwe ba-lombe n-di-ba-ta-bon-e (Tonga, Mumpande et al, 2017, p. 34)
 5-stone 2-boy C-5CA-2SM-TNS-see-TNS
 'the stone that the boys will see'



The word order in Zimbabwean Tonga relative clause is S-C+V rather than the expected C-S-V and C agrees with the head noun/relative operator although it is not the initial element in the relative clause. I assume that in object relatives such as (59), a probe-goal relation is established between C and the

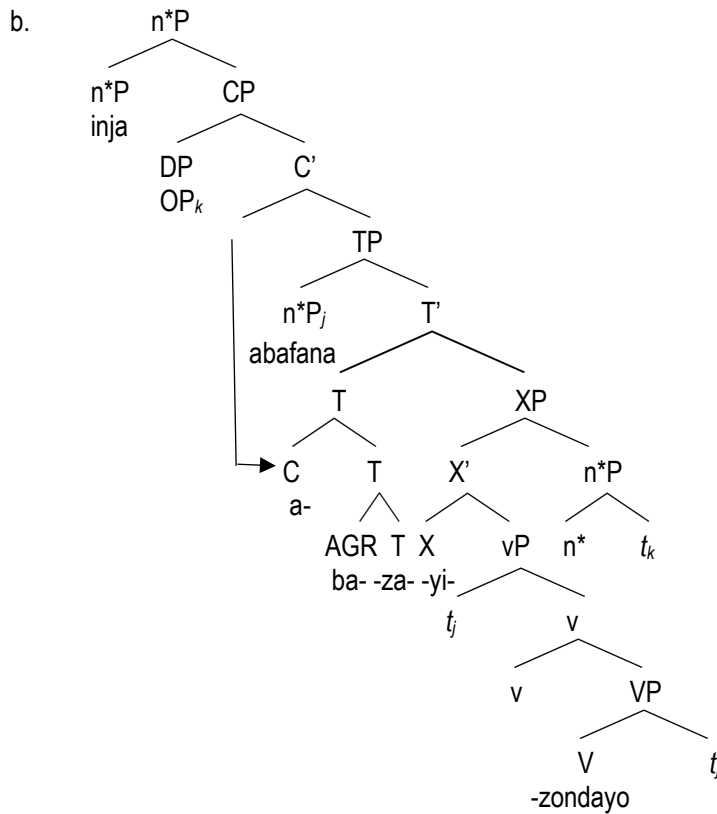
object of the relative clause and that the object is extracted and copied to spec C where it values the u-phi features. Unlike a strong u-T feature on the C head that triggers T-to-C head raising, a weak u-T feature requires C to lower to T to value its u-T feature against the i-T of the T head. I assume that C-to-T head lowering takes place in the PF module after spell out.

Type D: $C_{+EPP, u-rel, u-T (weak\ u-T)}$; *S-C+V word order*. The main property of the Type D C-head is that it does not have u-phi features and therefore the relative clauses that are formed using this head do not agree with the head noun. Rather, these relative clauses only agree with the subject of the relative clause.

60. a. nyika mu-soja a-chá-i-tong-a (Shona; Fortune, 1955)
 [9]-country 1-soldier AAE-C+TNS-9OM-rule-FV
 ‘the country that the soldier will rule’
- b. i-n-ja a-ba-fana a-ba-za-yi-zond-a
 AUG-9-dog AUG-2-boy C-2SM-TNS-9OM-hate-FV
 ‘the dog that the boys will hate’

The C head in Type D languages has the features EPP, u-rel and a weak u-T. Like in all the other languages, the u-rel feature on C probes the derivation and establishes a probe-goal relation with the relative operator and then the relative operator is copied to spec C to satisfy the EPP requirement. Unlike the strong u-T that must be valued in the narrow syntax and that triggers T-to-C head raising, the weak u-T feature is valued after syntax via C-to-T lowering. The C-to-T lowering operation affixes C to the relative verb to derive the word order *Subject-C+V*. The difference between Type C and Type D languages is that the former have u-phi on C, but the latter do not. As a result, complementiser agreement only obtains in Type C languages. For example:

61. a. i-n-ja a-ba-fana a-ba-za-yi-zond-a
 AUG-9-dog AUG-2-boy C-2SM-TNS-9OM-hate-FV
 'the dog that the boys will hate'



The illustration in (61), shows the derivation of a relative clause that is based on a Type C-head. Of note here is the lowering of the C-head to T where it adjusts to the subject agreement marker. Note that C is not segmental in some languages such as Shona that have Type D relative constructions (see 60a).

In section 3.5.1, I have proposed a classification of relative clause constructions that is based on the feature structure of C and the relative word order. I maintain that the relative word order reflects the feature structure of the C-head that participates in the formation of a given RC. Thus, the feature structure of C and the relative word order are vital in the classification of Bantu relative constructions. I suggested that Type A relative constructions have a C-S-V word order and that the C-head that participates in these

constructions has the following features: EPP, u-rel and phi. Type B relative constructions have the C+V – S word order and the C-head that participates in the formation of these constructions has the following features: EPP, u-rel, u-phi, and a strong u-T. I suggested a third type (Type C) of relative constructions. Type C relative constructions have the S – C+V word order and the C-head of Type C constructions has the following features: EPP, u-rel, u-phi and weak u-T. The last type is Type D. The C-head that participates in the formation of Type D relative constructions has the EPP, u-rel and a weak u-T feature. These constructions have a S-C+V word order.

In the following section I discuss the feature structure of C in Nguni and how it relates to the syntax and structure of C. I argue that the C head had u-phi features in proto Nguni which have been lost in “modern” Nguni. In proto Nguni, C expressed complementiser agreement with the relative head and possibly it was autonomous like its Southern Sotho counterpart. In contrast, C in modern Nguni does not have u-phi features and thus does not express complementiser agreement with any n*P. The C-head with u-phi features identifies with the strategy 2 relatives while the one without u-phi features identifies with strategy 1 relative clauses. On the position of C in strategy 1 relatives, I contend that strategy 1 relatives are instances of Type D relative clauses that are derived via the C-to-T head lowering operation. This operation is triggered by the weak u-T feature on C and it derives the S-C+V from the canonical C-S-V word order. Finally, I propose that strategy 2 relatives are instances of Type A relative clauses that have a canonical C-S-V word order. I will start by illustrating the syntactic representation of the relative clause in the DM-framework in the following section.

3.5.2 Merger of relative complementiser and verb

DM posits that there are three kinds of operations that are defined by their place in the architecture of grammar with respect to narrow syntax, spell-out and V1 as schematised below:

62. **narrow syntax** → operation 1 → **Spell-out** → operation 2 → **VI** → operation 3

(Arregi & Nevins, 2008, p. 1)

A strong u-T-feature on C is valued in the narrow syntax via T-to-C head raising. T-to-C movement is thus an instance of an *operation 1* process that takes place in the syntactic module. This syntactic operation, as discussed in 3.5.1, inverts the SV word order and derives a VS word order. The surface VS word order is motivated by the need to value the u-T feature on C. The word order in Shona object relatives is a typical example of T-to-C movement triggered by a strong T-feature on C.

63.	mbatya	dz-a- v-aka-son-er-a	va-kadzi	mw-enga
	[10]-Cloth	10CA-C-2SM-TNS-sew-APPL-FV	2-woman	1-bride
	‘the clothes which the women sewed for the bride’		(Harford & Demuth, 1999, p. 50)	

T moves to C in Shona (56 here repeated as 63) to value the strong T-feature of C. T-to-C movement derives the word order C+V S O (see Harford & Demuth, 1999 for more information on verb raising in Shona). In contrast to Shona, T-to-C movement does not take place in Ndebele hence the ungrammaticality of (64).

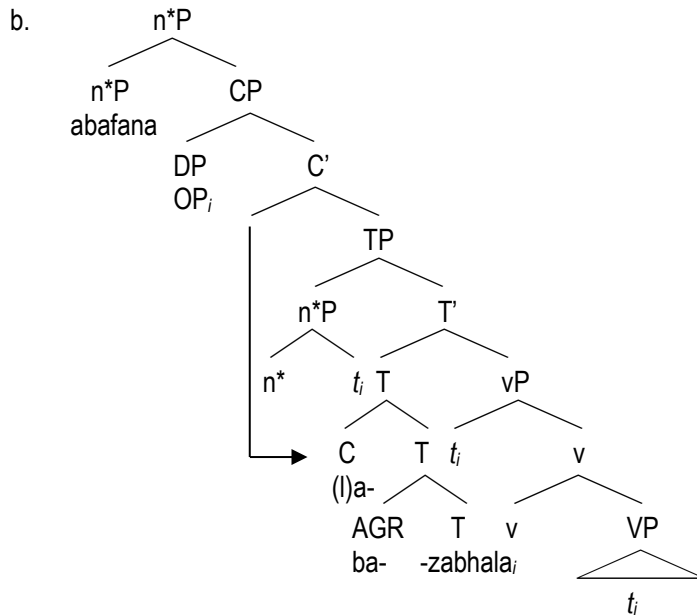
64.	*i-m-pahla	e-zi-ba-thung-el-e	a-ba-fazi	u-makoti
	AUG-10-cloth	C-10CA-2SM-10OM-sew-APPL-TNS	AUG-2-woman	1-bride
	Intended: ‘the clothes which the women sewed for the bride’			

The ungrammaticality of (64) relates to the feature structure of C in Ndebele. The absence of T-to-C movement shows that Ndebele C does not have a strong u-T feature.

I argue that the head-to-head lowering operation lowers C to T in the formation of strategy 1 relatives. Recall that head-to-head lowering occurs between a c-commanding head and a c-commanded complex head of a complement phase. In the process of lowering, the lowering head skips intervening specifiers and adjuncts because these are not landing sites for the head.

The C-head and the T-head are in a local configuration, which can trigger m-merger. As a result, the C-head lowers to the T-head, the head of its complement. Interestingly, Arregi and Pietraszko (2018) argue that the C head lowers to T in the formation of Ndebele relative clauses. According to Arregi and Pietraszko (2018), Ndebele has a weak C head and a T head position that is strong. As a result, m-merger lowers C to T. Crucially, Arregi and Pietraszko (2018) contend that Ndebele has a null C head. Following Arregi and Pietraszko (2018), I maintain that Ndebele has a weak C head which triggers C-to-T head lowering whenever the head is selected in the formation of strategy 1 relative clauses. In contrast to Arregi and Pietraszko (2018), however, I maintain that *(I)a-* is an exponent of C. The following tree illustrates C-to-T head lowering in Ndebele:

65. a. a-ba-fana a-ba-za-bhal-a
 AUG-2-boy C-2SM-TNS-write-FV
 'the boys that will write'



The C-head *(l)a-* skips the intervening subject position of the relative clause and adjoins to the T-head which hosts the inflected verb *bazabhala* 'they are will write' after v-to-T movement. The subject n*P in spec T cannot be a landing site for C mainly because the head-to-head operation targets heads rather than specifiers (Embick & Noyer, 1999; Bobaljik, 1995). C-to-T movement alters the canonical word order C - S - V - O to S - C+V - O where C is prefixed to the relative verb. Head lowering displaces C such that it ends up appearing in an 'unexpected' position in strategy 1 relatives in Ndebele. The displacement of C, however, does not change the syntactic status of C mainly because morphological operations such as head lowering create a mismatch between morphology and syntax (Embick & Noyer, 2008, p. 304). Head lowering affects word order, but not the syntactic status of a lowered head. I therefore suggest that *(l)a-* in strategy 1 relatives still occupies its clause-initial clause position in the *syntactic* module, just like in languages which have autonomous relative clause markers. The surface position of C in strategy 1 in Ndebele is due to the operation 2 of head lowering.

Lastly, the RCMs in strategy 1 relatives have unique agreement properties. The RCM in T-to-C languages like Shona and in languages like Southern Sotho where neither T-to-C nor C-to-T movement occur, agrees with the head noun. In contrast, we have seen that the RCM in strategy 1 agrees with the subject of the RC rather than with the head noun. The question that arises is why the RCM agrees with the subject of the RC rather than the head noun of the RC in Nguni.

I argue that the unique agreement relations in strategy 1 relatives are directly related to the feature structure of the C-head in modern Nguni. The C-head in modern Nguni, as stated above, does not have u-phi features. It therefore never agrees, and there are never any AGR-nodes added to the C-head. Recall that we said that u-phi features are valued in the narrow syntax and that AGR-nodes are only added to heads which have had their u-phi features valued in the narrow syntax.

The agreement markers that appear as part of the RCM in strategy 1 therefore correspond to the valued u-phi features on the T-head since the C-head does not have u-phi features. Thus, agreement markers in strategy 1 relatives express subject agreement on the verb, which has moved to T. The agreement nodes are added to T in morphology in accordance with the requirement that a predicate must have an agreement marker that agrees with the subject. These subject markers (SMs) are added to the T-head as shown in (65b).

I therefore argue that the agreement markers in strategy 1 relative verbs are verbal subject markers. Therefore, C in strategy 1 in Ndebele is represented only by the vowels *a-*, *e-* and *o-*. The underlying C vowel *a-* partially adjusts to the height of the vowel element of the subject agreement markers *i* and *u* to derive the surface C vowels *e-* and *o-* respectively, contrary to the vowel coalescence hypothesis suggested by (Doke, 1954; Pietraszko, 2019) that was discussed in section 3.3.5. The processes which adjust the vowel element of C, as mentioned prior, are classified as *partial distant progressive assimilation*

and *partial adjacent progressive assimilation*. Note, however, that the historical development in which u-phi on C disappeared meant that the vowel element of C has to adjust to the vowel height of the SM. The vowel of the C-element adjusts to the height of the vowel of the SM after VI because vowel harmony is an operation 3 phonological requirement unlike, for example, the addition of CA which is an operation 2 morphological requirement of a given language.

I therefore assume that strategy 1 relative clauses are instances of Type D relative clauses. Recall that the C-head in Type D languages has a weak u-T feature that triggers C-to-T head movement and that the C-head does not have u-phi features just like the Nguni strategy 1 relatives. The only difference between Nguni Type D clauses and the ones in Shona and Kalanga is that the C-head in the latter has no segmental marker whereas C has a morphological exponent in Nguni. Based on the Ndebele examples, I assume that there was a historical development in which u-phi on C disappeared. Assuming that Type A represents proto Nguni relative clauses, I contend that u-phi features on C disappeared. This means that Type D relatives were derived from Type A relatives in Nguni. Interestingly, strategy 2 (Type A) is no longer productive in Nguni. As a result, it is very rare to come across Type A relative clauses in modern Nguni/Ndebele.

In summary, (/)a- is a functional complementiser root. The complementiser root is specified for u-rel feature, u-phi features, a weak/strong u-T feature and an EPP requirement in Bantu. However, in the Ndebele strategy 1, C neither contains u-phi features nor a strong u-T feature, and as a result, the strategy 1 C neither expresses CA nor T-to-C movement in Ndebele. The merger of C and T is triggered by a weak T feature on C and takes place in morphology. I maintain that (/)a- is a C regardless of its surface position in a RC.

My analysis has so far not addressed the question why C merges with an augmentless subject NP in

strategy 2 relatives and when in the course of the derivation this merger takes place. I address this question in the final section.

3.5.3 Strategy 2 in Ndebele

Compare and contrast Southern Sotho relatives (66a) and Ndebele strategy 2 relatives (66b):

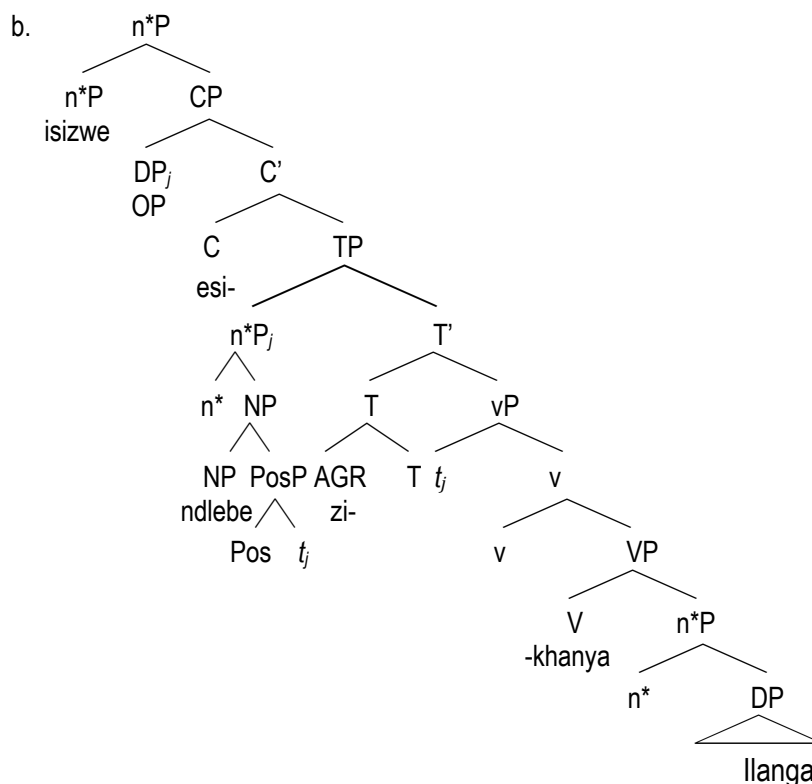
66. a. se-tulo se-o ba-sadi ba-se-rek-ile-ng kajeno
 7-chair 7CA-C 2-woman 2SM-7OM-buy-TNS-RS today
 'the chair which the women bought today' (Demuth & Harford, 1999, p. 42)
- b. i-n-doda e-m-fana w-a-y-o u-dak-iw-e
 AUG-9-man C-[9CA]-1-boy 1AGR-POS-9AGR-it 1SM-drunk-PAS-TNS
 'the man whose son is drunk'

In both languages, the relative word order is C-S-V. Furthermore, the C-head in both clauses is the initial element of the RC and agrees with the head noun. These similarities show that the feature structure of the C-head is identical in both languages. As noted in 3.5.1, the Southern Sotho C-head has phi-features but does not have T-features, which means that the C-head in Ndebele strategy 2 relatives also has phi-features only. These u-phi features are valued by the relative operator in the narrow syntax for the C-head to receive an AGR-node at PF.

The presence of the u-phi features on C distinguishes strategy 1 from strategy 2 relatives. In strategy 1, as highlighted in 3.5.2, a weak u-T feature on C triggers the C-to-T lowering. Recall that a weak u-T feature causes C-to-T head lowering while a strong u-T triggers T-to-C head raising, and that valued u-phi features facilitate for the addition of the agreement node to C in PF in accordance with the requirement that an agreement node must be added to a head that has had its u-phi features valued. This added

agreement node copies the phi features of the relative operator in spec C, which explains why C expresses agreement with the relative operator rather than with the relative subject in strategy 2 relative clauses (66b). Importantly, C does not combine with T in the formation of strategy 2 relatives. I assume that this is due to the fact that a strategy 2 C lacks a strong u-T feature and a weak u-T feature which trigger T-to-C head raising and C-to-T head lowering respectively. Thus the merging of C and T is not motivated in the formation of strategy 2 relatives.

67. a. i-si-zwe e-si-n-dlebe zi-khanya-a i-llanga (Nyathi, 1994, p. 139)
 AUG-7-nation C-7CA-10-ear 10SM-see-FV 5-sun
 'the nation whose ears are transparent'



The canonical Bantu word order in strategy 2 relatives and Southern Sotho relatives indicates the absence of T-features on C in both languages. As stated in 3.5.1, T-features on the C-head trigger the T-to-C/ C-to-T head movement, thereby inverting the Bantu canonical word order. Thus, the strategy 2

C-head has u-phi features but no T-features, just like the Southern Sotho C-head.

However, the C-head in Southern Sotho relatives is autonomous while the one in Ndebele strategy 2 morphologically merges with the subject of the RC. The questions that arise in this regard are:

- i) Why is the relative subject augmentless in strategy 2 relatives in Ndebele?
- ii) Why does the Nguni C-head and the relative subject phonologically merge in Nguni strategy 2 while the Southern Sotho C-head is autonomous?

The answers to the above questions relate to the feature structure of C in strategy 2 relatives and the role of the augment on DPs. There seems to be a direct link between the occurrence of the augmentless relative subject and the phonological merger of C and the relative subject in strategy 2 relative clauses.

The relative subjects are always augmentless in strategy 2 relatives (68a) while an augmentless subject is illicit in strategy 1 relatives (68b):

68. a. *i-n-komo thole l-a-y-o e-li-f-ile-yo
 AUG-9-cow 5-calf 5AGR-POS-9AGR-it RM-5SM-die-TNS-RS
 Intended: 'the cow whose calf died'
- b. i-si-lo e-si-n-hliziyo y-e-juba (Mhlabi, 1978, p. 138)
 AUG-7-beast C-7CA-9-heart 9AGR-POS-[5]-dove
 'the beast whose heart is of a dove'

An augmentless noun usually occurs inside a vP either as a VP-internal object or as a VP-internal subject in declarative sentence constructions. In both instances, an augmentless noun never controls agreement:

69. a. a-ma-nzi eq-a u-donga
 AUG-6-water [6SM]-jump-FV 11-gully
 'the water jumps over the gully'
- b. a-ma-nzi ka-w-eq-i donga (Pelling, 1977, p. 9)
 AUG-6-water NEG-6SM-jump-NEG [11]-gully
 'water does not jump over the gully'
- c. a-ma-nzi ngeke eq-e donga
 AUG-6-water never [6SM]-jump-SUBJ [11]-gully
 'water can never jump over the gully'
70. a. *a-ma-nzi ka-wa-lw-eq-i donga
 AUG-6-water NEG-6SM-11OM-jump-NEG [11]-gully
 Intended: 'water does not jump over the gully'
- b. *a-ma-nzi ngeke a-lw-eq-e donga
 AUG-6water never 6SM-11OM-jump-SUBJ [11]-gully
 Intended: 'water can never jump over the gully'

The augmentless object noun does not agree with the verb in (69). Recall that an agreeing object n*P always vacates VP for it to control object agreement. The fact that the object n*P does not control object agreement in (69) means that the object is inside the vP. In (70), the augmentless noun controls object agreement but the construction is ungrammatical. The ungrammaticality is in that the augmentless noun has vacated vP.

An augmentless noun may also occur in spec v. Like a vP-internal object n*P, an augmentless subject noun in spec v does not control subject agreement:

71. a. a-ba-ntu ba-hlek-ile
 AUG-2-person 2SM-laugh-TNS
 ‘people laughed’
- b. a-ku-hlek-anga ba-ntu
 NEG-17SM-laugh-NEG 2-person
 ‘people did not laugh’
- c. a-ku-soze ku-hlek-e ba-ntu
 NEG-17SM-shall not 17SM-laugh-SUBJ 2-person
 ‘people shall not laugh’
- d. *ba-ntu ka-ba-hlek-anga
 2-person NEG-2SM-laugh-NEG
 Intended: ‘people did not laugh’
- e. *ba-ntu ba-ngeke ba-hlek-e
 2-person 2SM-never 2SM-laugh-TNS
 Intended: ‘people never laughed’

As shown in (71a-c), an augmentless noun is grammatical if its inside vP. The occurrence of an agreeing augmentless subject in spec T generates an ungrammatical sentence (71d-e). This confirms Halpert’s (2015) view that augmentless subject nominals are not licensed in spec T. Crucially, Halpert (2015) reports that an augmentless subject is only allowed if it raises to one of the vP-internal object positions in Zulu:

72. a. a-ngi-fun-i mu-ntu ukuthi a-nath-e u-tshw-ala
 NEG-1SG-want-NEG 1-person that 1SM-drink-TNS AUG-14-beer
 ‘I do not want anyone to drink beer’

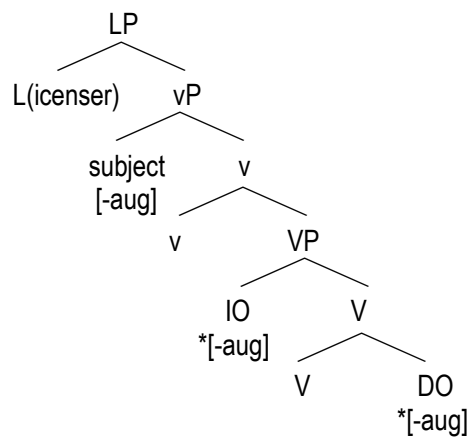
- b. *a-ngi-fun-i ukuthi mu-ntu a-nath-e u-tshw-ala
 NEG-1SG-want-NEG that 1-person 1SM-drink-TNS AUG-14-beer
 Intended: 'I do not want anyone to drink beer'
- c. a-ngi-fun-i ukuthi u-mu-ntu a-nath-e u-tshw-ala
 NEG-1SG-want-NEG that AUG-1-person 1SM-drink-TNS AUG-14-beer
 'I do not want anyone to drink beer'

In (72a), the augmentless subject moves from spec v through spec T to the internal object position of the main clause. In (72b), the augmentless subject moves from spec v to spec T. The construction is ungrammatical mainly because spec T is occupied by an augmentless noun and also because an augmentless noun controls agreement. (72c) is grammatical because the subject in spec T is augmented. The preceding examples show that an augmentless subject is illicit in spec T.

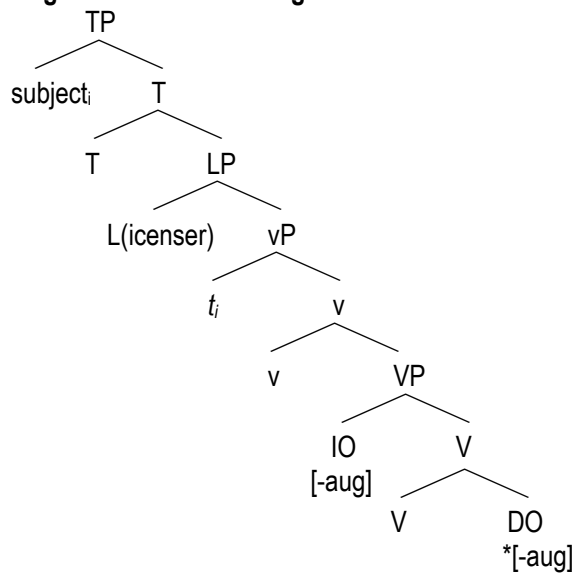
Basing on the distribution of augmentless arguments and the augment in Zulu, Halpert (2015) proposes an argument licensing theory. In this theory, Halpert separates case licensing from agreement processes in Zulu. She argues that v and T are not case licensers in Zulu. Rather, she suggests that there are three nominal licensing heads in Zulu. These are the case L(icensing) head, the applicative head (APPL) and the CAUSATIVE head (CAUS). The L head is located between vP and T whereas the APPL/ CAUS heads are located between VP and vP. I will only focus on the L head in this study.

The L head licenses augmentless nouns to strictly occur inside the vP. The L head only licenses the most local augmentless nominal in a vP. Thus, when there is an augmentless subject in spec v and an augmentless object in VP, L will only licence the augmentless subject because the subject intervenes between the probing L head the augmentless object. The following examples illustrate nominal licensing:

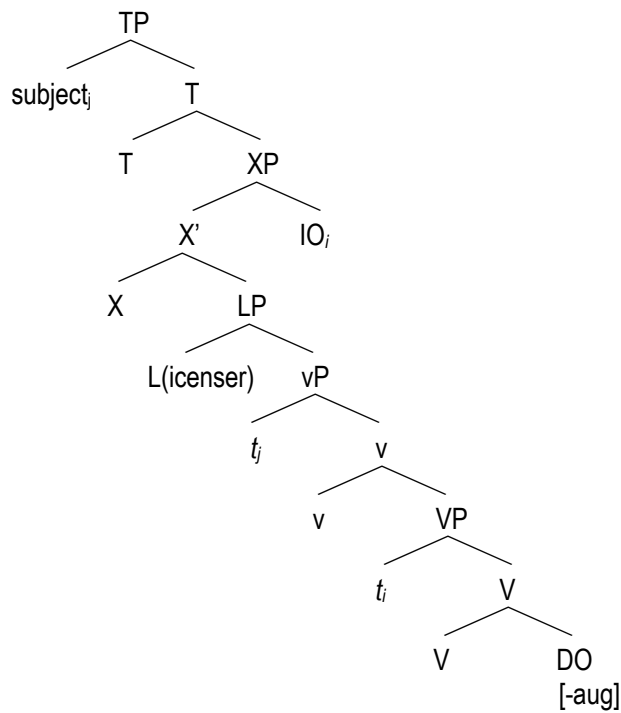
73. a. **Augmentless subject licensing**



b. **Augmentless IO licensing**

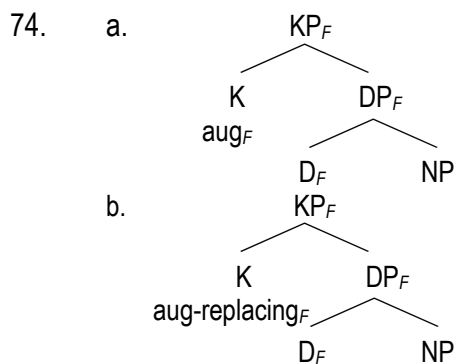


c. **Augmentless DO licensing**



If the subject, indirect object and the direct object are all augmentless as shown in (73a), L will only license the subject. In (73b), the augmented subject moves around L prior to probing and it is copied to spec T. The L head licenses the augmentless indirect object after the subject has vacated spec v. As shown in (73c), the direct object can only be licensed if both the augmented subject and the augmented indirect object vacate vP.

Crucially, Halpert claims that the augment and the augment replacing prefixes are exponents of case heads (K). These morphemes assign case to the complement DP as follows:



The major difference between the two is that an augment agrees with the noun class in (74a) and permits the noun to control agreement whereas an augment replacing prefix in (74b) “shields” the complement noun from agreeing with either v or T. I follow Halpert (2015) and assume that: 1. v and T are not case licensers in Nguni, 2. phi agreement is independent of case assignment, 3. augmentless nouns require structural licensing, and 4. augment vowels and augment replacing prefixes are case heads.

Note that the L head is the highest licenser in Halpert’s theory. This means that an augmentless noun cannot be licensed in spec T. However, in strategy 2 relative clauses, an augmentless subject noun occurs in spec T. The inflected C assumes the place of the augment vowel:

75. a. i-si-zwe e-si-n-dlebe zi-khany-a i-langa
 AUG-7-nation C-7CA-10-ear 10SM-see-FV 5-sun
 ‘the nation whose ears are transparent’ (Nyathi, 1994,p. 139)
- b. i-si-lo e-si-n-hliziyo y-e-juba
 AUG-7-beast C-7CA-9-heart 9AGR-POS-[5]-dove
 ‘the beast whose heart is of a dove’ (Mhlabi, 1978, p. 138)
- c. u-vevani o-lu-ma-bala a-y-izi-bhadu
 11-butterfly C-11CA-6-spot 6SM-COP-AUG-8-large
 ‘a butterfly whose spots are large’
- d. u-mu-ntu o-themb-a l-a-khe li-y-i-n-kosi
 AUG-1-person C-[1CA]-[5]-hope 5AGR-POS-your 5SM-COP-AUG-9-king
 ‘a person whose hope is the Lord’ (Ibhayibhili elingcwele, 2012, p. 897)
- e. i-n-doda e-m-fazi w-a-y-o u-ya-gul-a
 AUG-9-man C-[9CA]-1-wife 1AGR-POS-9AGR-it 1SM-DIS-ill-FV
 ‘the man whose wife is very ill’

The relative subject n*Ps in (75) are augmentless. C agrees with the head nouns and take the place of augments. The augment and the inflected C do not co-occur in the same word construction which suggests that the two serve the same function:

76. a. *i-n-doda m-fazi w-a-y-o o-gul-a kakhulu
 AUG-9-man 1-wife 1AGR-POS-9AGR-it C[1SM]-ill-FV very
 Intended: 'the man whose wife is very ill'
- b. i-n-doda u-m-fazi w-a-y-o o-gul-a kakhulu
 AUG-9-man C-[9CA]-1-wife 1AGR-POS-9AGR-it C-[1SM]-ill-FV very
 'the man whose wife is very ill'

The ungrammaticality of (76a) is in that an augmentless subject occurs in spec T while C has lowered to T. This suggests that an augmentless noun can only occur outside of vP when it is local to C.

Interestingly, an object n*P appears augmentless when it is left dislocated in the formation of strategy 2 relatives (77a) but the augment reappears when the object n*P occurs inside the VP (77b) and when the object n*P is right dislocated (77c):

77. a. u-m-fazi o-ba-ntwana b-a-khe u-ba-limaz-ile
 AUG-1-woman C-[1CA]-2-child 2AGR-POS-your 1SM-2OM-injure-TNS
 'the lady whose children you hurt' (Poulos-Msimang, 1998, p. 162f)
- b. u-m-fazi o-limaz-e a-ba-ntwana b-a-khe
 AUG-1-woman C-[1SM]-injure-TNS AUG-2-child 2AGR-POS-your
 'the lady that you hurt her children'

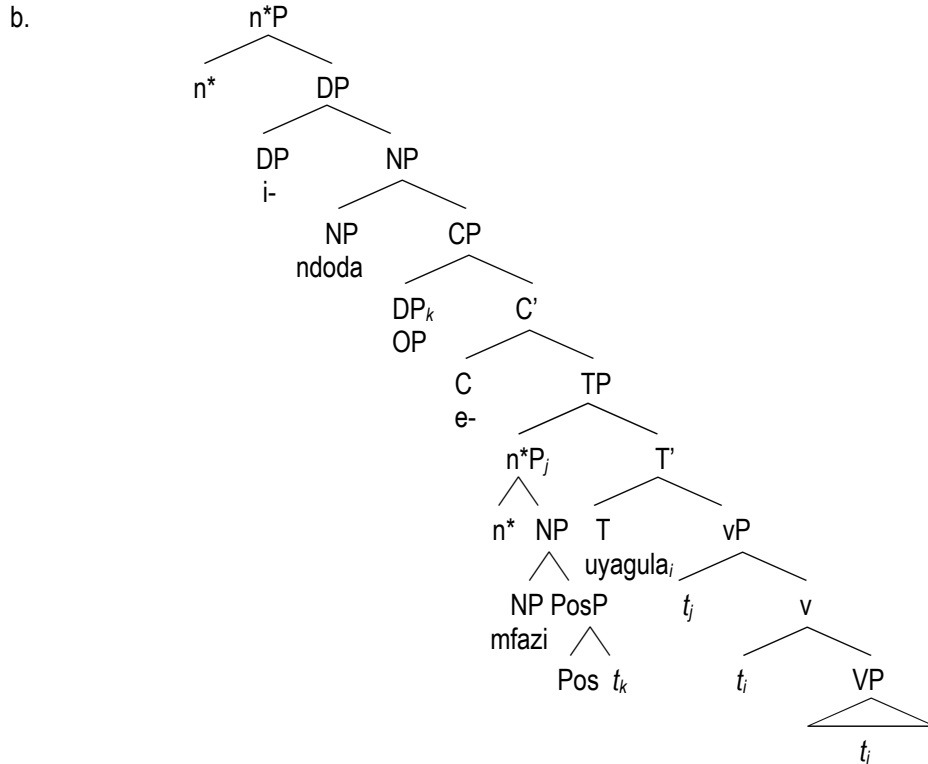
- c. u-m-fazi o-ba-limaz-a-yo a-ba-ntwana b-a-khe
 AUG-1-woman C-[1SM]-2AGR-injure-FV-RS AUG-2child 2AGR-POS-your
 'the lady whose children you are injuring'

77a) shows that the augmentless object n*P is only licensed when it is the topic of strategy 2 relative clauses while (77b) and (77c) show that the object n*P is augmented when it occurs in VP and when it is right dislocated respectively. I take this to mean that the inflected C and the augment are in complementary distribution in Ndebele. For instance, a left dislocated augmentless object n*P is ungrammatical in a strategy 1 relative clause when C lowers to T in the formation of strategy 1 relative clauses:

78. *u-m-fazi ba-ntwana b-a-khe o-ba-limaz-ile-yo
 AUG-1-woman 2-child 2AGR-POS-your C-[2SG]-2SM-injure-TNS-RS
 'the lady whose children you hurt'

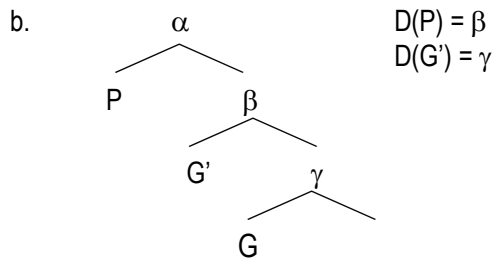
I therefore propose that C (/)a- is a case licenser in Ndebele. C licenses augmentless nominals to occur either in spec Top or in spec T in strategy 2 relative clauses. I assume that the augmentless relative subject vacates vP before L probes the derivation and moves to spec T where it satisfies the EPP feature and values the u-phi features on T.

79. a. i-n-doda e-m-fazi u-ya-gul-a
 AUG-9-man C-[9CA]-1-wife 1SM-DIS-ill-FV
 'the man whose wife is ill'



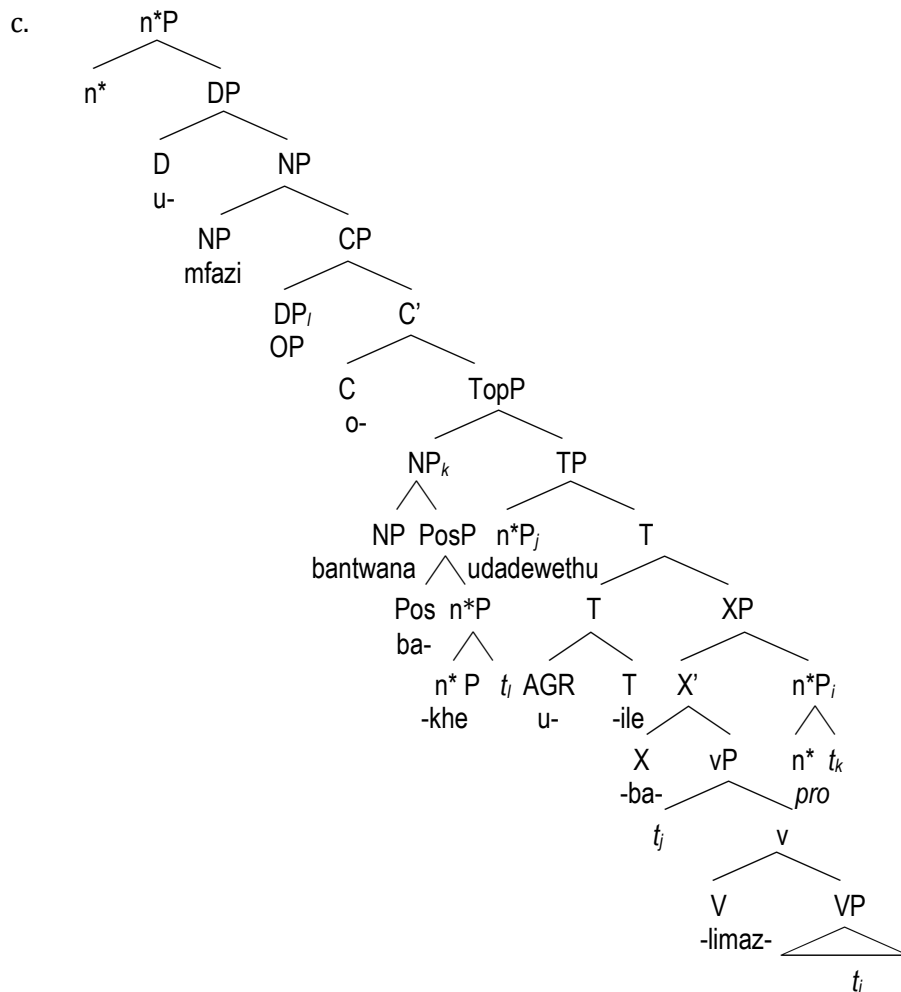
When an augmentless object is left dislocated in strategy 2 relatives, it intervenes between C and the relative subject in spec T and blocks the licensing of an augmentless relative subject in spec T. As a result, C licenses the left dislocated augmentless object n*P to occur in spec Topic (Top). The licensing of the left dislocated augmentless nominal is subject to locality constraints. According to Chomsky (2000, p. 122):

80. a. *Locality*: D(P) is the c-command domain of P, and a matching feature G is closest to P if there is no G' in D(P) matching P such that G is in D(G').



In a strategy 2 relative clause involving a left dislocated augmentless object noun and an augmentless relative subject, C c-commands both the left dislocated object and the relative subject. However, C cannot license the augmentless relative subject because a left dislocated object intervenes and blocks the licensing of the augmentless relative subject. The following examples illustrate that a case head can only license one goal (81b) and that where two goals are involved, the goal that is closest to the probing head is preferred (81a):

81. a. u-m-fazi o-ba-ntwana b-a-khe *u-dadewethu* u-ba-limaz-ile
 AUG-1-wife C-[1CA]-child 2AGR-POS-her 1-my sister 1SM-2OM-injure-TNS
 'the lady whose children my sister injured' (Poulos-Msimang, 1998, p. 162f)
- b. *u-m-fazi o-ba-ntwana b-a-khe *dadewethu* u-ba-limaz-ile
 AUG-1-woman C-[1CA]-child 2AGR-POS-her my sister 1SM-2OM-injure-TNS
 Intended: 'the lady whose children my sister injured'



As shown in (79b) and (81c), C becomes adjacent to either an augmentless relative subject or a left dislocated object. C merges into one word with an adjacent augmentless n^*P in phonology. C merges with a relative subject in spec T as illustrated in (79b). However, when there is a left dislocated object in spec Top as shown in (81c), C merges with a left dislocated object because it intervenes between C and the relative subject in spec T.

C, like an augment vowel, permits the augmentless noun to agree with the verb. The major differences between the augment and C is that the latter does not agree with the noun that it licenses. Rather, C agrees with the relative operator and the head noun. Also, while an augment vowel licenses the nominal to occur in any position, C strictly licenses nominals in spec Top and spec T. I maintain that the valued

u-phi features on C value the u-case on an augmentless noun.

3.5.6 Summary: comparing Strategy 1 and Strategy 2

My analysis is based on the idea that the differences between strategy 1 and strategy 2 RCs are an indication of the differences in the feature structure of the functional complementiser root in both strategies. A comparison of strategy 1 and strategy 2 relatives yields the following results: Firstly, the C-head in strategy 2 does not bear a T feature while the one in strategy 1 has a weak u-T feature. The weak u-T feature triggers the movement of C-to-T in morphology. The C-to-T head movement inverts the canonical word order C-S-V to S-C+V. The canonical word order C-S-V is maintained in strategy 2 relatives.

Secondly, the C-heads in both strategies bear an u-rel feature. This particular feature requires Spec C to be occupied by a relative operator bearing an i-rel feature. The u-rel feature triggers the movement of the relative operator to the specifier position of the RC. In both strategies, the spec C is occupied by a null OP.

Thirdly, the C-head in strategy 1 does not have u-phi features while the one in strategy 2 does. The u-phi features of C in strategy 2 are valued by the corresponding i-phi features of the c-commanding relative operator, which is bound by the head noun. AGR-nodes are added to the valued u-phi features at PF; as a result, CA is a characteristic of strategy 2 rather than strategy 1. The strategy 1 C-head cannot express agreement with any n*P because it has no u-phi features. In fact, the C-head in strategy 1 is only represented by the vowel *a*- (the C), and this vowel adjusts to the height of the vowel that is part of the subject agreement markers. In contrast, in strategy 2 C consists of the C and CA.

Fourthly, in strategy 1, the C-head lowers to the T-head in the morphology. This inverts the canonical

Bantu word order C-S-V to S-C+V. The head lowering operation is triggered by the weak u-T feature on the C-head. The head lowering operation is not motivated in strategy 2 because the C-head does not have T-features.

Lastly, a strategy 2 C-head bears u-phi features that are responsible for the case licensing of relative subject n*Ps and left dislocated object n*Ps. The u-phi features value the u-case features on NPs which appear in the c-command domain of the C-head. In contrast to the strategy 2 C-head, the strategy 1 C-head lowers to T to value its weak u-T feature against the T head. As a result, the strategy 1 C-head can neither license the augmentless relative subject in spec T nor be prefixed to the relative subject n*P.

3.6 Summary

In this chapter, I have introduced data on relative constructions and two relative clause formation strategies in Ndebele, namely, strategy 1 and strategy 2, which are essential to the issues to be addressed later in this study. The data describes the positions which the relative marker (/)a- assumes, agreement marking related to the position of (/)a- in relative clauses and the realisation of a grammatical role corresponding to the role of the head noun. I also discussed analyses which have been employed in the study of the status and position of (/)a- in Nguni (the linker analysis, the specifier analysis, subject topicalisation and relative concord analysis) as well as the subject-verb inversion analysis, which has been employed in the study of other Bantu languages. I highlighted the shortcomings of these analyses when applied to the study of the status and position of (/)a- in Ndebele.

I have argued that a- is a functional complementiser root which is specified u-rel and EPP features. In the formation of strategy 2 relatives, the categorised root then merges with AGR after the derivation has been transferred to the morphological structure. AGR can either be overt or be deleted depending on whether the head noun is in the nasal or non-nasal class. Overt AGR nodes appear when the head noun

is in a non-nasal class while AGR nodes are deleted when the head noun is in a nasal class.

An affixal C can merge with either the subject or the verb, at one of two possible points in the derivation, namely, in the narrow syntax and in the morphological structure prior to VI. The merger of C and T is triggered by a u-T-feature on C. While affixal Cs in languages such as Shona can merge with V in the narrow syntax (after T-to-C movement), C in Ndebele merges with the verb or the subject in the MS. In MS, C lowers and merges with T just before the introduction of agreement nodes and the linearisation of the structure. C-to-T head lowering is triggered by a weak u-T on C. The lowering of the C head to the T head inverts the canonical word order C S V O to derive the word order S C+V O. Importantly, I argued that strategy 1 relatives are instances of Type D relative clauses and that u-phi features disappeared on C and were replaced by a weak u-T feature, which marked the derivation of Type D relatives from Type A relatives.

I argued that strategy 2 relatives are a Type A languages together with Southern Sotho. Strategy 2 relatives have a canonical C-S-V word order and their C-heads express agreement with the OP. I suggested that C is a nominal licensing head that licenses either a left dislocated augmentless object n*Ps to occur in spec Top and an augmentless relative subject n*Ps to occur in spec T.

- b. *i-bhuku e-ngi-buy-e la-∅
 AUG-book C-1SG-come-TNS with

A resumptive pronoun *-lo* in (1a) appears in the relativisation site inside the RC. The ungrammaticality of (1b) is due to the non-appearance of a resumptive pronoun at the relativisation site. According to this view, the resumptive pronouns have a function of legitimising the movement of the relative operator from within a prepositional phrase from a focused n*P. I argue that the so-called gap is a case of a stranded null resumptive pronoun that is licensed by subject agreement/object agreement.

Henderson (2006) argues that the marker *-yo* found in Zulu relative verbs (2a) is an instance of a true resumptive pronoun and he terms it a non-agreeing resumptive pronoun. He posits that unlike verbal suffixes which occur before the final vowel *-a*, the *-yo* marker is a contracted pronoun which cliticises to the relative verb. Henderson (2006) states that the *-yo* element only occurs in non-subject relatives of strategy 1 where an object agreement marker agrees with the head noun and in subject relatives that have an intransitive relative verb (2b). Henderson (2006) claims that transitive verbs do not permit *-yo* to occur in Zulu (2c):

2. a. u-mangoye u-mama o-wa-m-theng-a-yo
 1-cat 1-my mother C-1SM-1OM-buy-FV-RS
 'the cat which my mother bought'
- b. u-m-fana o-fund-a-yo muhle (Zulu, Henderson, 2006, p. 230)
 AUG-1-boy 1C-study-FV-RS good
 'the boy who is studying is good'

- c. *u-m-fana o-fund-a-yo i-si-Zulu muhle
 AUG-1-boy 1C-study-FV-RS AUG-7-Zulu good
 Intended: 'the boy who is studying Zulu is good' (Zulu, Henderson, 2006, p. 230)

Contrary to Henderson's (2006) claim that *-yo* only occurs in subject relatives when the relative verb is intransitive, *-yo* is suffixed to a transitive relative verb when the object marked n*P vacates VP-internal position in Ndebele. (3b) is ungrammatical because the relative verb is followed by a VP-internal object n*P. For example:

3. a. a-ba-ntu a-ba-dl-a-yo
 AUG-2-person C-2SM-eat-FV-RS
 'the people who are eating'
- b. *a-ba-ntu a-ba-dl-a-yo i-si-nkwa
 AUG-2-person C-2SM-eat-FV-RS aug-7-bread
 Intended: 'the people who are eating bread'
- c. a-ba-ntu a-ba-si-dl-a-yo i-si-nkwa
 AUG-2-person C-2SM-7OM-eat-FV-RS AUG-7-bread
 'the people who eating bread'

In the rest of the thesis I uphold the traditional view that *-yo* is a relative suffix (Poulos, 1982; Nkabinde, 1985; Canonici, 1995; Buell, 2006) and reject Henderson's view that *-yo* is a non-agreeing RP. In the following section I present data on the occurrence of resumption in Ndebele relative clauses.

4.3 Previous analyses of Nguni resumptive pronouns

4.3.1 The base generation analysis

Poulos (1982) argues that all pronouns are base generated by base rules and that every pronoun in Zulu is marked as either [+anaphoric] or [-anaphoric]. An anaphoric pronoun is the one that “is preceded and commanded by an NP” (Lasnik, 1976, p. 15). The two elements (an antecedent and an anaphoric pronoun) are coindexed. The analysis posits two types of indices, namely the index of the moved noun and an index assigned by a rule of control. The index of the moved noun is associated with the trace of an NP that is moved by a transformational rule while the index assigned by a rule of control is a base generated anaphoric pronoun. For Zulu, Poulos adopts the latter view and argues that anaphoric pronouns are base generated both in declarative clauses (4a) and in RCs (4b). This claim is premised on the fact that absolute pronouns occur in similar positions in a declarative clause (4a) and in a RC (4b):

4. a. u-m-fowethu u-sebenz-a na-b-o (Zulu; Poulos, 1982, p. 188/9)
AUG-1-my brother 1SM-work-FV with-2AGR-it
'my brother works with them'
- b. a-b-akh-i u-m-fowethu a-sebenz-a na-b-o
AUG-2-build-NDM AUG-1-my brother C-[1SM]-work-FV with-2AGR-it
'the builders with whom my brother works'

In (4), the clitic pronoun *-bo* is the complement of an associative preposition *na-*. The only difference is that the reference of the pronoun in (4a) is not determined by any DP in the sentence, while in (4b), it is determined by the head noun.

On the relation between the head noun *abakhi* ‘the builders’ and the anaphoric pronoun *-bo* in (4b), Poulos (1982) contends that the head noun is base generated outside the RC while the anaphoric

pronoun is base generated in the relativisation site. Thus any reference to the head noun in a RC is expressed by an anaphoric pronoun. In this analysis, the head noun is resumed by either an object agreement marker (5a) or a clitic resumptive pronoun (5b). Poulos (1982, p. 192) contends that the agreement markers (subject/object agreement markers) are grammaticalised pronouns which now serve as verbal affixes. According to Poulos' (1982) analysis, a resumptive pronoun always resumes the head noun in Zulu. As a result, class 5 OM *-li-* in (5a) and the class 5 clitic pronoun *-lo* in (5b) are regarded as instances of the same phenomenon:

5. a. i-swidi u-m-ntw-ana a-li-fun-a-yo (Zulu; Poulos, 1982, p. 189)
 5-sweet AUG-1-child-DIM C-[1SM]-5OM-want-FV-RS
 'the sweet that the child wants'
- b. i-labhulali u-m-fowethu a-y-a ku-l-o (Zulu; Poulos, 1982, p. 189)
 5-library AUG-1-my-brother C-[1SM]-go-FV LOC-5AGR-it
 'the library to which my brother is going'
- c. ?i-swidi u-m-ntw-ana a-fun-a l-o-na (Zulu; Poulos, 1982, p. 198)
 5-sweet AUG-1-person-DIM C-[AAE]-want-FV 5AGR-it
 'the sweet which the child wants'

The head noun is resumed by the class 5 object marker *-li-* in (5a) and by the class 5 absolute pronoun clitic *-lo* in (5b). Crucially, Poulos (1982) argues that the agreement marker in (5a) and the absolute pronoun clitic in (5b) are non-emphatic pronouns that cliticise to the relative verb and the prepositional head respectively. According to Poulos (1982), (5c) is 'ill-formed' and this 'ill-formedness' lies in that an emphatic absolute pronoun is used instead of a non-emphatic object marker. This, however, does not explain why the construction in (5c) is not grammatical with an emphatic interpretation.

The base-generation analysis is not without weaknesses. As noted in chapter 3, anaphoric pronouns are obligatory in strategy 1 (6a) while they are optional in strategy 2 (7a):

- | | | | | | |
|----|----|---------------------------------------|----------------|------------------|-------------------|
| 6. | a. | *i-n-doda | u-m-fazi | o-gul-a-yo | |
| | | AUG-9-man | AUG-1-wife | 1SM-ill-FV-RS | |
| | | Intended: 'the man whose wife is ill' | | | |
| | b. | i-n-doda | u-m-fazi | w-a-y-o | o-gul-a-yo |
| | | AUG-9-man | AUG-1-wife | 1AGR-POS-9AGR-it | C-[1SM]-ill-FV-RS |
| | | 'the man whose wife is ill' | | | |
| 7. | a. | i-n-doda | e-m-fazi | u-ya-gul-a | |
| | | AUG-9-man | C-[9CA]-1-wife | 1SM-DIS-ill-FV | |
| | | 'the man whose wife is ill' | | | |
| | b. | i-n-doda | e-m-fazi | w-a-y-o | u-ya-gul-a |
| | | AUG-9-man | C-[9CA]-1-wife | 1AGR-POS-9AGR-it | 1SM-DIS-ill-FV |
| | | 'the man whose wife is ill' | | | |

The example in (6a) shows that the anaphoric pronoun is mandatory in the relativisation site in strategy 1 relatives while (7a) indicates the optionality of the anaphoric pronoun in the relativisation site in strategy 2 relatives. The claim that every relative clause contains a resumptive pronoun is not borne out in Ndebele as shown in (7a). One wonders why the anaphoric pronoun should be optional in strategy 2 but mandatory in strategy 1.

I adopt Poulos' (1982) view that the head noun is generated outside the relative clause whereas resumptive pronouns are base generated in the relative clause. I, however, assume that the relative operator merges as the complement of the resumptive pronoun and I reject the view that agreement

markers are grammaticalised pronouns. The non-occurrence of overt resumption is acceptable in my analysis.

4.3.2 The trace spell-out analysis

Nkabinde (1985) studies Zulu relative clauses using the head raising/promotion analysis. The promotion analysis⁵ assumes that the head noun is base generated inside the RC and that the head noun position is empty in the underlying structure. In the course of the derivation, the raising rule promotes the relativised NP from a position inside the relative clause to a position in the matrix sentence. If the object NP of the relative verb is promoted, Nkabinde (1985) claims that the verb “is left without an object and, therefore, must be compensated with an object concord (OC)” (p. 198). The promoted NP leaves an index in the RC which is then spelt out as either an agreement marker or a pronoun. Thus, according to the trace spell out analysis, the OM *-li-* compensates for the promoted relative object *icansi* ‘reed mat’ in (8):

8. *i-cansi* u-gogo *a-li-fun-a-yo* (Zulu; Nkabinde, 1985, p. 198)
 5-reed mat 1-grandmother C-[AAE]-5OM-want-FV-RS
 ‘the reed mat which my grandmother wants’

When the raising rule promotes the complement of a preposition, possessive, conjunctive or an associative, the promoted NP is replaced by a clitic pronoun. According to the trace spell out analysis, the class 9 clitic pronoun *-yo* in the following examples represents the pronominalisation of the NP *indawo*

⁵Cheng (2006) uses the same approach (head raising approach) in the study of Bantu relatives. Based on Southern Sotho and Bemba, Cheng argues that the head noun merges as the complement of the relative pronoun in the relativisation site. The relative pronoun moves together with the head noun to spec CP and then the head noun moves out of spec C to its surface position:

- (i) [_{DP} [_{NP} *bántu*_j [_{CP} *ábo* *t*_j]_i] [_{TP} *Chisanga* *á-mwéené* *t*_i *mailo*], *na-bá-ya* (Bemba, Cheng, 2006)
 2person 2REL Chisanga 1SM-see.PERF yesterday TNS-2SM-go
 ‘The people who Chisanga saw yesterday have gone’
 b. [_{DP} [_{CP} *people* [_{CP} *who* *people* [_{TP} *Chisanga* *saw* *people*]]]

'the place' and *intombazana* 'the young lady':

9. a. i-n-dawo a-ba-hlal-a ku-y-o (Zulu; Nkabinde, 1985, p. 199)
AUG-9-place C-2AGR-stay-FV LOC-9AGR-it
'the place at which they stay'
- b. i-n-tombazana e-li-zwi l-a-y-o li-sh-il-e
AUG-9-girl C-[9CA]-5-voice 5AGR-POS-9AGR-it 5SM-hoarse-TNS
'the girl whose voice is hoarse'

The promotion analysis differentiates ordinary absolute pronouns from RPs. The former are recognised as a primitive grammatical category (merged from the traditional lexicon) while RPs are inserted at PF as a way of rescuing the derivation from crashing.

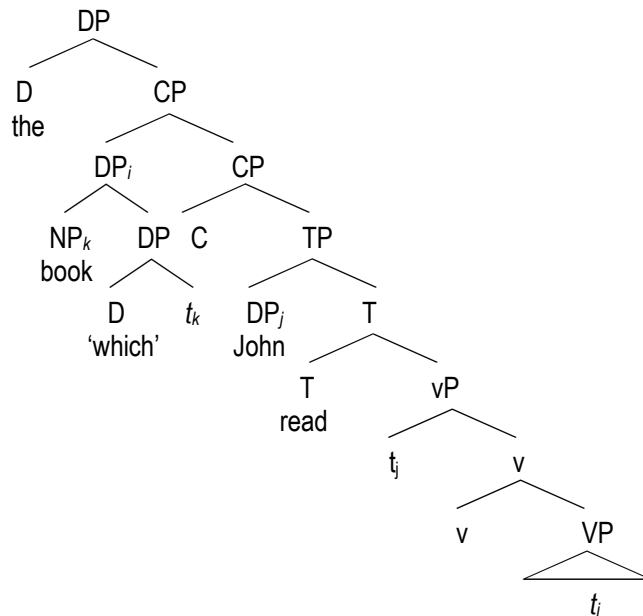
However, ordinary pronouns and RPs are morphologically and semantically identical in Ndebele, which militates against any analysis that attempts to differentiate the two. Therefore, I reject the trace spell out analysis and specifically the idea that an object agreement marker is the spell out of the index left by a promoted object n*P.

4.3.3 The big DP analysis

The big-DP analysis of resumption in relative clauses proposed in Boeckx (2003) adopts Kayne's (1994) influential head raising analysis. In Kayne's analysis, the relative clause in a construction such as *the book which I read* is selected by an external D-head. The relative pronoun *which* selects the head noun-NP as its complement, and the constituent *which book* first merges in the object position inside the relative clause. C extracts the constituent *which book* from the relativisation site and copies it to spec C. The

head noun *book* then moves to spec DP as follows:

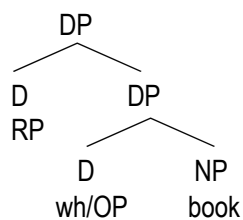
10. The book which I read (Boeckx, 2003, p. 33)



In this analysis, the relative word/operator and the head noun start off as one constituent. As shown in (10), this constituent is copied to spec C and then the NP *book* moves to spec D to check the categorial features and the strong phi features on the external D *the*.

Boeckx (2003) extends Kayne's analysis to account for resumption in relative clauses by adopting the so-called "big DP"-analysis proposed for clitic doubling by Uriagereka (1988, 1995) and others. A big DP consists of a determiner head (D) that is spelled out as a resumptive pronoun. This head selects the DP consisting of the relative OP and the head noun-NP as its complement:

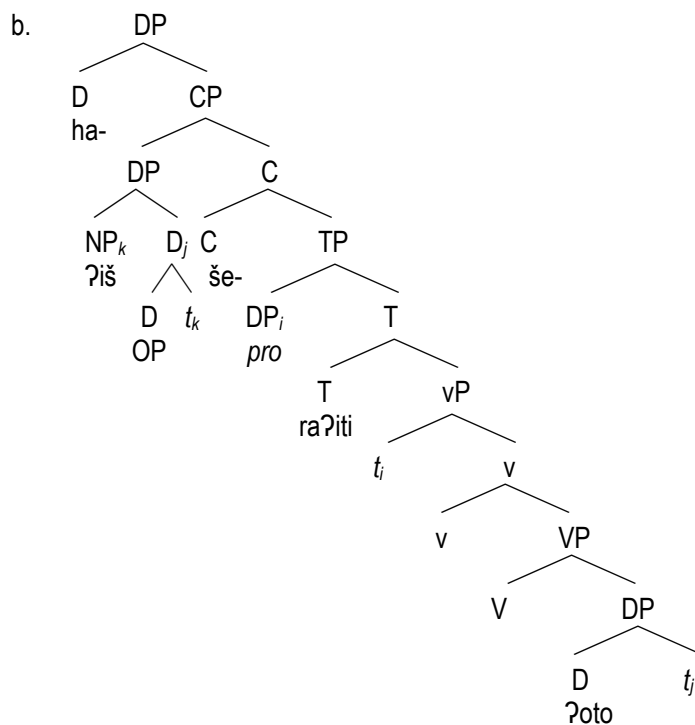
11.



(Boeckx, 2003, p. 28)

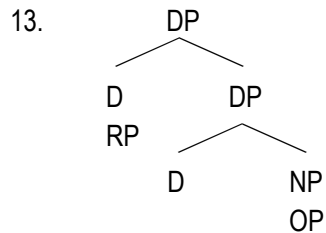
In a relative clause, C extracts the complement DP from the big DP, leaving the higher D stranded. The extracted DP is copied to spec C and then the complement NP is attracted to spec DP as shown below:

12. a. Ha-ʔiš še- raʔiti ʔoto. (Hebrew, Boeckx, 2003, p. 14)
 the-man that (I) saw him
 ‘the man that I saw’



Henderson (2006) adopts the big DP analysis for the analysis of Bantu relative clauses with resumptive pronouns. He argues that the head noun and its RP are base generated as a single constituent and that this constituent splits later in the derivation. Henderson contends that in Zulu object relatives, a big DP originates in the object position and moves to spec v to check strong u-phi features on v. Then C extracts the DP complement of the D head and copies it to spec C. The extraction of the complement DP results in the stranding of the D head. Crucially, Henderson (2006) contends that the object agreement marker spelled out the D head stranded in spec v is spelled in Zulu object relative clauses.

Recall that in Henderson's analysis, the big DP is headed by a D that is spelled out as a RP and that this D-head selects a DP headed by a relative operator and that the head noun merges as an NP-complement of a relative operator:

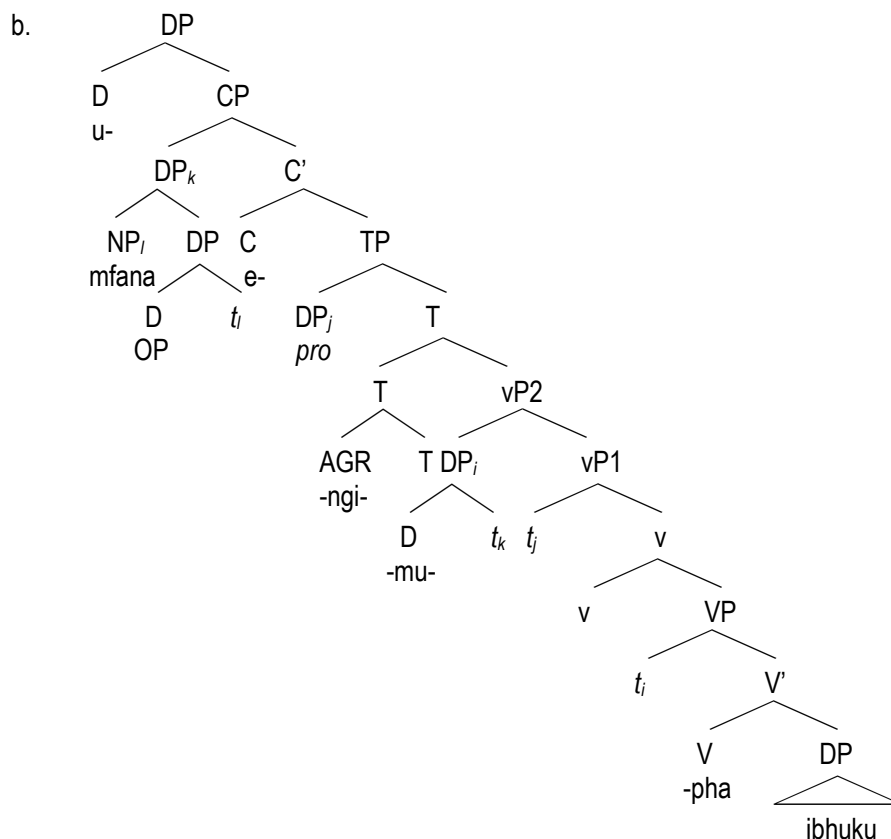


In keeping with Boeckx (2003), Henderson argues that the complement DP is extracted from the big DP and copied to spec C. After that, the external D that selects the relative clause causes the complement NP to move out of spec C. The external D then values its strong features against the head noun in spec DP.

Adopting Henderson's (2006) analysis for a Ndebele object relative clause such as (14a) would produce the structure in (14b). (Note that for ease of exposition, (14b) represents the object marker as the RP, an assumption not shared by Henderson 2006):

one object DP, an agreeing object DP will move to spec v while the non-agreeing object DP remains in VP. The following example illustrates the relativisation of a big DP that agrees with v in Ndebele:

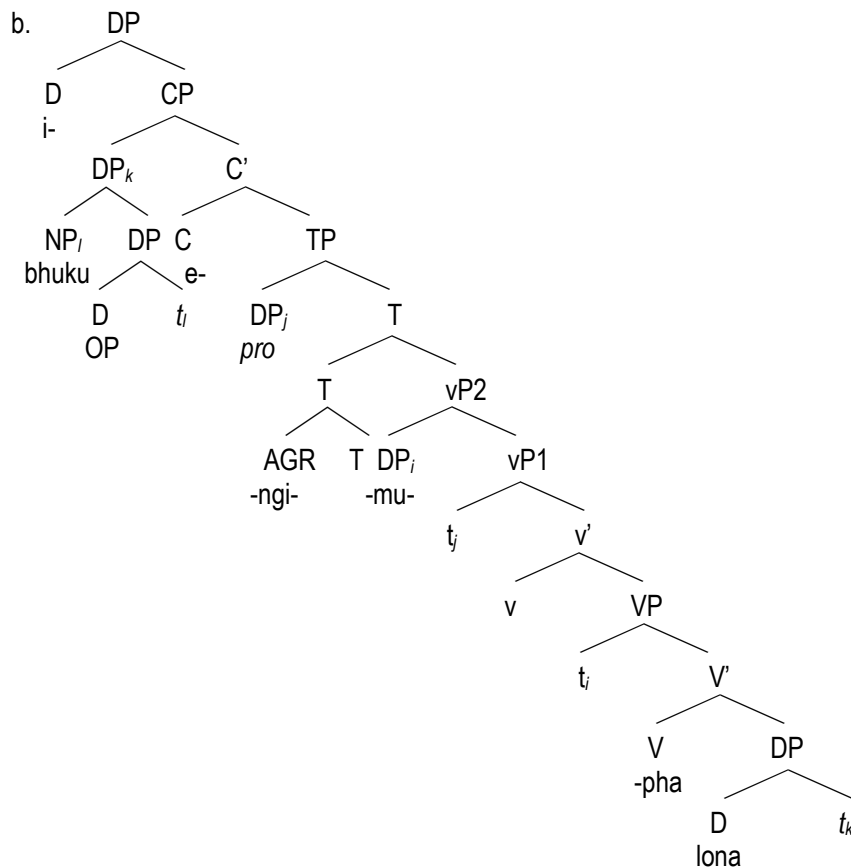
15. a. u-m-fana e-ngi-mu-ph-a i-bhuku
 AUG-1-boy C-1SG-1OM-give-FV 5-book
 'the boy that I am giving the book'



If Henderson's analysis was adopted for Ndebele, then the analysis of an object relative clause based on a ditransitive verb would be like (15). In (15), the big DP that agrees with v moves to spec v2. When C extracts the complement DP and copies it to spec C, the D head of the big DP is left stranded at spec v and it is consequently spelled out as an OM *-mu-*. Lastly, the relative operator (the head of the extracted DP in spec C) is stranded in spec C while its complement, the head noun-NP *mfana*, moves to its surface position.

In constructions where the object marker refers to a pronominal argument, the head noun corresponds to the grammatical role of a big object DP that does not agree with *v*, and resumption is expressed by a strong resumptive pronoun. C extracts the complement DP from VP and copies it directly to spec C. The D head is left stranded inside VP and it is spelled out as a strong pronoun *lona*:

16. a. i-bhuku e-ngi-mu-ph-a l-o-na
 5-book C-1SG-1OM-give-FV 5AGR-it-EM
 'the book that I am giving him/her'

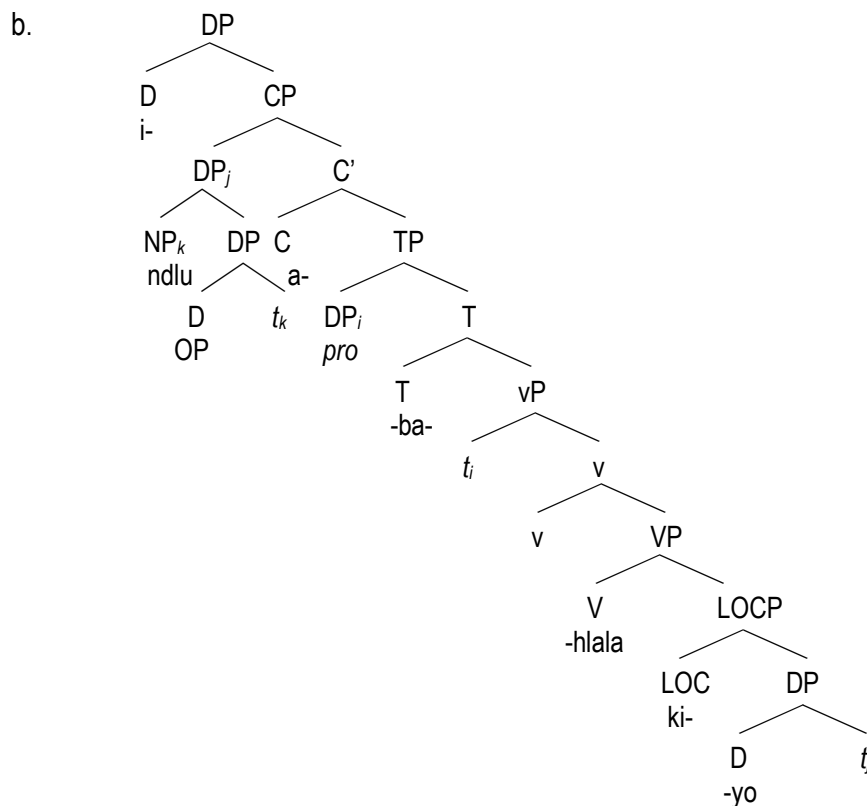


If Henderson's analysis was adopted for Ndebele, then the analysis of an object relative clause based on a ditransitive verb would like (16). In (16), the relativised object-big DP remains inside VP because it does not agree with *v*. The complement DP ($[_{DP} OP [_{NP}bhuku]]$) is extracted from the big DP ($[_{DP}lona [_{DP} OP [_{NP}bhuku]]]$) and it is copied to spec C. From there, the NP *bhuku* moves out of spec C to its surface

position. Crucially, the strong pronoun *lona* licenses the extraction of the complement DP from the big DP.

Finally, Henderson’s analysis could also be adopted for relative constructions where the head noun is expressed by the complement of a prepositional head in a PP. C extracts the complement DP from the big DP and copies it to spec C leaving the D-head of the big DP stranded in PP. The stranded D-head cliticises to the P-head and it is spelled out as a clitic resumptive pronoun:

17. a. i-n-dlu a-ba-hlal-a ki-y-o
 AUG-9-house C-2SM-stay-FV LOC-9AGR-it
 ‘the house at which they stay’



The RP *-yo* licenses movement out of a prepositional phrase and cliticises to the prepositional head while the extracted DP including the relative OP and the head noun is copied to spec C as shown in (17).

While I will adopt some basic ideas of Henderson's analysis in my analysis of resumption in Ndebele, I do not adopt all aspects of this analysis. For example, I believe that an analysis that is based on Kayne's (1994) head raising approach to relative clauses has problems in justifying the raising of the head noun to spec DP.

The problem lies in the movement of the NP to spec DP. Bianchi (2002) argues that the movement is triggered by the need to check categorial features on D. However, this movement is countercyclic because it occurs after CP has merged with D but the movement does not result in the extension of the tree. The extension condition stipulates that a syntactic derivation can only be continued by applying operations to the root projection of the tree (Chomsky, 1995). As a result, the extension condition rules out the movement of NP to a position below D.

Moreover, it is not clear how Henderson's analysis would explain relativisation of a direct object in the presence of an indirect object in Ndebele. In Henderson's analysis, object relativisation requires movement of the big DP to a second specifier of v where object agreement is established. However, as (18b) shows, in Ndebele, a relativised direct object DP agrees with the v head ahead of an indirect object DP which intervenes between the two:

18. a. u-khulu u-nik-e a-ma-sotsha u-m-buso
 1a-my grandfather 1SM-give-TNS AUG-6-soldier AUG-1-power
 'my grandfather gave soldiers power'
- b. u-m-buso u-khulu a-wu-nik-e a-ma-sotsha
 AUG-3-power 1-my grandfather C-[AAE]-3OM-give-TNS AUG-6-soldier
 'the power that my grandfather gave to the soldiers'

From Henderson's analysis, it is not clear why the DO *umbuso* can agree with *v* ahead of an IO *amasotsha* which is closer to *v* than *umbuso*. Agree is subject to the locality constraint:

19. *Locality*: $D(P)$ is the c-command domain of P , and a matching feature G is closest to P if there is no G' in $D(P)$ matching P such that G is in $D(G')$ (Chomsky, 2000, p. 122).

The locality constraint posits that agreement between a probing head and the goal that is in its c-command domain only obtains when there is no intervening goal between the probe and the goal. Otherwise, the agree relation will be between the probing head and the intervening goal. Returning to (19), if object agreement is based on phi agreement between *v* and an object DP, then this predicts that in ditransitive relative constructions, *v* can only agree with an IO in line with the locality constraint that rules out the agreement between a probe and a non-local goal. The agreement between *v* and a DO violates the locality with a ditransitive verb if we assume that resumption is contingent on phi agreement. Henderson's analysis of resumption therefore needs to be expanded by a theory that explains why relativisation and resumption of direct objects are possible in Ndebele ditransitive relative clauses, without violating the locality constraint in (19).

4.4 The status of the subject marker, object marker and resumptive pronoun in Ndebele

The extracted OP is always resumed by a subject marker, an object marker, a clitic pronoun or a strong pronoun in a Ndebele relative clause. The subject marker resumes an extracted OP in subject relatives while an object marker resumes an extracted OP when the OP is extracted from an object marked n^*P . An OP that is extracted from an n^*P that does not agree with a relative verb is resumed by a strong pronoun while an OP that is extracted from PP is resumed by a clitic pronoun. Table 11 presents subject markers, object markers, clitic pronouns and strong pronouns that can resume an OP in Ndebele relative clauses:

Table 11: The SMs, OMs, clitic pronouns and strong pronouns

Class	Subject marker	Object marker	Clitic pronoun	Strong pronoun
1SG	ngi-	-ngi-	m-i	m-i-na
1PL	si-	-si-	th-i	th-i-na
2SG	w-/u-	-wu-	w-e	w-e-na
2PL	li-	-li-	n-i	l-i-na
1	w-/u-	-wu-	y-e	y-e-na
2	ba-	-ba-	b-o	b-o-na
3	w-/u-	-wu-	w-o	w-o-na
4	y-/i-	-yi-	y-o	y-o-na
5	li-	-li-	l-o	l-o-na
6	w-/a-	-wa-	w-o	w-o-na
7	si-	-si-	s-o	s-o-na
8	zi-	-zi-	z-o	z-o-na
9	y-/i-	-yi-	y-o	y-o-na
10	zi-	-zi-	z-o	z-o-na
11	lu-	-lu-	l-o	l-o-na
14	bu-	-bu-	b-o	b-o-na
15	ku-	-ku-	kh-o	kh-o-na

Note that clitic pronouns and strong pronouns that resume an extracted OP never agree with the relative verb in Ndebele relative clauses. In fact, the subject markers, object markers, clitic pronouns and strong pronouns are in complimentary distribution. As a result, the status of subject markers and object markers is contested in Bantu linguistics. There are three analyses that have been suggested for Bantu basing on data from different languages: the clitic analysis (Givon, 1976; Poulos, 1982; Bresnan & Mchombo, 1987; Baker & Kramer, 2018), the grammatical agreement analysis (Henderson, 2006; Riedel, 2009; Baker, 2012) and the antifocus agreement analysis (Zeller, 2008; 2014; 2015). I will briefly review these analyses in the following sections.

4.4.1 The clitic pronoun agreement analysis

The clitic pronoun analysis (Givon, 1976; Poulos, 1982; Bresnan & Mchombo, 1987; Baker & Kramer, 2018) holds that the OM is a morphophonological clitic pronoun that has been incorporated into v. According to this analysis, v probes the derivation and agrees with the object DP and the object DP is extracted and copied to spec v and then a Reduce operation reduces the moved DP to a D by deleting the complement NP. The reduce operation ensures that the OM and the object marked DP do not co-occur in the same construction. In the last step of the derivation, the D in spec v is cliticised to the v-head. According to this analysis, pronominal agreement marking is subject to locality. Recall that locality rules out the occurrence of an intervening goal between the probing head and the goal. In double object constructions, for example, the analysis rules out the agreement between v and a DO because IO intervenes between the two heads.

The clitic pronoun analysis is not borne out in Ndebele. For example, the OM can co-occur with an object marked DP (20b) and DO object agreement is grammatical in double constructions (20c):

20. a. u-tisha u-nik-a u-John a-ma-notsi
 1-teacher 1SM-give-FV 1-John AUG-6-note
 'the teacher gives notes to John'
- b. u-tisha u-wa-nik-a u-John a-ma-notsi
 1-teacher 1SM-6OM-give-FV 1-John AUG-6-note
 'the teacher gives notes to John'
- c. a-ma-notsi u-tisha a-wa-nik-a u-John
 AUG-6-note 1-teacher C-[1SM]-6OM-give-FV 1-John
 'the notes that the teacher gives to John'

As shown in (20b), the object marked DP *amanotsi* co-occurs with the OM. In (20c), *v* agrees with a DO and rather than with an intervening IO. This shows that an intervening IO does not produce a locality violation. I therefore reject the view that object agreement is a clitic pronoun in Ndebele.

4.4.2 The agreement analysis

The agreement analysis (Henderson, 2006; Baker, 2012) posits that an agreement is an affix that realises the valued phi features on a functional head (*v/T*). In this analysis, rich agreement morphology licenses the occurrence of overt subject/object DPs and null pronominal arguments (little *pro*):

21. a. u-baba u-ya-bu-nath-a u-tshw-ala
 1-father 1SM-DIS-14OM-drink-FV AUG-14-beer
 ‘the father is drinking (it) beer’
- b. *pro* u-ya-bu-nath-a *pro*
 1SM-DIS-14OM-beer-FV
 ‘(s/he is drinking (it))’

The OM co-occurs with the object marked DP *utshwala* in (21a) whereas the null subject and the null object are licensed by the SM *u-* and the OM *-bu-* respectively in (21b).

The agreement analysis assumes that object agreement is a reflex of an Agree relation between *u-phi* features of *v* and *i-phi* features of the object marked DP. In this analysis, *v* has an EPP feature that attracts the object marked DP to spec *v* and the phi features of *v* are spelled out as an OM. Like the pronominal agreement analysis, the agreement analysis assumes that Agree is subject to the locality constraint. The locality constraint rules out agreement between *v* and a DO in double object constructions because an IO intervenes between the probe and the goal. However, agreement between *v* and DO in

double object constructions is grammatical in Ndebele:

22. a-ma-notsi u-tisha o-wa-nik-a u-John
 AUG-6-note 1-teacher C-[1SM]-6OM-give-FV 1-John
 'the notes that the teacher gives to John'

In (22), the DO *amanotsi* agrees with the relative ahead of an intervening IO *uJohn*. This example shows that agreement is not a reflex of an Agree between u-phi features of v/T and object/subject marked n*Ps in Ndebele.

4.4.3 The antifocus agreement analysis

The finer details of the antifocus agreement analysis are discussed in 2.5. According to the antifocus agreement analysis, agreement is a morphological reflex of antifocus agreement between the probing head and the goal (Zeller, 2008). In contrast to the agreement analysis discussed in 4.4.2 where Agree relation is between u-phi features of the probing head and the i-phi features of the goal, in the antifocus agreement analysis Agree relation is between u-antifocus features of the probing head and the i-antifocus features of the goal. The EPP feature of the probing head then extracts the goal to spec X/ spec T and then u-phi features are valued in a specifier – head configuration. The valued phi features of T are spelled out as a subject marker while those of the X head are spelled out as object makers.

In double object constructions, a focused IO that occurs between v and DO does not violate the locality constraint in (22) because it is not a goal for the probing head. In keeping with the antifocus agreement analysis, I maintain that the subject markers and the object markers are agreement markers that license *pro* in subject relative clauses and non-subject relative clauses. Recall from 2.7 that the n* head selects the operator marked DP in the formation of relative clauses. The extraction of the OP leaves the n* head

stranded in the relative site. This stranded n* head is spelled out as *pro* when it is identified either by subject agreement in relative clauses or by object agreement in non-subject relative clauses. A clitic pronoun spells out an n* head that that is stranded in a PP while a strong pronoun spells out an n* that does not agree with the verb.

4.5 Resumption in Ndebele relative clauses

Resumptive pronouns appear in the relativisation site. Resumptive pronouns can appear in the direct object position, in the indirect object position, and as a complement of a prepositional element (possessive marker, locative marker, associative marker or comparative marker).

4.5.1 Object relatives and resumption

Gaps may also occur in object relatives. In object relatives, the relative operator corresponds to an object of the verb. A gap appears in the position of the direct object inside the object relative, and the verb shows object agreement with the extracted relative operator:

23. a. i-n-to a-ba-fana a-ba-yi-fun-a-yo
 AUG-9-thing AUG-2-boy C-2SM-9OM-want-FV-RS
 'the thing which boys want'
- b. i-n-to a-ba-yi-fun-a-yo a-ba-fana
 AUG-9-thing C-2SM-9OM-want-FV-RS AUG-2-boy
 'the thing which boys want'
- c. i-n-to a-ba-fana a-ba-yi-fun-a kusasa
 AUG-9-thing AUG-2-boy C-2SM-9OM-want-FV-RS tomorrow
 'the thing which boys want tomorrow'

The head noun is resumed by the object agreement marker in non-subject relative clauses that are based on a monotransitive relative verb. The inclusion of resumptive pronouns in the preceding examples results in the formation of ungrammatical constructions:

24. a. *i-n-to a-ba-fana a-ba-yi-fun-a-yo y-o-na kakhulu
 AUG-9-thing AUG-2-boy C-2SM-9OM-want-FV-RS 9AGR-it-EM a lot
 Intended: 'the thing which boys want (it) a lot'
- b. *i-n-to a-ba-fana a-ba-yi-fun-a y-o-na kusasa
 AUG-9-thing AUG-2-boy C-2SM-9OM-want-FV-RS 9AGR-it-EM tomorrow
 Intended: 'the thing which boys want (it) tomorrow'

The preceding examples show that resumptive pronouns are illicit in the object position in relative clauses that are based on monotransitive relative verbs.

In RCs based on ditransitive verbs, either object n*P can be relativized, and correspondingly, a gap may appear in either the DO or the IO position, depending on which object n*P corresponds to the head noun. In either case, the relativised object n*P shows object agreement with the relative verb:

25. a. u-baba u-ph-e u-m-fana i-n-ja
 1-father 1SM-give-TNS AUG-1-boy AUG-9-dog
 'the father gave the boy a dog'
- b. u-m-fana u-baba a-mu-ph-e i-n-ja (IO relativisation)
 AUG-1-boy 1-father C-[AAE]-1OM-give-TNS AUG-9-dog
 'the boy to whom the father gave the dog'

- c. i-n-ja u-baba a-yi-ph-e u-m-fana (DO relativisation)
 AUG-9-dog 1-father C-[AAE]-9OM-give-TNS AUG-1-boy
 'the dog that the father gave to the boy'

The object markers correspond to the relativised object n*Ps in (25). When one object of a ditransitive verb is relativised, the one that remains in the VP can be realised as a pronoun. Compare (25) and (26):

26. a. u-m-fana u-baba a-mu-ph-e y-o-na (IO relativisation)
 AUG-1-boy 1-father C-[1SM]-1OM-give-TNS 9AGR-it-EM
 'the boy to whom the father gave it'
- b. i-n-ja u-baba a-yi-ph-e y-e-na (DO relativisation)
 AUG-9-dog 1-father C-[1SM]-9OM-give-TNS 1AGR-it-EM
 'the dog that the father gave to him'

The unmarked object n*P is realised by a strong pronoun. The pronominals have to be strong here, since Nguni allows for only one object marker. Given that the object marker slot is already filled by the agreement marker that agrees with the relativised n*P, the pronoun inside the RC has to be a strong pronoun.

The pronouns in the following examples are instances of RPs:

27. a. u-m-fana o-yi-ph-e y-e-na (IO relativisation)
 AUG-1-boy C-[2SG]-9OM-give-TNS 1AGR-it-EM
 'the boy to whom you gave it'

strong pronoun in these examples. Nevertheless, the preceding examples are ungrammatical, and illustrate that the dislocated agreeing object n*P cannot be emphasised regardless of whether it is a DO or an IO. Note that a strong resumptive pronoun only occurs inside the VP in a relative clause. This means that an object n*P that is realised by a strong resumptive pronoun cannot agree with the relative verb.

However, an object marked strong resumptive pronoun is only acceptable when it follows the temporal adverb that appears in a relative clause (29c). The occurrence of an object marked strong resumptive pronoun is unacceptable in VP (29a) and in spec X (29b):

29. a. *u-m-fana o-mu-ph-e y-e-na i-n-ja izolo (IO relativisation)
 AUG-1-boy C-[2SG]-1OM-give-TNS 1AGR-it-EM AUG-9-dog yesterday
 Intended: 'the boy to whom you gave (him) the dog yesterday'
- b. *u-m-fana o-mu-ph-e i-n-ja y-e-na izolo
 AUG-1-boy C-[2SG]-1OM-give-TNS AUG-9dog 9AGR-it-EM yesterday
 Intended: 'the boy to whom you gave (him) the dog yesterday'
- c. u-m-fana o-mu-ph-e i-n-ja izolo y-e-na
 AUG-1-boy C-[2SG]-1OM-give-TNS AUG-9-dog yesterday 9AGR-it-EM
 'the boy to whom you gave the dog'

The strong resumptive pronouns in examples such as (29) occur inside the VP, which is indicated by the fact that the preceding verb is in the conjoint form. In contrast, null resumptive pronouns, which occur in examples such as (27), are licensed in VP-external position when the relative operator that is extracted from an object n*P agrees with the relative verb. I follow Zeller (2014) and assume that *pro*, like all other object marked n*Ps, is always dislocated.

Zeller (2014) reports that gaps are also licensed without object agreement between the verb and the relative operator in Zulu. This obtains when the verb agrees with a *pro* IO n*P whereas the DO n*P is extracted from the relativisation site and copied to spec C as shown below:

30. a. *a-ba-ntwana o-zi-nik-ile ba-ya-jabul-a (Zulu, Zeller, 2014, p. 364)

AUG-2-child C-[2SG]-10OM-give-TNS 2SM-DIS-be.happy-FV

Intended: 'the children to whom you gave them are happy.'

b. i-zin-cwadi o-ba-nik-ile zi-bomvu

AUG-10-book C-[2SG]-2OM-give-TNS 10SM-red

'the books that you gave them are red.'

In (30b), there is no object agreement between the relative operator and the relative verb. Rather, the *pro* IO vacates VP and is copied to spec X where it triggers object agreement. The IO is realised as *pro* because it is identified by object agreement. The DO n*P is extracted and copied to spec C via spec XP. Zeller (2014) argues that "A-bar movement out of vP must proceed via X" (Zeller, 2014, p. 361) and that "... adjunction to XP is a last resort operation that only applies when spec X is occupied by an IO" (Zeller, 2014, p. 364).

However, constructions such as the one in (30b) are unacceptable in Ndebele:

31. a. *i-zin-gwalo o-ba-nik-ile-yo zi-bomvu

AUG-10-book C-[2SG]-2OM-give-TNS-RS 10SM-red

Intended: 'the books that you gave to them are red'

- b. i-zin-gwalo o-ba-nik-e z-o-na zi-bomvu
 AUG-10-book C-[2SG]-2OM-give-TNS 10AGR-it-EM 10SM-red
 ‘the books that you gave to them are red’

The relativisation of a *pro* DO that is not identified by object agreement is ruled out in Ndebele as shown in (31a). A *pro* resumptive pronoun is only licensed by object agreement in Ndebele non-subject relative clauses. The extraction of a relative operator from a non-agreeing DO, as shown in (31b), is only permitted when *n** is realised by a strong resumptive pronoun.

4.5.2 Prepositions and clitic resumption

A resumptive pronoun appears as a clitic when the head noun corresponds to the grammatical role of a complement of a preposition. Following Mathonsi (2001) and Skhosana (2009), I treat the associative marker *la-* ‘with/by’, the comparatives *njenga-/nganga-* ‘like’, the adverbial *nga-* ‘by’ and locative markers as prepositional elements. The resumptive pronouns that appear as complements of prepositional elements do not display agreement with the relative verb.

32. a. o-dokotela e-ngi-khulum-e la-b-o ba-ya-mamathek-a
 2-doctor C-1SG-speak-TNS with-2AGR-it 2SM-DIS-smile-FV
 ‘the doctors with whom I spoke are smiling’
- b. i-n-dlu e-ngi-hlal-a ki-y-o
 AUG-9-house C-1SG SM-seat-FV LOC-9AGR-it
 ‘the house in which I stay’
- c. u-baba e-ngi-khulum-a njenga-y-e
 1-father C-1SG-talk-FV like-1AGR-it
 ‘the father like whom I speak’

All the resumptive pronouns in (32) are complements of prepositional elements (*la-* ‘with’, *ki-* ‘in/at’ and *njenga-* ‘like’) and they display agreement with their respective head nouns. The emphasis marker *-na* does not occur when the resumptive pronoun is selected by a prepositional head. The following example illustrates that P never selects an emphatic n*-head:

33. a. *o-dokotela e-ngi-khulum-e la-b-o-na ba-ya-mamathek-a
 2-doctor C-1SG-talk-TNS with-2AGR-it-EM 2SM-DIS-smile-FV
 Intended: ‘the doctors with whom I spoke are smiling’
- b. *i-n-dlu e-ngi-hlal-a ki-y-o-na
 AUG-9-house C-1SG-stay-FV LOC-9AGR-it-EM
 Intended: ‘the house in which I stay’
- c. *u-baba e-ngi-khulum-a njenga-y-e-na
 1-father C-1SG-talk-FV like-9AGR-it-EM
 Intended: ‘the father like whom I speak’

The use of a strong resumptive pronoun when the resumptive pronoun is a complement of a prepositional element is impermissible in Ndebele. Like strong resumptive pronouns, gaps are also ungrammatical as complements of prepositional elements:

34. a. *o-dokotela e-ngi-khulum-e la-
 2-doctor C-1SG-speak-TNS with
 Intended: ‘the doctors with whom I spoke are smiling’
- b. *i-n-dlu e-ngi-hlal-a ki-
 AUG-9-house C-1SG-seat-FV LOC-
 Intended: ‘the house in which I stay’

- | | | | |
|----|--|----------------|---------|
| c. | *u-baba | e-ngi-khulum-a | njenga- |
| | 1-father | C-1SG-talk-FV | like- |
| | Intended: 'the father like whom I speak' | | |

The prepositional element is always overt and requires an overt complement in strategy 1 because preposition stranding is not permissible in Ndebele.

4.5.3 Subject relatives and resumption

A subject relative clause commences with a relative verb in Ndebele. The relative clause marker, consisting of C and the subject agreement marker, is prefixed to the relative verb and agrees with the subject of the relative clause. The relative verb may end with the relative suffix *-yo* when the relative verb is the terminal element in the verb phrase (35a). The relative suffix does not occur when any material follows the relative verb in a VP (35b):

- | | | | | |
|-----|----|---------------------------------|--------------------|-------------|
| 35. | a. | i-zin-ja | e-zi-khonkoth-a-yo | |
| | | AUG-10-dog | C-10SM-bark-FV-RS | |
| | | 'the dogs that are barking' | | |
| | b. | *a-ba-fana | a-ba-dl-a-yo | i-si-nkwa |
| | | AUG-2-boy | C-2SM-eat-FV-RS | AUG-7-bread |
| | | 'the boys who are eating bread' | | |

The ungrammaticality of (35b) is in the use of the RS *-yo* in a construction where the object *n*P* has remained in the VP-internal position.

The subject *n*P* moves from the VP-internal position to spec T where it values the *u-phi* features of T that

are spelled out as subject agreement. Relativisation in subject relatives takes place in spec T which means that subject relatives have a S-V word order. The following example shows that the V-S word order is untenable in Ndebele subject relatives:

36. *i-n-ja o-ku-khonkoth-a-yo
 AUG-9-dog C-17SM-bark-FV-RS
 Intended: ‘the dog that is barking’

This example shows that subject relativisation is only possible with antifocused subject n*Ps that move and trigger subject agreement. Thus, the gap in subject relatives occurs before the relative verb rather than after the relative verb.

As noted in 4.2, a resumptive pronoun appears in a position where one would expect to find a gap. In Ndebele subject relatives, as shown in (37), the occurrence of overt resumptive pronouns in the subject position results in the formation of ungrammatical constructions:

37. a. *a-ba-fana b-o-na a-ba-dl-a-yo
 AUG-2-boy 2AGR-it-EM C-2SM-eat-FV-RS
 Intended: ‘the boys who are eating’
- b. *i-zin-ja z-o-na e-zi-khonkoth-a-yo
 AUG-10-dog 10AGR-it-EM C-10SM-bark-FV-RS
 Intended: ‘the dogs that are barking’

(37) shows that the appearance of a RP is illicit in subject relatives. The head noun is resumed by the subject markers in Ndebele subject relative clauses.

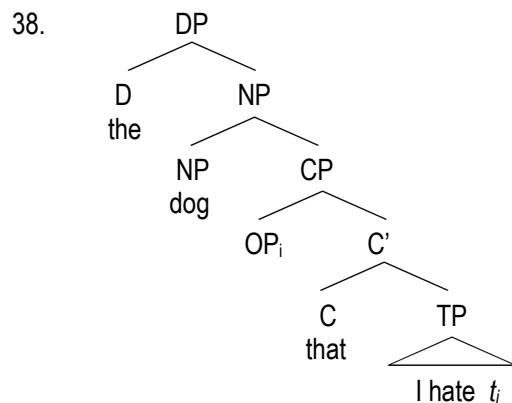
In summary, extraction of a relative operator in a relative clause in Ndebele can leave behind a gap or a RP. A gap occurs whenever the head noun is resumed by either subject agreement (in subject relative clauses) or by object agreement (in non-subject relative clauses). Resumptive pronouns that agree with the extracted operator (and hence with the head noun) appear in the relativisation site in two contexts. One context in which a strong resumptive pronoun is licensed is when the operator is extracted from an object-n*P that cannot agree with the verb for independent reasons (e.g. because the object marker agrees with another internal argument). The strong resumptive pronoun must occur inside the VP, and it never agrees with the relative verb. The second context, which licenses clitic resumptive pronouns, is when the n*P from which the operator is extracted occurs inside a PP. Like strong resumptive pronouns, clitic resumptive pronouns do not agree with the relative verb. Neither gaps nor strong pronouns are licensed in PPs.

4.6 An analysis of resumption in Ndebele relative clauses

Recall that I follow the antifocus agreement theory (Zeller, 2008; 2014; 2015). The antifocus agreement theory posits that subject agreement and object agreement are a result of antifocus agreement between a probing functional head T and X and an antifocus marked n*P. The EPP feature of the probing functional head attracts an antifocus marked n*P that agrees with T or X to spec T or spec X respectively. The uninterpretable phi features on T and X are valued by the antifocus marked n*P that has moved to spec T and spec X respectively. The theory holds that agreement obtains if and only if the targeted goal moves out of vP. In double object constructions, a direct object n*P can only agree if there is no intervening antifocus marked indirect object n*P between the functional head X, which is responsible for object agreement, and the direct object.

Recall that the standard analysis of relative clauses (Quine, 1960; Montague, 1974; Partee, 1975; Jackendoff, 1977; Chomsky, 1977) posits that the head noun is base generated outside the RC and that

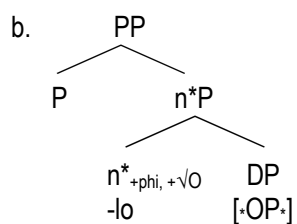
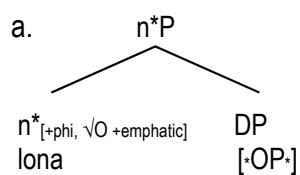
the RC is adjoined to the head noun. Importantly, this analysis assumes that a relative operator moves from the relativisation site to spec C. The following tree shows the structure of a RC adopted in this study:

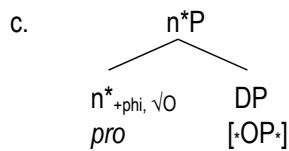


(38) shows that an OP is extracted from TP and copied to spec C and that the RC is adjoined to the head noun-NP.

In keeping with the little n*P hypothesis, I maintain that the relative operator enters the derivation as a complement of an n*-head and that the n*-head is spelled out as a resumptive pronoun when the head bears an emphatic feature, and otherwise is null.

39. The structure of an n*P in resumptive structures





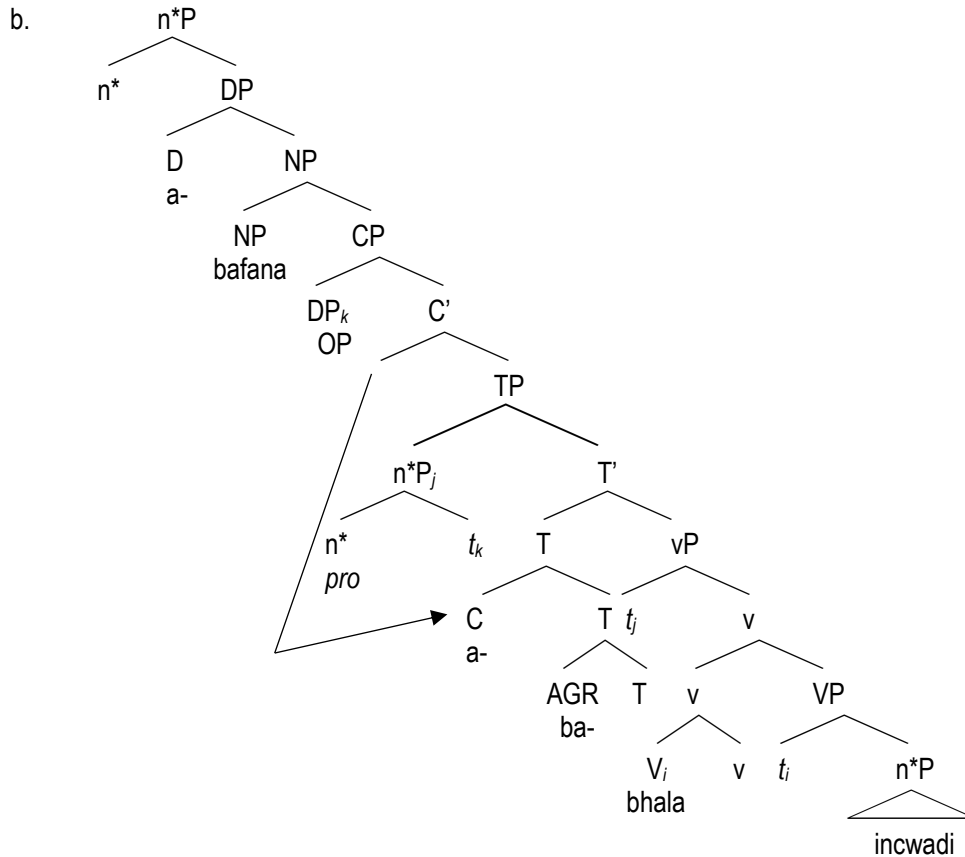
An overt RP occurs when the internal DP is extracted from an emphatic n*P (39a) and copied to spec C while a clitic resumptive pronoun *-lo* (39b) and an unpronounced RP occur when the internal DP is extracted from a non-emphatic n*P that agrees with the verb (39c).

4.6.1 Resumption in subject relatives in Ndebele

I adopt aspects of the antifocus theory of Zeller (2008; 2014; 2015) and I assume that an antifocus-marked n*P moves out of vP to spec X (recall that X is the functional head that selects vP and that hosts uninterpretable phi features) and spec T in the formation of object relatives and subject relatives respectively. In the formation of subject relatives, the uninterpretable antifocus features on T probe the derivation, agree with and attract a subject n*P that is first merged in spec v that bears interpretable antifocus features. The extracted n*P is copied to spec T where it values the u-phi features and the probing uninterpretable antifocus features on T. The agreement node operation adds an AGR node to T at MS after which the feature copying operation copies the phi-features from the n*-head at spec T. A subject marker is inserted at vocabulary insertion to spell out the phi features that were copied from the n*-head at spec T. Crucially, the n*-head that is identified by the SM is always spelled out as null in Ndebele subject relative clauses. I therefore maintain that an n*-head is spelled out as null if the n*-head is identified as the subject:

40. a. a-ba-fana a-ba-bhal-a i-ncwadi
 AUG-2-boy C-2SM-write-FV 9-letter

'the boys that are writing a letter'



As shown in (40), the subject n*P merges at spec v and moves to spec T and then C extracts the complement DP (the OP), leaving the n* stranded in spec T. The stranded n* is realised as null. As noted above, the realisation of the n* as either a strong resumptive pronoun (41a) or as a clitic resumptive pronoun (41b) is impermissible in Ndebele subject relatives:

41. a. *a-ba-fana b-o-na a-ba-bhal-a-yo
 AUG-2-boy 2AGR-it-EM C-2SM-write-FV-RS
 Intended: 'the boys that (them) are writing'

- b. *a-ba-fana b-o a-ba-bhal-a-yo
 AUG-2-boy 2AGR-it C-2SM-write-FV-RS
 Intended: ‘the boys that are writing’

As shown in (41), the occurrence of a resumptive pronoun is illicit in subject relatives regardless of whether the resumptive pronoun is a strong resumptive pronoun or a clitic resumptive pronoun. A question that arises is: why is the occurrence of overt n* heads illicit in subject relatives?

The ban on resumptive pronouns in the subject position of relative clauses is also reported for Hebrew. To illustrate the ban on resumptive pronouns in the subject position of relative clauses, I will show the occurrence of resumptive pronouns in the object position of non-subject of relative clauses. The following example shows that resumptive pronouns are optional in non-subject resumptive pronouns:

42. a. ha-ʔiš še- raʔiti ʔoto (Hebrew, Shlonsky, 1992, p. 452)
 the-man that- (I) saw him
 ‘the man that I saw’
 b. ha-ʔiš še- raʔiti (Hebrew, Shlonsky, 1992, p. 452)
 the-man that-(I) saw
 ‘the man that I saw’

The occurrence of the resumptive pronoun ʔoto is optional in the object position. The resumptive pronoun ʔoto occurs in (41a) while a gap appears in (42b).

In contrast, resumptive pronouns are not allowed in spec T of subject relative clauses:

43. a. ha-ʔiš še- ʔohev ʔet Rina. (Hebrew, Boeckx, 2003, p. 84)
 the-man that loves ACC Rina
 ‘the man who loves Rina.’
- b. *ha-ʔiš še- **hu** ʔohev ʔet Rina. (Hebrew, Boeckx, 2003, p. 84)
 the-man that **he** loves ACC Rina
 ‘the man who loves Rina.’

There is a near universal restriction, the High Subject Restriction (HSR), which prohibits overt RPs in the highest subject position in unbounded dependencies (McCloskey, 1990; 2002; 2006; 2011). The HSR bans overt resumptive pronouns from appearing in the highest subject in a subject relative clause. Razaq (2017, p. 101) argues that “the subject pronoun (in Arabic) receives a null spell-out due to the fact that the subject can be identified via agreement features carried by the verb.” This implies that n^* is realised as null in the subject relativisation site when n^* is identified by subject agreement. Recall that DM assumes that agreement nodes are added to heads that have valued their u -phi features in syntax and that the copying of phi features takes place in the PF branch after syntax. Following the DM assumption, I maintain that the subject agreement node is added to T and that phi features are then copied from T to the added subject agreement node. The subject agreement node then identifies the stranded n^* and spells out the copy of the phi features of n^* . As a result, n^* can remain unpronounced because all the features of n^* are expressed by the SM in Ndebele subject relative clauses.

Recall that there is a non-emphatic n^* and an emphatic n^* . A non-emphatic n^* -head is unpronounced when the phi features of n^* are spelled out by an agreement marker while an emphatic n^* -head is always overt. This implies that an emphatic n^* cannot be realised as null as this would leave the emphatic feature unexpressed since subject agreement does not express emphasis. I therefore argue that a null resumptive pronoun that occurs in Ndebele subject relatives is an indication that a non-emphatic subject

n^* is preferred over an emphatic subject n^* in Ndebele subject relatives. The non-emphatic n^* remains unpronounced because phi features of a non-emphatic n^* are identified by the subject agreement in subject relatives. I therefore maintain that the selection of an emphatic n^* is not permitted in Ndebele subject relative clauses. In fact, since the emphatic feature marks an emphatic n^* as focused, a strong resumptive pronoun cannot vacate spec vP because focused subjects are barred from vacating spec vP. It follows that the emphatic n^* can neither trigger agreement nor leave spec vP. Moreover, the selection of an emphatic subject n^* violates the HSR. A language that observes the HSR near universal restriction does not permit emphatic RPs to occur in spec T. I suggest that the non-occurrence of an overt RP in subject relatives is due to the HSR parameter that rules out the occurrence of an emphatic RP in spec T in the formation of Ndebele subject relatives. It follows, therefore, that languages such as Jordanian Arabic that do not observe the near universal restriction emphasise the relative subject n^*P and allow overt resumptive pronouns to occur in the highest subject position in a relative clause. Consider the following examples drawn from Abdel-Razaq (2017, p. 97):

44. a. *ʃuf-na* *l-fannaan* *ʔilli* *rasam* *hay* *l-lawħa*
 saw-1PL the-artist who painted.3ms this the-painting
 ‘we saw the artist who painted this painting.’
- b. *ʃuf-na* *l-fannaan* *ʔilli* *huwa* *rasam* *hay* *l-lawħa*
 saw-1PL the-artist who he painted.3ms this the-painting
 ‘we saw the artist who painted this painting’

The occurrence of the resumptive pronoun *huwa* is grammatical in Jordanian Arabic as shown in (43b).

4.6.2 Resumption in object relatives in Ndebele

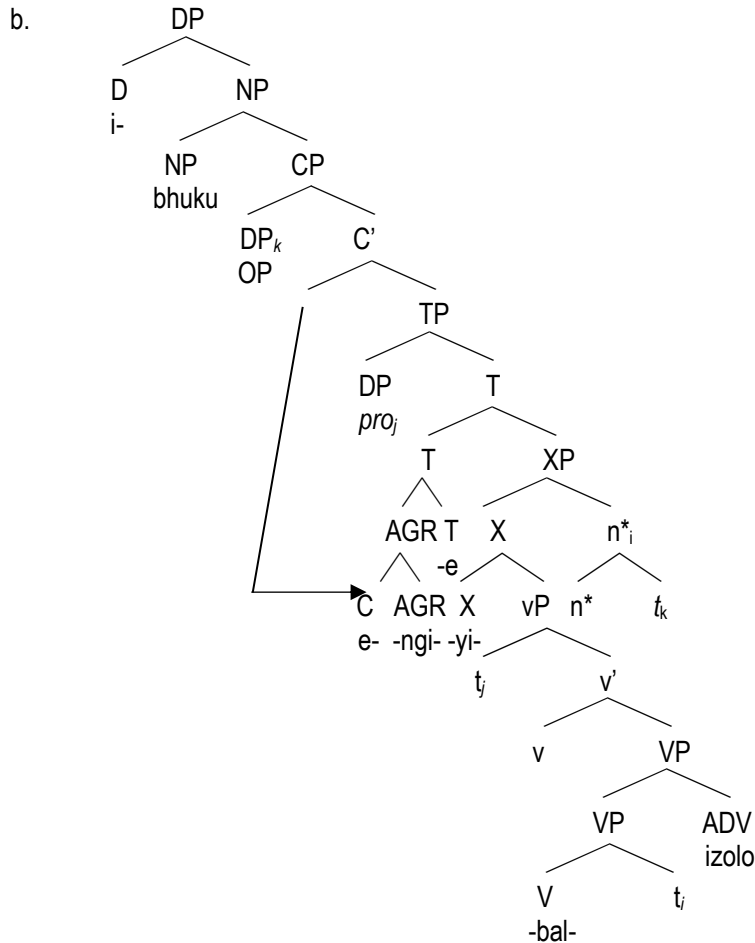
In object relatives, the functional head X responsible for object agreement bears uninterpretable antifocus

features that probe the derivation and agree with an n*P that has interpretable antifocus features. An agreeing object n*P is copied to (a right-branching) spec X where X's u-phi features are valued. C then subextracts the complement DP (the OP) and copies it to spec C, leaving the n*-head stranded at spec X. An agreement node is added to X at MS to realise the valued u-phi features. The AGR node that is added to X copies phi features from the n*-head of the n*P in spec X and these copied features are spelled out as object agreement by an object marker at vocabulary insertion. Like the stranded n* in spec T that is identified by the subject agreement marker and realised as null, the stranded n*-head in spec X can also be identified by the object agreement marker and can be realised as null. For example, the head noun is resumed by the object agreement marker *-li-* in the following example:

45. a. i-bhuku e-ngi-li-bal-ile-yo izolo li-ya-bhow-a
 5-book C-1SG-5OM-read-TNS-RS yesterday 5SM-DIS-boring-FV
 'the book that I read yesterday is boring'
- b. i-bhuku e-ngi-li-bal-e izolo li-ya-bhow-a
 5-book C-1SG-5OM-read-TNS yesterday 5SM-DIS-boring-FV
 'the book that I read yesterday is boring'

In (45), the head noun is resumed by the object agreement marker and the n*-head is null. The occurrence of the object agreement marker *-li-* in (45) denotes that the object marked n*P has been right dislocated (van der Spuy, 1993; Buell, 2005; 2006; Adams, 2010; Zeller, 2012). Following Zeller (2014), I assume that an object marked n*P always moves to spec X. Crucially, I assume that the n*-head that is left stranded in spec X after the extraction of the operator is spelled out as null:

46. a. i-bhuku e-ngi-li-bal-e izolo
 5-book C-1SG-5OM-read-TNS yesterday
 'the book that I read yesterday'



As argued in chapter 3, C lowers to T in the formation of strategy 1 relative clauses in Ndebele.

As was shown above, a head noun cannot be resumed by an object agreement marker and a resumptive pronoun in the same relative clause. The contrast between (47a) and (47b) shows that a strong pronoun that co-occurs with an object-marked head noun must follow a temporal adverb that appears in the relative clause:

47. a. i-bhuku e-ngi-li-bal-e izolo l-o-na li-ya-bhow-a
 5-book C-1SG-5OM-read-TNS yesterday 5AGR-it-EM 5SM-DIS-boring-FV
 ‘the particular book that I read yesterday is boring’
- b. *i-bhuku e-ngi-li-bal-e l-o-na izolo li-ya-bhow-a
 5-book C-1SG-5OM-read-TNS 5AGR-it-EM yesterday 5SM-DIS-boring-FV
 Intended: ‘the book that I read yesterday (it) is boring’

In (47a), the strong resumptive class 5 pronoun occurs after the temporal adverb *izolo* but in (47b), the strong pronoun occurs before the temporal adverb. I take the occurrence of the strong pronoun after the temporal adverb to mean that the strong pronoun is generated outside the relative clause and thus cannot be treated as a resumptive pronoun. Rather, the strong pronoun *lona* in (47a) emphasizes the head noun. The object n*P in (47a) has moved to spec X where it values the u-phi features on X and controls object agreement. The object n*P is identified by object agreement and the stranded n*-head is spelled out as null. In contrast, the strong resumptive pronoun precedes the temporal adverb in (47b), and the verb is in the conjoint form. This means that the pronoun occurs in the relativisation site in (47b), and that the head noun is resumed by both the object agreement marker and the strong resumptive pronoun. Recall that a strong resumptive pronoun spells out an [+emphatic] feature and that this feature requires the strong resumptive pronoun to strictly occur in focus positions. Focused n*Ps do not vacate VP and never trigger agreement with the verb. Therefore, the emphatic object n*P in (46b) cannot move out of VP and trigger object agreement. This explains the ungrammaticality of (46b). I maintain that null resumptive pronouns are only licensed when an n*P moves out of VP and is identified by the subject or object agreement marker in the formation of a relative clause that is based on a monotransitive verb.

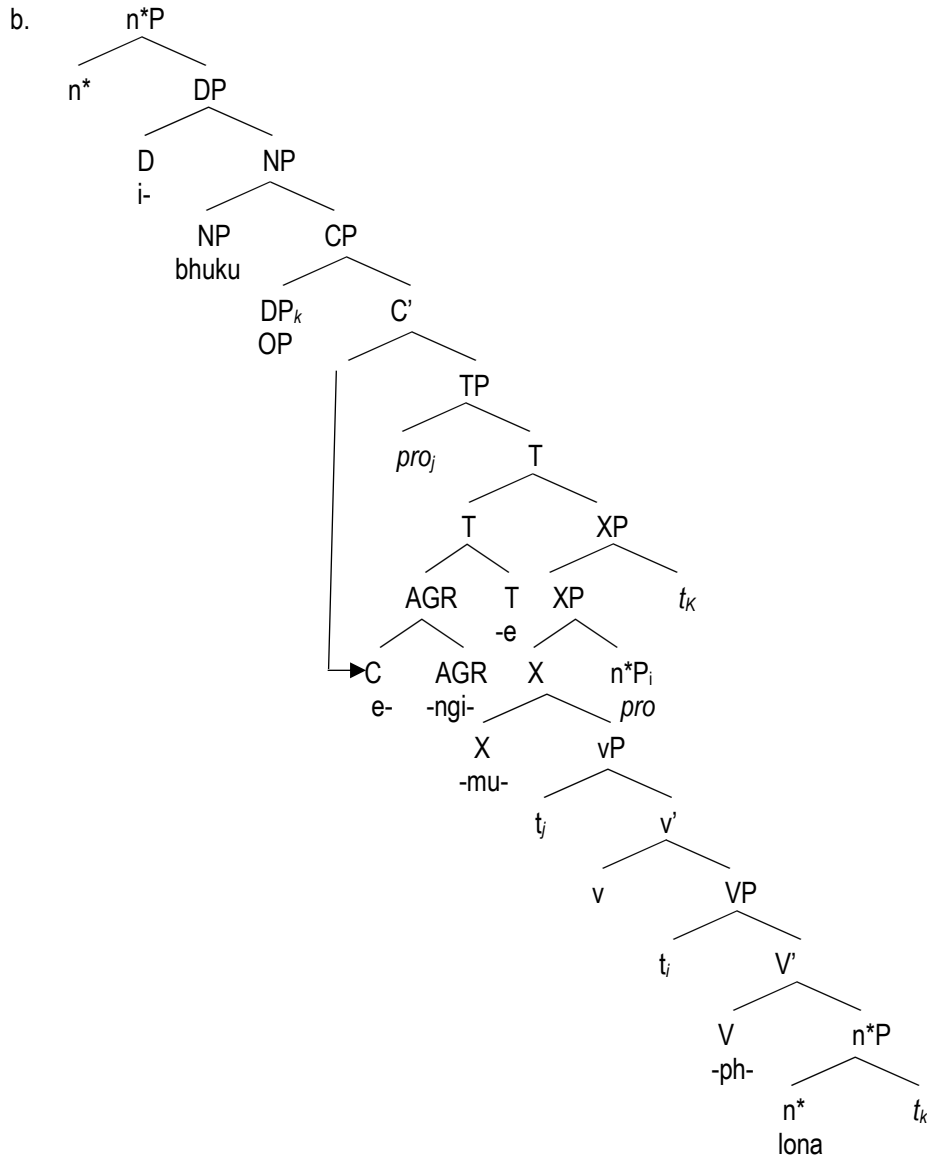
In double object constructions, the head noun may either correspond to the grammatical role of the indirect object n*P (48b) or the direct object n*P (48a):

agrees with an object n*P that has moved to spec X. As a result, the object n*P *umfana* 'the boy' that is focused in (48c) remains in its VP-internal base position and does not intervene for Agree, while the antifocused object n*P that corresponds to the head noun *inja* 'the dog' moves to spec X in (48c). I assume that both n* and the relative operator are inherently marked as antifocused which means both n* and the relative operator must vacate the vP. This is in keeping with the condition that "A-bar movement out of vP must proceed via X" (Zeller, 2014, p. 361). The antifocus driven agreement marking adopted here solves the problem that is associated with the phi feature driven object agreement marking theory that is adopted by Henderson (2006).

When one object in a RC is pronominalised and therefore marked as antifocus, while the second object is relativised, both the non-relativised object n*P and the relativised n*P are antifocus-marked. In the following example, the DO has been relativised, while the IO is *pro*.

49. a. i-bhuku e-ngi-mu-ph-e l-o-na
 5-book C-1SG-1OM-give-TNS 5AGR-it-EM

'the book that I gave him'

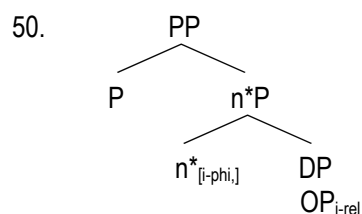


In (49), the antifocus-marked IO is a *pro*-n*P. This n*P has moved to spec X where it triggers object marking. The DO-operator also has an antifocus feature. Normally, the object n*P that includes the OP must move to spec X, because n* is antifocus marked. However, there is only one specifier of X, and therefore, only one object *pro* can be identified via object agreement. This means that a *pro*-RP in a RC like (49), where the non-relativised pronominal object is also *pro*, cannot be identified by agreement. So

a null RP is ruled out when the other object is also null, because there is only one agreement marker. This means that only a strong RP can realise n^* . The emphasis/focus feature on n^* marks the n^*P as focused and prohibits the n^*P from participating in antifocus movement. This means that strong resumptive pronouns are only licensed inside VP regardless of whether they select a relative operator or not. Note that a focused n^* does not block the extraction of the relative operator from the focused n^*P because the relative operator has an intrinsic antifocus feature that requires it to move to spec C. Rather, relativisation proceeds via X. As a result, relative operator is extracted from the in situ n^*P , and adjoins to XP first, and then moves to spec C as shown in (49).

4.6.3 Resumption in prepositional contexts in Ndebele

As highlighted in section 4.5.2, a clitic pronoun appears in the relativisation site when the grammatical role of a head noun/OP corresponds to the grammatical role of a complement of a prepositional element. A prepositional element may be a locative, an adverbial, a comparative or an associative. A prepositional element always selects a non-emphatic n^*P :



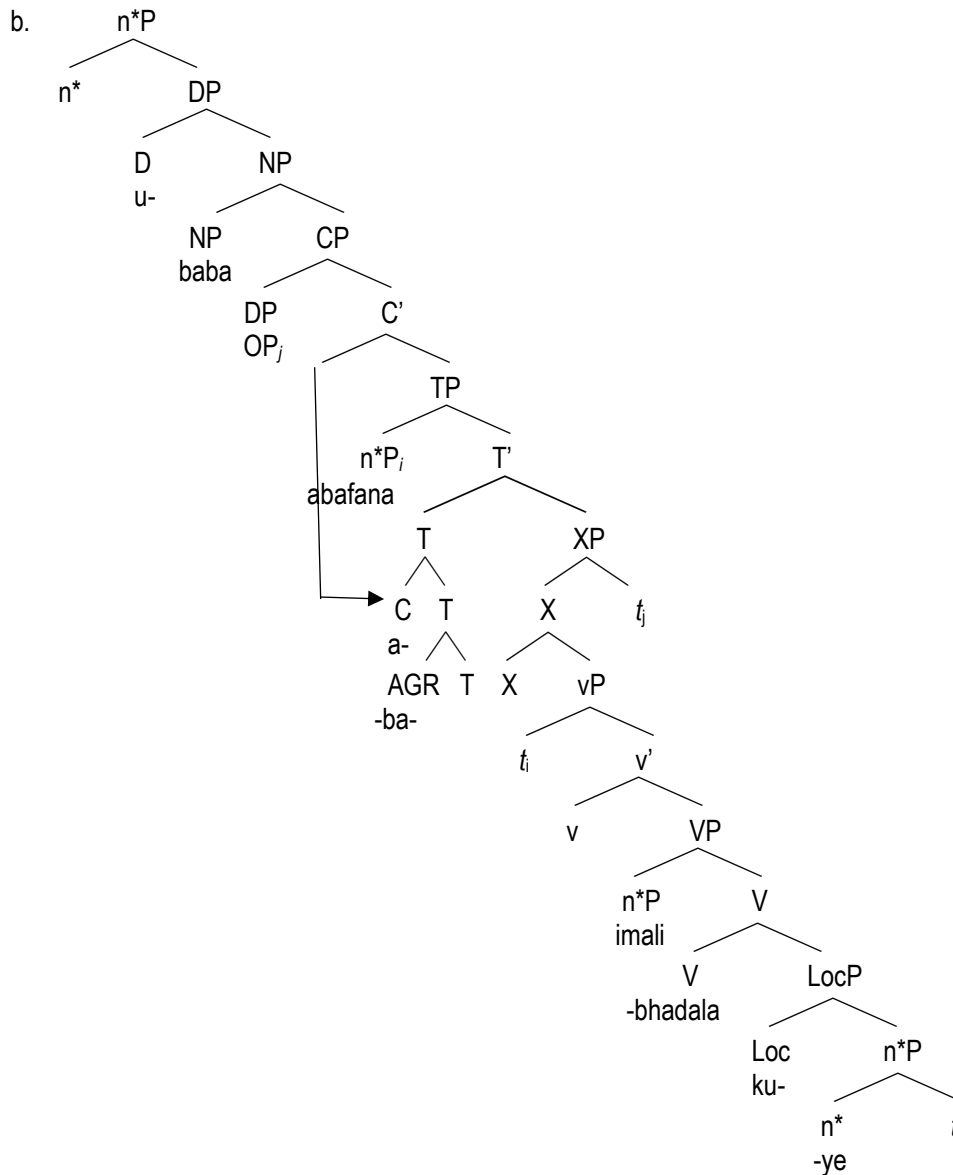
As highlighted in 4.6.2, the relative operator has an intrinsic antifocus feature that requires it to vacate VP and all A-bar movement proceeds via X (Zeller, 2014). I suggest that the relative operator is extracted from the PP and copied to spec X. Normally, an antifocused n^*P that moves to spec X triggers object agreement. I assume that object agreement is triggered by the antifocused n^* in spec X and that object agreement identifies the antifocused n^* in spec X. Following this analysis, the absence of object agreement is unsurprising in (51a) because n^* that should trigger object agreement is in PP rather than

in spec X. As shown in (51b), the occurrence of object agreement is ruled out when n* is stranded in PP:

51. a. u-baba a-ba-fana a-ba-bhadal-a i-mali ku-y-e
1-father AUG-2-boy C-2-pay-FV 9-money LOC-1AGR-it
'the father to whom the boys pay money'
- b. *u-baba a-ba-fana a-ba-m-bhadal-a i-mali ku-y-e
1-father AUG-2-boy C-2-1OM-pay-FV 9-money LOC-1AGR-it
'the father to whom the boys pay money'

When C merges, the uninterpretable relative feature on C probes the derivation for a goal that has a corresponding interpretable feature. The operator marked DP that is in spec X bears the requisite feature, and thus values the uninterpretable relative feature on C. The EPP feature on C extracts the operator marked DP to spec C. The stranded n*-head in PP is spelled out as a clitic resumptive pronoun:

52. a. u-baba a-ba-fana a-ba-bhadal-a i-mali ku-y-e
 1-father AUG-2-boy C-ba-pay-FV 9-money LOC-1AGR-it
 'the father to whom the boys pay money'

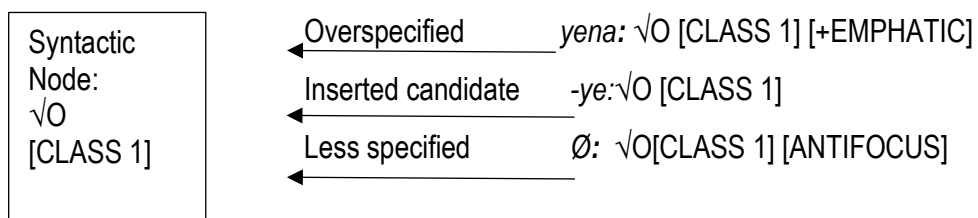


In (52a), the OP moves to spec C via X leaving the n*-head stranded in PP. The stranded n*-head cliticises to the prepositional head *ku-* and is spelled out as a contracted class 1 absolute pronoun *-ye*. The stranded n* is never spelled out as either as a strong resumptive pronoun (53a) or null (53b):

53. a. *u-baba a-ba-fana a-ba-bhadal-a i-mali ku-y-e-na
 1-father AUG-2-boy C-2-pay-FV 9-money LOC-1AGR-it-EM
 Intended: 'the father to whom the boys pay money'
- b. *u-baba a-ba-fana a-ba-bhadal-a i-mali ku-
 1-father AUG-2-boy C-2-pay-FV 9-money LOC-
 'the father to whom the boys pay money'

The ungrammaticality of the above constructions is linked to the feature structure of the n*-head that participates in the formation of clitic resumptive pronouns and the nature of the prepositional head. Firstly, prepositional stranding is illicit in Ndebele which means that the extraction of the whole n*P from PP is never licensed in Ndebele. Secondly, the prepositional head always selects a non-emphatic n*P. Recall that the non-emphatic n*-head lacks an emphasis feature and is only realised as *pro* if n* is identified by the verb as subject (in spec T) or as object (in spec X). As argued prior, the *-na* marker that occurs in strong resumptive pronouns spells out the [+emphasis] feature of the emphatic n*-head. I assume therefore that the ungrammaticality of (53a) lies in that the emphatic exponent *-na* is inserted to spell out a non-existent +emphatic feature. Thus the emphatic exponent is an overspecified candidate whenever the n*-head is selected by a prepositional element:

54. Competition into **ku-ye**.



In (53b), the null exponent is a less specified candidate. The null exponent is inserted ahead of a clitic resumptive pronoun and a strong resumptive pronoun if the n*P moves from vP to either spec X or spec

T where it will be identified by an agreement marker. The strong resumptive pronoun only spells out the n^* -head that remains in vP in Ndebele.

4.7 Summary

In this chapter, I discussed resumption in Ndebele relative clauses. I defined resumptive pronouns as pronouns that occur in the relativisation site. There are strong resumptive pronouns, clitic resumptive pronouns and null resumptive pronouns. I discussed the status of subject markers and object markers in subject RCs and in non-subject RCs respectively. I argued that these agreement markers are realisations of antifocus Agree relation between T and X in subject relatives and in non-subject relatives respectively. I maintained that these agreement markers license the occurrence of *pro* resumptive pronouns while overt resumptive pronouns spell out the stranded non-agreeing n^* head that is in the relativisation site.

It was argued that what is traditionally treated as a DP is in fact an n^*P and that an n^*P consists of an n^* -head and a complement DP (Chomsky, 2007). An n^* -head may be realised as a strong resumptive pronoun, as a clitic resumptive pronoun or as null resumptive exponent while the complement DP is always an OP in Ndebele relative clauses. In the course of the derivation, the OP is extracted and copied to spec C leaving the n^* -head stranded in the relativisation site. The n^* -head is always realised as null in subject relative clauses and in object relative clauses where the extracted n^* is identified by subject agreement and object agreement. I argued that the stranded n^* -head is spelled out as null in the relativisation site if, and only if the antifocus marked n^*P is identified by either subject agreement (in subject relative clauses) or object agreement (in non-subject relative clauses).

I also argued that strong resumptive pronouns occur in the VP-internal position because they spell out the n^* head of a focused n^*P . When an relative operator marked DP is a complement of a focused n^* , the relative operator first moves to spec X and then it is attracted to spec C. I argued that the relative

operator marked DP never triggers object agreement in Ndebele.

I argued that the extraction of n*P from PP is ruled out because it will result in prepositional stranding. As a result, the OP is extracted and copied to spec X leaving the n* head stranded in PP. I argued that the extracted OP never triggers object agreement though it occurs in spec X. I proposed that an n* head is the one that triggers object agreement when it is in spec X. Therefore, an n* head that is in PP cannot trigger object agreement.

CHAPTER FIVE: DOKE'S ADJECTIVES AND RELATIVES

5.1 Introduction

This chapter discusses the morphological and syntactic properties of the constructions that express the attributive adjectival function in Ndebele. The adjective in Ndebele has never been studied beyond school grammar description. This chapter therefore deliberately focuses on the morphology and syntax of the predicative and attributive adjective in Ndebele. I maintain Ndebele has a predicative adjectival category but does not an attributive adjectival category. My main submission is that the attributive adjectival function is expressed by relative clauses that are derived from predicative adjectives rather than by an adjectival category.

5.2 Three types of attributive adjective relative clauses

There is a close relation between attributive adjective relative clauses and verbal relative clauses. The core meaning of the verbal relative clause is carried by the verb root which takes pre-root prefixes (C, SM, TAM⁶, OM, negation and OM) and post-verb root affixes (verb extensions, the final vowel and the relative suffix). The relative verb of the subject RC follows the following template:

1. a.

C	SM	TAM	OM	VERB ROOT	EXTENSION	FV	RS
---	----	-----	----	------------------	-----------	----	----

b. a-ba-fana a-ba-za-m-khulek-el-a-yo
 AUG-2-boy C-2SM-TNS-1OM-pray-APPL-FV-RS
 'the boys who will pray for him/her'

The verbal affixes that come before the verb root and those that are preceded by the verb root occur in

⁶ TAM is Tense Aspect Mood.

the verb of the subject relative clause in Ndebele. Similarly, the attributive adjective takes a huge chunk of verbal morphology of the subject relative clause. These verbal affixes are prefixed to the adjective in the formation of a composite attributive adjective relative clause (a construction where verbal morphology and the adjective constitute a single morphological word form). Composite attributive adjective take C, the subject marker and TAM markers:

2. a.

	C	SM	TAM	ADJECTIVE
--	---	----	-----	------------------

b. i-sela e-se-li-li-dala
 5-thief C-EXCL-5SM-5AM-old
 'the thief that is now old'

The occurrence of the C, SM and TAM markers in attributive adjective clauses make the attributive adjective clause to be verb-like. In contrast to verbal relative clauses whose core meaning lies in the verb root, the core meaning of the attributive adjective lies in the adjective. Crucially, the OM, verbal extensions, final vowel and the relative suffix are ungrammatical in a composite attributive adjectival clause:

3. *C-SM-TAM-OM-ADJECTIVE-EXTENSION-FV-RS

However, some of the post-verb root affixes are grammatical when the adjective is selected by a copula verb *-b-*. The copula *-b-* takes a limited range of post-verb root affixes such as negation suffixes *-i* (4a), the tense suffix *-e* (4b) and the default final vowel *-a* (4c):

4. a. i-hloka e-li-nga-b-i bu-khali
 5-axe C-5SM-NEG-be-NEG 14-sharp
 'the axe that is not becoming sharp'
- b. i-hloka e-li-b-e bu-thundu
 5-axe C-5SM-be-TNS 14-blunt
 'the axe that became blunt'
- c. i-hoka e-li-b-a li-ncane
 5-axe C-5SM-be-FV 5AM-small
 'the axe that is becoming small'

Attributive adjectival relative clauses, like verbal subject relatives, commence with an underlying vowel *a-* that adjusts to the height of a subject agreement marker to derive the vowel allomorphs *e-* and *o-*. Following the analysis developed in chapter 3, I maintain that this vowel is a C and I further argue that C prefixes to a predicative adjective in the formation of attributive adjective RCs. Generally, there are three types of attributive adjectives in Ndebele: genuine adjectives (Type 1 adjectives), adjectives without a noun class prefix (Type 2 adjectives) and adjectives with a noun class prefix (Type 3 adjectives). The core meaning of the attributive adjective clauses lie in the following adjectival stems:

Table 12: Type 1, Type 2 and Type 3 adjective stem

Type 1 adjective stems	Type 2 adjective stems	Type 3 adjective stems
-dala 'old'	-munyu 'sour'	-nzima 'difficult'
-tsha 'new'	-mhlophe 'white'	-lula 'easy'
-khulu 'big'	-mnyama 'black'	-banzi 'wide'
-ncane 'small'	-mnandi 'nice'	-qatha 'stout'
-hle 'beautiful'	-mnene 'kind'	-bomvu 'red'
-bi 'bad'	-manzi 'wet'	-duma 'tasteless'
-de 'tall'	-luhlaza 'green'	-ngcono 'better'
-fitshane 'short'	-lusizi 'sad'	-nqunu 'naked'
-bili 'two'	-lukhuni 'tough'	-bhizi 'busy'
-thathu 'three'	-bukhali 'sharp'	-simati 'smart'
-ne 'four'	-buhlungu 'painful'	-ngcwele 'holy'
-hlanu 'five'	-buthundu 'blunt'	
	-mpofu 'poor'	
	-butshelezi 'smooth'	

In the following sections I present data on the examples and characteristics of the three types of adjectives found in Ndebele.

5.2.1 Type 1 adjectives

The main feature that defines Type 1 adjectives is the occurrence of two subject agreement markers (the subject agreement marker and the adjective marker) that agree with the head noun/ relative operator in a single relative predicate. In such constructions, the adjective marker attaches to the adjective stem while the subject marker precedes the adjective marker. The subject agreement marker may be prefixed to the adjective marker (5b), to negation (5c) or to an aspect marker (5d). Crucially, the adjective marker is always spelt out whereas the occurrence of the subject agreement marker depends on the occurrence of the negation and aspect markers (5a):

5. a. i-hloka e-li-ncane
5-axe C-[5SM]-5AM-small
'the axe that is small'
- b. i-hloka e-se-li-li-ncane
5-axe C-ASP-5SM-5AM-small
'the axe that is now small'
- c. i-hloka e-li-nge-li-ncane
5-axe C-5SM-NEG-5AM-small
'the axe that is not small'
- d. i-hloka e-li-sa-se-li-ncane
5-axe C-5SM-PROG-EXCL-5AM-small
'the axe that is still small'

In (5a), there is only the adjective marker because there is neither an aspect marker nor a negation marker, so the subject agreement marker is not licensed. When either an aspect marker (5b & 5d) or a negation marker (5c) are present, however, both agreement markers appear.

Moreover, the adjective marker strictly expresses noun class agreement whereas the subject agreement marker expresses both noun class agreement and person agreement:

6. a. th-ina e-se-si-ba-khulu
1PL-it C-EXCL-1PL-2AM-big
'we who are now big'
- b. *th-ina e-se-si-si-khulu
1PL-it C-EXCL-1PL-1PL-big

- | | | |
|----|---------|--------------------|
| c. | *th-ina | e-se-ba-ba-khulu |
| | 1PL-it | C-EXCL-2SM-2AM-big |

The subject agreement marker in (6a) expresses person agreement while adjective marker expresses noun class agreement. When the adjective marker is replaced by either a person agreement marker (6b) or when a noun class agreement marker is used in place of a person agreement (6c), we get an ungrammatical construction if the head noun is first/second person.

In structures involving the subject agreement marker, progressive aspect (PROG) *-sa-* 'still', the exclusive aspect *-se-* 'now' and negation, the subject agreement marker always precedes the aspect markers *-sa-* (7a) and the negation marker (7b). The subject agreement marker always precedes all tense, aspect, mood and negation markers in a relative clause, unless when the exclusive aspect marker is the only aspect marker (7c) and/or when the exclusive aspect marker precedes tense and mood markers (7d):

- | | | | |
|----|----|-----------------------------------|----------------------------|
| 7. | a. | u-chago | o-lu-sa-se-lu-hle |
| | | 11-milk | C-11SM-PROG-EXCL-11AM-nice |
| | | 'the milk that is still nice' | |
| | b. | u-chago | o-lu-nga-se-lu-hle |
| | | 11-milk | C-11SM-NEG-EXCL-11AM-nice |
| | | 'the milk that is no longer nice' | |
| | c. | u-chago | o-se-lu-lu-hle |
| | | 11-milk | C-EXCL-11SM-11AM-nice |
| | | 'the milk that is now nice' | |

As shown in (7), C can either prefix to the subject agreement or to the exclusive aspect marker. In either

case, C adjusts to the height of the vowel element of the subject agreement marker.

When the copula verb *-b-* is involved in the formation of attributive adjectives, we get an analytic predicate consisting of an inflected copula verb and an autonomous adjective. The autonomous adjective appears in its simple form and it never takes verbal affixes:

8. a. u-chago o-se-lu-za-ku-b-a lu-hle
11-milk C-EXCL-11SM-TNS-15-be-FV 11AM-nice
'the milk that will now be nice'
- b. i-n-doda e-b-a n-de
AUG-9-man C-[9SM]-be-FV 9AM-tall
'the man who is becoming tall'
9. a. i-n-doda e-nga-b-i n-de
AUG-9-man C-[9SM]-NEG-be-NEG 9AM-tall
'the man who not is becoming tall'
- b. i-n-doda e-b-e n-de
AUG-9-man C-[9SM]-be-TNS 9AM-tall
'the man who has becoming tall'

As illustrated in (8), the copula verb *-b-* takes the subject agreement marker, TAM markers and the final vowel whereas the adjective has the form: *adjective marker + adjective stem*. In (9), the final vowel, tense suffixes and the negation affixes are only permitted when the copula verb *-b-* is involved in the formation of attributive adjectives. Thus the predicate of the attributive adjective relative clause in (9) consists of a fully inflected copula verb and a simple non-verbal predicate (the adjective word category).

However, the object marker and the relative suffix are ruled out even when *-b-* is involved in the derivation of attributive adjectives:

10. *u-chago o-lu-lu-b-a-yo lu-hle
 11-milk C-11SM-11OM-become-FV-RS 11AM-nice
 Intended; ‘the milk is becoming nice’

Note that the copular only appears when “be/become” is expressed.

5.2.2 Type 2 adjectives

In contrast to Type 1 adjectives that have a subject agreement and an adjective marker expressing agreement with the head noun, Type 2 adjectives make use of the subject agreement markers only. There is a class marker that is prefixed to the adjective stem just like the adjective marker in Type 1 adjectives. However, the difference is that the class marker in Type 2 adjectives is invariable. In the examples in (11), this invariable prefix belongs to class 6 *ma-* (11a), class 9 *n-/m⁷-* (11b), class 11 *lu-* in (11c) and class 14 *bu-* in (11d). I will label this morpheme as a class marker, and gloss it with the number that identifies the noun class to which it belongs.

11. a. i-n-doda e-b-a ma-nzi
 AUG-9-man C-[9SM]-be-FV 6-water
 ‘the man who is becoming wet’

⁷This is a class 9 prefix N- that has changed into a labial nasal [m] by merging with a root that commences with an aspirated voiceless labial [p^h] (N- + √PHOFU > mpofu ‘poor person’). When the root merges with a class 5 prefix si-, it appears as – phofu (si- + phofu ‘a blind person’).

- b. i-xhegu e-li-za-ku-b-a m-pofu
 5-old man C-5SM-TNS-INF-become-FV 9-poor
 'the old man who will become poor'
- c. th-ina e-se-si-bu-khali
 1PL-it C-EXCL-1PL-14-greedy
 'we who are now greedy'
- d. u-tsh-ani o-bu-b-a lu-hlaza
 AUG-14-grass C-14SM-be-FV 11-green
 'the grass that is becoming green'

(11) shows that with Type 2 adjectives, the invariable class marker appears in the position where the adjective marker occurs with Type 1 adjectives.

The use of an agreeing prefix instead of the invariable class marker (12a), the omission of the class marker (12b), or the replacement of the invariable class marker by any other noun class prefix (12c) all result in the generation of ungrammatical constructions:

12. a. *i-jazi e-li-za-ku-b-a li-ma-nzi
 5-jacket C-5SM-TNS-INF-be-FV 5AM-6-water
 Intended: 'the jacket that will be wet'
- b. *u-tsh-ani o-bu-za-ku-b-a hlaza
 AUG-14-grass C-14SM-TNS-INF-be-FV green
 Intended: 'the grass that will become green'

- | | | | |
|----|---------------------------------------|---------------------|-----------|
| c. | *i-hloka | e-li-za-ku-b-a | si-thundu |
| | 5-axe | C-5SM-TNS-INF-be-FV | 7-blunt |
| | Intended: 'an axe that will be blunt' | | |

The constructions in the preceding examples are ungrammatical because Type 2 adjective stems do not take adjective markers and because invariable class markers can neither be deleted (12b) nor be replaced by other prefixes (12c).

A synthetic relative clause predicate also occurs in Type 2 adjectives. A synthetic relative clause predicate must consist of C, a subject marker and an adjective stem. The subject marker is deleted in nasal classes and the adjective stem consists of the invariable class marker (class 1/3 *mu*, class 6 *ma-*, class 4/9 *m-*, class 11 *lu-* and class 14 *bu-* (Cook, 2013), depending on the adjective) and the adjectival root:

- | | | | |
|-----|----|----------------------------|-------------------|
| 13. | a. | i-n-ja | e-m-hlophe |
| | | AUG-9-dog | C-[9SM]-1/3-white |
| | | 'the dog that is white' | |
| | b. | i-n-doda | e-ma-nzi |
| | | AUG-9-man | C-[9SM]-6-water |
| | | 'the man who is wet' | |
| 14. | a. | a-ba-ntu | a-ba-m-pofu |
| | | AUG-2-person | C-2SM-9-poor |
| | | 'the people that are poor' | |

- b. u-tsh-ani o-bu-lu-hlaza
 AUG-14-grass C-14SM-11-green
 'the grass that is green'
- c. i-hloka e-li-bu-thundu
 5-axe C-5SM-14-blunt
 'an axe that is blunt'

The above adjectives have negated forms. Like their counterparts that are in the positive form, C, the subject marker and the negation marker are prefixed to the adjective stem in the formation of the negated forms:

15. a. i-n-doda e-nge-ma-nzi
 AUG-9-man C-[9SM]-NEG-6-water
 'the man who is not wet'
- b. u-tsh-ani o-bu-nge-lu-hlaza
 AUG-14-grass C-14SM-NEG-11-green
 'the grass that is not green'

However, C, the subject agreement marker, tense, aspect, mood and negation do not affix to the adjective stem whenever the copular *-b-* morpheme is involved in the formation of negated adjective forms. Rather, C, tense, aspect, mood and negation combine with the copular *-b-*, and the adjective forms a separate word form like in the formation of Type 1 adjectives:

16. a. i-jazi e-li-za-ku-b-a **ma-nzi**
 5-jacket C-5SM-TNS-INF-be-FV 6-water
 'the jacket that will be wet'
- b. u-tsh-ani o-bu-za-ku-b-a **lu-hlaza**
 AUG-14-grass C-14SM-TNS-INF-be-FV 11-green
 'the grass that will be green'
- c. i-hloka e-li-za-ku-b-a **bu-thundu**
 5-axe C-5SM-TNS-INF-be-FV 14-blunt
 'an axe that will be blunt'

Note that the complements of the inflected *-b-* that I have put in bold face in (16) are adjectives rather than augmentless nouns. The occurrence of augmentless nouns as complements of copula verbs is ungrammatical in Ndebele (17a). Rather, a noun can only fulfill the predicative function if it has an augment and a copulative particle (17b):

17. a. *u-Sipho u-za-ku-b-a n-kosi
 1-Sipho 1SM-TNS-INF-be-FV 9-king
 Intended: 'Sipho will be the king'
- b. u-Sipho u-za-ku-b-a y-i-n-kosi
 1-Sipho 1SM-TNS-INF-be-FV COP-AUG-9-king
 'Sipho will be the king'

I maintain therefore that the constructions in bold face in (16) are adjectives.

In summary, the morphology of Type 2 adjectives is exactly like the morphology of Type 1 adjectives,

except that the second prefix is invariable in Type 2 adjectives. These invariable class markers belong to class 1/3, 6, 4/9, 11 and 14. These invariable class markers in Type 2 adjectives occupy the position that is assumed by the adjective marker in Type 1 adjectives. Like Type 1 adjectives, Type 2 adjectives have an optional subject agreement marker that expresses agreement with the head noun.

5.2.3 Type 3 adjectives

Type 3 adjectives are used in the examples in (18) below:

- | | | | |
|-----|----|---------------------------------|------------------|
| 18. | a. | i-n-dlela | e-nge-banzi |
| | | AUG-9-path | C-[9SM]-NEG-wide |
| | | ‘the path that is not wide’ | |
| | b. | a-ba-ntu | a-ba-nge-qatha |
| | | AUG-2-person | C-2SM-NEG-stout |
| | | ‘the people that are not stout’ | |
| | c. | i-si-gqoko | e-si-nge-lula |
| | | AUG-7-dress | C-7SM-NEG-light |
| | | ‘a dress that is not light’ | |

In (18), C, subject marker, tense, aspect, mood and negation markers are prefixed directly to the Type 3 adjective stems, and form a synthetic relative clause predicate. As the examples show, Type 3 adjectives differ from Type 1 and Type 2 adjectives in that no adjective marker or class marker is prefixed to the bare adjectival stem. This means that Type 3 adjectival stems are free morphemes and constitute word forms by themselves, unlike Type 1 and Type 2 adjectives, which always require adjective markers and invariable noun class prefixes respectively.

The independent nature of Type 3 adjectives is best illustrated in adjective constructions based on the copular *-b-*. Recall that the copular *-b-* combines with C, subject markers, tense, aspect, mood and negation markers and that the derived construction forms a word by itself in the formation of Type 1 and Type 2 adjectives. As a result, the relative predicate consists of two word forms whenever an adjective is selected by the copular *-b-*: an inflected copular *-b-* and an adjective. The examples below show that Type 3 adjectives can stand alone as independent word forms in these constructions:

19. a. a-ba-ntu a-ba-b-a qatha
 AUG-2-person C-2SM-be-FV stout
 'the people that are becoming stout'
- b. i-si-gqoko e-si-nga-b-i lula
 AUG-7-dress C-7SM-NEG-be-NEG light
 'the dress that is not becoming light'
- c. a-ba-ntu a-ba-sa-zo-ku-b-a qatha
 AUG-2-person C-2SM-PROG-TNS-INF-be-FV stout
 'the people that are yet to become stout'
- d. i-si-gqoko e-si-b-a lula
 AUG-7-dress C-7SM- be-FV light
 'a dress that is becoming light'

In fact, the affixing of an adjective marker (20a) or an invariable class marker (20b) to a Type 3 adjective results in the formation of ungrammatical constructions:

20. a. *a-ba-ntu a-se-be-si-b-a bu-qatha
 AUG-2-person C-EXCL-2P SM-si-be-FV 14-stout
 Intended: 'the people who are becoming light'
- b. *i-si-gqoko e-si-nga-b-i lu-lula
 AUG-7-dress C-7SM-NEG-be-NEG 11-light
 Intended: 'a dress that is becoming light'

In summary, Type 3 adjectives are unique in that they do not take adjective markers and invariable class markers. They share all other aspects with Type 1 and Type 2 adjectives.

5.3 The attributive adjective in Ndebele

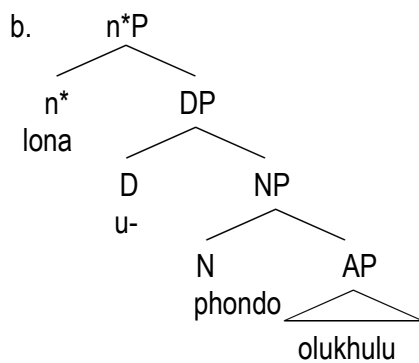
The term 'attributive' refers to the position that is assumed by the adjective word in an n*P. An adjective is a word that describes properties of the noun's referent (Richards, 1993). The adjective is said to be attributive if it occurs inside an n*P. In languages with agreeing adjectives, the attributive adjective always expresses agreement with the noun that it modifies (Baker, 2003; Dixon, 2004). The underlined words in the following examples agree with, and describe the attributes of, the nouns that they modify:

21. a. lo-lu u-phondo o-lu-khulu
 DEM-11AGR 11-horn C-11AM-big
 'this big horn'
- b. l-ona le-li i-li-tshe e-li-bu-tshelezi
 5AGR-it DEM-5AGR AUG-5-stone C-5SM-14-smooth
 'this smooth stone'

- c. i-li-zwe e-li-jomb-ile-yo le-li
 AUG-5-country C-5SM-bankrupt-TNS-RS DEM-5AGR
 'this bankrupt country'

The underlined 'word forms' in (21) appear to be attributive adjectives. (22) illustrates one possible way in which the syntactic structure of (21a) could be represented if this assumption was adopted.

22. a. lo-lu u-phondo o-lu-khulu
 DEM-11AGR 11-horn C-11-big
 'this big horn'

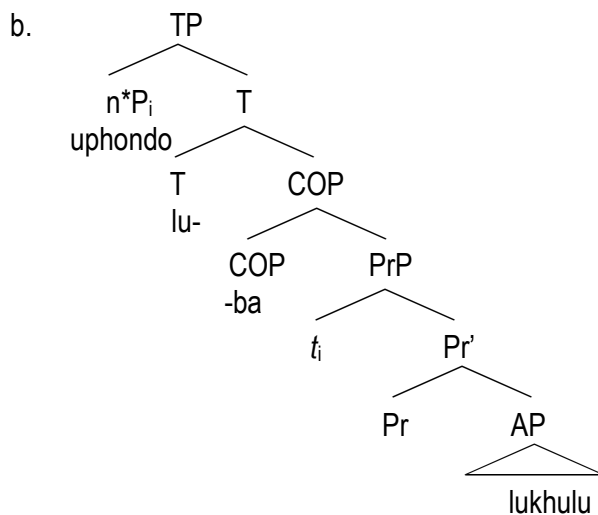


According to (22b), the attributive predicate construction *olukhulu* in (22a) is an AP that merges with the noun. The resulting NP merges with D to form a DP, which in my analysis is the complement of n^* . However, below I will argue that this representation of attributive adjective constructions is incorrect. Rather, adjective constructions are full CPs.

Other than modifying a noun in an n^*P , adjectives may occur after copular verbs in a predicate. Bowers (1993) argues that in these predicative adjective constructions, an AP is selected by the functional

category Pr (for predication)⁸. The Pr functional category: (1) introduces subject arguments in spec Pr; (2) merges with an AP in the derivation of predicative adjectives; (3) is selected by copular; (4) expresses the semantic function of predication (Bowers, 1993, p. 595). A Ndebele sentence such as (23a), which is based on the copular *-b-*, would be represented as in (23b), following Bowers's analysis:

23. a. u-phondo lu-b-a lu-khulu
 11-horn 11SM-be-FV 11AM-big
 'the horn is becoming big'



As shown in (23), the AP *lkhulu* is selected by Pr, Pr introduces the subject argument of the adjective in its specifier, and PrP is selected by COP; COP is selected by T. The subject n*P moves to spec T and triggers subject agreement with T. This syntax represents *lkhulu* as a predicative adjective.

According to the representations in (22b) and (23b), *olukhulu* is an attributive adjective category because it appears n*P-internally and modifies the noun, while *lkhulu* is a predicative adjective that merges with Pr, which is the complement of the copular verb in a predicate.

⁸In Bowers' (1993) analysis, Pr can select a verb phrase (VP), an adjective phrase (AP), a noun phrase (NP) or a prepositional phrase (PP).

However, I return to the derivation of Type 1, Type 2 and Type 3 adjectives in sections 5.5 and 5.6 where I argue that adjectives are relative clauses that are based on predicative adjectives. I also reject Bowers' (1993) view that the argument of adjective is introduced by Pr in spec Pr. Rather, I argue, following core assumptions of the DM-framework, that the argument of the adjective is introduced as the argument of the root. In the following section, I present the morphosyntax of Doke's adjectives (Type 1 adjectives) and Doke's relatives (Type 2 and Type 3 adjectives).

5.4 Doke's adjectives and relatives

Doke (1927) employs a word class approach to the study of attributive adjectives in Nguni. According to this approach, the attributive function in Nguni is fulfilled by the attributive adjective word and the attributive relative word. Doke (1927) notes that the attributive adjective word and the attributive relative word have a role of qualifying a noun in a noun phrase (p. 100). The adjective word consists of an adjective concord and an adjective root while the relative consists of a relative concord and a relative stem. This approach has been adopted for Ndebele by Ndebele (1987), Hadebe (2001), Khumalo (2003), Ndebele (2004), Mawadza (2009) and Mabuza (2012). According to this school of thought, there are fifteen adjectival roots in Ndebele (Hadebe, 2001; Khumalo, 2003; Ndebele, 2004; Mawadza, 2009):

24. Adjectival roots in Ndebele

-de 'tall'	-fitshane 'short'	-khulu 'big'	-ncane 'small'
-tsha 'new'	-dala 'old'	-hle 'good'	-bi 'bad'
-nengi 'many'	-ngaka 'this size'	-nye 'one'	-bili 'two'
-thathu 'three'	-ne 'four'	-hlanu 'five'	

According to Doke (1927), the adjectival concord consists of a qualificative marker *a-* and a noun class prefix plus augment. Doke (1927) alleges that the qualificative marker (QM) *a-* merges with the augment

vowel to derive the surface forms *a-*, *e-* and *o-* found in the adjectival concords. Note that the glossing in this section does not reflect the analysis that I will ultimately present, but is adjusted to the Dokean analysis that I discuss here:

Table 13: The structure of adjective concords

Noun class	QM + noun class prefix	Adjective concord	Adjective
1	a- + umu-	omu-	omu-de 'the tall one'
2	a- + aba-	aba-	aba-fitshane 'short ones'
3	a- + umu-	omu-	omu-de 'the tall one'
4	a- + imi-	emi-	emi-bi 'bad ones'
5	a- + ili-	eli-	eli-hle 'the good one'
6	a- + ama-	ama-	ama-khulu 'big ones'
7	a- + isi-	esi-	esi-ncane 'small one'
8	a- + izi-	ezin-	ezin-de 'tall ones'
9	a- + in-	en-	en-tsha 'new one'
10	a- + izin-	ezin-	ezim-bili 'the two ...'
11	a- + ulu-	olu-	olu-de 'the tall one'
14	a- + ubu-	obu-	obu-hlanu 'the five ...'
15	a- + uku-	oku-	oku-thathu 'the three ...'

The adjectives modify a noun in an n*P as follows:

25. a. z-o-nke i-zi-hlahla ezin-kulu
 8AGR-PM-all AUG-8-tree 8AC-big
 'all the trees that are big'
- b. leyi i-n-ja en-dala
 DEM-9AGR AUG-9-dog 9AC-old
 'this dog that is old'

As mentioned above, relatives (Type 2 and Type 3 adjectives in my analysis) consist of relative concords and relative stems and they qualify a noun in a noun phrase just like adjectives (Type 1 adjectives). Like adjective concords, the relative concords consist of a QM and a noun class prefix. In contrast to adjective concords that retain nasal noun class prefixes in classes 1, 3, 4, 6, 9 and 10, the classifiers that commence with nasals are deleted in the formation of relative concords of the nasal classes. Nkosi and Msomi (1992) argue that the nasals and vowels that follow nasals in concords are deleted in the formation of relative concords while adjective concords retain nasal agreement markers (p. 86). For example:

- | | | | | |
|-----|----|-----------------------|--------------|--------------------|
| 26. | a. | u-m-fana | o-mu-de | (Doke's adjective) |
| | | AUG-1-boy | QM-1-tall | |
| | | 'a boy that is tall' | | |
| | b. | u-m-fana | o-qatha | (Doke's relative) |
| | | AUG-1-boy | QM-[1]-stout | |
| | | 'a boy that is stout' | | |

The class 1 noun class prefix is deleted in the formation of Doke's relatives. This contrast is seen in the formation of class 1, 3, 4, 6, 9 and class 10 adjectives/relatives. Table 14 illustrates the deletion of a noun class prefix that commences with a nasal:

Table 14: The structure of adjective concords and relative concords

Class	QM + noun class	Adjective concord	Relative concord
1	a- + umu-	omu-	omu-
2	a- + ba-	aba-	aba-
3	a- + umu-	omu-	omu-
4	a- + imi-	emi-	emi-
5	a- + ili-	eli-	eli-
6	a- + ama-	ama-	ama-
7	a- + isi-	esi-	esi-
8	a- + izi-	eziN-	eziN-
9	a- + in-	eN-	eN-
10	a- + iziN-	eziN-	eziN-
11	a- + ulu-	olu-	olu-
14	a- + ubu-	obu-	obu-
15	a- + uku-	oku-	oku-

As shown in Table 14, nasals and the subsequent vowels are deleted in the formation of the relative concords. The non-occurrence of nasals in the relative concords is said to be distinguishing Type 2 and Type 3 adjectives from Type 1 adjectives. Table 14 also shows that the adjective concords and the relative concords are identical in non-nasal classes.

On the relation between predicative adjectives and Type 1, 2 and 3, Ndebele (2004) notes that the QM is deleted when forming predicatives of the non-nasal classes (27a) whereas the vowels *u* and *i* replace QM when forming class 4/9 (27b) and 1/3 (27c) predicative relatives (respectively) from attributive relatives:

27.	<u>Attributive relative</u>		vs	<u>Predicative relative</u>	
a.	i-li-tshe	eli-nzima	vs	i-li-tshe	li-nzima
	AUG-5-stone	5RC-heavy		AUG-5-stone	5SM-heavy
	'the stone that is heavy'			'the stone is heavy'	
b.	i-n-dlela	e-banzi	vs	i-n-dlela	i-banzi
	AUG-9-path	9RC-wide		AUG-9-path	9SM-wide
	'the path that is wide'			'the path is wide'	
c.	u-mu-ntu	o-m-hlophe	vs	u-mu-ntu	u-m-hlophe
	AUG-1-person	1RC-1/3-white		AUG-1-person	1SM-1/3-white
	'the person who is white'			'the person is white'	

Doke's approach to attributive adjectives is not unproblematic. Firstly, the Dokean proposal that an adjective is a single word form falls short of accounting for analytic adjectives in (28b & 28c).

28.	a.	i-khanda	<u>eli-khulu</u>	
		5-head	5AC-big	
		'the head that is big'		
	b.	i-khanda	<u>e-se-li-si-b-a</u>	<u>li-khulu</u>
		5-head	QM-EXCL-5SM-STA-be-FV	5AM-big
		'the head that is now becoming big'		
	c.	i-khanda	<u>eli-nga-kaze</u>	<u>li-b-e</u> <u>li-khulu</u>
		5-head	5RC-NEG-never	5SM-be-FV 5AM-big
		'the head that has never been big'		

The relative constructions in (28) express attributive adjective function. In contrast to the underlined

construction in (28a) which may qualify to be referred to as a word, the underlined constructions in (28b) and (28c) are clearly larger than a word. The so-called qualificative marker *a-* that appears to be combining with an adjective marker to form an adjective concord *eli-* in (28a), however, is prefixed to an inflected copular verb in (28b) and to an inflected auxiliary verb (28c) rather than to the adjective stem -*khulu* 'big'. Moreover, (28b) shows that an aspect marker may intervene between the qualificative marker and the subject agreement marker.

Secondly, the occurrence of person agreement markers in complex adjectives presents yet another problem for the Dokean approach. Since the approach posits that adjective concords are formed by combining the qualificative vowel *a-* and an augment of the noun class prefix that attaches to the adjectival root, one would expect the QM to be *a-* rather than *e-* in (29):

29. a. th-ina e-si-ba-de
 1PL-it QM-1PL-2AM-tall
 'we who are tall'
- b. li-ina e-li-ba-tsha
 2PL-it QM-2PL-2AM-youth
 'you who are youthful'

The examples in (29) show that that the qualificative vowel is not always adjacent to the noun class marker, and that it is unlikely to undergo coalescence with an augment when it is adjacent to a first or second person subject marker. The word class approach cannot explain the existence and the role of the person agreement markers in the preceding examples.

Thirdly, genuine attributive adjectives cannot concatenate with pronouns in a construction (*you tall/ tall

you; *youthful you/ you youthful). The fact that this concatenation is grammatical in Ndebele suggests that the above constructions in (29) ('we who are tall'; 'you who is youthful') are clausal rather than adjectival.

Fourthly, the occurrence of two subject agreement markers in complex adjectives also militates against the word class approach to adjectives. If it is true that adjective agreement concords are derived by prefixing a qualificative vowel to a noun class prefix, one would not expect to find two subject agreement markers in a single adjective. However, as noted above, this is what one finds in some attributive adjective constructions:

30. a. i-si-londa e-si-nga-sa-b-i si-khulu
 AUG-7-wound QM-7AM-NEG-PROG-become-FV 7AM-big
 'a wound that is no longer becoming big'
- b. i-si-londa e-si-nga-se-si-khulu
 AUG-7-wound QM-7SM-NEG-EXCL-7AM-big
 'a wound that is no longer big'
- c. i-si-londa e-si-nga-se-bu-hlungu
 AUG-7-wound QM-7SM-NEG-EXCL-14-pain
 'the wound that is no longer painful'

As seen in (30), the Type 2 adjectives have a single subject agreement morpheme (30c) while Type 1 adjectives may have two subject agreement morphemes in a single word form (30a & 30b). Two agreement morphemes appear in complex adjective constructions (with negated adjectives and in analytic adjective constructions involving a copular verb). The question pertains to the role and status of the second agreement morpheme (the one added to the adjective stem) in Type 1 adjectives and why

the second agreement morpheme does not occur in Type 2 adjectives shown in (30c).

Lastly, the appearance of /n/ in the class 8 adjective concord militates against the word class approach. The alveolar nasal /n/ should not be part of the so-called adjective concord if it is true that the adjective concord is formed by a qualificative marker *a-* and a noun class prefix (*a-* + *izi-* > *ezi-* for class 8 adjective concord). According to this principle, the adjective concord for class 8 should be *ezi-* (31b) rather than **ezin-* (31a) because the class 8 prefix is *izi-* rather than *izin-*.

- | | | | |
|-----|----|--|------------|
| 31. | a. | i-zi-khulu | e-zin-kulu |
| | | AUG-8-rich.person | QM-8-big |
| | | 'the richmen that are great' | |
| | b. | *i-zi-khulu | e-zi-khulu |
| | | AUG-8-rich.person | QM-8-big |
| | | Intended: 'the richmen that are great' | |

It is for these reasons that the word class approach to attributive adjectives should be rejected.

5.5 The syntactic status of adjectives

In this section I argue that all the three types of adjectives are relative clauses rather than lexical categories. These relative clauses are based on three types of predicative adjectives: Type 1, Type 2 and Type 3 predicative adjectives. I maintain that subject relative clauses are derived by prefixing C to the predicate of the relative clause.

All the three types of adjectives are akin to subject relative clauses that are based on verbal predicates. In fact, according to Doke, the synthetic subject relative clause *ezikhonkothayo* 'that are barking' in (24)

is a Type 2/ Type 3 adjective. In subject relative clauses, as stated in 3.2.2 and 4.5.3, the subject is null because the head of n*P is identified by subject agreement, and the complement of n* (= OP) has moved to spec C, and the complementiser head (/)a- is prefixed to the relative verb and adjusts to the height of the vowel of the subject marker. The first element of the subject relative clause is C + relative verb (32):

32. i-zin-ja e-zi-khonkoth-a-yo
 AUG-10-dog C-10SM-bark-FV-RS
 ‘the dogs that are barking’

When the lexical verb is selected by auxiliary verbs, C is prefixed to the auxiliary verbs:

33. a. i-n-ja e-nga-soze i-khonkoth-e kakhulu
 AUG-9-dog C-[9SM]-NEG-wont 1SM-bark-TNS much
 ‘the dog that won’t bark much’
- b. i-n-ja e-nga-kaze i-khonkoth-e kakhulu
 AUG-9-dog C-[9SM]-NEG-never 9SM-bark-TNS much
 ‘the dog that has never barked much’

(33) shows that C does not always prefix to the lexical verb. Rather, C is prefixed to the first element of an analytic relative predicate in the formation of subject relative clauses. Thus attributive function is fulfilled by a relative clause in Ndebele.

All the three types of adjectives commence with the vowels a-, e- and o- that are analogous to the C that occurs in verbal relative clauses. I therefore argue that Doke’s qualificative morpheme is a C-head and that all the three types of adjectives are in fact subject relative clauses that are based on adjectival

predicates. This means that the main predicate of a relative clause can either be a verb, as in (33) and in the constructions discussed in the preceding chapters, or an adjective, as in (34) and in the constructions discussed in this chapter. In either case, C is prefixed to the first element of the predicate and marks the embedded sentence as a relative clause. Following this analysis, the underlined constructions in the following examples are subject relative clauses:

34. a. i-zi-hlahla e-zin-kulu zi-w-ile
 AUG-8-tree C-[8SM]-8AM-big 8SM-fall-TNS
 'the trees that are big have fallen'
- b. i-hloka e-li-bu-khali
 5-axe C-5SM-14-sharp
 'the axe that is sharp'
- c. a-ba-fana a-ba-qatha
 AUG-2-boy C-2SM-stout
 'the boys that are stout'

(34) shows adjective constructions based on the three Types of adjectives that were introduced in section 5.2. In all cases, C is prefixed to a synthetic relative based on the adjectival predicate to derive a simple one-word relative clause. As with verbal relatives, C adjusts to the height of the vowel element of the subject agreement marker. However, (35c) differs from verbal relatives (35a) in that the subject agreement marker that determines the shape of C is deleted:

35. a. i-zi-hlahla e-zi-w-ile-yo
 AUG-8-tree C-8SM-fall-TNS-RS
 'the trees that have fallen'

- b. *l-i-na* *e-li-ba-hle*
 2PL-you-EM C-2PL-2AM-beautiful
 ‘you who are beautiful’
- c. *i-zi-hlahla* *e-zi-zin-kulu* *zi-w-ile*
 AUG-8-tree C-[8SM]-8AM-big 8SM-fall-TNS
 ‘the trees that are big have fallen’

In (35a) and (35b), the subject agreement markers that determine the shape of C are retained. In contrast, the subject agreement marker that determines the shape of C is deleted in (35c). As argued in 5.2.1, the subject agreement marker of Type 1 adjectives is deleted when neither an aspect marker nor a negation marker is not involved in the formation of adjectives. I assume that the subject agreement marker *-zi-* is deleted in (35c) because the morphology of the predicative adjective involves neither an aspect marker nor a negation marker. A similar view is articulated by Posthumus (2000). According to Posthumus (2000, p.154), the subject agreement marker is deleted when it expresses the same semantic values (3rd person, number and class gender) as the adjective marker. According to this view, the second person subject agreement marker in (35b) cannot be deleted because the adjective marker cannot express first person and second person. In (35c), the subject agreement marker is deleted because both the subject agreement marker and the adjective marker express third person, plural and class gender.

The question would then arise from this analysis: is there any evidence that the deleted element in (35c) is the subject marker, and not the adjective marker? The clear evidence is in class 8. The class 8 subject marker is *zi-* whereas the class 8 adjective marker is *zin-/ zim-*. I suggest that the occurrence of *zin-* in (35c) shows that the deleted element is the subject agreement marker *zi-*. I therefore maintain that the subject agreement marker may be deleted when T directly selects a Type 1 adjective stem.

C is prefixed to an analytic relative based on the adjectival predicate to derive a complex relative clause (a clause with two or more words). As with synthetic relative clauses, C adjusts to the height of the vowel element of the subject agreement marker. However, analytic relative clauses differ from synthetic relative clauses in that C attaches to a word that does not morphologically merge with the adjective stem. This disproves the view that C is prefixed to the adjective marker and that the Type 2 and Type 3 adjectives have agreement markers.

Interestingly, subject agreement markers appear on an inflected auxiliary verb *kaze* 'never' and on the inflected copular *-b-* 'become' when the relative predicate is analytic. The following examples further illustrate the point that C does not attach to the adjective stem and that the attributive function is expressed by a relative clause in Ndebele:

- | | | | | | | |
|-----|----|---|-----------------|------------|----------|---------|
| 36. | a. | i-si-hlahla | e-si-nga-kaze | si-b-e | si-khulu | kakhulu |
| | | AUG-7-tree | C-7SM-NEG-never | 7SM-be-TNS | 7AM-big | very |
| | | 'the tree that has never been very big' | | | | |
| | b. | i-hloka | e-li-b-a | bu-khali | kakhulu | |
| | | AUG-5-tree | C-5SM-be-FV | 14-sharp | very | |
| | | 'the axe that is becoming very sharp' | | | | |
| | c. | i-n-dlela | e-b-a | banzi | kakhulu | |
| | | AUG-9-path | C-[9SM]-be-FV | wide | very | |
| | | 'the path that is becoming very wide' | | | | |

In (36a) C is prefixed to the inflected auxiliary whereas in (36b) and (36c) C is prefixed to the inflected copular. The relative clauses in (36) commence with C and end with the adverb *kakhulu* 'very'. The core meaning of the clause lies in the Type 1 predicative adjective *sikhulu* 'big' in (36a) and in the Type 2

predicative adjective *bukhali* 'sharp' in (36b). In (36c), the core meaning of the relative clause lies in the Type 3 adjective *banzi* 'wide'. The clauses in (36) and the ones in (36) fulfil the attributive adjective function. The former are simple relative clauses that are represented by one word while the latter are complex relative clauses (a clause that is made up of more than one word).

Aspect, tense and mood markers and a copular verb may also intervene between C and the adjective stems. In the following examples, aspect, tense and mood markers are prefixed to the copular verb *-b-* 'become' and this inflected copular does not affix to the adjective stems. Rather, C+inflected copular verb is the initial element of the clause, followed by the adjective *mmandilqatha* 'nice'/'stout', and the adverb *kakhulu* 'very' is the terminal element of the clause:

- | | | | | | |
|-----|----|------------------------------------|----------------------|----------|---------|
| 37. | a. | i-si-kwa | e-si-za-ku-b-a | m-nandi | kakhulu |
| | | AUG-7-bread | C-7SM-TNS-INF-be-FV | 1/3-nice | very |
| | | 'the bread that will be very nice' | | | |
| | b. | i-n-dodana | e-sa-zo-ku-b-a | | qatha |
| | | AUG-9-son | C-PROG-TNS-INF-be-FV | | stout |
| | | 'the son who will be stout' | | | |

As shown in (37), C combines with subject markers rather than with noun class prefixes and the attributive function is fulfilled by a clause rather than a word.

Importantly, tense, aspect, negation and subject markers are prefixed to the adjective when the auxiliaries *-kaza/-soze/* copular are not involved in the formation of the relative clause. In such cases, the tense marker (38a), aspect marker (38b) or the negation marker (38c) select the adjective directly as follows:

38. a. i-li-tshe e-li-nzima
 AUG-5-stone C-5SM-heavy
 'the stone that is heavy'
- b. i-n-tombi e-s-i-n-hle
 AUG-9-young lady C-EXCL-9SM-9AM-beautiful
 'the young lady that is now beautiful'
- c. i-hloka e-li-nga-bu-khali
 5-axe C-5SM-NEG-14-sharp
 'an axe that is not sharp'

This shows that a synthetic relative predicate is formed when verbal prefixes (tense, aspect and negation) directly select the adjective. In contrast, an analytic relative predicate occurs when the adjective is selected by the copular verb *-b-* 'become' and auxiliary *-kaze* 'never'. The adjective appears in its basic form (without C, tense, aspect and mood markers; Type 1 adjectives only bear an agreement marker, while Type 2 adjectives only bear the invariable class marker) in an analytic relative predicate. I therefore maintain that attributive adjectival function is fulfilled by relative clauses rather than by an attributive adjective category and that the adjective category is predicative in Ndebele.

5.6 The relation between Type 1, Type 2 and Type 3 adjectives

As highlighted above, Type 1 adjectives agree with the head noun while Type 2 and Type 3 adjectives do not express agreement with the head noun. The Type 2 adjectives have an invariable prefix whereas Type 3 adjectives are free morphemes. There is a need to (1) determine the status of the agreement marker that always prefixes to the adjective stem in Type 1 adjectives, (2) ascertain the status of the invariable prefix that occurs in Type 2 adjectives and (3) to explain why Type 3 adjectives are free morphemes. In this section I discuss the relation between all the three types of adjectives. I will focus on

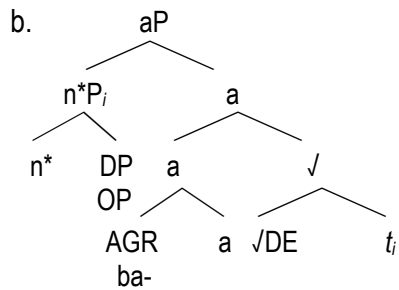
their internal structure and then highlight the differences and similarities. Finally, I will briefly discuss the relativisation of predicative adjectives.

According to DM, an adjective is derived from an acategorial root by merging with an adjectiviser head (the little *a*) (see chapter 2, section 2.2.1). In order to capture the difference between Type 1, Type 2 and Type 3 adjectives found in Ndebele, I suggest that there are two types of adjectiviser heads (the little *a*) in Ndebele:

39. a. *a* [u-root, u-antifocus, EPP, A-feature, u-phi]
 b. *a* [u-root, u-antifocus, EPP, A-feature]

The adjectiviser in (39a) participates in the formation of Type 1 adjectives whereas the adjectiviser in (39b) occurs in the formation of Type 2 and Type 3 adjectives. In the formation of Type 1 adjectives, the argument of the adjective is introduced as an argument of the root, and then the root merges with the little *a* to derive an adjective stem. The uninterpretable antifocus feature on the little *a* probes the derivation and agrees with the antifocused argument *n**P, and then the EPP feature of the adjectiviser head attracts an antifocused argument *n**P that agrees with the little *a* to spec *a*. I assume that the little *a* has uninterpretable gender and number, but no person features. The uninterpretable gender and number features on the little *a* are valued by the antifocused argument *n**P that has moved to spec *a*. Recall from chapter 2 that an agreement node is added at PF to spell-out the phi-features that were valued in syntax. As a result, the gender and number features on the little *a* are copied to the agreement node and they are spelt out as adjective markers:

40. a. ba-de
 2SM-tall
 'tall'



The adjective marker that is added to the little *a* always expresses the gender and number of the argument of the adjective in a Ndebele relative clause. Person agreement between first/second *n*P* and little *a* is impermissible in Ndebele Type 1 adjectives because the adjectiviser head has no person features:

41. *i-i-na e-li-li-hle
 2PL-you-EM C-2PL-2PL-beautiful
 Intended: 'you who are beautiful'

The following table further shows that person adjective markers are not attested in Ndebele and that adjective markers closely resemble the noun class prefixes:

Table 15: Noun class prefixes and adjective markers in Ndebele

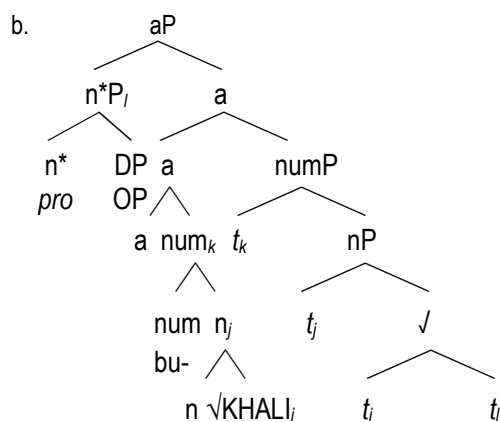
Noun class prefixes	Adjective markers
1SG	*ngi-
1PL	*si-
2SG	*u-
2PL	*li-
1 u-mu-	mu-
2 a-ba-	ba-
3 u-mu-	mu-
4 i-mi-	mi-
5 i-li-	li-
6 a-ma-	ma-
7 i-si-	si-
8 i-zi-	zin-/zim-
9 i-N-	in-
10 i-ziN-, i-zim-, i-m-	zin-/zim-
11 u-lu-	lu-
14 u-bu-	bu-
15 u-ku-	ku-

The analysis that adjective markers only express gender and number features in Ndebele is in sync with the standard minimalist assumptions. According to standard minimalist assumptions, phi-agreement of a DP with a probe values the DP's Case feature, and then the DP is inactive. In the Type 1 adjective constructions, however, the n*P agrees with *a*, but then can enter a second agreement relation with T after having agreed with *a*. This possibility follows if little *a* does not have person features, and if it is assumed that a probe without person features is not phi-complete and therefore defective, and not able to value the Case feature of n*P.

As stated above, the little *a* in (39b) is involved in the derivation of Type 2 adjectives. Type 2 adjectives

are an instance of secondary derivation. Recall from chapter 2 that the categorisers do not only merge with roots. Rather, a categoriser head can select a word form that has been categorised already. Following this thought, I assume that Type 2 adjectives are derived by merging the little *a* with a number phrase. The numP contains a root, little *n* and num. Following Kramer (2015), I maintain that the gender feature is on the *n* head and number features on the num head. In this analysis, the root is assigned gender by merging with the little *n*, and then the categorised noun moves to num for number values. Fusion combines little *n* and *num* and the derived node is spelled out as a class marker. In the derivation of Type 2 adjectives, the little *a* denominalises the numP by merging with the numP.

42. a. m-hlophe
 1/3-white
 'white'



The little *a* that participates in the formation never agrees with the argument because the little *a* has no u-gender and u-number features. Therefore, an adjective marker is ungrammatical in Type 2 adjectives. The following examples show that the invariable class marker cannot be replaced with an adjective marker (43a) and that the co-occurrence of a class marker and an adjective marker is ungrammatical (43b):

43. a. *i-hloka e-li-za-ku-b-a li-khali
 5-axe C-5SM-TNS-INF-be-FV 5SM-sharp
 Intended: ‘the axe that will be sharp’
- b. *i-hloka e-li-za-ku-b-a li-bu-khali
 5-axe C-5SM-TNS-INF-be-FV 5SM-14-sharp
 Intended: ‘the axe that will be sharp’

As shown in (43), the adjectiviser selects and denominalises a noun (only lacks an augment) which means that an invariable class marker is a noun class prefix. The invariable class marker that occurs in Type 2 adjectives spells out the gender and number feature values. Generally, a noun never agrees with another noun. Rather, nouns in Ndebele agree with the predicate (verbal predicate/ nominal predicate) and with members of n*P such as demonstratives, possessives, quantitatives and pronouns. Therefore, the class marker in Type 2 adjectives can never agree with the argument of the adjective.

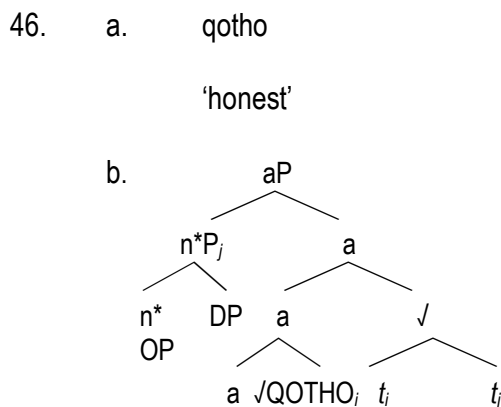
Note that even if the class marker was to agree with the argument of the adjective, such agreement will be restricted to a limited number of noun classes. My claim is premised on the fact that a noun stem only takes a restricted number of noun class prefixes in Nguni (Cope, 1984; Canonici, 1990). For example, the noun stem *-khali* merges with class 7, class 8 and class 14 only:

- | | | | | | | |
|-----|----|--------------|----|--------------|----|------------------|
| 44. | a. | i-si-khali | b. | i-zi-khali | c. | u-bu-khali |
| | | AUG-7-weapon | | AUG-8-weapon | | AUG-14-sharpness |
| | | ‘a weapon’ | | ‘weapons’ | | ‘sharpness’ |
| | | | | | | |
| 45. | a. | *u-m-khali | b. | *a-ba-khali | c. | *i-mi-khali |
| | | AUG-1-sharp | | AUG-2-sharp | | AUG-4-sharp |
| | | ‘a weapon’ | | ‘weapons’ | | ‘sharpness’ |

- | | | | | | |
|----|----------|----|-------------|----|--------------|
| d. | *i-khali | e. | *ama-khali | f. | *u-lu-khali |
| | 5-sharp | | AUG-6-sharp | | AUG-11-sharp |

As shown in (44), the acategorical root /KHALI only merges with gender + number that is specified for gender C (class 7/8) and gender G (class 14) and never with other genders (45). Following the analysis of Type 2 adjective bases as noun stems, I suggest that the little *a* strictly selects a few noun stems from classes 1/3, 6, 9, 11 and class 14 in the formation of Type 2 adjectives. This explains why invariable class markers which occur in Type 2 adjectives are class 1/3 *m-*, class 6 *ma-*, class 9 *m-*, class 11 *lu-* and class 14 *bu-* only.

As noted in the beginning of this section, the little *a* that participates in the derivation of Type 3 adjectives does not have u-phi features. As a result, the little *a* in Type 3 adjectives never agrees with the argument of the adjective. This little *a* merges with an acategorical root directly and then it attracts the argument of the adjective to spec *a* as shown below:



The major difference between Type 1 adjectives and Type 2 and Type 3 adjectives is that the little *a* that participates in the formation of Type 1 adjectives has u-phi features whereas the little *a* that participates in the formation of Type 2 and Type 3 adjectives does not have the u-phi features. As a result, Type 3

adjectives do not express adjective agreement.

In the derivation of adjective constructions, the derived aP next merges with the predicate head Pr (Bowers, 1993) to form a predicative phrase (Pr). In Bowers' (1993) analysis, Pr can select a verb phrase (VP), an adjective phrase (AP), a noun (NP). In Bantu, non-verbal predication does not include a verb (Baker, 2003; Zeller, 2013; Buell & de Dreu, 2013). Rather, non-verbal predication in Bantu includes an adjective phrase, a noun phrase or a prepositional phrase that combines with the functional head Pr. According to the abovementioned authors, the argument of the relevant AP, NP or PP predicate is always introduced in spec Pr.

I adopt the view that in the derivation of adjective constructions, a Pr-head merges with the adjectival predicate, which I have argued is an aP with all types of adjectives. However, I argue against the view that the subject argument of adjective constructions is introduced in spec Pr. Rather, as stated prior, I argue that subject arguments merge as root arguments and then move to higher positions. My claim that the arguments of adjectives are introduced in spec a is based on the word order of constructions in which the subjects of adjective constructions appear predicate-internally in declarative clauses. (47) shows that both the canonical S-A word order (47a) and the inverted A-S word order (47b) are possible in adjective constructions in Ndebele:

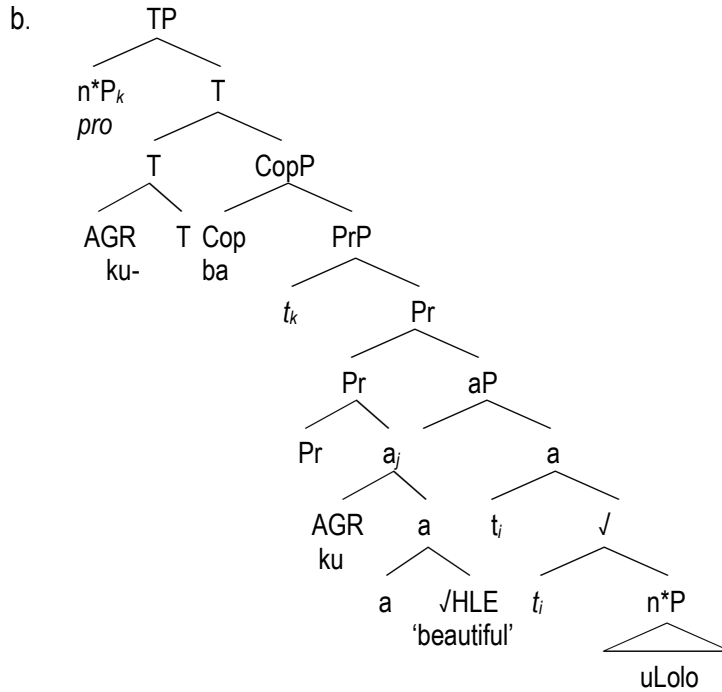
47. a. u-Lolo u-b-a mu-hle
 1a-Lolo 1SM-become-FV 1AM-beautiful
 'Lolo is becoming beautiful'
- b. ku-b-a ku-hle u-Lolo kuphela
 EXPL17SM-become-FV EXPL17AM-beautiful 1-Lolo only
 'only Lolo is becoming beautiful'

In (47a), the subject *uLolo* precedes the predicative adjective *uba muhle* 'is becoming beautiful' and agrees with both the adjective *-hle* 'beautiful' and the copular verb *-b-* 'become'. In contrast, in the inverted structure in (47b), both the copular verb *-b-* 'become' and the adjective *-hle* 'beautiful' precede the subject *uLolo* 'Lolo'. A class 17 expletive marker *ku-* is prefixed to both the copular verb and the adjective in (47b). Furthermore, the subject argument of the adjective is modified by the focus marker *kuphela* 'only'. This focus marker cannot appear with predicate-external n*Ps in Nguni, but is licensed when the n*P has remained inside the predicate (Buell, 2006; 2008; Buell & de Dreu, 2013; Zeller, 2008; 2013; Carstens & Zeller, 2020). The occurrence of *kuphela* therefore shows that the argument of the adjective has remained in a predicate-internal position in (47b).

Interestingly, Buell and de Dreu (Buell & de Dreu, 2013, p. 434) contend that subject arguments of non-verbal predicates in the Nguni language Zulu are never allowed in predicate-internal position. The example in (47b) shows that the view that internal subjects are illicit with non-verbal predicates does not hold for Ndebele.

In order to account for the word order in (47b), I suggest that Pr selects aP in Ndebele, but that the argument of the adjective is introduced as an argument of the root, and can remain in this position in declarative sentences. The adjective, which has moved to a now moves to Pr, and therefore precedes the aP-internal argument n*P when this n*P remains in its base position. Recall from chapter 2 that Pr introduces an expletive subject *pro* in the derivation of an expletive sentence construction. The EPP feature on T then attracts the expletive subject *pro* to spec T as follows:

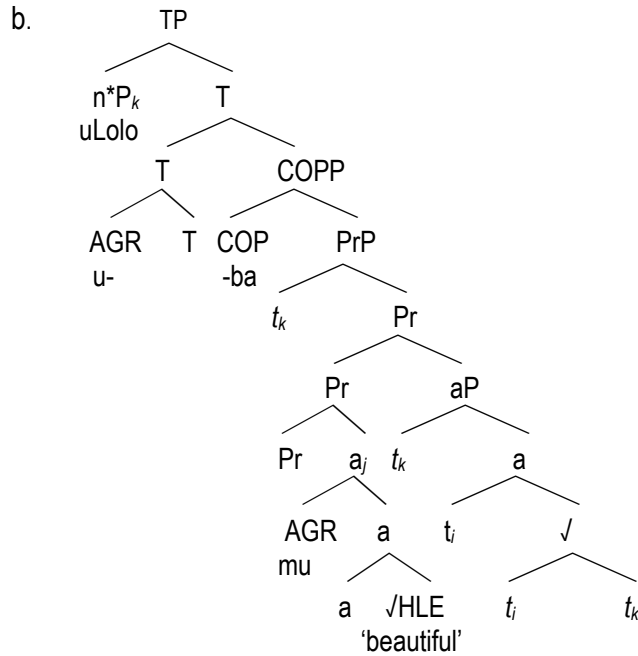
48. a. ku-ba ku-hle u-Lolo kuphela
 EXPL17-become-FV EXPL17AM-beautiful 1-Lolo only
 'only Lolo is becoming beautiful'



In (48), there is an expletive subject *pro* and the logical subject *uLolo*. The logical subject is focused and the expletive subject agrees with the adjective and the copular.

However, an antifocused argument vacates PrP. The antifocused argument of the adjective first merges as the complement of the root. The uninterpretable antifocus feature on the little *a* agrees with the argument and EPP attracts the argument to spec *a* where the argument values *u*-gender and *u*-number features on the little *a*. From here, the argument moves to spec Pr to value the *u*-A feature of the Pr head. Finally, the argument agrees with T and EPP attracts the argument to spec T as follows:

49. a. u-Lolo u-b-a mu-hle
 1a-Lolo 1SM-be-FV 1AM-beautiful
 'Lolo is becoming beautiful'

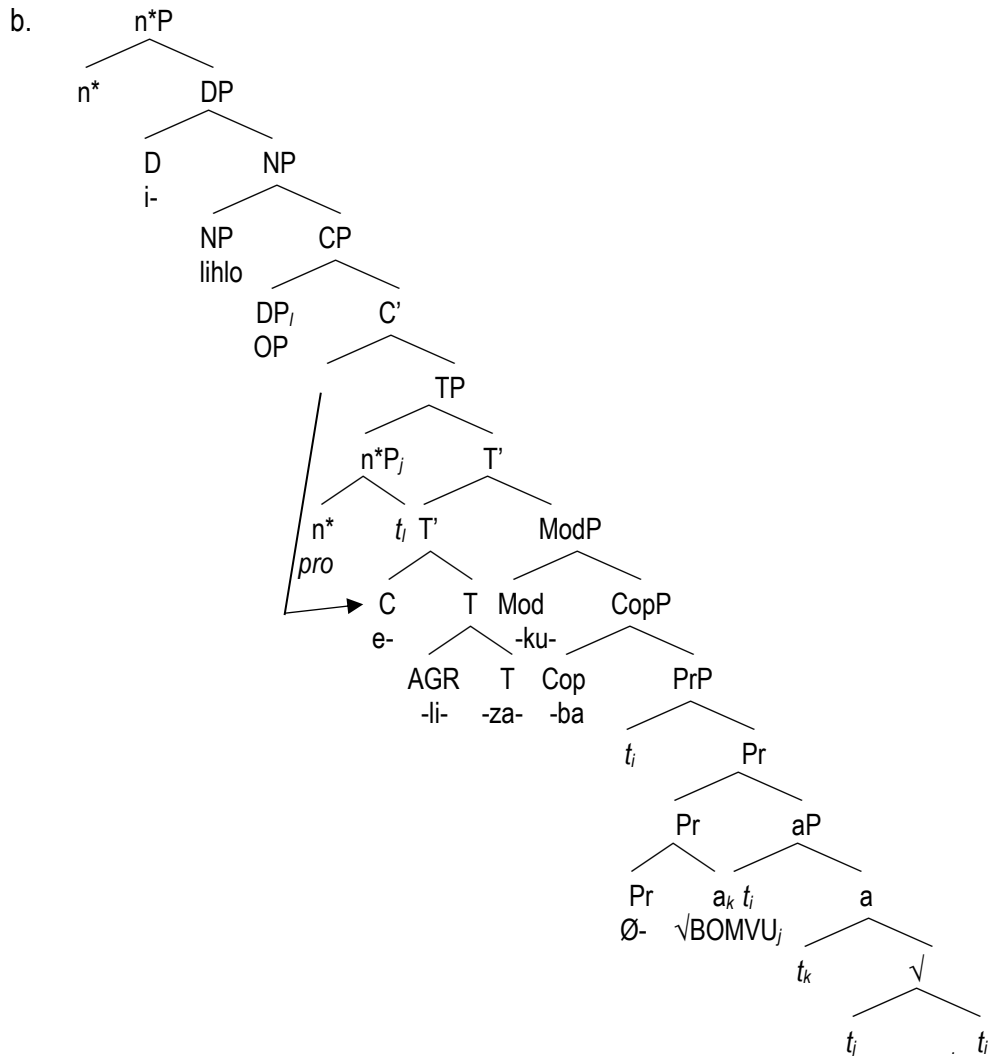


Let me now return to attributive adjective constructions, which are relative clauses in my analysis. Since the subject n^*P of a subject relative clause is always antifocused, this subject can never remain inside aP and will always move out of aP to higher positions (spec Pr and spec T). When T selects PrP directly, the subject n^*P moves to spec T and values the u-phi features on T. When nothing intervenes between T and PrP, the result is a synthetic relative predicate. The same applies when the predicate is negated and a Neg-projection intervenes between T and PrP, as in example (50) below. The operator marked DP is then extracted from n^*P , leaving the n^* head (= *pro*) stranded in spec T (see chapter 4). After spell out, an agreement node is added to T and then C-to-T head lowering combines C with the synthetic relative predicate:

51. *u-mu-ntu y-e-na o-m-khulu
AUG-1-person 1AGR-it-EM C-1AM-big
Intended: 'a person who is big'

However, as discussed above, adjective predicates in Ndebele can also be analytic, which is the case when PrP is selected by the copular *-b-*. In this case, the copular takes verbal prefixes such as the subject marker, tense, aspect, mood and negation and the adjective appears in its basic form. The subject n*P of the relative clause moves from spec Pr to spec T where it values the u-phi features on T. The subject marker spells out the valued u-phi features on T. C then extracts the operator from the subject n*P leaving the n*-head stranded in spec T.

52. a. i-li-hlo e-li-za-ku-b-a bomvu
 AUG-5-eye C-5SM-TNS-INF-become-FV red
 'an eye that will become red'



Adjective-to-Pr head movement raises the adjective *bomvu* to Pr to value the u-A feature on the Pr head and the two heads conflate to form a complex head (Pr+A). The derived head does not move out of Pr for two reasons. First, the copular does not have an u-pred feature to trigger Pr-to-Cop head movement. Secondly, the u-V/Pr feature on T agrees with the copular *-b-* rather than with the Pr head because the copular is closer to T than Pr is to T. As shown in (52), when PrP is selected by a copular verb *-b-*, the constructions C+inflected copulative and PrP do not conflate. Rather, an analytic relative clause

consisting of C+inflected copular and a PrP are borne out. The copular verb *-b-* takes verbal prefixes (a final vowel, tense, aspect, mood and negation) but it never conflates with PredP. Lastly, (53) shows that the subject n*P [a big n*P consisting of a RP and an OP] is introduced as an argument of the root and moves to spec T via spec a and spec Pr. C then extracts the relative OP and strands the RP *pro* at spec T and then C lowers to T.

5.7 Conclusion

This chapter focused on Type 1, Type 2 and Type 3 adjectives. I argued that all the three types are subject relative clauses that are based on predicative adjectives. There are analytic relative clauses and synthetic relative clauses. The analytic relative clauses commence with the C head that prefixes to an inflected copular stem, an inflected tense stem or an inflected negation stem. The combination of C+copular/tense/negation is followed by a predicative adjective. A synthetic relative clause is a one word relative clause where C and other prefixes such as the subject marker, negation and aspect markers are prefixed to the predicative adjective. The synthetic relative clause is erroneously treated as a word by the Dokean school of thought. I argue that both synthetic relative clauses and analytic relative clauses are formed via relativisation.

The initial vowel that appears with Type 1, Type 2 and Type 3 adjectives is a C-head which marks all the three types of adjectives as relative clauses. The C head lowers to T and adjusts to the height of the vowel element of the subject marker. The C head always prefixes to the first element of the relative predicate. If the relative predicate is analytic, C prefixes to the inflected copular *-ba*, or inflected auxiliaries *-soze/-kaze*. In the absence of these auxiliaries, C and other prefixes (subject marker, negation and aspect) prefix to the predicative adjective to derive a synthetic relative predicate. When this synthetic relative predicate is not followed by the adverb, we get a one word relative clause. However, when followed by an adverb we get an analytic relative clause.

I identified three types of adjectives: Type 1 adjectives, Type 2 adjectives and Type 3 adjectives. The adjectives are formed using either an adjectiviser head that has unvalued u-phi features or one that does not have phi features. The former participates in the formation of Type 1 adjectives and the unvalued phi features are spelt out as adjective markers. These adjective markers always combine with the adjective stem and they express noun class agreement with the head noun. The Type 2 and Type 3 adjectives do not express agreement because the head that participates in the formation of these adjectives does not have the phi features. When this head merges with an already categorised root we get Type 2 adjectives. I argued that the invariable prefix that occurs in Type 2 adjectives is a class marker and that in the formation of these adjectives, the adjectiviser head selects a number phrase. However, when this head directly merges with a root, we get Type 3 adjectives that are free morphemes. Finally, I contended that the argument of subject relative clauses based on adjective predication introduced as the argument of the root and then move to spec T via spec a and spec Pr. The relative operator is then extracted from the subject n*P at spec T, leaving the n* head stranded in spec T. As discussed in chapter 4, the stranded n* head is never spelt out in subject relative clauses, which is why attributive adjective constructions in Ndebele never include overt resumptive pronouns.

CHAPTER SIX: CONCLUSION

This study discussed issues in Zimbabwean Ndebele relativisation. These issues include: the position and status of the relative marker (/)a-, the shape of the relative marker, the relation between the relative operator and the resumptive pronoun, the morphology and syntax of resumptive pronouns, and the morphology and syntax of adjectives and adjective constructions.

In chapter 3, I examined the position and the status of the relative marker (/)a- which occurs in Ndebele relative clauses. This marker occurs in the relative clause initial position in strategy 2 relatives where it is prefixed either to the subject of the relative clause or to the left dislocated object while it occurs inside the relative clause in strategy 1 relatives where it is affixed to the verb. I proposed that the relative marker (/)a- is a functional complementiser root. I captured the existence of two different relativisation strategies by postulating two different complementisers with different morpho-syntactic properties. The first complementiser has a weak T feature that forces C to lower and morphologically merge with T in morphology. This results in the subject - C+verb word order.

One of the claims defended in chapter 3 is that C adjusts to the height of the vowel of the subject marker. I identified three types of agreement markers: consonant vowel agreement markers, glide vowel agreement markers and vocalic agreement markers. I argued that the vocalic agreement markers are deleted after adjusting (/)a-. This analysis is in line with Khumalo's (1992) claim that the vocalic subject marker is always deleted in the formation of relative clauses in Zulu. I suggested that the raising of complementiser vowels is a result of *adjacent partial progressive* assimilation when the subject marker is vocalic.

However, there is always a consonant or a glide when C is prefixed to a non-vocalic subject marker. This means C and the vowel element of the subject marker are non-adjacent. I proposed that *distant partial*

progressive assimilation takes place in such scenarios. The proposed analysis works well even in cases where C is prefixed to a person agreement:

1. i-n-to e-ngi-yi-fun-a-yo
 AUG-9-thing C-1SG-9OM-want-FV-RS
 'the thing which I want'

The complementiser that participates in the formation of the second strategy does not have T features and as such it does not lower to T. Instead, this complementiser has agreement features. The complementiser agrees with the relative operator and the head noun, and C adjusts to the height of the vowel element of the complementiser. I defended the view that C combines with a complementiser agreement in the formation of strategy 2 relatives whereas C combines with the subject marker in the derivation of strategy 1 relative clauses.

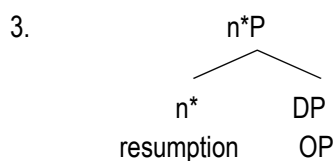
Importantly, C morphologically merges with either the subject of the relative clause to derive *C+subject* – *verb word order* (2a) or the left dislocated object of the non-subject relative clause to derive *C+object* – *subject- verb word order* (2b).

2. a. i-si-zwe e-si-n-dlebe zi-khany-a i-langa
 AUG-7-nation C-7CA-10-ear 10SM-see-FV 5-sun
 'the nation whose ears are transparent' (Nyathi, 1994, p. 139)
- b. u-m-fazi o-ba-ntwana b-a-khe *u-dadewethu* u-ba-limaz-ile
 AUG-1-wife C-[1CA]-child 2AGR-POS-your 1-my sister 1SM-2OM-hurt-TNS
 'the lady whose children my sister hurt' (Poulos-Msimang, 1998, p. 162f)

The chapter addressed the occurrence of augmentless nominals in strategy 2. It was observed that an augmentless nominal is only acceptable if and only if it morphologically merges with the complementiser. Adopting Halpert's (2015) argument licensing theory, I argued that C licenses the occurrence of either an augmentless left dislocated object n*P in the topic position (2b) or an augmentless relative subject n*P in spec T (2a). C then merges in phonology with the adjacent augmentless nominal. I proposed that a C that has agreement features is a case licenser in Ndebele.

Chapter 4 examined the status of subject markers in subject relative constructions and the status of object markers in non-subject relative constructions where the head noun corresponds to the grammatical role of the object marked n*P. It was established that gaps occur in subject n*P and in object n*P position when the relative verb agrees with the subject of the relative subject (in subject relatives) and the object marked n*P (in non-subject relatives). I reviewed the pronominal analysis of subject/object markers and the phi-driven agreement analysis. These analyses posit that agreement is subject to locality constraint. However, evidence from double object constructions show that agreement is not driven by phi features. Rather, in keeping with the antifocus analysis, I argued that agreement is driven by antifocus agreement and that SMs and OMs are spellout of the features that are valued by the object marked n*P that has been extracted and copied to spec X. I conclude that OMs and SMs license the occurrence of *pro* n* head that is left stranded in spec X and spec T after the extraction of the OP.

Adopting the big-DP hypothesis, I then suggested that a resumptive pronoun selects the relative operator marked DP as its complement and it can mark the whole n*P as either antifocus or focused:



I argued that n^* is realised as *pro* when it is antifocused and when it triggers subject and object agreement. In subject relative clauses, for example, the antifocused n^* , together with its complement, agrees with T and moves to spec T where it triggers subject agreement. n^* is identified as subject when it values the u-phi features of T. In non-subject relative clauses, n^* must agree with X and move to spec X where it values the u-phi features of X. I suggested that a null n^* only appears in spec T and spec X after agreeing and valuing the u-phi features of T and X respectively. This analysis entails that subject agreement and object agreement are triggered and controlled by an n^* that has vacated vP and that *pro* is always dislocated in Ndebele.

A clitic resumptive pronoun realises n^* if and only if n^* is selected by a prepositional head. I argued that the extraction of n^*P from PP is blocked because such a movement will result in prepositional stranding. As a result, clitic resumptive pronouns strictly occur inside a prepositional phrase in Ndebele. Importantly, I argued that the operator marked DP is extracted from n^*P and copied first to spec X. From here, the operator marked DP is attracted to spec C. Based on the claim I made that object agreement is triggered by n^* that moves to spec X, I contended that the operator marked DP that moves from PP to spec X cannot trigger object agreement because n^* is left behind inside PP. This explains why a relative operator that is extracted from PP never controls object agreement.

- | | | | | |
|----|----|--|-------------------------------------|-----------------------|
| 4. | a. | i-n-dlu
AUG-9-house

'the house in which I stay' | e-ngi-hlal-a
C-1SG-stay-FV | ki-y-o
LOC-9AGR-it |
| | b. | *i-n-dlu
AUG-9-house

Intended: 'the house in which I stay' | e-ngi-yi-hlal-a
C-1SG-OM-stay-FV | ki-y-o
LOC-9AGR-it |

Finally, I argued that strong resumptive pronouns strictly occur in focused positions. A focused n*P does not control agreement in Ndebele which explains why strong resumptive pronouns never agree with the verbs. Following Zeller (2014), I maintained that movement from VP proceeds via X. I assumed that the operator marked DP is extracted from a focused object n*P and copied to spec X and then to spec C.

Chapter 5 examined the morphology and syntax of Doke's 'adjectives' and 'relatives'. I contended that the attributive function is the result of deriving a subject relative clause from a predicative adjective. This is achieved by prefixing the complementiser to an inflected predicative adjective. Based on the evidence from declarative sentences, I proposed that the argument of the adjective (consisting of n* and an operator marked DP) is introduced as the argument of the root and then moves to spec T via spec *a* and spec Pr. The operator marked DP is extracted from the n*P in spec T and copied to spec C leaving n* stranded in spec T. The stranded n* is spelled out as *pro* because it is identified by the subject agreement. This analysis challenges the traditionally held belief that there are attributive adjectives and attributive relatives in Ndebele (Ndebele, 1987; 2004; Hadebe, 2001; Khumalo, 2003; Mabuza, 2012).

The chapter advances the thought that adjectives are complements of copular and auxiliary verbs in Ndebele. I argued that adjectives are derived by merging the adjectiviser and acategorial roots or a categorised stem. I identified three types of adjectives. This typology is based on the feature structure of the adjectiviser that participates in the derivation of a given adjective. In the formation of Type 1 adjectives, the adjectiviser head bearing u-phi features merges with acategorial roots. The u-phi features are valued by a subject n*P in syntax and an agreement node is added to A in the morphological branch. The added node copies phi features from A and this node is spelled out as an adjective marker. This marker expresses agreement with all noun classes.

I postulated the existence of another little *a* that has no agreement features. This head participates in the

formation of Type 2 and Type 3 adjectives. These adjectives do not express subject agreement mainly because the adjectiviser head that participates in their formation does not have agreement features. Type 2 adjectives contrast with Type 3 adjectives in that the Type 2 adjectives have an invariable class marker prefix. I argued that the little *a* selects a #P in the formation of Type 2 adjectives while the little *a* selects an acategorial root in the formation of Type 3 adjectives.

I also identified analytic and synthetic adjectives. In analytic adjectives, C is prefixed to the inflected copular *-ba*, or inflected auxiliaries *-soze/-kaze* and the adjective appears in its basic form. A synthetic adjective obtains when neither the copular *-ba* nor the auxiliaries *-soze* and *kaze* are not involved in the formation of adjectives. In the absence of these auxiliaries, C and other prefixes (subject marker, negation and aspect) are prefixed to the basic adjective.

6.1 Further research

In this study entitled 'Issues in relatives and relativisation in Ndebele', I have discussed the status of (*l*)*a*-, agreement marking, resumption and the morpho-syntax of adjectives and Dokes' 'relatives'. The following issues need further study:

The head noun – possessor relation: The relation between the head noun and the possessor was highlighted in the study. It emerged that strategy 2 of forming relative clause is only possible when the head noun corresponds to the possessor regardless of whether it is overt or covert. However, no attempt was made to ascertain as to why strategy 2 is only possible with *head noun- possessor constructions* in Ndebele. Further study is required to establish why strategy 2 relatives are only restricted to such constructions.

Moreover, I observed that strategy 2 is only possible with subject possessor in Ndebele whereas the

head noun can correspond to the subject possessor, direct object possessor and to the complement of a prepositional head in Zulu. A study that addresses the contrast between strategy 2 relativisation in Ndebele and Zulu will be invaluable to relativisation scholarship.

Crucially, from the languages that were sampled in this study, it is only in the Nguni language family where C is attached either to the subject n*P of the relative clause (C+S-V word order) or to the left dislocated object n*P relative clause (C+O-S-V word order):

5. a. i-n-doda e-m-fazi u-ya-gul-a
 AUG-9-man C-[9CA]-1-wife 1SM-DIS-ill-FV
 'the man whose wife is ill'
- b. u-m-fazi o-ba-ntwana b-a-khe *u-dadewethu* u-ba-limaz-ile
 AUG-1-wife C-[1CA]-child 2AGR-POS-her 1-my sister 1SM-2OM-hurt-TNS
 'the lady whose children my sister hurt' (Poulos-Msimang, 1998, p. 162f)

(5a), C attaches to the relative subject to derive the C+S –V word order while in (5b) C attaches to the left dislocated object marked n*P to derive the C+O – S- V word order. These two word orders were not reported in all the languages that were sampled in this study. C is either autonomous or attaches to the relative verb in these languages. Further research is required to establish whether this phenomenon is specific to the Nguni strategy 2 relative constructions or whether it is attested in other language families.

The link between the feature structure and relative word order: in chapter 3 I examined the relation between the feature structure of C and the relative word order in Bantu. I suggested that there are four types of C-heads that correspond to four relative word orders. In section 3.5.1, I proposed a classification of relative clause constructions that is based on the feature structure of C and the relative word order. I

argued that the relative word order reflects the feature structure of the C-head that participates in the formation of a given RC. Thus, the feature structure of C and the relative word order are vital in the classification of Bantu relative constructions. I suggested that Type A relative constructions have a C-S-V word order and that the C-head that participates in these constructions has the following features: EPP, u-rel and phi. Type B relative constructions have the *C+V – S word order* and the C-head that participates in the formation of these constructions has the following features: EPP, u-rel, u-phi, and a strong u-T. I suggested a third type (Type C) of relative constructions. Type C relative constructions have the *S – C+V word order* and the C-head of Type C constructions has the following features: EPP, u-rel, u-phi and weak u-T. S-C+V word order. The last type is Type D. The C-head that participates in the formation of Type D relative constructions has the EPP, u-rel and a weak u-T *feature*. These constructions have a S-C+V word order. However, further work is required to ascertain whether there are other languages that demonstrate relative word order that is different from the four types that I have suggested in this study.

Moreover, the data that was discussed in this study show that some Bantu languages use self-standing relative pronouns and self-standing Cs while other languages either use clitic C or have no segmental C markers. A study that traces the development of synchronic C markers across Bantu languages will be invaluable in relativisation scholarship.

The preposition – clitic pronoun link: in chapter 4 I addressed the extraction of an operator marked DP from PP. I argued that the movement of the whole n*P is barred as it results in prepositional stranding. I maintained that the stranded n* is spelled out as a clitic resumptive pronoun and that clitic resumptive pronouns strictly occur in PPs. I advanced the view that extraction from PP is licensed by a clitic resumptive pronoun.

However, I did not address the question as to why only clitic resumptive pronouns license the extraction

of the OP. Further study is needed to explain why strong pronouns are ruled out from licensing the extraction of the OP from a PP in Bantu.

C and structural licensing: In chapter 3 I discussed the relation between the occurrence of an agreeing C and an augmentless object topic or subject in Ndebele. I proposed that C licenses either the dislocated augmentless object to occur in spec Top or the augmentless subject to occur in spec T. I further proposed that C merges in phonology with the licensed augmentless noun. Further study is needed to ascertain the possibility of having C as a case licenser in other Bantu languages, especially in languages that employ the augment in nouns and in Type A languages which have a self-standing C.

Regardless of the three issues that I have ear marked for future research, this thesis has given a comprehensive study of the morpho-syntax of relative clause constructions in Ndebele. The data and the analysis presented in this study are vital in comprehending relative clause marking, resumption and agreement variations in Ndebele relatives and relative clauses, and the morpho-syntax of adjectives in general.

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