Verb Raising and Subject Inversion in Bantu Relatives

Katherine Demuth & Carolyn Harford

Brown University & University of Zimbabwe

Abstract

Verb raising and subject inversion have long been topics of theoretical linguistic interest in Romance and Germanic languages, amongst others. Bantu languages also exhibit verb raising and subject inversion, though there has been no comprehensive investigation of these phenomena, nor an explanation of crosslinguistic differences. This paper provides a unified account of verb raising and subject inversion in Bantu languages. It shows that subject inversion in Bantu matrix clauses resembles that found in Romance languages. In contrast, however, verb raising to C (similar to V2 in German matrix clauses) occurs only in embedded relative clauses, and only in some Bantu languages. A natural explanation for these phenomena comes from the fact that verb raising interacts with the prosodic status of the relative complementizer, and that Bantu matrix clauses are IPs not CPs. The paper points to the importance of competing interactions between different aspects of the grammar (e.g. prosodic words, syntax) and provides support for the notion of extended projections (Grimshaw 1993, 1997).

Verb Raising and Subject Inversion in Bantu Relatives[*]

1.0 Introduction

The structural position of postverbal subjects has been an issue of significant theoretical interest since early work on unaccusativity (e.g. Perlmutter 1978, Chomsky 1981, Rizzi 1982, Burzio 1986, Belletti 1990). Much of this work has been conducted on Romance languages such as French (Kayne & Pollock 1978, Deprez 1989, 1990) and Italian (Rizzi 1982, Burzio 1986, Saccon 1993) as well as Hebrew (Shlonsky 1987) and comparative Germanic (e.g. Vikner 1991). However, the analysis of postverbal subjects, even in languages like Italian, remains somewhat controversial. Early analyses by Rizzi (1982) argued that postverbal subjects derive from preverbal position where they are VP-adjoined through a process of "free variation." In contrast, Saccon (1992) provides evidence from the Conegliano dialect of Italian (north of Venice), that postverbal subjects are either VP-internal or right-dislocated, and that the same analysis holds for Standard Italian.

The nature of inverted subjects in Bantu languages has also been somewhat controversial. Although the phenomenon is more clearly understood in matrix clauses with constructions similar to what Saccon (1992) proposes for Italian (Bresnan & Mchombo 1987, Machobane 1987, Demuth & Mmusi 1997), the facts are less clear in other Bantu languages (see Bokamba 1976a for review). In this paper we show that Bantu languages have postverbal subjects in both VP-internal and right-dislocated positions in matrix clauses, as well as in VP-internal

and Spec-IP positions in embedded relative clauses. Evidence for these different structural positions comes from a combination of agreement, morphophonological, tonal, and word order facts.[1] In our analysis we address many of the issues raised by Meeussen's (1971), Givón's (1972), and Bokamba's (1976a, 1976b, 1979) early transformational analyses and Bokamba's (1992) later analysis of Bantu relative constructions.

We begin our investigation by showing that Bantu languages, which have basic SVO word order, exhibit variation with respect to subject inversion in object relative clauses. Languages like Sesotho have no subject inversion (1a), whereas languages like Chishona do (1b).[2]

(1) a. **Setulo seo   <u>basadi</u>   <u>ba</u>-se-rek-ile-ng   kajeno**

7chair 7REL 2women 2AGR-7OBJ-buy-PERF-RL today

'The chair which the women bought today'

b. **Mbatya   dza-<u>va</u>-kason-era   <u>vakadzi</u> mwenga**

10clothes 10REL-2AGR-sewed-APL 2women 1bride

'Clothes which the women sewed for the bride'

We then extend our analysis to address related yet more complex phenomena in Kiswahili, Dzamba, Lingala, and Kilega. We find the phrase structure notions articulated in Chomsky (1989) to be useful in capturing structural differences. We therefore assume, along with Kitagawa (1986), Sportiche (1988), Koopman & Sportiche (1991), and Chomsky (1989), that the subject is base generated in Spec-

VP, that the tensed verb raises to I to pick up Agreement and Tense, that the subject generally raises to Spec-IP to receive nominative Case, and that Spec-Head agreement takes place between the verb in I and the NP in Spec-IP.

The paper is organized as follows: In section 2 we examine the word order and structural differences between Sesotho and Chishona object relative clauses. Evidence from matrix clauses, including agreement, extraposition, and topicalization, is used to support our claim that prosodic clitic properties of the relative complementizer (REL) lead to verb raising to C and subsequent surface 'subject inversion' in Chishona, where the subject is left behind in Spec-IP. In section 3 we show that the same phenomena account for variable subject inversion in Kiswahili. In section 4 we consider Dzamba topicalization and left-dislocation. We show that variation in subject agreement patterns indicate either Spec-VP or Spec-IP positions for subjects in Dzamba as well as Lingala and Kilega, where subject inversion is dependent on discourse characteristics of the relativized clause. We conclude in section 5 with a discussion of the interactions between subject inversion and verb raising, clause structure, morphophonological properties of functional heads, and discourse properties such as of Topic and Focus, suggesting areas for future research.

2.0 Verb Raising and Relative Complementizers in Sesotho and

Chishona

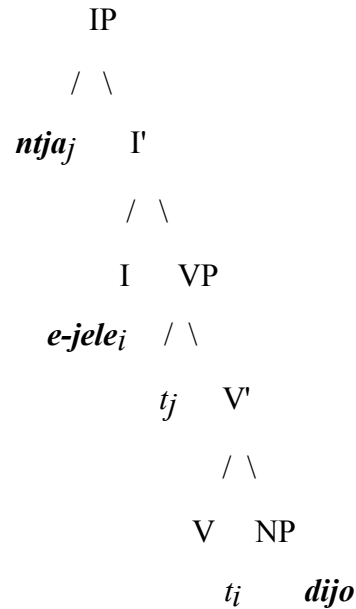2.1 Word Order and Agreement in Matrix Clauses

Basic word order in Bantu languages is SVO. However, Bantu languages also exhibit flexibility in word order: Grammatical subjects can be dropped and/or

extraposed, and the same is true with grammatical objects.   Extraposition (right/left dislocation) leads to the following possible word orders (examples from Sesotho):

(3)　　SVO　　**ntja e-j-ele　　　　dijo**

　　　　　　　　9dog 9AGR-eat-PERF 8food　　'The dog ate the food'

　　　　VOS　　**e-j-ele dijo ntja**

　　　　VSO　　**e-di-j-ele ntja dijo**

　　　　OSV　　**dijo ntja e-di-j-ele**

　　　　OVS　　**dijo e-di-j-ele ntja**

　　　　SOV　　**ntja dijo e-di-j-ele**

Note that subject-verb agreement (AGR) is obligatory, whereas the object pronominal (in this case **-di-** 'it') is only required when the lexical object is moved from its position adjacent to the verb. Note also that subject-verb agreement is always with the grammatical subject, regardless of its extraposed surface position. We assume, along with Koopman & Sportiche (1991) and others, that the lexical subject raises from Spec-VP to Spec-IP where it enters into Spec-Head agreement with the verb. This is illustrated in (4).

(4) Subject Raises to Spec-IP, V > I

```
            IP
           /  \
      ntja_j    I'
               /  \
              I    VP
          e-jele_i  / \
                  t_j  V'
                      /  \
                     V    NP
                    t_i    dijo
```

Interestingly, Bantu languages also permit locative subjects (cf. Bresnan & Kanerva 1989), as illustrated in the Sesotho example in (5b).[3]

(5) a. **Basadi   ba-ile   Maseru kajeno**

2women 2AGR-go/PERF Maseru today

'The women went to Maseru today'

b. **Maseru ho-ile   basadi   kajeno**

Maseru 17AGR-go/PERF 2women today

'To Maseru women went today'

c. ***Maseru <u>ba</u>-ile   <u>basadi</u>   kajeno**

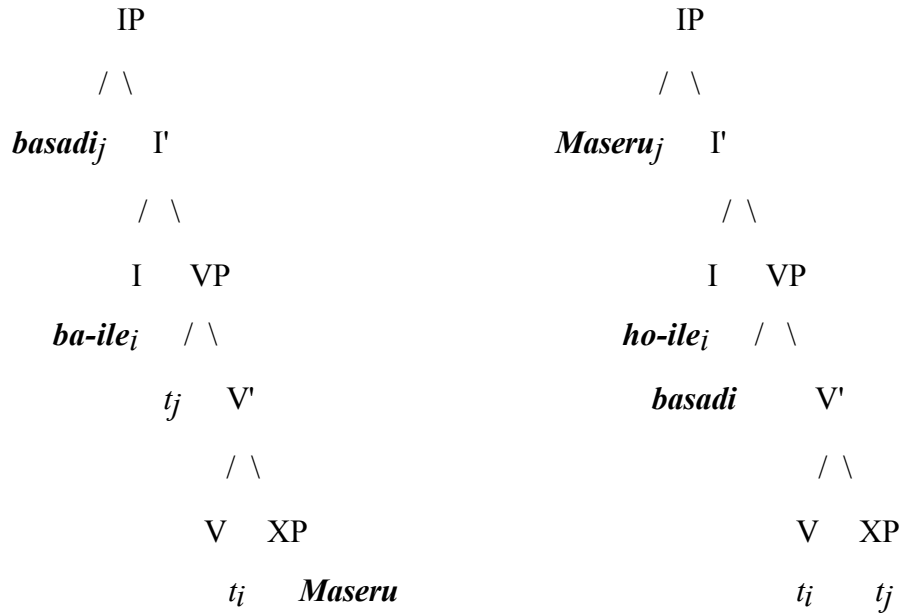   Maseru 2AGR-go/PERF 2women today

   'To Maseru women went today'

d. ***Maseru <u>ho</u>-ile   kajeno <u>basadi</u>**

   Maseru 17AGR-go/PERF today 2women

   'To Maseru women went today'

In (5a) the subject **basadi** 'women' and AGR are in agreement - they are both noun class 2. In (5b), however, it is the <u>locative subject</u> that agrees with the verb; the <u>logical subje</u>ct **basadi** 'women' does not. Such agreement would be ungrammatical, as shown in (5c). Note also that the logical subject **basadi** must remain adjacent to the verb in the inverted construction; an adverbial is not allowed to intervene (5d). Machobane (1987) argues that the logical subject in such constructions remains in Spec-VP where it receives nominative case, and that the locative raises to Spec-IP, triggering agreement. This is illustrated in (6a,b).

(6) a. <u>Logical</u> subject in Spec-IP   b. <u>Locative</u> subject in Spec-IP

```
              IP                                      IP
             / \                                     / \
      basadiⱼ    I'                          Maseruⱼ    I'
               / \                                     / \
              I   VP                                  I    VP
         ba-ileᵢ   / \                          ho-ileᵢ    / \
                  tⱼ   V'                               basadi    V'
                      / \                                        / \
                     V   XP                                     V    XP
                    tᵢ    Maseru                               tᵢ     tⱼ
```

These tests of agreement and position adjacent to the verb are useful in determining both the surface and underlying positions of the logical subject: AGR will agree with the NP that has raised to Spec-IP. That is, if AGR shows locative agreement (class 17), the locative NP must have raised to Spec-IP, the logical subject remaining in Spec-VP. Alternatively, if AGR agrees with the logical subject, it is the logical subject that must have raised to Spec-IP. If no subject NP appears preverbally, it has then been extraposed. Thus, we find cases where a locative has been topicalized (left-dislocated) (7), and cases where the locative is topicalized and the logical subject extraposed (right-dislocated) (8), but cases like (9a) are ungrammatical: If AGR agrees with the locative **Maseru**, the logical subject **basadi** 'women' must immediately follow the verb (9b).

(7)   **Maseru** <u>**basadi**</u>   <u>**ba**</u>**-ile**   **kajeno**

Maseru 2women 2AGR-go/PERF today

'To Maseru the women went today'

(8)   **Maseru** <u>**ba**</u>**-ile**   **kajeno** <u>**basadi**</u>

Maseru 2AGR-go/PERF today   2women

'To Maseru they went today, the women'

(9) a. *****Maseru** <u>**ho**</u>**-ile**   **kajeno** <u>**basadi**</u>

Maseru 17AGR-go/PERF today   2women

'To Maseru they went today, the women'

(9) b. **Maseru** <u>**ho**</u>**-ile**   <u>**basadi**</u>   **kajeno**

Maseru 17AGR-go/PERF 2women today

'To Maseru they went today, the women'

Thus, the agreement facts in the following Chishona constructions (from Harford 1990) indicate that the locative is functioning as the grammatical subject.

(10)a. **Ku-musha kwa-afi-wa**   **no   mukadzi**

17-3home 17AGR-die-PASS COP 1woman

'At home was died by a woman'

b. **Mumba m-atand-wa**   **vanhu**

18house 18AGR-chase out-PASS 2people

'In the house were chased out people'

[People were chased out of the house.]

Similar constructions are found in other Bantu languages (see Bresnan & Kanerva (1989) for discussion of Chichewa).

In this section we have shown how subject-verb agreement (AGR) is useful for determining the syntactic position of the logical subject. In particular, we have demonstrated that the NP raising to Spec-IP triggers agreement on the verb, and that if that NP is not the logical subject, the logical subject must be in Spec-VP. In the next section we show that these same diagnostics are useful for determining both the underlying and surface positions of logical subjects in embedded relative clauses.

2.2 Word Order and Agreement in Embedded Object Relative Clauses

Many Bantu languages preserve basic SVO word order in relative clauses. This is seen in Sesotho (11a), where a postverbal subject is ungrammatical (11b), but where an extraposed, or right-dislocated grammatical subject is permitted (11c).

(11)a. **Setulo seo   basadi   ba-se-rek-ile-ng   kajeno**

  7chair 7REL 2women 2AGR-7OBJ-buy-PERF-RL today

  'The chair which the women bought today'

  b. ***Setulo seo   ba-se-rek-ile-ng   basadi   kajeno**

  7chair 7REL 2AGR-7OBJ-buy-PERF-RL 2women today

  'The chair which the women bought today'

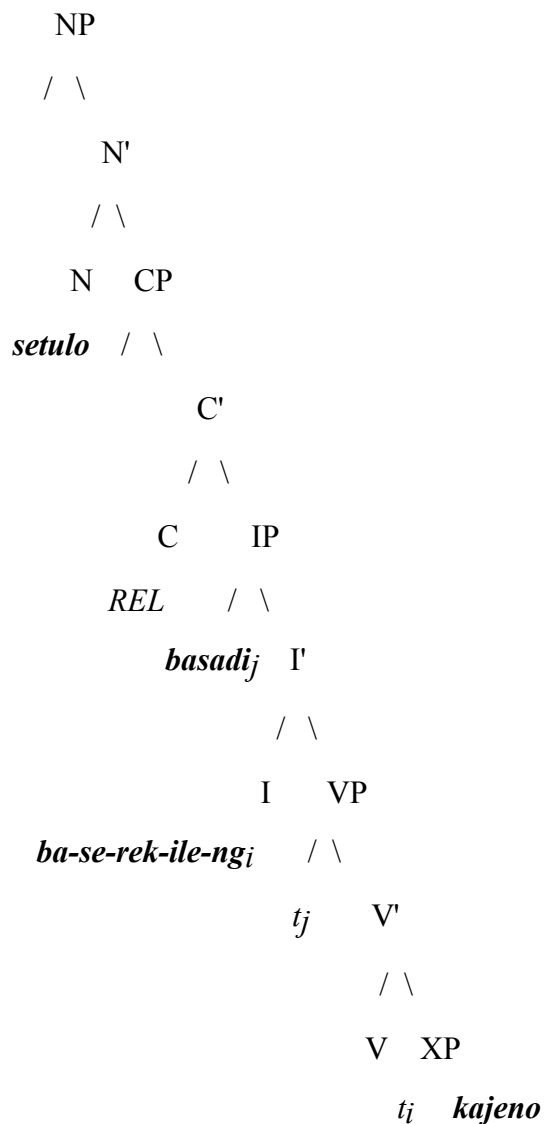 c. **Setulo seo   ba-se-rek-ile-ng   kajeno basadi**

  7chair 7REL 2AGR-7OBJ-buy-PERF-RL today   2women

  'The chair which they bought today, the women'

In (11a) the relative complementizer (REL) **seo** agrees with the head noun **setulo** 'chair' - both are noun class 7. The subject of the embedded relative clause is **basadi** 'women' which takes class 2 subject agreement on the verb. A class 7 resumptive pronoun (OBJ) -**se**- prefixes to the verb, agreeing with the extracted object. The phrase structure for object relative clauses is given in (12), where the lexical subject has raised from Spec-VP to Spec-IP, the verb -**rek**- 'buy' has raised

from V to I to pick up Agreement (**ba-**) and Tense (**-ile**), and the REL **seo** occupies C (see Demuth (1995) for a fuller treatment of Sesotho relative clauses).

(12) Subject Raising to Spec-IP, <u>V > I</u>

```
                  NP
                 / \
                    N'
                   / \
                  N    CP
            setulo   / \
                        C'
                       / \
                      C      IP
                    REL     / \
                        basadi_j   I'
                                  / \
                                 I      VP
                   ba-se-rek-ile-ng_i     / \
                                        t_j     V'
                                               / \
                                              V   XP
                                              t_i    kajeno
```

The structure of Chishona object relatives is somewhat different. A preverbal subject is ungrammatical (13a), but a postverbal subject is allowed (13b).[4]

(13)a. ***Mbatya   dza   <u>va</u>kadzi   <u>va</u>-kason-era   mweng**a

      10clothes 10REL 2women 2AGR-sewed-APL 1bride
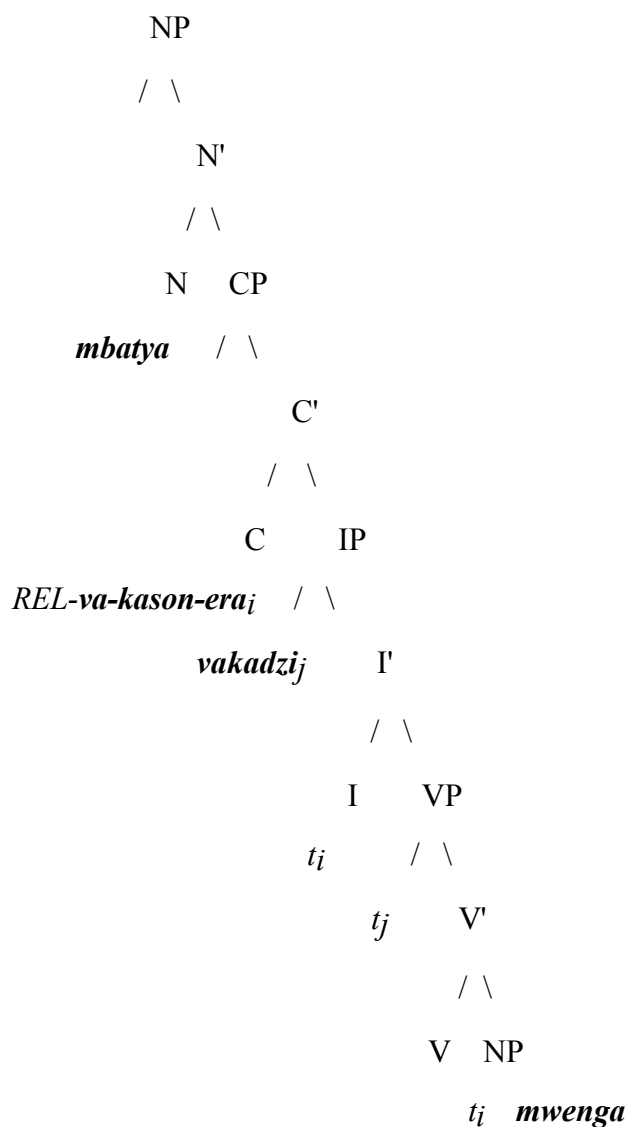
      'Clothes which the women sewed for the bride'

   b. **Mbatya   dza-<u>va</u>-kason-era   <u>va</u>kadzi   mwenga**

      10clothes 10REL-2AGR-sewed-APL 2women 1bride

      'Clothes which the women sewed for the bride'

What, then, is the grammatical difference between object relatives in Sesotho and Chishona? And what is the position of the 'inverted subject' in Chishona? Recall that the Sesotho REL is in C. We propose that the same is true for Chishona. Note, however, that the Sesotho REL is an independent lexical item (a prosodic word), whereas the Chishona REL is not. Lexical items in many Bantu languages must contain at least two syllables (be a binary foot) in order to constitute a "minimal phonological word" (e.g. Kanerva 1989). The Sesotho object REL is therefore an independent lexical item that can fully occupy the head of CP. In contrast, object REL in Chishona is a prosodic clitic (cf. Selkirk 1996) which cannot stand alone. It must achieve prosodic word-hood in another way, and this is accomplished by raising the verb from I to C, through head-to-head movement - a licit syntactic process that results in the satisfaction of prosodic word requirements. This results in the logical subject being left behind in Spec-IP,

giving rise to apparent subject inversion. This processes of verb raising from I to C (and subject raising to Spec-IP) is illustrated in (14).

(14) Subject Raising to Spec-IP, <u>V > I > C</u>

```
                    NP
                   /  \
                      N'
                     /  \
                    N    CP
                 mbatya  /  \
                            C'
                           /  \
                          C     IP
              REL-va-kason-erai  /  \
                          vakadzij    I'
                                     /  \
                                    I    VP
                                   ti    /  \
                                       tj    V'
                                            /  \
                                           V   NP
                                          ti   mwenga
```

Thus, a difference in syntactic surface form between Sesotho and Chishona embedded object relatives arises from a <u>difference in the prosodic shape of the relative complementizer:</u> In Sesotho, verb raising from I to C is blocked because C is lexically filled (as in German subordinate clauses), whereas in Chishona verb

raising from I to C is not only possible but required to satisfy the prosodic word requirements of REL. This is essentially a reformulation of Givón's (1972) Universal Pronoun Attraction Principle, where he noted that subject inversion in relative clauses occurs when the relative 'pronoun' is a bound morpheme. This is summarized in more current terminology below.

(15)   <u>Prosodic Status of REL and Implications for Verb Movement</u>

Sesotho   Prosodic Word   Blocks I > C

Chishona   Prosodic Clitic   Requires I > C

If this generalization is true - that is, if <u>the prosodic word status of REL has implications for word order in embedded clauses,</u> we should be able to predict the presence or absence of subject inversion in other Bantu languages based on the prosodic properties of the relative complementizer (REL). In the next section we examine three different relative constructions in Kiswahili, and show that this hypothesis is correct.

3. Lexical versus Clitic Relative Complementizers in Kiswahili

Kiswahili is an interesting language to consider because it has three different relative clause constructions. The first type is like that found in Sesotho. That is, REL is an independent lexical item **amba**- which inflects to agree with the head noun. In the embedded relative clause in (16a) the grammatical subject **mtoto** 'child' precedes the verb and AGR shows agreement with it. As in Sesotho, the

grammatical subject can be right dislocated (16b), but cannot occur adjacent to the verb in Spec-VP (16c) (see Ashton 1944, Tyler 1985).

(16)a. **Kitabu ambacho <u>mtoto</u> <u>a</u>-me-ki-ona**   jana

      7book REL7   1child 1AGR-PERF-7OBJ-see yesterday

      'The book which the child saw yesterday'

  b. **Kitabu ambacho <u>a</u>-me-ki-ona**   jana   <u>mtoto</u>

      7book REL7   1AGR-PERF-7OBJ-see yesterday 1child

      'The book which the child saw yesterday'

  c. *__Kitabu ambacho <u>a</u>-me-ki-ona__   <u>mtoto</u> jana

      7book REL7   1AGR-PERF-7OBJ-see 1child yesterday

      'The book which the child saw yesterday'

In addition to the lexical REL **amba**-, Kiswahili has a clitic REL that takes two different forms. In the first, the REL **-cho**- agrees with the head noun (both class 7) and the construction takes a resumptive pronoun **-ki**- (also class 7) (17a). As expected, the grammatical subject appears postverbally; a preverbal subject is not allowed (17b).

(17)a. **Kitabu <u>a</u>-li-cho-ki-ona**   <u>mtoto</u>

      7book 1AGR-PAST-7REL-7OBJ-see 1child

      'The book which the child saw'

b. *Kitabu <u>mtoto</u> a-li-cho-ki-ona

    7book 1child 1AGR-PAST-7REL-7OBJ-see

    'The book which the child saw'

Alternatively, the REL **-cho** suffixes to the verbal complex (18a), and preverbal subjects are again disallowed (18b).

(18)a. **Kitabu <u>a-ki-taka-cho</u>**   **<u>Hamisi</u>**

    7book 1AGR-7OBJ-want-7REL 1Hamisi

    'The book which Hamisi wants'

b. *Kitabu <u>Hamisi</u> a-ki-taka-cho

    7book 1Hamisi 1AGR-7OBJ-want-7REL

    'The book which Hamisi wants'

Recall that the REL in Chishona prefixes to the verbal complex, whereas in Kiswahili it is either infixed into the verbal complex, or suffixed to it. That is, the affixal nature of the clitic REL seems to be irrelevant for verb movement; the verb raises in all cases.[5] Rather, it appears to be the <u>prosodic word status</u> of the relative complementizer that is critical for blocking or triggering verb raising in embedded relatives: When REL is <u>lexical</u> (i.e. a well-formed prosodic word) verb movement to C is blocked and no subject inversion occurs. However, when REL

is a <u>prosodic clitic</u> the verb must raise to C, the subject being left behind in Spec-IP.

The Bantu patterns of verb raising and subject inversion are intriguing given the presence of somewhat similar phenomena in some Germanic languages (cf. Vikner 1991 for review). However, there are also some important differences. German, like Kiswahili, permits verb raising when C is not filled with lexical material, and prohibits verb raising when C is filled with a complementizer. Bantu and Germanic languages seem to pattern similarly in this regard. They differ, however, in the clause types in which verb raising occurs: Verb raising to C takes place in matrix clauses in German, and is blocked in embedded clauses. In contrast, Bantu languages never permit verb raising in matrix clauses; if verb raising to C occurs at all it happens in embedded clauses.

Why do Bantu languages not show verb raising to C in matrix clauses? Following Grimshaw's (1993, 1997) proposals for extended projections, a possible explanation is that CP structure is not available in Bantu matrix clauses; matrix clauses are only IPs. Support for this position comes from the fact that question formation in Bantu languages occurs either in situ, or as cleft/relative constructions; that is, there is no wh-movement in Bantu languages (Demuth 1995). If Bantu matrix clauses are only IPs, then verb raising to C can only occur in embedded clauses, and only under appropriate conditions - i.e. if not lexically blocked. In German, however, matrix clauses project a CP, and verb raising results. Similar patterns of verb raising to C also occur in residual V2 languages like English, but only when a CP is lexically projected, as in the case of questions

(compare [IP **Mary will come tomorrow**] with [CP **Will** [IP **Mary come tomorrow**]]?) (cf. Grimshaw 1997).

Can we then conclude that inverted subjects in Bantu relatives all occur in Spec-IP? Although this seems to account for the Chishona and Kiswahili relatives discussed above, we show in the following section that this assumption is too strong. Specifically, we provide agreement evidence that inverted subjects in Dzamba and Lingala, and some inverted subjects in Kilega, are actually in Spec-VP.

4. Subject Agreement and Subject Inversion in Dzamba, Lingala, and Kilega[6]

Bantuists have long noted that different word orders play important functions such as identifying discourse topic and focus (e.g. Givón 1972, Bokamba 1976a, 1976b, 1979, Bresnan & Mchombo 1987). Specifically, preverbal position is generally used for introducing Topics, and postverbal position is generally reserved for Focus. These discourse functions are especially visible in Bantu matrix clauses, where postverbal position is reserved for non-topical, new, or focused information (cf. Bresnan & Mchombo 1987, Demuth & Johnson 1989, Demuth 1989), including presentationally focused subjects of locative inversion and expletive constructions (Demuth & Mmusi 1997).

All Bantu languages so far investigated seem to permit locative NPs as grammatical subjects (locative inversion constructions), though the class of verbs with which these can occur shows language-specific variation (see Demuth & Mmusi 1997 for review). Bantu languages also make use of extraposition, as illustrated earlier with examples from Sesotho (3). Left-dislocation, or

Topicalization, often fulfills the role of introducing a new topic. However, Bokamba (1976a, 1976b, 1992) shows that languages like Dzamba make a distinction between Left-Dislocation and Topicalization, the latter permitting <u>object</u> NPs to function as grammatical subjects! We examine this phenomenon below.

As is the case in most Bantu languages (cf. (3)), Dzamba permits Left-Dislocation of an object, but only when an object pronoun (OBJ) is included (19a, 20a).[7] When the object pronoun is omitted the examples are ungrammatical (19b, 20b) (from Bokamba 1992).

(19)a. **Babana,   <u>oPoso</u> <u>a-ba-eza-áki</u>   bieka loome**

2children 1Poso 1AGR-2OBJ-give-IMP 8food today

'As for the children, Poso gave them some food today'

   b. ***Babana,   <u>oPoso</u> <u>a-eza-áki</u>   bieka loome**

2children 1Poso 1AGR-give-IMP 8food today

'To the children, Poso gave (some) food today'

(20)a. **Ibieka, <u>oPoso</u> <u>a-bi-eza-áki</u>   babana   loome**

8food 1Poso 1AGR-8OBJ-give-IMP 2children today

'As for the food, Poso gave it to the children today'

b. ***Ibieka, <u>oPoso</u> <u>a</u>-eza-áki   babana   loome**

   8food 1Poso 1AGR-give-IMP 2children today

   'The food, Poso gave (some) to the children today'

Note that in all the above examples AGR is class 1 **a-**, that is, agreement is with the logical subject **oPoso**. Now consider the following Topicalized sentences from Dzamba, where either object can function as the <u>grammatical subject</u> of the verb, triggering subject-verb agreement (21b,c) (from Bokamba 1992). In both cases Bokamba shows that the <u>logical subject</u> **oPoso** must occur immediately to the right of the verb and the object pronoun (OBJ) is not required.

(21)a. **<u>OPoso</u> <u>a</u>-eza-áki   babana   bieka loome**

   1Poso 1AGR-give-IMP 2children 8food today

   'Poso gave the children (some) food today'

   b. **Babana   <u>ba</u>-eza-áki   oPoso bieka loome**

   2children 2AGR-give-IMP 1Poso 8food today

   'To the children, Poso gave (some) food today'

   c. **Ibieka <u>bi</u>-eza-áki   oPoso babana   loome**

   8food 8AGR-give-IMP 1Poso 2children today

   'The food, Poso gave (some) to the children today'

Equivalent examples from Sesotho are unacceptable (22b, c).

(22)a. **Basadi**   **ba-rek-etse**   ngoana setulo

      2women 2AGR-buy-APL/PERF 1child   7chair

      'The women bought the child (a) chair'

b. ***Ngoana o-rek-etse**   **basadi**   setulo

      1child   1AGR-buy-APL/PERF 2women 7chair

      'For the child, the women bought (a) chair'

c. ***Setulo se-rek-etse**   **basadi**   ngoana

      7chair 7AGR-buy-APL/PERF 2women 1child

      'The chair, the women bought (it) for the child'

Bantu languages seem to differ in what they permit as grammatical subjects: Although most Bantu languages allow the raising of objects to subject position in passive constructions (Demuth 1989), and most permit locative subjects - albeit with different verb classes (cf. Harford 1990, Demuth & Mmusi 1997), only some Bantu languages apparently permit the use of objects as grammatical subjects. That is, only a few allow objects to raise to Spec-IP, triggering Spec-Head agreement on the verb. Bresnan & Kanerva (1989) take a Lexical Mapping Theory approach to the issue of locative subjects, arguing that the thematic hierarchy plays a role in determining which arguments can be promoted to grammatical subject. A full treatment of these issues goes beyond the scope of the present paper: What is important here is that constructions like those described

above for Dzamba provide another type of subject inversion construction in relative clauses.

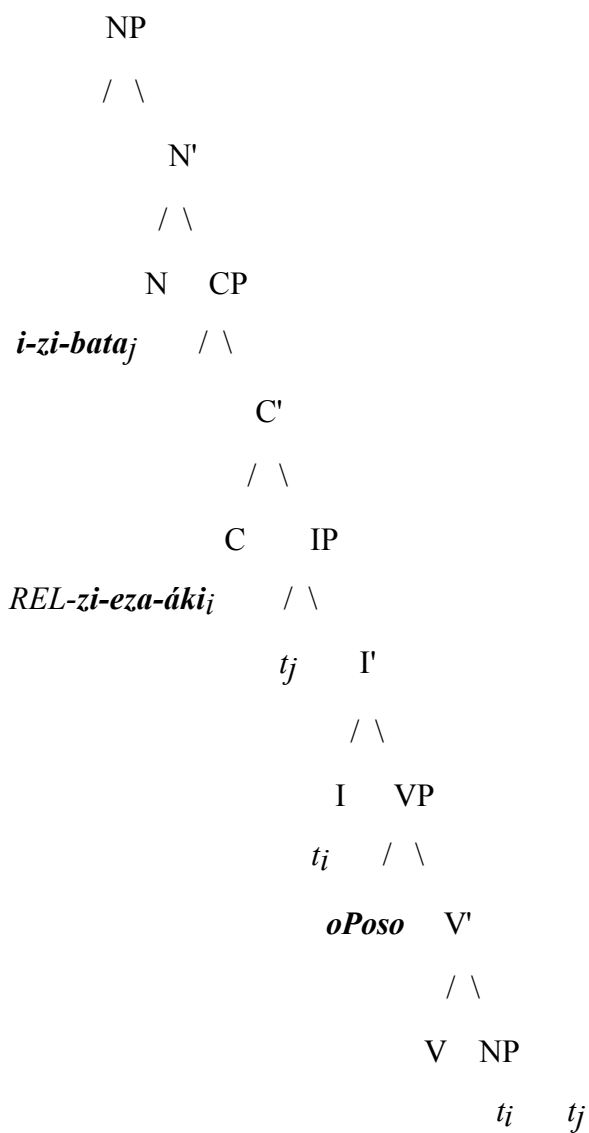Consider the following Dzamba relative (from Bokamba 1976b).

(23)   **Izibata i-zi-eza-áki**   **oPoso babutu loome**

        5duck 5REL-5AGR-give-IMP 1Poso 2guests today

        'The duck that Poso gave the guest today'

Here we see that both the clitic REL and AGR are of class 5, both agreeing with the head noun. Furthermore, there is no class 5 resumptive pronoun (OBJ), as might be expected of an object relative. That is, the construction in (23) seems to function grammatically as a subject relative. In fact, Bokamba (1976b) notes that subject inversion occurs with the relativization of objects, locatives, and instrumentals. Dzamba therefore appears to be a language that permits relativization only from subject position. Put another way, only Topics can be relativized, where grammatical subject position is reserved for discourse Topic. This is reminiscent of Keenan & Comrie's (1977) observations regarding the relativization hierarchy, where all languages can relativize subjects, but only some can relativize direct objects, indirect objects, and so on.

Thus, it appears that Dzamba may be a language which only permits relativization from Spec-IP. This means that when the object becomes the grammatical subject, and then is relativized, the logical subject **oPoso** is left behind in Spec-VP. It is therefore not the case that all inverted subjects in Bantu relative clauses are in Spec-IP. Rather, if the logical subject was already in Spec-VP in the

clause which was relativized, it will remain there in the relative clause as well. Since the Dzamba REL is a prosodic clitic, the verb will raise to C. The resulting structure for (23) is given in (24).

(24) Object Raising to Spec-IP, $\underline{V > I > C}$

```
                    NP
                   / \
                       N'
                      / \
                    N    CP
           i-zi-bataⱼ   / \
                            C'
                           / \
                         C     IP
       REL-zi-eza-ákiᵢ      / \
                          tⱼ     I'
                                / \
                              I    VP
                             tᵢ   / \
                               oPoso   V'
                                      / \
                                    V    NP
                                   tᵢ    tⱼ
```

Dzamba thus provides further evidence that subject inversion occurs when REL is a prosodic clitic.

Despite the different structural positions in which the logical subject can occur, all of the cases of subject inversion discussed so far have occurred when REL is a prosodic clitic. Although we expect no subject inversion with the logical subject in Spec-IP if the REL is lexical, we predict that subject inversion should be possible with lexical RELs if the logical subject is left in Spec-VP. Interestingly, Bokamba (1979) provides evidence of exactly this type of construction from Lingala. First, consider the relatives in (25a) and (25b), where both have Subject-Verb word order in the relative clause.

(25)a. **Litoko liye   Póso   á-tóng-ákí   leló**

5mat 5REL 1Poso 1AGR-weave-IMP today

'The mat which Poso wove today'

b. **Litoko Póso   á-tóng-áki   leló**

5mat   1Poso 1AGR-weave-IMP today

'The mat which Poso wove today'

Note that REL is missing in (25b), yet verb raising is apparently blocked in both cases. We suggest that C is "filled" in the sense of Grimshaw (1993), whether there is an overt lexical REL or not.[8] The logical subject has raised to Spec-IP, as evidenced by the class 1 AGR, but the verb does not move further.

Subject inversion does occur, however, in (26a) and (26b), but this time subject agreement is with the head noun **litoko** 'mat' - class 5. Note also that a lexical REL is present in (26a), whereas in (26b) the REL has coalesced with AGR into a portmanteau morpheme. That the REL **lí-** in (26b) is not merely AGR is indicated by the presence of High tone.[9]

(26)a. **Litoko liye** <u>li</u>**-tóng-ákí**   **Póso leló**

      5mat 5REL 5AGR-weave-IMP 1Poso today

      'The mat which Poso wove today'

  b. **Litoko** <u>**lí**</u>**-tóng-áki**   **Póso leló**

      5mat 5REL/5AGR-weave-IMP 1Poso today

      'The mat which Poso wove today'

In both (26a) and (26b) the <u>object</u> has raised to Spec-IP triggering agreement on the verb, and the logical subject remains in Spec-VP. The verb is blocked from raising to C in (26a), and remains in I. In (26b), however, the verb must raise to C to satisfy the prosodic word requirements of the clitic REL. Thus, the Lingala examples in (26a,b) represent a third "type" of subject inversion in relative clauses, where the logical subject is in Spec-VP, regardless of the lexical status of the REL. That is, the lexical nature of the REL controls verb movement, but the position of the logical subject is determined independently by discourse (Topic/Focus) properties of the original clause.

Given the possibility of having logical subjects in either Spec-IP or Spec-VP, we might also expect to find a language that exhibited both types of subject inversion in relative clauses, both with a clitic relative. Kilega is just such a language (Kinyalolo 1985, 1991, Itangaza 1993). Itangaza (1993) shows that postverbal subjects can occur with Kilega relative clauses (27a), but that these are in complementary distribution with the presence of the subject agreement marker -**ba**- (27b); the two cannot cooccur (27c). On the other hand, we expect the right-dislocated logical subject in (27d) to be acceptable, which it is.

(27)a. **Tukwe   tukizi   tu-a-kandulile   bana**

12package 12what 12REL/12AGR-TN-open-PERF 2children

                                             walubi?

                                             yesterday

'It's what packages that the children opened yesterday?'

b. **Tukwe   tukizi   tu-<u>ba</u>-kandul-ile   walubi?**

12package 12what 12REL-2AGR-open-PERF yesterday

'It's what packages that they (children) opened yesterday?'

c. ***Tukwe   tukizi   tu-<u>ba</u>-kandul-ile   bana**   12package

12what 12REL-2AGR-open-PERF 2children

                                  walubi?

                                    yesterday

'It's what packages that the children opened yesterday?'

d. **Tukwe   tukizi tu-<u>ba</u>-kandul-ile**   **walubi** 12package

12what 12REL-2AGR-open-PERF yesterday

<u>bana</u>?

2children

'It's what packages that they opened yesterday, the children?'

Meeussen (1971) makes similar observations for Kilega, and notes that Chiluba and Lomongo also have subject inversion constructions like that in (27a), whereas only Chiluba and Kilega have null-subject constructions like that in (27b). Chiluba and Kilega are therefore languages where the verb always raises to C in relative clauses, the subject either remaining in Spec-VP (27a), raising to Spec-IP and then undergoing pro-drop (27b), or being right-dislocated (27d). Kilega, Chiluba, and Lomongo also have the possibility of Topicalizing objects, with relativization being performed on the raised object. REL in both cases is a prosodic clitic and the verb therefore raises to C. These findings are summarized in Table 1. Those languages where subject inversion occurs are given in italics.

	Position of Logical Subject	
	Spec-IP	Spec-VP
Lexical REL (V > I)	Sesotho Kiswahili Lingala	*Lingala*
Clitic REL (V > I > C)	*Chishona* *Kiswahili* *Kilega* *Chiluba*	*Dzamba* *Lingala* *Kilega* *Chiluba* *Lomongo*

Table 1. Position of Logical Subject in Relative Clauses

In this section we have shown that inverted subjects occur in matrix clauses when an argument other than the logical subject (e.g. the object) is raised to grammatical subject position, becoming the Topic (and grammatical subject) of the matrix clause. We then showed that when relativization occurs, the logical subject remains in VP-internal (Spec-VP) position. Such constructions are attested in Dzamba, Lingala, Kilega, Chiluba, and Lomongo. This means that languages which permit locative subjects (section 2.1) should also exhibit VP-internal logical subjects when the locative is relativized from grammatical subject position. Bokamba (1976a) notes that this is true for Dzamba and Kiswahili. Additional

evidence comes from Sesotho, a language which otherwise does not permit subject inversion in relative clauses (from Demuth 1990).

(28) **Moo <u>ho</u>-ile-ng**   **<u>baeti</u>**   **teng**

REL 17AGR-go/PERF-RL 2travelers there

'There where the travelers went'

In sum, inverted subjects in Bantu languages can occur in two different positions, each for a different reason: The subject remains in Spec-VP for discourse reasons - in both matrix and relative clauses, or the subject remains in Spec-IP when a relative complementizer is a prosodic clitic and the verb raises to C.

5. Conclusions

The purpose of this paper was to provide a unified treatment of post-verbal subjects in Bantu matrix and embedded clauses. Of particular interest was the fact that some Bantu languages permit post-verbal "inverted" subjects in embedded object relatives, whereas others do not. Using evidence from subject-verb agreement, tone, restrictions on post-verbal word order, and the prosodic word status of the relative complementizer, we have identified two factors which independently result in subject inversion.

Subject inversion (subject in Spec-VP) occurs in matrix clauses when an argument other than the logical subject (e.g. an object, a locative) is raised to Spec-IP, becoming the grammatical subject of the matrix clause. If these constructions

are subsequently relativized the logical subject remains in VP-internal (Spec-VP) position. Alternatively, subject inversion in embedded object relatives occurs when the relative complementizer is a prosodic clitic (rather than a full prosodic word) and the verb raises from I to C, the subject remaining in Spec-IP. The contexts for subject inversion in Bantu relative clauses are summarized below, where YES indicates that "subject inversion" - or a "post-verbal subject" - results, and NO indicates it does not. The only context where post-verbal subjects do not occur is when the logical subject has raised to Spec-IP and C is filled with a relative complementizer, thereby blocking movement of the verb to C.

	Subject in Spec-IP	Subject in Spec-VP
Lexical REL (V > I)	NO	YES
Clitic REL (V > I > C)	YES	YES

Table 2. Post-verbal Subjects in Bantu Object Relative Clauses

The Bantu data presented here are interesting in light of ongoing crosslinguistic research on the nature of clause structure and word order. First, unlike languages such as German, the matrix clauses of the Bantu languages discussed in this paper

appear to be IPs, not CPs. Independent support for this claim comes from the fact that most Bantu languages lack wh-movement (Demuth 1995). If verb raising to C cannot occur in Bantu matrix clauses, then inverted subjects in matrix clauses can only occur in VP-internal position immediately following the verb (in Spec-VP) (unless they have been raised to Spec-IP, triggering agreement on the verb, and are then extraposed). Logical subjects that remain in Spec-VP do not trigger agreement with the verb.

In many Bantu languages verb raising to C in embedded relative clauses is blocked due to the presence of a relative complementizer, much as in the case of German embedded clauses. However, if the relative complementizer is prosodically deficient - i.e. a monosyllabic prosodic clitic rather than a wellformed disyllabic phonological word, verb raising to C is both permitted (C is not lexically 'saturated') and required (the clitic complementizer is not prosodically licensed, and must affix to a phonological host). Thus, crosslinguistic variation in the realization of post-verbal subjects in Bantu object relatives interacts with the prosodic characteristics of the relative complementizer. Further research will be needed to determine if prosodically deficient embedding complementizers besides the relative exist in Bantu languages, and if the expected V-S word order results.

The other interesting difference between Bantu languages and languages like German is that Bantu matrix clauses are only IPs. Thus verb raising to C (and concomitant subject inversion with the subject in Spec-IP) never occurs in Bantu matrix clauses. That Bantu root clauses only project to IP is not surprising given the fact that no wh-movement exists (Demuth 1995). Further research is needed to determine the structural status of topicalized (left-dislocated) elements as well

as preclausal negation and yes-no question words. One possibility is that these are all sentential adjuncts adjoined to IP (cf. Grimshaw 1997:380). Another possibility is that, as Grimshaw (1997) argues for English, matrix clauses can expand or contract depending on the lexical and syntactic requirements of the grammatical construction.

Finally, Bantu languages contrast with other languages in permitting a range of arguments (e.g. locatives, objects) to become grammatical subjects of the verb, resulting in inverted subjects which remain in Spec-VP. Bantu languages seem to differ from languages like English in requiring the Topic to be the grammatical subject of the sentence rather preferring the Agent in that position. This discourse effect is grammaticized to the extent that wh-question words are prohibited from occurring in subject position in Bantu languages except as an echo question.[10]

Bantu subject inversion constructions can thus be understood in terms of competing requirements of the grammar. In one case, inverted subjects result from interactions between clause structure and discourse phenomena such as presentational focus. In the other case inverted subjects result from interactions between clause structure and the morphophonological structure of functional heads. Interestingly, both discourse and prosodic word properties of the sentence seem to be satisfied first, triggering a change in unmarked SVO word order. One way to formalize these interactions is in terms of competing grammatical constraints (Prince & Smolensky 1993, Grimshaw 1997), where certain discourse and prosodic word constraints appear to be more highly ranked than syntactic constraints on word order (see Harford & Demuth (1998) for discussion along these lines). We suggest that much of language variation that has been cast in

terms of 'parametric' differences may in fact fall out from a better understanding

of such constraints and how they interact.

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Footnotes

* A earlier version of this paper was presented at 24th Conference on African Linguistics, Ohio State University. We thank that audience as well as Maarten Mous, Felix Ameka, and two anonymous reviewers for helpful comments and suggestions.

[1] Tonal interactions provide further evidence for right-dislocation: See Bresnan & Mchombo (1987) and Demuth & Johnson (1989) for discussion.

[2] Grammatical morphemes are glossed as follows: AGR = subject-verb agreement, APL = applicative, COP = copula verb, IMP = imperfect, OBJ = (resumptive) object pronoun, PASS = passive, PAST = past, PERF = perfect aspect, REL = relative complementizer, RL = relative suffix, TN = Tense. Numbers = noun classes.

[3] See the following for discussion of Bantu locative inversion constructions: Chichewa - Bresnan & Kanerva (1989), Chishona - Perez (1983), Harford (1990), Sesotho - Demuth (1990), Machobane (1995), Setswana - Demuth & Mmusi (1997).

[4] Chishona also has an alternative form which, though "grammatical" is highly marked. Further research would be needed to explore both the structural properties and discourse use of this construction.

?mbatya <u>vakadzi</u> **dza-<u>va</u>-kasonera** **mwenga**

10clothes 2women 10REL-2AGR-sewed for 1bride

'Clothes which the women sewed for the bride'

[5] Note that verb forms with the Kiswahili <u>suffixal</u> REL clitic are not marked for Tense. An analysis of this phenomenon goes beyond the scope of this paper.

[6] Different authors have used various glossing conventions in the data discussed in this section. In the interests of clarity and facilitating crosslinguistic comparison, we standardized the glosses in accord with those used for Sesotho, Chishona, and Kiswahili above.

[7] See Bresnan & Mchombo (1987) for discussion of the pronominal vs. agreement status of OBJ.

[8] Alternatively, it might be that no CP is projected (due to the lack of a lexical head), the resulting structure being merely an IP (Grimshaw 1997).

[9] A similar High toned morpheme **bá-** occurs in Sesotho subject relatives (cf. Demuth 1995) (+ = mid tone).

<u>basádi</u>+ **<u>bá</u>-rék-ílé-ng** **setulo**

2women 2REL/2AGR-buy-PERF-RL 7chair

'The women who bought the chair'

¹⁰ Bantu languages generally prohibit questioning of grammatical <u>subjects</u> in Spec-IP (i), except as 'echo' questions (ii), as illustrated in the following Sesotho examples:

    i. ***Mang o-bon-e   ntja?**

        1who   1AGR-see-PERF 9dog

        'Who saw the dog?'

    ii. **MANG o-bon-e   ntja?**

        1who   1AGR-see-PERF 9dog

        'WHO saw the dog?'

Rather, grammatical subjects must be questioned either as the oblique object of a passive (iii), or contrastively focused as part of cleft/relative construction (iv) (cf. Demuth 1989, 1990).

    iii. **Ntja e-bon-w-e   ke   mang?**

        9dog 9AGR-see-PASS-PERF COP 1whom

        "The dog was seen by whom?"

    iv. **Ke   mang ea-bon-e-ng   ntja?**

        COP 1Who 1REL/1AGR-see-PERF-RL 9dog

        "It's who that saw the dog?"

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