

RELATIVIZATION IN UMBUNDU

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I.

One of the transformations which lays claim to universal status is that of relativization. Current conventions in generative grammar build the conditions for the application of the relativization transformation into the phrase structure by means of the recursive rule:

(1) NP \rightarrow N (S)

This convention, established by the time of Chomsky [1965:107(vii)] has remained basically unchanged up to the present. The convention, in my opinion, is not completely satisfactory, in that there is no control over rewriting the embedded sentence in such a way that a N identical to the N expressed in (1) appears in it, although this is a necessary condition for the operation of the relativization transformation. Currently, it appears that the resolution of this problem is achieved by assuming a set of filters which will rule out as ungrammatical or unacceptable (the distinction is not clear) sentences with embedded sentences which do not contain the identical noun but are generated through (1). To my knowledge this has not been an issue of much concern, although there has been some discussion of the phrase structure rules which create the conditions for relativization, and is not dealt with in any detail in the literature on the subject. Actually, as (1) stands, it is not as inadequate a rule for English as it may be for many other languages when we consider such perfectly natural (non)standard sentences as:

(2a) He $\left\{ \begin{array}{l} \text{wanted me to} \\ \text{suggested that I} \end{array} \right\}$ pay in advance which I didn't want to do (it).

(2b) I lived in the mountains which it was cold there at night.

One can observe that some condition of identity is still preserved in such sentences but it is not identity of noun or noun phrase in any conventional sense. Furthermore the relative clauses in these sentences and others of this type are nonrestrictive. For the purposes of this paper I will restrict the discussion of relativization to the more well-known and discussed version, that of identical nouns. Any more general version such as that which would account for the sentences in (2), I suspect, would be less likely to be of universal validity.

One important aspect of relativization is that it is one of the strong arguments for the necessity of a grammar to contain recursive rules and to be able to produce infinitely long sentences (one way of having an infinite set of sentences). This is claimed to be a property of natural language and underlies the necessity for a distinction between competence (the grammar determining the ability to produce and understand the sentences of a language) and performance (not a well-defined notion, but apparently non-linguistic factors interfering with competence). Thus, it is claimed that a sentence with, say, five or ten embedded relative clauses is grammatical although it will never occur in natural discourse. In general, I think that the distinction between competence and performance has been somewhat arbitrarily made in actual analytic practice, and that the actual design of language must be determined by factors that also determine performance, to some extent, since language is a human creation for use by humans, but I do not think that recursion is relevant to this issue. The most current challenge to recursion (of certain types) on the grounds of performance is that of Reich [1969]. He objects to the grammatical status of multiple central embedding and would like to rule it out of the grammar by means of a set of conventions opposed to (1) above which allows it to exist. He challenges the grammaticality of sentences such as:

(3) The ship which the man that my father paid built sank.

In point of fact, one must account for the awkwardness and/or nonoccurrence of sentences of this magnitude of complexity. However, if we accept the relatedness of active and passive sentences, expressed by means

of the passive transformation, we cannot accept Reich's alternative model which, in effect, makes the discussion no longer one of grammatical structure. Reich's paper implies that he himself would accept the grammaticality and even potential infiniteness of such sentences as:

- (4) The ship which was built by the man who was paid by my father sank.

It seems then that the difference in intelligibility between (3) and (4) are matters of surface structure or perhaps intermediate structure but certainly not of deep structure. I will explore this issue of the difference between (3) and (4) which entails a difference between active and passive and their use according to discourse conventions elsewhere. My only aim here has been to establish the basic importance of relativization to current issues in linguistic theory.

II.

The claim that all languages have a phrase structure rule which has been represented as (1) is not directly verifiable since there are no languages known to linguists that have the surface form which (1) by itself would generate. In other words, (1) always produces structures which are subject to certain transformations. If this is the case, what does (1) mean? Leaving aside questions of simplicity in the description of specific languages, for this is by no means a settled issue, I would interpret (1) as a claim that all languages have a device for incorporating certain information into a single sentence, information that could also be expressed in more than one sentence without changing lexical items of high information content. Thus,

- (5) The man whom you met yesterday has arrived.

contains the same semantic information as

- (6) The man has arrived. You met $\left. \begin{array}{l} \text{him} \\ \text{that man} \end{array} \right\}$ yesterday.

The differences between (5) and (6) involve sentences within a discourse and the appropriate way of organizing information in a discourse. In

terms of sentence grammar, however, (5) contains the same information as (6). The function of relativization appears to be the identification of the antecedent noun, in contrast to other objects that could be referred to by the same noun when it remains without further specification. Thus we should no more expect a language to be without relativization than without demonstratives (this, that, etc.) and it would be even more surprising to find a language without a relativization device than to find one without demonstratives. In fact, some of the Bantu languages present morphological evidence that relative embedded sentences and demonstratives should be dominated by the same category symbol, that which is generally called Det(erminer). Syntactic evidence can probably be found in any language.

In Umbundu, the major Bantu language of Angola,¹ there are three demonstratives. They are morphologically complex and are as follows:

- (7) 'this' a + Vowel of Class Prefix + Class Prefix
 'that' (near you) o + Class Prefix + o
 'that' (unspecified) Class Prefix + na

For example,

- (8) { a-u-u > uu² } { 'this }
 u-lume { o-u-o > oo } { 'that } man'
 { u-na > una }
 a-lume { a-a-va > ava } { 'these }
 { o-va-o > ovo } { 'those } men'
 { va-na > vana }

¹Although Umbundu is the major Bantu language of Angola, Portuguese colonial policy does not grant it any recognition, not to mention official status. Many Ovimbundu, as a result, have lost pride in the language. It is not clear what the general status of the language among its speakers is, but I would like to express my anger at this attempt to discredit and destroy the African cultural heritage in Angola.

²or oo, irregular morphophonemically.

o-m-bwa ³	{	a-i-yi ⁴ > eyi	}	{	'this	}	dog'
		o-yi-o > oyo			'that		
		yi-na > yina			'those		

These forms are used as relative markers and, as a result, location of the antecedent is obligatorily marked. However, location need not be spatial in the concrete sense. As one would expect, since specification of location is unavoidable, the least semantically marked demonstrative is most commonly used if location is unimportant or unknown. Elicitation of sentences with relatives in them, out of any locative context, brings the -na form as a response.⁵

One is not justified in separating the two uses of these demonstratives into two different sets of morphemes. That is, one cannot claim that there are two (u-)na 's for example, one a demonstrative and the other a relative marker, since:

- (9) ulume una ndamoĩa heĩa wayongola okulya
 man that (one) I saw yesterday wanted to eat
 'the/that man whom I saw yesterday wanted to eat'

but not,

- (10) *ulume una una ndamoĩa heĩa wayongola okulya

purportedly, 'that man that I saw yesterday wanted to eat'. Similar arguments exist for all other forms of the demonstratives.

A sentence such as:

- (11) ulume uu ndamoĩa heĩa wayongola okulya
 man this (one) whom I saw yesterday wanted to eat
 'this man whom I saw yesterday wanted to eat'

³o is an automatic preprefix.

⁴With typical Bantu vowel coalescence.

⁵Class Prefix + na demonstrative is optionally deleted under certain conditions, but if the speaker responded with a sentence with no overt relative marker, the paraphrase with -na was the most acceptable. There are other conditions under which -na cannot be deleted for syntactic reasons, not because location is an issue. This indicates that -na is the unmarked demonstrative.

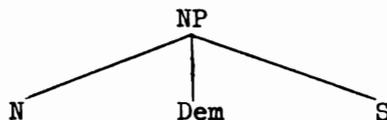
raises the question of the distinction between restrictive and nonrestrictive relative clauses. (11) is perfectly acceptable but if it is taken to be a nonrestrictive, its source, according to current generative thought on the subject, is different from that of restrictive relative clauses and is not from a deep structure generated by (1). In accord with the above discussion, the restrictive relative clause appears to "filter out" objects from the set of possible objects referred to by the noun, while the nonrestrictive simply presents additional information about the object referred to by the noun. Having both a demonstrative and a restrictive clause then appears to unnecessarily doubly identify the noun; this makes the nonrestrictive interpretation of the relative clause more probable. However, the Umbundu usage is such that (11) can be either restrictive or nonrestrictive like the equivalent English translation where a restrictive interpretation can be obtained, at least colloquially, with an unstressed this. (10) is rejected under any interpretation. I shall restrict the rest of my paper to the restrictive relative clause intended in the recursive rule (1).

So far we have not justified a node dominating both Dem(onstrative) and the embedded S, but simply a rule of the type:

(12) $NP \rightarrow N (Dem (S))$

This simply leads to a tripartite division if all options are taken:

(13)



(12) is strange in that it implicitly allows a dependency relation to exist in the choice of S on Dem, i.e. the choice of S depends on Dem being selected. The seemingly innocuous convention allowing (12) to be represented, is a rather strong claim about the possible structure of language, i.e. that there can be unmotivated dependency relations. It would seem, however, rather arbitrary to break (12) into two rules simply to form a node to avoid this problem without any empirical motivation. That is, to insist that (12) is nonconventional and must be converted into

(14a) NP → N (Det)

(14b) Det → Dem (S)

Fortunately for the conventions, there is further motivation for the two rules in (14), as against (12). This has to do with the extraposition of relative clauses from the NP. Thus, we may convert (9) into

(15) ulume wayongola okulya una ndamoĩa heĩa
'the man wanted to eat, whom I saw yesterday'

but not,

(16) *ulume una wayongola okulya ndamoĩa heĩa.

(16) is not grammatical and does not even mean

(17) 'the man who wanted to eat I saw yesterday'.

(17) is an example of Topicalization (Ross) or Y-Movement (Postal) and has an Umbundu analog, but it is not (16). It is:

(18) Ulume una wayongola okulya ndoo⁶ moĩa heĩa
'the man who wanted to eat — I saw him yesterday'

This transformation, I call it Preposing, converts structures such as

(19) ndamoĩa ulume
'I saw the man'

into

(20) ulume ndoomoĩa
'the man, I saw him'

and will be discussed later. (15) and (16) suggest that [una]_{Dem}[ndamoĩa heĩa]_S moves as a unit and therefore the two constituents are dominated by a node which unites them. This supports the structural analysis predicted by (14) rather than by (12).

It appears that many languages of the Congo share this overt morphological property with Umbundu and some varieties of Congo Swahili use the

⁶From nda-u where u is the object marker referring to ulume.

Swahili demonstrative as a relative marker e.g. m(un)tu yule nilimwona jana alitaka kula which is unacceptable in Coastal Swahili. In Standard Swahili ambaye would be used instead of yule here or mtu niliyemwona jana alitaka kula with the referential marker ye, indicating relativization, appended to the tense particle.

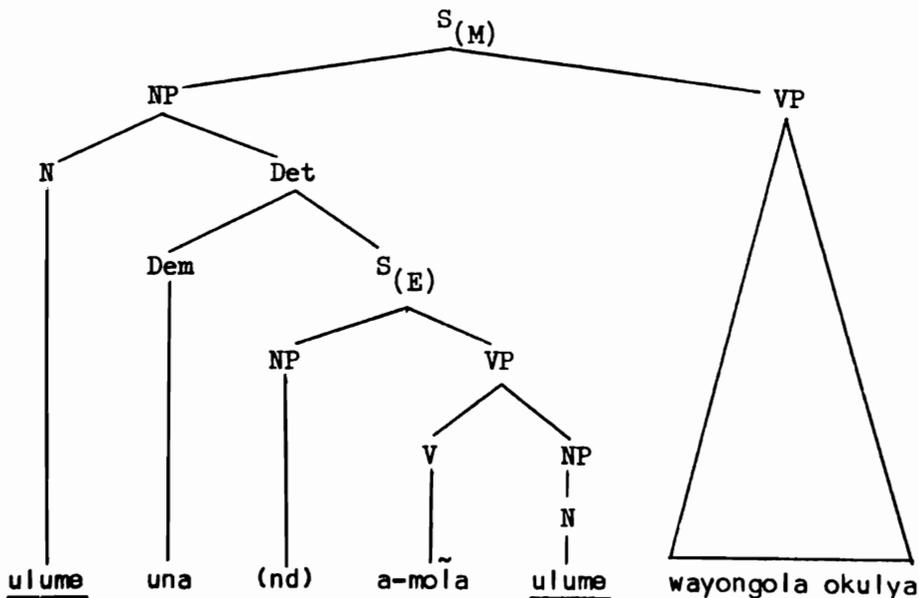
III.

If there are universal aspects to relativization as Bach [1965] suggests, is there a single rule relative transformation? Or are there, alternatively, several rules in a specific language, one or more being universal, the others being language specific (since surface relativization is not identical in all languages)?

Essentially, the recurrent or universal aspect of relativization rules has been indicated as the pronominalization of the noun referring to the antecedent and its movement to the head of the embedded S and its deletion or conversion into a relative marker, or alternately the creation of a relative marker introducing the embedded sentence and the attraction of the relativized noun to it in a pronominalized form.

For example, if we take (9) again, presumably the underlying structure at the stage of the derivation that relativization begins to operate is:

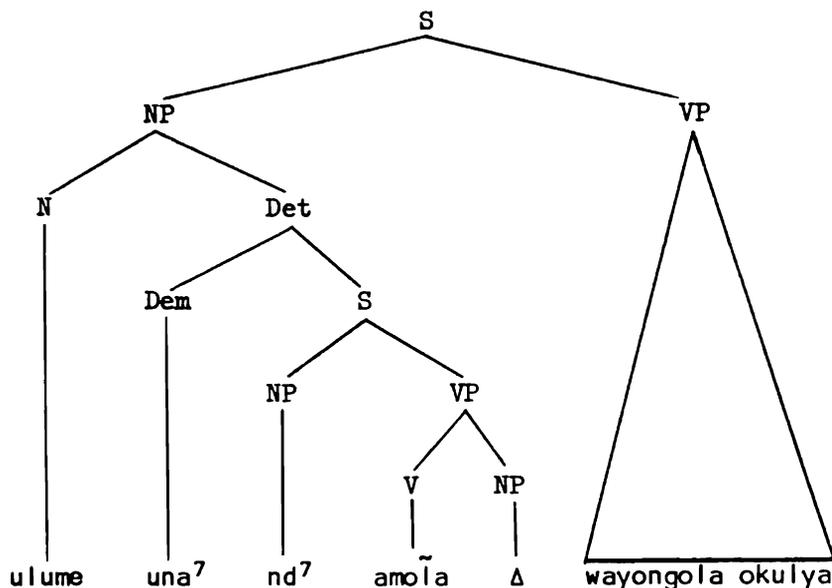
(21)



The underlined N in the embedded S is to be relativized and is identical to the underlined N in the matrix sentence. According to the universal rule u_{N} in S_{E} should be moved to the front of S_{E} and then deleted.

Now, several objections may be raised at this point. The first objection has to do with the representation of (21) and, in fact, is part of my previously mentioned dissatisfaction with (1) or its revised form (14). That is, that the implication of (21) is that the underlined noun in S_{E} has already been lexically inserted. I believe that this is an error and probably has its roots in the earlier generative distinction between local and generalized transformations. Before Chomsky [1965], the practice was to describe relativization as a generalized transformation, i.e. as the combining of two independent sentences. (See Chomsky [1957:113], for example.) While Chomsky [1965] established recursion in the phrase structure by means of rules such as (1) the theory, as a whole, for a variety of reasons, left the convention that lexical insertion into terminal symbols precede all transformations. This means that the underlined N in S_{E} must undergo lexical insertion before any rules of relativization apply. The relativization transformation then specified that the relativized noun (phrase) be identical morphologically as well as referentially to the noun of the matrix S. This was because of the principle of recoverability. Since the NP was to be deleted after having been previously (lexically) inserted, it would only be recoverable if it was identical to the antecedent NP. In effect, the notation of the transformation made it look like morphological identity was a necessary although insufficient condition for relativization. In essence, this is the same problem that leads to the Bach-Peters paradox in pronominalization, viz. morphological identity of coreferents. I contend that the NP which is to be deleted or pronominalized should not have been lexically inserted in the first place, but rather that co-reference alone is a sufficient condition. At present, the representation for a terminal symbol which is not lexically filled is the dummy symbol Δ . Thus, a more accurate representation of (21) would be

(22)



Such a convention in all coreference situations (of which relativization is one) avoids the Bach-Peters paradox, and also the problem with quantifiers exposed and discussed by McCawley and Lakoff in various papers and lectures, viz. how to distinguish the underlying structures of all men want to be rich and all men want all men to be rich. These problems of pronominalization naturally affect relativization as well. The problem still remains as to how to express coreference, but that was a problem before as well. If we could in some way establish the convention that when the embedded S in (14) is expanded, there must be a Δ where coreference is intended, then my original objection to (1) and (14) would lose its force. While this may seem to be merely a matter of alternative notations, Δ versus lexically filled symbols, the Bach-Peters paradox and the quantifier problem illustrate the extent to which notation can become a linguistic issue.

A major problem with the proposed Δ is that it has no semantic-syntactic features, some of which are necessary in most languages to produce

⁷We will pass over other problems in the accuracy of (22). For example, nd- should actually be a feature of V and is a concord for an underlying NP meaning 'I' and una should not necessarily have been lexically inserted at this point. I am trying to avoid irrelevant complications in the diagram.

grammatical sentences. In fact, the basis of lexical insertion preceding transformations was to express cooccurrence restrictions through selectional rules. It follows then that there must be rules which map necessary features onto Δ from the coreferent noun, a copying rule. In order to insure correct cooccurrence restrictions, the number of features and which features should be copied has to be investigated. It is not likely that all features should be copied. In any case the Δ remains a Δ no matter how many features are copied onto it and it will not appear in the surface structure although its effects will. Swahili offers some evidence for this position, where concord has the following effects:

(23a) mtoto wangu ni mkubwa
'my child is big'

(23b) mtoto mkubwa ni wangu
'the big child is mine'

where *mtoto* is one of a class of nouns which takes *mu-* concord, *w-* with the possessive;

(24a) nyumba yangu ni kubwa
'my house is big'

(24b) nyumba kubwa ni yangu
'the big house is mine'

where *nyumba* is one of a class of nouns which takes *ni-* concord, *y-* with the possessive. Now, with kinship terms we get what appears to be mixed concord.

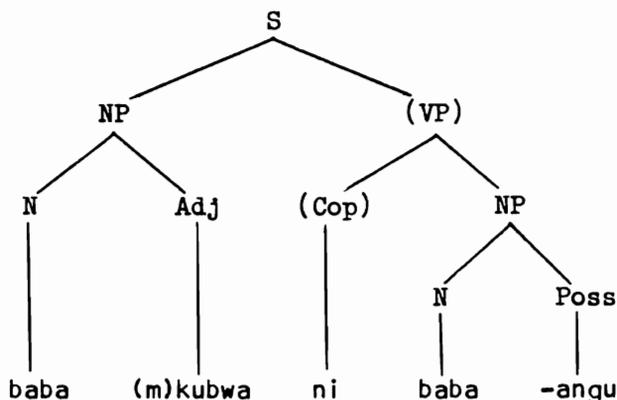
(25) baba yangu ni mkubwa
'my father is big' cf. (24a)

(26) baba mkubwa ni wangu
'the big father is mine' cf. (23b)

There is a general rule in Swahili that human nouns take *mu-* concord. We can see that (25) violates that rule. There is a finer rule that kinship terms in the possessive construction, which is where they

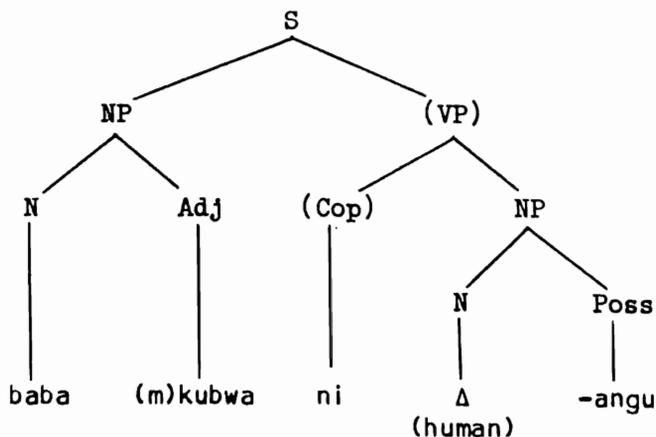
most frequently occur, take *ni-* concord in the possessive. This rule is apparently acquired late in that speakers claim that *baba wangu* (cf. (25)) sounds 'childish'. At any rate, according to the lexical insertion theory the source of (26) should be

(27)



(Again, the diagram (27) is rough; Poss, for instance, could be further complicated.) If (27) is taken as the source of (26) there is no generalization that we can make about the fact that kinship terms being human take human concord in (26) but not in (25). (25) is the exception; (26) is not. But when concord is applied (25) and (26) are indistinguishable if both are represented as the NP dominated by (VP) is in (27). The proposal I have made, however, will take the source of (26) to be (28) with the feature *human* copied onto the Δ but not the feature(s) determining kinship.

(28)



The evidence is not conclusive but I think it is worthy of consideration.

Returning to (22), if we stick strictly to Umbundu, one might argue that on the basis of the evidence considered so far it is unnecessary to consider the coreferential noun to have moved but it could be deleted where it stands. In this case there is compelling evidence in terms of the generative model that there is a movement of the N of the relative clause.

Compare the following:

(29) ufeko w-alya
'the girl ate'

(30) ulume w-alya
'the man ate'

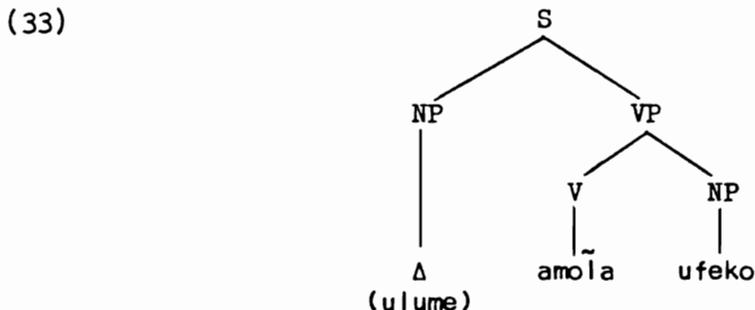
Both ufeko and ulume belong to the same concord class and produce a subject marker w (underlying o) by a concordial rule operating on the verb.

Now compare the following sentences:

(31) ulume una wamōla ufeko wayongola okulya
'the man who saw the girl wanted to eat'

(32) ulume una ufeko amōla wayongola okulya
'the man whom the girl saw wanted to eat'

The structure of the source of the relative clause in (31) is

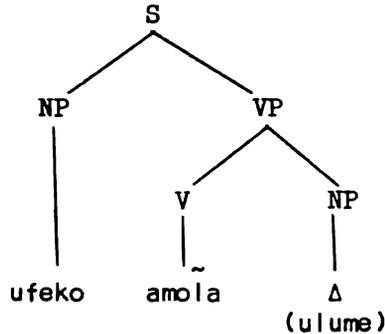


Before relativization subject marking operates on the verb causing a-mōla (Past Tense + Verb Stem) to be realized as w-amōla. This means

the appropriate noun class features have been copied on to the NP Δ . Clearly, subject marking precedes relativization rules.

In (32) the source of the relative clause is

(34)



Since subject marking precedes relativization, we expect $amōla$ to be changed to $wamōla$ as in (29), (30), (31), but in (32) we see the surface form has no $w-$, although if we paraphrase (32) with a passive:

(35) $ulume$ una $wamōla$ (ufeko) wayongola okulya
 'the man who was seen (by the girl) wanted to eat'

the subject marker appears on the surface; and if we do the same with (31):

(36) $ulume$ una ufeko $amōla$ lahē wayongola okulya
 'the man whom the girl was seen by wanted to eat'

the subject marker does not appear.

(32) and (36) have in common the absence of a subject marker and in both cases the relativized noun was not the subject, but behind the verb. The universal rule says that the relativized noun will move to the beginning of its sentence. We can then attribute the absence of the subject marker to the movement of the relativized noun, i.e. the coreferent Δ , over the verb. It appears then that the subject marking rule applies and then if the Δ moves over the verb during relativization the subject marker is erased.

Actually, the subject marker w is not erased but changed to a . This can be seen in other tenses. For example, in the present continuous:

(37a) ulumə una okasi okulya olusi unene

'the man who is eating the fish is big'

(37b) olusi luna ulumə akasi okulya lunene

'the fish which the man is eating is big'

The phonological rules of Umbundu require that o-a-lyā > w-a-lyā 'he ate' versus o-kasi okulya 'he is eating' and a-a-lyā > a-lyā 'he ate'.

Thus, the change is from o to a, and may be ascribed to the movement of the relativized NP over the verb. This change only occurs with the subject marker for the animate ((m)u- class) noun class in the singular and will be referred to as the o/a alternation for future reference.

Support for this analysis comes from another source. In interrogatives, the question word may either precede or follow the verb. Since the language, as all the examples above have shown (and note Preposing (19) and (20) in particular), is underlying SVO we assume that a transformation moves the question word to the front of the sentence, i.e. over the verb. Thus, we have pairs of sentences of which the first is the source of the second (in a manner of speaking):

(38a) walinga nye 'what did he do?'

(38b) nye alinga

(39a) waenda pi 'where did he go?'

(39b) pi aenda

(40a) waveta eliyē 'whom did he hit?'

(40b) heliyē aveta (heliyē and eliyē 'who(m)' vary in just this way)

There are also sentences involving negative attraction:

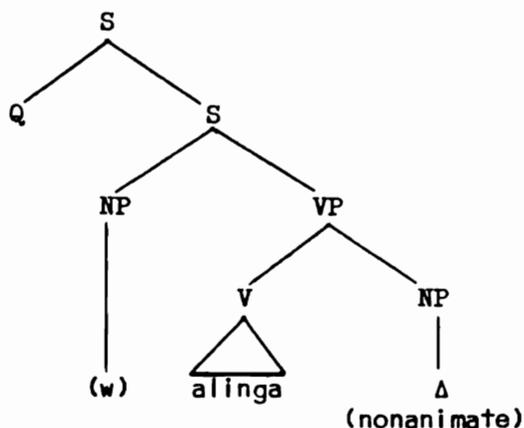
(41a) kalingile cimwē 'he didn't do anything'

(41b) lacimwē alinga 'he did nothing'

In all cases we notice the o/a alternation and in all cases the question word or negated noun has been preposed to the verb.

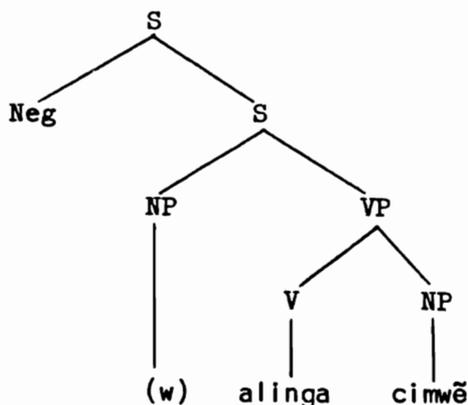
This all strongly suggests that when a noun moves over a verb in a transformation of a certain type $o > a$ is operant. It is thus not a transformation-specific rule but provides evidence that in relativization, the relativized NP is moved rather than deleted where it stands. I suggest that the structural description that relates the negative, interrogative, and relative transformations is a category symbol dominating the main S, which attracts a noun in that S from behind the main verb of that S. Thus, the underlying structure of (38) is:

(42)



Underlying (41) is the structure:

(43)



and the Dem symbol is the overt attracting element in the relative (as in (22) for example).

Because of other properties of Umbundu grammatical structure, surface minimal pairs are possible involving the o/a alternation. For example,

(44) ulume una wamoĩa walya
'the man who saw (something) ate'

(45) ulume una amoĩa walya
'the man whom he saw ate'

(44) is possible because no Umbundu transitive verb requires a surface direct object. The effect, however, is not the same as in English usage, and wamoĩa is more appropriately translated 'he did seeing' than 'he saw' in the sense that he wasn't blind (anymore). One might want to describe this phenomenon by a dummy-object deletion rule.

There is one final point which must be brought up to complete the picture. The data as presented so far is quite consistent and allows a description which relates several processes; the interrogative, the negative, and relativization in an insightful way. However, upon further investigation I elicited the following:

(46) ulume una ufeko alya olusi lwahẽ wasanjuka
(the) man that (the) girl ate his fish (is) happy
'the man whose fish the girl ate is happy'

The pronominal trace in this possessive sentence is typical of Bantu and presents no particular problem (cf. (36) with la-hẽ 'by him!'). The $o > a$ has applied as expected in conformity to the rule since the relativized NP referring to ulume moved over the verb. But now,

(47) ulume una omolahẽ $\left\{ \begin{array}{l} amwĩwa \\ *wamwĩwa \end{array} \right\}$ lufeko wasanjuka
(the) man that his-son was-seen (by) (the) girl (is) happy
'the man whose son was seen by the girl is happy'

It appears then that movement over the verb is not the correct generalization since omolahẽ for omolã wa (ulume) always preceded the verb. Since all my data was collected from one informant I do not know whether this construction, (47), is typical of any Umbundu speech community, i.e. whether it is variable, dialectal, or idiosyncratic. Judging by my one informant if a grammatical change is involved in extending

the o/a alternation to constructions like (47) it is complete. Given that most of the evidence points to the conditions for o/a as being the movement of a NP over a verb, the Umbundu generalization is that any movement of the relativized noun from its original position during the relativization transformation will register the change of o to a. This leaves only the subject relativized noun unaffected since this NP moves vacuously, i.e. not at all.

Having raised the question of grammatical change, I would like to explore the historical aspect of this change in the following section.

IV.

The alternation o/a is widespread among Bantu languages. In some languages it has a distinctive function as in Umbundu, demonstrated by (44) versus (45). In other languages it is determined by surface co-occurrence restrictions.

This alternation occurs, for example, in Swahili as the yu/a alternation. It serves no distinctive function in Swahili, the a being the animate singular subject marker and the yu being the pronominal concord marker for the same class. Thus, in Swahili: a-li-cheka 'he laughed', watoto aliowaona mtu 'the children whom the sam saw', mtu aliyewaona watoto 'the man who saw the children', etc. and: mtu yule 'that man', mtu huyu 'this man', mtu huyo (≠ hu-yu-o) 'the man just mentioned', mtu yu tayari 'the man is ready', etc. In the literature on Swahili dialects it is sometimes reported that yu is used with the short present tense as a subject marker (e.g. Ashton [1944]), but it is still incapable of surface contrast with a.

It will not be possible in this paper to go into the origin of the contrast between the two forms of the concord, but the contrast exhibited by Umbundu also occurs in the Nguni group (Zulu, Xhosa, etc.) and gives us more insight into the development seen in Umbundu. Certain aspects of Zulu relativization support the notion that the Umbundu o/a alternation has been extended to positions like that in (47) and also help us understand one line of development of relativization in Bantu generally.

Zulu has the alternation in the form of u/a and works similarly to the Umbundu alternation in the relative construction. The following examples are adapted from Louw, Ziervogel, Ngidi [1967].

(48) umfazi omsizayo umfana ufundile
'the woman who helped the boy is learned'

(49) umfazi amsizayo umfana ufundile
'the woman whom the boy helped is learned'

(48) and (49) differ in the same way that (31) and (32) above in Umbundu differ, and represent equivalent underlying structures (cf. relative clause in (33) and (34)).

The morphological structure of omsizayo in (48) (a-u-mu-siza-o) is a (introducer of the relative clause), u (third person animate subject marker in singular), m(u) (animate singular object marker agreeing with umfana 'boy'), siza (verb stem 'help'), (y)o (unmarked for concord referential particle marking the relative clause along with the initial morpheme a). The morphological structure of amsizayo (< a-a-mu-siza-o) in (49) is the same as that in (48) except that u is replaced by a. (a + a > a and a + u > o are regular phonological processes in Zulu, as in most Bantu languages.)

There are, however, notable differences between the pairs Umbundu (31), (32) and Zulu (48), (49). The relativizers a and yo are absent in Umbundu, but there is evidence that a derives, at least historically, from an original demonstrative, e.g. Jordan [1967], and therefore is equivalent to Umbundu Class Prefix + na. The subject NP of the relative clause in (49) is postposed and there is an object marker prefixed to the verb stem in (48) and (49). Postposition of the subject NP cannot occur in Umbundu, but is optional in Zulu. Object marking is operant under different conditions in Zulu and Umbundu. In Umbundu, object marking occurs if the object NP is preposed to the verb as in (20) above.⁸ In

⁸Note that this preposing rule in Umbundu is different from the one discussed for (38)-(45) above where attraction is involved and the structural descriptions for the transformations are different.

Zulu, object marking is optional in most contexts but preposing and postposing are contingent upon it. This indicates that Umbundu represents an older stage of Bantu in this respect where object marking is not well developed compared to Zulu (and Swahili) and 'scrambling' (preposing and postposing) is not possible in Umbundu. In Zulu,

- (50a) umfana upheka ukudya 'the boy cooks food'
 (50b) umfana uyakupheka ukudya " " " " (with object marker)
 (50c) umfana ukudya uyakupheka " " " " (" " ")
 (50d) ukudya uyakupheka umfana " " " " (" " ")

but not:

(50e) *umfana ukudya upheka

or

(50f) *ukudya upheka umfana

The ku, as in uyakupheka of (50b)-(50d), is the object marker agreeing in concord with the object ukudya 'food'.⁹

These data suggest that in Zulu object marking must precede preposing and postposing, and postposition is optional; while in Umbundu, postposing is impossible, and preposing and object marking are concomitant (or object marking makes preposing obligatory); Umbundu therefore seems less highly developed in object marking, and represents an older stage of Bantu. Umbundu relativization when compared to Zulu exhibits an older and simpler system; that is:

- (51a) Overtness of the demonstrative as a condition for relativization
 (51b) Stricter constraints on object marking

⁹The ya or 'long' form of the present is not relevant to the present discussion but indicates an interesting line of development for the object marker in Zulu and elsewhere outside the Nguni group. This will be discussed in the paper on Bantu coreference. In this paper we need only note that descriptively the 'long' form of the present, as opposed to the \emptyset 'short' present occurs obligatorily when the object marker is present or the object noun is unrealized on the surface.

(51c) More reliance on (or weight carried by) the o/a contrast for indicating the grammatical function of NP's in a S.

In this light we can see the Swahili development of subcategorizing nouns semantically (animate versus inanimate) for optionality or obligatoriness or object marking (animate objects must cause object marking), as an innovation and extension of the line of development seen in Umbundu and Zulu. The loss of the o/a functional distinction and Swahili's form of relativization may also be seen as being influenced by the development of object marking. These grammatical changes intersect with other Bantu grammatical devices such as the pre-prefix and will be discussed in another paper on the development of coreference devices in Bantu languages.

Returning to Zulu, we find the following situation in relative clauses where the possessive is involved:

(52a) umfana a(si)thenga isigqoko sakhe umfazi uhambe
 (the) boy (who) (the) woman bought his hat has gone
 'the boy whose hat the woman bought has gone'

(52b) izinkomo ezimelusi wazo ulele zizofohla
 (the) cattle (which) (the) herdboy of-them is asleep will escape
 'the cattle whose herdboy is asleep will escape'

In (52a) a(si)thenga consists of the relative marker a, the subject marker a (not u) as expected (since the relativized NP is behind the verb), an optional object marker si agreeing with isigqoko 'hat', and the verb stem thenga 'buy'. (52a) is comparable to (46) in Umbundu. We expect the subject marker a since the relativized NP represented by khe in sakhe (si agreeing with isigqoko, a possessive, khe the trace agreeing with umfana) is behind the verb and thus the Δ NP moved over the verb leaving the pronominal trace khe behind. In (52b) we note that u-lele has a subject marker u agreeing with (u)melusi 'herdboy'. The antecedent of the relative clause is izinkomo and has left its trace in the possessive wazo (u+a+zi+o: uu for umelusi, a possessive, zi for izinkomo, and o referential). The u is in

contradistinction to (47) in Umbundu in the same type of construction. The Δ NP in (52b) did not move over the verb; but it did move, if one assumes that relativization moves the relativized NP to sentence initial position, as in Umbundu. This movement, not over the verb, has not been registered by a change of *u* to *a* in Zulu.

- (53) *umfazi ongane yakhe igulayo uyahlupheka*
 (the) woman (who) her child is sick is suffering
 'the woman whose child is sick is suffering'

(53) is also to be compared with (47). The crucial word in (53) is the NP *ongane* which consists of *a* (relative marker), *u* (concord with the antecedent *umfazi* 'woman'), *ngane* (noun 'child', with pre-prefix form is *ingane*). Note that *u* is the form for the concord for the antecedent 'possessor' *umfazi*. This construction is not directly comparable to any Umbundu construction, but again the point is that the relativized NP does not move over the verb, and its concord is *u*, not *a*.

The data in (52) and (53) above, in particular, support the notion that the *o/a* alternation in Umbundu originally applied only to movement over the verb. The grammatical change in Umbundu is thus:

- (54a) Originally the *a* concord marker denoted the movement of a NP over a verb. This is seen in Zulu and supported by the Umbundu interrogative and negative attraction movements.
- (54b) Umbundu has generalized the rule in the relative so that any movement of the NP from its original position registers *a* concord rather than *u*. This has the effect that only a NP coreferent with the antecedent and which is the subject of the relative clause registers as *u*, since only here is movement to the front of the sentence vacuous. In the possessive, if the possessor of the subject is coreferent with the antecedent, it moves over the subject NP leaving a pronominal trace in the possessive, and this nonvacuous movement is a new environment for the *o > a* rule.

On the basis of our present knowledge of grammatical change, and due to insufficient data on closely related languages, it is difficult to say whether the o/a alternation in Umbundu negative and interrogative sentences is an innovation or more typical of an earlier stage of Bantu. Accurate comparative and dialect geographical data should enable this problem to be resolved and elucidate more of the principles of grammatical change.

The only further data I have to bear on the matter are anecdotal. It is not typical of Bantu to have a negative morpheme attached to a noun as far as I have been able to ascertain. Umbundu is almost unique in this respect. I had a conversation with someone passing through New York City who speaks Vambo, a Bantu dialect-cluster of South-West Africa. Vambo is closely related to Umbundu. With regard to the negative, I found that negation with indefinites is accomplished by means of the existential paraphrasis in standard Vambo, i.e. the most acceptable style of Vambo speech. So, to say I didn't see anyone one must say there wasn't anyone (a person) whom I saw. This is typical of a large variety of Bantu languages. However, the speaker admitted that in nonstandard, i.e. less acceptable speech, most frequently among younger people, Neg + someone was possible as an alternative for 'there-Tense-not-be-someone who ...' which is equivalent to Umbundu practice (this is my observation; the speaker did not know Umbundu). This seems to indicate a spread of the Umbundu-type construction southward and that the construction involving a negative morpheme attached to a nominal form is of recent origin. It follows that the o/a alternation in the negative cannot be of Proto-Bantu origin. It is my guess that the application of this alternation to Neg and Q has its origin in the relative construction as a device for foregrounding; i.e. nothing (is what) he did (41) and what (is it that) he did (38). Relativization is a well known grammatical device in Bantu languages and elsewhere for foregrounding of Q and Neg words in connection with a particular NP.

V.

I would like to discuss the implications of the body of this paper for aspects of generative linguistic theory, in conclusion.

- (a) the relative S should be represented as dominated by Determiner in the deep structure and commanded by Demonstrative.
- (b) the demonstrative with relative clauses, the Q-marker, and the Neg-marker share the property of commanding a S (see (22), (42), (43)). It is therefore not entirely fortuitous that morphologically the relative marker resembles the demonstrative in many languages, e.g. English *that*, and it is likely that the Q-marker and the relative marker are closely related, cf. most Indo-European languages.
- (c) the NP coreferent to the antecedent of the relative S should not be lexically filled. This eliminates counterintuitive filtering rules for blocking sentences with relative clauses without coreferent NP's.
- (d) All Δ 's should be deleted by a surface convention that lexically unfilled items obviously have no phonological representation. Deletion of apparently lexically filled items should be viewed with suspicion, especially when the level of abstraction is high.¹⁰
- (e) Certain rules such as Umbundu $o > a$ which operate under specified conditions at different points in the grammar are necessary without radical revision of the generative grammatical model. A rule such as this is similar to the ones Lakoff has called derivational or global constraints [e.g. December 1969, LSA meeting] or Ross [1967] would call constraints that need to be put in a conditions box:

... they are not universal, and to state them on each transformation which they affect is to miss a generalization. What is necessary is that the grammar of every natural natural language be provided with a conditions box [underlining is Ross's; BW] in which all such particular constraints are stated once for the whole language. By a

¹⁰There are such problems as the deletion of *that* in relative clauses and complement sentences in English and *-na* in relative clauses in Umbundu which might be appropriately viewed as the deletion of lexical material.

universal convention of interpretation, all conditions in the conditions box will be understood to be conditions on the operation of every rule in the grammar. ...

[Ross 1967:4.3.2]

The Umbundu example makes the following question more than academic. Obviously language-specific constraints, not being universal, must have evolved by some means and are subject to change. Addition of these constraints to the theory of grammar is serious, in that they reduce the power of the argument for ordered rules to account for syntactic facts in language. The expansion of a language specific constraint in a particular transformation throws into question the usefulness of these conventions in examining a language in the process of change. In purely descriptive terms, how do we maintain the generalization about o/a for the relative, negative, and interrogative, and at the same time indicate the generalization about the relative stated in (54b)?

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