

SWAHILI *Amba*-LESS RELATIVES WITHOUT HEAD MOVEMENT

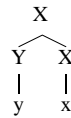
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Recent proposals have assumed that syntactic representations are constrained by some type of Linear Correspondence Axiom (LCA), as version of which first appeared in Kayne (1994). One consequence of this assumption is the elimination of right-adjunction of one overt element onto another in the syntax, which in some cases can force a remnant movement analysis. This paper shows that Swahili *amba*-less relatives, and probably even verb forms in simple matrix clauses, are one such case. Several types of independent evidence are also examined to the effect that these verbal and relative forms are maximal projections rather than complex heads, including the fact that the prosodic subconstituencies observed in the relative forms cannot be obtained by head movement. An analysis is then sketched which relies on remnant movement rather than head movement.

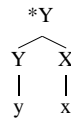
1. SWAHILI VERBAL FORMS AND THE LINEAR CORRESPONDANCE AXIOM

One of the consequences of the Linear Correspondence Axiom (LCA) proposed in Kayne (1994) is a ban on the right adjunction (as figured in (2)) of one non-empty head onto another in the syntax, while left adjunction (as in (1)) is allowed:

- (1) Left adjunction (allowed)



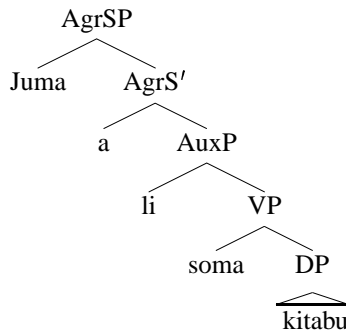
- (2) Right adjunction (disallowed)



Taken together with the strong hypothesis that the linear ordering of grammatical morphology generally corresponds to syntactic structure, the LCA suggests that the Swahili verb stem does not raise to Aux, but

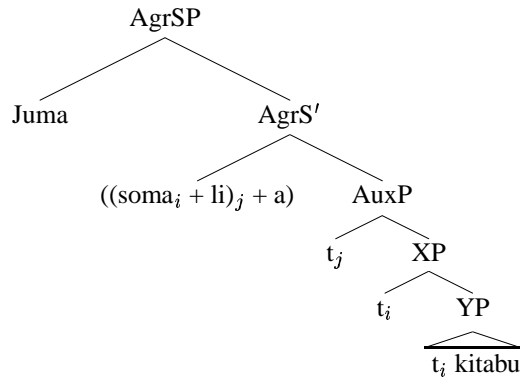
that it stays somewhere below Aux (assuming that Swahili tense markers are Aux heads), as in (3):¹

- (3) Juma a- li- soma kitabu.
 Juma 3s.subj- past- read book
 ‘Juma read a book’



This is so because if raising were to indeed take place, with only left adjunction available we would expect the subject agreement and tense morphology to appear as suffixes on the verb stem, as in (4):

- (4) * Juma soma- li- a kitabu.



While in this simple example it does not appear to be problematic to leave the subject agreement and auxiliary in their base-generated positions while leaving the verb stem somewhat lower, problems do arise

¹I would like to thank Masangu Matondo and Deogratias Ngonyani for valuable judgments used in writing this paper.

in more complex structures where the subject follows the verb (a phenomenon often termed ‘subject postposing’). One context where this occurs is in a type of relative clause form, here termed the ‘*amba-less*’ relative:

- (5) kitabu a- li- cho- ki- soma Juma shule- ni
 7.book 1.subj- past- 7.o- 7.obj- read Juma 9.school- in
 ‘the book that Juma read in school’

Under the assumption that the subject agreement on this form indicates that the subject has moved to Spec,AgrS, the verbal form *alichokisoma* in (5) appears to have moved across the subject.² Accounting for this type of movement would be unproblematic in a framework which allowed multiple right adjunction—the form would simply head-move past the subject. But if head-movement is not available for this form (due to the fact that it is not a head), we face the immediate problem that the morpheme string *a-li-cho-ki-soma* is not a constituent to the exclusion of *shule-ni* in (5) in the same way that *a-li-soma* is not a constituent to the exclusion of *kitabu* in (3). Since constituency is a prerequisite to movement, this problem must be solved by remnantification: a series of movements which renders the relevant string a moveable constituent. This paper will present evidence against a head-movement analysis for both Swahili tensed verbs and *amba-less* relatives and will illustrate what an analysis without head movement would entail. Specifically, it will be shown that such an analysis will require one cycle of remnantification for a matrix verb, and two such cycles for an *amba-less* relative. The analysis pursued here will also be in line with recent attempts to do away with head adjunction more generally.³

2. THE DATA

As is typical of Bantu languages, Swahili has a rich system of tense and aspect and a system of grammatical gender based on a large set of noun classes. Swahili’s agreement morphology takes the form of prefixes.⁴

²Zwart (Zwart 1997) proposes that Swahili subject markers are pronouns rather than AgrS heads. Under that assumption, the subject agreement facts cannot be used as an argument for movement of the subject through AgrSP. Even so, other reasons could be found to support movement of the subject.

³See, for example, Koopman and Szabolcsi (2000), Mahajan (2000), and Sportiche (1997).

⁴Except, arguably, the distributive suffix *-(e)ni*.

Examples (6) through (9) serve to demonstrate the form which subject agreement, tense, negation, and mood generally take in Swahili. In the glosses, numbers will refer to person agreement only when followed by ‘s’ or ‘p’ (‘1s’ = ‘first person singular’, ‘2p’ = ‘second person plural’, etc.), whereas bare numbers will refer to noun class (‘1’ = ‘noun class 1’, etc.). Noun class agreement on a verb implies third person.

- (6) tu- na- ki- soma
 1p.subj- pres- 7.obj- read
 ‘we’re reading it’
- (7) ha- tu- ki- som- i
 neg- 1p.subj- 7.obj- read- neg
 ‘we don’t read it’
- (8) kitabu ha- ki- ta- som- w- a
 7.book- neg- 7.subj- fut- read- pass- default.vowel
 ‘the book won’t be read’
- (9) ili tu- si- ki- som- e
 in.order 1p.subj- neg- 7.obj- read- subj
 ‘so that we not read it’

Two types of relative clauses exist in Swahili, which we shall call the *amba* relative and the *amba*-less relative, depending on whether the form contains the overt complementizer *amba*. Among the properties these two broad types of relative clauses have in common is the presence of an agreeing affix, which in this paper will be called an *o*-form and which will be glossed merely as *o*. Here is an example of an *amba* relative, with the *o*-form, appearing as *-cho* (bearing noun class 7 agreement features) as a suffix on the complementizer *amba*:

- (10) kitabu amba- cho a- li- (ki-) soma shule- ni
 book comp- 7.o 1.subj- past- 7.obj read 9.school- loc
 ‘the book that Juma read in school’

This paper is concerned with the second type of relative clause, the *amba*-less relatives, which are further divided into what we will call the ‘infix relatives’, which exhibit an overt auxiliary, and the ‘affirmative tenseless relative’, which does not. The infix relatives exhibit the following surface order, with the relative pronoun suffixed onto the Aux

(but written as an infix in the standard orthography):⁵

- (11) noun + subject marker + Aux + *o*-form + (object marker) + V + (subject)
+ everything else

- (12) kitabu a- li- cho- (ki-) soma Juma shule- ni
7.book 1.subj- past- 7.o- 7.obj- read Juma 9.school- loc
'the book that Juma read in school'

while in the positive tenseless form the relative pronoun appears as a suffix on the verb stem:

- (13) noun + subject marker + (object marker) + V + *o*-form + (subject) +
everything else

- (14) kitabu a- (ki-) soma- cho Juma shule- ni
7.book 1.subj- 7.obj- read- 1.o Juma 9.school- loc
'the book that Juma reads in school, the book read by Juma in
school'

Note that an overt subject in an *amba*-less relative clause is postverbal⁶
(except when it is the subject itself which is relativized):

- (15) a. kitabu a- li- cho- ki- soma Juma shule- ni
7.book 1.subj- past- 7.o- 7.obj- read Juma 9.school- loc
'the book that Juma read in school'
b. * kitabu Juma a- li- cho- ki- soma shule- ni
7.book Juma 1.subj- past- 7.o- 7.obj- read 9.school- loc
'the book that Juma read in school'

The [AgrS + Aux + *o*] sequence must immediately precede the [object marker + V] sequence; no material can intervene:

⁵For the sake of simplicity, relativized subjects will not be discussed, although their treatment is straightforward regardless of the analysis adopted.

⁶The subject can appear postverbally (as in (15b)) if it is stressed, as noted in (Barrett Keach 1985). Since the SVO order seems to entail focus, we will assume that it has a somewhat different structure than the neutral forms discussed in this paper.

- (16) * kitabu a- li- cho *Juma* ki- soma shule- ni
 7.book 1.subj- past- 7.o Juma 7.obj- read 9.school- loc
 ‘the book that Juma read in school’

3. THE *Amba*-LESS RELATIVE AS AN XP

We have already discussed why analyzing the *amba*-less relative form as a complex head is problematic in that its morphemes occur in an unexpected linear order if Kayne’s (Kayne 1994) proposal is assumed. This section discusses some evidence independent of these concerns which also supports the claim that this form is not a head, but an XP (maximal projection). Two new terms will be useful here. The term ‘Aux substring’ will refer to the substring of a verbal form or *amba*-less relative form consisting of the subject marker, the auxiliary, and (in the case of a relative) the *o*-form. The ‘V substring’ will refer to the substring consisting of the object marker and the verb stem. Thus, in the form *alichokisoma* ‘which he read’, the Aux substring is *a-li-cho* and the V substring is *ki-soma*.

3.1. The Syntactic Status of the V Substring

Note that bare verbs and verbs with object markers have distinct imperative forms in Swahili. The bare verb appears with the default final vowel *-a* while a verb with an object marker prefix ends in the subjunctive morpheme *-e*.⁷

- (17) a. Soma!
 read
 ‘Read!’
 b. Ki- som- e!
 7.obj- read- subjunct
 ‘Read! Read it!’

The situation is similar in at least some other Bantu languages, such as Sukuma (Masangu Matondo, p.c.):

⁷Verbs whose stem in the indicative form ends in a vowel other than *-a* do not exhibit any final-vowel alternation for any mood or tense.

- (18) a. Som- ag- a!
 read- imper- default.vowel
 'Read!'
- b. Gi- som- ag- e!
 7.obj- read- imper- subjunct
 'Read it!'

This alternation can be taken as evidence that the surface V substring is not a complex head (such as a verb and an incorporated pronoun), for the following reason. Let us suppose (contrary to what I am arguing here) that the object marker and the verb do, in fact, form a complex head. Both intuition and the LCA tell us that a complex head in (19) will be of the category verb (V), just like *soma*.

- (19)
- $$\begin{array}{c}
 \text{V} \\
 \swarrow \quad \searrow \\
 \text{D} \quad \text{V} \\
 | \quad | \\
 \text{ki} \quad \text{soma}
 \end{array}$$

Assume, as is customary, that a true imperative verb must move to the C domain, and suppose also that this is what happens to *soma* in the bare verb imperative in (17a). If this takes place via head movement, then these questions remain to be answered:

- a. If the complex head *kisom* has moved to C and the *-e* suffix is an allomorph of an imperative morpheme (rather than the subjunctive morpheme), then why has the morphology been able to look inside this complex head and chose the allomorph according to the syntactic composition *kisom*?
- b. If the complex head *kisom* has not moved or has moved to a position somewhat lower than C and the *-e* suffix is the subjunctive morpheme it appears to be (making the form a surrogate imperative), then what has prevented it (but not the analogous bare verb stem) from moving all the way to C?

Conversely, if we take *kisom* to be an XP, it is plausible that the bare verb stem imperative form head-moves to the C domain, while the [object marker + V] imperative stem *kisoma* cannot move in the same way,

because it is not a head.⁸

3.2. Words Within Words

This section will examine the composition of Swahili tensed verbal forms and of *amba*-less relative forms. There are several types of evidence suggesting that the both the Aux substring and the V substring of these forms are words in and of themselves.

3.2.1. Minimal Word Condition on the Verb Substring

In a number of matrix tenses and in all the *amba*-less relative forms containing an overt auxiliary, the V substring shows a morphological alternation apparently corresponding to a constraint on minimal wordhood. In these forms, when the V substring consists of only a monosyllabic verb stem (such as *la* ‘to eat’), the infinitive prefix *ku-* is added, making the V substring disyllabic.⁹ This alternation is illustrated in the following pairs, where in the (a) examples the V substring (bracketed) is disyllabic by virtue of the fact that it contains an object marker in addition to the monosyllabic verb stem, whereas in the (b) examples, the V substring must be augmented with the infinitive prefix *ku-* to make it disyllabic:

- (20) Matrix tense:
- a. a- li- [ki- la]
1.subj- past- 7.obj- eat
‘he ate it’
 - b. a- li- [ku- la]
1.subj- past- *inf*- eat
‘he ate’
 - c. * a- li- [la]
1.subj- past- eat
‘he ate’

⁸Such an argument raises questions about the status of the plural imperative (e.g. *someni*, *kisomeni*, which uses the otherwise distributive suffix *-(e)ni*). Is a plural imperative a complex head? Is *-(e)ni* inserted in the syntax or the lexicon? Unfortunately, because Swahili forms with *-(e)ni* never exhibit mood-vowel alternations, it is impossible to determine whether a plural imperative such as *someni* is analogous to a bare stem imperative (e.g. *soma*) or a prefixed imperative (e.g. *kisome*) with regards to mood or imperative allomorphy.

⁹A similar alternation occurs with one vowel-initial bisyllabic verb, *enda* ‘to go’, which becomes *kwenda* (which is also its infinitive form) under the same circumstances.

(21) *Amba*-less relative:

- a. kitu a- li- cho- [ki- la]
7.thing 1.subj- past- 7.o- 7.obj- eat
'the thing which he ate'
- b. kitu a- li- cho- [ku- la] mnofu wake
7.thing 1.subj- past- o- inf- eat 3.flesh 3.its
'the thing whose flesh he ate'
- c. * kitu a- li- cho- [la] mnofu wake
7.thing 1.subj- past- o- inf- eat 3.flesh 3.its
'the thing whose flesh he ate'

3.2.2. Stress

Secondary stress in infixated relatives is calculated as if the Aux substring were a domain of stress. Primary stress in Swahili generally falls on the penultimate syllable of the word:

- (22) Mími na- pénda ku- sóma vitábu.
I 1s.pres- like inf- read 8.books
'I like to read books.'

Words to which an *o*-form has been suffixed are no exception:

- (23) a. ní- na
1s.subj- with
'I have'
- b. ni- ná- cho
1s.subj- with- 7.o
'I have it.'
- (24) a. a- li- kú- wa
1.subj- past- inf- be
'he was'
- b. a- li- ku- wá- ko
1.subj- past- inf- be- 17.o
'he was there'

In an infix relative, the Aux substring serves as a domain of secondary stress. In other words, the secondary stress of the infix relative is calculated by treating this substring as a word, calculating its stress, then demoting that stress to secondary stress within the larger word. Here are two examples of infix relatives, with secondary stresses indicated. Brackets have been included to circumscribe the domain of secondary stress:

- (25) kitabu [ni- li- cho-] ki- sóma
 7.book 1.subj- past- 7.o 7.obj- read
 ‘the book which I read’
- (26) kitabu [ni- takà- cho-] ki- sóma
 7.book 1.subj- fut- 7.o 7.obj- read
 ‘the book which I will read’

One would expect this phonological constituency to correspond to a syntactic constituency, or at least to not contradict a syntactic constituency.

3.2.3. Native Speaker Intuitions

As noted in Barrett-Keach (1986), at variance with the standard orthography, native speakers frequently write the Aux substring and V substring of an *amba*-less relative form as separate words. For example, instead of writing *nilichokisoma* ‘which I read’ as a single word, as prescribed by the orthography, speakers sometimes write *nilicho kisoma*. This indicates that native speakers sometimes think of these forms as being composed of two words.

3.2.4. Wordhood Condition of the Aux Substring

There are only four tenses which can form infix relatives: the *na* present tense, the *li* past tense, the *ta* future tense (the allomorph of *ta* used before the *o*-form is *taka*, which is homophonous with the verb meaning ‘to want’), and the tenseless *si* form (which does not have a counterpart matrix tense):

- (27) a. kitabu ni- li- cho- ki- soma
 7.book 1s.subj- past- 7.o- 7.obj- read
 ‘the book which I read’

- b. kitabu ni- na- cho- ki- soma
7.book 1s.subj- pres- 7.o- 7.obj- read
'the book which I am reading'
- c. kitabu ni- taka- cho- ki- soma
7.book 1s.subj- future- 7.o- 7.obj- read
'the book which I will read'
- d. kitabu ni- si- cho- ki- soma
7.book 1s.subj- neg- 7.o- 7.obj- read
'the book not read by me'

This restriction is interesting because other tenses exist which can be relativized using an *amba* construction, but which cannot appear in an infixed form, an example of which is the *me* perfective,

- (28) a. kitabu amba- cho ni- me- ki- soma
7.book comp- 7.o 1s.subj- perf- 7.obj- read
- b. * kitabu ni- me- cho- ki- soma
7.book 1s.subj- perf- 7.o- 7.obj- read
'the book which I have read'

The grammaticality of an infixed relative form seems to be related to the ability of its Aux to form an independent word with a subject marker and an *o*-form. All of the auxiliaries which can form *amba*-less relatives have this property, while, conversely, only one tense which has this property cannot form a *amba*-less relative.¹⁰ Following this line of reasoning, the fact that a form such as (27b) *ninachokisoma* is grammatical is related to the fact that *ninacho* is a word, while the ungrammaticality of (28b) **nimechokisoma* follows from the fact that **nimecho* is not a word:¹¹

- (29) a. *ninacho* 'I have it' → *ninachokisoma* 'which I'm reading'

¹⁰That auxiliary is *ngali* (conditional, past conditional, and *still*-ative), which can form a [AgrS+Aux+o] word of the type *Ungalipo?* 'Are you still there?', but which cannot be relativized (**ningalichokisoma*) 'which I would have read/am still reading'. If this auxiliary is bimorphemic, which may be the case, its inability to form an *amba*-less relative can be explained by a constraint on the complexity of the remnant moved (Buell 2000).

¹¹Except possibly for the negative Aux *si*, the meaning of the Aux in conjunction with a verb is not a semantic composition of the meaning of the verb and that same Aux as used independently. For example, when not used in conjunction with a verb, the present tense Aux *na* has the meaning 'to have; and, with'. But this is also the case in English—compare the matrix and auxiliary meanings of 'have', for example.

- b. **nimecho* → **nimechokisoma* ‘I have read it’

This is not to say that this notion of a wordhood condition is completely straightforward or unproblematic. Getting the past tense Aux *li* to fit this pattern requires laxing the constraint to include ‘potential words’, whereby a form *nilicho* is a potential word by virtue of the fact that *nilimi* ‘I am indeed’ is a word,¹² with *mi* belonging to a class of pronominal affixes which patterns closely with *o*-forms.

Although this constraint has its complications, it can explain the one case of allomorphy in the verbal paradigm, that of the future tense auxiliary *ta/taka*. The allomorph *taka* occurs exclusively in *amba*-less relatives, while the *ta* allomorph occurs elsewhere:

- (30) a. ni- ta- ki- soma kitabu
 1.subj- past- 7.obj- read 7.book
 ‘the book which I read’
 b. kitabu ni- taka- cho- ki- soma
 7.book 1.subj- future- 7.o- 7.obj- read
 ‘the book which I will read’

The idea of a wordhood constraint fits nicely with this allomorphy, because the allomorph *taka* is homophonous with the lexical verb *taka* ‘to want’ (to which it is etymologically related), which, like any lexical verb may take an *o*-form suffix in a tenseless positive relative. Using the wordhood constraint to explain this alternation, *nitakachokisoma* is grammatical by virtue of the fact that *nitakacho* ‘(that which) I want’ is a word, whereas **nitachokisoma* is ungrammatical because the allomorph *ta*, being unable to form an independent word with a subject marker and an *o*-form, **nitacho* is not a word.

- (31) a. *nitakacho* ‘(the thing) that I want’ → *nitakachokisoma*
 ‘which I will read’
 b. **nitacho* → **nitachokisoma* ‘I will read it’

Without this constraint on the wordhood of the Aux substring, the *ta/taka* allomorphy is completely arbitrary.

¹²On analogy with *uliwe* ‘you are indeed’, encountered in a poetic example in McWhorter (no date).

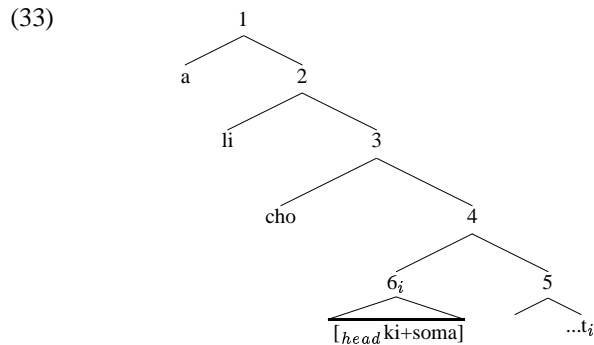
3.3. Constituency Unobtainable by Head Movement

By this point it should be clear that, regardless of whether the V and Aux substring each have the status of word, each of them has the characteristics of a constituent. We will now see that any constrained theory of head movement cannot obtain that constituency, even if right adjunction is allowed.

Let us consider the *amba*-less relative *alichokisoma* ‘which he read’. The desired constituency for this form is as in (32):

(32) [[a- li- cho-] [ki- soma]]

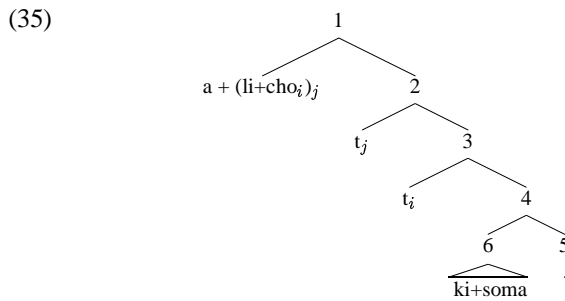
Assume that this is a complex head. Since *ki* is assumed to be merged very low in the tree, where it incorporates into the verb *soma*, we will consider what happens after this incorporation has taken place. Now observe the tree in (33) which omits all specifiers and irrelevant projections and which, to abstract away from the syntactic labels, simply numbers each projection:



The task of building a complex head with the desired constituency can be divided into three subtasks:

- (34) Subtasks to obtain the desired constituency of *alichokisoma*:
- a. Make the V substring *ki-soma* a constituent.
 - b. Make the Aux substring *a-li-cho* a constituent.
 - c. Make the entire form *a-li-cho-ki-soma* a constituent.

Subtask (34a) is assumed to have already been completed by some type of head movement (head-to-head adjunction to the left or right). We are now faced with an immediate problem with regards to subtask (34b). If *kisoma* is to (right-)adjoin to the next highest head, the constituent obtained is *chokisoma*, preventing us from ever getting *alicho* to be a constituent. If we do not take that step, then we can get a constituent *alicho*, of course, by moving *cho* to adjoin to *li* and then moving the head *lich*o to right-adjoin to *a* as in (35):



But now the only way to perform subtask (34c) is to right-adjoin *ki-soma* to *alicho*, skipping two nodes (namely, the nodes occupied by the traces of the heads of 2 and 3) in the process. Thus, obtaining the constituency [[*alicho*][*kisoma*]] via head movement forces us to use not only right adjunction, but long-distance head movement as well. Note that this problem arises regardless of the relative ordering in the tree of the heads forming the Aux substring.¹³

4. SAMPLE DERIVATIONS

Our motivations against a head-movement analysis for Swahili verbal forms and *amba*-less relative clauses can now be summarized as follows:

- a. An analysis in which these forms are complex heads leads to a contradiction if it is assumed that the LCA holds and that the morphological arrangement of these forms directly corresponds to their syntactic structures.

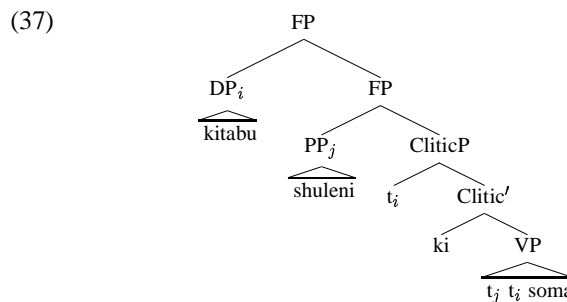
¹³Such relative ordering considerations would become relevant if there were evidence for the generation of the *o*-form *cho* in the C domain, above *a* and *li*.

- b. Because of the peculiar morphology of the imperative verb, the object marker and verb stem appear to form an XP rather than a head. It is assumed (as is maintained in (Kayne 1994)) that XP's cannot adjoin to heads to form complex heads, precluding the possibility of this XP adjoining to a higher head.
- c. The *amba*-less relative forms appear for several reasons to consist of two subwords whose constituent status contradicts any constituency obtainable by head movement, even if right adjunction is available.

At this point we can illustrate what an analysis of the forms would entail without resorting to head movement. Such an illustration should start at the level of the simple clause, such as that in (36):

- (36) Juma a- li- ki- soma kitabu shule- ni.
 Juma 1.subj- past- 7.obj- read 7.book 9.school- loc
 'Juma read the book in school.'

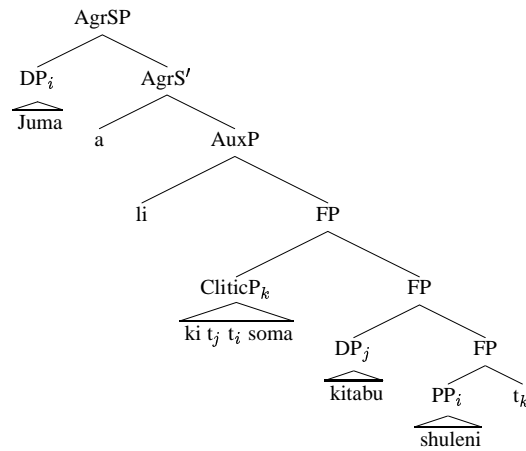
As discussed above, there is evidence from imperatives that the surface [object marker + V] sequence is not a complex head (such as a verb and incorporated pronoun). (And for this reason, the object markers will be treated here as heads of a projection CliticP, roughly as in Sportiche (1995).) If this is true, then a head movement analysis is ruled out even for simple clauses. In (37), the direct object *kitabu* and the adverbial phrase *shuleni* are shown having moved to FP projections, arbitrary labels for functional projections at the top of the V domain. The purpose of these two moves, which together constitute what we are calling one cycle of remnantification, seems to be to render the V substring moveable.¹⁴



¹⁴I assume some version of the VP-Internal Subject Hypothesis, but for the sake of simplicity, this is not reflected in any of the trees in this paper.

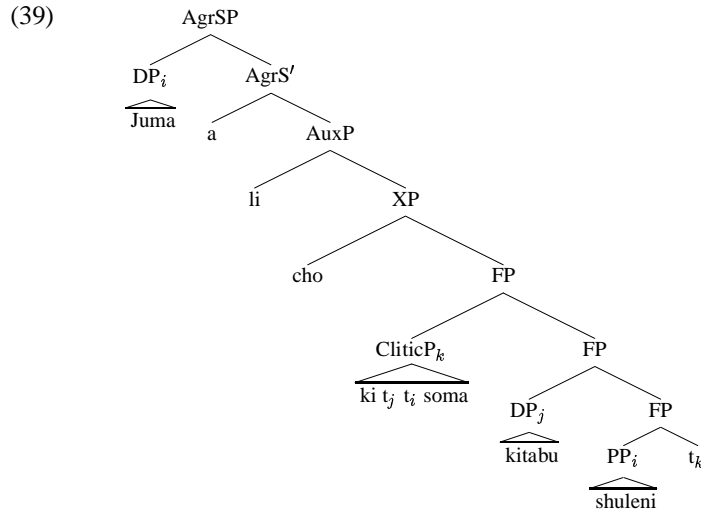
The V substring is now a constituent (specifically, a CliticP remnant) which can be moved. The entire clause is shown in (38), with AgrS and Aux in situ. No V-to-I movement has occurred.

- (38) Juma a- li- ki- soma kitabu shule- ni
 Juma 1.subj- past- 7.obj- read 7.book 9.school- loc
 ‘Juma read the book in school.’



5. *Amba*-LESS RELATIVES

We will assume that an *amba*-less relative clause is derived from a structure identical to (38) except that it contains the *o*-form (appearing here as *cho*). We shall merge the *o*-form just below Aux in a projection arbitrarily labeled XP. (Alternatives to this approach are to generate the *o*-form in the C domain, which will not be compatible with the analysis to be developed here, or to generate it with the relativized noun phrase, stranding it just below Aux.)



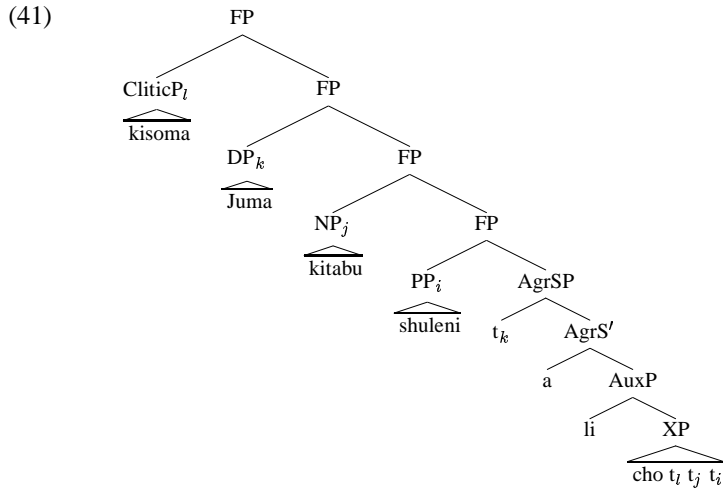
Recall that the subject is postverbal in *amba*-less relative clauses and that this is taken to indicate that the verb has moved across the subject. Looking at (39), it is obvious that the form *alichokisoma* cannot be immediately moved because it does not form a constituent. This fact will require us to perform an additional cycle of remnantification.

5.1. Infixes Relatives

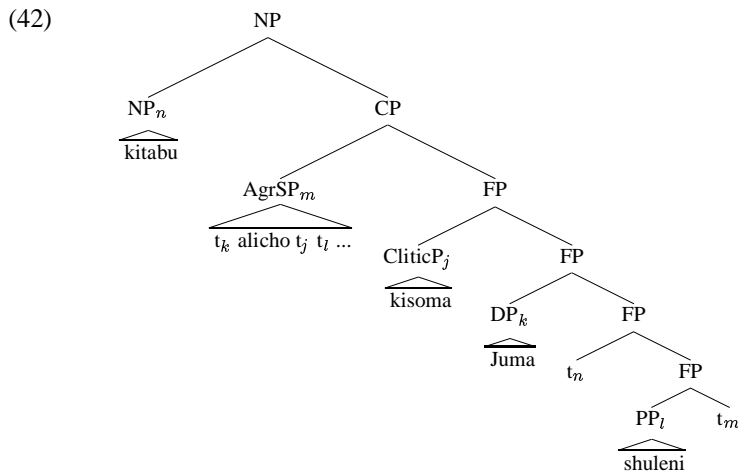
We will now derive the associated infix relative in (40), which we take to be derived from (40).

- (40) kitabū a- li- cho- ki- soma Juma shule- ni
 7.book 1.subj- past- 7.o 7.obj- read Juma 9.school- loc
 ‘the book which Juma read in school’

The tree in (41) shows the structure at the end of the second cycle of remnantification, where the PP, the object NP, and the subject DP have been stacked at the top of the structure, rendering the Aux substring a moveable AgrSP remnant:



The tree in (42) shows the entire relative clause.



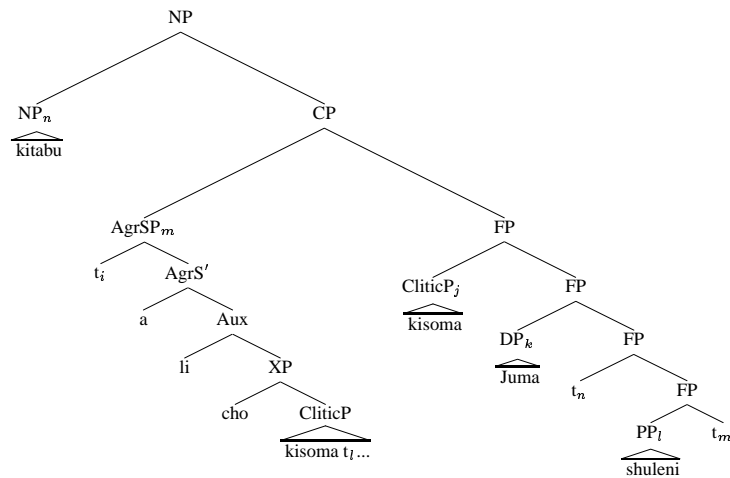
This analysis obtains the correct constituency for both the Aux substring *alicho* and the V substring *kisoma*, but not for the entire word *alichokisoma*. Given the fluctuation in native speaker intuitions discussed in 3.2.3 on whether such a form comprises one or two phonological words, this constituency might not seem crucial. But the tree in (42) fails to capture a very basic intuition: that the movement of this relative form over the subject closely resembles I-to-C movement, such as found in English

non-subject questions, in which only the auxiliary, and not the main verb, inverts with the subject:

- (43) a. Fred *will eat* an enchirito today.
 b. What *will Fred eat* today?
 c. * What *will eat* Fred today?

This resemblance to other I-to-C phenomena, and the fact that no material can intervene between the Aux and V substrings, suggests that the Aux substring and the V substring actually move to the C domain as a single constituent. This is the option taken in (44):

(44)



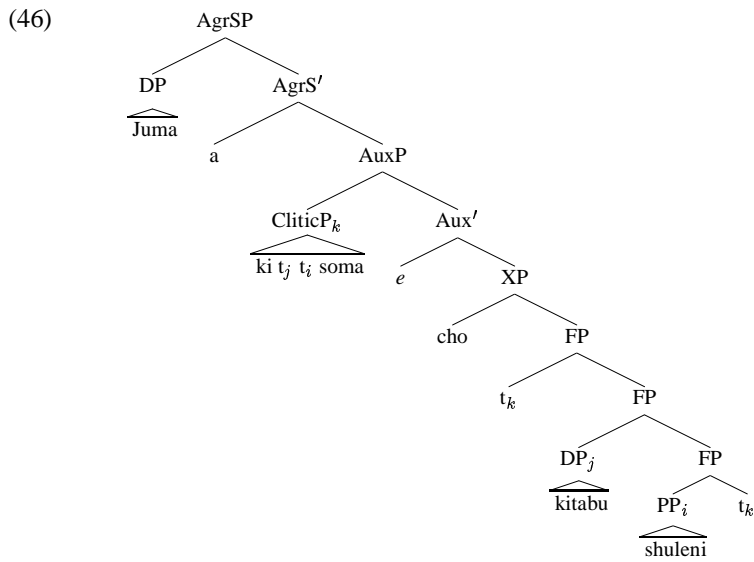
This refinement forces us to retreat from the suggestion made earlier that the Aux substring corresponds to a syntactic constituent; this is no longer the case in (44). However, the prosodic subdomain of the Aux substring could easily be obtained by the phonology, and the phonological constituency of this substring still has the desired property of not contradicting the syntactic constituency. This analysis has the additional effect of ruling out the possibility of generating the *o*-form in the C domain rather than somewhere below Aux.

5.2. The Positive Affirmative Relative

The affirmative tenseless relative form resembles the infixed form in that it lacks an overt auxiliary and the [obj marker + verb] sequence (the V substring) precedes rather than follows the *o*-form:

- (45) kitabu a- ki- soma- cho Juma
 7.book 1.subj- 7.obj- read- 7.o Juma
 ‘the book (being) read by Juma’

If the [object marker + V] sequence, which in our account is actually a CliticP remnant, is thought of as taking the place of the overt auxiliary, the positive tenseless relative can be easily accounted for. The following tree shows an underlying structure with a phonetically null Aux, to the specifier of which the remnant CliticP has moved:



From this point the derivation continues exactly as for the infixed forms discussed in the previous section.

6. COMMENTS AND CONCLUSION

In this paper, various types of evidence were presented, of both theoretical and empirical nature, which lead to the conclusion that Swahili conjugated verbs and *amba*-less relative clauses are not complex heads. Such a conclusion forces an analysis which employs remnant movement. The sketch presented here of what such an analysis might entail showed that a matrix verb form will require one cycle of remnantification, while an *amba*-less relative form will require two.

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