

The Zulu Verb Within the Constraints of the LCA

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1 Zulu verbs and non-verbal predicates

This talk will address the dependencies between various features and morphological pieces within Zulu verb forms and non-verbal predicates.¹

To get us started, here are some examples of the sorts of words we'll be looking at:

- (1) a. a- ka- sa- cul- i
NEG- 1.SBJ- still- sing- NEG
“she doesn't sing anymore”
- b. a- ka- se- khona
NEG- 1.SBJ- still- there
“she's not there anymore”
- c. uma e- nge- cul- e...
if 1.SBJ- NEG.POT- sing- NEG
“if she can't sing...”

These three forms exhibit a number of intermorphemic dependencies which are not phonological. What are the dependencies? What relationships must the language be aware of to produce the correct form?

- a. Each of the words in (1) has a negative element preceding the content morpheme (SING or THERE), but only the forms (1a) and (1b) also have a negative element after the content morpheme. What does the language need to be aware of to determine whether the form receives this final negation?
- b. The forms (1a) and (1c) both have a final negation element, but in one form it's *i* and in the other it's *e*. What determines which form final negation takes?

¹ Some of the data used in this handout is taken from Beuchat (1966) and Khumalo (1981) and (1982).

Non-verbal predicates share many morphological properties with verbs in Zulu. Here are examples of the types of non-verbal predicates we will consider here:

(2) Adjectives

si- ba- khulu, a- si- ba- khulú
 1p.sbj- 1- big, neg- 1p.sbj- 1- big=neg

“we’re big; we aren’t big”

(3) Locatives

si- khona, a- si- kho(na)
 1p.sbj- there, neg- 1p.sbj- there

“we’re there, we’re not there”

(4) Predicate nominals

ngi- ng- u- mfana, a- ngi- ng- u- mfana
 1s- cop- 1- 1.boy, neg- 1s- cop- 1- 1.boy

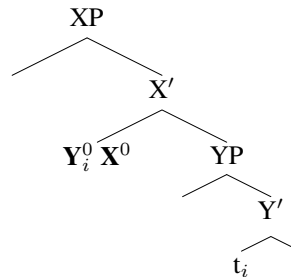
“I’m a boy; I’m not a boy”

1.1 Bantu verb words as phrases

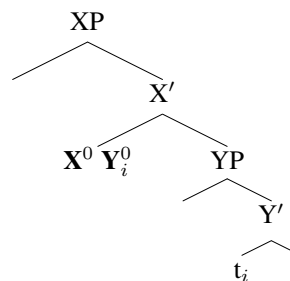
Two assumptions force us to adopt the view that Zulu verb words are not complex heads:

- a. This talk will assume the constraints on movement imposed by Kayne’s (1994) Linear Correspondence Axiom, which precludes right-adjunction of any overt head to another overt head:

(5) Left adjunction (allowed)



(6) Right adjunction (disallowed)



b. There are a series of prefixes in Zulu called “object markers” which immediately precede the verb stem:

(7) a. Without object marker

ngi- cul- ile
1s.sbj- sing- perf

“I sang”

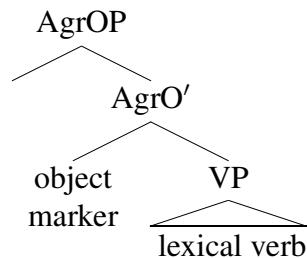
b. With object marker

ngi- zi- cul- ile
1s.sbj- 10.obj- sing- perf

“I sang them (e.g. the songs)”

It is assumed that the object marker is merged somewhere above the lexical verb and any valence-changing morphology (applicative, passive, etc.).

(8)



Orthography. Orthography is suspect. We cannot assume that something is a head just because it is written as a single word. Languages using similar verbal morphology use different conventions for dividing the string into orthographic words:

(9) a. ba a di rat- a (Northern Sotho (D. Ziervogel 1977))

2.SBJ- ya 8.OBJ- like- FV

b. ba- ya- ku- thand- a. Zulu

2.SBJ- ya 15.OBJ- like- FV

“they (the children) like it (the food)”

Internal finality. There are certain morphemes which can be treated consistently as final if head-hood is not presumed. Examples of these are the Zulu final negation morpheme *-i* in future forms and Swahili *o*-forms in synthetic relatives (Buell 2002):

(10) a. Full and contracted forms of the Zulu immediate future tense

Affirmative

Contracted sizocula

Full sizokucula

Negative

Contracted asizucula

Semi-contracted asizukucula

Full asiziyukucula

- b. [a- si- z- i]y [u- ku- cul- a]
 NEG- 1P.SBJ- come- NEG EPEN 15- 15- sing- FV

(11) Swahili *o* forms

- a. ni- na- cho
 1S.SBJ- with- 7.o
 “I have it”
- b. si- vyo
 not- 8.o
 “it’s not like that”
- c. ni- li- ku- wa- ko
 1S.SBJ- PAST- ku- be- 16.o
 “I was there”
- d. kitabu ni- li- cho- soma
 7.way 1S.SBJ- PAST- 7.o- read
 “the book I read”

Imperatives. Assuming that a verb stem with an object marker is a phrase rather than a head allows us to give a principled explanation of the fact that object markers are incompatible with morphological imperatives in Zulu:

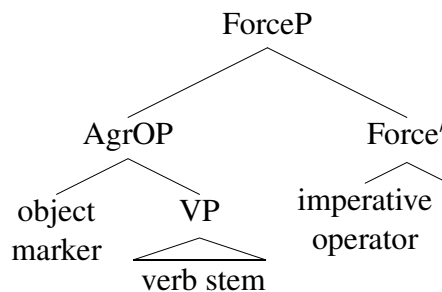
(12) Zulu

- a. cul- a!
 sing- FV
 “sing!”
- b. zi- cul- e; *zi- cul- a
 6.OBJ- sing- SBJNT 6.OBJ- sing- FV
 “sing them!”

The explanation is that the imperative can neither pied pipe its object marker to the C domain, nor can it strand it:

- (13) a. imperative cannot pied pipe its object marker

*



- b. object marker cannot be stranded: *cula zi!

And even if... Even if the view is taken that Zulu verbs are heads, we still want to understand the dependencies which hold between the various parts of this complex head.

1.2 Present indicative

(14) Zulu present indicative verb forms

	Principal	Participial
Affirmative long	SM ^{prin} -ya-V-a <i>uyacula</i>	
short	SM ^{prin} -V-a <i>ucula</i>	SM ^{part} -V-a <i>ecula</i>
Negative	a-SM ^{neg} -V-i <i>akaculi</i>	SM ^{part} -ngà-V-i <i>engaculi</i>

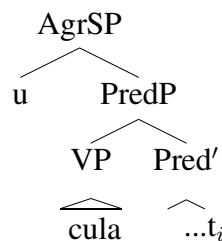
The various forms of the present indicative verb can be translated into English using either the present simple or present continuous tense:

- (15) U- cul- a i- zingoma.
1.SBJ- sing- FV 10- 10.song
“She sings songs. She’s singing songs.”

1.2.1 Present indicative principal

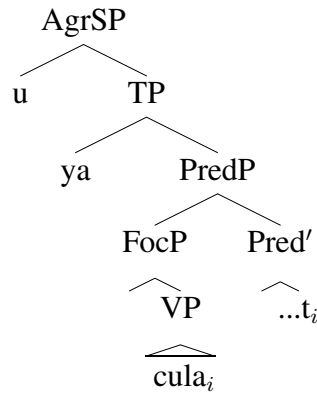
- (16) a. u- cul- a kahle]
1.SBJ- sing- FV well
“she sings well”

b.



- (17) a. u- ya- cul- a
1.SBJ- ya- sing- FV
“she sings”

b.



The long/short alternation. An alternation exists on affirmative present tense and recent past tense verbs. Intuitively, the short form is used when the verb is followed some element within a particular constituent. The long form is used when nothing follows the verb within this constituent. Assuming that the alternation relates to a lower focus projection. Thus, *ya* is shown as a T^0 head which needs a FocP (rather than a VP) in the specifier of its complement.

(18) a. Present principal

i. Long form

U- ya- cul- a \emptyset .

1.SBJ- *ya*- sing- FV

“She sings.”

ii. Short form

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 \emptyset / i- ngoma / kahle / kakhulu...

if 1.SBJ- sing- FV 9- 9.song well much

“If she sings \emptyset / a song / well / a lot...”

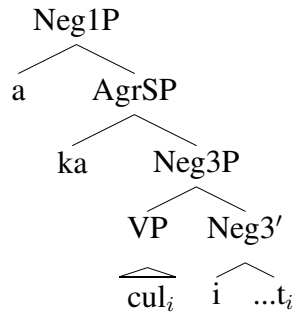
1.2.2 Present negative principal

(19) a. a- ka- cul- i

NEG- 1.SBJ- sing- NEG

“she doesn’t sing”

b.



Subject marker and negative *a*. The Neg1⁰ head *a* is always followed by an SM^{neg} subject marker. (Here it's *ka* for noun class 1, rather than *u*.) This constitutes a selectional requirement.

Two negators. It will be noted that there are two negators. A Neg3 head never seems to occur in Zulu without some type of concomitant earlier negation.

No *ya*. We can claim that *ya* is a positive polarity item (analogous to a negative polarity item). Note that the polarity dependence is a non-local relation, since the appearance of *ya* is prevented by a head which does not select it. Thus, the dependence must be expressed using c-command.

1.3 The Principal and Participial Submoods

The principal submood is used in matrix contexts, as well as in such embedded contexts as THAT clauses:

(20) 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.”

The participial submood is used after certain complementizers, such as *uma* “if, when”, in a type of relative clause we will call “synthetic”, and in depictives:

(21) Examples of the participial submood

- a. 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. 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.”

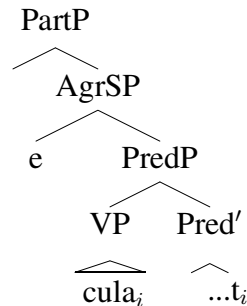
- c. Ngi- ba- bon- ile be- nga- cul- i.
 1S.SBJ- 2.OBJ- see- PERF 2.SBJ- NEG- sing- NEG
 “I saw them not singing.”

Note that the Zulu participial submood is substantially different from what is called a participle. While participles are tenseless forms which never bear subjectival agreement (complete with person features), the Zulu participial mood bears full subject agreement and exhibits a variety of simple tenses (present, recent past, stative, remote past, and potential), as well as a great number of complex tenses (including future).

1.3.1 Present affirmative participial

- (22) a. uma e- cul- a
 if 1.SBJ- sing- FV
 “if she sings”

b.



Selection of subject marker. As described, the participial submood employs a subject marker different from the principal. This is captured with the Part⁰ head selecting the appropriate AgrS⁰ head.

Participial mood as additional structure. There are two types of evidence which suggest that the participial submood incorporates more structure than the principal.

- a. First, only the principal submood subject clitics have a silent variant used with agreeing adjectives.

- (23) a. mncane
 1.small
 “she’s small”

- b. e- mncane
 1.SBJ- 1.small
 “she being small...”

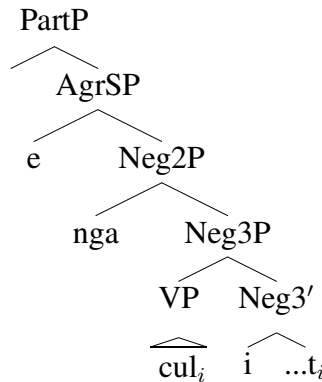
- b. While the final tone of present forms are identical across the principal and participial submoods, the affirmative forms in the recent past tense differ in tone. The *ile* suffix of the principal form is toneless, while the participial suffix *ile* is associated with a falling tone. Low tones are actually simply default tones, and thus the participial submood seems additive, while the principal is unmarked and default.

No *ya*. The participial differs from the principal in lacking the long/short alternation. The participial always lacks the *ya* morpheme. This can be expressed as a selectional property of the subject marker.

1.3.2 Present negative participial

- (24) a. uma e- nga- cul- i
 if 1.SBJ- NEG- sing- NEG
 “if she doesn’t sing”

b.



Selection of *nga*. The Neg2⁰ head is selected by the participial subject marker.

No other new dependencies. We can note these points, though:

- The Neg3⁰ head *i* has no apparent dependency on submood (the presence or absence of PartP), since it is used for both of them.
- The Neg3⁰ head *i* has no apparent dependency on whether Neg1 or Neg2 is used as a preceding negator.

1.3.3 Non-verbal predicates

In the present indicative, non-verbal predicates appear in both affirmative and negative polarity, and in both the principal and participial submoods, as shown here by a locative:

- (25) Zulu present indicative forms of *kho(na)* “there”

	Principal	Participial
Affirmative	SM ^{prin} -LOC <i>ukhona</i>	SM ^{part} -LOC <i>ekhona</i>
Negative	a-SM ^{neg} -LOC <i>akakho(na)</i>	SM ^{part} -nge-LOC <i>engekho(na)</i>

Negative *nga/nge*. It will be noted that the negative morpheme before the locative (and other non-verbal predicates) is *nge* rather than *nga*. This dependency can be seen as a categorial selectional restriction of *nga/nge*.

The long/short alternation. The *ya* morpheme found in the long form of the affirmative present principal verb is not found with any other type of predicate:

- (26) Present principal: the distribution of *ya*
- | | | |
|---------------------|-----------------|----------------------|
| Verb: | siyacula] | “we sing” (long) |
| | sicula...] | “we sing...” (short) |
| Locative: | si(*ya)khona | “we’re there” |
| Agreeing adjective: | si(*ya)bancane | “we’re little” |
| Nominal: | si(*ya)bantwana | “we are children” |

This can be seen as a selectional property of *ya*.

Final negation. The present principal and indicate forms (as well as of the infinitive and subjunctive) employ the final suffix *í*, which is associated with a high tone. Similarly, negative adjectival and stative predicates employ a final floating high tone:

- (27) a. Tensed verbal predication: ...*í*
- a- ba- cul- i
 NEG- 2.SBJ- sing- NEG
 “they don’t sing”
- b. Non-verbal/non-tensed predication: ...´ (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”

Durative *sa/se*. The durative *sa/se* morpheme can occur between the subject marker and the macrostem. The durative prefix *sa* has the meaning of “still” in the affirmative and of “no longer, not any more” in the negative:

- (28) Durative *sa*
- a. U- Siphó u- sa- cul- a le- ngoma.
 1- 1.Siphó 1.SBJ- DUR- sing- FV that:10- 10.song
 “Siphó still sings that song.”
- b. U- Siphó a- ka- sa- cul- i le- ngoma.
 1- 1.Siphó NEG- 1.SBJ- DUR- sing- NEG that:10- 10.song
 “Siphó doesn’t sing that song any more.”

A related form *se* occurs with non-verbal predicates:

- (29) *Sa/se*
- | | | |
|---------------------|-----------------|------------------------|
| Verb: | sisacula | “we still sing” |
| Locative: | sisekhona | “we’re still there” |
| Agreeing adjective: | sisebancane | “we’re still small” |
| Nominal: | sisengabantwana | “we’re still children” |

The durative prefix *sa* is compatible with present tense interpretation, but the prefixes *sa* and *ya* cannot coöccur:

- (30) a. *ucula]
 b. uyacula] “he sings”
 c. usacula] “he still sings”
 d. *uyasacula]
 e. *usayacula]

While a powerful morphology can account for this fact by assigning the same slot to *ya* and *sa*, a syntactic approach will need to find a different type of account.

This problem seems similar to certain coöccurrence restrictions between elements within a close region of the structure. (?) has shown that in Standard French, *pas* and *plus* occupy difference positions, and yet they cannot coöccur:

- (31) a. Il ne chante pas. “He doesn’t sing.”
 b. Il ne chante plus. “He doesn’t sing anymore.”
 c. *Il ne chante pas plus.

This fact shows that the “slot” phenomenon is not confined to morphology proper.

1.4 Recent past and stative

- (32) Zulu recent past verb forms

	Principal	Participial
Affirmative long	SM ^{prin} -V-ile <i>uculile</i>	SM ^{part} -V-île <i>eculile</i>
short	SM ^{prin} -V-ê <i>ucule</i>	SM ^{part} -V-ê <i>ecule</i>
Negative	a-SM ^{neg} -V-anga <i>akaculanga</i>	SM ^{part} -ngà-V-ángà <i>engaculanga</i>

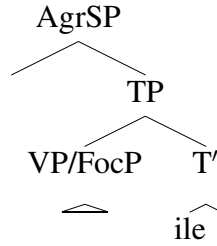
- (33) Zulu stative verb forms

	Principal	Participial
Affirmative	SM ^{prin} -V-ile <i>uculile</i>	SM ^{part} -V-île <i>eculile</i>
Negative	a-SM ^{neg} -V-ilé <i>akaculile</i>	SM ^{part} -ngà-V-ilé <i>engaculile</i>

It is worth noting that the long principal affirmative suffix *ile* is tonally distinct from the long participial suffix *île*.

It will be assumed that the affirmative recent past has a structure in which the VP/FocP remnant raises above T⁰:

(34)



The recent past is compatible with expressions of time which refer to up to a couple of days in the past, while the stative describes a present state of affairs resulting from an event in the past:

(35) a. Recent past

a- ka- lamb- anga izolo.
 neg- 1.SBJ- get.hungry- NEG.PERF yesterday
 “she didn’t get hungry yesterday”

b. Stative

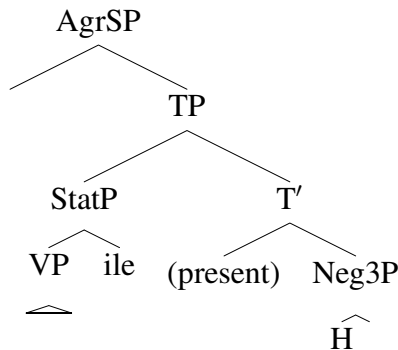
a- ka- lamb- ilé manje
 NEG- 1.SBJ- get.hungry- PERF yesterday
 “she didn’t get hungry yesterday”

Negation. Note that the recent past and the stative use different final negation morphemes. While the recent past uses the morpheme *anga*, which encodes both negation and past tense, the stative uses what could be called a floating high tone, just as used with an adjective:

(36) si- lamb- ile; a- si- lamb- ilé
 1P.SBJ- get.hungry- PERF, NEG- 1P.SBJ- get.hungry- PERF=NEG
 “we’re hungry; we’re not hungry”

Considering the fact that the stative employs a negation strategy used for present tense, and that it describes a present state of affairs, unlike the recent past, I would like to suggest that the stative morpheme raises with the VP above Neg3P:

(37)

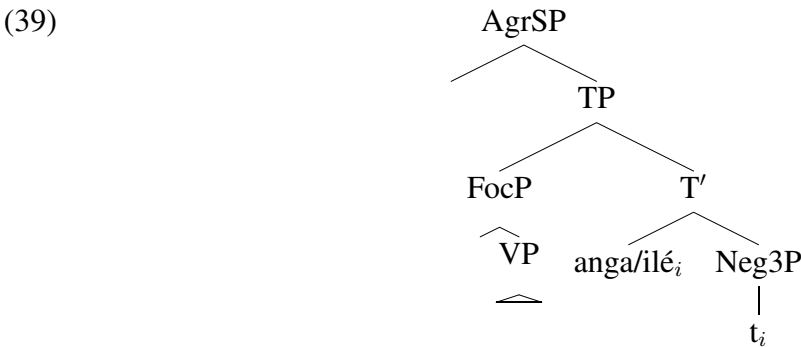


Under this conception, StatP is analogous to an English participle.

The long/short alternation. 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 only manifest in the recent past, not in the stative. In the stative, the *ê* variant is not used:

- (38) 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”

Write me!



Submood. 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 (*île*) in the participial. This is an interesting dependency, because, depending on the assumptions made, it can be seen as non-local, since the macrostem intervenes between the I domain prefixes and the final suffix which depends on it.

The dependency between submood and *ya* of the long affirmative principal present has already been mentioned.

SM/submood and the final suffix. In the affirmative, there is a dependency between the submood and the final suffix, since the principal suffix *ile* is toneless while the participial *île* is associated with a falling tone.

2 Conclusion

Intermorphemic dependencies in Zulu show sensitivity to a great number of features, including:

- polarity
- focus properties
- submood
- category

These can be handled using syntactic notions such as

- selection
- c-command

However, some of the dependencies involve non-local dependencies for feature not customarily viewed as being licensed by c-command, such as the participial submood feature.

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