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Issues in Zulu Verbal Morphosyntax

A dissertation submitted in partial satisfaction
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Doctor of Philosophy in Linguistics

by

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The dissertation of Leston Chandler Buell is approved.

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To my parents, who told me I could do anything.
To George, who stood by me while I tried.

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PUBLICATIONS

Leston Buell (2003). Introducing arguments above the agent: the case of Zulu locative applicatives. *WCCFL Proceedings*, pages 109-122.

Leston Buell (2002). Swahili *amba*-less relative clauses without head movement. *UCLA Working Papers in Linguistics*, pages 86-106.

ABSTRACT OF THE DISSERTATION

Issues in Zulu Verbal Morphosyntax

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This dissertation explores diverse issues in Zulu verbal morphosyntax assuming both a close correspondence between morphology and syntax and a restrictive theory of syntax allowing only left adjunction of heads and phrases. Among the issues explored are the composition of the verb stem, including verbal extensions such as reciprocal and causative; the nature of the verbal final suffix; stem selection and suffix selection; and difficulties in accounting for dependencies between various pieces of verbal morphology. A chapter is devoted to the short/long verb form alternation found in the present and recent past tenses, showing that the alternation cannot be described in terms of focus. An analysis based on constituency within the framework assumed is shown to require remnant movement to form the relevant constituents. Finally, an analysis is provided of a Zulu construction in which a locative applicative argument raises to subject position, leaving the agent with certain object-like properties. It is argued that differences between this and another locative applicative construction can be accounted for by assuming that in one construction the locative phrase is merged above the agent, while in the other construction the locative phrase is merged below the agent.

CHAPTER 1

Introduction

This dissertation will discuss a variety of syntactic and morphological issues concerning the Zulu verb within a highly restricted theory of syntax and under the assumption that there is a very close correspondence between syntax and morphology. Specifically, the syntax and morphology are constrained by restrictions imposed by Kayne's (1994) Linear Correspondence Axiom, the assumption that heads are subject to the same restrictions on movement and adjunction as phrases, and the assumption that morpheme ordering closely reflects the morphemes' underlying or derived syntactic hierarchy. This chapter will lay out the theoretical assumptions, give an overview of the Zulu language, and preview the issues to be addressed in subsequent chapters.

1.1 Theoretical assumptions

Linear Correspondence Axiom. Kayne (1994) introduces a principle relating the linear order of a string with the asymmetric c-command relations holding between constituents. The consequences of this principle, known as the Linear Correspondence Axiom or LCA, will be assumed in this dissertation. The most relevant consequences of the LCA here are these:

- No right branching.
- No rightward movement.
- No multiple specifiers.
- Adjuncts and specifiers are structurally identical, a head can have either one specifier or one adjunct, but not both.

The LCA can be summarized roughly by saying that c-command in syntax is mapped to the linear order of pronounced material, such that if a non-terminal category X asymmetrically c-commands a non-terminal category Y, then all terminal nodes dominated by X precede all terminal nodes dominated by Y. The ordering must be total, meaning that if the order of any two nodes in a structure cannot be determined by the asymmetric c-command relations of their dominating nodes, that structure is illicit.

A consequence of this principle is that complements are always to the right of their selecting heads, while all specifiers are to the left of their heads, To see why, consider the following structure for the hypothetical string *yoyo xo zozo*:[1]

(1)　a.　Surface string: *yoyo xo zozo*

　　　b.

$$
\begin{array}{c}
* \text{XP} \\
\diagdown \\
\text{X}' \quad \text{ZP} \\
\diagup\diagdown \qquad \text{zozo} \\
\text{YP} \quad \text{X}^0 \\
| \qquad | \\
\text{Y}' \quad \text{xo} \\
| \\
\text{Y}^0 \\
| \\
\text{yoyo}
\end{array}
$$
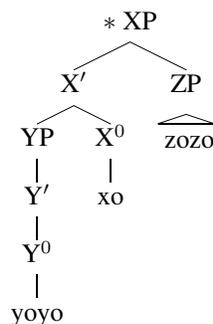
The phrase markers in this dissertation will use the familiar X-bar notation rather than the notational variant used in Kayne. The structure in (1b) is incorrect for the string given because the asymmetric c-command relations it embodies do not map correctly onto the linear order. In this tree, ZP, a right-hand specifier, asymmetrically c-commands YP and X^0, and, according to the assumed mapping, all terminal nodes dominated by ZP (namely *zozo*) must precede all terminal nodes dominated by YP and by X^0 (*yoyo* and *xo*, respectively), while precisely the opposite linear order obtains. Similarly, if we consider YP, the left-hand complement of X^0 in (1b), we see that X^0 asymmetrically c-commands Y^0 and should hence precede it, when in fact *xo*, the terminal node dominated by X^0, actually follows *yoyo*, the terminal node dominated by Y^0.

In contrast to the incorrect structure in (1b), a structure in which a head precedes its complement and a specifier precedes its head perfectly satisfies the Linear Correspondence Axiom for the string given. Such a structure is shown in (2):

(2)

$$
\begin{array}{c}
\text{XP} \\
\diagup\diagdown \\
\text{ZP} \quad \text{X}' \\
\diagup\diagdown \quad \diagup\diagdown \\
\text{zozo} \quad \text{X}^0 \quad \text{YP} \\
\qquad | \qquad | \\
\text{xo} \quad \text{Y}' \\
\qquad\qquad | \\
\text{Y}^0 \\
| \\
\text{yoyo}
\end{array}
$$

---
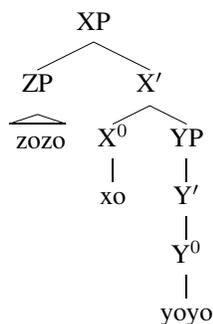
[1]This discussion is somewhat simplified. For the relevant formulation of c-command and for a discussion of precisely which nodes enter into the calculation of asymmetric c-command relations, refer to Kayne (1994).

In this tree, we see that ZP, the left-hand specifier of X^0, asymmetrically c-commands both X^0 and YP, and that the terminal node dominated by ZP (namely *zozo*) precedes the terminal nodes dominated by X^0 and YP (namely *xo* and *yoyo*), exactly as the mapping from syntactic structure to linear order demands. Note that for the same reason that a specifier must precede its head, an adjoined phrase must precede the phrase to which it is adjoined. Adjuncts and specifiers in this framework are essentially the same thing.

Another consequence of the Linear Correspondence Axiom, and one which will play a major analytical role in this dissertation, is the impossibility of right adjunction (as figured in (3b)) of one head onto another in the syntax, while left adjunction (as in (3c)) is allowed:

(3)   a.   Surface string: *yo xo*

      b.   Left adjunction (allowed)

$$X^0$$
$$Y^0 \quad X^0$$
$$yo \quad xo$$
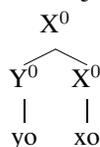
      c.   Right adjunction (disallowed)

$$*Y^0$$
$$Y^0 \quad X^0$$
$$yo \quad xo$$
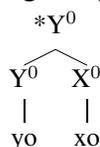
The right-adjunction structure in (3c) is incorrect for the string given because X^0 asymmetrically c-commands Y^0 but follows it linearly, in violation of the structural/linearity mapping, while in (3b) it is Y^0 which asymmetrically c-commands X^0, in keeping with the mapping. (Understanding the c-command relations in this case would require a discussion of the distinction between nodes which are categories and those which are segments, for which the reader is referred to Kayne (1994).)

Further syntactic consequences to assuming the Linear Correspondence Axiom include the impossibility of rightward movement. Any apparent rightward movement of any given constituent will thus be treated as leftward movement with subsequent remnant movement around that constituent. Consider, for example, the rightward movement of an indirect object in a double object construction, assuming that this is a movement operation. The indirect object (IO) is assumed to merge higher than the direct object (DO), as in the simplified structure in (4):

(4)   Before movement: V IO DO

      a.   U- mama   u-   nik- e   a- bantwana a- maswidi.
          1-   1.mother 1.SBJ- give- PERF 2- 2.children   6- 6.candy

"The mother give the children candy."

b.

```
        V
          IO
              DO
```
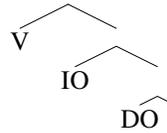
(5)   After movement: V DO IO

    a. U- mama   u-   nik- e   a- maswidi a- bantwana.
       1- 1.mother 1.SBJ- give- PERF 6- 6.candy   2- 2.children

    "The mother give the children candy."

    b. i.

```
        IO_i
             V
                t_i
                    DO
```

      ii.

```
             _i i
        V              IO_i   t_i
            t_i
                DO
```
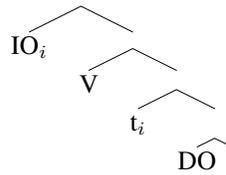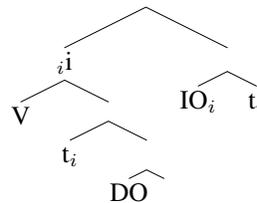
Obtaining the seemingly rightward movement of the indirect object will require first moving it leftward, as in (5b.i), and then moving everything below it to an even higher position, either as a single constituent as in (5b.ii) or in smaller pieces.

    Finally, the LCA, with its requirement of a total ordering derivable from asymmetric c-command, does away with the possibility of multiple specifiers, multiple adjuncts, and specifier/adjunct combinations.

Morphology and Mirror Principle effects.   There are two opposing views on the question of where morphology resides in the human language faculty. Under a lexicalist view, morphology is a discrete linguistic component on par with syntax and phonology. In the opposing view, morphemes are composed in the syntax, and there is no discrete morphological component, as such. In this dissertation, the latter approach will be taken, in a way compatible with Borer's Parallel Morphology (Borer 1988), Distributed Morphology (Halle and Marantz 1993; Halle and Marantz 1994), which assume some morphological principles, and Koopman (2002), which does not, and with Koopman and Szabolcsi (2000) and Julien (2003) in allowing words to be built by phrasal movement.

In this conception of the language faculty, morphemes are heads which are merged and manipulated in the same way as phrases. Thus, morpheme ordering is a function of the internal syntactic structure of words and can thus be used as a diagnostic for syntactic structure. This is the view of morphology to be taken here, which will become particularly relevant in the construction of verb forms.

The Mirror Principle (Baker 1988) stipulates that morphemes appearing closest to the verb root are structurally lower than those appearing further to the periphery. Under the conception of morphology assumed here, Mirror Principle effects are not the result of a principle per se, but rather reflect the transparent composition of morphemes in syntax. Due to this conception, combined with the assumption of the Linear Correspondence Axiom, Mirror Principle effects involving the relative ordering of suffixes comes about in a different fashion from that for prefixes. Consider the subject marking and tense morphology of Spanish and Zulu in (6):

(6) a. Spanish

      cant_1- aba_2- s_3
      sing-   IMPERF- 2S

      "you sang, used to sing"

  b. Zulu

      w_3- $\hat{\text{a}}_2$- cul_1- a
      2S- PST- sing- FV

      "you sang"

It is assumed that the universal underlying hierarchy of the verb root (V), tense (T), and subject agreement (AgrS) is $\text{AgrS}_3 > \text{T}_2 > \text{V}_1$ (numbered with the lowest number corresponding to the lowest in the underlying structure). In Spanish, the tense and subject morphemes are both suffixes. In this case, the Mirror Principle effect that the tense morpheme *-aba* appears closer the verb root than the subject agreement morpheme *-s* comes about from the verb root first moving to precede the tense morpheme, then moving the resulting V+T string to precede the subject agreement morpheme, resulting in V+T+AgrS. Conversely, in the case of Zulu, the tense and subject morphemes are both prefixes. Because we are assuming that there can be no right adjunction (adjunction of a lower head onto the right-hand side of the higher one), here the Mirror Principle effect of the tense morpheme of being closer to the verb root than is the subject agreement morpheme is the result of the verb root remaining in a position lower than the tense morpheme, rather than adjoining to it.

Clause structure.   Clause structure is assumed to be divided into three major regions. The way in which these will be described here ignores certain complications, but this

simplified view is sufficient for our purposes here. The lowest of these is the thematic domain, in which the verb enters the syntactic structure, as well as any arguments are introduced, including the subject (the "external argument"), along with any valence-changing morphemes (such as passive and causative). The thematic domain is often also referred to as the verbal domain (V domain), and this is how it will be referred to here. Atop the verbal domain sits the inflectional domain (I domain), where morphemes related to tense, aspect, negation, and subject agreement are merged. And at the top of the clause is the complementizer domain (C domain) (Rizzi 1997), in which complementizers, illocutionary particles, and projections concerning topic and focus are merged. This view differs from mixed systems in which inflectional heads can be merged within the thematic domain (Travis 1984) or where certain complementizer projections are available under the inflectional domain (such as the low focus positions proposed by Belletti (2001) and Ndayiragije (1999)). No claim is made here as to the possibility of such inflectional or complementizer projections outside of their canonical domains, but no use of them is made in this thesis and the availability of a low focus position in Zulu is specifically argued against in chapter 5. (Or rather, it is argued that clauses with short verb forms do not alone provide evidence for such a position.)

1.2   An overview of the Zulu language

Zulu (or IsiZulu[2]) is a Bantu language of the Nguni cluster spoken primarily in South Africa (especially the southeastern provinces of KwaZulu and Natal), but it also has speakers in Swaziland, Lesotho, Zimbabwe, and Malawi. Zulu is highly mutually intelligible with other Nguni languages such as Ndebele, Xhosa, and Swati. It is extensively used as a lingua franca by speakers of Bantu languages in the region. The number of South Africans citing Zulu as their home language numbered 8.5 million in 1998, or 22.4% of the population, but it is estimated to be understood by over 80% of the black population of South Africa (Sanneh 2001).

Zulu is an SVO language with a large number of noun classes (about 15 of them, depending on how they are counted) triggering agreement on verbs, adjectives, and other elements. It has a very rich system of tense and aspect, expressed in a variety of simple tenses with optional aspectual affixes, compound tenses allowing composition of many of the simple tenses, and a large number of auxiliary verbs.

---

[2]Bantu languages will be referred to throughout by their bare stem name only. This is consistent with the fact that Bantu languages add class prefixes even to non-Bantu languages (such as Zulu *isiNgisi* "English") and that they translate class prefixes in the names of other Bantu languages rather than retaining the source-language prefix (such as Swahili *Kizulu* "Zulu"). Forms such as *IsiZulu* and *IsiXhosa* are particularly odd in English because the initial syllable (the preprefix) is actually a determiner. English borrowings from Nguni languages uniformly drop this initial determiner. For example, the Zulu word *isangoma* "witchdoctor" is borrowed into South African English as *sangoma*.

Zulu has both lexical and grammatical tone, and the complex way in which tones interact with each other, with a series of breathy consonants known as "depressors", and with phrase boundaries often makes it difficult for the second-language learner to determine the underlying tone of a given morpheme and hence to predict the tonal contours of a given polymorphemic surface form.[3] No tonal information is indicated in the standard orthography.

Zulu boasts newspapers and magazines, and to a lesser extent also books and serious literature. It has long been taught in schools, even during the apartheid era, and has acquired a standard form, based on the Natal (southeast coast) dialect. Zulu has also been used for many years in radio and television. With the adoption of a new constitution in 1994, which established multi-ethnic rule in South Africa, Zulu became one of the country's eleven national languages.

To aid the reader in reading the example sentences, a few words on orthography and pronunciation are in order. Stress is always on the penultimate syllable. The *h* in the combinations *ph*, *th*, and *kh* indicates aspiration. *Bh* is breathy *b*. *Hh* is voiced *h*. *Hl* and *dl* represent voiceless and voiced lateral fricatives, respectively. The voiceless, unaspirated clicks of Zulu are written as *c* (dental), *q* (retroflex), and *x* (lateral). Each of these clicks can occur as aspirated (*ch, qh, xh*), prenasalized (*nc, nq, nx*), voiced (*gc, gq, gx*), or voiced and prenasalized (*ngc, ngq, ngx*).

Related languages. Data from other Bantu languages such as Swahili, Lega, and Nsenga will be brought into the discussion at various points. Substantial weight is given to Xhosa, which will be treated essentially as a dialect of Zulu in this discussion. Xhosa brings important additional material to the discussion, because much work has been done on that language in the fields of both syntax and phonology (notably tonal phonology).

1.2.1 Noun classes and agreement morphology

As is emblematic of Bantu languages, Zulu has a large system of noun classes, which can be thought of as a system of grammatical gender. More than one convention exists for labeling and referring to these classes, most of which are essentially numbering systems. The system used in this paper, developed by Carl Meinhof (1948), is that used in most scholarly work, which allows comparison of corresponding classes across Bantu languages, all of which lack at least some of the classes posited for proto-Bantu. In Zulu, most of the classes can be set off into pairs, such that most nouns have a singular form in one class and a plural form in another. For example, most if not

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[3]I cannot resist the temptation to quote Khumalo here: "It is usually very difficult to distinguish the high+down-gliding-low falling tone from the raised-down-gliding-low tone."

Class	Augment	Prefix	Stem	Gloss
1	u-	m-	fana	"boy"
2	a-	ba-	fana	"boys"
1a	u-	∅	baba	"father"
2a	o-	∅	baba	"fathers"
3	u-	m-	fula	"river"
4	i-	mi-	fula	"rivers'
5	i-	li-	gama	"name"
6	a-	ma-	gama	"names"
7	i-	si-	hlalo	"seat"
8	i-	zi-	hlalo	"seats"
9	i-	∅	nkomo	"cow"
10	i-	zi-	nkomo	"cows"
11	u-	(lu-)	phondo	"horn"
10 (bis)	i-	zi-	mpondo	"horns"
14	u-	bu-	mnyama	"darkness"
15	u-	ku-	cula	"to sing"
17		ku-		(locative)

Table 1.1: Zulu noun classes

all nouns of class 7 (such as *isikole* "school", *isandla* "hand", and *isihlalo* "seat") are singulars which have a plural counterpart in class 8 (*izikole* "schools", *izandla* "hands", *izihlalo* "seats"). The noun classes of Zulu are shown in table 1.1, with an example noun for each class.

It will be noted in the table that each noun is actually preceded by not one prefix but two. The first of these is termed the "augment" (or "preprefix"), which can be thought of as a type of article, and the second the "class prefix". Nouns exhibiting the augment will be called "augmented". Nouns are usually encountered in their augmented form, and this is also their citation form. Nouns lacking the augment will be referred to as "bare" or "unaugmented". Bare nouns function primarily as negative polarity items, with the meaning of "none, any", as in:

(7) A-   ngi-   fun- i   zincwadi.
     NEG- 1S.SBJ- want- NEG 10.books

     "I don't want any books."

To shorten the glosses, the augment will always appear separately, but the class prefix will be glommed onto the noun stem except for class 15 (the infinitive class), as explained below. The augment will be glossed simply by its class number:

8

(8) i- zincwadi
    10- 10.books
    "books"

Only a few remarks on particular noun classes are relevant to the syntactic issues at hand:

a. Most class 1a and 2a nouns are either terms of kinship (such as *ugogo* "grand-mother"), proper names of people (such as *uSipho* "Sipho (man's name)"), borrowings (which may be non-human, such as *ubhanana* "banana"), or animals (though this is not the class in which most animals are found).[4] The classes 1 and 1a are distinguishable only by their nominal morphology. The agreement morphology which they trigger on adjectives, verbs, and the like is identical. The same is true for classes 2 and 2a. This being the case, the glosses will not indicate any distinction between classes 1 and 1a or between classes 2 and 2a.

b. Class 15 consists of infinitives (or verbal nouns) and a few concrete nouns (such as *ukudla*, which is ambiguous between the infinitive "to eat" and the concrete noun "food"). Because of the need to present the verb stem as a separate morpheme, in the case of class 15 only the class prefix will be glossed separately from the stem, as illustrated here:

    (9) u- ku- cula
        15- 15- sing
        "to sing"

c. Class 17 is a non-productive locative class with the noun class prefix *ku-*. The relevance of this noun class is that class 17 verbal agreement is a default (for example, it is used for certain kinds of conjoined subjects) and is used in agreement failure constructions such as the impersonal passive.

As an example of agreement in action, note the class 2 and class 10 morphology on the verb and adjectives in the following sentence:

(10) A- bafana a- bancane ba- zo- zi- theng- a i- zincwadi e-
     2- 2.boy REL- 2.small 2.SBJ- FUT- 10.OBJ- buy- FV 10- 10.book REL.10-
    zinkulu.
    10.big
    "The little boys will buy the big books."

---

[4]The characterization given here and in Table 1.1 is the one found in the literature. However, on the basis of agreement data, it is clear that inanimate nouns of class 1a (and perhaps all non-human ones, more generally) actually behave like class 3 nouns in all respects other than the noun prefix. Thus, in a more accurate account, inanimate nouns of this class might be given a new class 3a, which would still be paired with the plural 2a class (Van de Velde 2005).

In (10), the fact that the subject *abafana* "boys" is of noun class 2 is reflected both in the agreement prefix on the adjective *abancane* "small" and in the subject agreement on the verb. As for the noun class 10 feature of the object *izincwadi* "books", it is reflected in the class 10 agreement on the adjective *ezinkulu* "small" and in the object marker on the verb.

1.3   Verbal morphology

The morpho-phonological entity which would traditionally be called the "verb", and which will sometimes be referred to here as the "verb word", can be divided into two halves—the macrostem (object marker and verb stem) and what precedes the macrostem. We will look at the composition of these two halves here in detail.

This division of the verb word is made on the basis of the cross-Bantu phonological integrity of the macrostem. For example, the macrostem is often subject to a constraint of its minimal phonological size independently of the word which contains it.[5]

---

[5]As a concrete example of such a minimality constraint, consider the Standard Swahili simple past. The macrostem in this tense must be at least two syllables long. When this requirement would otherwise not be met, the epenthetic syllable *ku* is prefixed within the macrostem:

(1)   a.   Disyllabic verb stem (with final vowel): *fika* "to arrive"

ni-   li-   [(∗ ku) fika   ]$_{macrostem}$
1S.SBJ- PST-   *ku*   arrive

"I arrived."

b.   Monosyllabic verb stem (with final vowel): *la* "to eat"

i.   ni-   li-   [∗(ku-) la   ]$_{macrostem}$
1S.SBJ- PST-   *ku*   eat

"I ate."

ii.   ni-   li-   [(∗ ku-) ki-   la   ]$_{macrostem}$
1S.SBJ- PST-   *ku*   7.OBJ- eat

"I ate it."

Epenthetic *ku* cannot be added in (1i) or (1ii.b), because the macrostem already meets the requirement of having a minimum of two syllables without it. In contrast, *ku* must be added in (1ii.a) because otherwise the macrostem would consist of only the single syllable *la*, thus violating the minimality constraint. These facts are taken as evidence that the macrostem is an autonomous domain below the level of the phonological word because, as should be obvious, if the minimality constraint had applied to the phonological word rather than to the macrostem, no epenthesis would be predicted to be needed in (1ii.a), since the trisyllabic phonological word ∗*nilila* would satisfy minimality.

1.3.1 The macrostem

At the core of the macrostem is the obligatory verb stem, consisting of the verb root and any number of optional argument-changing suffixes. This may be preceded by at most one "object marker" and must be followed by a final suffix, which can encode mood, tense (or aspect), polarity, or plural number (in the case of the imperative). The macrostem is schematized here in (11):

(11) [([object marker]) [verb stem] [final suffix]]$_{macrostem}$

The integrity of the macrostem constituent is widely accepted among Bantu linguists. Evidence for the macrostem as a constituent varies across languages. One type of evidence comes from Swahili synthetic relatives, in which a relative pronoun clitic (*cho* in (12b) can intervene between the macrostem and the preceding subject marker and tense morphemes:

(12) a. Ni-   ta- ki-   som- a kitabu.
          1S.SBJ- FUT- 7.OBJ- read- FV 7.book

       "I will read the book."

      b. kitabu [ni-   takà- cho-] ki-   sóm- a
          7.book   1S.SBJ- FUT- 7.*o*-   7.OBJ- read- FV

       "I will read the book."

In this case, the material preceding the macrostem forms a domain for secondary penultimate stress.

The verb stem.   The Zulu verb stem consists minimally of a verb root and a final suffix. The verb root can be augmented with one or more suffixes which alter the argument structure of the verb by either adding or absorbing an argument. The suffixes relevant to the discussion here are the passive suffix -*w*, the applicative suffix -*el*, the causative suffix -*is*, and the reciprocal suffix -*an*.[6] The use of these argument-structure-changing suffixes to build verb stems is illustrated in (13), where in the glosses FV stands for "final vowel", the default -*a* final suffix:

(13) Building verb stems

---

[6]Among the argument-structure-changing suffixes which will not be discussed here are the middle/inchoative -*ek*, as in *vuleka* "to open (intrans.)", from *vula* "to open (trans.)". There are also a few suffixes which can occur between the verb root and any argument-structure-changing suffixes, such as the intensive -*isis*, as in *donsisisa* "to pull forcefully", from *donsa* "to pull".

a. cul- a
sing- FV

"sing"

b. cul- w- a
sing- PSV- FV

"be sung"

c. cul- el- a
sing- APPL- FV

"sing to, sing for, sing at"

d. cul- el- an- a
sing- APPL- RECIP- FV

"sing to each other, sing for each other"

e. cul- el- w- a
sing- APPL- PSV- FV

"be sung to"

f. cul- is- a
sing- CAUS- FV

"make sing, help to sing, conduct (a choir)"

g. cul- is- w- a
sing- CAUS- PSV- FV

"be made to sing, be helped to sing, be conducted"

The examples in (13) have all been combined in a semantically transparent fashion. However, it has been shown in many Bantu languages that the relative ordering of these suffixes is often subject to morphological constraints independent of semantic compositionality (Hyman 2003). The question of derivational suffix ordering will be taken up in the next chapter.

The object marker. "Subject markers" and "object markers" are terms used in the Bantu tradition to denote verbal prefixes in the verb word which agree with a subject or object (either overt or silent). Other terms which have been used for these prefixes in the literature include "clitic", "concord", and "agreement". As an example of these markers, consider the following Zulu sentence:

(14) Mina ngi- zo- [ku- bon- a.]$_{macrostem}$
me 1S.SBJ- FUT- 2S.OBJ- see- FV

"I'll see you."

In the verb word *ngizokubona*, *ngi-* is a first person singular subject marker, while *ku-* is a second person singular object marker.

Subject and object markers encode either person and number (for first and second persons) or noun class (for third person). With respect to the glosses, for first and second person the gloss will indicate person and number as 1S, 1P, 2S, or 2P. For third person, only the noun class number will be indicated, without S or P. Thus, 1S.OBJ will indicate a first person singular object marker, while 1.OBJ (without the *s*) will indicate a noun class 1 (third person) object marker.

In most cases subject and object markers are identical, but not always. For example 2S.SBJ is *u-*, while 2S.OBJ is *ku-*. In the trees, "subject marker" will sometimes be abbreviated to SM, while "object marker" will be abbreviated to OM.

Within the macrostem, the verb stem may be preceded by at most one object marker, in the manner shown in (14). There is an additional object marker *zi-* which encodes a reflexive object, illustrated here:[7]

(15) Mina ng-   a-   [zi-   bon- a.]*macrostem*
      me   1S.SBJ- PST   REFL- see- FV
      "I saw myself."

As will be described later, the reflexive object marker consumes the single object marker morphological "slot" in the verb word, even though in certain respects its syntactic behavior is distinct from that of the other object markers.

Unlike the subject markers which will be described below in 1.3.2, object markers are invariant across all moods and tenses both segmentally and tonally. (They are all high-toned.)

The final suffix.   The verb stem is obligatorily followed by exactly one of several final suffixes.[8] The examples given here employ the first person singular subject marker *ngi-*:

(16)   a.   *-a*, as in *ngiyabon***a** "I see."

        b.   *-i*, as in *angibon***i** "I don't see."

        c.   *-e*, as in *uba ngibon***e** "in order for me to see."

        d.   *-ile*, as in *ngibon***ile** "I saw."

---

[7]Reflexive *zi-* is also homophonous with object markers for noun classes 8 and 10. So (15) could also be translated as "I saw them", where "them" has a referant of one of these classes.

[8]We will not consider the status of word-final clitics like *-yo* (relative), *-ni* "what?", or *-ke* "just".

Some of these and other final suffixes have tones associated with them. The possibility of decomposing the tonal and segmental portions of these suffixes is considered in section 4.3 on page 82.

The final suffix is I-related, encoding mood, tense, and polarity features, and thus higher than the verb stem and the object marker. It will be useful to have a term to refer to the constituent containing the object marker and the verb stem which comes to precede the final suffix. We will use the term "macrostem" to refer to that constituent.

Having discussed the three regions composing the macrostem, we can now turn to the material which precedes it.

1.3.2 Material preceding the macrostem

There are several types of prefixes found in the region preceding the macrostem in the verb word, the most basic of which is the subject marker. Other material includes tense morphology, a hortative particle, a negative particle, and two aspectual particles.

The subject marker is obligatory in all forms except the infinitive and the affirmative imperative. These markers encode mood in addition to person, number, and class features. The mood distinction is usually only tonal and hence not transparent in the standard orthography. A couple of noun classes show a two-way segmental distinction, but the noun class 1 shows at least a three-way mood distinction in the subject marker in a way transparent without tonal information:

(17) Noun class 1 subject markers across moods

    a. Indicative: *u-*

       u-   ya- bon- a
       1.SBJ- *ya-* see- FV

       "she sees"

    b. Subjunctive: *a-*

       ... ukuba a-   bon- e
       in.order 1.SBJ- see- FV

       "in order for her to see"

    c. Participial: *e-*

       ... ngoba e-   bon- a
       because 1.SBJ- see- FV

       "because she sees"

A variety of tense, polarity, and aspectual affixes can appear between the subject marker and the macrostem, as shown in (18), where (18a) employs the durative affix

-sa-, (18b) uses the remote past affix *-a-*, and (18c) has the negative potential affix
-nge-:

(18) a. ngi-   sa-   ba-   bon- a
          1S.SBJ- DUR- 2.OBJ- see-   FV

         "I still see them"

      b. ng-   a-   ba-   bon- a
          1S.SBJ- PST- 2.OBJ- see-   FV

         "I saw them"

      c. a-   ngi-   nge-   ba-   bon- e
          NEG- 1S.SBJ- POT.NEG- 2.OBJ- see-   FV

         "I can't see them"

There are a great number of interdependencies between the different pieces of the
verb word which pose challenges to any account of the verbal morphology. These
interdependencies are discussed in chapter 4.

1.4   Overview of issues discussed

This section will give the reader an overview of the sorts of issues addressed in the
subsequent chapters.

Chapter 2 (pages 18-47) discusses how the verb stem is built, including verbal
extensions such as applicative, causative, and reciprocal suffixes, as well as prefixal
object and reflexive markers. Evidence is examined supporting an analysis in which
the reciprocal suffix *-an* is structurally lower than the reflexive prefix *zi-*. Extension
ordering problems are also discussed.

Chapter 3 (pages 48-70) discusses subject/verb agreement and object/verb agree-
ment in Zulu using a specifier/head theory of agreement. (No additional agreement
mechanism is needed.) An analysis of the alternation based on constituency is es-
tablished, following Van der Spuy (1993). The analysis serves as a basis for a more
detailed discussion of the alternation in chapter 5 and is assumed for a discussion of
locative applicatives in chapter 6.

Chapter 4 (pages 71-141) discusses a variety of morphological issues involving the
inflectional domain, including these:

- Dependencies between non-adjacent morphemes.
- Arguments against the view that the Zulu verb word is a complex head.
- The nature of the final suffix.
- The principal/participial alternation in verbal and non-verbal predicates.

- The relation between imperatives and the subjunctive in Bantu languages.
- Bantu *-ni* as a plural addressee clitic.

Chapter 5 (pages 142-187) explores the possibility of describing the short/long alternation in terms of focus features. Known contexts of short verb forms are examined, including non-agreeing postvebal subjects. It is concluded that the alternation cannot, in fact, be described in terms of focus. A comparison with a superficially similar alternation in Rundi is also provided. Issues concerning coöccurrence restrictions within *v*P are discussed, as is an interesting coöccurrence restriction between non-reflexive object markers and a non-agreeing postverbal subject.

Chapter 6 (pages 188-207) explores issues involving locative applicative arguments in Zulu, particularly the existence of a previously undescribed active construction, termed here "locative-to-subject raising", in which the locative applicative argument appears as a noun phrase (DP) in the preverbal subject position. It is argued that this construction, in which the locative appears as a noun phrase, is fundamentally different from those in which the locative appears as a prepositional phrase. An analysis is pursued in which the PP-type constructions occur when the locative argument (and the licensing locative applicative verbal suffix) are merged below the agent, while the DP-type constructions occur when the locative is merged above the agent. Supporting evidence from Nsenga (spoken in Zambia) is also discussed.

1.5 Data sources

The data in this dissertation comes from a variety of sources, original and published.

I am most fortunate to have spent a great deal of time eliciting data from Dr. Zilungile (Lungi) Sosibo, who at the time was the Zulu instructor at UCLA. As a native speaker of Zulu and an experienced teacher not only of Zulu, but also of Afrikaans, Lungi was a patient consultant with the ability to ponder judgements and offer insight on interpretation, usage, and analysis.

My other main consultant for Zulu was Petros Saunders, a high school student and native speaker of Zulu, with whom I had the privilege of working over my three-month stay over the summer of 2002 in Port Shepstone, KwaZulu-Natal, South Africa.

Original data for Xhosa was provided by Nolutando Xate, through e-mail elicitations.

Most other data is from published sources, including both linguistics articles and Zulu texts written by and for Zulu speakers. These, as well as various other pieces of original data, will be cited as they are presented. Uncited data for Classical Arabic, Egyptian Arabic, and Swahili is from my own knowledge of those languages.

Occasionally, examples are given from the Zulu translation of the Bible. These will be cited simply by indicating the verse. All such examples are from the 1959 translation (Bible Society of South Africa 1959).[9]

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[9]Such examples are used not because they have any special merit, but simply because I have found many relevant examples as the result of studying this translation in detail in conjunction with audio recordings.

CHAPTER 2

Morphology of the Verb Stem

This chapter will examine the morphology of the verb stem, within the morphosyntactic constraints set out in the preceding chapter.

2.1   Head movement and the Zulu verb

Classic analyses of verb placement in SVO structures (such as Emonds (1978), Pollock (1989), and Koopman (1984)) assume that the verb is merged low in the structure and moves leftward in the string via head movement, bypassing phrasal material such as DPs, adverbial phrases, and DP traces along its way. For example, the traditional analysis of the French sentence in (19a) assumes that the V^0 head is merged in a close local relationship with the direct object low in the structure, as in (19b), a structure which assumes that adverbs are licensed by heads, as in Cinque (1999), rather than by adjunction to the verb phrase. (The analysis of verb movement as head movement is independent of this assumption.)

(19)   a. Nous chanterons très souvent *We Are the World*.
       we   sing.FUT.1P very often   We Are the World
       "We will very often sing *We Are the World*."

b.

AgrSP
- *Nous*
- AgrS′
  - *chanterons$_i$*
  - TP
    - t$_i$
    - FreqP
      - AdvP
        - *très souvent*
      - Freq′
        - t$_i$
        - VP
          - V′
            - t$_i$
            - DP
              - *We Are the World*
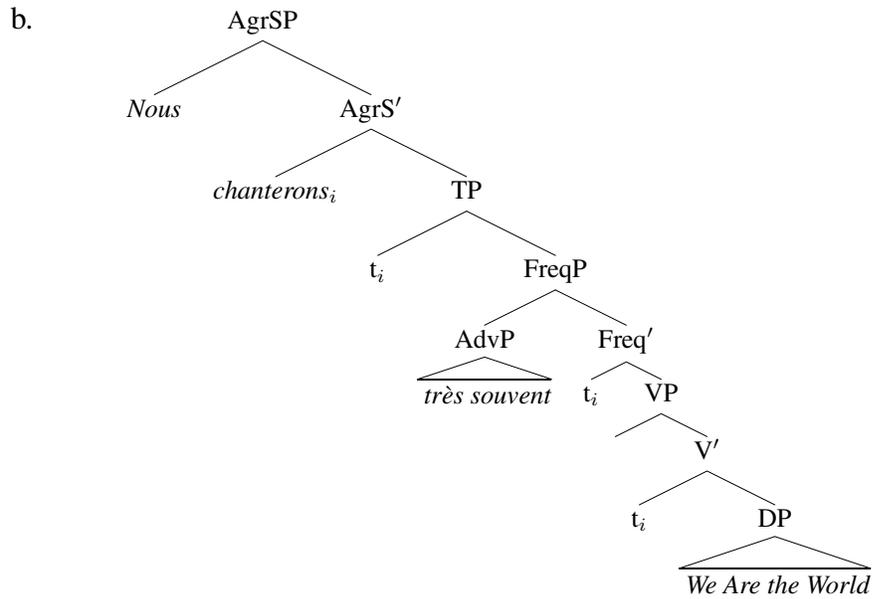
As additional heads are merged, such as Freq^0, which licenses an adverb of frequency in its specifier, the verb raises stepwise, accumulating heads by adjunction until it reaches the AgrS^0 head (Chomsky 1991; Belletti 1990) and adjoins to it to remain there in a typical SVO clause. Given the assumptions laid out in chapter 1, namely that words are composed in the syntax and that head movement obeys the Linear Correspondence Axiom (LCA), such an analysis is inadequate to account for the morpheme orderings of the Zulu verb word. Instead, an analysis will be pursued in which some subconstituents of the verb word are phrasal remnants rather than complex heads, foregoing any assumption that phonological words are necessarily heads. Consequently, Zulu verb forms such as *walipheka* "he cooked it" will be open to a range of analytical options:

(20) w-   a-   li-   phek- a
      1.SBJ- PST- 5.OBJ- cook- FV

  "he cooked it"

Some of the analytical options for such a form are these:

(21)   a. *Walipheka* is a single complex head [walipheka], derived entirely by left-adjunction.

   b. The form consists of two or more complex heads, such as [wa][lipheka], where each complex head is derived entirely by left-adjunction.

   c. The form consists entirely of simple, in situ heads, as in [w][a][li][phek][a].

d. The form contains both in situ heads and phrasal material, as in this tree:

```
                    1P
                   /  \
                 1⁰    2P
                 |    /  \
                 w  2⁰    3P
                    |    /  \
                    a   XP    3′
                       /\    /  \
                    liphek  3⁰   4P
                            |   /\
                            ∅  4⁰
                               |
                               a
```
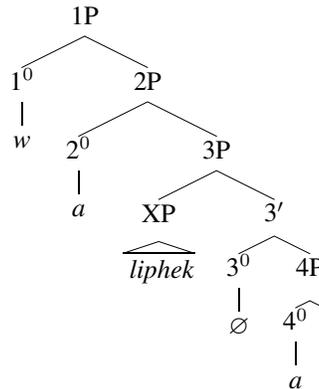
Options (21a) and (21b) will be shown to be impossible given the assumptions about head movement made here. Option (21c) cannot be correct for the verb stem portion of the string because the morpheme ordering is the opposite of that predicted, given standard assumptions of phrase structure (hierarchy of merger). These assumptions take the verb (V) to be embedded under tense (T) and subject agreement (AgrS). In accordance with these standard assumptions, the hierarchy of merge positions in a tensed verb form with object agreement such as *walipheka* is as in this tree:

(22)

```
        AgrSP
         /\
          AgrS′
          /  \
         w    TP
             /  \
           T⁰    AuxP
           |    /   \
           a  Aux⁰   AgrOP
              |     /    \
              a   AgrO′
                  /  \
                 li   VP
                      /\
                       V′
                      /\
                   phek
```
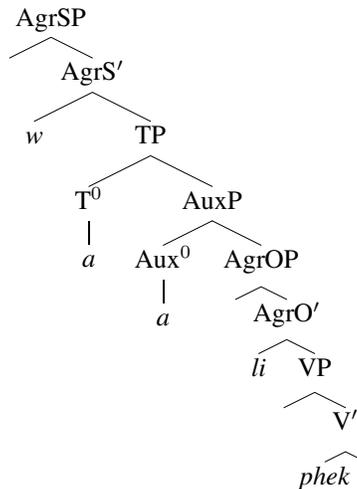
As described in the previous chapter, the region of the structure below any complementizers and above AgrOP will heretofore be called the inflectional domain,[1] while the region under the inflectional domain will be termed the verbal domain. The final suffix

---

[1] Strictly speaking, AgrOP should probably be included in the inflectional domain. However, because in Zulu and other Bantu languages AgrOP is included in the verbal constituent which raises to a point higher in the inflectional domain, it is more useful for our purposes to roughly define the lowest point in the inflectional domain as the projection immediately dominating AgrOP.

here is being called an Aux^0 head, a convention which will be adopted throughout this dissertation. The distribution of the various final suffixes is sensitive to (or itself encodes) mood, polarity, and modality, a property also true of some auxiliary verbs. The label of Aux^0 is only one of convenience and should not be taken to suggest that the final suffix has all the properties of what are more traditionally called auxiliary verbs.

Using these assumptions of phrase structure hierarchy while at the same time holding to the Linear Correspondence Axiom, options (21a) and (21b) are ruled out. *Walipheka* cannot be a single complex head, because given only left-adjunction, the morpheme order would be *phekliaw*. Similarly, taking any two or three adjacent morphemes in the word as a subconstituent complex head would necessarily invert two or three morpheme orders incorrectly.

Why the sequence of simple, in situ heads in (21c) is incorrect requires consideration of the final suffix, which will be dealt with in more detail in the next chapter. Let it suffice to say here that the final suffix of a verb form is sensitive to mood, tense, polarity, and potential modality. These are all features characteristic of the inflectional domain, not of the verbal domain, and it follows that this suffix is merged in the inflectional domain. If this is so, then the macrostem (the verb stem preceded by any object marker) must raise to precede this final suffix (or above it).[2] But given the phrase structure hierarchy in (22) and the Linear Correspondence Axiom (LCA), the OM+V string (here *liphek*) must be a phrase, not a complex head, and must move as a (remnant) phrase to precede the final suffix in the inflectional domain, as diagrammed in (23), where the final suffix is assumed to be an auxiliary verb head (Aux^0):

(23)

For this reason, under the assumptions set forth, the Zulu verb word cannot be either a head or a string of heads, whether simple or complex, but rather it must contain at least one phrasal subconstituent as in (21d). The AgrOP in (23) is a remnant because all arguments licensed in the verbal domain (in this case at least the subject of *pheka* "to cook") have moved out, leaving an AgrOP containing traces.

---

[2]The fact that the suffix in this case is *-a* cannot be taken to mean that the suffix is simply a morphological default, because this tense (the remote past) also employs a non-default tonal suffix, as will be described in the next chapter.

Given this view, no argument following a raised verb can truly be in situ. Instead, all arguments must move to new positions below the inflectional domain. Simplified structures showing how the arguments and verb move under such an analysis are given in the trees (24) through (27). First in (24), we see how a subject, object, and verb are merged low in the structure, in the verbal domain:

(24)

```
                              vP
                          ／      ＼
                       DP            v′
                    ╱‾‾‾╲        ／     ＼
                   subject    V⁰         VP
                              |        ／   ＼
                              ∅      DP       V′
                                  ╱‾‾‾╲      |
                                 object     V⁰
                                            |
                                           verb
```
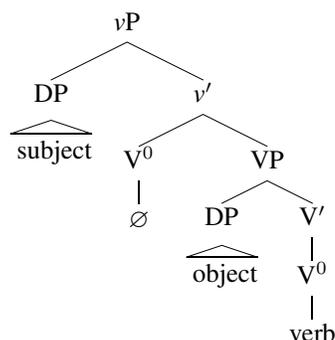
The introduction of the subject in the verbal (thematic) domain (rather than in a preverbal position in the inflectional domain, where it is more typically observed) is known as the Internal Subject Hypothesis (Fukui and Speas 1986; Fillmore 1968; Koopman and Sportiche 1991; Kuroda 1988). The vP projection in (24) and elsewhere in this thesis serves to introduce an agent argument into the verbal domain.[3] Because the verb will move as a phrase to precede the final suffix, the subject and object must both be moved out of vP, as in (25):

(25)

```
                           YP
                       ／      ＼
                    DP_i          Y′
                 ╱‾‾‾╲        ／     ＼
                subject    Y⁰          XP
                           |        ／    ＼
                           ∅      DP_j      X′
                               ╱‾‾‾╲      ／   ＼
                              object    X⁰      vP
                                        |      ／ ＼
                                        ∅    t_i    VP
                                                 ／  ＼
                                               t_j    V′
                                                      |
                                                      V⁰
                                                      |
                                                     verb
```

---
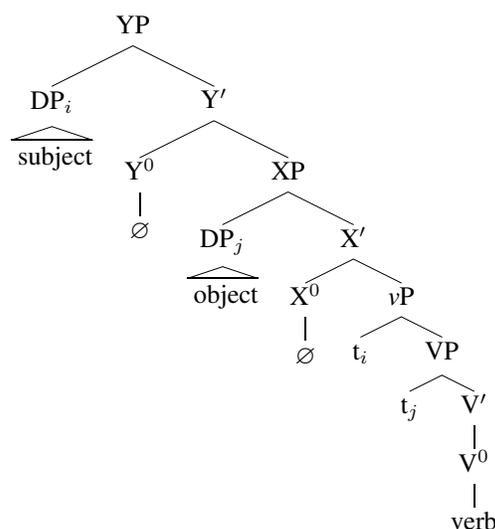
[3]The possible case properties of this projection, such as vP as the assigner of structural accusative case to objects, will not be considered.

In this tree the object and subject have moved to projections arbitrarily labeled XP and YP. What could motivate these moves is not clear. They could, for example, be related to case. Motivating these moves will not concern us here, and the reader is referred to Koopman and Szabolcsi (2000), Koopman (2003a), Koopman (2002), and Müller (2003) for additional discussion.

Now that all arguments have moved out of vP, the latter contains no overt material but the verb itself, which moves to the inflectional domain to precede the final suffix, as in (26):

(26)

```
                              AuxP
                    _____
                   /                        \
                $v$P_k                      Aux'
               _____              _____
              t_i t_j verb         /               \
                               Aux^0               XP
                                |           _____
                              final        /               \
                              suffix     DP_i               XP
                                       _____        _____
                                       subject      DP_j        t_k
                                                   _____
                                                   object
```
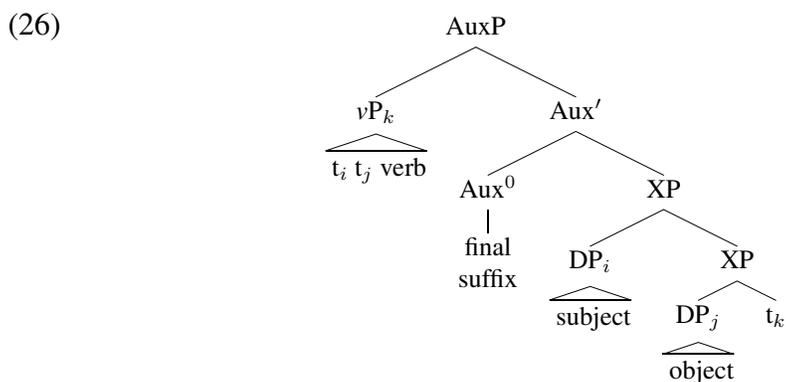
And finally, in a subject agreement structure (such as an SVO clause), the subject moves to preverbal position, triggering the appearance of the subject marker (an AgrS^0 head), as in (27):

(27)

```
                              AgrSP
                    _____
                   /                        \
                 DP_l                      AgrS'
               _____              _____
               subject            /               \
                              AgrS^0             AuxP
                                |         _____
                             subject     /               \
                             marker    $v$P_k            Aux'
                                     _____        _____
                                     t_i t_j verb  /           \
                                                 Aux^0         XP
                                                  |        _____
                                                final    t_l        XP
                                                suffix          _____
                                                              DP_j      t_k
                                                                |
                                                              object
```
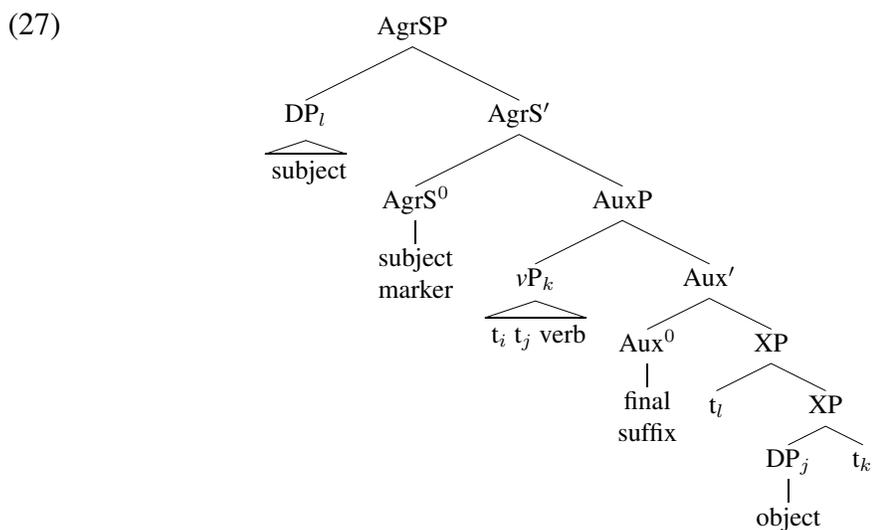
The analysis to be pursued here is one in which the macrostem (the object marker plus the verb stem) at the very least is a phrasal remnant, while the subject marker and tense morpheme are in situ heads (Koopman 1996), as in (28):

(28)

```
AgrSP
  AgrS'
   w    TP
          T'
         a    AuxP
            AgrOP      Aux'
            remnant_i   -a   YP
             liphek        ...t_i...
```
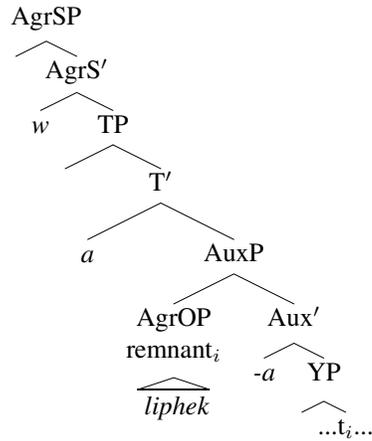
Given the stated assumptions about morphology, this is the only type of solution that adheres to the LCA. The remainder of this chapter will take up issues regarding derivation of the macrostem within the stated morphological and syntactic constraints.

2.2   On the nature of the Bantu reciprocal suffix *-an*

We will now consider the nature and syntactic position of the reciprocal verbal extension *-an*. This discussion builds on previous work on *-an* in various Bantu languages, such as Mchombo (1993), Ndayiragije (2003), Kinyalolo (1988), and Mugane (1996), among others.

There are three types of objects that can be encoded directly in the macrostem in Zulu: the reciprocal, as the suffix *-an*; the reflexive object marker, as *zi-*, which occurs as a prefix on the verb stem; and the ordinary object marker, which varies in form according to noun class or to person and number, and which also occurs as a prefix on the verb stem.

Addition of the reciprocal suffix *-an* to a verb in the general case reduces by one the number of DP arguments that can appear. We will refer to this consumption of a DP argument as saturation of an argument.[4] This property is shown in (29), (30), and (31). In (29b), we see that *-an* cannot be added to an intransitive verb because there is no argument available for saturation:

(29)   a.   S-   a-   hlal- a.
            1P.SBJ- PST- stay- FV
            "We stayed."

---

[4]The term "saturation" is not meant to suggest any particular analysis. Rather, it provides a theory-neutral way of saying that the *-an* suffix "stands for" a particular argument, without committing us to a particular way in which it does so (such whether the suffix *is* the aregument or merely agrees with it).

b. ∗ S- a- hlal- an- a.
    1P.SBJ- PST- stay- RECIP- FV

   "We stayed each other."

In (30a), we see that the transitive verb *fihla* "to hide" can take a lexical direct object, and in (30b) that it can be replaced with reciprocal *-an*. The ungrammatical (30c) shows that the object argument has indeed been saturated by *-an*, because the lexical argument and *-an* cannot coöccur:

(30) a. S- a- fihl- a i- mali.
           1P.SBJ- PST- hide- FV 9- 9.money

        "We hid the money."

     b. S- a- fihl- an- a.
           1P.SBJ- PST- hide- RECIP FV

        "We hid each other."

     c. ∗ S- a- fihl- an- a i- mali.
            1P.SBJ- PST- hide- RECIP- FV 9- 9.money

        "We hid each other the money."

And finally, (31) shows us the pattern with an applicativized transitive verb. In (31a), we see that *culela* "to sing for" can take a lexical applicative object in addition to a direct object. The ungrammatical sentence in (31b) shows that the applicative object must be overt. But (31c) shows that this inomissible argument can be saturated with the reciprocal suffix *-an*.

(31) a. S- a- cul- el- a u- Sipho i- ngoma.
           1P.SBJ- PST- sing- APPL- FV 1- 1.Sipho 9- 9.song

        "We sang Sipho a song."

     b. ∗ S- a- cul- el- a i- ngoma.
            1P.SBJ- PST- sing- APPL- FV 9- 9.song

        "We sang a song for (someone)."

     c. S- a- cul- el- an- a i- ngoma.
           1P.SBJ- PST- sing- APPL- RECIP- FV 9- 9.song

        "We sang each other a song."

When causative or applicative morphology is employed, the question of which argument *-an* saturates depends on what position *-an* takes with respect to the verb stem and verbal extensions, in a way discussed by Ngonyani (1996), Satyo (1992), Baker (1988), among others. This dependency is illustrated for Zulu in (32) and (33), where the reciprocal suffix *-an* is interpreted variously as the direct object, the applicative (benefactive) object, or the embedded subject (the causee):

(32) a. Reciprocal direct object

I- zigebengu zi-   fihl- **an- el-**   a a- bangani ba- zo.
10- 10.thieves   10.SBJ- hide- RECIP- APPL- FV 2- 2.friends 2.of- 10.them

"The thieves hide each other for their friends."

b. Reciprocal applicative object

I- zigebengu zi-   fihl- **el- an-**   a i- mali.
10- 10.thieves   10.SBJ- hide- APPL- RECIP- FV 9- 9.money

"The thieves hide money for each other."

(33) a. Reciprocal causee

A- bafana ba-   bon- **is- an-**   a a- mantombazane.
2- 2.boys 2.SBJ- see-   CAUS- RECIP- FV 6- 6.girls

"The boys are showing each other (making each other see) the girls."

b. Reciprocal applicative object

A- bafana ba-   bon- **an- is-**   a a- mantombazane.
2- 2.boys 2.SBJ- see-   RECIP- CAUS- FV 6- 6.girls

"The boys are making the girls see each other."

(Adapted from Satyo (1992).)

Note how the interpretation of *-an* in these examples depends on its position relative to other morphemes in the string. In (32a) and (33a), *-an* immediately follows a transitive verb root and is interpreted as the direct object of that verb thus saturating that argument. In contrast, *-an* in (32b) follows not the transitive verb but the applicative suffix *-el*, which licenses an applicative argument. In this position, *-an* must be interpreted as the applicative object and it saturates that argument. Similarly, in (33b) *-an* follows the causativizer *-is*. The causativizer embeds the subject of the verb *bona* "see", and this is the argument which *-an* saturates in this case. The two orderings of *-an* with respect to the applicative or causative morpheme are assumed to follow directly from different hierarchies of syntactic merger.

In accordance with our assumption that words are morphologically composed in the syntax, it is assumed that each verbal extension is the head of its own projection, an assumption also taken by other syntacticians working on Nguni languages such as Thwala (1996) and Ngonyani (1996), following Baker's (1985) Mirror Principle, by which morphemes closer to the verb stem are lower in the syntactic structure than outermore morphemes. The two patterns for reciprocal applicative verbs are given in (34). The tree in (34a) shows the underlying structure where the direct object argument is reciprocal (as in (32a)), while the tree in (34b) it is the applicative argument that is reciprocal (as in (32b)):

26

(34) a.

```
        ╱╲
   Appl⁰   ╱╲
    |   Recip⁰  ╲
   -el      |    V̂⁰
           -an    |
                 fihl
```

b.

```
         ╱╲
   Recip⁰   ╱╲
     |    Appl⁰  ╲
    -an     |     V̂⁰
           -el     |
                  fihl
```
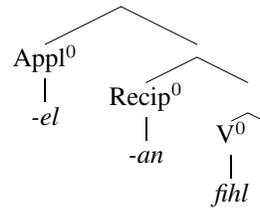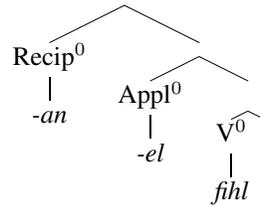
Thus, on this view, *-an* saturates the argument licensed by the phrase which it imme-
diately embeds.

Given that reciprocal *-an* and reflexive *zi-* are both argument saturators[5] which do
not correspond to an overt DP in the language, a simple analysis of these two mor-
phemes could hold that both of them attach to the verb stem in a position strictly local
to the head which licenses the argument (or in the same VP shell, to use Larsonian
terminology (Larson 1988)), as a suffix or prefix as determined by the lexical specifi-
cation of the attaching morpheme (suffix for *-an*, prefix for *zi-*). This potential analysis
is schematized in (35), in which either reflexive *zi-* or reciprocal *-an* can head a pro-
jection labeled ArgP:

(35)

```
        AgrOP
         ╱╲
        ╱ AgrO′
       ╱   ╱╲
  AgrO⁰  VP
    |    ╱╲
 -an/zi-
```
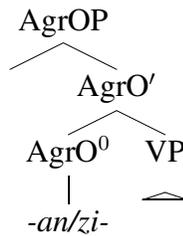
It will be recalled from the preceding chapter (pages 2-3) that under our assumptions,
if a head X^0 moves to adjoin to a higher head Y^0, these heads will necessarily be
linearized as XY rather than as ∗YX. In other words, heads adjoined to are necessarily
suffixes, never prefixes. Our assumptions thus preclude the possibility of interleaving
the reflexive *zi-* prefix between other projections in the verbal domain to which the
verb stem is assumed to adjoin. Consider, for example, the case where a verb has
both a reflexive direct object and a reason applicative, as in (36a), which is putatively
assumed to have roughly the underlying verbal domain structure in (36b), with the

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[5]Reflexive *zi-* and the other object markers can be shown to be argument saturators in the same way
that (29), (30), and (31) showed for *-an*, except that an object marker can be doubled by a lexical object.

Refl^0 head *zi* intervening between the overt Reason^0 (reason applicative) head *-el* and the overt V^0 (verbal root) *bulal* "kill":

(36) a. Wena u-   zi-   bulal- el-   a- ni?
        you   2S.SBJ- REFL- kill-   APPL- FV- what

"What are you killing yourself for?"

b.

```
                    ReasonP
                   /       \
                 DP        Reason'
                 /\        /     \
               ni       -el       vP
             "what"             /    \
                             DP_i     v'
                             /\      /   \
                          wena           ReflP
                          "you"         /     \
                                     Refl^0    VP
                                      |         |
                                     zi-       V^0
                                                |
                                              bulal
                                              "kill"
```
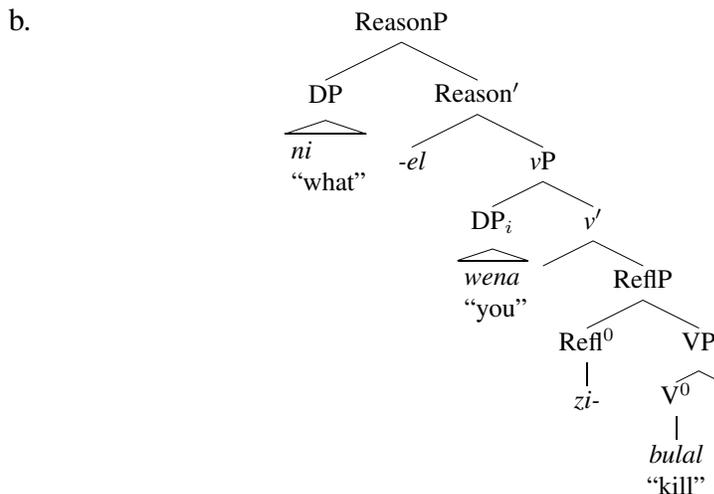
Assuming only left-adjunction of heads, successive head movement of the V^0 head *bulal* to finally adjoin to the Reason^0 *-el* yields the unattested order *∗bulal-zi-el* rather than the grammatical *zibulalel*. But the more liberal assumption that head adjunction can be to either the right or left still leads us to the conclusion that the constituency of the resulting head is [[zi+bulal]el]. We would expect this constituency to be supported by phonological or morphophonological evidence, but there is in fact no evidence for this constituency in any Bantu language, to my knowledge.

Such an analysis is not possible under the assumptions held here, where the directionality of adjunction is fixed, but there are reasons not to adopt such an analysis even under less restrictive assumptions. Here we will examine some of the differences between reciprocal *-an* and reflexive *zi-*: differences in lexicalization, nominalization, the notion of morphological slot, a non-canonical interpretation, and use in imperatives. Some of these asymmetries have been used by Mchombo (1993) to argue for a purely morphological treatment of reciprocal *-an* in Bantu languages while maintaining a syntactic treatment of reflexive *zi-*. That analysis has been convincingly refuted by Ndayiragije (2003). But all authors seem to agree that the asymmetries between *-an* and *zi-* all point to an analysis where reflexive *zi-* attaches at a point in some sense higher than any of the attachment points for reciprocal *-an*. While the following discussion focuses on contrasts between reciprocal *-an* and reflexive *zi-*, the arguments could easily be extended to show that *-an* differs from all object markers (not just the reflexive one) in the same ways.

Lexicalization. Reciprocal *-an* appears in lexicalized forms in ways that reflexive *zi-* does not. Specifically, the form to which *-an* is added does not always occur independently, as illustrated in these two Zulu examples:

(37)　a.　hlang- an-　　a, ∗hlanga
　　　　　hlang-　RECIP- FV

　　　　　"to meet (intrans.)"

　　　b.　ncint- is-　　an-　　a, ∗ncintisa, ∗ncinta
　　　　　ncint-　CAUS- RECIP- FV

　　　　　"to compete"

Here are some of the more transparent examples of *-an* in Zulu that are lexicalized in this sense, but where *-an* seems to contribute some sense of togetherness or reciprocity (culled from Dent and Nyembezi (1995)):

(38)　　*bangisana* "to compete", ∗*bangisa*, *banga* "to dispute a claim"
　　　　bumbana "to unite, come together", *bumba* "to mould (clay)"
　　　　buthana "to gather together", *butha* "to gather together (trans.)"
　　　　dibana "to mix together", ∗*diba*
　　　　enqakisana "to argue", *enqaka* "to catch"
　　　　hambisana "to accompany", *hambisa* "to send off", *hamba* "to go"
　　　　hlangabezana "to meet one another; to compromise", *hlangabeza* "to meet"
　　　　hlangana "to meet", ∗*hlanga*
　　　　hlobana "to be related to", ∗*hloba* (in a relevant sense)
　　　　shomana "to be pals", ∗*shoma*

Furthermore, reciprocal *-an* is sometimes buried inside other derivational morphology, making any possible compositionality even more obscured:

(39)　a.　khand- an-　　is-　　el-　　a (Xhosa)
　　　　　hammer- RECIP- CAUS- APPLIC- FV

　　　　　"to subdue" (Adapted from Satyo (1992).)

　　　b.　xak-　　an-　　is-　　ek-　　a (Zulu)
　　　　　inconvenience RECIP- CAUS- MIDDLE- FV

　　　　　"to be upset"

In contrast, there appear to be hardly any lexicalized instances of reflexive *zi-*, and the lexicalized forms incorporating *zi-* that do occur combine *zi-* with an independently occurring verb, as in this obviously metaphorical example:

(40)　　*thwala* "to carry" → *zithwala* "to be proud"

This asymmetry is easily explained if we accept the idea that smaller structures are more frequently targeted for lexicalization (listedness) than larger ones (Di Sciullo and Williams 1987). The relative frequency by which -*an* comes to be included in so many lexicalized forms is then explained by its low position in the syntactic structure.

Prolonged action interpretation. In Xhosa (and presumably in Zulu, as well) [6] -*an* can be used to give the sense of a prolonged action. This is shown in (41), adapted from Satyo (1992), where the matrix verbs have been extended with the -*an* suffix with this interpretation of prolonged action:

(41) a. *phefumla* "to breathe" (Xhosa)

Kwezi lokishi si- phefuml-***an-*** a [PP no- moya o-
at.10 townships 1P.SBJ- breathe- RECIP- FV with:1- 1.air REL:1.SBJ-

nuka- yo] kuba...
stink- REL because

"We constantly breathe in bad air in the townships because..."

b. *lala* "to sleep" (Xhosa)

U- xol- el- e u- ku- lal- ***an-*** a [PP no- buthongo
2S.SBJ- forgive- APPL- PERF 15- 15- sleep- RECIP- FV with:14- 14.sleep

obu- nga- phel- i- yo] ngenxa ye- ziyobisi?
REL:14.SBJ- NEG- end- NEG- REL because OF:10- 10.drugs

"Are you so addicted to drugs that you don't mind sleeping for long periods because of them?"

c. *chama* "to urinate" (Xhosa)

Kutheni u- cham-***an-*** a [PP ne- nto e- nga- phel- i- yo]
why 2S.SBJ- urinate- *an-* FV with:9- 9.thing REL:9- NEG- end- NEG- REL

nje?
just

"Why do you take such a long time to urinate?"

(Adapted from Satyo (1992).)

Although -*an* in Xhosa usually has a reciprocal interpretation, just like in Zulu, the interpretation of the three verbs in (41) incorporating -*an* is not reciprocal in any sense. Rather, the suffix -*an* adds a sense of prolonged action. But in these cases, -*an* licenses a prepositional phrase headed by *na* "with" (and apparently even requires one), making it somewhat similar to the case of verbs incorporating -*an* of the sort *hlangana na* "meet with":

---

[6]Zulu data on this interpretation is not available. One arguable (and lexicalized) instance in Zulu is *phana* "to be generous", derived from *pha* "to give".

(42) a. U- Thandiwe no- Sipho ba- zo- hlang- an- a.
   1- 1.Thandiwe and:1- 1.Sipho 2.SBJ- FUT- meet- RECIP- FV

   "Thandiwe and Sipho will meet."

b. U- Thandiwe u- zo- hlang- an- a no- Sipho.
   1- 1.Thandiwe 1.SBJ- FUT- meet- RECIP- FV and:1- 1.Sipho

   "Thandiwe will meet with Sipho."

Ndayiragije (2003) has proposed that Bantu *-an* is not intrinsically reciprocal, but that it is a kind of v^0 head which can assign null case, hence licensing PRO. The reciprocal interpretation results when this PRO in the specifier of *-an* is bound. The analysis captures the fact that in some languages *-an* can have certain non-reciprocal interpretations. To account for some cross-linguistic differences in distribution, the suffix is claimed to vary along two different parameters across the Bantu languages. The parameter which is of interest here is that of theta role assignment:

(43) Theta role assignment parameter:

a. In some languages, *-an* cannot assign a theta role, and hence no argument can be generated in its specifier. This means that *-an* is always a kind of raising predicate, with PRO raising to it from a lower position. In these languages, *-an* can be applied to non-transitive predicates (unergative and unaccusative).

b. In other languages, *-an* is unspecified for theta role assignment. In these languages, *-an* can be either a raising predicate, with PRO raising to its specifier, or a control predicate, with PRO being generated (merged without movement) in its specifier.

Assuming this analysis to be correct, we must consider which value this parameter is set to in Zulu. With respect to theta role assignment, Xhosa (and presumably Zulu) allows application of *-an* to seemingly unergative predicates, resulting in a prolonged action interpretation, first described on page 30.

Now let's consider the three verbs incorporating *-an* in (41) — *phefumla* "to breathe", *lala* "to sleep", *chama* "to urinate". These verbs are all cononically intransitive, as illustrated with their Zulu counterparts in (44):

(44) a. Ngi- ya- phefumul-a. (Zulu)
   1S.SBJ- *ya*- breathe- FV

   "I breathe."

b. Ngi- ya- lal- a. (Zulu)
   1S.SBJ- *ya*- sleep- FV

   "I sleep."

    c. Ngi-   ya- cham- a. (Zulu)

          1S.SBJ- *ya-* urinate- FV

        "I urinate."

It might appear, then, that the nouns *umoya* "air", *ubuthongo* "sleep", and *into* "thing" in the *na* prepositional phrases are arguments assigned directly by *-an* rather than by the verb root. But in all these cases the prepositional phrase actually corresponds to a sort of object selected by the verb. While URINATE and BREATHE are usually intransitive, one can, in fact, urinate blood and breathe air (as in (45a)). Furthermore, the *ubuthongo* "sleep (n.)" of (41c) actually occurs as an idiomatic object of *lala* "to sleep, lie down" (as in (45b)).

(45)   a. *ukuphefumula umoya* "to breath air" (Zulu)

        b. *ukulala ubuthongo* "to sleep" (lit. "to sleep/lie a sleep") (Zulu)

The prepositional phrases in (41) thus seem to be generated as an argument of the V^0 head rather than as an argument of *-an*. It thus seems that the direct object argument of the verb in these cases is saturated by the *-an* suffix, while at the same time the lexical object appears in a prepositional phrase.

    The prolonged action interpretation would seem to be the only case in Zulu where *-an* could be added to an intransitive verb, but on closer inspection these appear to be cases of verbs which are optionally transitive and there thus appear to be no true cases of *-an* added to an intransitive verb. In terms of the theta role assignment parameter in (43a), Zulu *-an* is thus unable to assign its own theta role.[7]

Noun class 3 nominalizations.   Zulu has a frequent form of nominalization, of noun class 3 (with corresponding plurals in noun class 4), ending in *-o*:[8]

(46)   *thwala* "to carry" → *umthwalo* "load, burden"

        vuza "to reward" → *umvuzo* "reward"

        nikela "to contribute" → *umnikelo* "contribution"

        mangalisa "to surprise" → *ummangaliso* "wonder, miracle"

-An appears freely in these nominalizations, as shown in three examples in (47):

(47)   a. u- m- hlang- an-   o

          3- 3- *hlang-* RECIP- NOM

          "meeting"

---

[7]And with respect to Ndayiragije's case parameter (not discussed here), because there are no cases where the argument corresponding to *-an* appears as an object marker or an overt noun phrase, Zulu *-an* appears to always license null case.

[8]A discussion of the thematic properties of such nominals in Xhosa can be found in Visser (1997).

b. u- m- ncint- is- w- an- o
    3- 3- *ncint-* CAUS- PSV- RECIP- NOM
    "competition"

c. i- s- ahluk- an- is- o
    7- 7- separate- RECIP- CAUS- NOM
    "separation"

In contrast, reflexive *zi-* cannot be incorporated into such nominalizations, as shown in (48):

(48) *zidela* "to sacrifice" → *∗umzidelo*

Noun class 3 nominalizations being unavailable to them, forms with *zi-* must resort to other nominalization strategies. Such a strategy is seen in the word *uzibuze* "self-government", which appears to a coerced imperative form:

(49) a. u- zi- bus- e
        1- REFL- govern- SUBJ
        "self-government"

      b. Zi- bus- e!
        REFL- govern- SUBJ
        "Govern yourself!"

      c. ∗ u- m- zi- bus- o
          3- 3- REFL- govern- NOM

This case seems entirely analogous to the French noun *cessez-le-feu* (and indeed its English counterpart):

(50) a. Cessez   le feu! (French)
        stop.IMP.PL the fire
        "Cease fire!"

      b. un cessez   - le - feu!
        a stop.IMP.PL the fire
        "a cease fire"

Like the lexicalization asymmetry, this asymmetry can be explained in terms of height. The exclusion of *zi-* in *um...o* nominalizations is natural if *zi-* attaches at a point in the structure higher than the nominalizing heads *m-* and *-o*:

(51) a.

```
                    ReflP
                   /     \
               Refl⁰      NomP
                |         /    \
               zi-    Nom⁰      NomP
                       |       /    \
                       m-    vP_i    Nom′
                            /\      /    \
                          stem  Nom⁰   ... t_i ...
                                 |
                                 -o
```

b.

```
                    NomP
                   /     \
               Nom⁰       NomP
                |        /    \
                m-     vP_i     Nom′
                      /   \    /    \
                 stem + -an  Nom⁰  ... t_i ...
                              |
                              -o
```
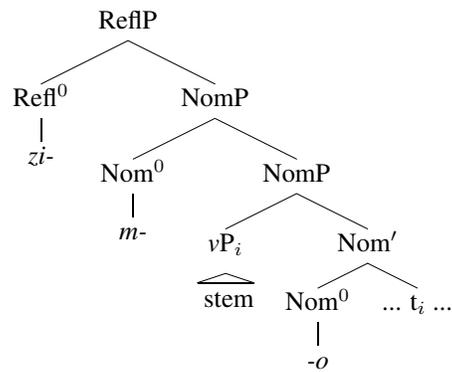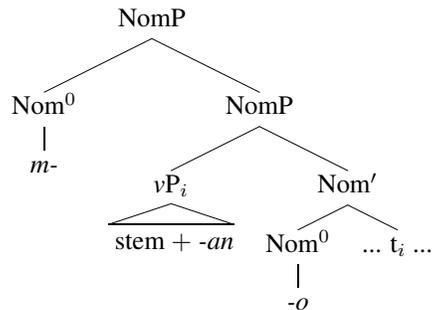
This is not meant to imply that all nominalizations are as low as the Zulu noun class 3 *um...o* nominalization. Certain other Zulu nominalizations appear to be higher and are able to incorporate the reflexive:

a. Zulu (and other Bantu) infinitives, which morphologically are class 15 nouns: *ukuzigeza* "to wash oneself", *ukuzibonisa* "to show oneself".

b. Zulu noun class 1 nominalizations appear to be able to include reflexive *zi-*: *umzenzisi* "hypocrite" (from *z-enz-is-a* "to pretend", literally something like "to make oneself do").

This is to be expected if different nominalization heads attach at different heights. Mchombo (1993) claims that in Chewa the reflexive prefix is excluded from all nominalizations, while Ndayiragije (2003) shows that several types of nominalization in Rundi can incorporate the reflexive. This is explained if we assume that the point at which the nominalizing head for any particular class of nominalization varies somewhat from language to language.

Morphological slot. The reflexive takes up a morphological slot in a way that the reciprocal does not. As in many (but not all) Bantu languages, Zulu allows no more than one object marker on the verb. In this sense, *zi-* is like any other object marker and it cannot coöccur with another object marker on the same verb, as shown in (52):

(52) a. Ba- fihl- el-   a a- masela i- mali.
           2.SBJ- hide- APPL- FV 6- 6.thieves 9- 9.money
           "They hide money for/from the thieves."

     b. Ba- **yi-**   fihl- el-   a a- masela.
           2.SBJ- 9.OBJ- hide- APPL- FV 6- 6.thieves 9- 9.money
           "They hide it for/from the thieves."

     c. Ba- **zi-**   fihl- el-   a i- mali.
           2.SBJ- REFL- hide- APPL- FV 9- 9.money
           "They hide the money for/from themselves."

     d. * Ba- ya-**yi-**   **zi-**   fihl- el-   a.
           2.SBJ- *ya-* 9.OBJ- REFL- hide- APPL- FV 9- 9.money

     e. * Ba- ya-**zi-** **yi-** fihl- el-   a.
           2.SBJ- *ya-* REFL- 9.OBJ- hide- APPL- FV 9- 9.money
           "They hide it for/from themselves."

Sentence (52a) shows the verb *fihlela* "to hide for/from" with two DP objects: the first a class 6 beneficiary object and the second a class 9 direct object. Sentence (52b) shows that the direct object can be replaced with an object marker, while (52c) shows that the beneficiary can be replaced with the *zi-* reflexive marker (changing the reference of that argument, of course). But the ungrammatical sentences (52d) and (52e) show that these two markers cannot be combined in either order in the same form. In contrast with *zi-*'s inability to coöccur with another object marker, reciprocal *-an* can do exactly that, as shown in (53):

(53) Ba- ya-**yi-** fihl- el- **an-** a (i- mali.)
      2.SBJ- *ya-* 9.OBJ- hide- APPL- RECIP- FV   9- 9.money
      "They hide it (the money) for/from each other."

    This disparate behavior is unexpected if reciprocal *-an* and reflexive *zi-* differ only in the directionality of their affixation, unless the notion of slot depends on (potential) string-adjacency. Conversely, the ability of these affixes to coöccur is expected if they are merged in different regions of the syntactic tree.

Imperatives.   And finally, another way in which the Bantu reciprocal *-an* behaves differently from the reflexive prefix is with respect to imperatives. In Zulu, as in many other Bantu languages, the final suffix of an imperative is normally *-a*, but when the verb has an object marker, the final suffix is not *-a* but *-e*, the same suffix used in the subjunctive.[9] In this respect, the reflexive prefix *zi-* behaves like an object marker, in

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[9]In Zulu, the tonal melody of an imperative with an object marker is also like that of a present subjunctive with an object marker.

requiring the subjunctive *-e* final suffix, but the reciprocal does not, taking the normal *-a* suffix. These facts are illustrated in the plural imperative examples in (54):

(54) a. Fihl- ***a-*** ni i- mali   yenu!
          hide- FV 2P 9- 9.money 9.your

          "Hide (pl.) your money!"

      b. M-   fihl- ***e-*** ni! Ngi-   fihl- ***e-*** ni!
          1.OBJ- hide- FV- 2P 1S.OBJ- hide- FV- 2P

          "Hide him! Hide me!"

      c. Zi-   fihl- ***e-*** ni!
          REFL- hide- FV- 2P

          "Hide yourselves!"

      d. Fihl- an-   ***a-*** ni!
          hide- RECIP- FV- 2P

          "Hide each other!"

Sentence (54a) shows that the final suffix of the imperative (preceding the plural addressee clitic *-ni*) is *-a* if no object marker is present. When an ordinary object marker is present, as in the two examples in (54b), the final suffix is *-e*, and, as seen in (54c), this *-e* also appears when the reflexive marker *zi-* is present. But in (54d), we see that again, reciprocal *-an* does not behave like reflexive *zi-*, as the final suffix before *-ni* is *-a*, just as it is when no object marker is present, as in (54a).

Further discussion of the imperative, including this particular issue, is taken up in the next chapter, on page 128.

2.3   Deriving the verb stem

Having examined the nature of reciprocal *-an*, we now return to the more basic issue of how the verb stem is derived.

The verb stem uses only suffixal morphology, making it amenable to an LCA-compliant head movement analysis.[10] This portion of the verb word includes the verb root, followed by any number of suffixes traditionally called verb extensions (such as applicative, middle, causative, passive, and reciprocal). In most cases an analysis employing only head movement with left adjunction is straighforward, building a string whose morpheme order transparently mirrors the semantic compositionality. Let's consider *ukufundisela* "to teach for", a form with both causative and applicative affixes:

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[10]This does not rule out a phrasal analysis, though. For an example of a phrasal analysis for a similar range of verbal suffixes in Wolof (a West Atlantic language) see Buell and Sy (2005b).

(55) *ukufundisela* "to teach for"

Verb stem: fund- is-   el
learn- CAUS- APPL

The merge positions for (55) are as in (56), where AO denotes the applicative object and DO the direct object. The hierarchy directly mirrors the semantic compositionality, with the applicative embedding the more basic predicate "to teach", which is a morphological causative in Zulu.

(56)

```
                        vP
                   ┌─────┴─────┐
                  DP          ApplP
                ┌──┴──┐      ┌──┴────┐
                Agent       DP      Appl′
               (causer)   ┌─┴─┐   ┌──┴──────┐
                          AO        -el     CausP
                                        ┌────┴────┐
                                      Caus⁰       vP
                                       │      ┌───┴───┐
                                      -is     DP      VP
                                           ┌──┴──┐  ┌─┴──┐
                                           Agent   DP   V′
                                          (causee)┌┴┐   │
                                                  DO    V⁰
                                                        │
                                                       fund
```
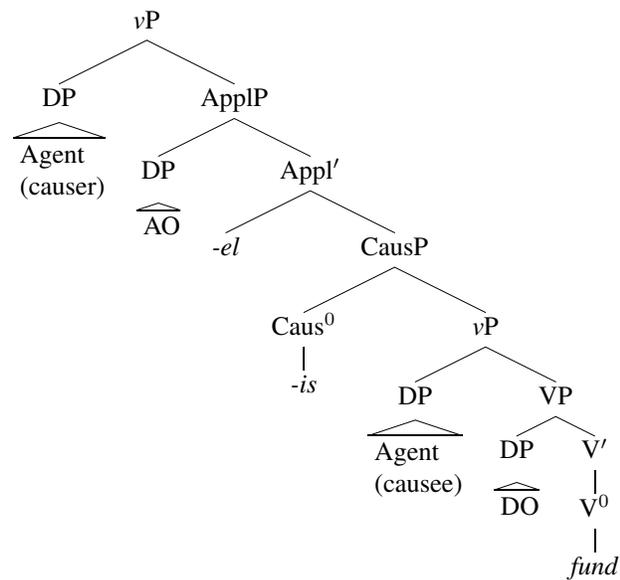
In this structure, the V^0 head locally licenses a direct object, $Caus^0$ introduces a causation event (Pylkkänen 2000), embedding the lexical verb and its arguments, introduced in the specifier of the higher vP, to be interpreted as a causer, and $Appl^0$ licenses the applicative object. Under a head movement analysis, the V^0 head *fund* adjoins to the $Caus^0$ head *-is*, and that complex head subsequently raises to the $Appl^0$ head *-el*, as in (57):

37

(57)
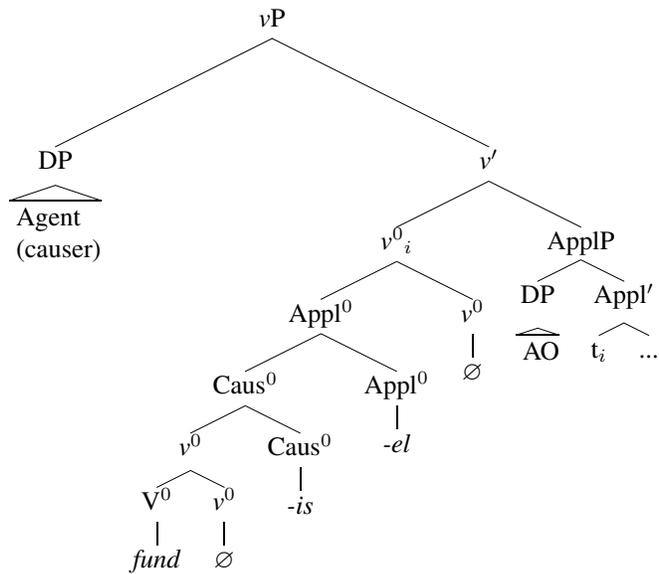
As seen in the morpheme order of the complex head built in this way, LCA-compliant head movement easily acounts for the fact the functional morphemes lowest in merge position surface closest to the verb root.

Some complications with extension reorderings. We have just described a straightforward way of building the verb stem when the morpheme orderings map transparently onto the underlying syntactic structure. However, this is not the entire story, for in combinations with the passive suffix *-w*, the reciprocal *-an* can show up displaced from its supposed merge position. Consider the following forms from Xhosa:[11]

(58) *ukukhuphisana* "to compete" (Xhosa)

    a. khuph- is-   an- a
        khuph-   CAUS- RECIP FV-

        "compete"

    b. khuph- is-   an-   el- a
        khuph-   CAUS- RECIP- APPL FV-

        "compete for"

    c. khutsh- is-   an-   el-   w- a   (expected order)
        khuph-   CAUS- RECIP- APPL- PSV- FV

        "be competed for"

---

[11]In (58), the *ph* of the root *khuph* has become *tsh* due to a regular process of palatalization induced by the passive suffix *-w*.

d. khutsh- is- el- w- an- a　　　(unexpected order)
　　khuph-　CAUS- APPL- PSV- RECIP- FV

"be competed for"

My own Zulu informants have been ambivalent to such reorderings, but even written examples of them are occasionally encountered.[12] The reorderings in Xhosa seem quite acceptable, and the alternation is described as free variation by Satyo (1992), who is presumably a native speaker of Xhosa.

The form in (58c) illustrates a reordering of the passive suffix *-w* and the reciprocal suffix *-an* where *-an* saturates the subject of the embedded predicate. A similar reordering occurs when *-an* saturates the subject of the embedded predicate in a causative, as illustrated in the Xhosa forms (59), in which (59d) displays the reordering of *-an* with respect to the passive suffix *-w*:[13]

(59)　a. cham- a
　　　　urinate- FV

　　　　"to urinate"

　　b. cham- is- a
　　　　urinate- CAUS- FV

　　　　"to cause to urinate, help to urinate"

　　c. cham- is- an- a
　　　　urinate- CAUS- RECIP- FV

　　　　"to cause each other to urinate, help each other to urinate"

　　d. chany- is- w- an- a
　　　　urinate- CAUS- PSV- RECIP- FV

　　　　"to cause each other to urinate, help each other to urinate" (passive)

　　e. Y- into yabo leyo yokuthi ba- ku- nxil- a u- fik- e
　　　　COP- 9.thing 9.theirs 9.that 9.of:that 2.SBJ- *ku-* get.drunk- FV 2S.SBJ- arrive- FV

　　　　ku- hanj- w- e ku- chany- is- w- an- a na-
　　　　17.SBJ- go- PSV- FV 17.SBJ- urinate- CAUS- PSV- RECIP- FV and-

　　　　sesidlangaleleni.
　　　　in.public

　　　　"It is very common to find them helping each other to pass water even in public once they are drunk."

(Data from Satyo (1992).)

---

[12]The *-an*-final orders are the norm in Zulu nominalizations such as *umncintiswano* "competition", glossed in (47b) on page 33, but nominalizations do not constitute clear cases of reordering, since it is not understood what role the passive suffix *-w* plays in them.

[13]A passive form like (59d) can be used in an impersonal passive construction, for example.

The sentence in (59e) demonstrates how the form in (59d) can be used in an impersonal passive clause.

The argument saturated by the reciprocal *-an* is that of causee, as shown by the fact that this is the only option in the form in (58a). For a passivized applicative derivative of that form, we would expect underlying the structure in (60b) (shown without specifiers):

(60) a. khutsh- is- el- w- an- a
          khuph-   CAUS- APPL- PSV- RECIP- FV

          "be competed for"

  b.

```
                            PsvP
                          /      \
                      Psv⁰        ApplP
                       |         /     \
                      -w      Appl⁰     RecipP
                               |       /      \
                              -el   Recip⁰    CausP
                                      |       /    \
                                     -an   Caus⁰    vP
                                            |        \
                                           -is        VP
                                                      |
                                                      V⁰
                                                      |
                                                    khutsh
```
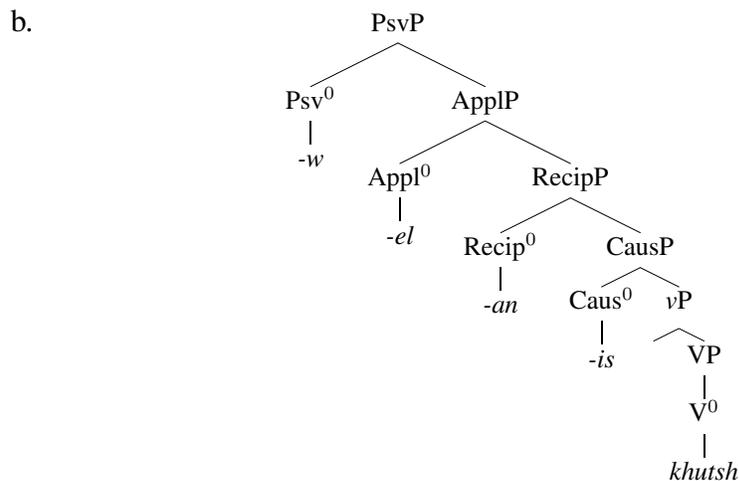
If (60b) is indeed the correct hierarchy of merger, then no head movement analysis can account for the actual morpheme order, because the reciprocal suffix *-an* would need to move above both applicative *-el* and passive *-w* to follow them in the string, a move which would violate the standardly assumed Head Movement Constraint (Travis 1984), which stipulates that head movement proceed in a stepwise fashion in which no intervening head can be "skipped over".

There are at least two approaches to such Mirror Principle violations. The first is the morphological approach, which allows for the reordering of certain affixes according to morphological rules or constraints. This approach, which relegates the process to a morphological component, has been proposed for the reordering of Bantu verbal extensions (a phenomenon which occurs in numerous Bantu languages), by Hyman (2003), who elaborates a constraint-based analysis in which the desire for transparent compositionality is pitted against a desire to conform to certain fixed pair orderings. While his analysis successfully explains why certain interpretations in the languages he considers display free variation in suffix ordering and others do not, Buell and Sy (2005a) show that this approach cannot be extended to all languages with similar verbal extensions, due to paradoxes which arise in the putative fixed ordering constraints.

The other approach that can be taken is to implement all affix reorderings in the syntax. This is the approach taken in Koopman (2003b) and Buell and Sy (2005b).

2.4 Attaching the object marker

As in Ngonyani (1996) and Thwala (1996), we will assume that the object marker is an agreement head, merged in a projection labeled AgrOP (for "object agreement phrase"), below the inflectional domain, but above all structure introducing verbal extensions such as passive, applicative, causative, and reciprocal, as in (61):

(61)

```
              AgrOP
             /     \
          DP_i      Agr'
          /        /    \
       object   Agr^0    vP
                 |      /    \
          object marker  verb stem t_i
```
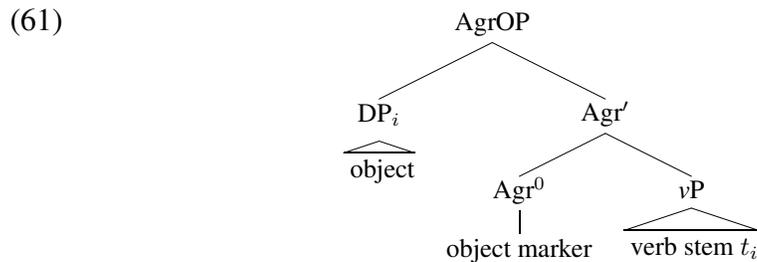
The relative height of the reflexive and other object markers.   There remains a question as to whether the ordinary object markers are in a structurally different position from the reflexive marker *zi-*. Given their similar usage and linear position, and the fact that they cannot coöccur, one would expect reflexive *zi-* and the ordinary object markers to constitute different lexical heads of the same category, and hence to be capable of heading the same projection, such as an AgrOP. But there are at least two types of evidence suggesting a different picture, in which the position of the reflexive prefix is structurally lower than that of any other object prefix. It seems that in all Bantu languages allowing multiple object markers, in the coöccurrence of an object marker and the reflexive marker it is always the reflexive marker that immediately precedes the verb stem, regardless of which argument it saturates (Thilo Schadeberg, p.c.):

(62)　　a.　OM + REFL + V

　　　　b.　∗ REFL + OM + V

Assuming the Mirror Principle, this suggests that the reflexive marker is structurally lower than the other object markers, because the reflexive marker surfaces closer to the verb root than does the other object marker. (Recall that Zulu is silent on this point, as it does not allow multiple object markers.)

Another piece of evidence that suggests a difference in height between the reflexive marker and the other object markers is the fact that the latter never occur in nominal-

izations, while the reflexive marker can occur in some types of nominalizations in some Bantu languages. Ndayiragije (2003) explains this asymmetry in terms of case. He claims that nominalizations lack the structural case which would be necessary to check the number, person, and Case features on either lexical DPs or object markers. Because the reflexive marker does not have number and person features to check, being invariable for all persons, numbers, and noun classes, and because it by his assumption also lacks case features, the reflexive marker is not prevented from appearing in such nominalizations, unlike its ordinary object marker counterparts.[14] The problem with this analysis concerns the claim that all Bantu nominalizations lack structural Case. In some Bantu languages (or at least in Swahili) agent and process nominalizations do appear to have the ability of assigning accusative case to a phrasal object, as seen in these Swahili examples (collected from Internet searches):[15]

(63) Swahili process nominalizations

    a. u- zalisha- ji   bidhaa
        11- produce- NOM 10.goods

        "the production of goods"

    b. u- andika- ji   [mswada wa kanuni ongozi] amba- zo zi-   na-
        11- write-   NOM 3.draft   3.of law   directive which- 10.*o* 10.SBJ- PRES-

        taj-   a ...
        mention- FV

        "the writing of draft guidelines that mention..."

(64) Swahili agent nominalizations

    a. mu- uza- ji   madawa
        1-   sell- NOM 6.medicines

        "medicine seller"

    b. m- piga picha   na mw- andika usanifu majengo
        1- hit   9.picture and 1-   write   11.design 6.buildings

        "photographer and architect"

    c. mu- uza kanda za   kidini
        1-   sell 10.tape 10.of religious

        "religious tape seller"

---

[14]It is not entirely clear whether Ndayiragije views the object markers as pronouns or as morphemes agreeing with such pronouns, but in either case the claim is that a nominalization lacks the structural case configuration in which the object marker could appear. And in either case, the conclusion is implied that the reflexive marker does not require such a structural case configuration. The question of why the reflexive marker should lack Case features, and how this is related to the fact that it lacks person and number features, is not addressed. (Note that in Slavic languages, the reflexive pronoun also lacks person and number features, and yet it displays morphological case.)

[15]For a discussion of nominalizations in Malagasy that license accusative case, see Ntelitheos (2005).

In many of these cases, the phrase in which a nominalized verb is followed directly by a noun phrase alternates with one in which it is followed by an associative prepositional phrase, as in (65) (also found in an Internet search), which is a variant of (64a):

(65) mu- uza- ji   wa madawa
      1-   sell- NOM 1.of 6.medicines

      "seller of medicines"

In many cases the noun phrase complement variant seems to have the flavor of a bureacratic or technical compound, but examples are found in other registers, as in this proverb:[16]

(66) a. [M- tak-a   cha mvungu- ni   ] sharti a-   inam- e.
          1-   want-FV 7.of cranny-   LOC   must 1.SBJ- bend- SBJCNT

      "He who wants something under a piece of furniture has to bend over."

Example (63b) is particularly interesting, because the complexity of the bracketed complement noun phrase defies an analysis in which the nominalized verb and complement noun phrase form a complex noun head, even if we assume the relative phrase to be extraposed. To return to our main point, though, the existence of nominalizations in Swahili poses a problem for an analysis that excludes non-reflexive Bantu object markers from nominalizations by means of case properties. An analysis based on differential height, with the reflexive structurally lower than the other object markers, does not suffer from this problem.[17] Given these facts, the distribution of the reflexive and ordering object markers with respect to each other and with respect to nominalizations seems more naturely explained in terms of relative height.

Further discussion of the object prefix is found in the next chapter. An additional asymmetry between the reflexive marker and ordinary object markers is discussed in section 5.6 on page 185.

2.5 Prefixes and suffixes: some asymmetries

It is curious that Zulu verbal suffixes interact with the verb root and with each other in several ways in which the prefixes never do. These interactions suggest that a different sort of structural relation holds between these suffixes and the verb root from that

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[16]The noun class 7 associative marker *cha* in (66) agrees with the elided noun *kitu* "thing": *(kitu) cha mvunungi* "something from inside the space (as under a piece of furniture)".

[17]Assuming that definite nouns are higher structurally than indefinite ones (Diesing 1992), the height account will also predict the presumed exclusion of definite complement noun phrases in Swahili nominalizations like those in (63) and (64).

which holds between the verb stem and an object marker. Some of these interactions are discussed in what follows.

Suppletive recent past forms.   The first of these asymmetries involves suppletive forms used with recent past forms of verb roots ending in the string *al* (which is not itself a morpheme or suffix).[18] The pattern is illustrated in contrast between the verb root *bamb* "to grab" in (67a), which does not display the alternation, and the root *thwal* "to carry" in (67b), which does:

(67)   a.   i.   Ngi-   b*a*mb- a   i- ncwadi.
               1S.SBJ- grab-   FV 9- 9.book

                     "I'm grabbing a book."

        ii.   Ngi-   b*a*mb- *e*   i- ncwadi.
               1S.SBJ- grab-   PERF 9- 9.book

                     "I grabbed a book."

        iii.   Ngi-   yi-   b*a*mb- *ile*.
               1S.SBJ- 9.OBJ- grab-   PERF

                     "I grabbed it."

        b.   i.   Ngi-   thw*a*l- a   i- ncwadi.
               1S.SBJ- carry-   FV 9- 9.book

                     "I'm carrying a book."

        ii.   Ngi-   thw*e*l- *e*   i- ncwadi.
               1S.SBJ- carry-   PERF 9- 9.book

                     "I carried a book."

        iii.   Ngi-   yi-   thw*e*l- *e*.
               1S.SBJ- 9.OBJ- carry-   PERF

                     "I carried it."

In (67a), we see the verb root *bamb* "to grab" does not change, regardless of the suffix attached to it. In contrast, the root *thwal* has the form *thwal* in the present tense form in (67b.i), but changes its internal vowel to become *thwel* in the recent past forms in (67b.ii) and (67b.iii). (These alternate forms appear only in the recent past, and not in any other form ending in *-e*, such as the present affirmative subjunctive.) In addition to this internal vowel change, we also note that while the non-alternating verb root *bamb* in (67a) takes the two different recent past suffixes *-e* and *-ile*, the irregular verb root *thwal* does not alternate, the suffix in both recent past forms ending in *-e*.[19]

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[18]Alternations of this and similar types are analysed in terms of vowel raising in Khumalo (1992).

[19]Beuchat (1966) notes that there is, in fact, a tonal contrast between forms analogous to (67b.ii) and (67b.ii). But the point here is that the root and the suffixes interact in an idiosyncratic way.

Non-default final vowel copying.   A similar set of suppletions occurs with the verb root *sho* "to say", which is highly unusual in that it ends in the non-default vowel *o*. The pattern is shown in (68):

(68)   a.   ngi- sho
            1.SBJ- say

       "I say"

       b.   / a-   ngi- sho- anga / → angishongo, *angishonga, *angishanga
            NEG- 1.SBJ- say- NEG

       "I didn't say"

We see in (68b) how the unusual vowel of *sho* is copied onto the suffix *-anga*.

Palatalization.   A process termed palatalization mutates a certain set of consonants in the verb root in the presence of the passive suffix *-w*.[20] The process is illustrated in the contrast between the active and passive affirmative infinitive forms in (69):

(69)   a.   u- ku- ba***mb***- a,   u- ku- ba***nj- w-*** a
            15- 15- grab-   FV, 15- 15- grab- PSV- FV

       "to grab, to be grabbed"

       b.   u- ku- ba***mb***- el-   a,   u- ku- ba***nj***- el-   ***w-*** a
            15- 15- grab-   APPL- FV, 15- 15- grab- APPL- PSV- FV

       "to grab for, to be grabbed for"

       c.   u- ku- ba***mb***- is-   a,   u- ku- ba***nj***- is- ***w-*** a
            15- 15- grab-   CAUS- FV, 15- 15- grab- CAUS- PSV- FV

       "to make/help grab, to be made/helped to grab"

We see in each of the examples in (69) that the prenasalized labial stop *mb* in the verb root of the active form becomes the palato-alveolar *nj* with the addition of the passive suffix *-w*.

Suffix fusion.   We also see a case of fusion between the passive suffix *-w* and the recent past suffixes *-e/ile*, yielding the fused suffix *-iwe*, as in (70):

(70)   / i-   fund- w- ile   / → ifundiwe, *ifundwile
            9.SBJ- read- PSV- PERF

       "it was read"

---

[20]A similar process occurs in the formation of locative phrases in cases where *-eni* is suffixed to a noun ending in *-o* or *-u*. as seen in how the stop *mb* in *umthombo* "spring" becomes *nj* in *emthonjeni* "at the spring". This process involves the same set set of mutations seen in the active and passive verb forms in (69).

Whether a phrasal or head movement account is adopted for construction of the verb stem, this suppletion is interesting because the suppletion targets *-w+-ile*, which is a non-constituent, as shown in the underlying structure in (71a) and the derived constituency in (71b):

(71)   a.   -ile > -w > V

        b.   [[-fund -w] -ile]

This problem is familiar from European languages such as English, in which subinflectional prefixes do not impede suppletion of a tensed verb root, as in a form like English *resang* as shown in the assumed underlying hierarchy in (72a) and resulting structure in (72b):

(72)   a.   PST > re- > sing

        b.   [[re- sing] PST]

Finally, there is a coöccurrence restriction between the negative *-i* suffix and the passive suffix *-w*.[21] Instead of *-i*, the suffix *-a* is used (which also has non-default tonal properties):

(73)   a.   a-   ngi-   thánd- i
              NEG- 1S.SBJ- love-   NEG

           "I don't love."

        b.   ngi-   ya- thánd- w-   a
              1S.SBJ- *ya*- love-   PSV- FV

           "I am loved."

        c.   a-   ngi-   thând- w-   a, ∗angithándwi
              NEG- 1S.SBJ- love-   PSV- FV

           "I am not loved."

Whether any analogous situation holds with respect to object markers depends on the analysis of the present subjunctive, which uses two different tonal suffixes, depending on the presence or absence of an object marker. (This will be discussed in chapter 4.)

There are thus several phenomena which involve interactions between suffixes or between a suffix and the verb root. We can imagine similar interactions between a prefix and the verb stem. For example, a process of palatalization could mutate the consonant of an object prefix when the verb root begins with *w*, in the same way that the passive *-w* suffix mutates a consonant of the verb root. Similarly, the initial vowel

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[21]Or, more correctly, the principal *-i* ...HL and participial *-i* ...FL suffixes. The tonal aspect of these suffixes is addressed in chapter 4.

of the verb root could copy itself onto the object marker or onto a tense or aspect related prefix. But the fact is that such phenomena do not occur in Zulu. This would be a curious accident, but it is not strange at all under assumptions like those adopted here in which prefixes are not assumed to be structurally identical to suffixes, differing only in the directionality of their attachment.

Having concluded our examination of the morphology of the verb stem, we will now turn our attention to the morphology of the inflection domain in the next chapter.

CHAPTER 3

Subjects, Objects, Agreement, and Raising

This chapter will discuss agreement and constituency as tools for determining the height of an argument in Zulu, as well as some basic facts and assumptions about clause structure, and the treatment of subject and object markers. Evidence will be presented supporting the claim made elsewhere (Kinyalolo (1991), Thwala (1996), Ngonyani (2000)) that both subject and object markers appear as the result of an argument raising to the specifier of a particular head. This view of agreement and argument raising will be exploited in chapters 5 and 6.

3.1 Subject markers and object markers

Because the exponents of verbal agreement in Zulu are subject and object markers, we will first examine these.

3.1.1 Comparing subject and object markers

Here we will take a moment to compare and contrast the subject and object markers. These are prefixes which appear inside the verb word, as illustrated in (74):

(74) a. ***Ng-*** a- ***ku-*** bon- a.
          1S.SBJ- PST- 2S.OBJ- see- FV

      "I saw you."

   b. A- ***ngi- ku-*** bon- anga.
      NEG- 1S.SBJ- 2S.OBJ- see- NEG

      "I didn't see you."

Both sentences in (74) employ the first person singular subject marker *ng(i)-* and the second person singular object marker *ku-*. As in all verb forms, the subject marker precedes the object marker (if present), though in some forms another morpheme may intervene between them, as in (74a), where the remote past morpheme *-a* intervenes. Although the subject marker is often the first morpheme in the verb word, the negative prefix *a-* in (74b) shows that this is not always the case. A more complete treatment of

subject markers will be given in the next chapter, and here we will be concerned only with pointing out the similarities and differences between subject and object markers.

First, it will be noted that both subject and object markers have person features, which distinguishes them from certain other types of concord in Zulu. This distinction is shown in the predicate adjective in (75), where both personful and personless concord is present in the same word:[1]

(75) Nina ni- ba- hle.
     you 2P.SBJ- 2- beautiful
     "You (pl.) are beautiful."

In this sentence, we see that the adjective -*hle* "beautiful" is preceded by the morpheme *ba-* bearing noun class 2 features, class 2 being the default plural human noun class.[2] This personless morpheme is preceded by the subject marker *ni-* possessed of second person plural subject features. While personful agreement morphology is most often seen in subject and object markers and in pronouns, it also used in a few other contexts, such as with the words -*onke* "all" and -*odwa* "only, alone", as shown in (76), where these words bear the *n-* second person plural prefix:[3]

(76) a. Nina n- onke ni- ya- cul- a.
       you 2P- all 2P.SBJ- *ya-* sing- FV
       "All of you sing."

    b. Nina n- odwa ni- ya- cul- a.
       you 2P- only 2P.SBJ- *ya-* sing- FV
       "Only you sing."

The subject markers (SMs) and object markers (OMs) are quite similar in form, as shown in the partial listing in (77). The corresponding strong pronouns are also given for comparison.[4]

(77) Subject markers, object markers, and strong pronouns: a partial listing

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[1]Because here we are interested in nominal agreement, we deviate somewhat from the glossing style set out in chapter 1.

[2]By "default" here it is meant that it is the agreement class used on various predicates when referring to humans or addressing them when no particular noun has been mentioned, as is the case in (75).

[3]The relative distribution of personless and personful agreement is an interesting issue in its own right, but one which is difficult to map out because the distinction is apparent only in first and second person (and in a few cases noun class 1), which is incompatible with many of the cases one would like to test. Kinyalolo (1991) has suggested that "third person" subject markers lack person features altogether.

[4]The subject markers are given in their principal form (SM^{prin}). The other two paradigms of subject markers (the participial (SM^{part}) and subjunctive (SM^{subj})) differ from these only minimally and will be discussed in the next chapter.

agreement	SM^{prin}	OM	pronoun
1s	ngì-	ngí-	mìná
1p	sì-	sí-	thìná
2s	ù-	kú-	wèná
2p	nì-	ní-	nìná
1	ú-	ḿ-	yèná
2	bá-	bá-	bòná
3	ú-	wú-	wòná
4	í-	yí-	yòná

For noun classes 2 through 17 (that is, for all noun classes other than 1), the subject and object markers are identical except that in those cases where the subject marker begins with a vowel, the object marker begins with a glide. Except for second person singular and for noun class 1, the resemblence between the subject and object markers is obvious.

As for differences between the subject and object markers, we can consider their obligatory and optional natures, as well as the features other than person and noun class they encode. It will be noted that in all finite verb forms (all forms except infinitives and affirmative imperatives) a subject marker is obligatory, but in no case is an object marker morphologically obligatory, as shown for the present tense in (78):

(78)　a.　*(Ngi-　) ya- cul- a.
　　　　　1S.SBJ-　*ya*-　sing- FV

　　　"I sing."

　　b.　*(Ngi-　) ya- yi-　　cul- a.
　　　　　1S.SBJ-　*ya*- 9.OBJ- sing- FV

　　　"I sing it."

Person, number, and noun class are the only types of features which are expressed both in subject and object markers. The subject markers are also endowed with mood and submood features (to be examined in the next chapter), in a way fully visible only in noun class 1. Note the three variants of the noun class 1 subject marker in (79):

(79)　a.　Long present principal

　　　***u*-**　　ya- cul- a
　　　1.SBJ- *ya*- sing- FV

　　　"she sings"

　　b.　Present participial

　　　uma ***e*-**　　cul- a
　　　if　　1.SBJ- sing- FV

"if she sings"

    c. ukuze ***a***- cul- e
       in.order 1.SBJ- sing- FV
      "in order for her to sing"

No analogous alternation exists in the object markers. As for the object markers, only these have a special form *zi-* for a reflexive interpretation, as already described in the previous chapter. No analogous special bound subject marker exists.

3.1.2 Pronoun or agreement?

Among the basic questions to be asked about subject markers and object markers are whether they are pronouns or agreement markers and how they are to be represented in the structure. We will here briefly consider these questions.

There have been two views in the literature on the nature of Bantu subject and object markers. One is that they are agreement markers, and the other that they are pronouns (as in, for example, Zwart (2000)). The agreement approach is the one that will be adopted here. Argumentation for this view comes from different sources for subject and object markers. For subject markers, evidence comes from compound tenses in various Bantu languages, while for object markers it comes from a certain type of ellipsis in Zulu.

Let's first consider subject markers. Bantu languages including Zulu typically have a large range of compound tenses formed by embedding a lexical verb under a modal, aspectual, or temporal auxiliary. Both the auxiliary and the lexical verb in these compound tenses bears a subject marker, as illustrated by the Zulu example in (80):[5]

(80) A- ba- nga- ka- fik- i, ***s-*** a- b- e ***si-*** phum- ile.
      NEG- 2.SBJ- NEG- yet- arrive- NEG 1P.SBJ- PST- be- FV 1P.SBJ- leave- PERF
    "Before they arrived, we had left."

In the clause *sabe siphumile* "we had left", the participial recent past form of the lexical verb *phuma* "to leave" is embedded under the (principal) remote past form of the semantically vacuous auxiliary verb *ba* "to be". Both the auxiliary and the lexical verb form bear a first person singular subject marker. As argued in Carstens and Kinyalolo (1989), the auxiliary in such compound tenses has all the properties of a raising verb. For example, no selectional restrictions are imposed on these auxiliaries. (That is, there is no type of DP which cannot serve as their subject.) For example, the subject of such an auxiliary can be the idiomatic argument of the lexical verb, as in the case of the passivized idiomatic object *isililo* in (81c):[6]

---

[5]Unfortunately, the example in (80) could not be confirmed with a native speaker by time of filing.

[6]Unfortunately, the examples in (81) could not be confirmed with a native speaker by time of filing.

(81)   a. *dinda* "to thrash, beat severely"
              isililo "lamentation"
              dinda isililo "to wail"

        b. A- besifazane ba-   be   be- dind- a i- sililo.
              2- 2.women   2.SBJ- be:PERF 2.SBJ- thrash- FV 7- 7.cry

              "The women were wailing."

        c. I- sililo si-   be   si-   dind- w- a nga- besifazane.
              7- 7.cry 7.SBJ- be:PERF 7.SBJ- thrash- PSV- FV by:2- 2.women

              "There was wailing being done by women."

This property of compound tenses is surprising in an account where subject markers are pronouns, but is in fact expected in an account where subject markers are agreement morphemes.

Now we turn to object markers, where evidence also points to an agreement analysis. Consider the forms in (82):

(82)   a. Ngi- dl- e   a- mahhabula a-   mabili,
              1S.SBJ- eat- PERF 6- 6.apple   6.REL- 6.two

        b. no- Sipho u-   *(wa-   ) dl- ile.
              and:1- 1.Sipho 1.SBJ-   6.OBJ- eat- PERF

              "I ate two apples, and so did Sipho."
              (lit. "I ate two apples, and Sipho ate them, too.")

Note how the object marker in (299b) is obligatory, even though the interpretation is neither definite nor specific. If the object marker in (82b) is a pronoun, then the interpretation is unusual, because we would expect the sentence to mean "I ate two apples, and Sipho ate them, too", where the apples eaten by me are the same ones eaten by Sipho. However, if the object marker is an agreement marker, its appearance in the embedded form can be explained. The underlying structure of the second conjunct (299b) contains the object *amahhabula amabili* "two apples" just like the first conjunct (82a). This object in the second conjunct can only be elided from a particular position, and it can only reach this position by first passing through the specifier of AgrO^0.

3.1.3 The spec/head relation and agreement

Having examined the subject and markers and having discussed why we are treating them as exponents of agreement heading AgrP projects, we can now examine the syntactic configuration in which they appear, which is argued here to be the spec/head relation.

First let's consider subjects, which can either agree with the verb, as in (83a) and (83b), or fail to agree with it, as in (83c):

(83) a. Mina ngi-   cul- ile.
          me   1S.SBJ- sing- PERF

      b. Ngi-   cul- ile   mina.
          1S.SBJ- sing- PERF me

      c. Ku-   cul- e   mina.
          17.SBJ- sing- PERF me

          "I sang."

The next section will present different types of evidence that supports the idea that in (83a) and (83b), in which the subject marker bears the same agreement features as the subject, the subject has risen to the specifier of the subject marker, and that the subject marker is hence a reflex of an agreement relation which can be consummated only by a phrase moving to the specifier of an agreeing head. Here the agreeing head is assumed to be AgrS^0 (AgrS standing for "subject agreement"), situated above TP in the inflectional domain. As in the tree in (84), the agreement between the person, number, and gender (noun class) features between the lexical subject and the subject marker is the result of this spec/head relationship in which they stand:

(84)

```
              AgrSP
             /     \
          DP_i     AgrS'
           |       /    \
         mina   ngi-    TP
         [1s]   [1s]    /\
                      ...t_i...
```

It should be noted that Zulu is what is traditionally termed a *pro*-drop language, meaning that a lexical subject is not required, as shown by the omission of the pronoun in (85b):

(85) a. Yena u-   cul- ile.
          (s)he 1.SBJ- sing- PERF

      b. U-   cul- ile.
          1.SBJ- sing- PERF

          "She sang."

In such cases, there is assumed to be a silent subject in the specifier of AgrS^0. This type of silent subject is traditionally called *pro*. The structure for (85b) is shown in (86b):

(86)

```
              AgrSP
             /     \
          DP_i     AgrS'
           |       /    \
         pro     u-     TP
         [1]     [1]    /\
                      ...t_i...
```

As for cases like (83c), in which the subject marker does not bear the same features as the subject, it is assumed that an expletive (dummy) silent subject is in the specifier of AgrSP, and that the subject marker agrees with it in default class 17 third person features, as shown in (87):

(87)

```
                        AgrSP
                       /     \
                     DP      AgrS′
                     /\      /    \
                    ⌒     ku-    TP
                    ∅    [17]    /\
                   [17]         ...
                                /\
                            ... mina ...
```

The subject marker (the AgrS^0 head) cannot agree with the subject *mina* in (87), because the subject has not entered into the spec/head relation required for the agreement features of the subject to be checked (matched) against those of the subject marker.

The view could be proposed that in cases like (83c), where there is simply a default class 17 subject marker, nothing is actually in its specifier and that *ku-* is simply the default, non-agreeing form of the AgrS^0 head. Evidence against this view comes by observing that in some Bantu languages situations exist in which no subject marker appears at all, suggesting that the non-agreeing form of AgrS^0 (the one which appears when its specifier is empty) is simply zero.[7] Such an example comes from Lega, in which in certain cases where the subject is lexical and postverbal, no subject marker appears at all, while a subject marker does appear if the subject is *pro*. These two situations are shown in (88):

(88) a. mú- ní mu- ***tu-*** á- nyám- é?
          18- Q 18.REL- **1P.SBJ-** *a-* sleep- FV

          "in which one will we sleep?"

   b. bikí b- á- kás- íl- é ***bábo bíkulu*** mwámí mu- mwílo?
       8.what 8.REL- *a-* give- *il-* FV ***2.that 2.woman*** 1.chief 18- 3.village

       "what did those women give the chief in the village?"

   Data from Kinyalolo (1991), pages 19 and 21.

In (88a), the subject is first person plural, as indicated by the subject marker *tu-*, yet no lexical subject (a pronoun meaning "we") is present. The subject is hence *pro*. In (88b), however, the subject is overt and postverbal. In this case, no subject marker appears at all. The analysis is that it is a property of *pro* that it must raise to the

---

[7]Or that the AgrS^0 simply doesn't project when nothing would move to its specifier.

specifier of AgrS^0, triggering agreement,[8] but for some reason, a lexical subject such as in (88b) is prevented from raising to that position in the presence of the relative marker.[9]

The possibility of having no subject marker in special cases such as these where the subject is in postverbal position suggests that a subject marker occurs only when an element is in its specifier.

Another case of a zero subject marker comes from Swahili, in the *hu-* tense, used to express general properties, as in "Birds fly." This tense is unusual in not requiring or even allowing a subject marker, as shown in (89):

(89) Ndege (∗ zi-   ) hu- (∗ zi-   ) ndiz- a.
      10.birds   10.SBJ-   *hu-*   10.SBJ-   fly-   FV
      "Birds fly."

The subject of a verb in the *hu-* tense is reported to have some unusual properties, such as an inability to be right dislocated (Keach 1995):

(90) ∗ Hu- ndiz- a, ndege.
      hu-   fly-   FV 10.birds
      "They fly, birds."

This suggests that the subject in (89) is not in the usual subject position, and further suggests either that AgrSP can fail to project or that its default form is zero. It follows, then, that the "default" *ku-* subject marker is the result of a dummy subject in the specifier of AgrS^0.

An analysis will be pursued for objects and object markers that is similar to that just outlined for subjects. Consider the two sentences in (91):

(91) a. Ngi- cul- e   i- ngoma.
         1S.SBJ- sing- PERF 9- 9.sing
         "I sang a/the song."

---

[8]This is a property which distinguished *pro* from lexical DPs in other languages as well, such as Classical Arabic.

[9]The pattern in (88) is reminiscent of German, in which the expletive subject *es* cannot appear when a temporal adverb is topicalized:

1. i. Es wird   heute getantzt.
       it becomes today danced

   ii. Heute wird   (∗ es) getantzt.
       today becomes   it   danced

       "There is dancing today."

b. Ngi- yi- cul- ile i- ngoma.
1S.SBJ- sing- 9.OBJ- PERF 9- 9.sing

"I sang the song."

In both (91a) and (91b), the direct object directly follows the verb. In (91b), the verb word contains an object marker agreeing with the object in class 9 features. In a way similar to that just described for subjects and subject markers, the object marker in (91b) is taken to be an $AgrO^0$ head (AgrO standing for "object agreement"), which agrees with the object DP in its specifier. The absence of an object marker, as in (91a), is the result of no object having raised to this specifier.

We will now address the assumption made here that subject and object markers are Agr^0 heads heading their own projections. An alternative analysis would have inflection done in the morphology. For example, some analyses, such as Kinyalolo (1991), assume that a subject marker on a simple verb form is simply the agreeing form of a complex head adjoined to T^0, inserted complete with inflection by the morphological component (as in Distributed Morphology (Halle and Marantz 1993)).

For subject markers, the assumption here that they are $AgrS^0$ heads is made largely on theoretical grounds. The basic premise of this thesis is that words are built transparently in syntax, and the notion that regular affix is performed by an extrasyntactic process runs contrary to that premise.

For object markers, the reasons for pursuing an Agr^0 analysis rather than one where forms are inserted in the syntax preinflected are somewhat stronger than for subject markers. In the previous chapter, several aspects were described in which the reciprocal -*an* suffix differs in behavior from reflexive *zi-* and ordinary object markers. Such differences are expected if a verb with an object marker differs structurally from a verb lacking one, but they are unexpected in an analysis where they are structurally identical. In a direct agreement analysis (that is, one with no AgrP projections), there is no structural difference between a verb stem with and without an object marker; they differ only in the presence or absence of a trace in the specifier of the highest projection. But in the analysis pursued here, in which the object marker is an $AgrO^0$ whose complement contains the verb stem, the two structures are indeed different.

The argument used in Carstens and Kinyalolo (1989) for deciding against assuming that subject and object markers are Agr^0's heads heading discrete projections is that AgrP projections unnecessarily complicate the analysis of compound tenses (illustrated above in (80) on page 51), because in their analysis, a compound tense consists of multiple points of subject agreement within a single clause. It is argued that assuming AgrP projections above each of the agreeing categories (such as T and Asp) is an unnecessary complication, because the same type of projection (an $AgrS^0$ projection) has multiple occurrences in the same clause. However, this does not seem any more arbitrary than requiring the agreeing categories (such as T^0 and Asp^0) to

have agreement features forcing the subject to pass through their specifiers while certain intervening categories lack these features, which is what an analysis without AgrP projections seems to require.

3.2 Agreement, the short/long alternation, and prosodic constituency

The following types of evidence will be brought to bear on this view of Zulu arguments and agreement:

a. The relation between the long/short verb alternation and agreement patterns.

b. The relation between word order possibilities and long/short verb alternation.

c. Constituency evidence concerning the long/short verb alternation: prepausal lengthening, high tone shifting, vocative insertion, and *na* insertion

Zulu displays an interesting alternation in affirmative present and recent past tense verbs. The two forms in the alternation will be called the long form and the short form. Intuitively, the alternation can be described as follows. The short form is used when the verb is followed by some element within a particular constituent. The long form is used when nothing follows the verb within this constituent. In the present tense, the long form is the one which exhibits *-ya-*, while the short form lacks it, as illustrated for Zulu in (92):

(92)   a. Ngi- **ya-** cul- a. (long present)
            1S.SBJ- *ya-* sing- FV

          "I'm singing."

    b. Ngi-   cul- a i- ngoma. (short present)
            1S.SBJ- sing- FV 9- 9.song

          "I'm singing a song."

As in (92a), *-ya-* will be glossed simply as "ya". In Zulu, the recent past tense also has a long and short alternation which has a distribution identical to that of the present tense pattern. In this tense, the long form ends in *-ile*, while the short form ends in *-e*:

(93)   a. Ngi-   cul- ***ile***. (long recent past)
            1S.SBJ- sing- PERF

          "I sang."

b. Ngi- cul- *e*   i- ngoma. (short recent past)
      1S.SBJ- sing- PERF 9- 9.song

      "I sang a song."

More thorough treatment in terms of syntax, interpretation, and relating the morphology to the syntax is the subject of chapter 5, while the morphological details are discussed in chapter 4. In the chapter at hand, the short and long forms are discussed with regards to their utility in determining syntactic constituency.

The canonical environment for the long verb form is in sentence-final position, while one of the canonical environments for the short verb form is preceding the direct object, and these are the environments in which they are presented in (92) and (93). Due to this distribution, in pedagogical texts, the long form is sometimes referred to as the final form, while the short form is called the non-final form. However, these terms are misleading if "final" is taken to mean sentence-final. Rather, the choice of a long or short verb form is partially contingent on the informational packaging of the sentence. For example, the (b) sentences in (94) and (95) show that either a long or short verb form can precede an adverb, but that the resulting sentences are used to answer different questions.

(94) a. Ba- dlal- a- phi?
        2.SBJ- play- A- where

        "Where are they playing?"

    b. Ba- dlal- a phandle. (short present)
        2.SBJ- play- FV outside

        "They're playing outside."

(95) a. B- enza- ni phandle?
        2.SBJ- do- what outside

        "What are they doing outside?"

    b. Ba- ya- dlal- a phandle. (long present)
        2.SBJ- *ya*- play- FV outside

        "They're playing outside."

Taken with facts about subject and object agreement, these long and short forms provide us with useful diagnostics for constituency and for the height of arguments in the structure. We will see that a subject or object following a short form correlates with the absence of an agreeing subject marker or object marker. Further, we will see that a short verb form followed by an argument seems to form a constituent, as shown by the phrasal phonology and related evidence.

We will now be dealing with the issue of whether a postverbal subject is situated inside a particular constituent. A label is needed to refer to this constituent. For convenience, this constituent will be referred to as IP. In chapter 5 we will see that this constituent is actually created at a higher point in the structure by the formation of a remnant, but the term "IP" provides us an intuitive way of thinking about this constituent at this point. The following three claims will now be discussed:

(96)   a.   Short verb forms are never the last overt element in IP.

       b.   Subject agreement on the verb entails raising the subject out of IP.

       c.   When an object coöccurs with an agreeing object marker, the DP object lies outside the IP region.

The analysis follows Van der Spuy (1993), who identified three classes of evidence (phonological phrasing, agreement, and insertion) to argue that long verb forms are final in an IP constituent. This chapter builds upon this analysis by introducing additional pieces of phonological phrasing and insertion evidence and by applying it to a particular theory of agreement.

3.2.1 Short verb forms are not IP-final

The most obvious evidence that short verb forms cannot appear as the last overt element in IP comes from the fact that they cannot appear in sentence-final position:

(97)   a.   ∗ A- bafana ba-   dlal- a. (short present)
                 2- 2.boys   2.SBJ- play- FV

       b.   A- bafana ba-   ya- dlal- a. (long present)
                 2- 2.boys   2.SBJ- ya- play- FV

            "The boys are playing."

Further evidence for the claim that short verb forms are not IP-final will become apparent as arguments concerning subject and object agreement are presented.

The assumption that short forms are not IP-final affords us a powerful diagnostic tool; the first element appearing to the right of a short form will necessarily be taken as lying inside IP.

3.2.2 Agreeing subjects raise out of IP

We can now use the fact that short forms are not IP-final to establish that, in Zulu, when agreement is observed between the verb and the subject, the subject has necessarily moved out of IP. Let us consider a minimal sentence with an intransitive verb and

an overt DP subject. The canonical form this type of sentence takes in Zulu has a preverbal subject and an agreeing verb:

(98) A- bafana ba-   ya- dlal- a. (long present)
      2- 2.boys 2.SBJ- *ya*- play- FV

      "The boys are playing."

As already explained, the presence of the subject marker on the verb agreeing with the class 2 subject *abafana* "boys" is taken to be a consequence of an agreement relation holding between the DP subject in the specifier of that subject marker, which is an AgrS^0 (subject agreement head), as shown here:

(99)

As mentioned in chapter 1, agentive subjects ("external arguments"), like all other arguments, are assumed to be licensed in the verbal domain, in a projection often labeled *v*P as in (99) This agreement relation then comes to hold when this subject raises from the specifier of *v*P to the specifier of AgrS^0.

As just established, a short verb form cannot be the last overt element in IP. This will preclude a variant of this sentence employing a short form (regardless of its interpretation):

(100) * A- bafana ba-   dlal- a. (short present)
         2- 2.boys 2.SBJ- play- FV

       "The boys are playing."

But SV is not the only word order available for the type of sentence described. A VS order is also possible with an agreeing verb, but note that only the long verb form is possible with this word order:[10]

---

[10]I have encountered one instance of what appears to be an *agreeing* postverbal subject preceded by a short verb form:

   a. Ngi-   zi-   gqok- is-   e   mina.
       1S.SBJ- REFL- wear- CAUS- PERF me

       "I dressed *myself*."

(101)   a.   Ba-   ya- dlal- a   ]$_{IP}$ a- bafana. (long present)
           2.SBJ- *ya-* play- FV   2- 2.boys

        b.   ∗ Ba-   dlal- a   a- bafana.]$_{IP}$ (short present)
            2.SBJ- play- FV 2- 2.boys

        "The boys are playing."

Given our previous assumption about short verb forms, a straightforward syntactic analysis is readily available. The subject in (101b) is IP-internal as in the tree in (102)

(102)
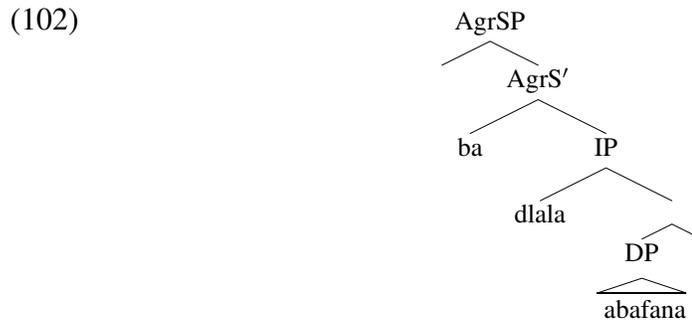
The ungrammaticality of this sentence is the result of an incoherent structural picture given by the short form and the agreement morphology. The short form of the verb indicates that the element following the verb is IP-internal, but the agreeing subject marker indicates that the subject has raised to the specifier of AgrS, which is a contradiction. Or in terms of feature checking, the short form of the verb indicates that the subject is sufficiently low to be inside IP and hence that it has not reached the specificed of AgrSP. But that means that the ϕ features of the subject prefix, the noun class 2 AgrS^0 head *ba-* remain unchecked, and the derivation fails to converge.

     To complete this reasoning, let's now consider the situation when no agreement relation holds between the subject and the subject marker, as in (103):

(103)   a. Ku-   dlal- a   a- bafana. (short present)
            17.SBJ- play- FV 2- 2.boys

        "The boys are playing."

This defies the standard judgements, such as those in van der Spuy (1993). The intended interpretation is one of contrastive focus on the subject. It is unclear what to make of this. The form is reflexive, and the postverbal pronoun may be object-related rather than subject-related, although it is clear from the context that the intended interpretation is subject focus rather than object focus.

b.

```
                    AgrSP
                   /      \
                 DP        AgrS′
                 /\        /    \
                Ø        ku      IP
               [17]             /  \
                            dlala   \
                                    DP
                                   /  \
                                abafana
```
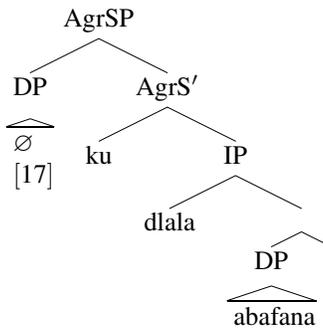
What, then, of (101a), in which the subject follows a long verb form with which it agrees? Given the subject agreement, the spec/head relation between the subject and the AgrS^0 head in (102b) must have held at some point in the derivation. In a theory which allows a specifier to appear to the right of its head, (101a) could be represented with a right-branching topic position above AgrSP, as in (104):

(104)

```
                         TopP
                        /    \
                    Top′      DP
                   /    \     /\
                Top0   AgrSP  abafana
                       /   \
                     t_i   AgrS′
                           /   \
                          ba   DP
                              /  \
                            yadlala
```
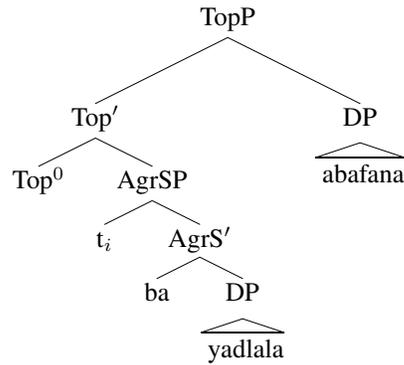
But in an account compliant with the Linear Correspondence Axiom, such right-handed specifiers are precluded, and the postverbal subject can only be attained by first topicalizing the subject (105a), then raising the AgrSP remnant around it, as in (105b):

(105)   a.

```
                    TopP
                   /    \
                DP_i     AgrSP
                /\       /    \
             abafana   t_i    AgrS′
                              /   \
                             ba    IP
                                  /  \
                                yadlala
```

b.

```
                    /    \
                AgrSP     TopP
                /\        /   \
            bayadlala   DP    t_i
                        /\
                     abafana
```

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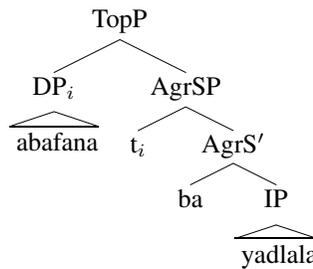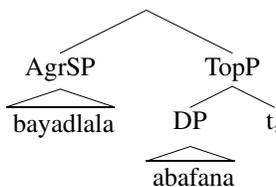
Such a cycle of movement will be needed independently for the formation of an AgrSP remnant, as described in chapter 5.

This default agreement option is available only when the subject remains inside IP, as was the case in (103). Default agreement is unavailable when the subject is preverbal:

(106) ∗ A- bafana ku-   ya- dlal- a $_{IP}$]
     2- 2.boys 17.SBJ- *ya-* play- FV

    "The boys are playing."

The ungrammaticality of (106) is a result of the agreement mismatch between the subject and the verb. If the subject *abafana* in the specifier of AgrS^0, then AgrS^0 should agree with it in class. But suppose that the subject *abafana* in (106) is actually in a topic position, like the subject in (105a)? The fact that (106) is ungrammatical on any reading (including the reading where *abafana* is a topic) shows that the subject must first pass through the specifier of AgrS^0 to reach that position.

3.2.3 Clitic-doubled objects lie outside IP

"Clitic-doubling" will refer to the presence of an overt lexical DP object accompanied by an object marker on the verb. As in other Bantu languages, clitic-doubling of objects is pervasive in Zulu:

(107) A- bafana ba-   ya- si-   hlupha i- salukazi.   (long present)
    2- 2.boys 2.SBJ- *ya-* 7.OBJ- annoy 7- 7.old.woman

    "The boys annoy the old woman."

A sentence with clitic-doubling such as (107) can appear in all possible word order permutations:

(108)   a.   SVO: Abafana bayasihlupha isalukazi.

       b.   VOS: Bayasihlupha isalukazi abafana.

       c.   SOV: Abafana isalukazi bayasihlupha $_{IP}$].

       d.   OSV: Isalukazi abafana bayasihlupha $_{IP}$].

       e.   OVS: Isalukazi bayasihlupha $_{IP}$] abafana.

       f.   VSO: Bayasihlupha $_{IP}$] abafana isalukazi.

Sentences (108c-f) show that the clitic-doubled object may be left- or right-dislocated, but the (108a,b) sentences seem ambiguous: the object could be either

inside IP or right-dislocated. It will be argued here that even cases such as (108a,b) are always dislocated. Any clitic-doubled overt DP lies outside AgrOP, and the subject/verb agreement indicates that the subject has raised out of IP.

Note that a short verb form is compatible with an immediate postverbal object:[11]

(109) a. A- bafana ba-   hlupha i- salukazi. $_{IP}$] (short present)
           2- 2.boys 2.SBJ- annoy 7- 7.old.woman

       b. Ba- hlupha i- salukazi $_{IP}$] a- bafana. (short present)
           2.SBJ- annoy 7- 7.old.woman   2- 2.boys

           "The boys annoy the old woman."

The short verb form cannot be IP-final, so it is the object in such cases which is the last overt element within IP. However, the short verb form becomes ungrammatical once an object clitic is added that refers to this object:

(110) a. * A- bafana ba-   si-   hlupha i- salukazi. $_{IP}$] (short present)
             2- 2.boys 2.SBJ- 7.OBJ- annoy 7- 7.old.woman

       b. * Ba- si-   hlupha i- salukazi $_{IP}$] a- bafana. (short present)
             2.SBJ- 7.OBJ- annoy 7- 7.old.woman   2- 2.boys

           "The boys annoy the old woman."

This fact cannot be due to a coöccurrence restriction holding between short verb forms and object clitics, for such combinations do occur, as before certain adverbs,[12] exemplified in (111) by *kakhulu* "much":

(111) A- bafana ba-   si-   hlupha kakhulu. $_{IP}$]
       2- 2.boys 2.SBJ- 7.OBJ- annoy much

       "The boys annoy her a lot."

or when the object clitic refers to an object other than the one immediately following the verb, as in applicative and other double object constructions:

---

[11]Note that cliticization is not necessary for a definite interpretation of the object, as clearly shown by using a demonstrative:

  a. A- bafana ba-   hlupha le-   salukazi. $_{IP}$] (short present)
      2- 2.boys 2.SBJ- annoy this:7- 7.old.woman

      "The boys annoy this old women."

[12]These adverbs includes *kahle* "well" and *kakhulu* "much".

(112)　A- bafana ba-　si-　　dlal- el-　a　i- bhola ₍IP₎] i- salukazi.　(short present)
　　　　2- 2.boys　2.SBJ- 7.OBJ- play- APPL- FV　5- 5.ball　　　7- 7.old.woman

　　　　"The boys play ball for the old woman."

This pattern is easily captured in a single generalization: an object clitic and an overt co-referring DP cannot co-occur within IP. The underlying structure of both the grammatical (107) and the ungrammatical (110b) is shown in (113):

(113)
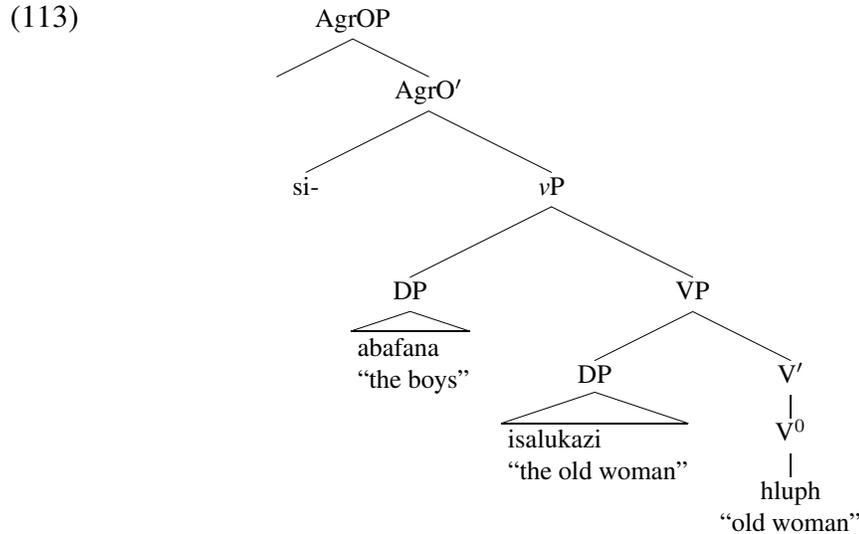
For (107), the representation in (113) is consistent because the object will pass through the specifier of AgrO^0, which serves as a path to a higher position, preventing its inclusion in the surface constituent to be formed above IP. But for (110b) the tree is inconsistent. Object is in a surface constituent with the verb word indicating that it has not passed through the specifier of AgrO^0, but the presence of the object marker *si-* indicates, to the contrary, that it has passed through this very position. This generalization is corroborated by additional diagnostics: prepausal lengthening, high tone shifting, *na* insertion, and vocative insertion. Prepausal lengthening and vocative insertion are exploited in van der Spuy (1993).

Prepausal lengthening.　Prepausal lengthening is a phenomenon by which a penultimate syllable is lengthened before a certain prosodic boundary.[13] The phenomenon is illustrated in (114) where /incwadi/ is realized as [incwa:di] in (a), where it occurs sentence-finally, but as [incwadi] in (b), where it is followed by a possessive:

(114)　　a.　Ngi-　funda i- ncwa:di. (*incwadi* lengthened)
　　　　　　1s.SBJ- read　9- 9.book

---

[13]This description is somewhat simplified.

"I'm reading a book."

    b.   Ngi-   funda i- ncwadi ya:mi. (*incwadi* not lengthened)
          1s.SBJ- read   9- 9.book   9.my

        "I'm reading my book."

Prepausal lengthening is relevant to the question at hand because a focused verb with an object clitic undergoes such lengthening even when the co-referent object DP immediately follows it:

(115)   A- bafana ba-   ya- si-   hlu:pha _{IP}] i- salukazi.
        2- 2.boys 2.SBJ- *ya-* 7.OBJ- annoy   7- 7.old.woman
        (*bayasihlupha* lengthened)

        "The boys are annoying the old woman."

In contrast, such prepausal lengthening is infelicitous in the short verb form:[14]

(116)   ∗ A- bafana ba-   hlu:pha i- salukazi   _{IP}].
         2- 2.boys 2.SBJ- annoy   7- 7.old.woman
        (*basihlupha* lengthened)

        "The boys are annoying the old woman."

Such a contrast is easily explainable under the assumptions made. The verb in (116) is short and hence not IP-final; the final element in IP is the object. Prepausal lengthening is awkward in this sentence because it is awkward to pause within IP. As for sentence (115), its object DP is right-dislocated and its verb is final in IP. Prepausal lengthening of the verb is natural because it is natural to pause between these phrase boundaries. Or, put another way, the IP syntactic right bracket typically corresponds to a prosodic right bracket.

High tone shifting. Prepausal lengthening finds a correlate in the expression of tone in Zulu. If the root of the verb is toneless, a high tone originating earlier in the verb word (or noun, for that matter) will shift to the right as far as the antepenult.[15] This phenomenon is known has high tone shifting, which is illustrated with the contrast between two long present tense forms in (117):

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[14]Van der Spuy claims that a lengthened short form is ungrammatical. This may be the case, but my own informant did not reject such a form. However, she spontaneously produced prepausal lengthening only with the clitic-doubled long form. Jokweni (1995), who is both a linguist and a native speaker of Xhosa, claims that lengthening in this context is ungrammatical in Xhosa. On the basis of the totality of these facts, I would tend toward considering these forms as ungrammatical rather than merely questionable or unnatural.

[15]Descriptions of this phenomenon can be found in practically any work dealing with Nguni tonology, such as Rycroft (1979), Khumalo (1981), and Cassimjee (1998).

(117)   a. / ngi-   ya- gijim- a / → ngìyàgìjì:mà]
            1S.SBJ- *ya*- run-   FV

        "I run"

        b. / bá-   ya- gijim- a / → bàyàgíjì:mà]
            2.SBJ- *ya*- run-   FV

        "they run"

The form in (117a) has no underlying high tones, yielding a surface form which is entirely low-toned. But in (117b), the subject marker *bá-* is underlyingly high-toned, and this is reflected in a high tone on the antepenult in the surface form. In work by Cassimjee (1998) in the Optimal Domains Theory framework, a shift or spread of a high tone to the antepenult (but no further) is described in terms of the formation of high tone domains.

A high tone domain is a domain on a discrete tier of phonological representation. The domain represents the portion of the string in which high tones can be pronounced. Different types of constraints determine the size and placement of these domains, as well as the way the high tone is realized within them. For example, consider the infinitive form *ukuwa* "to fall", glossed in (118). (The unmarked tones in the underlying form indicate the absence of a high tone.)

(118)   a. / ú- ku- w- a / → úkúwà
            15- 15- fall- FV

        "to fall"

        b. [úkú] wà

The surface tonal pattern *úkúwà*, which shows a spreading of the high tone from the first to the second syllable, reflects the high tone domain bracketed in (118b). The domain takes its form as the result of various constraints, such as one which says that every underlying high tone should be included in such a domain and another that says that a domain should be at least two syllables in length.

The spread or shift of a tone to the antepenult, as in (117a) is explained as a way of satisfying two constraints: one which wants to create the largest high tone domain possible (extending from the originating syllable through the syllable on which the high tone is actually pronounced) and another which wants to avoid placing a high tone on the prominent syllable, a prominent syllable being a lengthened, stressed penult, such as the one in the long present tense form in (117b), which is inherently phrase-final.

As might be expected then, in the short form of the present tense, the high tone does not stop at the antepenult, but rather shifts all the way to the penult:

(119) / bá-   gijim- a nge-   jubane / → bàgìjímà ngejuba:ne]
           2.SBJ- run-   FV with:5- 5.speed

       "they run fast" (Adapted from Cassimjee and Kisseberth (2000?).)

Failure of the high tone to stop at the antepenult in (119), which provides a context for (117b) is due to the fact that the short form of the verb is not phrase-final, rendering the penult non-prominent, and hence making the constraint concerning high tones on prominent syllables irrelevant.

Vocative insertion. Vocative insertion involves inserting a vocative phrase, such as "o father", sentence-medially.

(120)   a. ∗ A- bafana ba-   hlupha baba   i- salukazi   IP].
               2- 2.boys 2.SBJ- annoy   1.father 7- 7.old.woman

        b. A- bafana ba-   ya- si-   hlupha IP] baba   i- salukazi.
               2- 2.boys 2.SBJ- *ya*- 7.OBJ- annoy   1.father 7- 7.old.woman

            "The boys are annoying, Dad, the old woman."

The vocative insertion argument follows a line similar to that of prepausal lengthening. If vocative insertion is felicitous only between certain types of phrase boundaries, the contrast in (120) receives an immediate explanation. The insertion is unnatural inside the IP as in (120a), but is completely natural after the IP boundary in (120b).

It is assumed that vocative phrases are inserted into the syntactic structure, like any other element in a sentence, and that the unavailability of a particular point in the sentence for vocative insertion is due to that point falling inside a constituent at the point where vocatives are inserted. Thus, the unavailability of the point between the short verb form and the object in (120a) stems from the fact that the verb and object are inside a single constituent at the point where the vocative phrase is inserted, as in (121):

(121)
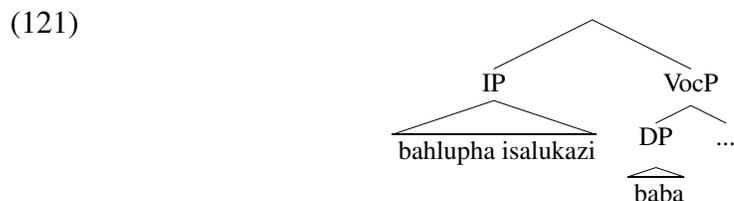
The form in (120b) does not have this problem, because the long verb form is final in its constituent, allowing the vocative to appear between the verb and object as in (122):

(122)

```
              IP            VocP
          bayahlupha     DP
                      baba    DP    ...
                           isalukazi
```
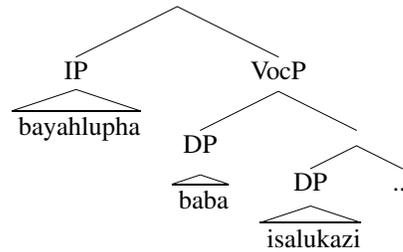
***Na*-insertion and additional diagnostics.** Placement of the optional *na* question particle, which can be used in either yes/no questions or Wh questions, gives us an additional diagnostic for phrase finality. *Na* is typically used to form a yes/no question out of a statement. It canonically occurs in sentence-final position, as it does in (123b):

(123)   a. U- Sipho u-   ya- yi-   thand- a lo-   mculo.
            1- 1.Sipho 1.SBJ- *ya*- 9.OBJ- love-   FV that:3- 3.song

        "Sipho likes this song."

        b. U- Sipho u-   ya- yi-   thand- a lo-   mculo na?
            1- 1.Sipho 1.SBJ- *ya*- 9.OBJ- love-   FV that:3- 3.song *na*

        "Does Sipho like this song?"

The following examples show that *na* cannot follow a short verb form.

(124)   a. U-   fund- e   le-   ncwadi na? (short recent past)
            2S.SBJ- read- PERF this:9- 9.book   QUES

        b. ∗ U-   fund- e   na   lencwadi?
            2S.SBJ- read- PERF QUES this:9-   9.book

        c. U-   fund- ile le-   ncwadi na? (long recent past)
            2S.SBJ- read- PERF this:9- 9.book   QUES

        d. U-   fund- ile na   le-   ncwadi?
            2S.SBJ- read- PERF QUES this:9- 9.book

        "Did you read this book?"

(125)   a. ∗ A- bafana ba-   dlal- a na   phandle? (short present)
            2- 2.boys 2.SBJ- play- FV QUES outside

        b. A- bafana ba-   ya- dlal- a na   phandle? (long present)
            2- 2.boys 2.SBJ- *ya*- play- FV QUES outside

        "Are the boys playing outside?"

This is taken to mean that *na* cannot occur within the minimal constituent containing the verb and its object or an adverb of the same class as *phandle*.

As in the case of vocative insertion, *na* is assumed to be inserted high in the structure, and in (126) it is shown as heading a dedicated interrogative projection labeled QP:

(126)
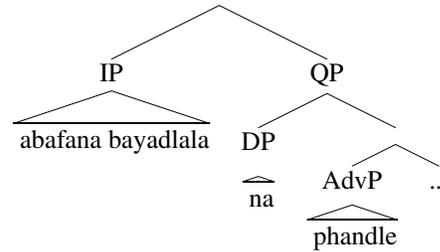
And just as the case with vocative phrases, the inability of *na* to follow a short form stems from the inability of the short form to be final in the IP remnant which moves above *na* in the left periphery.

If facts from Xhosa documented in DuPlessis and Visser (1992) are also valid for Zulu, additional insertion tests exist, such as insertion of a temporal adverbial clause (such as, "when John arrives"). Such adverbial clauses have not been tested in Zulu, and it is likely that additional tests along these lines are waiting to be discovered for all the Nguni languages.

CHAPTER 4

Morphology of the Inflectional Domain

In chapter 2 we saw that the verb stem could be derived using LCA-compliant head movement, although certain complications regarding suffix reordings (with respect to the reciprocal -*an* suffix) might force an analysis which requires phrasal movement for its derivation. And in chapter 3, we saw that subject markers and object markers appear as the reflex of a spec/head relation between the marker and the DP with which it agrees. In the present chapter we take a more global view of the verb words, examining the internal syntactic structure of these words, the myriad dependencies between the various morphemes that make up the word, and the possibility of decomposing certain verbal affixes

There is a rich descriptive literature dealing with Bantu verbs, but relatively little work has been done in analyzing these from a standpoint in which morphology is the reflex of syntactic operations. Zulu provides fertile ground for such research because of its rich tense, mood, and agreement morphology. This chapter builds upon the preceding one by pursuing an LCA-compliant analysis of the remaining components of the Zulu verb word: the inflectional domain prefixes which precede the verb stem and the final suffix. Since non-verbal predicates share many features with verbs, these will be examined, as well. Further argumentation will also be provided to support the claim that the verb word is not a complex head. Besides data from my own consultants, other major sources of data are used in this chapter include: Doke (1973), the classic grammar of Zulu, which provides important data on non-verbal predicates; Beuchat (1966), which provides the most complete description of the verbal paradigms; Khumalo (1981) and (1982) which provide information on tonal affixes and other insights; and Claughton (1983), which provides complete paradigms with tones for Xhosa. Extensive information on Zulu is also provided in Poulos and Msimang (1998). Khumalo (1981) and (1982) constitute a single dissertation published in two separate halves. Because we will refer to this work often, the following convention will be used. The dissertation will be cited merely as "Khumalo" when no reference is made to a particular page, while "Khumalo I" and "Khumalo II" will be used to mean Khumalo (1981) and Khumalo (1982), respectively, whenever a specific page number is referred to.

While the view is taken here that Zulu verb forms are not complex heads, the issues raised in this chapter should be of interest to anyone examining Bantu verbal morphology, regardless of theoretical perspective. Because the main concern is which pieces

of the verb word relate to each other, issues are raised here which need explanation in all but the most mystical conceptions of word formation. Unless morphology is an oracle to which one can pose queries of the sort "What is the negative participial form of *cula* 'sing' for a first person singular subject and a noun class 10 object, with a durative affix?" and receive a correct but impenetrable answer, we must ask ourselves questions like this: How does my theory allow the same feature to be encoded twice in the same form? How does my theory allow substring A to be sensitive to substring C even though substring B intervenes between them? What relationship do phonological constituencies bear with syntactic structure?

This chapter will examine the morphology of the simple tenses of Zulu, considering what features the various pieces of morphology express, what dependencies hold between them, and what mechanisms are needed to account for these dependencies. In this chapter we will use the term "tense" somewhat informally, as a convenient way to denote a paradigm associated with a certain set of verbal features. Thus, "affirmative past subjunctive" is a tense, but so is "negative infinitive" (which might technically be considered tenseless). A "simple tense" will mean one which is written as a single word and doesn't entail the embedding of one conjugated form under another.

4.1   Bantu verbs as phrasal structures

The Linear Correspondence Axiom (LCA) provides theoretical motivation for treating Zulu verb words as structures containing phrasal remnants rather than as complex heads. However, other types of evidence can also be found. It should first be noted, though, that orthography alone should not be taken as motivation for any particular analysis. That is, we should not assume that a string is a head merely because it is written as a single word. The decision to write Zulu verb forms as single words was standardly adopted only after much debate. (See, for example, Stuart (1906).) And in fact, related languages using similar verbal morphology came to use different conventions for dividing these strings into orthographic words, as shown by the following verb forms from Zulu and Northern Sotho (data for the latter adapted from D. Ziervogel (1977)):

(127)   a.   ba   a di   rat- a   Northern Sotho
             2.SBJ *ya* 8.OBJ like- FV

        b.   ba- ya- ku-   thand- a   Zulu
             2.SBJ- *ya-* 15.OBJ- like-   FV

        "they (they children) like it (the food)"

These two forms represent morpheme-for-morpheme translations of each other, yet the Northern Sotho string is divided into four orthographic words, while the Zulu form

constitutes a single orthographic word. In the absence of clear evidence that the two strings behave differently with respect to prosodic constituency or movement, it should be presumed that they are structurally similar, not that the Zulu form is a head while its Sotho counterpart is not.

One type of evidence which can be brought to bear on the question of whether verb words are heads is the existence of morphemes that can be treated consistently as suffixes only if the word in which they appear is not assumed to be a head. This same logic is exploited in Buell (2002) to argue that Swahili synthetic relatives ar not heads. An example of such a morpheme in Zulu is the final negation morpheme *-i* which appears sometimes word-finally and sometimes word-medially. We will now show that only if we let go of the assumptions that words are always heads can we see that negative *-i* is a suffix even when it appears word-medially. Except in future forms, negative *-i* uniformly appears as a suffix on the verb throughout the verbal paradigm:

(128)   *-i* as a suffix

     a. Present principal

       a-   ka-   cul- *i*
       NEG- 1.SBJ- sing- NEG

       "she doesn't sing"

     b. Present participial

       uma e-   nga- cul- *i*
       if   1.SBJ- NEG- sing- NEG

       "if she doesn't sing"

     c. Infinitive

       u- ku- nga- cul- *i*
       15- 15- NEG- sing- NEG

       "to not sing"

     d. Subjunctive

       ukuze a-   nga- cul- *i*
       so.that 1.SBJ- NEG- sing- NEG

       "so that she not sing"

However, in the future tense this morpheme shows up internal to the verb form, appearing as *-i* in its full (non-contracted) forms:

(129)   a. Immediate future affirmative

       i. Full: u-   z-   *o*-   ku- cul- a
                1.SBJ- come- FV:15- 15- sing- FV

          "she will sing"

ii. Contracted: uz**o**cula

  b. Immediate future negative

    i. Full: a- ka- z- **i**- y- u- ku- cul- a
            NEG- 1.SBJ- come- NEG- EPEN- 15- 15- sing- FV

      "she won't sing"

    ii. Semi-contracted: akaz**u**kucula

    iii. Contracted: akaz**u**cula

While certain deletions and coalescences occur in the contracted forms (which are now the usual forms), the presence of the suffix *-i* can be detected in the distinction between the internal vowels *o* and *u* in the affirmative and negative forms, respectively. The morphophonological processes in these forms need not be taken as evidence of head movement, and one need not venture farther than English to find examples of such processes, such as the case of *whatcha*, which contracts a Wh phrase *what*, the auxiliary verb *do*, and the subject DP *you* in an idiosyncratic way.

If we assume that the Zulu future negative forms are complex heads, we cannot maintain that *-i* is a suffix, because the verb stem would have to raise to attach to the right of *-i* making it a prefix on the verb stem (by means of right-adjunction, a process which we assume doesn't exist anyway). This situation is shown in the following tree, in which irrelevant projections (such as *v*P) have been omitted:

(130)
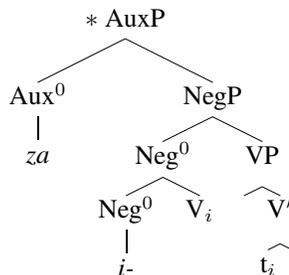
Conversely, by forgoing the assumption that Zulu future verb forms are heads, we can maintain that *-i* is always a suffix by moving the future auxiliary *za* up to the left of *-i*, leaving the macrostem below:

(131)

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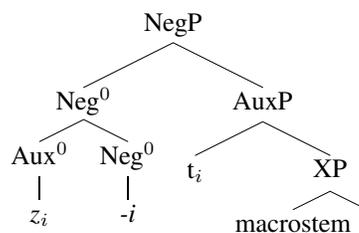
Thus, in spite of the fact that Zulu future forms are written as single words and that they are subject to special morphophonological processes of deletion and coalescence, negative forms show that treating these forms as structures other than complex heads allows us to capture the generalization that *-i* is a suffix.

The only conceptual impediment to the analysis in (131) is the fact that the contracted forms in (129) undergo an idiosyncratic coalescence and consonant deletion, such as is typically thought of as associated with single complex heads, but in fact, Zulu has several such morphophonological processes which cross constituencies in the way needed in an analysis like (131). One of these processes we will call "selective subject marker deletion", which occurs in contracted forms when a verb is embedded under the auxiliary *-se* "already" or a perfect form of the auxiliary *-ba/-be* "be".[1] The process, which is sensitive to phonological and morphosyntactic factors to be described below, is illustrated in (132):[2]

(132)   Selective subject marker deletion

    a. Past continuous (present participial embedded under perfect *-ba/-be*)

Subject	Full	Contracted	Translation
1s	*ngi*be *ngi*culile	be*ngi*culile	"I was singing."
2	*ba*be *be*culile	*ba*beculile	"they were singing"
1	*u*be *e*culile	*u*beculile	"she was singing"
6	*a*be *e*culile	*a*beculile	"they were singing"

    b. *-Se*

Subject	Full	Contracted	Translation
1s	*ngi*se *ngi*culile	se*ngi*culile	"I have already sung."
2	*ba*se *be*culile	se*be*culile	"they have already sung"
1	*u*se *e*culile	*u*seculile	"she has already sung"
6	*a*se *e*culile	*a*seculile	"they have already sung"

In the contracted forms, either the subject marker of the auxiliary or that of the lexical verb is deleted, depending on the phonological properties of the subject markers. If the subject marker of the lexical verb is vowel-initial, then it is dropped in favor of the

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[1] Paradigms for contracted forms with *-se* are given in Poulos and Msimang (1998), p. 346. It should be noted that, in some noun classes with vowel-initial subject markers, other processes are at work in the formation of the contracted forms. That fact supports rather than works against the point made here that idiosyncratic processes occur across words in Zulu.

    The elision patterns of compound tenses with *-ba/be* are neatly summarized by Postuhumus (1982).

[2] The properties of *se* are not well understood. The forms of the subject markers in (132b) make it clear that the embedded (lexical) verb is in a participial form, but forms also occur where the lexical verb is clearly principal in form, such as *sengiyabona* "now I see", which incorporates *-ya-*, which does not normally occur in participial forms.

auxiliary subject marker. In all other cases (except noun class 2 in the past continuous), it is the subject marker of the auxiliary which is dropped. The fact that in the full forms there are two overt agreement morphemes makes it apparent that these are two separate verbs, even written as discrete words in the orthography when not contracted. There is nothing to be gained by treating the contracted forms as single heads except that doing so allows us to maintain that morphophonology comprises only head-internal mechanisms, which English cases such as *whatcha* show not to be true anyway. It is worth noting that this is not, strictly speaking, a case of deletion under identity; in all of the examples in (132) the subject marker of the auxiliary is from the principal series, while that of the embedded verb is participial. For the same reason, the process is not one of metathesis, either, as can be seen be comparing the full and contracted forms for noun classes 1 and 2 in (132b). Both of these classes have distinct participial and principal subject markers. In the class 1 contracted form *useculile*, it is the principal subject marker *u-* of the auxiliary verb which is retained rather than the participial subject marker *e-* of the lexical verb, while in the class 2 contracted form *sebeculile* the opposite situation holds.

Other cases of special morphophonological processes across constituents in Zulu verb words include deletion of the auxiliary *-ba/-be* "be" in contracted forms, with concomitant epenthesis of *y* to prevent adjacent vowels:[3]

(133)

Subject	Full	Contracted	Translation
1s	***ngabe ngi***cula	***ngangi***cula	"I was singing."
1	***wabe e***cula	***waye***cula	"She was singing."

Given that morphophonological processes across constituents for both selective subject marker deletion and deletion of *-ba/-be* in compound tense contractions, the need for such a process should not be seen as a particular problem in the analysis of negative *-i* in (131), in which the future tense verb word is not a single head.[4]

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[3]Discussed briefly in Poulos and Msimang (1998), p. 346.

[4]An additional case of morphophonology across heads in Zulu, which we will only mention only briefly, involves the agreeing relativizing clitic, which, as analysed by Zeller (2003), syntactically attaches to a large phrase (the entire clause following the head noun). When this clitic precedes a noun, the augment of that noun is never present (or at least never surfaces).

The clitic interacts with the noun inside the following clause, whether or not one believes that that phrase has an augment. If one believes that the augment on the noun following clitic is underlyingly present, then the clitic is interacting morphophonologically with the augment, resulting in the augment's suppression. Conversely, if one believes that the augment does not surface because it is not underlyingly present, then the clitic can interact with the following noun class prefix, because one of Zeller's examples, *insizwa entombi ziyicel' ukhisi* "the young man who the girls find charming" (lit. "... who the girls ask (him) for a kiss"), shows that the clitic can induce suppression of part of the noun class prefix. In this example, the word *entombi* "who the girls" is "missing" the *zi* portion of the class 10 class prefix. (Class 10 prenasalization of the following /t^h/, however, is present.) Such a suppression occurs regularly in reduced pronunciations of class 10 nouns with augments, but it does not occur with

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In the same vein as the preceding discussion, Ndayiragije (2003) has shown the perils of regulating certain Bantu affixes to a lexical component and others to syntax, because such attempts can ultimately lead to contradictions, with "syntactic" affixes embedded inside "lexical" ones.

One of the main issues to be addressed when dealing with Bantu verb forms is the relation between tense, mood, and negation prefixes before the verb stem and the final suffix after the verb stem. Not only are these discontiguous substrings of the verb word interdependent, but the features they encode often seem redundant, as we shall see. It should be pointed out that there is no particular advantage to a head movement account of verb word formation in this regard, unless we admit circumfixes, a possibility which opens up problems of its own.[5] In a framework without circumfixes, some mechanism must be able to account for the redundancy of features in addition to the observed interdependencies.

4.2 Preliminary matters

Before we delve into the various Zulu tenses, some terminology and abbreviations will need to be explained.

4.2.1 Subject markers

Reference will be made to three different paradigms of subject markers (SMs),[6] which will be abbreviated in a way adapted from Beuchat (1966): affirmative principal indicative (SM^{prin}), participial (SM^{part}), and subjunctive (SM^{subj}). The names used for these three series are to be taken only as labels of convenience. As we shall see, not all affirmative principal indicative forms use the "principal" subject marker, and the "subjunctive" subject marker has many non-subjunctive uses.

The distinct nature of the three paradigms is completely apparent only for noun class 1, for which the three forms are segmentally distinct in the standard orthography. Noun classes 2 and 6 display a segmental contrast between the participial and affirmative principal indicative. No segmental contrasts are found for any of the other noun classes or for first or second persons, though there is a two-way (high or low) tonal

bare (augmentless) class 10 nouns.

[5]For example: If each prefix is actually a circumfix, why in no Bantu language do we find an aggregation of segmental suffixes which mirror the prefixes in their order, rather than the pervasive single final suffix? Why are final suffixes never sensitive to (prefixal) subject agreement?

[6]There are tonal issues which could possibly warrant expanding the number of paradigms. For example, if Khumalo's (1981, 1982) tonal analysis is extended to the affirmative contingent as a discrete form employing a toneless *-nga-*, then an additional series could be postulated in which all subject markers are toneless. However, this is not the only way in which these issues could be accommodated.

contrast for first and second persons in the SM^{prin} series. The following is a partial listing of the four paradigms. Agreement classes which show a segmental distinction between any of the paradigms have been italicized, while phonologically conditioned allomorphs have been omitted.[7]

(134) The three subject marker paradigms: a partial listing

agreement	SM^{prin}	SM^{part}	SM^{subj}
1s	ngì-	ngí-	(-)ngí-
1p	sì-	sí-	(-)sí-
2s	ù-	ú-	(-w)ú-
2p	nì-	ní-	(-)ní-
1	*ú-*	*é-*	*(-k)á-*
2	*bá-*	*bé-*	*(-)bá-*
3	ú-	ú-	(-w)ú-
4	í-	í-	(-y)í-
5	lí-	lí-	(-)lí-
6	*á-*	*é-*	*(-w)á-*

It will be noted that the SM^{prin} and SM^{part} series always appear word-initially except in contracted forms of compound tenses as in (132), while the SM^{subj} series appears word-initially in some contexts and non-initially in others. Stating the subject marker paradigms in terms of three series collapses some of the series traditionally used to describe Zulu verb paradigms (Van der Spuy 1992).[8] For example, the system is usually described as having a negative subject marker series which is distinct from the subjunctive series.[9] But the differences between these two paradigms can be reduced to the phonological environments which come into being for these two uses. This issue is illustrated in the forms in (135):

(135) a. Present subjunctive

  i. ukuze *a-* cul- e
      in.order 1.SBJ- sing- FV

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[7]Khumalo also indicates that the first and second person SM^{prin} subject markers are depressed (breathy).

[8]Van der Spuy (1992) divides the Zulu tenses into three reality states: realis (those which use the SM^{prin} series), irrealis (those which use what is labeled here as the SM^{subj} series, except the potential), and potentialis (the potential). On the basis of a tonal difference between the subject prefixes of the potential on the one hand and those of the irrealis tenses on the other, he proposes that the potential uses a distinct series of subject markers. (It is not clear that this tonal difference could not be derived by a tone lowering process, such as are present in Khumalo's work.) Van der Spuy does not discuss how the participial tenses fit into his analysis, and this remains an interesting question to be addressed.

[9]It is assumed that certain paradigms are merely morphophonological variants of another, such as the remote past series, which lacks vowels and always appears before the vowel-initial remote past morpheme *a*.

"in order for him to sing"

    ii. ma- ***ka-*** cul- e
        HORT- 1.SBJ- sing- FV

"let him sing!"

b. Negative present principal

    a- ***ka-*** cul- i
    NEG- 1.SBJ- sing- NEG

"he doesn't sing"

In the negative forms which ostensibly use the negative subject marker series, the subject marker is uniformly preceded by the negative prefix *a-*, as it is in (135b). In these cases, then, the medial forms are always used. Conversely, under those analyses the subjunctive form of the subject marker will depend on whether or not it is preceded by an additional prefix. The alternation is shown in (135a), where two different forms of the subject marker (*a-* and *ka-*) are regulated by the presence or absence of the hortative prefix *ma-*. Note that the form of the subject marker in the negative form in (135b) takes the same form as in the subjunctive form in (135a.ii). By factoring out such differences between the two paradigms that can be attributed to their phonological environments, they can be collapsed into one.

Use of these abbreviations for the three paradigms and of V for the macrostem allows us to easily schematize how each verb form is composed. For example, we can schematize the negative participial form *ngingaculi* "me not singing" as SM^{part}-*nga*-V-*i* and its principal counterpart *anguli* "I don't sing" as *a*-SM^{subj}-V-*i*.

4.2.2 Tone

The tonal information in this chapter will generally follow Khumalo, which addresses Zulu specifically, and Claughton (1983) and Lumko (1969) for Xhosa.[10] The concept of how tone is represented in the grammar and how it is realized is informed by Optimal Domains Theory, as it is employed to describe a subset of Xhosa verb forms in Cassimjee (1998). The tonal system of Zulu is rather complex, due to a number of tone lowering processes, the regular rightward spread or shift of a high tone to the antepenult within particular phonological domains, processes which govern the way the tone of an affix docks onto its host in shorter stems, morpheme-specific tonal properties, phonological minimality constraints, and so forth. Therefore, we shall not be

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[10]Grammatical tone information for Zulu is neatly arranged in Chirwa (1993), as well. However, since she provides forms for only (disyllabic) LL and HL verb stems, the work is of limited use for the present purposes. The main sources used for lexical tone in Nguni languages are Nyembezi (1992) and Nkabinde (1982 and 1985) for Zulu, Lumko (1969) for Xhosa, and Rycroft (1995) for Swati.

concerned with how the surface tone is derived, but only with the underlying tone of the affixes, when relevant.

As described in the introductory chapter, we will use the accute accent ($\acute{v}$) to indicate a high tone, a grave ($\grave{v}$) to indicate a low tone, and a circumflex ($\hat{v}$) to indicate a falling tone. The low tone is generally considered to be a default, in the sense that a low tone is assigned to any syllable which has not received a high or falling tone. This is reflected in the fact that low tones never spread or shift in the way that high tones do, and that low tones are never added to a form, overwriting high or falling tones, while the converse does occur. The absence of a diacritic will not mean that a syllable is low-toned, as it does in many materials on Nguni languages. Such an absence will simply indicate that the tone is either unknown or irrelevant to the current discussion.

4.2.3 Easily confused morphemes

It is worth noting at the outset that there are several similar-looking morphemes spelt *nga* and *anga* which should be distinguished.[11] Two of these are negatives and two of them are not.[12] They are listed in (136):

(136) The *nga*'s

    a. Negative *ngà*. This morpheme is used to negate the present participial, past participial, subjunctive, and infinitive:

      i. uma bé- ngà- cul- i
        if   2.SBJ- NEG- sing- NEG

        "if they don't sing"

      ii. uma bé- ngà- cul- ángà
        if   2.SBJ- NEG- sing- NEG

        "if they didn't sing"

     iii. ukuze bá- ngà- cul- i
        in.order 2.SBJ- NEG- sing- NEG

        "so that they don't sing"

     iv. u- ku- ngà- cul- i
        15- 15- NEG- sing- NEG

        "to not sing"

    This negative may also be identical to the one used in two forms used to negate the consecutive, even though in that case it bears a falling tone, rather than a low tone:

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[11]There is also a copular *nga* and a preposition *nga* "about", which do not concern us here.

[12]I am departing from Khumalo in assuming that the contingent is distinct from the potential. The contingent is also recognized as a distinct form by later authors, such as Poulos and Msimang (1998).

v. (a-   ) ba-   ngâ-   cúl- à
    NEG-   2.SBJ-   CONS-   sing- FV

"and then they didn't sing"

b. Past negative *ángà*. This is a final suffix used in the principal and particip-
ial negative past:

i. a-   ba-   cul- ángà
    NEG-   2.SBJ-   sing- NEG

"they didn't sing"

ii. uma be-   nga-   cul- ángà
    if   2.SBJ-   NEG-   sing- NEG

"if they didn't sing"

c. Contingent *ngà*. This is used in the affirmative contingent and arguably in
the negative contingent as well (in which it bears a falling tone):

i. s-   à- ngà-   cùl- à
    1P.SBJ-   ?-   CONT-   sing- FV

"if we sing"

ii. s-   a- ngâ-   cul- a
    1P.SBJ-   ?-   CONT.NEG-   sing- FV

"if we don't sing"

d. Potential *ngá*. This is used in the potential modality, both principal and
participial. Its negative form is *ngê*:

i. ba-   ngá- cul- a
    2.SBJ-   POT-   sing- FV

"they can sing"

ii. ba-   ngê-   cul- e
    2.SBJ-   POT.NEG-   sing- FV

"they can't sing"

Another group of similar morphemes which should be pointed out is the *ka*'s shown
in (137):[13]

(137)   The *ka*'s

a. Negative *(k)à*. This prefix occurs exclusively before the SM^{subj} series of
subject markers. It occurs far more frequently without the initial *k*. This
being the case, this morpheme will be referred to as negative *a* and the *k*
will not be written in any of the examples.

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[13]There is also an associative *ká-* "of the", used with certain noun classes, and an adverbial prefix *kà-*
which will not concern us here.

b. Exclusive *ká*. This is a verbal prefix meaning "not yet", used only in negative contexts. It will be discussed below.

c. SM^{subj} *ká*. For noun class 1, as listed in (134) above.

Having now addressed these preliminary matters, we can begin examining some of the morphology of the Zulu verb word in detail, beginning with the final suffixes.

4.3 Final suffixes

This section will discuss the morphological form of the final suffixes in preparation for discussion about dependencies between these suffixes and other parts of the verb word which will follow in the discussion of the individual tenses. It will be noted that what is conventionally termed the "final suffix" refers specifically to the suffix added to the verb stem and associated with inflection-related features such as tense, aspect, and mood. As such, the "final suffix" in Zulu actually can itself be followed by one of a small number of additional affixes or clitics, including the *-yo* ending found in synthetic relatives, the *-ni* suffix of the plural imperative and hortative, and Wh clitics such as *-phi* "where", each of which are illustrated here:

(138) a. a- bantu a- ba- cul- ile- ***yo***
        2- 2.people REL- 2.SBJ- sing- PERF- *yo*

       "the people who sang"

   b. Cul- a- ***ni***, bantwana!
      sing- FV- 2P 2.children

      "Sing, children!"

   c. Ba- cul- e- ***phi***?
      2.SBJ- sing- PERF- where

      "Where did they sing?"

Our discussion begins by noting that every tense is associated with both a segmental final suffix and a tonal pattern.[14] To illustrate this, let's compare the affirmative and negative present principal forms of a long toneless verb stem:

(139) / namathelis *(toneless)* / "to stick (something onto something)"

   a. Affirmative present principal

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[14]We will soon see that in a couple of cases, a single tense is actually associated with two different tonal patterns or two different segmental affixes, depending on the presence of other, optional affixes in the word.

ngì-   yà- nàmàthèlìs- à
1S.SBJ- *ya-* stick-   FV

"I stick"

   b. Negative present principal

à-   ngì-   nàmàthèlís- ì
NEG- 1S.SBJ- stick-   NEG

"I don't stick"

The affirmative form in (139a) has the final segmental suffix *-a* and does not add any high or falling tones to the form. Because it is not clear what features, if any, this final suffix encodes, it has been glossed simply as FV for "final vowel". The form in (139b) is somewhat more interesting. In this form the segmental suffix *-i* is employed, which will be shown to encode negation. Additionally, a high tone has been added to the penult of the form. This can be described as a penultimate high suffix, and in fact, because the tonal patterns of Zulu verbs can all be characterized by the addition of high or falling tones to the final one or two syllables of the word, they can all be described as suffixes, as they have by phonologists such as Khumalo. Conversely, it does not make sense to think of these tonal affixes as prefixes because they don't interact with prefixes on the verb stem as would be expected.

The notation for the tone of the final suffix will use the letters H (high), F (falling), and L (low) for as many syllables from the right edge as needed to describe the pattern (maximally two). Thus, ...HL stands for a penultimate high tonal suffix (such as needed in (139b)), ...HH means that both the penult and ultima are high-toned, and simply ...F means that the ultima (final syllable) is falling. Because low tones are defaults, there is no analogous way to represent a pattern that adds no high or falling tones to the form. In such cases, we will simply use the word *toneless* to indicate the absence of a tonal affix. Using these conventions, the final suffix in (139a) is simply *-a* (toneless), while in (139b) it is *-i* ...HL. In cases where the added tone always falls on the suffix itself (rather than on a portion of the verb stem), for convenience we will sometimes write the tone directly on the suffix, such as *-îlè* for *-ile* ...FL, *-ê* for *-e* ...F, and *-ìlè* for *-ile* (toneless).

Because morphemes can be entirely tonal in character, with no associated segmental material (and we shall see a clear case of this in Zulu), a question to be addressed (and one which does not seem to have been asked in the literature) is whether "the" final suffix is actually *two* final suffixes, one of them segmental and the other tonal. To see why such a decomposition of the final suffix suggests itself, consider the fact that adjectives are negated with a ...H suffix (a "floating high tone") in addition to prepredicative negation morphology:

(140) si-   ba- khulu;   a-   si-   ba- khulú
       1P.SBJ- 2- big   NEG- 1P.SBJ- 2- big=NEG

      "we're big; we aren't big"

Now observe that the perfect principal employs the toneless suffix *-ile* but its negative counterpart has a final high tone, just like an adjective:

(141) si-   lamb- ìlè;   a-   si-   lamb- ìlé
       1P.SBJ- get.hungry- PERF   NEG- 1P.SBJ- get.hungry- PERF=NEG

      "we're hungry; we're not hungry"

This would appear to be a transparent case of compositionality: the segmental suffix *-ile* encodes the perfect, while the ...H suffix encodes negation. Nevertheless, the conclusion will be reached that it is generally not possible to decompose final suffixes in such a way the the segmental portion encodes one feature while the tonal portion encodes another, because so few clear generalizations can be made, but to reach that conclusion we must delve a bit into the tonology of the Nguni verbal system. Note that we are not claiming that the final suffix cannot be decomposed in an abstract sense. Indeed, given the mood, tense, aspectual, and polarity features it encodes simultaneously, it may well be a complex head built from a $Mood^0$ head, a T^0 or Asp^0 head, and a Neg^0 head. The claim here is merely that such a decomposition cannot be implemented by assigning these various features to different parts of the suffix. Rather, final suffixes must be regarded as fused forms, inserted as single units from the lexicon. While the conclusion that transparent decomposition of the final suffix into a segmental affix and a tonal one may itself seem disappointing (as transparent decomposition often leads to better understanding of underlying structure), an examination of the tonology of the verbal system does bring to light the fact that it can be deceptive to speak of a *-a* "default suffix", because doing so can obscure the presence of non-default tonal suffixes (as will be seen here) and of non-obvious differences in internal tonal domains (to be discussed under the present participial form, starting on p. 105).

    As mentioned, the tonal suffix can be identified by using longer verb stems, specifically consonant-initial stems of three or more syllables (three including a final vowel, which is not strictly part of the verb stem). This is because factors other than the suffix come into play in forms shorter than this, such as the lexical tone of the stem, effects of the left-hand boundary of a tonal domain, and high tones contributed by prefixes such as subject and object markers. For example, the ...FL affix will surface as ...FL on all such long stems, but on a disyllabic consonant-initial stem it can surface as either ...LH or ...FL on a consonant-initial stem, depending on whether the stem is high-toned or toneless. It will be assumed that any tonal divergences between tenses which employ the same tonal suffix can be attributed factors such as these two:

a. The lexical tonal properties of the prefixes employed in the two tenses. For example, while the third person SM^{prin} subject marker (such as noun class 2 SM^{prin} *bá-*) and the durative prefix *-sá-* both contribute a high tone, both can appear immediately before a verb stem, and both spread their high tone to the antepenult, only the former will spread its tone onto the penult of a toneless disyllabic stem to create a minimal disyllabic high tone domain, e.g. *bácúlà/∗bácùlà* "they sing", versus *ngìsácùlà/∗ngìsácúlà* "I'm still singing". This is assumed to be a lexically marked difference between *-sá-* and the subject marker.

b. The type of phonological domain to which the tonal suffix attaches. For example, the ...HL affix surfaces differently in a few types of short stems in the imperative than in other forms employing ...HL. This is attributed to the fact that only in the imperative does the left edge of the tonal domain coincide with left edge of the word, a factor which is also reflected in the phonological minimality constraints on the imperative. (The imperative must be consonant-initial and consist of at least two syllables.)

Obviously, a complete phonological analysis is beyond the scope of the present work, but a careful examination of the multitudinous paradigms given in Claughton (1983) give the impression that these assumptions are correct. Under these assumptions, phonology applies tonal information blindly to the segmental material, in the sense that in order to realize the ...HL suffix, phonology does not need to know whether the form is a negative present principal or an imperative. It is simply aware of the lexical tonal information (including lexeme-specific constraints), and the domains into which the morphemes are structured, which will be assumed to derive from the syntactic structure.

Claughton (1983) gives a very complete picture of the tones of the verb forms of Xhosa, which, as previously mentioned, will be treated here as a dialect of Zulu. To give an idea of the paradigms in that work, for each of the roughly 30 simple tenses, a table is provided showing a conjugated verb, with tone marked, for 22 different lexical tonal classes (such as "trisyllabic vowel-initial low-toned stem" (LLL) and "disyllabic falling-toned stem" (FL)), and, where relevant, with and without an object marker or with a high-toned subject marker and low-toned subject marker. The thorough way in which all of the tenses have been checked in this work for various lexical tonal classes makes it possible to make accurate comparisons between different tenses and to address various questions such as the one at hand, namely the relation between the segmental and tonal components of the final suffix. The conclusions reached in this section were made by tabulating an abstraction of each of the sixty-some paradigms and finding which of them could be collapsed, either because they were strictly identical in tonal properties, or because their differences could be attributed entirely to lexical properties of prefixes peculiar to particular tenses.

Claughton's accuracy is demonstrated by the high degree of consistency between various groups of paradigms. As in any work, though, there are some shortcomings. No paradigms are given for the negative present subjunctive, presumably due to an oversight, since the tense exists in Xhosa, and we will have to assume on the basis of Zulu and Xhosa data available that it employs the *-i* ...FL pattern like all other forms ending in *-i* which have negative *-nga-*. Two other omissions are the negative perfect and the remote past participial.[15] It is unlikely that Xhosa lacks these two tenses.

There are known differences between the tonal systems of Xhosa and Zulu. For example, Xhosa has more tonal verb classes than Zulu, such as an FL verb class.[16]

Other tonal differences include the effect of depressor (breathy) consonants on tonal spreading, but such differences are of little consequence to the questions at hand here, because they concern the realization of tone rather than the underlying tonal morphology. There may be a case or two in which a different tonal pattern is associated with a particular tense in Zulu than it is in Xhosa (such as the negative past subjunctive, which varies in this respect even among speakers of Zulu (Davey 1988)). However, the Xhosa pattern is largely identical to that of Zulu, and the points made here using the Xhosa paradigm are assumed to extend to Zulu except when indicated otherwise.

As was already mentioned, the conclusion will be reached that each tense is associated with a single suffix which combines both tonal and segmental material. We will term this atomic conception of the final suffix the "tonosegmental final suffix". This conclusion will be reached because while it is very easy to isolate the segmental suffixes, it is very difficult to organize the tonal residue in any enlightening way. Here are the segmental final suffixes of Xhosa active verb forms:[17]

(142)   Xhosa segmental final suffixes

    a.   *-a*

        The default suffix. Used everywhere not indicated otherwise.

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[15]It is possible that the remote past participial and participial are always identical in form.

[16]Most works on Zulu tone divide Zulu verbs into only two tonal classes—high-toned and toneless. The fact that most Zulu dialects lack the FL class found in Xhosa has been addressed explicitly in the literature, but the question of whether Zulu distinguishes between Claughton's LL and LL+ classes has not. Similarly, the question of whether Zulu maintains a contrast between Claughton's HLL and HHL classes has not been addressed.

Note that the variety of Zulu described by Khumalo does have the FL class (Khumalo, I p. 28, II p. 30). He claims that even in those dialects which seem to lack FL classes, it is necessary to assume such a class to account for differences between that and the true HL class in the affirmative present participial, such as HL *èhámbà* "he going" and FL *èbônà* "he seeing". An example of a minimal contrast for LL, HL, and FL verbs in Xhosa is found in *sinda* LL "smear the floor", *sinda* HL "escape", *sinda* FL "weigh down" (Lumko Institute 1969).

[17]Passive forms have been exluded, because not all of their tonal properties are known. Passive forms involve certain fusions or suppletions. For example, where the active negative form ends in *-i*, the passive counterpart ends in *-wa*.

b. *-i*

   Negative. Used in the negative present indicative (all variants), the negative infinitive, the negative present subjunctive, and the negative potential.

c. *-ile*

   Long perfect. Used in all variants.

d. *-e:*

   Short perfect. Used in all variants.

e. *-e*

   Used in the affirmative present subjunctive.

f. *-anga*

   Negative past. Used in all variants.

The only difference between Xhosa and Zulu with regard to the segmental suffixes concerns the negative potential forms. In Xhosa, these use the general negative *-i* suffix, while in Zulu they share the *-e* suffix with the affirmative present subjunctive.

Having determined what the segmental affixes are, we can now consider the tonal residue, the putative tonal affixes of Xhosa active verb forms, which are as follows:[18] [19]

(143) a. toneless

   As already mentioned, this is best thought of as the absence of any tonal affix, or as a zero affix. Used in: affirmative present principal (short, long, and with durative *sa*), affirmative past subjunctive, affirmative potential (principal and participial), affirmative infinitive, present participial, and affirmative long perfect principal.

b. ...H

   Used in: affirmative present subjunctive and negative perfect principal.

c. ...HL

   Used in: negative present principal (plain and with durative *sa*), negative potential (principal and participial), negative past (principal and participial).

d. ...HH

   Used in: negative past subjunctive.

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[18]As mentioned earlier, the tonal properties of affirmative present subjunctive and negative perfect has been extrapolated. The putative tonal affixes for these forms are hence somewhat speculative. Claughton also omits the negative present participial. The paradigm for this tense was completed from data in Lumko Institute (1969), p. 241.

[19]Affirmative imperatives lacking an object marker have been omitted, as the nature of their tonal suffix is not entirely clear.

e. ...F

   Used in: affirmative short perfect (principal and participial), negative short perfect.

f. ...FL

   Used in: negative infinitive, negative present participial, negative present subjunctive, long affirmative perfect participial, past principal, present participial with durative *sa*, present subjunctive with object marker, imperative with object marker.

   The generalization can be made that ...FL is used in all tenses simultaneously employing preverbal negative *-ngà-* and the segmental negative suffix *-i*.

(Note that "participial" forms, to be discussed at greater length below, are not participals but a type of dependent verb form which bears both tense and subject morphology.)

Now we are ready to see why this separation of the tonal and segmental features is unfeasible. First, there does not seem to be any way to make generalizations about the tonal suffixes in the way that was done for the segmental suffixes in (142). For example, if we say that in the long perfect the principal submood uses the default, toneless final suffix or that it simply lacks a tonal suffix, and that in the participial form the non-default ...FL suffix is added to encode participial submood, there is nothing which can be generalized over any other tense, because there is no other tense where the principal form lacks a tonal suffix and adds the ...FL to form the participial.

Second, in addition to the difficulty of characterizing forms taking, say, the ...FL suffix as a coherent semantic or syntactic class, several other types of problems are encountered when trying to handle this tonal residue as discrete suffixes. First, there are cases where the simultaneous change in segmental and tonal suffixes appears to change only one semantic feature. For example, the present principal affirmative uses the default segmental suffix *-a* and the toneless tonal pattern, yet the analogous negative form uses both the non-default segmental suffix *-i* and the non-default tonal suffix ...HL. There is no reason to believe that any additional syntactic or semantic features differ between these two tenses, making it difficult to fathom what two distinct features the putative *-i* and ...HL suffixes contribute to the negative form.[20]

And third, a feature is sometimes associated with either a tone or a segment in the same tense. There are two cases of this regarding negation in the present tense. First note that in the normal cases listed in the tables, the negative of a present tense principal or participial form is associated with both *-i* and with one of either ...HL or

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[20]An observation that can be made on this problem is that verbal negation is always associated with a (non-default) tonal affix, regardless of whether it is also associated with a segmental suffix.

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...FL. However, in a passive form of any of these, the default vowel -*a* is used rather than -*i* is employed and the tonal suffix changes in some cases:[21]

(144)   a. a- yi-   cul- i
                NEG- 9.SBJ- sing- NEG
                "he doesn't sing"

         b. a- yi-   cul- w- a
                NEG- 9.SBJ- sing- PSV- FV
                "it isn't sung"

The other case in this tense concerns adjectival predicates. These are negated with a floating high tone, that is, a ...H suffix: *sibancanè* "we're little", *asibancané* "we're not little". Other cases where the only suffix encoding negation is exclusively tonal are the negative long perfect and the negative past subjunctive. The consequence for these facts is that under any analysis it is impossible to say that a particular feature is always either encoded segmentally, or tonally, or both.

Xhosa has an interesting additional case which shows the problems with a compositional approach to final suffixes. The distribution of -*anga* in Xhosa appears to be identical to that in Zulu, except that Claughton (p. 71) notes that in colloquial Xhosa -*anga* can also be used to negate adjectival predicates: *àsìshùshwángà/àsìshùshwàngá* "we're not hot". While the tonal pattern of -*anga* has two variants in this usage, -*ángà* and -*àngá*, as a past tense verbal suffix it is always pronounced -*ángà*. The similarity between the verbal and adjectival suffixes is obvious, and if the adjectival suffix is an innovation (as it seems to be), then it apparently came into existence by analogy with the verbal suffix. However, the past tense feature of the verbal suffix is absent in its adjectival sibling, and the tonal melodies of the forms encode either nothing (in the case of the -*ángà* adjectival suffix) or dependency agreement and absence/presence of past tense (in the case of the -*àngá* variant).

A final problem is evident for any analysis, regardless of whether tonal and segmental features are taken to be discrete suffixes or whether they constitute a single, tonosegmental suffix. It is not always clear what feature the tonal morphology could possibly encode. This problem is evident in the two unusual cases where an optional prefix triggers a change of tonal affix. The first case is the affirmative present participial, which generally has the toneless suffix, but which employs the ...FL suffix if the durative *sa* prefix is present, for example *bénámáthélísà* "they stick", but *bésánámáthélîsà* "they still stick". The second case is the present subjunctive, which

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[21]Not all of the tonal details of the passive forms are known. The generalization is that non-toneless verb stems bear a falling tone is some cases where an analogous active verb has a high tone. For example, *úkúthándà* "to love" becomes *úkúthândwà* "to be loved". This phenomenon extends to nouns derived from passives, as well, as seen in *ísíthândwà* "sweetheart".

uses the ...H tonal suffix when there is no object marker, but the ...FL tonal suffix when such a marker is present. For example *ukuze bánámáthélìsé* "in order for them to stick", but *ukuze báwánàmàthèlîsè* "in order for them to stick them". (Related issues regarding the imperative will be discussed later on.) The selection of the affix does not appear to be driven by any inflectional-related feature in these cases.

Because of all of these problems encountered in separating the segmental and tonal components of the final suffix, the view is adopted here that the final suffixes cannot, in fact, be decomposed by separating features into those encoded segmentally and those encoded tonally. The suffixes will henceforth be referred to as segmental material associated with a suffixal tonal pattern. Here are the tonosegmental final suffixes of Xhosa, which are assumed to be essentially the same for Zulu:

(145)   Xhosa tonosegmental final suffixes

     a. *-a* toneless

        Used in the affirmative infinitive, the affirmative present principal (short, long, and with durative *sa-*), the affirmative present participial, the affirmative past subjunctive, and the affirmative potential (principal and participial).

     b. *-a* ...HH

        Used in the negative past subjunctive.

     c. *-i* ...FL

        Used in the negative infinitive, the negative present participial, the negative present prinicipal with exclusive *ka*, and the negative present subjunctive.

     d. *-i* ...HL

        Used in the negative present principal (plain and with durative *sa*) and the negative potential (principal and participial).

     e. *-e* ...H

        Used in the affirmative present subjunctive..

     f. *-e* ...FL

        Used in the affirmative present subjunctive with an object marker, and in the imperative with an object marker.

     g. *-e:* ...F

        Used in the affirmative short perfect (principal and participial).

     h. *-ile* toneless

        Used in the affirmative long perfect principal.

     i. *-ile* ...FL

        Used in the affirmative long perfect participial.

j. *-ile* ...H

Used in the negative perfect principal.

k. *-a* ...FL

Used in the affirmative past principal and the affirmative present participial with durative *sa*.

l. *-anga* ...HL

Used in the negative past (principal and participial).

4.4 The tenses

Here we will examine the simple tenses and the relations and mechanisms needed to account for their morphology. The tenses of Zulu can be divided into the following categories, each of which will be treated separately: indicative (§4.4.1), subjunctive (§4.4.2), contingent (§4.4.3), imperative (§4.4.4), and infinitive (§4.4.5). As we discuss each new tense, new relationships between different parts of the verb word will come to light, as well as other morphological issues.

4.4.1 Indicative

We will call indicatives those tenses which occur in two different forms which are often called submoods in the Nguni literature. These submoods are the principal and the participial.[22] As a concrete example, we will consider the negative present tense forms of *cula* "to sing". The forms agreeing with a noun class 2 subject in this tense are *abaculi* in the principal submood and *bengaculi* in the participial. It will be noted that the principal form *abaculi* employs the SM^{prin} subject marker *ba-*, while the participial form *bengaculi* employs the SM^{part} subject marker *be-*. The principal submood is used in matrix contexts, as well as in such embedded contexts as THAT clauses:

(146)   Examples of the principal submood

a. A- bantwana a-   ba-   cul- i.
   2- 2.child   NEG- 2.SBJ- sing- NEG

   "The children aren't singing."

b. Ngi-   fund- e   ukuthi a- bantwana a-   ba-   cul- i.
   1S.SBJ- read- PERF that   2- 2.child   NEG- 2.SBJ- sing- NEG

   "I read that the children aren't singing."

---

[22]In an alternative taxonomy found in the literature, what we are here calling principal and participial submoods of the indicative are called simply indicative mood and participial mood. That scheme does not capture the generalization that all tenses which occur in one also occur in the other.

As for the participial submood, it is used after certain complementizers, such as *uma* "if, when", in relative clauses,[23] and in depictives:

(147)   Examples of the participial submood

    a. IF clause

       Uma be-   nga- cul- i,   ngi-   zo- phum- a.
       if   2.SBJ- NEG- sing- NEG 1S.SBJ- FUT- leave-   FV

       "If they don't sing, I'll leave."

    b. Relative

       i- ndawo lapho be-   cul- a khona
       9- 9.place there   2.SBJ- sing- FV there

       "the place where they sing"

    c. Depictive

       Ngi- ba-   bon- ile be-   nga- cul- i.
       1S.SBJ- 2.OBJ- see-   PERF 2.SBJ- NEG- sing- NEG

       "I saw them not singing."

The participial submood is also used to form the various compound tenses, and as the complement of certain auxiliary verbs. Compound tenses are exemplified by the remote past exclusive in (148):

(148)   a. Simple: principal exclusive

       a-   ba-   ka- cul- i
       NEG- 2.SBJ- yet- sing- NEG

       "they aren't singing yet"

    b. Compound: remote past exclusive (participial exclusive under remote past)

       b-   a:- be-   nga- ka- cul- i
       2.SBJ- PAST- 2.SBJ- NEG- yet- sing- NEG

---

[23]The participial submood is also used in what can be termed synthetic relatives, in which the relativizing morpheme is prefixed to the verb rather than to a DP and in which the postverbal clitic *-yo* appears in certain contexts. A non-synthetic relative has been used in (147b) because the synthetic type does not display the usual participial *be-* prefix. However, the other morphological properties of synthetic relatives show that they are indeed built on participial verbs. Here is an example of a synthetic relative:

  a. A- bantwana aba-   nga- cul- i-   yo ba-   phum- ile.
     2- 2.child   REL=2.SBJ- NEG- sing- NEG- REL 2.SBJ- leave- PERF

    "The children who don't sing have left."

"they weren't singing yet"

Note that the Zulu participial submood differs substantially from what in most languages is called a participle. While participles are tenseless forms that typically don't bear subjectival agreement (complete with person features), the Zulu participial submood bears full subject agreement and appears in a variety of simple tenses (present, perfect, remote past, and potential), as well as a great number of complex tenses (including future).

4.4.1.1 Present indicative

The paradigm of the present tense verb forms given in (149). As will be the case with all agreeing forms, the schema for each form is given, as well as the form of the verb *cula* "sing" that agrees with a noun class 1 subject.

(149) Present indicative verb forms

		Principal	Participial
Affirmative long		SM^{prin}-ya-V-a (toneless) *uyacula*	
	short	SM^{prin}-V-a (toneless) *ucula*	SM^{part}-V-a (toneless) *ecula*
Negative		a-SM^{subj}-V-i ...HL *akaculi*	SM^{part}-ngà-V-i ...FL *engaculi*

The present indicative of a verb can be translated into English using either the present simple or present continuous tense:

(150) U-   cul- a i- zingoma.
       1.SBJ- sing- FV 10- 10.song
       "She sings songs. She's singing songs."

Non-verbal predicates. Zulu has a variety of predicate types which in the present tense lack a verb. The predicate in these cases bears subject agreement and negation morphology similar to that of verbs. These are exemplified in (151) which employs a prepositional phrase with *na* "with; and", translated idiomatically into English as "have":

(151)   a. Present indicative

u- na- yo i- mali
1.SBJ- with- 9.it 9- 9.money

"she has (the) money" (lit. "she's with it, the money")

b. Present participial

uma e- na- yo i- mali
if 1.SBJ- with- 9.it 9- 9.money

"if she has (the) money" (lit. "if she's with it, the money")

Non-present tenses cannot be formed of such prepositional phrases:[24]

(152) Potential

∗ u- nga- na- yo i- mali
1.SBJ- POT- with- 9.it 9- 9.money

"she can have (the) money"

This pattern is similar to that found in more familiar languages which have a null copula in the present tense, such as Russian and Arabic. In these languages, a verb BE must be inserted to "support" non-present tenses and non-indicative mood, as in (151). However, Zulu copulatives differ from Russian and Arabic in that a subject marker appears even in the absence of BE. Thus, in Zulu it is clear that BE is inserted to support tense and mood rather than to support agreement features.

There are several types of predicates which form the principal and participial forms without verbs in this manner, including adjectives, locatives, and nominal predicates. Adjectives in Zulu are of two types: agreeing and non-agreeing. Agreeing adjectives, exemplified in (153), always exhibit noun class (personless) agreement features.

(153) si- ba- khulu, a- si- ba- khulú
1P.SBJ- 1- big, NEG- 1P.SBJ- 1- big=NEG
"we're big; we aren't big"

Some of the most basic adjectives belong to this category, such as those meaning "beautiful", "many", and "small". This is a closed class in Zulu, with only a handful of members. In contrast, non-agreeing adjectives, exemplified in (154), never exhibit noun class (personless) agreement features. This is an open class.

(154) si- qotho, a- si- qothó
1P.SBJ- honest, NEG- 1P.SBJ- honest=NEG
"we're honest, we aren't honest"

---

[24]While it might appear that such forms can be formed in the remote past, it is assumed that in these cases auxiliary *-be* "be" is optionally deleted in the same way it is for verbs.

In the Nguni literature, non-agreeing adjectives are usually called "relatives", a term which leads to confusion and will not be used here. Locatives include several types of predicates. We will concentrate on the predicate *kho(na)* "there", shown in (155).[25]

(155) si-   khona,   a-   si-   kho(na)
       1P.SBJ- there,   NEG- 1P.SBJ- there

       "we're there, we're not there"

Nominal predicates are exemplified in (156):

(156) ngi- ng- u- mfana,   a-   ngi- ng- u- mfana
       1S- COP- 1- 1.boy,   NEG- 1S- COP- 1- 1.boy

       "I'm a boy; I'm not a boy"

These non-verbal predicates, along with a few others, are called "copulatives" in the Nguni literature. These predicate types and tensed verbs use similar morphology in the indicative present tenses, but we will see that even in these tenses the morphology is sensitive to whether the predicate is verbal or non-verbal.

The short/long alternation. As introduced in chapter 3, Zulu displays an alternation in affirmative present tense and recent past tense verbs. The two forms in the alternation will be called the long form and the short form. Intuitively, the alternation can be described as follows. The short form is used when the verb is followed by some element within a particular constituent. The long form is used when nothing follows the verb within this constituent. In the perfect tense, the alternation occurs in both the principal and participial submoods, but in the present tense, it occurs only in the principal. The alternation is shown for present tense in (157), where the long form of the present principal includes the morpheme *-ya-*, which is absent in all the other forms:[26]

(157) a. Present principal

           i. Long form

               U-   ya- cul- a ∅.
               1.SBJ- *ya-* sing- FV

               "She sings."

           ii. Short form

---

[25]The *na* in parentheses is what is termed a stabilizer in the Bantu literature, a categorially sensitive epenthetic syllable affixed to satisfy a phonological minimality constraint. Morphologically, *kho(na)* is a class 17 pronoun. Pronouns of other classes and persons also display alternations with and without *na*, as for example the first person singular: *mina* "me", *kimi(na)* "to me".

[26]That forms with *-ya-* do not constitute a discrete tense is shown in the next chapter on page 144.

U-   cul- a i- ngoma / kahle / kakhulu.
1.SBJ- sing- FV 9- 9.song   well   much

"She sings a song / well / a lot."

b. Present participial

Uma e-   cul- a ∅ / i- ngoma / kahle / kakhulu...
if   1.SBJ- sing- FV   9- 9.song   well   much

"If she sings ∅ / a song / well / a lot..."

The *ya* morpheme found in the long form of the affirmative present principal verb is not found with any other type of predicate, as shown here:

(158)   Present principal: the distribution of *ya*
        Verb: siyacula]   "we sing" (long)
                                 sicula...]   "we sing..." (short)
        Locative: si(*ya)khona   "we're there"
        Non-agreeing adjective: si(*ya)qotho   "we're honest"
        Agreeing adjective: si(*ya)bancane   "we're little"
        Nominal: si(*ya)bantwana   "we are children"

Predicate category is thus one the of the parameters to which the inflectional morphology is sensitive.

Given that *-ya-* occurs only in a verb in the affirmative long present principal, it is dependent on a great number of things: that the form is final in its constituent, that the mood is indicative, that it isn't participial or negative, that it is a present tense form, and that the form is a verb rather than a non-verbal predicate. This includes at least one non-local dependency, in the form of a coöccurrence restriction: that between the initial negative *a* and *ya*. The dependency is non-local because the subject marker intervenes between them, if the structure in (159) is correct:

(159)
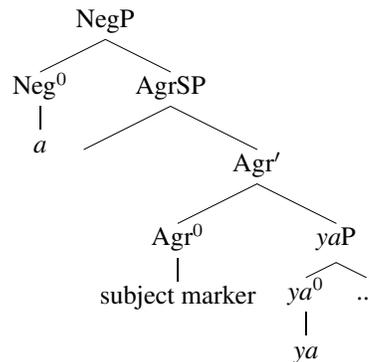
There are assumed to be only a limited number of ways in which such a dependency (here, a coöccurrence restriction) can hold in a structure:

- Specifier/head agreement. This is not an option here, because we are not assuming that there is any phrase here which bears on the dependency.

- Selection. Under selection, a head selects a complement phrase endowed with properties determined solely by its own head.

- C-command. Licensing by c-command is assumed to be very limited. For example, negative polarity items can be licensed by c-command, but nominative case-licensing is not. Because heads can intervene between the two elements in the c-command relation, c-command is not always a very local relation in the way that specifier/head agreement and selection are.

Using the structure in (159), the coöccurrence restriction between *a-* and *ya-* can be handled by c-command, because the *a-* c-commands *ya-*. However, given the fact that c-command is an admittedly restricted licensing mechanism, all other possibilities should be explored. While simple selection is not a possibility, since in (159) *a-* does not select a phrase headed by *-ya-*, we can appeal to what could be termed "serial selection". Under serial selection, intervening heads mediate in the relation between the two heads being accounted for. Let's take a hypothetical example and suppose that in some language with the heads *a*, *b*, and *c* there is a coöccurrence restriction between *a* and *c*, so that the strings *ab* and *bc* occur, the string *abc does not. The structure for these heads is given in this tree:

(160)
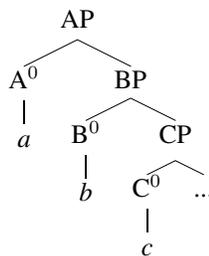
The coöccurrence restriction can now be accounted for by assuming that there are actually two different B^0 head morphemes pronounced [b], which we can call b_1 and b_2. The morpheme b_1 has a property which allows it to select a complement headed by c, but it does not have the properties needed to be selected by a. Thus, while b_1c can appear, $*ab_1c$ cannot. As for b_2, it has properties which allow a phrases headed by it to be selected by a, but it cannot itself select a phrase headed by c. This accounts for the fact that ab_2 occurs, while $*ab_2c$ does not.

It turns out that serial selection suggests itself as particularly plausible for the coöccurrence restriction between *a-* and *-ya-* because the form of the subject marker (the $AgrS^0$ head) that intervenes between them actually varies in form between the affirmative and negative forms, as the affirmative principal present uses the SM^{prin}

series of subject markers, while its negative counterpart uses the SM^{subj} series. Thus, the apparent coöccurrence restriction between *a-* and *-ya-* can be described instead as a coöccurrence restriction between *a-* and the SM^{prin} series of subject markers on the one hand, and a similar restriction between the SM^{subj} series and *-ya-* on the other.

Negation. There are two relative orders for the subject marker and the first negation morpheme: Neg-SM^{subj} in the principal and SM^{part}-Neg in the participial. There are two ways to account for these orders. We can say that there are two different Neg heads: one above AgrS and one below it. Conversely, we could say that that Neg is uniformly below AgrS, and that in the case of the Neg-SM order, the lower $AgrS^0$ head adjoins to the left of the higher Neg^0 head. This being left-adjunction, it would be LCA-compliant.

Other Bantu languages also have these two different orders. In some languages, such as Swahili, the negative in the SM-Neg order has certain verb-like properties which the negator in the Neg-SM order lacks, because in a synthetic relative, it is followed by an *o*-form clitic, which is otherwise uniformly word-final (Buell 2002). Unfortunately, there is no clear way to decide whether negative *a-* and *-nga-* differ in a similar way in Zulu.

For lack of clear evidence, here it will be assumed that the two morphological positions correspond to two distinct syntactic merge positions, one above and one below:[27]

(161) a.
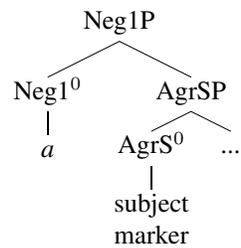
b.
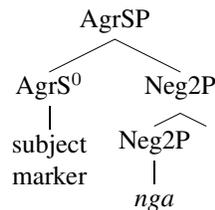
The structure in (161a) is assumed for forms in which the negative morpheme *a-* precedes the subject marker, while (161b) is assumed where *-nga-* follows the subject marker.

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[27]There is one case which could favor this analysis which will be discussed under the past subjunctive.

At this point we encounter our first case of dependency between preverbal material and the final suffix. In many cases, a feature encoded in the final suffix seems redundant, because the same feature is also encoded in material preceding the verb stem, as in the case of the negative of the present principal indicative:

(162)   Present principal indicative

    a. Affirmative (short)

       u-   cul- a
       1.SBJ- sing- FV

       "she sings"

    b. Negative

       a- ka-   cul- i
       NEG- 1.SBJ- sing- NEG

       "she doesn't sing"

The negation is encoded in both the preverbal and postverbal portions of the word. In this negative form, the initial *a-* is identified as a negation morpheme because it occurs only in negative forms, and, in the case of some non-verbal predicates such as predicate nominals, it is, in fact, the only portion of the string which encodes negation:[28]

(163)   Predicate nominals

    a. Affirmative

       ngi- ngu- mfana
       1s.sbj- cop- 1.boy

       "I'm a boy."

    b. Negative

       a- ngi- ngu- mfana
       neg- 1s.sbj- cop- 1.boy

       "I'm not a boy."

As for the final *-i* suffixes, they are identified as negators because they occur only in a few negative verb forms:

(164)   a. *-i* ...HL

       *a*kacul*i*   negative present principal indicative

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[28]There is generally no floating high tone with predicate nominals. Claughton reports that a floating high is possible but not obligatory in this case in Xhosa. It is not known whether they are possible in Zulu. Khumalo only discusses the negation of adjectives.

b. **-*i* ...FL**

    e*nga*cul*i*   negative present participial indicative

    a*nga*cul*i*   negative subjunctive

    uku*nga*cul*i*   negative infinitive

All forms in which final *-i* appears also have a preverbal negator (either *a-* or *-nga-*, as italicized in (164)). This pattern of bipartite negation is familiar, of course, from languages like French:

(165)   Elle ne   chante pas.
            she   NEG sings   NEG

            "She doesn't sing."

However, Zulu verb forms also doubly encode features which are not doubly encoded in an analogous way in familiar non-Bantu languages. Take, for example, subjunctive mood:

(166)   ukuze a-   cul- e
            in.order 1.SBJ- sing- SBJNC

            "so that she sing"

Mood is encoded in the preverbal subject marker, which for noun class 1 agreement takes the form *a-*, distinguishing it from analogous principal and participial indicatives. Mood is simultaneously encoded in the final suffix *-e* ...H. Unlike the bipartite negation pattern above, it is hard to find an analogous "bipartite subjunctive mood" in an unrelated language.

    The negative and subjunctive forms are clear cases of dependency between preverbal and postverbal elements. The question arises as to how these dependencies hold in structural terms. In familiar cases such as French, it is standardly assumed that in cases of bipartite negation, the rightmost negator is c-commanded by the leftmost one:

(167)

                        Neg1P
                   Neg1   XP
                          VP   Neg2P
                              Neg2
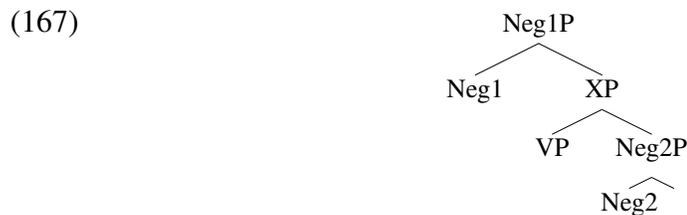
But such an analysis seems unnatural for the Zulu subjunctive case, because it forces us to posit high and low mood projections within the same clause. Because there is no known evidence for two mood projections of the same type within a single clause in

other languages,[29] it is proposed that forms such as the subjunctive, and by extension all verb forms (since they all empoloy a final suffix) be treated as biclausal. Two approaches can be taken as to the nature of the lower clause. In one approach, a complex head is formed by moving the suffix through a series of projections mirroring those of the higher clause to pick up the relevant features: tense, mood, submood, polarity, and potentiality. In the second approach, the final suffix is an auxiliary in the lower clause to which the macrostem raises as in (168):

(168)
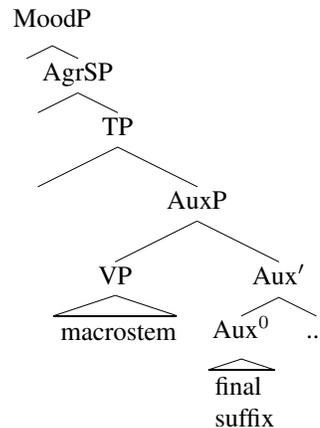
As there does not seem to exist any way to distinguish between these two choices empirically, the second option (as pictured in (168)) will be used here because of its conceptual simplicity. The selection of the correct final suffix will depend upon two different types of information. The first is the mood, submood, tense, modality, and polarity properties of the preverbal portion of the verb word (that is, the upper clause in this biclausal analysis). The other is the structure of the macrostem (such as whether it contains an object marker).

It is also worth noting that by claiming that preverbal negation, modality, and tense morphemes are verbs, Khumalo essentially suggests the same analysis, and for purely morphophonological reasons. He makes this claim because the lowering of the tone of the subject marker before either the verb stem or such a morpheme can be accounted for in a uniform fashion if it is simply assumed that those morphemes are, in fact verbs.

Just as the forms of the principal and participial indicative employ the negation suffixes *-í* ...H *-í* ...FL, the negative adjectival and stative predicates employ a ...H suffix (a floating high tone).

(169)   a.   Tensed verbal predication: ...*í*

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[29]Cinque (1999) proposes several mood nodes in a single clause. However, the moods they host are different in nature. They cannot be used to licnse two separate instantiations of the same mood in a single clause.

a- ba- cul- i
NEG- 2.SBJ- sing- NEG

"they don't sing"

b. Non-verbal/non-tensed predication: ...H (floating high tone)

si- ba- ncane; a- si- ba- ncané
1P.SBJ- 2- small   NEG- 1P.SBJ- 2- small=NEG

"we're small; we're not small"

Because non-verbal predicates such as adjectives display a final suffix (a tonal one) in their negative form in the same way that verbs do, it is assumed that these predicates raise to the lower auxiliary (final suffix) in the same way that verbs do, as in (170), and in this case the Aux^0 has a [+neg] feature:

(170)

```
                    AuxP
                   /    \
                 XP      Aux′
                /  \    /   \
          predicate  Aux⁰   ...
                    [+neg]
```
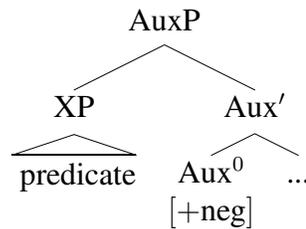
Under this analysis, the question arises as to what happens with nominal and locative predicates, which have no suffixal negation (tonal or segmental). It will be assumed that even in these cases the predicate raises to negation but that the negation morpheme is silent. The assumption is supported by the fact that Claughton reports that in Xhosa both nominal and locative predicates can sometimes host a final floating high tone in negative forms. It is not known if such cases also exist in Zulu.

The fact that different suffixes are used to negate verbs and adjectives constitutes another case of categorial dependency. Note, though, that we are using this term to describe a parameter to which morphemes can be sensitive rather than to a dependency mechanism. In the case of *-ya-*, we used the term to describe the relation between a head and the specifier of its complement, while in the case of the final suffix, it is a relation between the final suffix and the predicate raised to its specifier.[30] Such a sen-

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[30]An alternative view is possible. Suppose that the Neg^0 head is always underlyingly *-í* but that category-specific phonological constraints regulate the way this morpheme surfaces. With verbs, it always overwrites a default final *-a*; with adjectives it overwrites a final low tone with a high, but cannot overwrite the adjective's final segment; and for vowels it is optionally allowed to overwrite a final low with a high. While this solution seems unproblematic for Zulu proper, it cannot be extended to Xhosa, in which only adjectives have the option of using either a high tone or the *-ángà/ángà* suffixes discussed on page 89. Unless the choice between *-í* and *-ángà/ángà* is also made by phonological constraints (which would essentially move the choice between certain lexical items to phonology), the Xhosa pattern shows that the Neg^0 head is syntactically sensitive to the category of the predicate that raises to it.

sitivity to category as the result of a specifier/head relation has been called categorial agreement by Koopman (2002).

It was already noted that negative *a-* is always followed by an SM^{subj} subject marker. This constitutes a dependency between *a-* and the subject marker.[31] Because the two morphemes are adjacent, the dependency is local.

Principal and participial. A description of the usage of principal and participial forms has already been given above on page 91. The participial submood will be taken to entail structure additional to that required for principal mood, as illustrated here:

(171)   a. Principal

         Neg1P
            AgrSP
                TP
                       AuxP
                  VP   Aux′
              macrostem   Aux^0
                       final suffix

    b. Participial

         PartP
            AgrSP
                Neg2P
                  TP
                       AuxP
                  VP   Aux′
              macrostem   Aux^0
                       final suffix
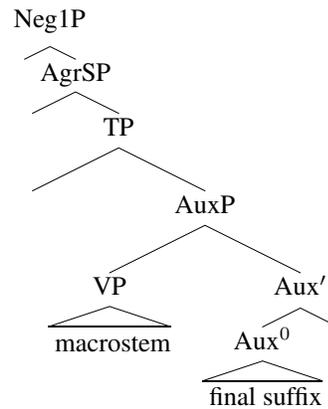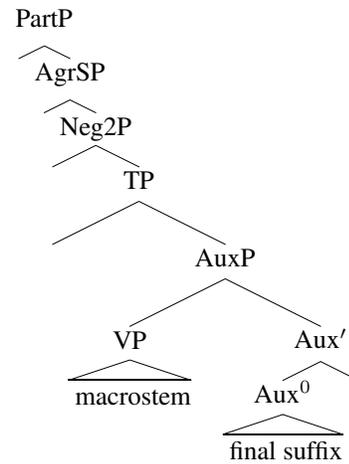
In the principal, MoodP selects for Neg1P rather than for AgrSP, as in (171a). In the case of the participial, in contrast, MoodP selects for AgrSP (of a particular type), as in

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[31]There is a special morphophonological relationship between the negative *a-* morpheme and the following SM^{subj}, as the former can be deleted before the subject marker if it has the shape *ka* (noun class 1).

(171b). Here, then, the selection of the type of subject marker is driven by the selecting head.

There are three types of evidence which suggest that the participial submood incorporates more structure than the principal. First, only the principal submood subject clitics have a silent variant used with agreeing adjectives, as will be shown immediately below in the section on subject markers and the category of predication. The second type of evidence involves the final tone on the verb word. While the final tone of present forms are identical across the principal and participial submoods, the affirmative forms in the perfect tense differ. The *-ile* suffix of the principal form is toneless, while the participial suffix *-île* is associated with a falling tone. Recalling that low tones are simply default tones in Zulu, here again the participial submood seems additive, while the principal is unmarked and default. And the third type of evidence is that the participial subject marker cannot be preceded by any other prefix. This suggests either that there is an adjacency requirement between the subject marker and the $Part^0$ head or that the SM^{part} is actually a complex head—an $AgrS^0$ head which moves to adjoin to $Part^0$.

Subject markers and the category of predication.   It was noted that non-verbal predicates use the same subject markers as verbal ones. However, an idiosyncrasy of adjectival predicates must be pointed out. In the present principal affirmative, an adjectival predicate always bears adjectival (nominal, personless) agreement, but subject agreement is borne only when the subject is first or second person:[32]

(172)   a.   ngi-   m- ncane, si-   ba- ncane, u-   m- ncane, ni-   ba- ncane
         1S.SBJ- 1- small, 1P.SBJ- 2- small, 2S.SBJ- 1- small, 2P.SBJ- 2- small

         "I'm small, we're small, you're small, you (pl.) are small"

       b.   m- ncane, ba- ncane, m- ncane, mi- ncane, etc.
         1- small, 2- small, 3- small, 4- small

         "she's small, they're small, it's small, they're small"

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[32]The distribution of subject markers on non-verbal predicates is complex and depends upon tense, mood, and polarity; on the type of predicate; and on the distinction between BE and BECOME.

As an example of predicate type, while an adjective can lack an overt third person subject marker in the principal present tense as shown above, a prepositional phrase cannot, as in *(u)nayo "she has it".

As an example of the verb tense distinction, an adjective embedded under the affirmative future form of the auxiliary *-ba/-be* "be" can lack a subject marker as in *ngiyobe mkhulu* "I'll become big", but it bears one (a SM^{part}) under the negative future as in *angiyobe ngimkhulu* (Poulos and Msimang (1998), p. 391). (Unlike the previous alternation, this one is insensitive to person.)

Finally, the BE/BECOME distinction can be seen in the future tense, in which a predicate nominal X is translated as "will be X" when the subject marker is present, but "will become X" when it is absent. This phenonmenon is discussed briefly in Poulos and Msimang (1998) (p. 365). The BE/BECOME distinction and the sensitivity to tense, mood, and polarity are probably related.

The subject markers are present in third person when the form is negative and/or participial, as illustrated here for noun classes 1 and 2:

(173)   a. Affirmative present participial

e-   m- ncane,   be- ba- ncane
1.SBJ- 1- small   2.SBJ- 2- small

"she being small, they being small"

        b. Negative present principal

a- ka- m- ncané,   a- ba- ba- ncané
NEG- 1.SBJ- 1- small=NEG, NEG- 1.SBJ- 1- small=NEG

"she's not small, they're not small"

This pattern can be described as a series of null subject markers for third person, which can be used only in the relevant submood. Since the null subject marker can be used only when the predicate is an adjective, it follows that there is a dependency between the subject marker and the category of the predicate. This pattern is familiar from a certain analysis of French subject clitics (Kayne and Pollock 2001). French subject clitics cannot be focused. Thus, to focus the subject, a strong pronoun can be used, presumably in a dedicated FocP focus position in the left periphery:

(174)   a. ∗ IL chante, mais pas elle.
            LUI (il) chante, mais pas elle.
            "HE's singing, but not her."

        b. MOI ∗(je) chante, mais pas elle.
            "I'm singing, but not her."

As seen in (174), the silent variant of the subject clitic can be used only in third person, as is also the case of the subject clitic of a Zulu agreeing adjective. Also as in Zulu, the French silent clitic is licit only in particular syntactic contexts, as shown by the fact that it cannot be employed in subject verb inversion constructions:

(175)   Que chante-t-∗(il)?
        "What's he singing?"

Tonal patterns with the toneless suffix.   In Xhosa forms using the toneless suffix, two different patterns emerge which cannot be attributed to preverbal prefixes. The two patterns are visible only in three classes of verb stems: H (as in *tyá* "eat"), FL (*mêma* "invite"), (F)L ((*î*)*ba* "steal"), and VH2 (*âkha* "build"). The two patterns are illustrated in the table in (176):

(176)   Two patterns with the toneless suffix

Verb Class	*mêmà* Pattern: Bare Infinitive	*mémà* Pattern: 2p Present Principal
H	kùty**á**	nì**tyà**
FL	kù**mêmà**	nì**mémà**
(F)L	kù**bá**	nì**bà**
VH2	kw**âkhà**	nà**khà**

The first pattern is exemplified by the bare infinitive which employs the toneless class 15 prefix *ku-*, while the second pattern is exemplified with a short affirmative present principal with the low-toned, second person plural subject prefix *ni-*. These two prefixes can be shown to be toneless by attaching them to a toneless stem. When doing so, no high or falling tones are added to the form:

(177)   / namathelis *(toneless)* / "stick (trans.)"

   a.   kùnàmàthèlìsà "to stick"

   b.   nìyànàmàthèlìsà "you (pl.) stick"

Because a tonal difference surfaces between the two patterns in (176), even though no tones are added to the form by either a prefix or suffix, the phenomenon is easily described in terms of selection between two alternate stems for these four verb classes.

On closer inspection, it appears that for each of these four classes of verbs — H, FL, (F)L, and VH2 — the *méma* pattern involves a sort of reduction in tone, where an F in the *mêma* pattern is reduced in the *méma* pattern to an H (*mêmà*→*mémà*) or to an L (*âkhà*→*àkhà*), and where an H in the *mêma* pattern is reduced in the *méma* pattern to an L (*tyá*→*tyà*, *bá*→*bà*). With the FL verb class, this analysis is further strengthened if we assume that the F of this class is the realization of an underlying HH (/HH#/→[FL#]), a frequent phenomenon in the Nguni languages. We will see that this analysis can probably be extended to adjectives, as well. Because implementation of the tonal reduction idea requires a more sophisticated phonological model than can be pursued in this dissertation (one possessed of morphophonological constraints or subtractive morphemes), here we will speak simply of selection between two alternate stems, one of which is tonally reduced. It will be shown shortly that similar alternate stems are also needed for adjectives, and that they too can probably be described in terms of tonal reduction.

We will refer to the two patterns in (176) mnemonically as the *mêmà* and *mémà* patterns, according to how the stem of this FL verb stem (meaning "to invite") is realized. The distribution of these two patterns is given here:

(178)   a.   *Mêmà* pattern

    i. affirmative present participial (alone, with durative *-sá-*, and with object marker)

    ii. imperative

    iii. affirmative infinitive (alone and with object marker)

  b. *Mémà* pattern

    i. affirmative present principal

    ii. affirmative past subjunctive

    iii. affirmative potential (principal and participial)

Zulu displays a similar phenomenon, but the data is not as complete as it is for Xhosa using Claughton. Extrapolating from Khumalo's comments (Khumalo, I p. 28, II p. 30), it might be the case that in Zulu the *mêmà* pattern appears in fewer contexts, and only in the dialects of the Natal Coast.[33]

    Two of these (the present participial and the imperative) are also subject to phonological minimality constraints.[34] In the forms the domain of the macrostem plus the final suffix must be minimally disyllabic and start with a consonant. In both cases, epenthetic prefixes are added when these constraints would not otherwise be met, as shown in (179):

(179)   /lwa H/ "fight" (Xhosa)

  a. *nìlwà* "you (pl.) fight"
    Affirmative present principal, no epenthesis needed in this tense.

  b. *ní*[***sílwà***] "you (pl.) fighting"
    Affirmative present participial, epenthetic *sí* added to make bracketed domain disyllabic.

  c. *ní*[***wálwà***] "you (pl.) fight them"
    Affirmative present participial with noun class 6 object marker *wa*. No epenthesis is needed because the object marker makes the domain disyllabic.

Where do these domains come from, assuming that they are the reflex of the syntactic structure from which the phonological form is derived? At least three different scenarios are possible. The raised constituent could be of a different category or have different features. Or the domain could be the effect of greater distance to material to

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[33]Khumalo's comments address only what for Claughton would be the FL verb class. To my knowledge, no previous author has noted that Claughton's H, FL, (F)L, and VH2 verb classes exhibit stem alternations in precisely the same tenses.

[34]The domain for disyllabicity and the *mêmà* pattern cannot actually be the same, because the domain for *mêmà* excludes the object marker while the one for disyllabicity contains it.

the left of the raised constituent. Or the domain could signal the presence of a silent head to the left of the raised constituent (although this analysis would not work in the case of the subjunctive). Or finally, verbs of the H, FL, (F)L and VH2 tonal classes might simply have two stems: one with a falling penult and one with a high penult.[35] The affirmative present principal and participial paradigms show the deceptive nature of default suffixes. Both of these forms use the default segmental suffix -*a* and lack a tonal affix. However, Xhosa shows that the two forms must be different in a way which can be attributed neither to tonal properties of a prefix nor to tonal properties of a suffix. They must be structurally different in some way, because the macrostem constitutes a phonological domain for both minimality and tonal processes in one form but not in the other. The fact that this pattern emerges irrespective of the presence or absence of an object marker means that the domain depends on material embedded inside the macrostem. While this is not reflected in the selection of a visibly different final suffix, the domain is dependent on participial submood, which will be shown in the section on the perfect tense to be a determining factor in the selection of the suffix. The two structures conceived for this pattern, where the domain present in the participial form is dependent upon a head which creates the domain inside the raised predicate, are as follows:

(180)   a.

TP
 └─ AuxP
     ├─ AgrOP
     │   ├─ object marker
     │   └─ PartP
     │   ├─ ∅
     │   └─ VP
     │   └─ verb stem
     └─ Aux′
         ├─ -a (toneless)
         └─ ...

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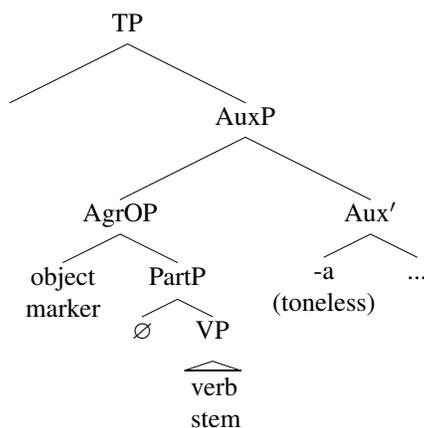
[35]This is the approach taken by Khumalo, who does not consider any other possibilities.

b.

```
                    TP
                   /  \
                 AgrOP
                /    \
           object    AuxP
           marker    /   \
                  PartP   Aux'
                   /\     /  \
                  VP    -a    ...
                  /\  (toneless)
                verb
                stem
```
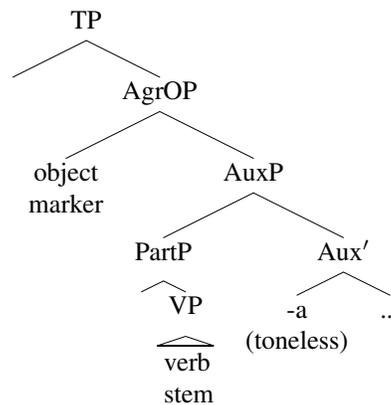
Both of the trees in (180) employ a Part^0 head (for "participial"), a silent head which in the phonology becomes manifest as the left edge of a phonological domain, much in the same way that a Wh trace in English translates into the phonology as a domain edge over which *wanna* contraction does not occur (in a certain register). The well-known phenomenon is contrasted with no blockage of such a contraction over PRO:

(181)   a. Contraction of *want to* to *wanna* allowed over PRO:
          What do you$_i$ want PRO$_i$ to do? $\rightarrow$ What do you wanna do?

    b. No contraction of *want to* to *wanna* allowed over a Wh trace:
          What$_i$ do you want t_i to happen? $\rightarrow$ ∗What do you wanna happen?

Adjectives were already shown to participate in the principal/participial alternation in the prepredicative morphology. However, like verbs, adjectives are unique among non-verbal predicates to manifest the alternation in the non-prepredicative substring, as well.[36] Certain adjectival stems have a tonal alternation. In some adjectives with high-toned penults, when the adjective is a matrix predicate, one tonal pattern is used, while the alternate pattern is used when it is the predicate of a relative clause, an environment which for verbs require the participial form. The pattern is illustrated by the non-agreeing adjective *khulu* "big":[37]

(182)   a. Principal

          I- ncwadi nkúlù.
          9- 9.book   9.big

          "The book is big."

    b. Participial

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[36]This alternation is not addressed by Claughton, even though his examples show that he is aware of it.

[37]It is interesting that nouns derived from such adjectives seem to use the participial stem, rather than the principal, e.g. *úbúkhûlù* "size".

i- ncwadi e- nkûlù
9- 9.book rel- 9.big

"the big book" (lit. "the book which is big")

Note that in the principal form, *khulu* has a high penult, while in the participial form its penult is falling. The alternation is not entirely predictable. Some stems have a high penult in both environments, while yet others have a falling penult. These facts are exemplified in the Xhosa examples below, taken from an exercise in Lumko Institute (1969):

(183)   a. Alternating: /-khúlu/ "big"

    i. M̀kh**ú**lù úm̀thí. "The tree is big."

    ii. Ngumthi óm̀kh**û**lù. "It's a big tree."

  b. Non-alternating stem: /-mnyáma/ "black, dark"

    i. Ubusuku búm̀ny**á**mà. "The night is dark."

    ii. Bubusuku óbúm̀ny**á**mà. "It's a dark night."

These facts appear to be identical for Xhosa and Zulu. Xhosa examples are used here because a complete and reliable paradigm is available.

We will now see how these two stems are amenable to the same analysis as the two verbal stems just described. On page 106, it was described how one of the two verb stems could be described in terms of tonal reduction. One of those reductions was the reduction of an F to a H in the FL verb class. This is the same alternation seen here in the adjective *khulu* "big".

(184)   a. verb *mema* "invite":

        tonally unreduced stem: FL *mêmà*
        tonally reduced stem: HL *mémà*

  b. adjective *khulu* "big":

        tonally unreduced stem: FL *khûlù*
        tonally reduced stem: HL *khúlù*

A list of alternating adjectives is unfortunately not available, but my impression is that the stems can all be described in terms of tonal reduction, in the same way described earlier for the four classes of alternating verbs. We saw earlier that in the present affirmative principal tense, the tonally reduced stem (*méma*) was used, while the present affirmative participial tense the unreduced stem (*mêma*) was used. If we assume that an adjective has a principal/participial alternation just like a verb, we see that the observation about tonally reduced verb stems can be generalized over verbs and adjectives. For the present affirmative indicative of both verbs and adjectives, the

tonally reduced form is used in the principal submood, while the unreduced form is used in the participial.

Non-verbal adjectival predicates are all interpreted as present tense. Earlier it was shown with the *mêma/méma* alternation in Xhosa that the final suffix is dependent on the properties of the predicate raised, even in the present tense. Zulu and Xhosa adjectives show this as well, and selection of the correct form of the adjectival stem (that is, with a high or falling penult) is seen as a relation between a silent final suffix (embedded auxiliary) and the predicate raised.

4.4.1.2 Durative *-sa-/-se-*.

The durative *-sa-/-se-* morpheme can occur between the subject marker and the macrostem. It is translated as "still" if it occurs in an affirmative verb, and as "no longer" if in a negative verb:[38]

(185) Durative *sa*

   a. U- Sipho u-   sa- cul- a le-   ngoma.
      1- 1.Sipho 1.SBJ- DUR- sing- FV that:10- 10.song

      "Sipho still sings that song."

   b. U- Sipho a-   ka- sa- cul- i le-   ngoma.
      1- 1.Sipho NEG- 1.SBJ- DUR- sing- NEG that:10- 10.song

      "Sipho doesn't sing that song any more."

Here we will only look at two issues which concern the use of *-sa-* in the present tense. However, it should be noted that *-sa-* is not a discrete tense, because the morpheme can also be used in other tenses, such as in these perfect and negative past examples:[39]

(186) a. Ngi- sa- m- bon- e kabili.
          1S.SBJ- DUR- 1.OBJ- see- PERF twice

          "I've only seen him twice so far."

       b. A- ngi- sa- m- bon- anga w- aze w- a- hamb- a.
          NEG- 1S.SBJ- DUR- 1.OBJ- see- NEG 1.SBJ- until 1.SBJ- PST- GO-   FV

          "I didn't see him before he left."

The form *-sa-* is used with verbs, while the form *-se-* occurs with non-verbal predicates:

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[38]The durative *-sa-/-se-* which translates as "still" is distinct from the *-se* auxiliary meaning "already" encountered in (132) on page 75: *-Se* "already" is an auxiliary verb which can only take a verbal complement. It does not undergo a morphological alternation of the sort the *-sa-* "still" does.

[39]In affirmative perfect cases, as in (186a), *-sa-* introduces scalarity, seen here in the word *only* in the English translation. More examples of this type can be found in Poulos and Msimang (1998).

(187) *Sa/se*

Verb:	si*sa*cula	"we still sing"
Stative:	si*sa*lambile	"we're still hungry"
Locative:	si*se*khona	"we're still there"
Adjective:	si*se*bancane	"we're still small"
Nominal:	si*se*ngabantwana	"we're still children"

This constitutes another case of categorial dependency.

The durative prefix *-sa-* is compatible with the present tense, but the prefixes *-sa-* and *-ya-* cannot coöccur:

(188) a. ngi- ya- phil- a
      1S.SBJ- *ya-* live- FV

      "I live. I'm doing well."

  b. ngi- sa- phil- a
      1S.SBJ- DUR- live- FV

      "I'm still alive. I'm still doing well."

  c. * ngiyasaphila

  d. * ngisayaphila

The question arises as to where *-sa-* is in the syntactic structure, and there are at least two possible answers. In (189a), *-sa-* is conceived as being inside the predicate constituent which raises to the final suffix (the Aux^0 head). Conversely, in (189b), the affix is just above the position to which the predicate raises.

(189) a.

  b.

This raises an issue of orthogonality with the negative *-nga-* prefix. We saw that *-sa-* and *-nga-* display a similar pattern of allomorphy, in which the allomorphs *-sa-* and

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-nga- are used with verbs while *-se-* and *-nge-* are used with non-verbal predicates. This suggests that these two morphemes relate to the embedded predicate in a similar way. This would mean either that both *-sa-* and *-nga-* raise as part of the predicate as in (189a), or they are both outside of the predicate, as in (189b). It is as difficult to decide between these two options as it is to decide whether the similar allomorphy forces orthogonal analyses for the two morphemes. We will see in the case of the subjunctive that we will need final suffix selection to depend on the presence of a (morphologically) optional prefix embedded inside the verbal remnant, as in (189a).

An adjacency relation is needed to account for the pattern which obtains when the negative *-nga-/-nge-* and *-sa-/-se-* allormophies are combined, as shown in (190):

(190)   a. u-   se- mncane,   ∗...sa...
               1.sbj- dur- 1.small

               "she's still young"

        b. a- ka- se- mncané,   ∗...sa...
               neg- 1.sbj- dur- 1.small=neg

               "she's not young anymore"

        c. e-   nge- mncané,   ∗...nga...
               1.sbj- neg- 1.small=neg

               "she not being small"

        d. e-   nga- se- mncané,   ∗...ngese...
               1.sbj- neg- dur- 1.small=neg

               "she not being small anymore"

The form in (190d), which combines *-nga-* and *-sa-*, shows that it is adjacency which regulates the allomorphy, because *-nga-* appears as *-nga-* rather than as *-nge-* once it is separated from the predicate by the durative *-sa-* morpheme.

4.4.1.3 Exclusive *-ka-*

The prefix *-ka-*, appearing only in negative forms, has the meaning "not yet". The term "exclusive" for this morpheme is the one usually found in the Nguni literature. It is exemplified in (191), and a paradigm is given in (192):

(191) A- bantwana a- ba- ka-   cul- i le-   ngoma.
       2- 2.child   NEG- 2.SBJ- EXCLUS- sing- NEG that:10- 10.song

       "The children aren't singing/haven't sung this song yet."

(192) Exclusive *-ka-*

	Principal	Participial
-ka- negative	a-SM^{subj}-ká-V-i ...FL *akakaculi*	SM^{part}-nga-ká-V-i ...FL *engakaculi*

Although forms with *-ka-* can be translated using the present tense, *-ka-* cannot be prefixed onto an adjective. While this fact may be characterized as another case of categorial dependency, it might better be simply a matter of semantic compatibility, if the predicate modified by *-ka-* requires an event, which would hence also require a verb.

It will be noted that the tonal properties of the final suffix are different from the plain present tense:

(193)   a. Plain negative present principal
          a-SM^{subj}-V-i ...HL

     b. Negative present principal with *-ka-*
          a-SM^{subj}-ká-V-i ...FL

Thus, as with the case of durative *-sa-* which was just discussed, there is a question as to what mechanism it is by which *-ka-* affects which final suffix is chosen. Just as with *-ka-*, it is not clear whether *-ka-* is on the spine of the tree, participating in serial selection, or whether *-ka-* is embedded inside the verbal remnant. Again, there do not appear to be clear arguments to decide this case, but considering the fact that *-sa-* and *-ka-* both appear to be aspectual adverbs, it would be most likely that they are appear in a similar structural position, and would thus be either both on the spine of the tree or both inside the verbal remnant.

4.4.1.4   Recent past, perfect, and stative

In the literature, what is here termed the "recent past" is called both the "perfect" and the "recent past". It contrasts with the remote past, which will be discussed below on page 118.

(194)   Zulu recent past verb forms

	Principal	Participial
Affirmative long	SM^{prin}-V-ile *uculile*	SM^{part}-V-ile ...FL *eculile*
short	SM^{prin}-V-e: ...F *ucule*	SM^{part}-V-e: ...F *ecule*
Negative past	a-SM^{subj}-V-anga ...HL *akaculanga*	SM^{part}-ngà-V-anga ...HL *engaculanga*

The recent past is used to describe events which occurred either today or yesterday, as is exemplified in (195):

(195) Ngi- cul- ile   izolo.
   1.SBJ- sing- PERF yesterday

   "I sang yesterday."

Similar morphology is used for what is called the stative, used to express present conditions for predicates like "be hungry" and "be clever":

(196) a. ba-   hlakaniph- ile
    2.SBJ- clever-   PERF

    "they're clever"

  b. ba-   lamb- ile
    2.SBJ- hungry- PERF

    "they're hungry"

We will see that there are morphological differences between the recent past and the stative.

Negation. In the literature, attention is paid almost exclusively to the past negative form using the *-ánga* suffix shown above in (194). However, a different negation pattern is used in the recent past and stative, as shown here:

(197) a. Recent past

   si-   lamb- ìlè;   a-   si-   lamb-   ángà
   1P.SBJ- get.hungry- PERF,   NEG- 1P.SBJ- get.hungry- NEG

   "we got hungry; we didn't get hungry"

  b. Stative

si-	lamb-	ìlè;	a-	si-	lamb-	ìlé
1P.SBJ-	get.hungry-	PERF,	NEG-	1P.SBJ-	get.hungry-	PERF=NEG

"we're hungry; we're not hungry"

There are two different ways in which the past negative verb-final suffix could be analyzed. Under one analysis, *-ángà* is an unanalyzable suffix (or an epenthetic vowel *a* plus an unanalyzable suffix *-ngà*) which is a fusion of past and negative features. Such an analysis seems particularly natural if the negative past is the negative counterpart of the affirmative perfect rather than of the remote past. Under a different analysis, *-ángà* is the remote past tense morpheme *-â* followed by negative *-ngà*. This seems to entail that the negative past is the negative equivalent of the affirmative remote past rather than of the perfect.

The first view, that *-ángà* is unanalyzable, will be adopted here. If *-ángà* were composed of *-â-* and *-ngà-*, we would expect *-anga* to have a falling initial tone, making it ∗*-ângà*. Furthermore, these perfect indicative cases would be the only ones in the paradigm to have two instances of negative *-nga-*. Finally, while the negative contingent form (discussed in 4.4.3) does have the string *anga* preverbally, it is not clear whether *-anga* in that case is decomposable, either, since the affirmative form also has a preverbal *-nga-*.

The short/long alternation. The recent past tense employs the suffixes *-ile* and *-ê*. In this alternation the *-ile/-île* variants are used in the long form, while *-ê* is used in the short form. However, the alternation is normally manifest only in the recent past, not in the stative. In the stative, the *-ê* variant is not used:

(198)   a. Perfect (recent past)
       Long: ba- cul- ile   "they sang"
       Short: ba- cul- ê kakhulu   "they sang a lot"
   b. Stative
       Long: ba- lamb- ile   "they're hungry"
       Short   ba- lamb- ile kakhulu   "they're very hungry"

It is assumed that whether a verb can appear in the stative paradigm (like *lamba* "to be/get hungry") is a lexical property of the stem.

The pattern in (198) is robust and shows that a distinction exists between the recent past and the stative in terms of the long/short alternation. However, we cannot claim that the stative lacks a short form altogether, due to examples such as this one:

(199)   o-   f- e   u- hlangothi
       REL:1.SBJ- die- PERF 11- 11.side

"the one who is paralized"

116

The relation between recent past and stative must be left to future research.

Subject markers, submood, and the final suffix.   It will be noted that the affirmative perfect suffix is toneless (*-ile*) in the principal submood, but that it is associated with a falling tone (*-îlè*) in the participial. This is an interesting dependency, because, depending on the assumptions made, it can be seen as non-local, since the macrostem and possibly a silent T^0 head intervenes between the inflectional domain prefixes and the final suffix which depends on it. We have already seen that in the present tense the embedded Aux^0 (final suffix) in Xhosa is sensitive to the structure of the raised predicate, something that Zulu adjectives also display in stem selection. Here, we see a dependency between the embedded Aux^0 and submood, which in the tree in (200) is non-local because of the intervening $AgrS^0$ head. It will be assumed here that these are actually the same relation; adjective stem selection and an embedded macrostem with a $Part^0$ head is selected by the embedded Aux^0, which is in turn selected by the matrix submood.

Because the subject marker is an inflectional prefix and hence not embedded inside the verbal remnant, this dependency is assumed to be the result of either serial selection or c-command, holding within the following structure:

(200)
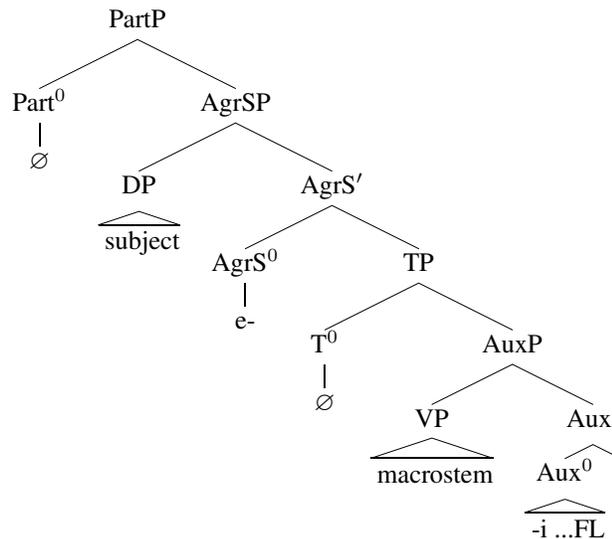
If the distribution of the final suffix is the effect of c-command, the *-i* ...FL is licensed by virtue of being simultaneously c-commanded by a present tense T^0 head and a $Part^0$ head. Under serial selection, the $Part^0$ head selects an AgrSP phrase head by an $AgrS^0$ head possessed of a particular feature (whatever feature it is that the SM^{subj} is endowed with). This $AgrS^0$ head in turn selects an allomorph of the silent T^0 head that selects for an AuxP phrase headed by a final suffix (Aux^0) with a particular type of feature (whatever feature it is which differentiates *-i* ...HL from *-i* ...FL).

Tense. The hypothesis should be explored that the preverbal portion of the recent past and perfect, like the present, are present tense and that it is only perfect aspect which is encoded in the the final suffix. The idea behind this is that the Zulu recent past and perfect are really like the English present perfect (such as, *he has sung*), in which the auxiliary verb *have* is in the present tense and is followed by a participle which is aspectually perfect. This hypothesis will lead to some difficult issues.

First, the question will arise as to what regulates the distribution of *-ya-*, which occurs only in present tense form with the relevant focus properties. If the preverbal portion (the upper clause) of the verb word is present tense, then *-ya-* must be said to be sensitive to the aspect features of the lower clause.

Second, there is a distinction between *-anga* and *-ile* in negative forms which are related to tense or aspect. If the upper clause in both variants is present tense, then the lower clause must differ in some tense or aspect feature. Since there is a semantic difference between these forms in some cases, they cannot both be merely "perfect". How, then, can these two forms be differentiated analytically?

The possibility still exists that although the upper clause is present tense in recent past and perfect forms, the lower clause can have real tense features rather than just aspect. That is, it could be said that in the case of *-ile*, it is merely aspect which is embedded, while in the case of *-anga* it is past tense which is embedded.

There is a real question as to whether tense can really be embedded under tense. At the level of compound tenses in Zulu, the remote past is never embedded under the auxiliary *-ba/-be* "be".

4.4.1.5   Remote past

The remote past tense is used to describe events which occurred at least two days before speech time. Here is the paradigm for this tense:[40]

(201)   Zulu remote past

	Principal	Participial
Affirmative remote past	SM^{prin}-â:-V-a ...FL *wa:cula*	SM^{part}-â:-V-a ...FL *a:cula*

The remote past and the affirmative past subjunctive differ in both tone and the vowel length of the prefix, but they are orthographically identical.

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[40]The distinction between the principal and participial submoods in the remote past is not often noted in the literature, but it is documented in Beuchat (1966) and in Khumalo (1982), p. 40.

4.4.1.6 Potential

The potential is used to express possibility or ability, like English *can*, *could*, and *might*, as in this example:

(202) Ngi- nge- yi- cul- e le ngoma.
      1S.SBJ- NEG.POT- 9.OBJ- sing- NEG.POT 9.this 9.song
      "I can't sing this song."

Here is the potential indicative paradigm:[41]

(203) Zulu potential

	Principal	Participial
Potential affirmative	SM^{subj}-ngá-V-a (toneless) *angacula*	SM^{part}-ngá-V-a ...HL *engacula*
negative	SM^{subj}-ngê-V-e (tone unknown) *angecule*	SM^{part}-ngê-V-e (tone unknown) *engecule*

In all other affirmative indicative tenses, the principal form employs the SM^{prin} series of subject markers, while the participial employs SM^{part}. The affirmative potential is thus unusual in that it displays the principal/participial dichotomy, with normal participial subject markers in the participial, and yet it uses subjunctive subject markers in the principal. As the example in (202) shows, the potential can be used in root contexts.

In the discussion of the present indicative, we saw that the type of subject marker was driven by the selecting head. The question arises as to whether this is always the case. This question becomes relevant in the potential, which exhibits the principal/participial alternation, but which takes an SM^{subj} rather than an SM^{prin} in its principal form.

It appears that the negative form is actually a contracted form of a compound consisting of a conjugated form of the auxiliary *-ngeke* followed by a present subjunctive form of the lexical verb (Poulos and Msimang (1998), p. 286).

4.4.1.7 Future

A summary analysis of future forms was given earlier in the chapter. Here we will consider them in greater detail.

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[41]Khumalo I, p. 79.

There are two future tenses, reflecting two different temporal distances with respect to speech time. The two forms are termed the immediate future and the remote future. Here is the future paradigm for these two forms:

(204) Future

	Principal	Participial
Immediate Future affirmative	SM^{prin}-zo-V-a (toneless) *uzocula*	SM^{part}-zo-V-a (toneless) *ezocula*
negative	a-SM^{subj}-zu-(ku)-V-a (toneless) *akazuyucula*	SM^{part}-nge-zu-V-a (toneless) *engezucula*
Remote Future affirmative	SM^{prin}-yo-V-a (toneless) *uzocula*	SM^{part}-yo-V-a (toneless) *ezocula*
negative	a-SM^{subj}-yu-(ku)-V-a (toneless) *akazuyucula*	SM^{part}-nge-yu-V-a (toneless) *engeyucula*

The immediate future is used to describe events up to a few days in the future, while the remote future is used to describe more distant future events. The future employs an auxiliary which raises to negation instead of the matrix verb. The immediate future uses *za* "come", while the remote future uses *ya* "go".

(205) Negative immediate future: asizucula "we won't sing"

[a- si- z- i] y [u- ku- cul- a]
NEG- 1P.SBJ- come- NEG   EPEN   15- 15- sing- FV

It will be noted that most negative verb forms in Zulu (and some non-verbal negative forms) transparently display two negative morphemes, one of them word-final:

(206) a. Negative present indicative: *a...i*

a- si- cul- i
NEG- 1P.SBJ- sing- NEG

b. Negative past indicative: *a...ánga*

a- si- cul- ánga
NEG- 1P.SBJ- sing- NEG

c. Negative subjunctive: *...nga...i*

si-   nga- cul- i
1P.SBJ- NEG- sing- NEG

d. Negative past participial: *...nga...nga*

si-   nga- cula- nga
1P.SBJ- NEG- sing-   NEG

e. Negative present potential: *...e...e*

si-   ng- e-   cul- e
1P.SBJ- POT- NEG- sing- NEG

The future tenses can be made congruent to the forms with two transparent negative morphemes by seeing that they are actually compound forms in which the second negative morpheme occurs internal to the verb word as a suffix on an auxiliary verb. This negative auxiliary is followed by an infinitive, but its morphology undergoes phonological reduction. The negative immediate future and negative remote future forms actually have three variant pronunciations (Doke, §45), while their affirmative counterparts have two pronunciations:[42]

(207)   Full and contracted forms of the immediate and remote future tenses

Tense	Immediate Future	Remote Future
Affirmative		
Contracted	so:cula	so:cula
	sizocula	siyocula
Full	sizokucula	siyokucula
Negative		
Contracted	asu:cula	asu:cula
	asizucula	asiyucula
Semi-contracted	asizukucula	asiyukucula
Full	asiziyukucula	asiyiyukucula

The full forms of the negatives are the most telling. They show a regularly negated verb followed by an infinitive—with both a prefix and an augment, with an epenthetic glide intervening between them, as shown for the negative immediate future in (208):

(208)   Negative immediate future:

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[42]In the variety of Zulu described by Doke, the present of the augment in the infinitive is transparent, even in the negative forms (where we might expect it to be absent). In contrast, in the Zulu of the Bible, the future is never contracted and never displays this augment, even in the affirmative (where we might expect it to be always present).

[a-	si-	z-	i	] y	[u-	ku-	cul-	a]
NEG-	1P.SBJ-	come-	NEG	EPEN	15-	15-	sing-	FV

As indicated by the glosses, the auxiliaries in these two forms are identifiable as the verbs *za* "come" and *ya* "go". Seen in this way, the future forms do not lack final negation, the negative morpheme is simply final on the auxiliary and is usually obscured by contraction.[43] It is impossible to treat such future forms as heads in a way which both obeys the Mirror Principle (Baker 1988) and negates these auxiliaries and lexical verbs (as in the present tense) in a consistent way.

It will first be noted that in the full forms of the affirmative remote and immediate future, the final vowel *a* of the auxiliary fuses with the augment of the auxiliary to become [o]:

(209) / si-   z-   a- u- ku- cul- a / → asiz*o*kucula
       1P.SBJ- come- FV 15- 15- sing- FV

This analysis is supported historically. For example, Stuart (1906) indicates that the coalescence between the *a* of *za* and the *u* of the infinitive was optional, as was the deletion of *ku*.

According to Beuchat (1966), durative *sa* can appear in the future tenses, where it precedes *za/ya*. This is entirely consistent with an analysis in which futures are actually formed with auxiliaries in the present tense.[44]

We noted that the full form, (that is, the non-contracted form) of the negative future shows an internal negation:

(210) a- ngi- z- i- y- u- ku- m- shay- a
      NEG- 1S.SBJ- come- NEG- EPEN- 15- 15- 1.OBJ- hit-   FV

Let's assume that the contracted, semi-contracted, and full forms are structurally identical. We note that the contracted form exhibits morphologically conditioned deletion. Most notably, the *k* segment of the infinitival morphology disappears entirely, which is not a general phonological process in the language. Furthermore, the form seems to constitute a prosodic word. For argument's sake, let us take these two facts to indicate that the future negative forms are heads. We will now see that the attested form cannot be constructed with head movement with standardly assumed specification for prefix or suffix.

We first note that negative *-i* is a suffix, as shown by its word-final position in the negative present indicative *angiculi*, the negative present participial *ngingaculi*, and

---

[43]I do not believe that Thwala's (1996) claim that the *ku* segment in the future forms in Swati is class 17 (default) agreement is tenable in light of these facts.

[44]My consultant has rejected such forms, although I have seen them in primary texts.

the negative infinitive *ukungaculi*. Assuming head movement with either right or left adjunction, depending on the prefix/suffix feature of the higher head, the verb stem head-raises and left-adjoins to the Neg^0 head *-i*:

(211)

```
              NegP
              /\
                Neg′
               /\
         cul_i -i   XP
                   /\
                     X′
                    /\
                  t_i   vP
                       /\
                        ...
```
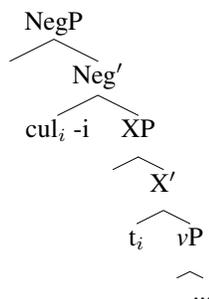
Now let us consider the future negatives. Assuming that there is only one Neg^0 head *-i*, which as we established is specified in the lexicon as a suffix, there is no way to account for the fact that the putative infinitival head *ukucul* cannot raise to negation in the same fashion:

(212)

```
              Aux
             /\
            z   NegP
                /\
                  Neg′
                 /\
          ukucul_i -i   XP
                       /\
                         X′
                        /\
                      t_i   IP
                           /\
                            I′
                           /\
                            ...
```
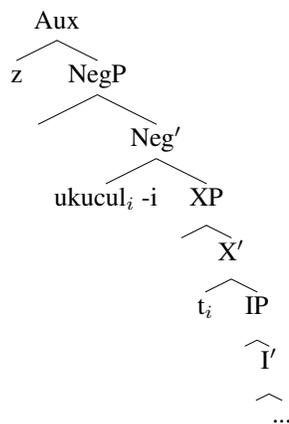
The same is true if we assume that the Aux *z* originates below Neg:

(213)

```
                        Neg′
                       /    \
                     -i     AuxP
                            /   \
                          Aux′
                         /    \
                   ukucul_i z   XP
                               /  \
                                  X′
                                 /  \
                               t_i   IP
                                    /  \
                                       I′
                                      /  \
                                    t_i   ...
```
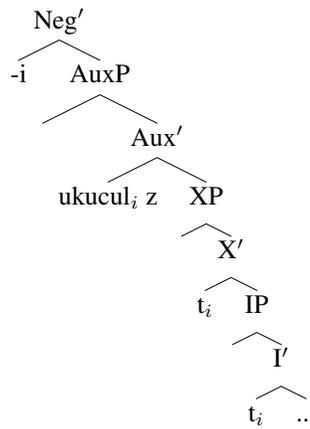
We cannot resort to saying that infinitives are incompatible with *-i*, because we have already seen that *-i* occurs in the negative infinitive (*ukungaculi* "not to sing").

Conversely, dropping the assumption that a phonological word with internal morphophonological processes necessarily constitutes a single head, the correct ordering can be attained by assuming that it is the auxiliary verb *z* "come" which raises to negation (or vice versa):

(214)

```
                      Neg′
                     /    \
                 z_i -i    AuxP
                           /   \
                         Aux′
                        /    \
                      t_i     IP
                             /  \
                          ukucula
```
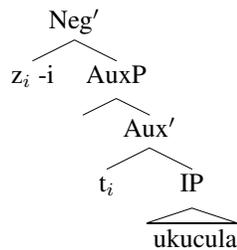
The emphatic future form (Doke's term), which is often used to express obligation, can be handled in a similar fashion, albeit without the availability of morphologically transparent uncontracted forms. This coalescence suggests a similar treatment for the [o] of *bo* in the emphatic future, where the *b* segment is the auxiliary *ba* "be":

(215)   / si-   b- a- u- ku- cul- a / → sibocula
        1P.SBJ- be- FV 15- 15- sing- FV

As has already been shown, the ability to delete the class 15 (infinitive) prefix *ku* is needed independently for the contracted forms of the immediate and remote future tenses.

This analysis is further supported by the fact that BE+INF (or BE+*to*-phrase) is a common strategy crosslinguistically for expressing both future and obligation:

(216)   Future and obligation paraphrasis with BE+INF or BE+*to*-phrase

a. English

You are to sing tomorrow.

b. Classical Arabic

lam	ya-	kun	li-	yu-	ɣanniy-	a.
NEG.PAST	3MS-	be	to-	3MS-	sing-	SBJNC

"He wasn't going to sing."

c. Spanish

Está	por	cant-	ar.
be.PRES.3S	for	sing-	INF

"She's about to sing."

In conclusion, the most cohesive analysis of future forms does not treat them as heads.

4.4.2 Subjunctive

Zulu has both a present and past subjunctive.[45] While the usage of these two tenses differs in ways which probably cannot be attributed entirely to tense properties, they can both be used as consecutives, as shown in (217).

(217) a.

U-	mfana	u-	fik-	a	e-	khaya	a-	*fund-*	*e.*
1-	1.boy	1.SBJ-	arrive-	FV	LOC:5-	home	1.SBJ-	study-	SBJNCT

"The boy arrives home and studies." (present subjunctive form italicized)

b.

U-	mfana	w-	a:-	hlal-	a	phansi	*w-*	*a-*	*fund-*	*a.*
1-	1.boy	1.SBJ-	PST-	sit-	FV	down	1.SBJ-	PST.SBJNCT-	study-	FV

"The boy sat down and studied." (past subjunctive form italicized)

(Data from Van der Spuy (1992).)

Note the absence of any conjunction between the verbs in these examples. We will now examine the present and past subjunctive forms separately.

4.4.2.1 Present subjunctive

Besides its use as a consecutive, the present subjunctive is used as a complement to various auxiliary verbs, such as *-ngeke* "never":

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[45]There has been a debate in the literature on Zulu as to whether the consecutive is a discrete mood or whether it is the past tense of the subjunctive (see, for example, Davey (1988), Posthumus (1991), Wilkes (1991), and Wilkes (1998)). We will not be concerned with this issue here.

(218) ba- ngeke ba- cul- e
   2.SBJ- never- 2.SBJ- sing- SBJNCT
  "they'll never sing"

Here is the subjunctive paradigm:[46]

(219) Present subjunctive

Present subjunctive affirmative	SM^{subj}-V-e ...H *acule*
	SM^{subj}-OM-V-e ...FL *ayicule*
negative	SM^{subj}-nga-V-i ...FL *angaculi*

 Note that there is a difference in the tonal properties of the affirmative suffix which depends on the presence or absence of an object marker. This seems similar to three cases already seen: the negative *-nga-* prefix, durative *-sa-*, and exclusive *-ka-*. This case, however, does not seem analytically ambiguous in the way that those cases were, because we have already argued that the object prefix is inside the verbal remnant that raises to the inflectional domain.

 It was shown in section 4.4.1 that principal and participial indicative clauses can be formed from non-verbal predicates. Curiously, analogous subjunctive clauses cannot be formed in this way, using an SM^{subj} subject marker:[47]

(220) Present subjunctive

 a. * ukuze a- na- yo i- mali
   in.order 1.SBJ.SBJNC- with- 9.it 9- 9.money
  "in order for her to have (the) money"

 b. ukuze a- b- e- na- yo i- mali
   in.order 1.SBJ.SBJNC- be- SBJNC- with- 9.it 9- 9.money
  "in order for her to have (the) money"

---

[46]As mentioned earlier, the tonal pattern associated with the suffix is presumably ...FL. This form has been inexplicably omitted by Claughton, but the ...FL pattern matches up with Zulu forms I have been able to identify in recordings and the fact that all other Xhosa verb forms employing preverbal *-nga-* have this tonal melody. The absence of a subject marker seems to be dependent on tense in a way that is loosely correlated with inchoativity. For example, the present subjunctive, as in (220b), entails a change of state, and thus counterindicates a subject marker.

[47]Note the absence of a subject marker on the non-verbal portion of the non-verbal predicate in (220b). Again, the distribution of subject markers on these predicates when embedded is not understood.

Expressing subjunctive and non-present tenses of clauses whose predicates are prepositional phrases requires insertion of the auxiliary verb *ba* "be", such as illustrated in the subjunctive above in (220).

4.4.2.2 Past subjunctive

The past subjunctive, in addition to its consecutive usage already noted, is used as the complement of certain auxiliary verbs, as shown in (221):[48]

(221) a-   n-   oze   n-   a-   phum- a
   NEG- 2P.SBJ- never 2P.SBJ- SBJNC- leave- FV
   "you will never leave"

The paradigm for the past subjunctive is as follows:

(222) Past subjunctive

affirmative		SM-á-V-a (toneless) *wacula*
negative	a.	a-SM-angâ-V-a ...HL *akangacula*
	b.	SM-a-ngâ-V-a ...HL *wangacula*
	c.	a-SM-â-V-a ...HL *akacula*

An issue here concerns the presence of two negative elements in the a-SM-angâ-V-a variant of the negative form. Khumalo considers the (b) and (c) variants[49] in (222) to be variants of the (a) form. The (a) form (the uncontracted form) is interesting because the negative feature seems to be expressed in three different morphemes: preverbal *a*- before the subject marker, *-angâ-* before the macrostem, and in the *-a* ...HL final suffix, which, as in other cases already described, is not simply a default final suffix, because its ...HL tonal melody is not a default.

4.4.3 Contingent

Examples of the contigent tense are shown in (223), taken from Poulos and Msimang (1998) (p. 302-303):

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[48]A complete description of auxiliary verbs (defective verbs) and the types of complements they select for can be found in Slattery (1981).

[49]These are discussed in Khumalo II, p. 39 and Khumalo I, p. 79.

(223) a. Si-   yo- m-   shay- a a-   nga- ni-   thuk- a.
           1P.SBJ- FUT- 1.OBJ- hit- FV 1.SBJ- CONT- 2P.OBJ- swear- FV

       "We will hit him if he swears at you."

    b. N-   a-   nga- fund- a kakhulu ni-   ngeke ni-   phas- e.
        2P.SBJ- NEG- CONT- study- FV much   2P.SBJ- never 2P.SBJ- pass- SBJNC

       "If you don't study hard, you won't pass."

The tonal properties of the negative form are not discussed anywhere in the litera-ture. The affirmative form is discussed by Khumalo who considers it a variant of the affirmative potential indicative, which would make it a toneless form.[50]

Here is the contingent paradigm:

(224) Zulu contigent

Contigent affirmative	SM-ngà-V-a *angacula* (toneless)
negative	SM-a-nga-R-a *wangacula*

The contingent form is given for the sake of completeness. No additional relations or issues arise with this tense.

4.4.4   Imperative

Here is the imperative paradigm in Zulu:

(225) Imperative

	Singular	Plural
Without object marker	V-a ...HL *cula*	V-a-ni ...HL *culani*
With object marker	OM-V-e ...FL *yicule*	OM-V-e-ni ...HL *yiculeni*

No negative forms are given because surrogate forms are used to express negative imperatives, either the present negative subjunctive or, more commonly, the negative imperative auxiliary *musa* "don't!", as illustrated in (226):

---

[50]Khumalo's analysis is useful only in that it provides us with tonal information about the form. The analysis fails to explain why none of the three negative forms appear to be variants of the negative potential tense.

(226) a. U-   nga- cul- i.   (negative subjunctive)
    2S.SBJ- NEG- sing- NEG

    "Don't sing."

    b. Mus- a u- ku- cul- a.   (*musa* auxiliary)
    don't- FV 15- 15- sing- FV

    "Don't sing."

The tonal melody of both plural forms is ...HL, but the analysis is ambiguous. Because ...FL can in many cases be derived from /...HH/, the ...HL pattern in the form with an object marker, the surface tonal pattern could be derived regularly from an underlying ...FL suffix, interacting with the additional suffix *-ni*.[51]

There are two interesting issues with these imperatives. The first is the alternation between the final suffixes *-a* and *-e* and the second is the nature of the morpheme *-ni* found in the plural forms. These will be discussed separately.[52]

Suffix selection in imperatives: the subjunctive connection.   It will be noted in the paradigm in (225) that the final suffix of the imperative is toneless *-a* in the absence of an object marker but that it is *-e* ...FL when an object marker is present.[53] If this alternation occurred only in Zulu, it could be dismissed as an arbitrary morphological alternation. However, note that the *-e* ...FL variant is also the affirmative present subjunctive final suffix, as noted by Khumalo:[54]

---

[51]Khumalo II (p. 54-55) says that *-ni* is toneless, followed by the [HL] imperative morpheme.

Khumalo does not consider non-imperative use of *-ni* even though he argues that imperatives with object markers are actually subjunctives. If his claim is correct in that a tonal (non-segmental) imperative suffix is attached to the right of *-ni*, then the fact that the plural forms with and without object markers have identical tonal melodies is merely coincidental. In the case of the true imperative without an object marker, the melody is the result of adding a final HL imperative affix to a form which may be otherwise devoid of any high tones. Conversely, in the case of the surrogate imperative with an object marker, the melody is the result of adding the toneless suffix *-ni* to a subjunctive form, which in Zulu will always have underlying high tones (even though subjunctive forms usually surface with a falling tone).

[52]There is an additional issue introduced by Khumalo. On a disyllabic LL stem, V-HL is usually realized as HL, but in the imperative it is realized as LH. Khumalo solves this by making *a-* and HL separate suffixes, then applying a mapping convertion to HL.

[53]In addition to the imperative form discribed here, Engelbrecht (1957) also discusses what he terms an emphatic imperative form in Zulu in which the final vowel is *-a* even in the presence of an object marker (of arbitrary person and number), for example:

  a. Yi-   leth- a leyo- nduku!
     9.OBJ- bring- FV 9.that- 9.stick

    "There now, bring that stick!"

[54]Engelbrecht (1957) also cites tone as an indication that imperatives ending in *-e* are really subjunctives.

(227)   a. Imperative with object marker

Yi-   cûl- è!
9.OBJ- sing- FV

"Sing it!"

b. Present affirmative subjuncive with object marker

... ukuba u-   yi-   cûl- è.
    in.order 2S.SBJ- 9.OBJ- sing- FV

"...for you to sing it."

This homophony between the present affirmative subjunctive and the affirmative imperative with an object marker is found in other, far-flung Bantu languages such as Swahili, a non-tonal language, in which the alternation is between *-a* and *-e*, as shown in (228):

(228)   a. Imperative without object marker

Chez- a!
play-   FV

"Play!"

b. i. Imperative with object marker

I-   chez- e!
9.OBJ- play- FV

"Sing it!"

ii. Present affirmative subjuncive with object marker

... ili   u-   i-   chez- e.
    in.order 2S.SBJ- 9.OBJ- play- FV

"...for you to play it."

The use of subjunctives as surrogate imperatives is well attested cross-linguistically, as in the Spanish example in (229b), which employ the pronoun *Usted*, which means "you", but which grammatically is third person:

(229)   a. Spanish subjunctive as complement clause

Quier- o que Usted cant- e.
want- 1S that you   sing- SBJNCT

"I want you to sing."

b. Spanish subjunctive as surrogate imperative

Cant- e   Usted.
sing- SBJNCT you

"Sing!"

And the subjunctive even occurs unambiguously in Zulu to express negative impera-
tives. These facts taken together suggest that Zulu affirmative "imperatives with object
markers" are actually subjunctives used as surrogate imperatives.

Assuming that imperatives ending in *-e* are subjunctives lacking subject markers,
we must ask ourselves what would drive such an alternation between a morphological
imperative and a subjunctive. The alternation is actually reminiscent of the verb/clitic
ordering pattern of Spanish. In that language, an object clitic precedes the verb,
whether the latter is an indicative or an embedded subjunctive (that is, a subjunctive
preceded by an overt complementizer), as shown in (230), with the object clitic *lo*:

(230)   a. Indicative

          Lo cantas bien.
          it   sing.2S well

          "You sing it well."

        b. Embedded subjunctive

          Quiero que lo cantes   bien.
          want.1S that it   sing.2S.SBJNC well

          "I want you to sing it well."

However, an imperative verb form must precede the clitic, as in (231):

(231)   Cánta-   lo bien.
        sing.IMPER- it well

        "Sing it well." (singular familiar, morphologically second person)

The Spanish pattern suggests that an imperative has to raise to a position higher
than the clitic. And indeed it is a standard assumption that an imperative raises to a
position above AgrSP, in the complementizer domain (Beukema and Coopmans 1989;
Koopman 2001). We will assume that in Zulu, too, an imperative must move to a
designated position in the complementizer domain. Combining this assumption with
our assumption that the Zulu macrostem (object marker plus verb stem) moves as a
phrasal remnant rather than as a complex head, the unavailability of the morphological
imperative (that is, a non-surrogate imperative) in the presence of an object marker
can be explained in terms of pied-piping. We must simply assume that the imperative
verb cannot pied-pipe the AgrOP along with it when it raises to the complementizer
domain (as might be handled by a complexity filter, such as employed in Koopman
and Szabolcsi (2000)). At the same time, the object marker (an AgrO^0 head) cannot
be stranded. The impossibility of splitting the AgrOP from the verb stem embedded in

it, combined with the impossibility of pied-piping the AgrOP to the complementizer domain creates a situation where imperatives with object markers simply cannot occur. This forces the use of a surrogate form, a subjunctive, which lacks the pied-piping restrictions.

A morphophonological approach. While the idea that imperatives with a final suffix of *-e* are actually subjunctives, an alternative analysis must be addressed. In some Bantu languages, such as Rundi and Chewa, the alternation of the *-a/-e* suffixes falls along slightly different lines. As shown in the Rundi examples in (232), the *-a* suffix is used not only when the verb has no object marker (232a), but also when the first person singular marker is used (232b):

(232) Rundi imperatives

    a. No object prefix

       Vun- ***a*** amagúfa.
       break- FV 5.bone

       "Break the bone!"

    b. First person singular object prefix

       / N-   heb-   ***a*** / → [Mpeb***a***!]
         1S.OBJ- abandon- FV

       "Abandon me!"

    c. Other object prefixes (including reflexive)

       i. Tu-   vun- ***e***.
          1P.OBJ- break- FV

         "Break us!"

       ii. I-   vun- ***e***.
          REFL- break- FV

         "Break yourself!"

    (Adapted from Ndayiragije (2003).)

This pattern is only found in languages in which the first person singular object marker is a homorganic nasal which surfaces as prenasalization on the following consonant (Larry Hyman, p.c.). All other object markers constitute whole syllables. This pattern also holds in at least some dialects of Ndebele, a Nguni language closely related to Zulu, according to unpublished data collected by Ziervogel cited in Engelbrecht (1957). These facts lead Ndayiragije to claim that the alternation is of a purely morphophonological nature, dependent on the number of syllables preceding the verb stem:

(233) / (N +) stem / → [(N +) stem + **a**]
       / σ + stem / → [σ + stem + **e**]

If such an approach were adopted, there are four cases in which it could be used in Zulu, all of them cases where the presence or absence of a prefix other than one encoding tense, mood, or negation participates in suffix selection:[55]

(234)   a. Affirmative imperative
            without object marker: *-a* ...HL
            with object marker: *-e* ...FL

        b. Affirmative present subjunctive
            without object marker: *-e* ...H
            with object marker: *-e* ...FL

        c. Affirmative present participial
            without durative *sa-*:   *-a* (toneless)
            with durative *sa-*:   *-a* ...FL

        d. Affirmative present principal and participial
            without exclusive *ka-*:   *-a* (toneless)
            with exclusive *ka-*:   *-a* ...FL

        e. Negative forms in *-i*

            i. Forms lacking *nga-*: present principal indicative
                    -i ...HL

            ii. Forms with *nga-*: present participial indicative, present subjunctive, infinitive
                    -i ...FL

What must be added to Ndayiragije's analysis to extend its application beyond imperatives is a notion of phonological domain, because the forms in (234b) and (234c) have prefixes preceding the suffix-selecting prefix.[56] Introducing the notion of domain is not problematic, because it is required for other phenomena, such as for epenthesis to satisfy phonological minimality and for the bounding of tonal processes. However, it should be noted that the domain relevant for the subjunctive and imperative cases (in Zulu) is distinct from that for the remaining cases. Let's consider just the subjunctive and present participial affirmative cases (that is, cases (234b) and (234c)), schematizing the domains in this way, and ignoring the issue of where the right edges of these domains fall:

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[55]I am assuming that the role of tense, mood, and negation in suffix selection is not merely morphophonological.

[56]I am using the term *suffix-selecting* as shorthand for "a suffix which participates in suffix selection", as selection of the suffix is also partially determined by factors of tense, mood, submood, and polarity.

(235) $[_{SM}$ SM $[_{Dur}$ *sa-* $[_{OM}$ OM $[_{stem}$ verb stem $]]]]$

In the case of the subjunctive (234b), suffix selection is sensitive to the presence of an object marker (OM) on the verb stem, but not to the presence of a subject marker (SM) (which is obligatory). Thus, stem selection can be said to be partially determined by the presence of a syllable with the OM domain in (235) excluding the stem domain. Conversely, in the case of the present participial, suffix selection is not sensitive to the presence of an object marker, but is indeed sensitive to the presence of the durative *sa-* prefix. As in the case of the subjunctive, the present participial is not sensitive to the presence of a subject marker (which is, again, obligatory). Thus, under this analysis, suffix selection is partially determined by the presence of a syllable in the Dur domain excluding the OM domain.

Since the imperative alternation depends on the presence of an object marker, it can be handled in exactly the same way as the subjunctive. The analysis of the negative forms ending in *-i* is similar to the affirmative present participial cases, although the situation here is more complicated, since *nga-* can be combined with either *ka-* or *sa-*, making it impossible to determine which prefix triggers an alternation in these combinations.

Unfortunately, it is difficult to decide for or against this morphophonological analysis. To its advantage, it neatly accounts for the fact the Rundi-type alternation, in which a first person singular object marker coöccurs with the same suffix as that occurring in the outright absence of an object marker, occurs in precisely those languages in which the first person object marker is not syllabic. The main disadvantage of this purely morphophonological approach is that it fails to capture the fact that the imperative alternation occurs in so many Bantu languages and that the alternation seems to always be such that one of the alternates (the one with the object marker or the syllabic object marker) is subjunctive in form. Schlindwein (1986) has argued that in Rimi (a language in which the first person subject marker is not syllabic) the first person subject marker is structurally lower than the other object markers (Larry Hyman, p.c.). As this unpublished analysis is not available, it is impossible to know whether any evidence for that analysis could not be accounted for equally as well using Ndayiragije's morphophonological approach. If it is true that these non-syllabic first person object markers are structurally lower than other object markers, then a morphosyntactic account becomes more plausible; the first person singular forms pattern morphologically with the OM-less forms because they are syntactically smaller structures than forms incorporating the structurally higher object markers.

Other participating prefixes.   From a cross-Bantu perspective, there are prefixes other than object markers that participate in the *-a/-e* alternation in the imperative. An example comes from Swahili, in which the aspectual prefix *ka-* triggers the *-e*

imperative alternate:[57]

(236) Swahili *ka-* in imperatives and subjunctives

    a. som- a
        read- FV

        "Read!"

    b. ka- som- e
        ka- read- FV

        "Go and read!"

    c. ili   u-   som- e
        in.order 2S.SBJ- read- FV

        "for you to read"

    d. ili   u-   ka- som- e
        in.order 2S.SBJ- *ka-* read- FV

        "for you to go and read"

While data like this broadens the scope of the phenomenon, it does little to settle the issue of whether the alternation is morphophonological or morphosyntactic. The data is compatible with the morphophonological approach because addition of *ka-* also introduces a syllable preceding the verb stem. But from a morphosyntactic standpoint, it provides another way in which prefixed imperatives resemble subjunctives. This is not only due to the fact that both an imperative and a subjunctive with the *ka-* prefix employ the same final suffix, but also because the distribution of *ka-* is quite restricted, occuring only in the subjunctive and the imperative (and the so-called narrative tense, usually called the "*ka* tense", if it is, in fact, the same morpheme in the case of the narrative tense, and not a merely homophonous morpheme).

-*Ni* as a plural addressee clitic.   It will be argued here that the *-ni* suffix used in plural imperatives is actually a plural addressee clitic, with properties more like a vocative phrase than a subject marker. While *-ni* is shown as a suffix in (225), its status is more like that of a clitic. For one thing, it follows the final suffix, putting it in the same class as final clitics such as *-ni* "what", *-ke* "so", and the *-yo* clitic found in synthetic relatives. (All of these were illustrated earlier in this chapter in example (138) on page 82.) The fact that *-ni* is optional in some of its uses (hortatives and cohortatives, discussed below) also puts it on par with these clitics. Furthermore, *-ni* is not restricted to morphological imperatives. It can be also used with hortatives, which are subjunctive in form, as exemplified in (237):[58]

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[57]Thanks to Deo Ngonyani for grammaticality judgements.

[58]Insight on the non-imperative use of *-ni* in Zulu was provided by Nhlanhla Thwala.

(237) Ma- ni- cul- e- (ni) !
      HORT- 2P.SBJ- sing- SBJNC- 2P

      "Sing!"

It should be noted that the agreement features of this clitic are independent of those of the subject (the agent). The second person plural features of this clitic are actually addressee features rather than subject features. This fact is not apparent in either a plural imperative or a hortative as in (237), because in those cases *-ni* is used only when both the subject and the addressee are plural. However, the independence of addressee features and subject features does become apparent in cohortatives (first person plural hortatives), which, like second person hortatives, are subjunctive in form. These cohortatives are exemplified in (238):

(238)   a. Ma- si- cul- e- (ni) !
           HORT- 1P.SBJ- sing- SBJNC- 2P

         "Let's sing!" (Addressing two or more people.)

     b. Ma- si- cul- e!   #Masiculeni!
           HORT- 1P.SBJ- sing- SBJNC

         "Let's sing!" (Addressing one person.)

First consider (238a), in which the *-ni* clitic is possible (although not obligatory). Because the subject (the agent) is first person, it can be concluded either that the features of *-ni* do not include person or that its features encode something other than subject features. It is the form in (238b) that shows that *-ni* encodes addressee features, independent of subject features. The agent in this form is plural, but *-ni* cannot be used because the addressee is singular. We are glossing this clitic as 2P although it is not clear whether addressees have person features. It would seem that addressees are inherently second person, making a person feature redundant.

The claim that *-ni* encodes addressee features rather than subject features is supported by the fact that *-ni* can be used in certain lexicalized forms, such as greetings, in which a subject feature analysis simply doesn't make sense. Consider, for example, the Zulu forms for "hello", shown in (239):

(239)   a. S- a- wu- bon- a.   ∗Sawubonani.
          1P.SBJ- PST- 2S.OBJ- see- FV

         "Hello." (Addressing one person. Literally, "We saw you.")

     b. S- a- ni- bon- a- (ni).
          1P.SBJ- PST- 2P.OBJ- see- FV 2P

         "Hello." (Addressing two or more people. Literally, "We saw you.")

Although these forms are lexicalized, as indicated by the use of the form *wu-* as the second person singular object marker rather than the usual *ku-*, there is no evidence that these are imperatives or hortatives. If anything, the addressee corefers with the object rather than with the subject. The non-subject nature of *-ni* is further highlighted by its use in certain phrases in Swahili that lack subjects altogether, as shown in (240):

(240) a. i. Asante. (Swahili)
               thank.you
               "Thanks." (Addressing one person.)

       ii. Asante- ni.
            thank.you- 2P
            "Thanks." (Addressing two or more people.)

       b. i. Kwa heri.   (Swahili)
               for   goodness
               "Goodbye." (Addressing one person.)

       ii. Kwa heri-   ni.
            for   goodness- 2P
            "Goodbye." (Addressing two or more people.)

Asante in (240a) is an Arabic borrowing which is not decomposable in Swahili, and there is no evidence that any subject is involved. As for *kwa heri* in (240b), if it has a subject at all, it would seem to be the subject of an elided imperative verb meaning "go" rather than of the overt phrase *kwa heri*. The lack of a subject in these expressions needs no explanation if *-ni* encodes addressee features rather than subject features.

And while we are considering Swahili, consider the fact that Swahili, like Zulu, uses *-ni* in plural imperatives:

(241) a. Som- a!
           read- FV
           "Sing! (sing.)"

       b. Som- eni!
           read- FV:2P
           "Sing! (pl.)"

This might lead us to believe that *-ni* in Swahili encodes subject features, except in the greeting-like phrases we just considered. But Swahili has two additional types of cases where the *-(e)ni* is object-related rather than subject-related (Tom Hinnebusch, p.c.). In the first case, *-(e)ni* can be used (optionally) to disambiguate a second person plural object from a third person plural animate (noun class 2) object, whose object markers are homophonously *wa-*:

(242)   a. Ni-   ta- **wa-**   saidi- a.
            1S.SBJ- FUT- 2P.OBJ/2.OBJ- help-   FV

        "I will help you/them." (ambiguous)

        b. Ni-   ta- **wa-**   saidi- eni.
            1S.SBJ- FUT- 2P.OBJ/2.OBJ- help-   2P

        "I will help you/∗them." (unambiguously second person plural)

In the second case, not available for all speakers, *-(e)ni* is used in conjunction with a second person *singular* object marker to give a distributive interpretation:

(243)   Ni-   ta- ku-   saidi- eni.
        1S.SBJ- FUT- 2S.OBJ- help-   2P

        "I will help you (individually)."

These cases serve to strengthen the argument that *-ni* encodes neither subject features nor imperative force.

Another issue concerns the relation between the subject and the addressee. While the Zulu cohortatives demonstrate that subject and addressee features are not identical, it is also clear that there is a relation between them. Were this not so, we would expect *-ni* to be used in, say, arbitrary third person optatives and indicatives, as long as the addressee is plural, an expectation shown by the forms in (244) to be incorrect:

(244)   a. Ma-   ka-   cul- e-   (∗ ni)!
            HORT- 1.SBJ- sing- SBJNC-   2P

        "Let him sing!" (Addressing two or more people.)

        b. Ba-   cul- ile-   (∗ ni).
            2.SBJ- sing- PERF-   2P

        "They sang." (Addressing two or more people.)

The characterization of *-ni* as encoding addressee features may thus need further refinement. How can the relevant entity whose plurality is encoded by *-ni* be formulated in such a way that its use with imperatives, hortatives, and greeting-like expressions is neatly captured? This question must be left for further research.

The position of -ni.   The issue of the structural position of *-ni* remains to be explored. Because there is no short/long alternation in the forms in which the clitic appears in Zulu, it is not clear whether the clitic falls inside or outside the AgrSP remnant formed above the inflectional domain (discussed in the next chapter). However, an addressee particle would appear to be of the same ilk as vocatives, which as mentioned earlier are assumed to be merged in a cycle above the inflectional domain. We might thus

expect *-ni* to be merged in this same region, but this possibility is problematic. First it should be noted that while *-ni* and vocative phrases share the property of encoding addressees, there are important differences between them. First it should be noted that *-ni* can coöccur with a vocative phrase:

(245) Cul- a- ni, bantwana!
       sing- FV- 2P 2.children
       "Sing, children!"

And second, vocative phrases have a much wider distribution than *-ni*. For example, unlike *-ni*, a vocative phrase can be used in an arbitrary declarative sentence, in which the addressee is not a participant in the verb phrase:

(246) U- mfundisi u-   phum- ile, bantwana.
       1- 1.teacher 1.SBJ- leave- PERF 2.children
       "The teach has left, children."

-Ni therefore cannot be characterized as a mere clitic version of a plural vocative phrase.

   The more interesting problem, however, is an issue involving constituency and morphological attachment which arises by merging *-ni* high in the structure, above the inflectional domain. This problem, unfortunately, involves an analysis introduced only in the next chapter. There it will be shown that the adverb *kahle* "well" must occur inside a particular constituent containing both it and the verb. This constituent is formed by moving an AgrSP remnant to the complementizer domain. That is, the adverb *kahle* must move together with the verb in the AgrSP remnant. Now consider the form in (247):

(247) Cul- a- ni kahle!
       sing- FV- 2P well
       "Sing well!"

The plural imperative in (247) constitutes a paradox if *-ni* is merged in the complementizer domain and if *kahle* moves there in the same constituent as a verb, because the clitic *-ni* would have to attach to the end of that constituent, as in (248):

(248)

139
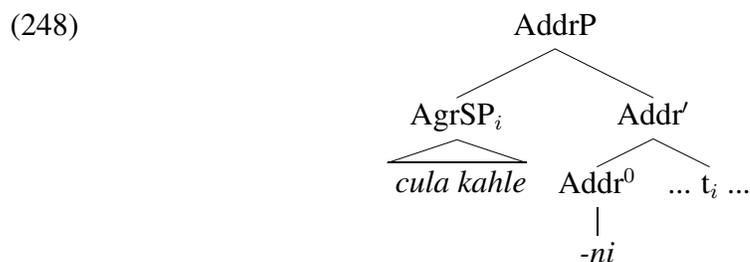
It seems likely, then, that *-ni* is merged somewhere in the inflectional domain, perhaps in a position similar or identical to that of honorific heads, given that both of *-ni* and honorifics encode addressee features.

4.4.5 Infinitive

Here is the infinitive paradigm:

(249) Zulu infinitives

Affirmative	ú-ku-V-a (toneless) *ukucula*
Negative	ú-ku-ngà-V-i ...FL *ukungaculi*

It will be noted that the Zulu infinitive, like that of related languages, has certain nominal properties. Infinitives constitute a noun class (noun class 15). In Zulu, infinitives participate in the augment/bare noun alternation just like canonical nouns, as shown in (250), where the infinitival complement "to sing" behaves in the same way as the nominal complement "bread":

(250)   a. Ngi-   fun- a   *(u-) kucula / *(i-) sinkwa.
1S.SBJ- want- FV   15- 15.sing   7-   7.bread

   "I want to sing/some bread." (augment obligatory in affirmative context)

   b. A- ngi-   fun- i   (u-) kucula / (i-) sinkwa.
NEG- 1S.SBJ- want- FV   15- 15.sing   7-   7.bread

   "I want to sing/any bread." (augment omissible in negative context)

The fact that the postverbal negative morpheme *-i* in the infinitive is identical to the one used in the indicative negative present (both principal and participial) and in the subjunctive suggests that there is no tense feature at all in the indicative present or the subjunctive. That is, present tense is merely the lack of any other tense. (If this is so, then the distribution of *ya* becomes complicated, because *ya* cannot appear in non-present contexts.)

4.5 Conclusion

This chapter has described Zulu inflectional morphology and explored the diverse set of issues that presents itself when trying to account for the many dependencies that hold within a constrained morphosyntactic model, building on the idea that the

macrostem is phrasal and that the verb word is hence not a complex head. The parameters to which the morphology was shown to be sensitive include:

- Mood, submood (principal/participial), and tense.

- Polarity.

- Predicate category.

- Constituent size and constituent structure.

There can be several types of dependencies that can hold simultaneously within the Zulu verb word. For example, the final suffix can be sensitive to both polarity and to submood. Because of differences in the structural position of some of the affixes that express the features involved, at least two different types mechanisms are needed. One type, involves heads standing in a c-command relation. This could take the form either of c-command, *per se*, or selection. If selection is the correct relation, it must be serial selection, because in some cases heads (silent or overt) intervene between the two heads between which the dependency holds.

The concept of a default suffix was discussed. It was shown that speaking of a default *-a* final suffix *-a* is a misnomer in any case where the final tonal melody is non-default. Even in cases where the final suffix is *-a* and the tonal melody is indeed default. The default suffix *-a* with a toneless suffix masks the problem of stem selection.

While there are reasons suggesting that final suffixes could be decomposed into segmental and tonal components, this does not, in fact, seem possible.

CHAPTER 5

The Short/Long Alternation

In the preceding chapter, certain morphological considerations were discussed concerning the short/long alternation, found in present and recent past tense verb forms. The present chapter further develops a syntactic analysis of these forms sketched out in chapter 3. An analysis will be pursued in which the alternation will fall out from constituency in the analysis pursued, but the constituencies needed will be obtained above the inflectional domain.

We will begin our discussion in section 5.1 by examining the contexts in which the Zulu short verb forms are used and the semantic properties of the element following these short forms. The conclusion will be reached that what these elements have in common is a lack of topicality. Then, in section 5.2, a syntactic analysis will be pursued within the stated morphological and syntactic constraints. In section 5.3, we will consider a seemingly similar pattern in Rundi, described and analyzed by Ndayiragije (1999). It will be shown that the Zulu pattern differs from it in such a way that Ndayiragije's analysis cannot be adapted to fit it. Specifically, it will be shown that the Zulu short form does not clearly correlate with a focal interpretation on the immediate postverbal element. It will further be argued that a converse analysis which claims that a long form entails focus on the verb is also problematic. The remaining two sections discuss various other issues relating to the analysis pursued here.

5.1   The Zulu pattern

Consider the following three Zulu utterances, all of which employ a short verb form:

(251)   a. Q: Ba- cul- a- phi?
              2.SBJ- sing- FV- where
              "Where are they singing?"

          A: Ba-   cul- a phandle.
              2.SBJ- sing- FV outside
              "They're singing outside."

        b. Ku-   cul- a u- Sipho!
             17.SBJ- sing- FV 1- 1.Sipho
             "SIPHO's singing!"

In each of these utterances, the element following the short verb form is clearly in focus. In (251a.Q) that element is a Wh clitic, in (251a.A) it is the constituent which answers the Wh clitic, and in (251b) it is a focalized subject. These facts might lead us to hypothesize that the element following a Zulu short form is in a low focus position, with "low" meaning below the inflectional domain. Indeed, this is the approach taken by Ndayiragije to describe a similar pattern in Rundi, discussed below in section 5.3. However, this hypothesis immediately runs into the problem that certain contexts in which the short form must be used do not involve a focus interpretation at all, such as the resumptive pronoun *khona* in (252):

(252) i- ndawo lapho ngi-   cul- e   khona
       9- 9.place   where 1S.SBJ- sing- PERF there

       "the place where I sang"

In this section we will examine the known contexts in which the short form of the verb is used. It will be concluded that what the elements immediately following such short forms have in common is not a focal property, but rather a lack of topicality (or something of a similar nature).

As a reminder to the reader, a table is given in (253) of the morphological forms of short and long verb forms for the present and recent past tenses, the two tenses which display the alternation:

(253) The short/long alternation

	Short	Long
Present		
principal	SM-V-a (toneless)	SM-*ya*-V-a (toneless)
participial	SM-V-a (toneless)	SM-V-a (toneless)
Recent past		
principal	SM-V-e ...F	SM-V-ile (toneless)
participial	SM-V-e ...F	SM-V-ile ...FL

Before we proceed, we will first refute two naïve explanations of the short/long alternation: a prosodically driven analysis and the notion that the short and long forms constitute different tenses.

The short/long alternation is not prosodically driven. The intuition behind a prosodic analysis would build upon the claim made here (following van der Spuy (1993)) that short verb forms are not phrase-final. To restate our claim, for all speakers the short verb form is never final in a certain constituent, while (for most speakers) the focus form in this same constituent is always final. It is uncontroversial to assume that

the right boundary of this constituent can also constitute a prosodic boundary. It seems reasonable then, that a verb appears in a longer form when it comes at the end of this prosodic boundary. This seems even more plausible when we consider that it is always the last prosodic word that is stressed in this constituent.

(254) a. Ba- dlal- a PHÁNDLE] (short verb form)
        1.SBJ- play- FV outside

        "They're playing OUTSIDE."

       b. Ba- ya- dlála- a] phandle. (long verb form)
        1.SBJ- *ya-* play- FV   outside

        "They're playing outside."
     (The acute accent in these examples indicates stress, not high tone.)

The problem with such an analysis is that it incorrectly predicts that a verb form with an enclitic will be in the long form if no other material follows the verb in the verb phrase. This prediction is wrong, as seen in (255):

(255) a. i. Ba- dlal- á- phi? (short verb form)
          1.SBJ- play- FV- where

       ii. ∗ Ba- ya- dlal- á- phi? (long verb form)
          1.SBJ- *ya-* play- FV- where

          "Where are they playing?"

       b. i. U- fundis- é- ni? (short verb form)
          2S.SBJ- teach- PERF- where

          ∗ U- ya- fundis- ilé- ni? (long form)
          2S.SBJ- *ya-* teach- PERF- where

          "What did you teach?"

Stress in Zulu is on the penultimate syllable, and as (255a.ii, b.ii) show, a Wh enclitic incorporates prosodically into the verb that precedes it, inducing a shift in stress to the syllable immediately preceding it. Thus, when enclitics are considered, the prosodic account of verb focus loses the very intuition which made it appealing. If the use of a longer verb form is the result of a desire to make a prosidically prominent word phonologically heavier, we would expect the examples in (255) to be prime environments for the long form to appear. Because our expectation is not borne out, a prosodic account is unsatisfactory.

Long and short forms are not discrete tenses. It has been claimed at times in the linguistic literature (such as Doke (1973) and Thwala (1996)), as well as in some pedagogical texts (such as Malcolm (1966)), that the long/short alternation in the present

is one of tense. This claim comes from generalizing over incomplete paradigms, such as this one:

(256) a. A- baculi ba-   ya- cul- a. (long form)
       2- 2.singer 2.SBJ- *ya-* sing- FV
       "Singers sing."

       b. Lo- mculi u-   cul- a i- ngoma enhle. (short form)
       that:1- 1.singer 1.SBJ- sing- FV 9- 9.song   9.pretty
       "That singer's singing a pretty song."

       c. Le- ngoma ngi-   ya- yi-   cul- a. (long form)
       that:9- 9.song   1S.SBJ- *ya-* 9.OBJ- sing- FV
       "That song I sing."

Sentences (256a) and (256c) both use long forms and both have habitual interpretations, as indicated by the translation. Conversely, (256b) uses a short verb form and has a present progressive interpretation. Such reasoning has led certain authors to conclude that the long present form is one tense while the short present form is another. If we were to use the data in (256) as the basis for this type of analysis, we would conclude that the long form is a habitual present tense while the short form is a present progressive. The problem is that this correlation is apparent only when examples are taken out of context. Divorced from a specific context, sentence (256a) looks like a generalization, hence inviting the habitual reading. But the same sentence given as a reply to a question which establishes an immediate present tense context is not only correct, but in the SV word order, it is the only grammatical way of formulating such a reply, the analogous short form being ungrammatical:

(257) Q: Kw-   enzek- a- ni   manje?
       17.SBJ- happen- FV- what now
       "What's happening now?"

       A: A- baculi ba-   *(ya-) cul- a.
       2- 2.singer 2.SBJ-   *ya-*   sing- FV
       "The singers are singing."

Similarly, presented out of the blue, sentence (256b) invites a present progressive reading because if the sentence denoted a generalization or a habitual action, we might expect a plural object. However, a short verb form would be used even if we make such a generalization:

(258) Lo- mculi u-   cul- a i- zingoma ezinhle. (short form)
       that:1- 1.singer 1.SBJ- sing- FV 10- 10.song   10.pretty
       "That singer sings pretty songs."

Also note that in the exchange in (257) a question employing a short verb is answered by using a long form. Such a response would be predicted to be infelicitous if the long and short forms were discrete tenses.

It should thus be clear that the distinction between the long and short forms of the present tense is not one of tense. To my knowledge, no analogous claim has been made for the two forms of the perfect tense, presumably this is because it is hard to construe recent past tense statements as generalizations in a way similar to present tense statements. The relative distribution of short and long forms is identical in the present and recent past tenses, and this fact remains unexplained in an analysis where the short and long present forms constitute distinct tenses while the short and long recent past tenses are instantiations of a single tense.

5.1.1   Non-agreeing postverbal subjects

As discussed in chapter 3, Zulu finite clauses sometimes license a postverbal subject that does not trigger subject agreement on the verb. Such a clause will be referred to as having a "non-agreeing postverbal subject", or simply a "non-agreeing subject". An example of such a clause is given in (259a):

(259)   a.   Ku-   dlala a- bafana. (short present)
             15.SBJ- play   2- 2.boy

             "Boys/The boys are playing."

        b.   ∗ Ku-   ya- dlal- a   a- bafana. (long present)
               17.SBJ- *ya-* play- FV 2- 2.boy

As shown in this contrast, a non-agreeing subject must be preceded by a short form. As explained in chapter 3, both the appearance of the class 17 default subject marker and the postverbal position of the subject preceded by a short verb form are taken as evidence that the subject has failed to raise to the specifier of AgrSP.

The first thing which should be noted about a non-agreeing postverbal subject is that it must be overt:

(260)   a.   Ku-   zo- dlal- a   a- bantwana.
             17.SBJ- FUT- play- FV 2- 2.children

             "Children will play."

        b.   * Ku-   zo- dlal- a.
               17.SBJ- FUT- play- FV

             Intended meaning: "There will be playing. Someone will play"

This pattern is reminiscent that of Classical Arabic. In that language, a finite verb must bear number, gender, and person subject agreement. When the subject is overt,

the verb agrees with the subject in all these features when the subject precedes the verb, as in (261a), but it defaults to singular number when the subject follows the verb, as in (261b):[1]

(261)   a. 'al- banaat- u   γannay- na
            the- girls-   NOM sang-   3FP

        b. γanna- t   il- banaat- u
            sang-   3FS the- girls-   NOM
            "the girls sang"

But when the subject is covert (or pronominal (Harbert and Bahloul 1993)), the verb must agree with it in number, as shown in (262):

(262)   a. γannay- na
            sang-   3FP
            "they sang"

        b. γanna- t
            sang-   3FS
            "she sang" (but not "they sang")

The Zulu non-agreeing postverbal subject appears frequently in a number of contexts, which will be examined here. However, a sentence with a non-agreeing postverbal subject does not generally occur in an out-of-the-blue context, and VSO is not considered to be Zulu's canonical word order. While elicitation provides important grammaticality judgements for this construction, it is less useful for learning about the contexts and interpretations with which the construction is compatible, because the construction is only rarely volunteered by an informant. Thus, to examine contexts of usage, 32 passages were examined in the Standard 2 (fourth grade) primary school reader *IsiZulu Sethu 2* (Kheswa 1996), hereafter IZS2, and each instance of a non-agreeing postverbal subject was noted. Each passage runs two to three pages, and is either narrative, expository, or in dialog format. The passages are all original Zulu compositions rather than translations. In all, about 125 instances of non-agreeing postverbal subjects were found. On the basis of this corpus, the conclusion will be reached that the Zulu subject is not in a dedicated focus position in this construction, because it is, in fact, not in semantic focus except in a subset of the contexts in which it is used.

There are a few easily delineable contexts in which non-agreeing subjects are used: subject focus, quotative inversion, bare subjects, and Wh subjects. These will be discussed first, after which the remaining cases will be considered. Examples from ISZ2 will be identified as such. Other examples originate from elicitation sessions.

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[1]3FS/3FP in the glosses means third person sing/plural subject agreement.

The following table summarizes some of the properties of agreeing and non-agreeing subjects in Zulu:

(263) Agreeing and non-agreeing subjects

Property	Agreeing Subject	Non-Agreeing Subject
Can be topic	✓	∗
Can be focused	?	✓
Can be bare	∗	✓
Used in quotative inversion	∗	✓
Can be indefinite	?	✓
Can be definite specific	✓	✓

Contrastive subject focus. In discussions of non-agreeing subjects in the literature on Bantu languages, it is typical to discuss only cases of contrastive subject focus. Whether this is because subject focus is actually the only interpretation available for these subjects in the particular languages under discussion or whether these are merely the most obvious cases, it is surprising that out of the 125 instances of non-agreeing subjects found in the Zulu sample, there is only one arguable case of contrastive subject focus, shown in context in (264a). The relevant clause has been italicized and glossed in (264b):

(264) a. Bayancishana abantu balapha. *Kudla bona kuqala* bese bengithelela-ke izinsalela namathambo asebewacabile. (IZS2, p. 11)

  "The people here are stingy. *THEY eat first*, then they give me the left-overs and the bones they've already chewed on." (The context is a dialog between a pet cat and a mouse.)

  b. Ku- dl- a bona kuqala ...
    17.SBJ- eat- FV 2.they at.first

  "They eat first..."

This is a case of subject focus rather than just presentation of a subject as some sort of new information, because the preceding clause *the people here are stingy* has already clearly established *the people*, to which the pronoun *bona* "they" refers, as the discourse topic. A clearer case of contrastive subject focus in context is shown in the elicited example in (265):

(265) – Mmmmm... I smell food. Someone's been cooking here.

– A- ku- phek- anga mina!
   NEG- 17.SBJ- cook- NEG me

"*I* didn't cook!" ≈ "It wasn't me who cooked!"

The subject is the focused constituent, and the short form of the verb is the result of no focus feature raising with the verb to the inflectional domain.

    The analysis pursued here is that the element following the short verb form is not in a dedicated focus position, but rather that the element has simply not been topicalized, which would require raising it to a higher position. The availability of a subject focus reading is compatible with such an analysis. With a subject focus interpretation, a clause is not *about* the subject; rather, it is *about* the predicate and asserts what the subject of the predicate is, as in the response in the exchange in (266):

(266)   Q: Ku- cul- e bani?
            17.SBJ- sing- PERF who

            "Who sang?"

      A: Ku- cul- e u- Sipho.
            17.SBJ- sing- PERF 1- 1.Sipho

            "Sipho sang."

Wh subjects.   Wh elements do not raise to a preverbal position in Zulu as they do in English. The options available for constituent questioning are clefting and in situ Wh. The usual way to question a subject is to use a cleft as in (267):[2]

(267)   Ngu- bani o- cul- e ingoma?
        COP- who REL:1.SBJ- sing- PERF 9.song

       "Who sang a song?"

However, a Wh subject is sometimes encountered postverbally, and in this case, the verb is in its short form and bears class 17 agreement. Postverbal Wh subjects can thus

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[2]It might be objected that cleft questions have different presuppositional properties from English-type questions with preverbal Wh subjects, but consider this rhetorical example:

a. Ng- u- bani ow- a- ye- nga- thand- i- ke u- ku- hamb- a nge-
   COP- 1- 1.who REL:1.SBJ- PST- 1.SBJ- NEG- love- NEG- so 15- 15- go- FV by:9-
   bhanoyi?   (IZS2, p. 113)
   9.aeroplane

   "Who wouldn't like to ride an aeroplane?"
   Literally, "Who's the one who didn't want to go by aeroplane?"

be characterized as non-agreeing postverbal subjects. These subjects can occur either in their heavy forms (independent words) or as clitics:

(268) a. Wh word *bani* "who"

Kw- azi   bani?
17.SBJ- know who

"Who knows?" (rhetorically)

b. Wh clitic *-ni* "what"

Kw- enzek- e-   ni?
17.SBJ- happen- PERF- what

"What happened?"

Wh items are typically focused. This interpretation is therefore compatible with both an analysis where the constituent following a short verb form is in the specifier of a low FocP projection and with an analysis that simply says that the constituent is not topical.

Quotative inversion. A non-agreeing postverbal subject is also used in quotative inversion, which is used very frequently in Zulu narrative. Except for the agreement facts, quotative inversion in Zulu resembles quotative inversion in English:

(269) "U- zo- phek- a- ni?" Kw- a-   buza u- Sipho.
     2S- FUT- cook- FV- what 17.SBJ- PST- ask   1- 1.Sipho

"What will you cook?", asked Sipho.

(It is a convention of punctuation in Zulu that everything but the quotation itself be presented as a separate sentence.)

A crucial semantic difference between contrastive subject focus and quotative inversion seems to reside in the presuppositionality of the predicate. In the subject focus examples in (264) and (265), the predicates EATS and COOKED are presupposed, and we call the interpretation "subject focus" because the construction signals that out of a range of possible subjects, the actual subject is the one asserted. In quotative inversion, however, the predicate is not presupposed, and the subject does not have the contrastive focus interpretation. However, the use of the postverbal subject could be understood to be contrastive in that it draws attention to a particular participant who might already have been established in the discourse. If subject focus and quotative inversion differ only in the presuppositionality of the predicate (and the availability of a special position for the quotation to move to), then it might be expected that they use the same construction, as they do in Zulu. What is unexpected, then, is what marks

quotative inversion as an exceptional construction in other languages. For example, in English the subject of a quotative inversion does not receive focal intonation similar to that of an SVO sentence with either a focused subject or a focused object, as can be seen by comparing the intonation of *John* in (270a,b), in which *John* is in focus,[3] with its intonation in the quotative inversion in (270c):

(270)   a. The teacher scolded JOHN (, not MARY).

          b. Mary had just finished singing, when into the room walked JOHN.

          c. "Hello," said John.

And (O)VS remains entirely unavailable for subject focus:

(271)   a. ∗ The ballad sang JOHN.

Similarly, in French, subject clitics can be used in quotative inversion, while they cannot be used for subject focus:

(272)   a. "Salut," dit-il.

             "Hello," he said.

          b. ∗ IL chante, pas elle.

             "He sang, not her."

For these reasons, it seems incorrect to classify quotative inversion as a special type of subject focus, and the use of a non-agreeing subject in Zulu attributions is best explained by the untopical nature of their subjects rather than by a focal property.

As in the cases of the contrastive subject focus interpretation, the subject in quotative inversion is not what the sentence is about. Rather, the entire sentence is a simultaneous assertion of an utterance event, the quotation, and the attribution. The complete absence of aboutness properties in quotative inversions can be illustrated by showing that quotative inversions cannot be used to answer questions:

(273)   a. What did Mary DO/SAY?
             # "Thank you," said she/Mary.

          b. What did MARY do/say?
             # "Thank you," said she/Mary.

          c. What happened?
             # "Thank you," said she/Mary.

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[3]Although only arguably so for (270b).

In (273a) the question is about Mary, in (273b) it is about things that were done or said, and in (273c) it is about a presumed event or outcome. Quotative inversion provides an infelicitous response to all of these questions, presumably because it lacks any of the presuppositions which the questions establish in the discourse: that Mary is the topic of discourse and that she did or said something in (273a), that Mary is the topic of discourse and that various people did or said something in (273b), or that some event occurred in (273c).

Bare subjects. A "bare subject" is a lexical DP subject in which the noun lacks an augment, a determiner prefix often termed the preprefix or the initial vowel (first discussed on page 8). Like any other bare noun phrase in Zulu, a bare subject is licensed only under a negative predicate.[4] An example of a bare subject is given in (274):

(274) A- ku-   cula- nga muntu.
        NEG- 17.SBJ- sing- NEG 1.person
        "Nobody sang."

The subject here is not in contrastive focus, for *muntu* does not pick out one of a range of possible singers, but rather, the sentence asserts that no event of singing took place with a human agent.

It is clear that *muntu* in (274) is not topical; negatively quantified noun phrases are not entities which can even be established as topics, as the English sentences in (275) show, where discussion of *nobody* and *anybody* cannot be resumed using a referring pronoun:

(275)   a. ∗ Nobody sang. And he didn't dance, either.

        b. ∗ I didn't see anybody upstairs. And he wasn't downstairs, either.

The case of bare subjects thus suggests that an unraised subject (such as must be preceded by a short verb form in an appropriate affirmative tense) is not focused, but merely not topicalized.

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[4]The distribution of bare noun phrases is actually much more complex than described here, but the generalization is good enough for our purposes here. A simple bare noun phrase cannot serve as a preverbal subject, as the object of an affirmative verb, as a topic, or as the focus of a cleft. A comprehensive description of the distribution of Zulu augments and bare nouns can be found in von Staden (1973).

Other cases. We have now discussed several easily delineable contexts in which a non-agreeing postverbal subject is employed. The remaining cases are harder to classify neatly, but in all of them the use of the non-agreeing subject can be explained by the fact that the subject is not topicalized, in the sense that the clause is not *about* the subject.

A non-agreeing subject can exhibit a wide range of properties. We note that it can be indefinite and non-specific, as in (278), which is not surprising, as we find this even in English existential *there* constructions. However, we note in (276) that the subject may also be definite and specific, and in (277) that it may be headed by a strong quantifier like EACH:

(276) Ku- cul- e u- Sipho.
       17.SBJ- sing- PERF 1- 1.Sipho
       "Sipho sang."

(277) Ku- fund- e u- mfana ngamunye$_i$ i- ncwadi yakhe$_i$.
       17.SBJ- read- PERF 1- 1.boy 1.each 9- 9.book 9.his
       "Each student read his book."

We also note from (265) above that the subject may even be a first person singular pronoun, which is the highest possible argument on the referentiality hierarchy (see below in section 5.5).

One class of cases employing non-agreeing subjects involves assertion of the existence of the subject:

(278) Njalo nje ku- thol- w- a i- mpendulo entsha.
       always just 17.SBJ- find- PSV- FV 9- 9.answer 9.new
       "Each time, a new solution is found."

In (278), *a new solution* is not a topic, because it is not even presupposed to exist prior to this assertion.

Non-agreeing subject sentences serve felicitously as answers to event questions, as in (279):

(279) – What happened?

       – Ku- phek- e u- Sipho i- zambane.
          17.SBJ- cook- PERF 1- 1.Sipho 5- 5.potato
          "Sipho cooked a potato."

This would be surprising if the postverbal subject were in focus. Furthermore, (279) would be infelicitous as a response to such questions as *What did Sipho do?* or *What happened to Sipho?*, which are answered with an agreeing subject.

That *uSipho* is not in any kind focus in (279) is perhaps supported by the fact that this sentence cannot be transformed into a question using *yinindaba* "why":

(280)   * Yi- ni- ndaba ku-   phek- e   u- Sipho i- zambane?
           COP- what- 9.story 17.SBJ- cook- PERF 1- 1.Sipho 5- 5.potato

   "Why did Sipho cook a potato (rather than Bill)?"

Yinindaba puts contrastive focus on some element in the sentence, as shown by (281):

(281)   Yi- ni- ndaba ku-   phek- e   u- Sipho?
         COP- what- 9.story 17.SBJ- cook- PERF 1- 1.Sipho

   "Why did Sipho cook (rather than Bill)?"

Comprehensive data for *yinindaba* is not available. For example, we would like to know exactly what elements can be given contrastive focus and whether analogues of (280) are ungrammatical whenever two non-agreeing arguments are present, such as both objects of a ditransitive verb. However, (280) and (281) can be taken together to suggest that a low focus position exists, but that the subject in (280) cannot move to this position for some reason related to the presence of the object. If this is the case, then (279) shows that there does exist some non-focal position available for a non-agreeing subject.

Another context where a non-agreeing subject is often used is in relative clauses in which the head of the relative clause is extracted from a prepositional phrase. In (282), the element extracted is a locative, while in (283) and (284) we see examples where the element extracted is a temporal adjunct:[5]

(282)   a. Ng- a- y- a lapho ku-   hlal- a u- Sipho khona.
             1.SBJ- PST- go -FV there   17.SBJ- stay -FV 1- 1.Sipho there

        b. ...kuhlala (khona) uSipho.

            "I went to where Sipho lives."

(283)   Ng- a- fik- a ngenkathi ku-   cul- a u- Sipho.
         1S.SBJ- PST- arrive -FV when   17.SBJ- sing -FV 1- 1.Sipho

        "I arrived when Sipho was singing."

[5]Because noun class 17 in Zulu is both a locative and a default class, it is difficult in cases like (282), which involve a locative phrase, to show that we are dealing with default (expletive) agreement rather than locative agreement. However, the availability of the locative pronoun *khona* would make (282) an unusual candidate for locative agreement.

(284) A- ng- az- i   i- sikhathi o-   ku-   cul- a   nga- so u- Sipho.
      NEG- 1.SBJ- know- NEG 7- 7.time   REL- 17.SBJ- sing -FV at-   7.it 1- 1.Sipho

"I don't know (the time) when Sipho sang."

A great many cases arise where the non-agreeing subject is the derived subject of a passive verb, as in (285):

(285) Emadeleni yilapho kuhlatshwa khona izinkomo kanye nezinye izilwane ezidli-
      wayo

      kanti e-   bhikawozi yi- lapho ku- bhak- w- a   khona i- zinkwa.
      but   LOC:5- 5.bakery   COP- there   17- bake- PSV- FV there   8- 8.bread

      (IZS2, p. 41)

"A slaughterhouse is where cattle are slaughtered along with other edible animals, but a bakery is where bread is baked."

As is clear from the context, the subject in cases such as (285) is not topical. The untopicalized nature of the postverbal subject in (285) is reflected in the intonation of a carefully constructed contexts for the *bakery* clause in English:

(286) a. Q: Returning to our discussion about places of work, who can tell me
              what a bakery is?
          A: i. # A bakery is where bread is BAKED.
              ii. A bakery is where BREAD is baked.
       b. Q: Returning to our discussion about bread, who can tell me what a bak-
             ery is?
          A: i. A bakery is where bread is BAKED.
              ii. # A bakery is where BREAD is baked.

The context in (285) is re-created in (286a). Here, a topic other than bread has been made explicit, namely places of work, and this is reflected in the fact that bread cannot be destressed. Conversely, in (286b), bread has been explicitly made the topic of conversation, and as such, it must be destressed. What the postverbal Zulu subject in (285) and the preverbal English one in (286a.ii) seem to share is their non-topical nature.

We have now seen that in Zulu a non-agreeing subject can be used in a variety of contexts. In only two of these uses is there a clear case of focus on the postverbal subject, namely genuine contrastive subject focus (as in (265)) and Wh subjects. This is unexpected if the subject in these clauses is in the specifier of a FocP projection and licensed by a [+focus] head. If the [+focus] feature is interpretable (as its appellation

suggests), then it should occur only when its interpretation is available. But if we reject the hypothesis that a non-agreeing subject is licensed by a [+focus] feature, we can see that what distinguishes these from preverbal subjects in Zulu is the fact that they are not topicalized.

Properties of agreeing subjects.   It has sometimes been claimed in the literature that agreeing subjects in Bantu languages are referential or definite. Indeed, it is difficult to get a non-referential interpretation of a simple noun phrase in preverbal position:

(287)   U- mntwana u-   cul- ile.
        1- 1.child   1.SBJ- sing- PERF

   "The child sang." NOT ∗"A child sang."

The strategies normally employed to get an indefinite interpretation are to use either an existential expression in combination with a relative clause as in (288) or a non-agreeing subject as in (289):

(288)   Ku-   khona u- mntwana o-   cul- ile- yo.
        17.SBJ- there   1- 1.child   REL:1.SBJ- sing- PERF- *yo*

   "A child sang. There's a child who sang."

(289)   Ku-   cul- e   u- mntwana.
        17.SBJ- sing- PERF 1- 1.child

   "A child sang."

However, it is possible to construct sentences in which the non-referential reading is natural:

(290)   Ngi- ya- bikezel- a ukuthi i- zinkinga ezi-   ntsha esi-   nga-
        1.SBJ- *ya*- predict- FV that   10- 10.problem REL:10.SBJ- new   REL:1P.SBJ- NEG-
        ka- z-   az- i-   yo zi-   yo- si-   hluph- a i- sizukulwana sa-
        yet- 10.OBJ- know- NEG- *yo* 10.SBJ- FUT- 7.OBJ- bother- FV 7- 7.generation   7.of-
        ngomuso.
        in.the.future

   "I predict that new problems which we do not know will trouble the future generation."

There are certain circumstances in which this situation occurs frequently, including the case of negative existentials. One way of expressing a negative existential is to use a bare noun under a negative existential:[6]

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[6]The alternation between *kho* and *khona* is described in a footnote on page 95.

(291) A- ku-   kho mali.
       NEG- 17.SBJ- there 9.money

       "There isn't any money."

In (291), the class 17 subject marker is a default subject agreement while the class 17 clitic *kho* is locative. However, in an alternative strategy, the existential phrase has non-default subject agreement and the noun must be augmented. The equivalent of (291) in this strategy is given in (292a):

(292) a. A- yi-   kho i- mali.
           NEG- 9.SBJ- there 9- 9.money

           "There isn't any money." Literally, "It isn't there, the money."

       b. ∗ A- yi-   kho mali.
             NEG- 9.SBJ- there 9.money

The grammaticality of (292a) is unexpected if agreeing subjects cannot be indefinite and non-referential, but the following example from IZS2 clearly shows that the interpretation of the subject in the construction can be just that:

(293) A- yi-   kho i- nhlobo yo-   kudla ey-   a- yi-   nge- kho.
       NEG- 9.SBJ- there 9- 9.type   9.OF:15- 15.food REL:9.SBJ- PST- 9.SBJ- NEG- there
       (IZS2, p. 68)

       "Not a single kind of food wasn't there."
       Literally, "The kind of food that wasn't there isn't there."
       or "There isn't a kind of food that wasn't there."

The fact that the subject has raised in (292a) is signaled both by the fact that subject agreement has been triggered and by the fact that the noun cannot be in its bare form as in (292b) (because it is outside the scope of negation). Why it should be possible to raise such non-referential arguments to subject position in this case is not understood. It seems that the force behind the raising of such a subject could be attributed to one of two things. The first is a desire to move the DP to the background to highlight the remainder of the predicate (the absence of something). This backgrounding is obviously related to topicalization. The second is the "heaviness" property, as in heavy NP shift. That said, we will take these cases to be exceptional. And the interpretative restrictions on (287) will be taken to mean that the preverbal subject position generally has some sort of topical property.

We have now shown that non-agreeing postverbal subjects are not always in focus. Rather, the common trait which the various uses of non-agreeing subjects share is the subject's non-topical nature. This is expected, considering the canonical definite

interpretation received by a preverbal subject in Zulu. Non-agreeing subjects do not seem to have a unifying feature such as focus. Rather, what characterizes them is the fact that they are non-topical. We will now turn our attention to objects and other elements occurring after a short verb form.

5.1.2 Objects following short verb forms

It has just been shown that the common property of non-agreeing subjects is that they are non-topical. In this section, we will also see that non-subject elements that follow a short verb form are also not inherently focused, but rather they are simply non-topical, and this is the trait which distinguishes them from objects that coöccur with an object marker. In this respect there is a parallel between agreeing subject and objects on the one hand, and between non-agreeing subjects and objects on the other. In comparison with subjects, it is harder to identify specific contexts for objects following short or long verb forms. Subjects are typically topical, making it easy to identify the exceptions. Conversely, objects do not have a particular propensity to be topicalized, making non-agreeing objects much more commonplace than non-agreeing subjects.

An object following a short verb form can receive a focus interpretation, as in response to an object question, as in (294) and (295):

(294) Q: U- cul- e- ni?
2S.SBJ- sing- PERF- what

"What did you sing?"

A: Ngi- cul- e i- ngoma.
1S.SBJ- sing- PERF 9- 9.song

"I sang a song."

(295) Q: U- cul- e i- ngoma yiphi?
2S.SBJ- sing- PERF 9- 9.song 9.which

"Which song did you sing?"

A: Ngi- cul- e le ngoma.
1S.SBJ- sing- PERF 9.that 9.song

'I sang that song."

As in the case of subjects, this focus interpretation is compatible with both a focus analysis and the analysis which simply says that an argument following a short verb form is non-topicalized. However, such a focus interpretation is not necessary, as shown by the fact that a short verb form followed by an object can be used to answer an event question, as in (296):

(296) Q: Kw- enzek- e- ni?
        17.SBJ- happen- PERF- what

        "What happened?"

    A: Ngi- cul- e i- ngoma.
        1S.SBJ- sing- PERF 9- 9.song

        "I sang a song."

This fact is entirely unexpected if the object which follows a short verb form is in the specifier of a low focus projection.

Resumptive objects. Recall that we are using the term "doubled object" for an object which appears in a clause where the verb has an agreeing object marker. Perhaps the clearest case of a non-focal interpretation of an object following a short verb form arises when one of two objects of a verb is relativized. The sentence in (297a), which employs the applicativized transitive verb *culela* "to sing for":

(297) a. Ngi- cul- el- e u- Sipho i- ngoma.
        1S.SBJ- sing- APPL- PERF 1- 1.Sipho 9- 9.song

        "I sang Sipho a song."

    b. Ngi- m- cul- el- e i- ngoma.
        1S.SBJ- 1.OBJ- sing- APPL- PERF 9- 9.song

        "I sang him a song."

    c. Y- i- ngoma$_i$ e- ngi- m- cul- el- e yona$_i$.
        COP- 9- 9.song   REL- 1S.SBJ- 1.OBJ- sing- APPL- PERF 9.it

        "It's a song that I sang him."

To pronominalize an object in this sentence, that object is replaced with an object marker on the verb, as has been done for the applicative object *Sipho* in (297b). As previously described, Zulu (like many other Bantu languages) does not allow the simultaneous use of more than one object marker. So, what if we want to pronominalize not just one object, but both of them? The answer is shown in (297c), in which one of the objects is pronominalized using a resumptive strong pronoun. (We will see in (334) that use of this resumptive pronoun is, in fact, optional.) This pronoun is preceded by a short perfect form. If it is thus in focus, as dictated by an analysis regulated by focus features, it is unclear what "focus" means in this case. The pronoun appears for grammatical reasons (the unavailability of the object marker) and not for any semantic considerations.

Properties of doubled objects.   While a non-doubled object can have either a definite or an indefinite interpretation as in (298a) and (298b), respectively, the interpretation of the doubled object can generally only be definite, as in (298c):

(298)   a. Ngi- cul- e   i- ngoma.
            1S.SBJ- sing- PERF 9- 9.song

            "I sang a/the song."

        b. Ngi- cul- e   le-   ngoma.
            1S.SBJ- sing- PERF that:9- 9.song

            "I sang that song."

        c. Ngi- yi-   cul- ile i- ngoma.
            1S.SBJ- 9.OBJ- sing- PERF 9- 9.song

            "I sang the/∗a song."

However, the problem of indefinite/non-referential agreeing subjects finds a parallel in object agreement in a certain type of VP ellipsis first mentioned in chapter 3:

(299)   a. Ngi- dl- e   a- mahhabula a-   mabili,
            1S.SBJ- eat- PERF 6- 6.apple   6.REL- 6.two

        b. no-   Sipho u-   ∗(wa-   ) dl- ile.
            and:1- 1.Sipho 1.SBJ-   6.OBJ-   eat- PERF

            "I ate two apples, and so did Sipho."
            (lit. "I ate two apples, and Sipho ate them, too.")

Note how the object marker in (299b) is obligatory, even though the interpretation is neither definite nor specific.

It was shown beginning on page 156 that a bare subject (such as *muntu* "nobody, anybody") cannot raise to preverbal position, triggering agreement. Because these bare arguments are licensed only by negative predicates, and because no negative tense displays a short/long alternation, it is the linear order and the agreement facts which must be used to establish that a bare (non-agreeing) subject and an augmented non-agreeing subject are in similar or identical positions (which would be the null hypothesis, anyway). If we assume that a bare subject cannot raise to preverbal position because it cannot be topicalized, then the distribution of bare objects can be explained by seeing that subject agreement for subjects is functionally equivalent to an object marker for objects, for just as a bare subject cannot raise to the subject agreement position, the bare object cannot raise to the object agreement position, triggering the presence of an object marker:[7]

---

[7]There are limits to the parallels between subject markers and object markers, though. With a verbal predicate, a subject marker is always required, while an object marker is not. This requirement of a

(300) a. A-   ngi-   bon- anga   muntu.
          NEG- 1S.SBJ- see- NEG.PST 1.person

       b. * A-   ngi-   m-   bon- anga   muntu.
            NEG- 1S.SBJ- 1.OBJ- see- NEG.PST 1.person

       "I didn't see anyone."

5.1.3 Other postverbal constituents

Adverbs and resumptive PPs lend further support the idea that the element following a short verb form is non-topical.

Adverbs.   The idea that the short/long alternation is related to topicalization is supported by the fact that certain adverbs, such as *kahle* "well" cannot be preceded by a long verb form:

(301) a. U-   cul- a kahle.
          2S.SBJ- sing- FV well

       b. * U-   ya- cul- a kahle.
            2S.SBJ- *ya-* sing- FV well

       "You sing well."

This contrasts with certain other classes of adverbs which can appear after either a short or long form, such as the location adverb *phandle* 'outside":

(302) a. Ba-   dlal- a phandle.
          1.SBJ- play- FV outside

       b. Ba-   ya- dlal- a phandle.
          1.SBJ- *ya-* play- FV outside

       "They're playing outside."

If the adverb following a long verb form is in fact topicalized, while the one following a short form is not, then the properties of Zulu *kahle* and *phandle* are like those of their English counterparts *well* and *outside*, of which only *outside* can be topicalized:

(303) a. Outside, the chidren are playing.

       b. * Well, the children are singing. (Where *well* is a manner adverb.)

---

subject marker is apparent because a default class 17 subject marker appears when the subject fails to raise to preverbal subject position. This is taken to be an EPP property—a finite clause requires a structural subject. No analogous phenomenon exists for object markers.

Conversely, if the constituent following a short verb form is in the specifier of a FocP projection, then the only way to explain why (301b) could not be used to answer a question like "What do you do well?" is to say that *kahle* "well" is inherently focused in Zulu, which again leads to the question of what "focused" means in such cases, since the interpretation of an answer to this question has contrastive focus on the verb, if anything, and not on the adverb.

Resumptive obliques. The problem of resumptive pronouns for double objects found in sentences like (297c) above finds a counterpart in the relativization of oblique constituents, exemplified in (304):

(304)   a.   i- ndawo lapho ngi-   cul- e   khona
                9- 9.place where 1S.SBJ- sing- PERF there

                "the place where I sang"

      b.   i- sikhathi$_i$ e-   ngi-   cul- e   nga- so$_i$
                7- 7.time   REL- 1S.SBJ- sing- PERF by-   7.it

                "the time when I sang"

In (304a) the resumptive *khona* "there" (which is, in fact, a class 17 pronoun) seems to appear due to the fact that object markers are unavailable for obliques, and the same is true for the pronoun *-so* in the prepositional phrase *ngaso* in (304b). As in the case of resumptive object pronouns, this is a syntactic consideration rather than a semantic one.

5.2   Analysis

The previous sections showed that Zulu short verb forms do not always involve focusing a following constituent. The cases that show this the most clearly are these:

- objects in answers to event questions
- quotative inversion
- resumptive object pronouns
- resumptive obliques
- adverbs like *kahle* "well"

What the element following a short form has seems to be a lack of topicality, which is not actually a semantic property, but rather the absence of a semantic property. Topicality is associated with a syntactically high position (Diesing 1992). The element following a short form has not moved to this high position and thus remains syntactically low. For these reasons, we will pursue an analysis in which it is the constituency

which drives the alternation, rather than an analysis in which a feature (such as focus) drives the alternation and in which the constituency is merely epiphenomenal.

Under a constituency analysis for the short/long alternation, a long form occurs when the verbal remnant moving to the inflectional domain is light, ending in the verb itself. This is illustrated with a simple SV sentence in (305):[8]

(305) a. U- Sipho u-   cul- ile.
           1- 1.Sipho 1.SBJ- sing- PERF
           "Sipho sang."

       b.
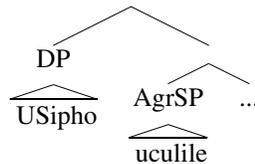
Conversely, when a short form occurs, the verbal remnant is heavy, containing some phrasal element such as a DP or an adverb after the verb itself. This is illustrated with a simple SVO sentence in (306):

(306) a. U- Sipho u- cul- e   i- ngoma.
           1- 1.Sipho 1- sing- PERF 9- 9.song
           "Sipho sang a song."

       b.
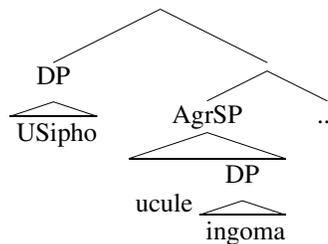
The essential difficulty in such an analysis is morphological. To see this, we must draw more precise trees then the one in (306b):

(307) a. U- Sipho u- cul- e   i- ngoma.
           1- 1.Sipho 1- sing- PERF 9- 9.song
           "Sipho sang a song."

---

[8]Why the nodes in the trees are unlabeled will become apparent shortly.

b.

```
                    AgrSP
              ┌───────┴───────┐
             DP            AgrS′
            ╱__╲        ┌─────┴─────┐
          USipho        u         AuxP
                              ┌─────┴─────┐
                             vP          Aux′
                         ┌────┴────┐      ╱╲
                              DP          ...
                        cule  ╱__╲
                            ingoma
```

c.

```
                    AgrSP
              ┌───────┴───────┐
             DP            AgrS′
            ╱__╲        ┌─────┴─────┐
          USipho        u         AuxP
                              ┌─────┴─────┐
                             vP          Aux′
                         ┌────┴────┐     ╱╲
                              DP        e  ...
                        cul  ╱__╲
                            ingoma
```
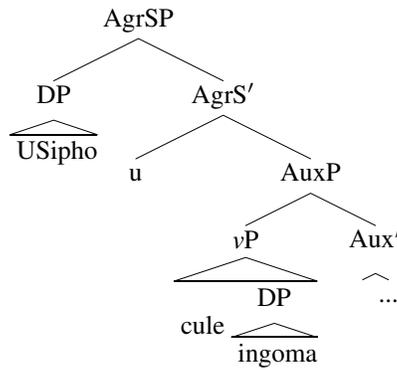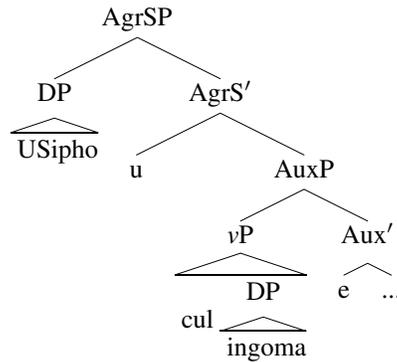
It is assumed here that the various verbal final suffixes are inflectional domain heads, and are labeled Aux^0, as described in chapter 4. If this is so, then the macrostem must raise to precede these heads. The picture in (307) would be compatible, though, if the final suffixes were heads introduced below all verbal prefixes, including object markers. The structure in (307b) is not consistent with this view, because the verb, with its perfect suffix *-e*, is actually contained within the constituent which has raised to the inflectional domain. Conversely, in (307c), the perfect suffix *-e* follows the noun phrase embedded in the verbal remnant rather than to the immediate right of the macrostem. The only way in which a constituency analysis can be constructed is for the constituencies to be formed via an additional cycle of remnant movement above the cycle in which the macrostem raises to the left of its final suffix. This cycle will now be described.

We will assume that the lexical subject forms a constituent separate from the verb and object that follow it.[9] To follow through with this assumption, the subject must be

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[9]The SVO and SOV permutations in (108) on page 63 show that a doubled object can intervene between the subject and the verb. This is presumably because the subject in the SOV permutation is in a topic position. Presumably the subject can also be in this topic position in the SVO permutation, as well. However, this does not mean that the subject is *necessarily* in the topic position in the SVO order. Evidence for the availability of such a non-topic position in the SVO order would need to show that a subject in the SVO order is allowed to have certain properties which an SOV subject cannot. For example, if it were found that the SVO subject can be quantified by EACH while an SOV subject cannot,

moved to a slightly higher position so that the AgrS^0 head *u-* and the lexical subject can be split. The position to which the subject has been moved in (308) has loosely been labeled TopP:

(308)

```
                          TopP
                      ／        ＼
                  DP_i          AgrSP
                 ／＼          ／      ＼
              uSipho        t_i        AgrS′
                                    ／      ＼
                                   u        AuxP
                                         ／      ＼
                                       vP        Aux′
                                      ／＼      ／    ＼
                                    cul       e      ObjP
                                                    ／    ＼
                                                  DP      ...
                                                 ／＼
                                              ingoma
```
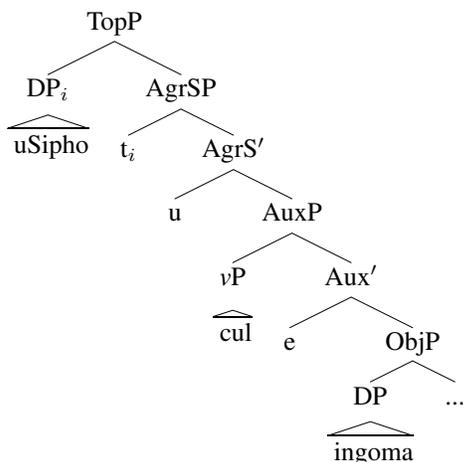
The tree in (309) shows the constituency created in the next cycle of movement:

(309)

```
                     ／          ＼
                 TopP              ＼
               ／    ＼              ＼
           DP_i      ...             ＼
          ／＼                    ／      ＼
       uSipho               AgrSP         ＼
                          ／      ＼        ＼
                        t_i        AgrS′
                                ／      ＼
                               u        AuxP
                                     ／      ＼
                                   vP        Aux′
                                  ／＼      ／    ＼
                                cul       e      ObjP
                                                ／    ＼
                                              DP      ...
                                             ／＼
                                          ingoma
```
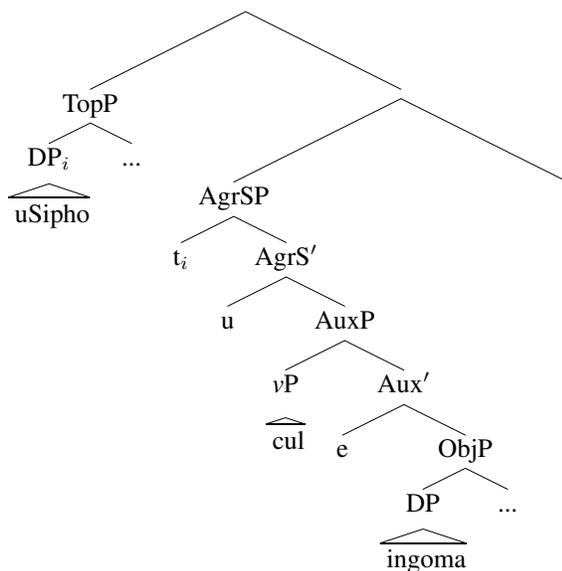
Under this analysis, the choice between a long or short recent past suffix is essentially the work of phonology. When the suffix is phrase-medial, the short form is chosen, and when it is phrase-final, the long form is chosen. But the choice between long and short present forms cannot be handled so elegantly, since the head in question

that fact could be taken to show that an SVO subject can occupy a lower, non-topic position (such as the specifier of AgrSP) which an SOV subject cannot.

(ya^0) will always be constituent-medial, always followed by the verb, as shown in the long form in (310a) and the short form in (310b):

(310)   a. Long present
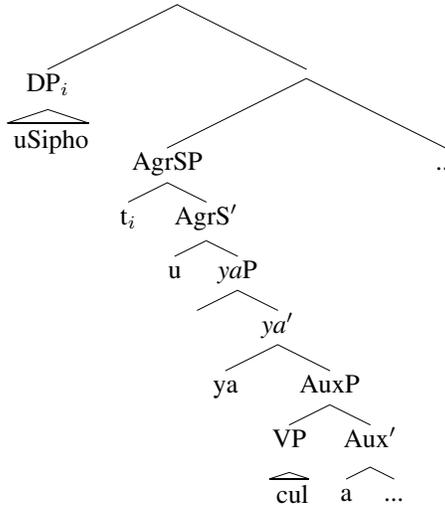
　　　　b. Short present (tentative)
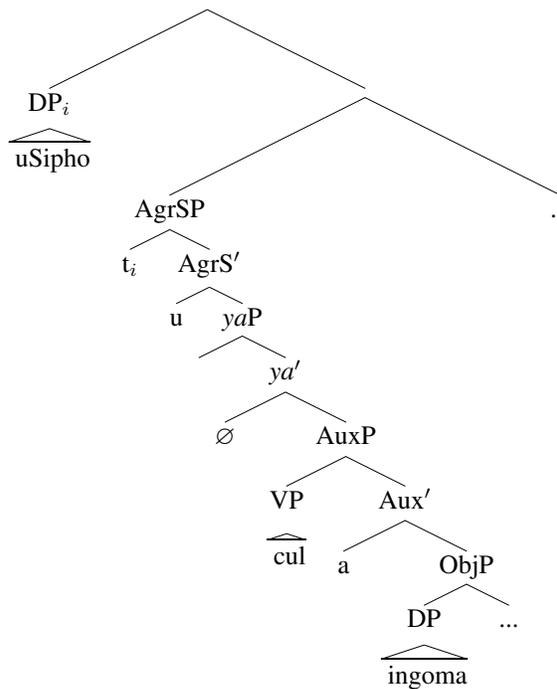
The distribution of -*ya*- can be accounted for by adopting an analysis similar to *do* support, where -*ya*- is analogous to English *do*. Suppose that the AuxP constituent requires being filled with heavy (phrasal) overt material. The -*ya*- head appears when

the specifier of *ya*P is empty, while a zero head appears in *ya*P when the specifier is occupied by the macrostem. The macrostem always raises unless AuxP would be left with no phrasal material in it (as compatible with Koopman's (1996) Doubly Filled Spec Filter). A long form is then correctly shown in the tree in (310a), but the short form in (310b) requires an addition step of raising of the macrostem to the specifier of *ya*P, as in (311):

(311)   Short present (final)

```
                          ●
                        /   \
                   DP_i       ●
                   /\        /  \
                 uSipho  AgrSP    ...
                        /   \
                      t_i   AgrS'
                           /   \
                          u    yaP
                              /   \
                           VP_j   ya'
                           /\    /   \
                         cul   ∅   AuxP
                                  /   \
                                t_j   Aux'
                                     /   \
                                    a    ObjP
                                        /   \
                                       DP   ...
                                       /\
                                    ingoma
```
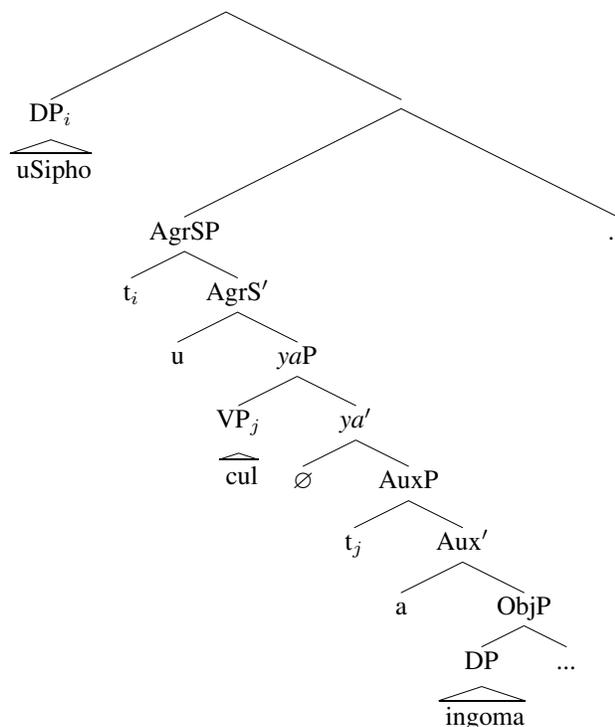
Because one of these constituents contains material from the inflectional domain, they must be in the complementizer domain. This is to be expected, considering the facts about vocative insertion described in chapter 3. It will be recalled that a vocative can be inserted after a long verb form but not after a short one, as shown again here:

(312)   a.   A- bafana ba-   ya- si-   hlupha] baba   i- salukazi.   (long form)
             2- 2.boys   2.SBJ- *ya*- 7.OBJ- annoy   1.father 7- 7.old.woman

        b.   * A- bafana ba-   hlupha baba   i- salukazi   ]. (short form)
             2- 2.boys   2.SBJ- annoy   1.father 7- 7.old.woman

        "The boys are annoying, Dad, the old woman."

This is the predicted pattern if vocative phrases are inserted high in the structure, above inflection in the complementizer domain. Consider the structure for (312a), which

contains a long verb form:[10]

(313)
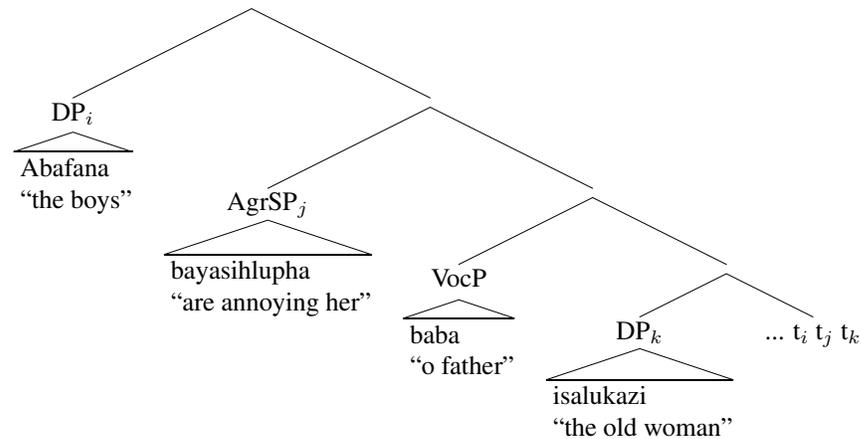
Now let's consider the ungrammatical form in (312b). It is easy to see why such a form cannot be derived. The short form can only appear where there is something following the verb within the AgrSP remnant. But if a vocative phrase can only be merged in the complementizer domain, there is no way for the vocative to intervene between the verb and the object.

5.3   Rundi *-ra-* as a [-focus] head

Rundi has a verbal contrast similar in certain ways to the long and short forms of the Zulu present and perfect verbs, described and analyzed in Ndayiragije (1999). Rundi verb forms containing the premacrostem morpheme *-ra-* can be considered analogous to Zulu long verb forms, while Rundi forms lacking *-ra-* can be considered analogous to Zulu short forms. Because of these parallels between Rundi and Zulu, here we will examine the Rundi pattern and consider whether Ndayiragije's analysis of it can be extended to Zulu. It will be concluded that the languages differ in such a way as to make Zulu unamenible to Ndayiragije's analysis.

Ndayiragije's interpretation of constructions of the Rundi short form will be taken at face value, and we will assume with him that they are used only when a contrastive focus interpretation is intended. Ndayiragije's article does not explore some of the other ways in which we might imagine that this form might be used, such as in quotative inversion, in conjunction with resumptives, or any of the other uses explored in

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[10]The vocative phrase has been labeled "VocP" on the assumption that it differs from ordinary noun phrases. This is evident in Zulu from the fact that a vocative noun phrase never has an augment: *ubaba* "the/a father", *baba* "o father". In some languages, such as Arabic, a noun used as a vocative is preceded by a vocative particle, which has a certain determiner-like property (namely, determiner spread).

the section on non-agreeing postverbal subjects in Zulu, where a focus interpretation is found in only a minority of cases.

The long and short forms of the Rundi verb are shown in (314). Note that the long form is distinguished by the morpheme *-ra-*.

(314)   a. Long form

        Abâna ba- á- ***ra-*** nyôye   amatá.
        2.children 2.SBJ- PST- *ra-* drink:PERF 6.milk

        "Children drank milk."

    b. Short form

        Abâna ba- á- nyôye   amatá.
        2.children 2.SBJ- PST- drink:PERF 6.milk

        "Children drank MILK (not water)."

In (314a), where the direct object is preceded by a long verb form, the interpretation is one of neutral focus (or no focus), whereas in (314b), where the object is preceded by a short form, there is contrastive focus on the direct object. As in Zulu, the Rundi short form cannot occur clause-finally, as shown in (315):

(315) Abâna ba- á- ∗(***ra-***) nyôye   amatá.
        children 3P- PST-   FOC- drink:PERF milk
        "Children drank milk."

And also like Zulu *-ya-*, Rundi *-ra-* immediately precedes the macrostem, preceding any object marker:

(316) Abâna ba- á- ***ra-*** ya- nyôye.
        2.children 2.SBJ- PST- *ra-* 6.OBJ- drink:PERF
        "Children drank it."

Several different types of material can intervene between the verb and the focused constituent in Rundi, including an object, subject, control clause, or adverb, as shown here:

(317) Object intervenor

    a. Ha- á- nyône   amatá abâna.
        16.SBJ- PST- drink:PERF milk   children
        "CHILDREN (not adults) drank milk."

b. Yohani a-   á-   oógeje   imiduga néezá.
   John   1.SBJ- PST- wash:PERF cars   well

   "John wash cars WELL (not badly)."

(318)   Subject intervenor

Tu-   á-   rungitse abâna [$_{CP}$ PRO$_i$ kuryaâma].
1P.SBJ- PST- send:PERF children   sleep

"We sent children TO SLEEP (not to play)."

(319)   Control clause intervenor

Tu-   á-   rungitse [$_{CP}$ PRO$_i$ kuryâma] abâna.
1P.SBJ- PST- send:PERF   sleep   children.

"We sent CHILDREN (not adults) to sleep."

(320)   Adverb intervenor

Yohani a-   á-   oógeje   néezá imiduga.
John   1.SBJ- PST- wash:PERF well   cars

"John washed CARS (not trucks) well."

In Rundi, as in Zulu, it is possible to have a postverbal, non-agreeing subject. In such a case, the verb bears locative class 16 agreement, as shown above in (317b).[11] It will be recalled that in Zulu, the verb in a clause with a non-agreeing subject bears class 17 subject agreement. Classes 16 and 17 are both locative classes in the Bantu family, and Bantu languages differ in the degree to which the different locative classes have been preserved or collapsed, and, in the case of class collapsing, which class is preserved or made a default. In this context, Zulu class 17 agreement and Rundi class 16 agreement can thus be thought of as equivalents. In Rundi, a non-agreeing subject is licensed only when it appears to the right of any objects. (That is, the non-agreeing subject cannot intervene between the verb and an object.)

Ndayiragije's analysis for Rundi is straightforward if a specifier is allowed to follow its head rather than precede it and if the range of interpretations is restricted to those he describes. Under his analysis, there is a right-branching FocP projection which is headed either by a [+focus] zero morpheme or the [−focus] morpheme *-ra-*. The zero [+focus] head is licensed if and only if the specifier of the low FocP is filled,

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[11]Rundi also has subject/object reversal, an active voice OVS construction in which the verb bears a subject marker agreeing with the raised object. We will not discuss that construction here. As in non-agreeing postverbal subject clauses, the verb in subject/object reversal must be in its short form. Zulu lacks this construction.

while the *-ra-* [−focus] head is licensed if and only if that specifier is empty. To illustrate the analysis for a simple SVO sentence, let's consider the neutral focus and object focus sentences in (314), repeated here as (321):

(321)   a.   Long form

> Abâna   ba-   á-   ra- nyôye   amatá.
> 2.children 2.SBJ- PST- *ra-* drink:PERF 6.milk

"Children drank milk."

   b.   Short form

> Abâna   ba-   á-   nyôye   amatá.
> 2.children 2.SBJ- PST- drink:PERF 6.milk

"Children drank MILK (not water)."

In the long form in (321a), *-ra-* is the reflex of an antifocus feature (Ndayiragije's own term) present because the specifier of the low FocP projection is empty. The object occupies the canonical postverbal object position, as in (322):

(322)
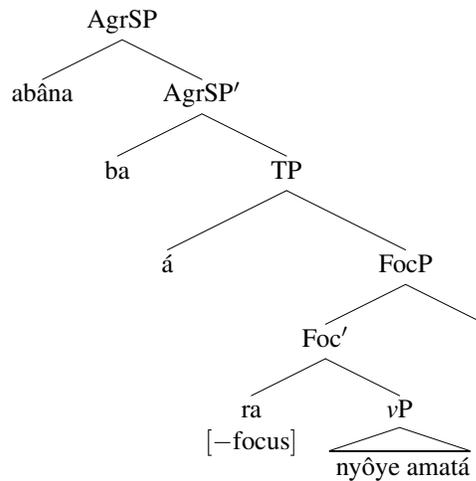
In this tree, as in those that follow, the head movement of the verb has not been shown. The verb stem *nyôye* moves to adjoin to the right of the Foc^0 head *ra*, which in in turn adjoins to the right of the T^0 *á*, then to the AgrS^0 head *ba*, forming the complex head *baáranyôye*, as shown in (323):

(323)

```
                        AgrSP
                ┌─────────┴─────────┐
             abâna              AgrSP′
                          ┌────────┴────────┐
            [ ba [ á [ ra nyôyeᵢ ]ⱼ]ₖ]        TP
                                        ┌──────┴──────┐
                                       tₖ           FocP
                                                ┌─────┴─────┐
                                              Foc′
                                          ┌────┴────┐
                                         tⱼ        vP
                                                  ╱──╲
                                                tᵢ amatá
```
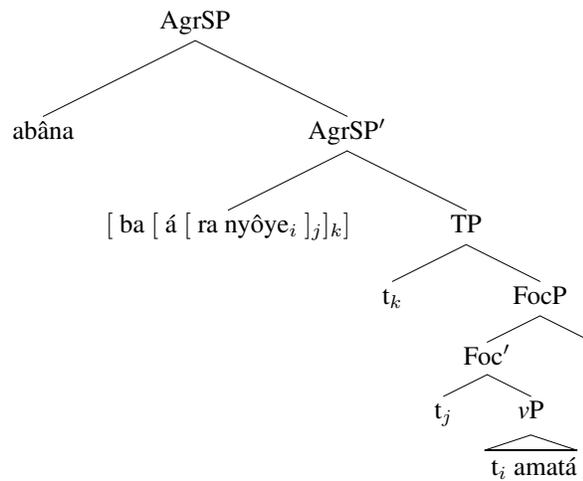
In the short form in (321b), the object is in the specifier of the low FocP, triggering the null [+focus] Foc^0 head as in (324):

(324)

```
                     AgrSP
              ┌────────┴────────┐
           abâna            AgrSP′
                      ┌────────┴────────┐
                     ba                TP
                               ┌────────┴────────┐
                              á                FocP
                                        ┌────────┴────────┐
                                      Foc′             amatá
                                  ┌─────┴─────┐
                                 ∅           vP
                               [+focus]      ╱──╲
                                            nyôye
```
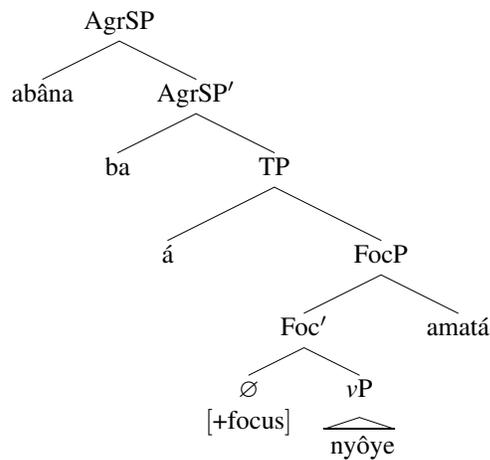
With a postverbal non-agreeing subject, no -ra- occurs, and the subject must have a focus interpretation. The subject occupies the specifier of the subinflectional FocP projection, as in (325):

172

(325)

```
                      AgrSP
                     /     \
                    ∅      AgrSP′
               (expletive)  /    \
                          ha-     TP
                                 /   \
                                    FocP
                                   /    \
                                 Foc′    Subj
                                /    \
                               ∅      vP
                            [+focus]  /\
                                    V Obj
```
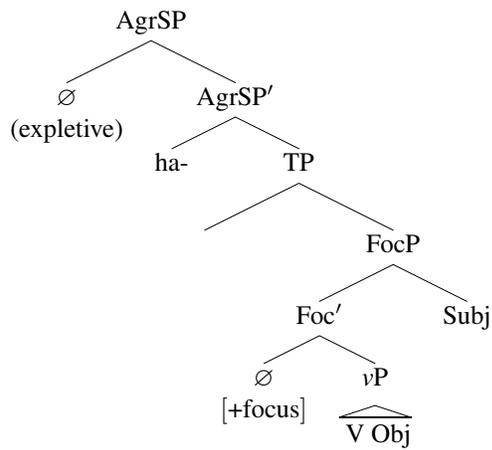
With a preverbal subject and no coöccurring *-ra-*, some other constituent occupies the specifier of the subinflectional FocP projection, and that constituent receives a focus interpretation. This is illustrated with an object in focus in (326):

(326)

```
                      AgrSP
                     /     \
                   Subj    AgrSP′
                          /      \
              subject marker      TP
                                 /   \
                                    FocP
                                   /    \
                                 Foc′    Obj
                                /    \
                               ∅      vP
                            [+focus]  /\
                                     V
```
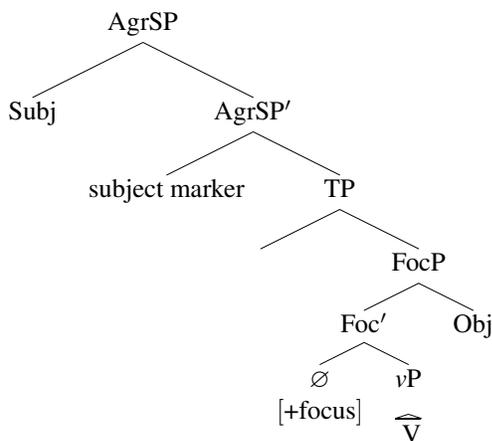
Similarly, when the subject is preverbal and *-ra-* is used, the specifier of the FocP projection is empty.

173

(327)

```
                        AgrSP
                       /     \
                    Subj    AgrSP′
                           /      \
                  subject marker   TP
                                  /   \
                                      FocP
                                     /    \
                                  Foc′
                                 /    \
                              -ra      vP
                            [-focus]   /\
                                    V Obj
```
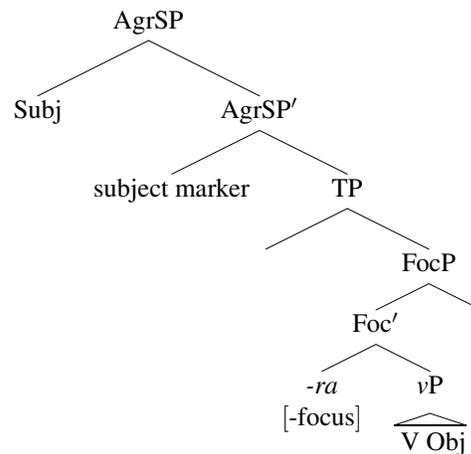
The ungrammaticality of a non-agreeing subject with the *-ra-* [−focus] morpheme can be explained by case considerations—focal elements are assumed not to require case. But if the subject is not in focus, as must be the case when *-ra-* appears, then the subject must be inside the *v*P. But there is no head in *v*P able to assign nominative case to the subject, resulting in ungrammaticality.

Comparing Zulu and Rundi. Let's now consider the differences between Zulu and Rundi. It will become apparent that radically different analyses are needed to account for the alternations of these two languages. In short, the Rundi alternation is driven by a focus feature, while the Zulu alternation is driven by constituency.

Rundi has a focus contrast for certain types of elements for which no contrast exists in Zulu. This is easily demonstrated by looking at simple SVO sentences in the two languages. In (328), we see that in the simple SVO case either the short or long form of the verb may occur, resulting in a focal contrast:

(328) a. Abâna ba- á- ***ra-*** nyôye amatá. (Rundi long past)
       2.children 2.SBJ- PST- *ra-* drink:PERF 6.milk

       "Children drank milk."

    b. Abâna ba- á- nyôye amatá. (Rundi short past)
       2.children 2.SBJ- PST- drink:PERF 6.milk

       "Children drank MILK (not water)."

In contrast, the long verb form in Zulu is simply unavailable before a non-agreeing object:

(329) a. ∗ A- bantwana ba- phuz- ile u- bisi. (Zulu long recent past)
       2- 2.children 2.SBJ- drink- PERF 14- 14.milk

b. A- bantwana ba- phuz- e u- bisi. (Zulu short recent past)
2- 2.children 2.SBJ- drink- PERF 14- 14.milk

"Children drank milk."

"Children drank MILK (not water)."

Furthermore, unlike in Zulu, the focal contrast in Rundi corresponds not only to the short/long alternation, but also to a word order contrast:

1. i. Yohani a- á- oógeje néezá imiduga. (Rundi long past)
   John 3S- PST- wash:PERF well cars

   "John washed CARS well (not trucks)."

   ii. Yohani a- á- oógeje imiduga néezá. (Rundi short past)
   John 3S- PST- wash:PERF cars well

   "John washed cars WELL (not badly)."

These facts are incompatible with an application of Ndayiragije's analysis of Rundi to Zulu. In that analysis the specifier of a low FocP projection is filled when a short form occurs, but it must be empty when the long form occurs. That analysis works for Rundi because we are told that the short form always entails focus on a constituent which excludes the verb. This is clearly not the case in Zulu, where short forms can be used even when no focus interpretation obtains. The beauty of Ndayiragije's analysis for Rundi lies in the fact that it identifies a clearly distinct syntactic position (to the right of any non-focused postverbal material) which is paired with both the morphological alternation and a clear semantic property, namely contrastive focus. To maintain that such a FocP position correlates with the short form in Zulu is difficult, because no clearly distinct position can be identified for a focused constituent, and even if it could be identified, its semantic value would be unclear. Essentially, we would be forced to say that if a noun or adverb fails to raise (failing to trigger subject or object agreement in the case of an argument), then at least one postverbal constituent must raise to the specifier of FocP. The [±focus] feature then has a very unusual property. While the [−focus] feature value is interpretable, since it always signals a lack of focus, the [+focus] feature value is interpretable when the constituent focus interpretation is present but uninterpretable when any other interpretation obtains. Such an analysis is obviously incoherent.

For these reasons, it is not possible to maintain that the short/long alternation in Zulu can be regulated by a [±focus] feature or any other interpretable feature. We will therefore explore another type of analysis in which the alternation is regulated by constituency, the short form of the verb being triggered when the verb is not final in a particular constituent.

Conversely, the constituency analysis we are assuming for Zulu cannot be extended to Rundi, because short forms in Rundi can occur regardless of whether the verbal

remnant is heavy or light, that is, whether or not a constituent intervenes between the verb and the focused constituent, as seen by comparing the SVO sentence in (330) with a focused object to the VOS sentence in (331) (in which the subject is necessarily focused):

(330) a. Abâna [ba- á- nyôye] amatá. (Repeated from (314b).)
　　　　2.children　2.SBJ- PST- drink:PERF　6.milk

　　　　"Children drank MILK (not water)."

　　b.
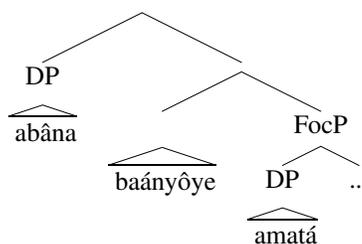
(331) a. [Ha- á- nyôye amatá] abâna. (Repeated from (317a).)
　　　　16.SBJ- PST- drink:PERF milk　children

　　　　"CHILDREN (not adults) drank milk."

　　b.
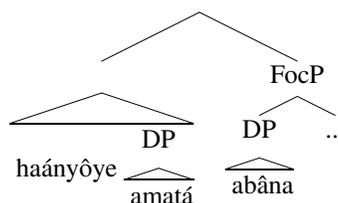
The sentences in (330) and (331) both employ short forms, but in (330) the verb word is final in its constituent, while the verb word in (331) is not. (In (331) it is assumed, as in Ndayiragije's own analysis that the subject and the verb word do not form a constituent.)

5.4　Verb focus?

We have just compared the Zulu alternation to that of Rundi and determined that, unlike in Rundi, the element following a Zulu short verb form is not necessarily in focus. But what of an analysis that states the converse? Güldemann (1996) (cited in Zerbian (2004)) analyses the long forms as focus on the verb.[12] Looking at the examples with *phandle* "outside" again, we can see how this would work:

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[12]As I have not actually seen Güldemann (1996), I am unsure of its details. I am also unsure of which language he is claiming this of. Zerbian assumes his analysis to be correct for Xhosa.

(332) a. Ba- dlal- a- phi?
           2.SBJ- play- FV- where

       "Where are they playing?"

       b. Ba- dlal- a phandle. (short present)
           2.SBJ- play- FV outside

       "They're playing OUTSIDE."

(333) a. B- enz- a- ni phandle?
           2.SBJ- do- FV- what outside

       "What are they doing outside?"

       b. Ba- ya- dlal- a phandle. (long present)
           2.SBJ- *ya*- play- FV outside

       "They're PLAYING outside."

In (332b), *ya-* would be said to be absent because the verb is not in focus, since it is the adverb which is in focus. Conversely, in (333b), it would be said that *ya-* is present because the verb itself is in focus.

Unfortunately, some of the cases we have already considered are equally problematic for this verb focus analysis. These cases are the resumptive pronouns, resumptive adverbs, and adverbs like *kahle* "well". Resumptive pronouns were first shown above in (297) on page 159. Note, however, that they are optional. In (334a), the resumptive pronoun is present, necessitating the short form observed. In contrast, in (334b), the resumptive pronoun has been omitted, leaving the verb final in the relevant constituent and hence triggering a long form:[13]

(334) a. Yi- mali e- ngi- m- nik- e yona. (short form)
           COP:9- 9.money REL- 1S.SBJ- 1.OBJ- give- PERF 9.it

       b. Yi- mali e- ngi- m- nik- ile- yo. (long form)
           COP:9- 9.money REL- 1S.SBJ- 1.OBJ- give- PERF- *yo*

       "It's money that I gave him."

---

[13]It must be made clear that the clitic *-yo* on the end of the verb in (334b) is not merely a cliticized form of the pronoun *yona*. *-Yo* is an invariable, non-agreeing clitic which appears in some relative forms, and its presence is not dependent on the relativization of any particular argument. Here is an example in which a class 7 subject is relativized and which illustrates both of these properties:

a. i- salukazi   e- si- cul- ile- yo
    7- 7.old.woman REL- 7.SBJ- sing- PERF- *yo*

    "the old woman who sang"

It was not possible to establish any difference in meaning between clauses like (334a), which contain a resumptive, and those like (334b), which lack one. This is unexpected if in (334b) the verb has a focus feature while the verb in (334a) lacks one, as would be required by this analysis. Some resumptive obliques, first discussed on page 162, are also optional, showing the same pattern as the resumptive. This is unexpected under the verb focus analysis in exactly the same way as for resumptive pronouns. As for adverbs like *kahle* "well", consider the example in (335):

(335) A- ngi- dans- i kahle, kodwa ngi- cul- a kahle.
      NEG- 1S.SBJ- dance- FV well   but   1S.SBJ- sing- FV well
      (short present obligatory)

      "I don't dance well, but I sing well."

In this example, there is clearly contrastive focus on the verb, and yet the verb is required to appear in its short form. This is, again, unpredicted by the verb focus analysis.

Given these problems in characterizing long verb forms as being focused, and given the problems previously exposed relating to characterizing as focused any element immediately following a short verb form, it must be concluded that the Zulu short/long alternation simply cannot be defined in terms of focus. Rather, the alternation is best defined simply in terms of constituency. Any focus properties which seem to correlate with the use of either a long or short verb form must thus be described in terms of the range of interpretations possible within the AgrSP remnant. Note that this does not rule out the possibility of a dedicated focus projection (low FocP) inside the AgrSP remnant. It only means that if such a position exists, the alternation is not dependent upon it; a short verb form sometimes occurs even when such a focus projection is not utilized, as in the case of resumptive pronouns.

5.5 Coöccurrence restrictions within IP

In this section certain coöccurrence restrictions will be examined between elements following short verb forms, which, as has been discussed, are structurally low, having failed to be undergo topicalization.

Let's first consider objects. Both human and non-human objects can immediately follow a short verb form, as shown in (336):

(336) a. Ngi- bon- e i- ncwadi.
        1.SBJ- see- PERF 9- 9.book

        "I saw a book."

b. Ngi- bon- e   a- bantwana.
   1.SBJ- see-   PERF 2- 2.children

"I saw some children."

Furthermore, there are no syntactic differences between human and non-human objects of ditransitive verbs, as shown in (337):

(337) a. Ngi-   fundis- el-   a i- mali   i- siXhosa.
          1S.SBJ- teach-   APPL- FV 9- 9.money 7- 7.Xhosa

       "I teach Xhosa for money."

       b. Ngi-   fundis- el-   a u- Sipho a- bantwana bakhe.
          1S.SBJ- teach-   APPL- FV 1- 1.Sipho 2- 2.children   2.his

       "I teach Sipho's children for him." (Literally, "I teach Sipho his children.")

And finally, there are no syntactic differences between human and non-human non-agreeing subjects in VS sentences:

(338) a. Kw-   a-   cul- a u- Sipho.
          17.SBJ- PST- sing- FV 1- 1.Sipho

       "Sipho sang."

       b. Kw-   a-   dum- a i- zulu.
          17.SBJ- PST- roar-   FV 5- 5.sky

       "The sky roared."

Bearing this pattern in mind, consider the contrast between the two sentences in (339):

(339) a. Kw-   a-   bon- a u- Thandi i- ncwadi.
          17.SBJ- PST- see-   FV 1- 1.Thandi 9- 9.book

       "Thandi saw the book."

       b. * Kw-   a-   bon- a u- Thandi i- ntombazane.
            17.SBJ- PST- see-   FV 1- 1.Thandi 9- 9.girl

       "Thandi saw the girl."

For some reason, it is ungrammatical to have both a human postverbal subject and a human postverbal object in Zulu. Here it will be described how this and another coöccurrence restriction can be handled using exclusion constraints in the spirit of Woolford (1999, 2000). We will first examine the concepts used by Woolford and then return to examine the two coöccurrence restrictions in Zulu which need to be accounted for.

Woolford (1999, 2000) has proposed that some languages make use of constraints dependent on different (and sometimes multiple) hierarchies out of a set of what can

be called "referentiality hierarchies", which include the Definiteness, Specificity, Animacy, Number, and Person Hierarchies. The constraints are termed "exclusion principles" by Woolford because a certain type of term is excluded from a certain type of constituent. That is, it is not permitted to appear inside that type of constituent. It will be shown here that the Animacy Hierarchy is active in Zulu, constraining the types of arguments which can appear within VP. But it will also be shown that the constraint involved must refer to something more than just a referentiality hierarchy.

As an example of how exclusion principles work, let us consider the case of objects in Swahili. We must first note that a lexical object with a concomitant object marker on the verb in Swahili cannot generally be interpreted as indefinite:

(340)   Juma a-   li- ki-   soma kitabu.
        1.Juma 1.SBJ- PST- 7.OBJ- read   7.book
        "Juma read the/*a book."

However, it is also often claimed in the literature on Swahili that human objects are obligatorily clitic-doubled. This is not precisely correct, but the claim does point us in the right direction. Examples first discussed by Ngonyani (1996) show us that, in spite of what we saw in (340), clitic-doubling of human objects is not restricted to definites, as shown in the "anyone" translation of (341a):[14]

(341)   a. Ha- tu-   ku- (mw-) ona mtu.
           NEG- 1P.SBJ- PST- 1.OBJ- see 1.person
           "We didn't see anyone." OR "We didn't see the person."

        b. Ha- tu-   ku- ona kitu.
           NEG- 1P.SBJ- PST- see 7.thing
           "We didn't see anything."

        c. Ha- tu-   ku- ki-   ona kitu.
           NEG- 1P.SBJ- PST- 7.OBJ- see 7.thing
           "We didn't see the thing." BUT NOT "We didn't see anything."

What such an example does is to force us to divorce the issue of definiteness from humanness. The object *mtu* in (341a) is not definite, specific, or even referential. The fact that it can appear with an object marker is due solely to the fact that it is human, as shown by the fact that no object marker is possible in the analogous case of nonhuman *kitu* in (341b). Assuming that the appearance of an object marker results from raising an object out of VP in Swahili (as Ngonyani claims, and as I assume for Zulu),

---

[14]The pattern is reminiscent of Spanish, where the indirect object clitic is used even when the indirect object is negatively quantified: *Le dije* "I told him/∗someone." but *No le dije a nadie* "I didn't tell anybody."

exclusion principles allow us to express the generalizations about definiteness and the facts we have just seen about humanness separately:

(342)   (Swahili) Definiteness Exclusion Constraint.
        The VP does not contain a definite object.

(343)   (Swahili) Humanness Exclusion Constraint.
        The VP does not contain a human object.

And to explain the fact that objects in clauses with both an object marker where the object is non-human cannot be interpreted as indefinite, a third constraint will be necessary:

(344)   (Swahili) Object Marker Definiteness Constraint
        An object marker does not refer to an indefinite argument.

The pattern in (341), with an object marker for (341a), obtains when the Humanness Exclusion Constraint outranks the Object Marker Definiteness Constraint:

(345)

	Human Exclusion	Object Marker Definiteness
Hatukumwona mtu.		∗
∗ Hatukuona mtu.	∗!	
Hutukuona kitu		
∗Hatukukiona kitu		∗!

The fact that there is a degree of free variation in Swahili is expained by a free ranking between these two constraints.

Human arguments.   Now let's return to the Zulu pattern, looking first just at human arguments. The paradigm is summarized in (346):

(346)   a. S V O$_{[\pm human]}$

        b. S V O$_{[\pm human]}$ O$_{[\pm human]}$

        c. V S$_{[\pm human]}$

        d. V S$_{[+human]}$ O$_{[-human]}$

        e. ∗ V S$_{[+human]}$ O$_{[+human]}$

   The Zulu data relevant for exclusion principles involves clauses with non-agreeing postverbal subjects. Consider the sentences in (347), which differ only in the animacy/humanness and referentiality/argumenthood of the object:

(347)   a.   Animate object:

        * Ku-   shay- e   u- Sipho u- mfana.
          17.SBJ- hit-   PERF 1- 1.Sipho 1- 1.boy

        "Sipho hit the/a boy."

    b.   Inanimate object:

        ? Ku-   shay- e   u- Sipho i- tafula.
          17.SBJ- hit-   PERF 1- 1.Sipho 5- 5.table

        "Sipho hit the/a table."

    c.   Idiomatic object:

        Ku-   shay- e   u- Sipho u- cingo.
        17.SBJ- hit-   PERF 1- 1.Sipho 11- 11.wire

        "Sipho made a phone call."

Sentences (347a) and (347b) differ only in the animacy (or humanness) of the object. The definiteness and specificity of the object is not relevant, since (347a) is simply ungrammatical on any reading. Some speakers accept (347b) as grammatical, while others do not.[15] In contrast, it appears that all speakers will accept an idiomatic object in this context, as shown in (347c). This pattern can be explained in two ways. The first possibility is that speakers who accept (347b) have a constraint which refers to the animacy hierarchy, while those who do not accept (347b) have a constraint which refers to the referentiality hierarchy (with idiomatic objects being at the very low end of this hierarchy):

(348)   a.   Animacy hierarchy:
        Animate > Inaminate

    b.   Animate Exclusion Constraint A:
        A VP does not contain an object higher than Inanimate on the Animacy Hierarchy.

(349)   a.   Referentiality Hierarchy:
        Referential > Non-Referential > Idiomatic

    b.   Non-Idiomatic Exclusion Constraint A:
        A VP does not contain an object higher than Idiomatic on the Referentiality Hierarchy.

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[15]We are generally treating sentences such as (347b) as grammatical, but some speakers reject the sentence in out-of-the-blue contexts. It is assumed that all speakers would accept such a sentence if an appropriate context were provided.

And the other possibility is that all speakers have a constraint referring to the same hierarchy:

(350)   Extended Animacy Hierarchy:
        Animate > Inanimate > Idiomatic

but differ in the relevant cut-off point. For speakers who accept (347b), the cut-off point is between Animate and Inanimate, while for speakers who don't, the cut-off point is between Inanimate and Idiomatic:

(351)   a.   Animate Exclusion Constraint B:
             A VP does not contain an object higher than Inaminate on the Extended Animacy Hierarchy.

        b.   Non-Idiomatic Exclusion Constraint B:
             A VP does not contain an object higher than Idiomatic on the Extended Animacy Hierarchy.

This is a case where conflating referentiality hierarchies might be harmless, since an idiomatic argument does not really have any animacy features, while a non-idiomatic object can always be classified as either animate or inanimate.

The inability of a human object to coöccur with a human non-agreeing subject can be attributed to a constraint which prevents just that from occurring:

(352)   Human Subject and Object Coöccurrence Constraint
        A VP does not contain both a human subject and a human object.

We have seen that Swahili has a constraint at work which prefers for a human object to be moved out of its low position, triggering agreement, to the extent of allowing a negatively quantified human object to do so. A constraint penalizing the simultaneous appearance of a human subject and a human object in these low positions is thus not particularly unusual.

Oddly, it seems that lexical human objects (not clitic-doubled) are possible in Zulu quotative inversion:

(353)   "Sawubona!" Kw- a-   bingelel- a i- khehla   u- mngani wa- lo.
        hello   17.SBJ- PST- greet-   FV 5- 5.old.man 1- 1.friend 1.of- 5.it
        "Hello," greeted the old man his friend.

This fact can be taken as evidence that it is a violable constraint at work here rather than a structural property which in the general case prevents a human object from appearing in the clause as a non-agreeing human subject. Assuming that the non-agreeing subject in a quotative inversion is in the same position as the subject in other non-agreeing

subject clauses, the only way to explain why a human object is tolerated only in a quotative inversion would need to take in account the particular information structure of a quotative inversion and say that it is that information structure that renders irrelevant the constraint which prevents the object in non-quotative clauses.

The formulation of the constraint in (352) is supported by the examples in (354), all using the non-agentive verb *enzeka*, which always takes a non-human subject:

(354)   a.   Kw- enzek- el- e-   ni u- Sipho?
             17.SBJ- happen- APPL- PERF- what 1- 1.Sipho

             "What happened to Sipho?"

        b.   Kw- enzek- el- e   i- ngozi   u- Sipho.
             17.SBJ- happen- APPL- PERF 9- 9.accident 1- 1.Sipho

             "Sipho had an accident."

        c.   Kw- enzek- el- e   i- ngozi   bani?
             17.SBJ- happen- APPL- PERF 9- 9.accident 1.who

        d.   Kw- enzek- el- e   bani i- ngozi?
             17.SBJ- happen- APPL- PERF 1.who 9- 9.accident
             "Who had an accident?"

These sentences show that it is not simply a matter of ensuring that an unraised human object not coöccur with any non-agreeing subject, but rather that it is specifically with a non-agreeing *human* subject that the unraised human object cannot coöccur.

Adverbs.   Now let's consider another interesting coöccurrence restriction in Zulu. As shown in (355a), there is no inherent need for the object of *khuluma* "speak" to raise and trigger object agreement, while (355b) shows that this move is possible:[16]

(355)   a.   i.   Ngi- khulum- a i- siXhosa.]
                  1S.SBJ- speak-   FV 7- 7.Xhosa

             ii. Ngi- ya- si-   khulum- a] i- siXhosa.
                  1S.SBJ- *ya*- 7.OBJ- speak-   FV   7- 7.Xhosa

                  "I speak Xhosa."

        b.   i.   Ngi- si-   khulum- a kahle] i- siXhosa.
                  1S.SBJ- 7.OBJ- speak-   FV well   7- 7.Xhosa

             ii. * Ngi-   khulum- a kahle i- siXhosa.]
                    1S.SBJ- speak-   FV well 7- 7.Xhosa

---

[16]It is assumed that the only interpretational difference between the doubled and non-doubled object in this sentence is related to the topicality of the word *isiXhosa*.

iii. ∗ Ngi-   khulum- a i- siXhosa kahle.]
   1S.SBJ- speak-   FV 7- 7.Xhosa   well

"I speak Xhosa well."

But (355b.ii) shows that the undoubled object becomes ungrammatical when the adverb *kahle* "well" is added. And (355c.iii) shows that the ungrammaticality is not due to the relative ordering of the adverb and the object. A similar situation holds with non-agreeing subjects, as shown in (356):

(356) a. Ku-   khulum- e   u- Sipho.
         17.SBJ- speak-   PERF 1- 1.Sipho

   "Sipho spoke."

   b. i. ∗ Ku-   khulum- e   u- Sipho kahle.
           17.SBJ- speak-   PERF 1- 1.Sipho well.

   ii. ∗ Ku-   khulum- e   kahle u- Sipho.
           17.SBJ- speak-   PERF well   1- 1.Sipho.

   "Sipho spoke well."

The fact that undoubled objects and non-agreeing subjects are incompatible with *kahle* "well" does not appear to be an issue of adjacency of the verb to the subject or object, because, as we have already seen, certain other adverbs, such as *khona* "there", grammatically intervene between the verb and the argument in question. This is shown with *khona* intervening between the verb and a subject in (357a), and between the verb and an object in (357b):

(357) a. i- ndawo lapho ku-   hlal- a khona u- Sipho
         9- 9.place there   17.SBJ- sit-   FV there   1- 1.Sipho

   "the place where Sipho lives"

   b. i- ndawo lapho e-   cul- a khona i- zingoma
         9- 9.place there   1.SBJ- sing- FV there   10- 10.song

   "the place where he sings songs"

This situation seems amenable to the same sort of treatment, using exclusion principles, as did the case of the simultaneous non-agreeing human subject and human object.

5.6   Object markers and non-agreeing subjects

In section 2.4 on page 41, two asymmetries were discussed between the reflexive marker *zi-* and the ordinary object markers. Here we will briefly discuss an additional asymmetry involving non-agreeing postverbal subjects.

The reflexive marker *zi-* is compatible with a non-agreeing postverbal subject, as shown in (358):

(358) Kw- a- zi- bon- a u- Sipho e- sibukw- eni.
17.SBJ- PST- REFL- see- FV 1- 1.Sipho LOC:7- 7.mirror- LOC

"Sipho saw himself in the mirror."

However, other object markers are not:

(359) a. Kw- a- bon- a u- Sipho i- ncwadi.
17.SBJ- PST- see- FV 1- 1.Sipho 9- 9.book

"Sipho saw the book."

b. * Kw- a- yi- bon- a u- Sipho.
17.SBJ- PST- 9.OBJ- see- FV 1- 1.Sipho

"Sipho saw it."

This fact, too, can be attributed to a constraint, which expresses the inherent preference for a subject to be topical:

(360) Subject Raising Preference
A subject does not remain in VP if an object raises out of it.

This constraint does not affect the appearance of reflexive *zi-* in this context, because this head is not an agreement marker which appears when an argument is backgrounded or topicalized. That is, the reflexive marker in (358) does not topicalize Sipho as an object, giving us a reading such as *As for himself, Sipho saw him.*

Such a constraint is compatible with the conception suggested in section 2.4 that the ordinary object markers are structurally higher than the reflexive marker if the position occupied by the non-agreeing postverbal subject is higher than the reflexive *zi-* head, as in (361a), but lower than ordinary object markers, as in (361b):

(361) a.

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b.

```
                          AgrOP
                         /      \
                      DP         AgrO′
                      /\         /     \
                 incwadi      yi-       XP
                 "book"               /    \
                                    DP       X′
                                    /\        ·
                                uSipho
                                (subject)
```
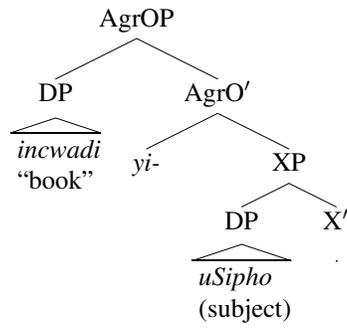
Under such a conception, the constraint in (360) can be understood in such a way that a subject is not allowed to remain lower than another argument (the cliticized or doubled object) within a particular constituent (minimally AgrOP).

Having concluded our dicussion of a number of issues involving the short/long verb alternations, we will now turn our attention to constructions involving locative applicatives.

CHAPTER 6

Locative Applicatives

This chapter will discuss applicatives which license locative arguments. To put this discussion into context, we will first take a peek at the full range of applicatives in Zulu.

"Applicative" is a cover term for a variety of related constructions all of which add an additional argument (such as Beneficiary or Motive) to the verb. In this sense an applicative is similar to a causative (which adds the Causer argument), except that in the applicative construction, the argument added does not have a causer interpretation and in many languages some applicative constructions can be paraphrased using a non-applicative verb with an adjunct prepositional phrase.[1] Applicative constructions are pervasive in Bantu languages, but also occur in many other typologically diverse languages such as Wolof (West Atlantic), Chickasaw (Muskogean), and Haka Lai (Burmo-Tibetan). In an applicative construction in all of these languages, the verb displays an affix which indicates that an additional argument has been added to the argument structure of the verb. We can refer to this additional argument generically (that is, regardless of its specific interpretation) as the Applicative Object or AO. Typically, the Applicative Object behaves as a true object of the verb, while any other (more basic) object loses some of its object properties, though these two phenomena vary both from language to language and from one type of applicative to another.

In Zulu the single verbal suffix *-el* is used for both the benefactive/motive and circumstance DP applicatives as well as for the locative applicative, but, as in other Bantu languages with various types of applicatives, these three applicatives have distinct syntactic properties. Before we discuss each of these types of applicatives in detail, here are examples of each of them:

(362)   Benefactive

      a.   Plain:

---

[1]The distinction between applicatives and causatives is not always as clear-cut as this might suggest. In some languages, the verbal morphology is identical for the causative and some type of applicative, such as instrumental in Rwanda (Bantu) and benefactive in Pima (Uto-Aztecan). Furthermore, in some languages, such as Chewa, the causee argument of the causative construction can appear in a displaced prepositional phrase, a phenomenon which is more characteristic of locative and instrumental applicatives cross-linguistically.

Ngi- lahl- a u- doti.
1S.SBJ- dispose.of- FV 1- 1.trash

"I'm taking out the trash."

b. Applicative:

Ngi- lahl- el- a u- Thandi u- doti.
1S.SBJ- dispose.of- APPL- FV 1- 1.Thandi 1- 1.trash

"I'm taking out the trash for Thandi."

(363) Motive

a. Plain:

Ngi- lahl- a u- doti.
1S.SBJ- dispose.of- FV 1- 1.trash

"I'm taking out the trash."

b. Applicative:

Ngi- lahl- el- a i- mali u- doti.
1S.SBJ- dispose.of- APPL- FV 9- 9.money 1- 1.trash

"I'm taking out the trash for money."

(364) Circumstance

a. Plain:

Lo muntu u- zo- fa.
that.1 person 1.SBJ- FUT- die

"That person will die."

b. Applicative

Lo muntu u- zo- f- el- a u- ku- thanda a- bantwana ba-
that.1 1.person 1.SBJ- FUT- die- APPL- FV 15- 15- love 2- 2.child 2.of-
khe.
1.PRON

"That person will die from loving his children (so much)."

(365) Locative

a. Plain:

A- bantwana ba- zo- fund- a i- siBhunu.
2- 2.child 2.SBJ- FUT- study- FV 7- 7.Afrikaans

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"The children will study Afrikaans."

b. Applicative:

A- bantwana ba- zo- fund- el- a i- siBhunu e- sikole- ni.
2- 2.child 2.SBJ- FUT- study- APPL- FV 7- 7.Afrikaans LOC:7- 7.school- LOC

"The children will study Afrikaans at school."

It will be noted that the benefactive, motive, and circumstance applicatives license a DP argument, while the locative applicative typically licenses a PP argument.

While in many Bantu languages the various types of applicatives use a homophonous suffix, closing inspection shows that they have different syntactic behavior. For example, as discussed by Ngonyani (1996), although the Swahili benefactive and motive applicatives both employ a suffix *-i* to license a DP argument, these two applicatives differ with respect to passivization. As shown in (366), while a beneficiary can be passivized in the presence of a direct object, the same is not true of a motive, as shown in (367):

(366) a. Ni- li- m- pik- i- a Juma mayai.
       1S.SBJ- PST- 1.OBJ- cook- APPL- FV 1.Juma 6.eggs

       "I cooked Juma some eggs."

   b. Juma a- li- pik- i- w- a mayai.
      1.Juma 1.SBJ- PST- cook- APPL- PSV- FV 6.eggs

      "Juma was cooked eggs."

(367) a. Ni- li- pik- i- a pesa mayai.
       1S.SBJ- PST- cook- APPL- FV 10.money 6.eggs

       "I cooked eggs for money."

   b. *Pesa zi- li- pik- i- w- a mayai.
      10.money 10.SBJ- PST- cook- APPL- PSV- FV 6.eggs

      "Money was cooked eggs for."

While this particular difference cannot be reproduced in Zulu, with the view that clause structure is largely uniform across languages, it is thus wiser to think of the applicative "suffix" *-el* in Zulu as a set of homophonous suffixes merged in distinct syntactic positions and possibly having distinct lexical properties.

6.1 Locative arguments and DP objects in Zulu

We will now examine interesting differences between constructions in Zulu in which the locative applicative argument appears as a PP, as in (368), and constructions in

which it appears as a DP, as in (369), which I will term "locative-to-subject raising":[2]

(368) PP locative:

A-	bantwana	ba-	fund-	el-	a	[e-	sikole-	ni.	]$_{\text{P}P}$
2-	2.child	2.SBJ-	study-	APPL-	FV	LOC:7-	7.school-	LOC	

"The children study at the school."

(369) DP locative:

[I-	sikole	]$_{\text{D}P}$	si-	fund-	el-	a	a-	bantwana.
7-	7.school		7.sbj-	study-	APPL-	FV	2-	2.child

Lit. "The school studies at the children."
(≈ "The children study at school.")

It will be demonstrated that where the locative is a DP, as in (369), the locative has certain subject properties while the agent has certain object properties. It will be shown that these facts are most easily accounted for in an analysis in which the locative in such sentences is merged above the agent.

The prepositional phrases which will be used in the examples are of the form use both the prefix *e-* and the suffix *-ni*, as illustrated in (370):

(370) a. DP:

i-	sikole
7-	7.school

"school"

b. PP:

e-	sikole-	ni
LOC:7-	7.school-	LOC

"at school"

It will now be argued that there are two distinct positions in which the Bantu locative applicative argument can be merged, one below PsvP and *v*P, which I will call Loc2, and one above them, which I will call Loc1:

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[2]A subtype of the (369) sentences is perhaps first mentioned in Nkabinde (1988).

(371)

```
                        Loc1P
                       /    \
                            PsvP
                           /    \
                               vP
                              /   \
                                 Loc2P
                                 /    \
                                     VP
                                    /__\
```
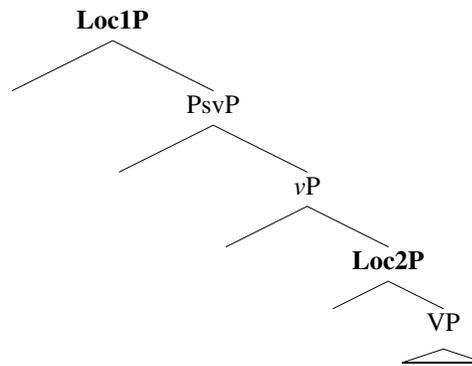
As already shown, the locative applicative suffix is *-el*, making it homophonous with the suffixes used for the other types of applicatives in Zulu. The applicative suffix *-el* on the verb is dependent upon an applicative argument, as shown in (372b):

(372)   a.   Plain (with optional PP adjunct):

        Ngi- thand- a u- ku- cul- a (e-   sikole- ni).
        1S.SBJ- love-   FV 15- 15- sing- FV   LOC:7- 7.school- LOC

        "I like to sing (at school)."

    b.   Applicative:

        Ngi- thand- a u- ku- cul- el- a ∗(e-   sikole- ni).
        1S.SBJ- love-   FV 15- 15- sing- APPL- FV   LOC:7- 7.school- LOC

        "I like to sing (at school)."

There is usually no readily perceivable difference in meaning between a plain verb with a PP adjunct as in (372a) and a locative applicative as in be (372b), but as these two sentences show, there are clear syntactic asymmetries between them. While the locative adjunct in (372a) is optional, the locative argument in the applicative construction in (372b) is obligatory.

Before we continue with our discussion of locatives, we will establish that what I have termed locative-to-subject raising in (369) is not generally available to DP objects in Zulu. DP objects in Zulu (patients, beneficiaries, and circumstances) share certain properties. They cannot raise to preverbal subject position in the presence of an agent, while they can raise to preverbal subject position under passivization. These facts are demonstrated in (373), (374), and (375).[3] The fact that subject/object reversal is not available, as shown by the (b) sentences, is not trivial, since such a construction is

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[3]As has been noted before, there do not appear to be any syntactic differences between benefactive and motive applicatives in Zulu, which is why the motive applicative has been omitted in these examples.

attested in several Bantu languages, such as Swahili (Barrett Keach 1985) and Rwanda (Kimenyi 1978), where it also goes by the name of "quasipassive", as will be shown later.

(373) Patients

    a. Neutral word order: S V Patient

U- mfana u-   zo- fund- a i- ncwadi.
1- 1.boy 1.SBJ- FUT- study- FV 9- 9.book

"The boy will study the book."

    b. Subject/object reversal impossible: Patient V S

∗ I- ncwadi i-   zo- fund- a u- mfana.
  9- 9.book 9.SBJ- FUT- study- FV 1- 1.boy

Lit. "The book will study the boy."
(≈ "The book will be studied by the boy.")

    c. Passivization possible: Patient V-psv

I- ncwadi i-   zo- fund- w- a (ng- u- mfana).
9- 9.book 9.SBJ- FUT- study- PSV- FV by- 1- 1.boy

"The book will be studied by the boy."

(374) Circumstance applicative objects

    a. Neutral word order: S V ReasO

A- bantu ba- zo- jabul- el- a i- mali.
2- 2.person 2.SBJ- FUT- rejoice- APPL- FV 9- 9.money

"People will rejoice over the money."

    b. Subject/object reversal impossible: ReasO V S

∗ I- mali   i-   zo- jabul- el- a a- bantu.
  9- 9.money 9.SBJ- FUT- rejoice- APPL- FV 2- 2.person

Lit. "The money will rejoice over people."
(≈ "The money will be rejoiced over by people.")

    c. Passivization possible: ReasO V-psv

I- mali   i-   zo- jabul- el- w- a (ng- a- bantu).
9- 9.money 9.SBJ- FUT- rejoice- APPL- PSV- FV by- 2- 2.person

"The money will be rejoiced over (by people)."

(375) Benefactive applicative objects

    a.   Neutral order: S V BenO (DO)

Ngi-	lahl-	el-	a	u-	Thandi	u-	doti.
1S.SBJ-	dispose.of-	APPL-	FV	1-	1.Thandi	1-	1.trash

"I'm taking out the trash for Thandi."

    b.   Subject/object reversal impossible: BenO V S (DO)

∗ U-	Thandi	u-	lahl-	el-	a	mina	(u-	doti	).
1-	1.Thandi	1.SBJ-	dispose.of-	APPL-	FV	me	1-	1.trash	

Lit. "Thandi's taking out me the trash."
(≈ "Thandi's being taken out the trash for by me.")

    c.   Passivization possible: BenO V-psv

U-	Thandi	u-	lahl-	el-	w-	a	u-	doti.
1-	1.Thandi	1S.SBJ-	dispose.of-	APPL-	PSV-	FV	1-	1.trash

"Thandi is being taken out the trash (for)."

    The fact that these three types of objects behave similarly is taken to be partially a consequence of the fact that both patients and reason and benefactive applicative objects are merged below the agent (Ngonyani 1996; Pylkkänen 2002), as in this tree:

(376) Objects merged below the agent
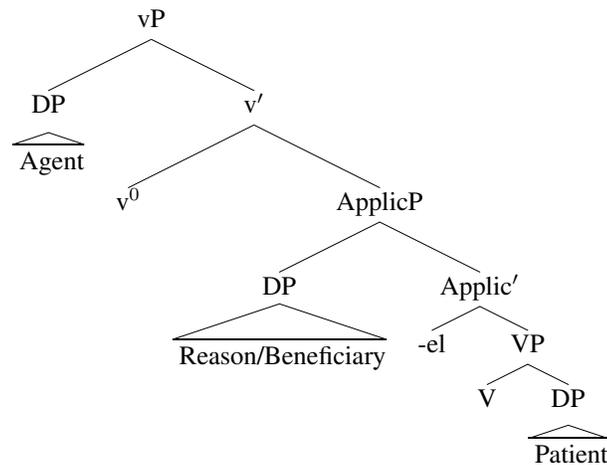
6.2 PP locative applicatives in Zulu

The Zulu locative applicative argument in postverbal position must appear as a PP, as shown by the ungrammaticality of (377b), in which it is a DP:

(377)   a.   A- bantwana ba-   fund- el-   a [e-   sikole- ni.]$_{PP}$
             2- 2.child   2.SBJ- study- APPL- FV   LOC:7- 7.school- LOC

        b.   ∗ A- bantwana ba-   fund- el-   a [i- sikole.]$_{DP}$
             2- 2.child   2.SBJ- study- APPL- FV   7- 7.school

        "The children study at the school."

    We will now see that PP locative applicative arguments behave similarly to patients, beneficiaries, and reasons with respect to passivization and subject/object reversal, thus supporting the null hypothesis that this type of applicative argument, just like the benefactive and reason type, is also merged below the agent.

Passivization.   First it will be noted that a locative applicative PP can raise to preverbal subject position under passivization:

(378)   [E-   sikole- ni]$_{PP}$ ku-   zo- fund- el-   w- a (nga- bantwana).
         LOC:7- 7.school- LOC   17.SBJ- FUT- study- APPL- PSV- FV   by:2- 2.child

        "The school will be studied at (by children)."

It would seem that in (378) the locative PP *esikoleni* is truly in subject position and that this is not a PP topic of an impersonal passive,[4] since although Zulu does have impersonal passives, they are incompatible with *by*-phrases:

(379)   Ku-   zo- fund- w- a (∗ nga- bantwana).
         17.SBJ- FUT- study- PSV- FV   by:2- 2.child

        "There will be studying going on (by children)."

---

[4]The potential for two different analyses stems from the fact that noun class 17 in Zulu serves as both a locative class and as a sort of default agreement class. As examples of the latter, noun class 17 agreement can be used as subject agreement with certain types of conjoined subjects, with copular predicates, and with verbs like *be evident* which take a single clausal argument. Thus, in sentences such as (378), it is not immediately obvious whether the verb agrees with a locative subject or whether it agrees with an expletive subject.

No subject/object reversal.   There is no subject/object reversal in Zulu. Three potential instances of subject/object reversal have been shown above to be ungrammatical—with a direct object in (373b), with a circumstance applicative in (374b), and with a benefactive applicative in (375b).[5] But now note sentence (380), which might be taken as a case of subject/object reversal, with a locative subject:

(380) (E-   sikole- ni)$_i$ ku-   zo- fund- el-   a *(a- bantwana) t_i.
        LOC:7- 7.school- LOC   17.SBJ- FUT- study- APPL- FV   2- 2.child

       "(At the school), children will study."

But this is not necessarily a counterexample to our suggestion that Zulu has no subject/object reversal, since the locative phrase can be taken to be a topic. That a locative applicative can be topicalized is demonstrated in (381).[6]

(381) (E-   sikole- ni,)$_i$ a- bantwana ba-   zo- fund- el-   a t_i.
        LOC:7- 7.school- LOC   2- 2.child   2.SBJ- FUT- study- APPL- FV

       "(At the school), children will study."

No implicit low subject.   As shown in (380), the postverbal agent cannot be made implicit when the PP locative applicative argument is raised to preverbal position. This is to be expected if this postverbal agent is a subject, since low postverbal subjects have already been shown in (260), repeated here as (382), to be obligatorily overt:

(382)   a. Ku-   zo- dlal- a a- bantwana.
           17.SBJ- FUT- play- FV 2- 2.child

          "Children will play."

        b. * Ku-   zo- dlal- a.
             17.SBJ- FUT- play- FV

           Intended meaning: "There will be playing. Someone will play"

Subject and object properties with PP locatives.   In (368), and in other sentences where the locative is a PP, the agent has certain subject properties: it can raise to preverbal subject position and trigger subject agreement on the verb, it cannot be implicit in postverbal position in active voice, and under passive voice it is either suppressed

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[5]The benefactive under subject/object reversal would be expected to be ungrammatical even if it were grammatical for the other two cases, due to the animacy hierarchy issues discussed in section 5.5 in the previous chapter.

[6]If (380) were shown to be an instance of genuine subject/object reversal, we could account for it by appealing to Relativized Minimality—the locative can raise over the agent by virtue of the former being a PP while the latter is a DP.

or appears in a *by*-phrase. In contrast, the PP locative has the object property of being able to raise to preverbal subject position under passivization. This falls out from the uncontroversial assumption that PP locatives merge in a position below the agent, just as the reason and benefactive objects in (376):

(383)

```
                          vP
                    ┌──────┴──────┐
                   DP            v′
                   ╱╲        ┌────┴────┐
                 Agent      v⁰       ApplicP
                        ┌─────────┴─────────┐
                       PP              Applic′
                       ╱╲          ┌──────┴──────┐
                    Locative     -el           VP
                                          ┌─────┴─────┐
                                          V          DP
                                                     ╱╲
                                                  Patient
```
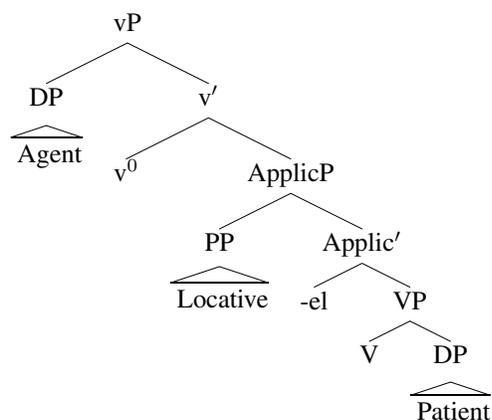
Having examined locative applicative constructions in which the locative is a PP, we will now consider a construction in which it is a DP.

6.3   DP applicative locatives and locative-to-subject raising

The DP locative applicative argument can raise to preverbal position in a construction I have termed "locative-to-subject raising", as shown in (368), repeated here as (384):

(384)   DP locative raised to preverbal subject position

I- sikole si-   zo- fund- el-   a a- bantwana.
7- 7.school 7.sbj- FUT- study- APPL- FV 2- 2.child

Lit. "The school will study at (children)."
(≈ "The school will be studied at (by children).")

We will now see that the DP locative in (384) has certain subject properties, while the agent has certain object properties.

The locative DP in (384) appears to be a subject. It is in preverbal position, it triggers subject agreement, and there is no resumptive pronoun corresponding to it in the VP. Furthermore, the DP locative can bind into an agent:

(385) I- sikole ngasinye$_i$ si- fund- el- a a- bantwana ba- so$_i$.
7- 7.school 7.each 7.sbj- study- APPL- FV 2- 2.child 2.of- 7.it

Lit. "Each$_i$ school studies at its$_i$ children."

(≈ "Each$_i$ school is studied at by its$_i$ children.")

In her treatment of Bantu subject/object inversion, Morimoto (2000) discusses several different tests for the subjecthood of the preposed object in subject/object reversal constructions. The object fails all of these tests, supporting the idea that the preposed object is not actually a subject. Three of these tests, all of which in Zulu are dependent upon relativization, are applicable to the DP locative construction. These are relativization, clefting, and Wh questioning. As seen here, the preverbal locative DP passes all of these tests:

(386) Relativization

Izolo ngi- bon- e i- sikole esi- fund- el- a a- bantwana ba- kho.
yesterday 1s.SBJ- see- PERF 7- 7.school REL.7- study- APPL- FV 2- 2.child 2.of- you

"Yesterday I saw the school that your children study at."

(387) Clefting

Y- i- sikole esi- nye esi- fund- el- a a- bantwana ba- mi.
COP- 7- 7.school 7- one REL.7- study- REL- FV 2- 2.child 2.of- me

"It's the other school that my children study at."

(388) Wh-questioning

Yi- siphi i- sikole esi- fund- el- a a- bantwana ba- kho?
COP- 7.which 7- 7.school REL.7- study- APPL- FV 2- 2.child 2.of- you

"Which school do your children study at?"

This provides additional evidence that DP locative applicative subjects are true subjects, and that this construction is not merely a variant for the more familiar subject/object inversion.

Implicit agents. The agent may be implicit in locative-to-subject raising, as shown in (389). The agent receives an arbitrary (non-referential) interpretation.

(389) Implicit agents in locative-to-subject raising

I- sikole si- zo- fund- el- a t_i e_{agent}.
7- 7.school 7.sbj- FUT- study- APPL- FV

Lit. "The school will study at."
(≈ "The school will be studied at (by someone).")

This is surprising, because, as shown above in (382), low postverbal subjects cannot generally be implicit.

Now note the contrast between (390a) and (390b):

(390) a. I- sikole$_i$ si-   zo- fund- el-   a t_i e_{agent}.
           7- 7.school 7.sbj- FUT- study- APPL- FV

           Lit. "The school will study at."
           (≈ "The school will be studied at.")

       b. * [E-   sikole- ni$_i$]$_{\mathrm{T}op}$ ku-   zo- fund- el-   a t_i e_{agent}.
             LOC:7- 7.school- LOC   17.SBJ- FUT- study- APPL- FV

           Lit. "At the school will study at."
           (≈ "The school will be studied at.")

If the locative PP in (390b) is a topic, its ungrammaticality is reduced to the case of (382)—a subject may not be implicit in postverbal position. This contrast supports the idea that the DP *isikole* in (390a) is a subject.

The locative-to-subject raising sentence in (389) also stands in contrast with classic subject/object reversal, exemplified here by Swahili, where the agent cannot be omitted:

(391) No implicit agent in classic subject/object reversal (Swahili)

       Kitabu ki-   na-   soma *(watoto).
       7.book 7.sbj- PRES- study   2.child

       Lit. "The book studies (the children)."
       (≈ "The book is studied (by the children).")

The ability to be implicit in postverbal position is taken to be an object-like property, as exemplified by the two sentences in (392):

(392) Implicit postverbal arguments

       a. Object can be implicit

           Ngi-   zo- fund- is-   a.
           1S.SBJ- FUT- study- CAUS- FV

           "I will teach (someone)."

       b. Subject cannot be implicit

199

∗ Ku-   zo- lal- a.
     17.SBJ- FUT- sleep- FV

"Someone will sleep."

No passivization. A DP locative applicative argument cannot raise to subject position under passivization.

(393)   ∗ I- sikole si-   zo- fund- el-   w- a.
       7- 7.school 7.sbj- FUT- study- APPL- PSV- FV

     "The school will be studied at."

The inability of the DP locative to passivize is expected if it is in some sense a subject in sub-IP position.

In summary, data employing locative-to-subject raising shows that the DP locative applicative argument behaves like a subject, while the agent behaves like an object in certain respects. This situation stands in clear contrast with the PP locative applicatives shown in the previous subsection.

6.3.1   Infinitival relatives

Zulu has the infinitival relative construction found in many Bantu languages, exemplified in (394):

(394)   i- zingoma zo-   ku- cul- a
       10- 10.song   10.of:15- 15- sing- FV

     "songs for singing"

The construction is compatible with postverbal objects, as shown in (395):

(395)   i- sikhathi so-   ku- cul- a i- zingoma
       7- 7.time   7.of:15- 15- sing- FV 10- 10.song

     "time for singing songs"

But the construction is not compatible with postverbal agents. This is shown with a plain (unextended) verb in (396a) and a motive applicative in (396b).

(396)   a.   i- sikhathi so-   ku- cul- a   (* a- bantwana)
           7- 7.time   7.of:15- 15- sing- FV   2- 2.child

        "a time (for children) to sing"

b.   [i- mali   ]$_i$ yo-   ku- sebenz- el-   a (* a- bantwana) t_i
        9- 9.money   9.of:15- 15- work-   APPL- FV   2- 2.child

        "money (for children) to work for"

The ability of an argument to appear in postverbal position in this construction can thus be taken to be an object-like property.

Now note that a postverbal agent is licensed in this construction when a locative applicative DP is extracted:

(397)   [i- sikole   ]$_i$ so-   ku- fund- el-   a (a- bantwana) t_i
        7- 7.school   7.of:15- 15- study- APPL- FV   2- 2.child

       "a school (for children) to study at"

A theory in which DP locatives undergo raising and extraction from the same position as PP locatives cannot explain how the postverbal agent is licensed in precisely this case. Conversely, if the locative in (397) is taken to subordinate the agent in a postverbal position, as claimed here, the ability of the agent to appear in postverbal position can be taken to be an object-like property.[7]

Summary of DP locatives   To summarize, in contrast to the PP locative in (368), the DP locative in (369) is a subject by these criteria:

(398)   a. It appears in preverbal position and triggers subject agreement.

        b. It passes Morimoto's three relativization-based tests for subjecthood (relativization, clefting, and Wh questioning).

        c. It can bind into the postverbal agent.

        d. There is no resumptive pronoun or object clitic referring to it in the VP.

In the same construction, the agent has a certain object-like property, namely that it can be implicit in postverbal position.[8]

---

[7]The following example, which has both a postverbal subject and a prepositional locative, poses a complication to using infinitival relatives as a support for this analysis:

  1. i- sikhathi so-   ku- fund- el-   a a- bantwana e-   sikole- ni
      7- 7.time   7.of:15- 15- study- APPL- FV 2- 2.children LOC:7- 7.school- LOC

     "time for children to study at school"

The precise distribution of subject licensing in infinitival relatives is an interesting question which must be left for future research.

[8]This is not to say that the agent has *all* typical object properties. Notably, unlike a direct, beneficiary, or reason DP object, an agent cannot be object-cliticized under locative-to-subject raising. This fact

These facts will be taken to follow from the fact that in a sub-IP position, the locative DP will be in a position above the agent, the specifier of a projection which I will temporarily label ?P.

(399)   Locative DP merged or moved above the agent

```
                        IP
                   ┌────┴────┐
                 DP_i        I'
                 ╱──╲     ┌──┴──┐
               Locative   I     ?P
                        ┌──┴──┐
                       t_i    ?'
                           ┌───┴───┐
                        (-el)      vP
                                ┌──┴──┐
                               DP     v'
                              ╱──╲  ┌──┴──┐
                            Agent  v⁰    VP
                                        ╱──╲
```
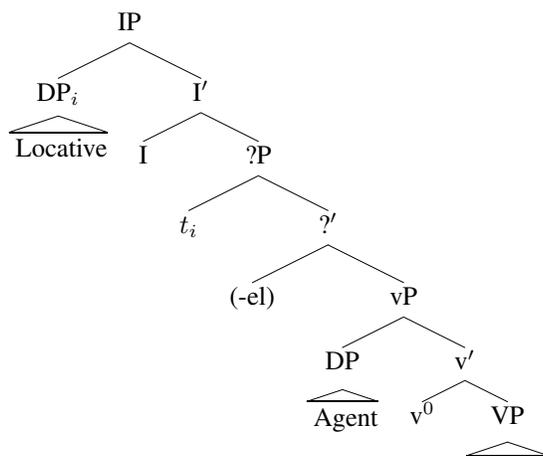
We will now attempt to refine this analysis.

6.4   Towards a more precise analysis of DP locatives

Now we will consider the nature of what I have labeled ?P in (399). Given that in locative-to-subject raising the DP locative has subject properties while the agent has object properties, the natural analysis is that the DP locative must raise to preverbal subject position from a postverbal position above the subject. This can be conceived in two distinct ways:

Analysis A—High Applicative Merge.   In the first of these analyses, a DP locative merges above the agent, while a PP locative merges below the agent, as in (400):

_____

distinguishes this construction from the causative, which also subordinates an agent under a higher argument.

(400)

```
                      Loc1P
              ┌─────────┴─────────┐
             DP                  Loc1′
          Locative          ┌──────┴──────┐
                           -el            vP
                                    ┌──────┴──────┐
                                   DP            v′
                                 Agent      ┌─────┴─────┐
                                          ApplicP
                                    ┌────────┴────────┐
                                   PP              Applic′
                                Locative      ┌──────┴──────┐
                                             -el            VP
                                                      ┌──────┴──────┐
                                                      V            DP
                                                              Patient
```
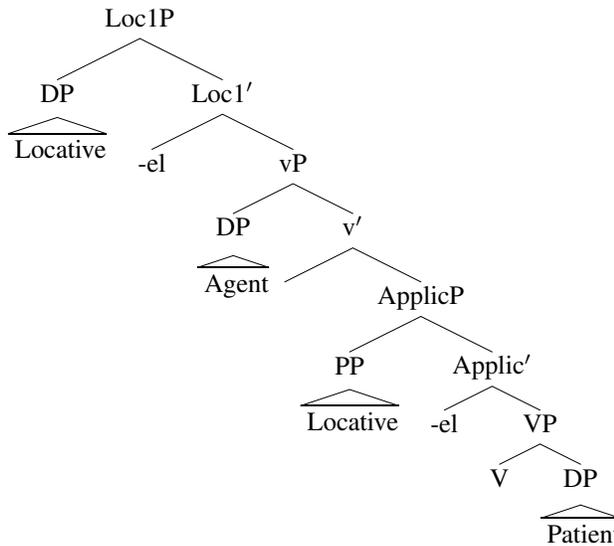
Analysis B—Movement. Under the second analysis, the locative applicative argument is always merged in the same position, but Zulu has a locative voice. The locative DP moves to VoiceP before it moves to preverbal subject position, as in (401):

(401)

```
                      VoiceP
              ┌─────────┴─────────┐
            DP_i               Voice′
          Locative       ┌───────┴───────┐
                        vP
                  ┌──────┴──────┐
                 DP            v′
               Agent     ┌─────┴─────┐
                        Loc2P
                  ┌──────┴──────┐
                 t_i          Loc2′
                        ┌──────┴──────┐
                       -el            VP
                                ┌──────┴──────┐
                                V            DP
                                        Patient
```
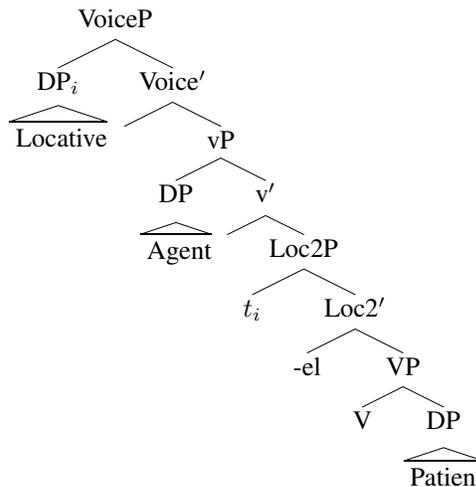
How shall we choose between these two analyses? Evidence from quantifier stranding and from a morphological alternation in a related language suggests that the locative applicative of the locative-to-subject raising construction is merged above the agent, as in (400).

Quantifier stranding. Recall that the short form of the verb indicates that the following phrase is inside IP, while the long form indicates that it is outside, as illustrated

in (402) and (403):

(402) a. Ku-　cul- a　a- bantwana]$_{IP}$. (short present)
　　　17.SBJ- sing- FV 2- 2.child

　　b. Ba-　ya- cul- a　]$_{IP}$ a- bantwana. (long present)
　　　2.SBJ- *ya-* sing- FV　　2- 2.child
　　　"Children are singing."

(403) a. A- bantwana ba-　cul- a i- zingoma]$_{IP}$. (short present)
　　　2- 2.child　　2.SBJ- sing- FV 10- 10.song

　　b. A- bantwana ba-　ya- zi-　cul- a]$_{IP}$ i- zingoma. (long present)
　　　2- 2.child　　2.SBJ- *ya-* 10.OBJ- sing- FV　　10- 10.song
　　　"The children are singing the songs."

The quantifier *-onke* "all" can be stranded within the IP constituent.[9] This is illustrated in (404a), where the subject is quantified, and in (404b), where it is the topicalized object that is quantified:

(404) a. A- bantwana ba-　cul- a　bonke.]$_{IP}$
　　　2- 2.child　　2.SBJ- sing- FV 2.all
　　　"The children are all singing."

　　b. I- zingoma, a- bantwana ba-　zi-　cul- a zonke.]$_{IP}$
　　　10- 10.song　2- 2.child　　2.SBJ- 10.OBJ- sing- FV 10.all
　　　"The songs, the children are singing them all."

Curiously, however, a quantifier associated with a raised DP locative cannot be stranded inside IP:

(405) a. I- zikole zi-　ya- fund- el-　a]$_{IP}$ zonke.
　　　8- 8.school 8.SBJ- FOC study- APPL- FV　　8.all

　　b. ∗ I- zikole zi-　fund- el-　a zonke.]$_{IP}$
　　　8- 8.school 8.SBJ- study- APPL- FV 8.all
　　　"The schools are all studied at."

This fact seems difficult to account for under an analysis where the DP locative merges under the agent in the same position as a PP locative. But under the high applicative merge analysis, these facts can be accounted for by assuming that the lowest position in which a quantifier can be stranded is below the high locative position (Loc1P). Subject and object quantifiers can thus be stranded because this is a position through which they can move. A high locative, however, cannot strand its quantifier there, because that would require lowering the quantifier to the stranding position.

---

[9]On the basis of an incomplete Xhosa paradigm from Plessis and Visser (1992), everything said here of *-onke* "all" can probably be extended to *-odwa* "alone, only", as well.

Nsenga locatives and passivization. Cross-linguistic evidence from Nsenga also points to the ability of the locative applicative to be merged either below or above the subject. Nsenga is a Bantu language spoken in Malawi. Nsenga[10] exhibits two relative orderings of the locative applicative and passive suffixes, which correspond to a syntactic asymmetry (Simango 1995).[11] Assuming two merge positions of the locative will allow us to both maintain the Mirror Principle (Baker 1988) and explain the syntactic asymmetry.

With the morpheme ordering V-Appl-Psv, the direct object cannot be passivized, while the locative can, as shown in (406):

(406)   Nsenga locative and passive (Simango, p. 258)

    a. * Mwana ∅- e- timb- *il-* *iw-* a pa lukolo (na Tombi).
       1.child 1.SBJ- PST- beat- APPL- PSV- FV on porch   by Tombi

      "The child was beaten on the porch by Tombi."

    b. Pa lukolo p- e- timb- *il-* *iw-* a mwana (na Tombi).
       on porch SBJ- PST- beat- APPL- PSV- FV child   by Tombi

      "On the porch was beaten the child (by Tombi)."

Both the morpheme ordering and this syntactic fact are those predicted if the Appl morpheme is the low locative head (Loc2^0), as shown in the way the verb stem is built in (407):

(407)

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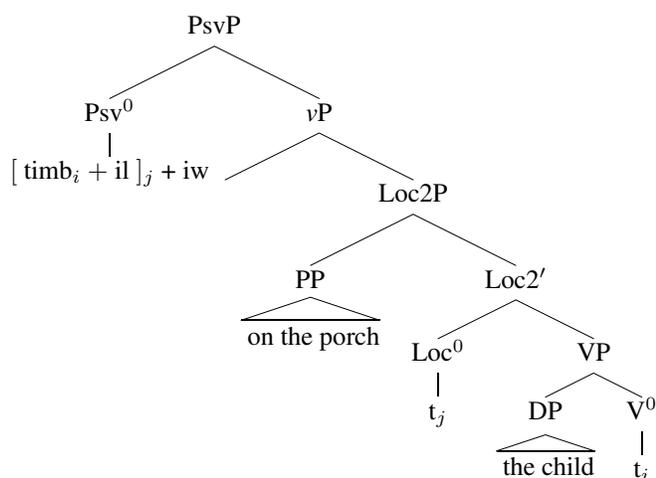
[10]The same is probably also true of Chewa. Simango's dissertation deals with both Nsenga and Chewa, but he does not always make clear if and when they differ syntactically.

[11]Simango's Nsenga glosses have been modified to be uniform with the Zulu glosses.

These are the same morpheme ordering and passivization facts as for benefactive applicative and passive in Nsenga.[12] Since the benefactive is generally assumed to merge below the agent (as in Ngonyani (1996)), it is natural that a locative merged in the same region as the benefactive behaves in a similar fashion.

In contrast with the V-Appl-Psv order just described, with the morpheme ordering V-Psv-Appl, both the direct object and the locative applicative argument can passivize:

(408) a. Mwana ∅- e- timb- *iw- il-* a pa lukolo (na Tombi).
      1.child   1.SBJ- PST- beat- PSV- APPL- FV on porch   by Tombi

      "The child was beaten on the porch by Tombi."

    b. Pa lukolo p- e- timb- *iw- il-* a mwana (na Tombi).
      on porch   SBJ- PST- beat- PSV- APPL- FV child   by Tombi

      "On the porch was beaten the child (by Tombi)."

This yields the following contrast:

(409) a. Mwana ∅- e- timb- *iw- il-* a pa lukolo (na Tombi).
      1.child   1.SBJ- PST- beat- PSV- APPL- FV on porch   by Tombi

      "The child was beaten on the porch by Tombi."

    b. ∗ Mwana ∅- e- timb- *il-* *iw-* a pa lukolo (na Tombi).
      1.child   1.SBJ- PST- beat- APPL- PSV- FV on porch   by Tombi

Both the morpheme ordering and this syntactic fact are those predicted if the $Appl^0$ morpheme is the $Loc1^0$ (high locative) head, an analysis which is essentially the same as Simango's own:

(410)

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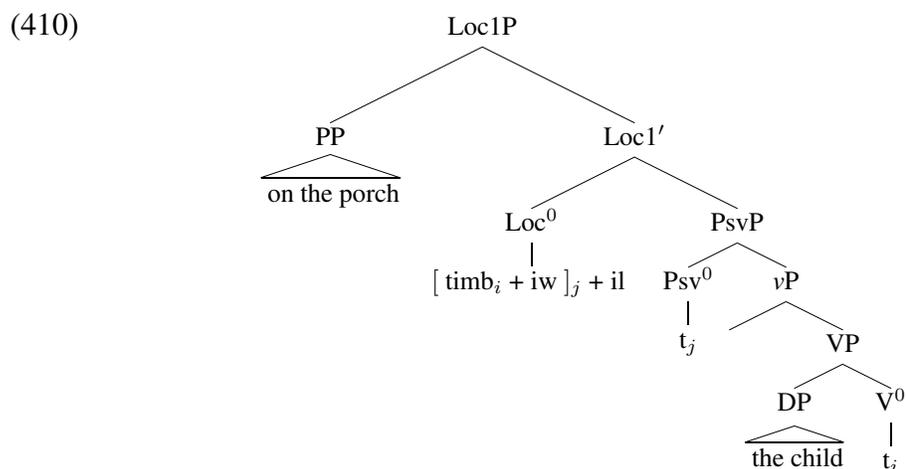
[12]Simango states this explicitly (p. 250), although he does not provide an exact minimal pair for the two orders for benefactives.

Nsenga thus provides support to the analysis presented for Zulu by showing the existence of two distinct locative applicative positions, by correlating the morphological ordering and a syntactic fact in a way that directly follows from the two proposed merge positions.

6.5 Conclusion

DP locative applicative arguments have been shown to behave quite unlike other non-agent arguments in Zulu—beneficiaries, reasons, and even PP locative applicatives. It was argued that these asymmetries could be explained by assuming that the DP locative was higher than the agent in a sub-IP position. Data involving quantifier stranding was taken to suggest that the DP locative is merged in a position above the agent rather than moved to such a position. While such a conclusion may seem somewhat unusual, it should not be entirely surprising, given that we are already familiar with another valency-increasing head which is merged above an agent, namely the causative head Caus^0.

CHAPTER 7

Conclusion

In the preceding chapters we discussed a variety of morphosyntactic issues bearing on the Zulu verb. In the first chapter, we laid out our theoretical assumptions, the most important of which being that constituents are adjoined only to the left and that words are composed by assembling morphemes transparently in the syntax.

In chapter 2, we considered how the macrostem is composed by first building the verb stem from a verb root, adding valence-changing suffixes as necessary, such as causative, applicative, reciprocal, and passive. It was shown that at this level of morphology, either a head-movement analysis or an analysis involving phrasal movement can be assumed, but that certain problems arise regardless, involving morpheme reorderings and the formalization of the (canonically) reciprocal suffix *-an*. After the verb stem is built, an object marker can be prefixed to the verb stem. Under our syntactic assumptions, the resulting macrostem must be a phrasal constituent rather than a complex head. Empirical evidence for this was presented from Zulu. First, it was noted that certain types of interactions occur between the verb root and suffixes for which no analogous prefix/root interactions exist. And more specifically, a variety of evidence was presented to argue that the reciprocal suffix *-an* must be merged at a point lower in the syntactic structure than prefixal object markers, including the reflexive marker *zi-*.

In chapter 3, subject and object agreement patterns and the long/short verb dichotomy was used to argue that non-agreeing subjects and objects are lower than those that agree. The data was shown to be best accounted for in a system employing the specifier/head relation as the only agreement configuration. Even if a non-local relation such as AGREE is available in Universal Grammar, such a relation does not seem to be employed in Zulu.

In chapter 4, the morphology of the inflectional domain was discussed, comprising all prefixes preceding the object marker. These include prefixes encoding subject agreement, negation, mood, submood (participial and principal), and aspectual modifiers. The final suffix was also discussed. It was shown that many different dependencies are active in the inflectional domain, including dependencies between prefixes and the final suffix. These dependencies take the form of stem selection, coöccurrence restrictions between prefixes, coöccurrence restrictions between prefixes on the one hand and the final suffix on the other, and allomorphy dependent on adjacency.

Several particulars of Zulu morphology were tackled. It was argued that there are good extra-theoretical reasons not to assume that the Zulu verb word is a complex head. It was shown that the final suffix cannot be decomposed in a transparent fashion, even though decomposition suggests itself in certain cases. Parallels were drawn between verbal and non-verbal predicates. Competing analyses were evaluated for "imperatives" with object markers, and the "plural imperative suffix" was argued to be a plural addressee clitic.

Chapter 5 took up a syntactic analysis of the Zulu long and short verb forms. The short/long alternation has been shown not to involve focus features in Zulu, as might be true for some other Bantu languages. An analysis was pursued which both respects the Linear Correspondence Axiom and predicts the observed phonological phrasing (and other constituency evidence).

And finally, in chapter 6, it was shown with the DP and PP locatives that certain morphosyntactic phenomena related to valence-changing verb extensions can be understood if it is seen that they can be merged in different orders with respect to each other. The two positions posited for the Zulu locative applicative were related to a transparent morphological alternatation in Nsenga, showing that what might at first glance be seen as an arbitrary morphological reordering actually reflects two different syntactic structures, even though no semantic consequence is apparent.

APPENDIX A

Abbreviations

A.1 Abbreviations used in the glosses

Subject and object markers in the glosses follow the following conventions. For first and second person the gloss indicates person and number as 1S, 1P, 2S, or 2P. For third person, only the noun class number is indicated, without S or P. Thus, 1S.OBJ indicates a first person singular object marker, while 1.OBJ (without the *s*) indicates a noun class 1 (third person) object marker.

Here is a list of other abbreviations used in the glosses:

appl Applicative (benefactive, reason, locative, etc.).

caus Causative.

cop Copula.

foc Focus.

fut Future.

fv Final vowel (a traditional term in the Bantu literature). This is used for the final suffix on a verb when no single particular feature of that suffix (such as negation or perfect aspect) is obvious.

loc Locative.

neg Negative.

nom Nominalizer. Nominative.

obj Object.

perf Perfect.

pres Present.

pst Past.

psv Passive.

recip Reciprocal.

rel Relative.

sbj Subject.

sbjnct Subjunctive.

A.2   Other abbreviations

AgrOP Object agreement phrase.

AgrSP Subject agreement phrase.

Aux Auxiliary. This is also the syntactic label used for the Bantu final suffix.

DP Determiner phrase. Often more loosely referred to here as "noun phrase".

EPP Extended Project Principle. A head which requires something in its specifier is said to have an EPP feature.

ISZ2 *IsiZulu Sethu 2* (Kheswa 1996).

LCA Linear Correspondence Axiom (Kayne 1994). See page 1 for discussion.

OM Object marker.

PP Prepositional phrase.

SM Subject marker.

SVO Subject Verb Object word order.

T Tense.

TopP Topic phrase.

V Verb.

VocP Vocative phrase.

VOS Verb Object Subject word order.

***v*P** "Little vee pee", the projection in which agentive and similar subjects are introduced.

A.3 Abbreviated citations

Biblical references are all from *IBhayibheli Elingcwele* (Bible Society of South Africa 1959).

Khumalo's dissertation was published in two parts. These are referred to as "Khumalo I" (Khumalo 1981) and "Khumalo II" (Khumalo 1982). The dissertation is referred to simply as "Khumalo" when no particular page or portion is referred to.

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