

Transparency Effects in Zulu Reason Applicative Questions*

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There are three reason question (*why* question) strategies in Zulu, a Bantu language (S40) spoken primarily in South Africa, namely, the reason applicative strategy illustrated in (1a), postverbal *ngani* “why” used in negative clauses as in (1b), and a cleft-like strategy as in (1c):¹

- (1) a. U-cul-el-a-ni?
2S-sing-APPL-FV-what
“Why are you singing? What are you singing for?”
b. A-wu-cul-i nga-ni?
NEG-2S-sing-FV for-what
“Why aren’t you singing?”

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- c. Yi-n' indaba u-nga-cul-i?
COP-what 9.story 2S-NEG-sing-FV
“Why aren’t you singing? Why is it that you’re not singing?”

These different strategies give rise to several interesting syntactic, morphosyntactic, and semantic issues. Here we are concerned with the linear position and interpretation of reason question morphology in biclausal constructions in the applicative strategy in (1a). It will be argued that the reason applicative strategy provides evidence that some infinitival complement constructions in Zulu show transparency effects akin to what have been called restructuring environments in Romance languages.

1. Reason applicatives: description

The applicative illustrated in (1a) is a very common reason question strategy in Zulu. In the Bantu languages, the applicative is a suffix that licenses an extra argument to the thematic structure of the verb stem. The three basic types of applicatives which can be differentiated in Zulu on the basis of syntactic or morphosyntactic properties are benefactive (2a), locative (2b), and reason (2c):

- (2) a. Ngi-cul-*el*-a uMama ingoma.
1S-sing-APPL-FV 1.mother 9.song
“I’m singing Mother a song. I’m singing a song for Mother.”
b. Ngi-dl-*el*-a e-sitshe-ni.
1S-eat-APPL-FV LOC-7,plate-LOC
“I’m eating from a plate.”
c. Ngi-m-thand-*el*-a ubuqotho bakhe.
1S-1-love-APPL-FV 14.honesty 14.her
“I like her for her honesty.”

It is standardly assumed (see, for example Nkonyani (1996)) that the applicative suffix is a syntactic head in the thematic domain whose argument is licensed in its specifier. Accordingly, in the sentence in (2c), the applicative suffix *-el* is merged in the thematic domain (such as just below or above vP, precise attachment sites vary) and its argument *ubuqotho* is introduced in its specifier, while independently needed verb movement results in the word order observed. Similarly, in the reason applicative question in (1a), the applicative argument is

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the *Wh* clitic *-ni* “what”, which has been merged in the specifier of the applicative head *-el*.

We now turn to the clause of construal, that is, the question as to which clause the reason is interpreted in, beginning with embedded tensed clauses. To see what this means, consider the English tensed complement clause construction in (3a). *Why* in this question can be interpreted in either the lower clause, modifying *crying*, as required by the context in (3b), or in the higher clause, as in (3c), modifying *think*:²

- (3) a. Why do you think the baby is crying?
 b. Look! The baby is crying! Why_i do you think [_{CP} it is crying _i?]³
 c. It is obvious to everyone else that the baby is laughing.
 Why_i do you think _i [_{CP} it is crying?]

Now consider a simple Zulu sentence with a tensed clause complement:

- (4) Ngi-(ya-)cabang-a ukuthi uThandi u-ya-khal-a.
 1S-DJ-think-FV that 1.Thandi 1-DJ-cry-FV
 “I think that Thandi is crying.”

If we question this sentence with a reason applicative, the applicative morpheme and *-ni* “what” appear in the clause that is questioned:

- (5) a. U-cabang-*el-a-ni* ukuthi uThandi u-ya-khal-a?
 2S-think-APPL-FV-what that 1.Thandi 1-DJ-cry-FV
 “Why_i do you think _i [Thandi’s crying?]”
 b. U-cabang-a ukuthi uThandi u-khal-*el-a-ni*?
 2S-think-FV that 1.Thandi 1-cry-APPL-FV-what
 “Why_i do you think [Thandi’s crying _i?]”

In other words, in a biclausal structure in which the complement clause is finite, the reason question is interpreted in the clause on whose verb the applicative morphology appears.

Now we will consider infinitival complements. Note how in English a sentence-final adverb or prepositional phrase can modify either *want* or the complement clause:

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- (6) a. I wanted to graduate with honours.
b. *I wanted with honours to graduate.
c. I wanted to graduate very badly.
d. I wanted very badly to graduate.

In (6a), the prepositional phrase *with honours* modifies the verb *graduate* in the infinitival complement, while in (6c) the adverb *badly* modifies the higher verb *want* (or, more accurately, the phrase *want to graduate*). Note that while *very badly*, may follow either *want* or *want to graduate*, *with honours* can only follow *graduate*: it is not allowed to move up into the selecting clause. The sentences in (7) show that a reason clause can modify either *want* or its complement (and hence fall under the scope of *want*):

- (7) a. I want to be praised by my peers because (as you know) they have found my ideas useful. *reason > want*
b. I want to be praised by future generations because (*as you know) they have found my ideas useful. *want > reason*

In an analogous reason question, though, the reading where *why* or *what for* modifies *want* is by far the most natural one. Accordingly, the question in (8) is interpreted as asking about a reason for wanting to do something rather than a reason for singing, as shown by the infelicitousness of a response where the reason falls under the scope of *want*:

- (8) Q: Why do you want to be praised?
A: ?# Because future generations have found my ideas useful.

Consider now the Zulu sentence in (9), in which the verb *funa* “want” takes an infinitival complement (which appears with noun class 15 morphology, as do infinitives in most Bantu languages):

- (9) Ngi-fun-a uku-zi-bon-a.
1S-want-FV 15-10-see-FV
“I want to see them.”

Considering this potential availability of two different readings, it is perhaps not surprising that the reason applicative can attach either to *funa* or to the verb in its infinitival complement, as in (10):

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- (10) a. U-fun-*el-a-ni* uku-zi-bon-a? *reason > want*
 2S-want-APPL-FV-what 15-10-see-FV
- b. U-fun-a uku-zi-bon-*el-a-ni*? *reason > want*
 2S-want-FV 15-10-see-APPL-FV-what
 “Why do you want to see them?”

What is surprising, though, is that this alternation does *not* reflect an interpretive distinction. In both (10a) and (10b) the reason scopes over WANT, yielding a question which asks the reason for wanting rather than a reason for seeing. Thus, the observed alternation does not correspond to the potential semantic distinction just illustrated in English in (7). Rather, both variants have the interpretation which was shown in (8) to be the one available for *want*+infinitive constructions, while we would expect only (10a) to have this interpretation. Attachment of the applicative to the verb heading the complement clause with this interpretation is puzzling. It is a commonplace affair in syntax for an element to appear in a position higher than where it is interpreted, a situation which typically results from the element moving from the position in which it is interpreted to a higher one, but here the *Wh* phrase and the applicative morpheme thematically licensing it appear in a position not higher but lower than where they are interpreted.

In a way similar to *funa* “want”, the reason applicative can also attach to the complement of certain aspectual auxiliary verbs, which abound in Zulu (see Slattery (1981) for a detailed description), as well as to the auxiliary itself. This is the case with *vamise* “do usually”, shown in (11), and *phonse* “almost do”:

- (11) a. Ngi-vamis-*el-e-ni* uku-vuk-a ekuseni kakhulu?
 1S-usually-APPL-FV-what 15-wake.up-FV in.morning very
- b. Ngi-vamis-e uku-vuk-*el-a-ni* ekuseni kakhulu?
 1S-usually-FV 15-wake.up-APPL-FV-what in.morning very
 “Why do I usually get up early?”

However, this alternation is not found with arbitrary verbs taking infinitival complements. As shown in (12), the reason applicative cannot attach to the verb heading the complement clause of *zama* “try”:

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- (12) a. U-zo-zam-*el-a-ni* uku-cul-a?
2S-FUT-try-APPL-FV-what 1S-sing-FV
b. *U-zo-zam-a uku-cul-*el-a-ni*?
2S-FUT-try-FV 1S-sing-APPL-FV-what
“Why will you try to sing?”

Furthermore, even with some aspectual auxiliary verbs the lower attachment site is ungrammatical:

- (13) a. Ni-man-*el-e-ni* ni-khulum-e nje ni-nga-cabang-anga?
2P-simply-APPL-FV-what 2P-speak-FV just 2P-NEG-think-FV
b. *Ni-man-e ni-khulum-*el-e-ni* nje ni-nga-cabang-anga?
2P-simply-FV 2P-speak-APPL-FV-what just 2P-NEG-think-FV
“Why do you simply talk without thinking?”

Attachment of the reason applicative to the complement clause of *funa*, as in (11b), is well-attested, with examples occurring even in Nyembezi’s (1970) textbook of Zulu, Nyembezi being an authority on standard Zulu. Some of my speakers noted that in this case, attachment to the complement verb was in fact more natural. With respect to the auxiliary verbs, speakers varied somewhat with respect to which verb followed which pattern, but all of them accepted attachment of the applicative to the complement verb in at least some cases. All informants rejected attachment to the complement of *zama* “try”.

Our description of reason applicatives can be concluded by saying that in constructions where a verb selects a tensed clause, the applicative suffix and *Wh* clitic *-ni* appear in the clause in which they are interpreted, but with infinitival complements the picture is more complicated. With some embedding verbs, such as *funa* “want” and certain aspectual auxiliary verbs, the reason applicative morpheme can appear either on the higher verb or, unexpectedly (considering its interpretation), on the verb heading the complement clause.

2. Analysis

Let us first consider the most clear-cut biclausal cases, those in which the selected clause is finite, as above in (5). Because these clauses have an overt complementizer and are finite, it is clear that the lower clause is a full CP. We

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observed that in a reason question the applicative morpheme *-el* and the concomitant clitic *-ni* “what” can appear in either clause, as schematised in (14):

- (14) a. [CP ... [AppIP *-ni* [AppI' *-el* ... [CP ...
 b. [CP ... [CP ... [AppIP *-ni* [AppI' *-el* ...

We also saw that the interpretation of the reason is different in these two cases. If the reason appears in the lower clause, as in (14a), the verb in the upper clause is excluded from the scope of the reason. Conversely, if the reason is in the upper clause, the scope of the reason includes the verb in the upper clause.

Now consider *zama* “try”, which takes an infinitival complement. This verb was shown in (12) not to allow the reason to appear in the lower clause. In the case where the reason would modify the verb in the upper clause, this can be explained by assuming that *zama* selects a CP, making this case identical to the selected tensed clause constructions schematised in (14). But why shouldn't it be possible to attach the reason within the lower clause with the reason falling within the scope of TRY? Note that English does not seem to allow extraction of *why* across a clause selected by *try*:

- (15) a. *Why_i did they try [to punish you _{-i}] ?
 b. [What offences]_i did they try [to punish you for _{-i}] ?

While the question in (15a) is grammatical, it cannot have the interpretation indicated (the one analogous to (15b)); it can only ask for a reason for trying. I propose that the ungrammaticality of (15b) is due to the same reason; for whatever reason, reasons do not like to be extracted over a clause boundary selected by TRY. Thus, just as with tensed clause complements, the reason must be interpreted in the clause in which it appears, and the fact that it cannot appear or be interpreted in the lower clause (as schematised in (14b)) is due to an independent reason. Due to that fact, only (14a) is possible.

Now we turn to cases like *funa* “want”, as in (10). The first case, where the reason appears attached to *funa* itself, can be handled just like the selected tensed clauses and like *zama* “try”. The reason appears and is interpreted in the higher of two complete clauses, as in (14a). But it is the second case which is problematic, where the reason appears attached to the selected infinitive while it contains WANT within its scope. Two analytical options would seem to be available. The first would be to allow both the applicative head and the clitic to move downwards into the complement clause, requiring two instances of a process prohibited under current syntactic assumptions. The second is to assume that the two clauses in some sense constitute a single domain, so that the

applicative merged in the thematic domain of the lower verb can take scope over the higher verb. In other words, an apparently biclausal structure is behaving as a single clause with respect to reason modification. Such phenomena are sometimes called “transparency effects”, because the clause boundary (if there actually is one) between the verbs can be said to be transparent or invisible, and the domain within which these transparency effects occur is sometimes called “a restructuring domain” (Rizzi 1978). I will here use “restructuring domain” merely as a convenient term to denote the environment in which phenomena such as clitic climbing and the low attachment of a reason applicative occur, rather than as suggestive of a particular analysis.

The most classic restructuring phenomenon is clitic climbing, in which the clitic (such as a direct object clitic) licensed by an infinitive complement verb attaches to the higher verb, as illustrated for Italian in (16):

- (16) a. Vorrei [finir-lo.]
 want.COND.1S finish.INF-it
 b. Lo_i vorrei [finire t_i.]
 it want.COND.1S finish.INF
 “I would like to finish it.”

In both sentences, the clitic *lo* is licensed by the verb *finire* in the complement clause, but in (16b) it has “climbed” into the higher clause. In the literature on Romance languages, the properties of restructuring domains are compared to those of canonical biclausal structures by considering pairs of sentences differing only in whether climbing has occurred.

My main proposal is that low attachment of reason applicative morphology in cases like (10b) in Zulu indicates a restructuring domain similar to the one in (16b) in Romance. With respect to how transparency manifests itself, clitic climbing and reason applications show different directionality: in the former, the clitic appears *higher* than expected, while in the latter, the applicative head and *Wh* clitic appear *lower* than expected.

Unfortunately, no Bantu languages (to my knowledge) exhibit clitic climbing, as shown here for Zulu, with a climbing object marker (thought by many to be a clitic) in (17) and a *Wh* clitic in (18):

- (17) a. Ngi-fun-a uku-yi-cul-a.
 1S-want-FV 15-9-sing-FV
 b. *Ngi-yi-fun-a uku-cul-a.
 1S-9-want-FV 15-sing-FV
 “I want to sing it.”

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- (18) a. U-fun-a uku-cul-a-*ni*?
 2S-want-FV 1S-sing-FV-what
 b. *U-fun-a-*ni* uku-cul-a?
 2S-want-FV-what 1S-sing-FV
 “What do you want to sing?”

Zulu thus lacks the tool so useful in Romance for controlling for restructuring domains. The arguments for my proposal are thus limited to these: the need for an explanation for the unexpectedly low attachment of the applicative morpheme and the *Wh* clitic in Zulu (which we have already seen), the fact that the semantic class of selecting verbs is similar in Zulu and Romance, the similarity to restrictions on adverbial modification in Romance, and facts concerning floating quantifiers. These will now be examined.

The types of verbs which show transparency effects in Romance languages include aspectual verbs such as *seguire* “continue” and desideratives like *volere* “want”, which is the same range of verbs as in Zulu. The Zulu aspectual verbs found to show transparency effects are all purely auxiliary verbs (that is, they cannot be used as main verbs).

We will now consider adverbial modification. Although Bantu languages are not usually thought of as exhibiting restructuring phenomena, the reason applicative pattern bears a strong affinity to temporal modification under clitic climbing in Italian.⁴ In an infinitive complement construction, if the clitic does not climb (indicating that the clauses do not constitute a restructuring domain), two distinct points in time can be specified with adverbial expressions (one point in time per clause) (Rooryck 2000; Napoli 1981). This situation is shown in (19a), where *oggi* “today” modifies the higher verb *vorrei* “would like”, while *domani* “tomorrow” specifies the time of the event denoted by the lower verb *finire* “finish” in the complement clause:

- (19) a. Oggi, vorrei finire-lo domani.
 today want.COND.1S finish.INF-it tomorrow
 b. (??Oggi,) lo vorrei finire domani.
 today it want.COND.1S finish.INF tomorrow
 “(Today) I would like to finish it tomorrow.”

However, if the clitic undergoes climbing as in (19b), then *vorrei* and its complement form a restructuring domain, and it is no longer possible to specify two distinct points in time for the two clauses. Within this single domain, only one point in time is available for specification. And closer to the Zulu case, it

appears that in Spanish, while it is possible to extract a reason from a selected infinitival clause, as in (20a), this is very difficult to do if the clitic has climbed, as in (20b):⁵

- (20) a. ¿Porqué_i querías [hacer- lo _{-i}] ?
 why want.2S.COND do.INF- it
 b. ?? ¿Porqué_i lo querías [hacer _{-i}] ?
 why it want.2S.COND do.INF
 “Why_i would you [want to do it _{-i}] ?”

(The interpretation where the question is extracted from the upper clause is available and more salient in both versions.) Note that while the temporal modifier case in (19b) and the reason in (20b) both involve a reduction in the points of modification under clitic climbing, the reductions operate in different directions. In (19b), it is a modification of the upper verb which is removed, while in (20b), it is that of the lower clause. The Spanish case in (20b) is thus parallel to that of Zulu, under the respective indicator of a restructuring domain (clitic climbing for Romance and low attachment of a reason for Zulu), reason modification of the upper clause is possible.

I will here assume Cinque (2000), who argues that verbs which admit transparency effects (like WANT) are auxiliary verbs which do not have any theta roles to assign and that there is no CP layer between the upper and lower verbs. I will assume, though, that when the reason is attached to the upper verb, that verb is a lexical verb (a V⁰), which takes a full clausal complement (21a), and that the upper verb is an argumentless auxiliary (labelled here as a volitional Mod⁰ head) only when the reason is attached to the lower verb as in (21b) is:

- (21) a. [CP [VP [AppIP -ni [AppI' -el [VP funa [CP ... [VP V⁰]]]]]]
 b. [CP ... [ModVolitional funa [VP [AppIP -ni [AppI' -el [VP V⁰]]]]]

The structure in (21a) is thus biclausal, while (21b) is monoclausal. Cinque himself wants to maintain that restructuring verbs have this characterisation whether or not transparency effects are visible, that is, that they always have the structure in (21b). We will now consider two phenomena which may be taken as evidence against this strong view.

Quantifier stranding in Zulu provides one phenomenon which shows a syntactic difference between high and low attachment of the reason applicative while varying for placement of reason applicative morphology. When the reason is attached in the upper clause, the quantifier *-onke* “all” can follow the upper

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verb, as in (22a), while no such quantifier can intervene when the reason is attached to the lower verb, as in (22b):

- (22) a. ? [_{CP} Ba-fun-*el-a-ni* bonke [_{CP} uku-hamb-a?]]
 2-want-APPL-FV-what 2.all 15-leave-FV
- b. * [_{CP} Ba-fun-a bonke uku-hamb-*el-a-ni*?]
 2-want-FV 2.all 15-leave-APPL-FV-what
 “Why do they all want to leave?”

This difference can be explained if we assume, as in (21), that (22a) is biclausal and (22b) monoclausal. In the monoclausal structure in (22b), there is no structural position available to host the quantifier between the higher verb and the position to which the lexical verb moves, while in (22a), *-onke* is attached somewhere between the position in which lexical *funa* has merged and the functional position below IP to which the verb moves. (Some verb movement is independently necessary to account for certain word orders (Buell 2005).)

Now let's compare the behaviour of reason applicatives to that of benefactive and locative applicatives. In contrast with the situation with reason applicatives, attachment to the higher verb is not available to the benefactive and locative. These applicatives have to attach to the complement verb, as shown in (23) and (24):

- (23) a. U-fun-a ukukul-*el-a* *bani*?
 2-want-FV 15.sing-APPL-FV who
- b. *U-fun-*el-a* *bani* ukucula?
 2S-want-APPL-FV 1.who 15.sing
 “Who do you want to sing for?”
- (24) a. U-fun-a ukudweb-*el-a-phi*?
 2-want-FV 15.draw-APPL-FV-where
- b. *U-fun-*el-a-phi* ukudweba?
 2S-want-APPL-FV-where 15.draw
 “Where do you want to draw? What do you want to draw on?”

Under the analysis given for reason applicatives, why shouldn't the benefactive and locative applicatives display the same variability as their reason counterpart? To understand this, we must look at interpretive differences between reason questions and other adjunct questions. Consider the English questions in (25) and (26):

- (25) a. Why do you want to sing?
b. What do you want to sing for?

- (26) a. Who do you want to sing for?
b. What do you want to draw on?

In the reason questions in (18), the most natural interpretation (perhaps the only one) is the one in which the reason modifies *want* rather than *sing*. In contrast, in the benefactive and locative questions in (19), the *Wh* phrase cannot modify *want*. Accordingly, the questions in (19) are not asking about the person for whom or location at which a desire occurs. Given the interpretation of locative and benefactive questions, then, we would expect the Zulu locative and benefactive applicatives to attach to the complement verb rather than the selecting verb when the two clauses constitute two clauses. The question now is why these types of applicatives cannot attach to the higher clause when the clauses constitute a single domain. This can be answered by assuming that an applicative must attach to the lowest verb in the clause. Just as there was no structural room for attachment of a quantifier between the two verbs in (22b), there is no place to attach an applicative benefactive or locative modifier between them in (23b) and (24b).

This explanation is consistent with the one given for the variability with reason applicatives. Recall that a reason question in an infinitival complement construction is interpreted as modifying the higher verb. When the construction is realised biclausally, the applicative appears on the higher verb, which is the verb it semantically modifies, but when the reason attaches to the lower verb in a monoclausal structure, the interpretation of the reason still includes the higher verb in its scope. It seems that an applicative simply must attach to the lowest verb in a clause. Given this generalization, locative and benefactive applicatives will always attach to the complement verb. If the construction is realised as biclausal, the applicative will attach to the complement verb because that is the one it semantically modifies. But if the construction is realised as monoclausal, the applicative will still attach to the complement, because it must attach to the lowest verb in the clause.

3. Conclusion

It has been argued that Zulu reason questions in which the reason applicative suffix and the *Wh* clitic appear attached to the infinitival complement belong to

the same class of infinitival complement structures that in Romance languages exhibit clitic climbing. An analysis was pursued in which structures showing the phenomenon are monoclausal. Furthermore, I have argued that “restructuring” verbs in Zulu are best analysed as taking full clausal complements in the absence of this phenomenon. Relating this Zulu phenomenon to transparency effects in Romance opens up a range of new questions to be explored in both Bantu and Romance languages, because we expect similar issues to arise in the two language families. As just one example, the Zulu pattern makes us suspect that, in Romance too, reasons in restructuring domains originate low in the clause even if they semantically modify the higher verb. Furthermore, Bantu languages offer a new field of data on which predictions about restructuring can be tested. It is hoped that more indicators of restructuring domains can be found in Bantu languages which allow a wider range of testing than applicative reason questions.

¹ The following glossing conventions are used. Third person subject and object markers appear with a noun class number, such as 2 for “noun class 2”. First and second person markers appear with both person and number, such as 2S for “second person singular”. Tense/aspect/negation-related verbal suffixes (of which exactly one appears per verb) are glossed as FV (for “final vowel”). Other abbreviations are APPL “applicative”, COND “conditional”, COP “copula”, DJ “disjoint”, INF “infinitive”, LOC “locative”, NEG “negation”, REL “relative”. The nominal augment or pre-prefix, which is a kind of determiner, is not glossed separately.

² Judgements for English are my own.

³ There are reasons to believe that *why* in English is merged in the complementizer domain rather than within the verb phrase. The gaps here (and also for Spanish and Italian) have been represented here as postverbal merely for ease of exposition.

⁴ I am grateful to Johan Rooryck, for pointing out this similarity.

⁵ The response used to force the lower clause reading was *Por amor, pero amor no había* “For love, but there wasn’t any love.” Similar effects were found for *intentar* “try”.

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