

RELATIVE CLAUSES IN BANTU: AFFIXES AS RELATIVE MARKERS

Gloria COCCHI

1. Introduction

In this work I am going to investigate relative clauses in Bantu languages, with special regard to two of them, Tshiluba and Swahili.¹ Interestingly, in these languages the relative marker is not an independent element, as in Romance or Germanic languages, but rather a morphologically bound affix. At a closer look, this does not come as an excessive surprise, in that all unstressed pronominal elements encoding syntactic relations, like subject, object or locative, which are clitic in Romance, have affix status in Bantu. However, the fact that the relative marker is a bound affix bears non-negligible consequences on the morphology of the verb contained in the relative clause.

Crucially, Bantu languages are characterized, among other things, by an extremely complex nominal morphology:² any noun is composed of a lexical stem and a prefix, which signals the class the noun in question belongs to. Classes are indeed agreement systems characterized by a specific prefix, encoding gender and number. All modifiers adjoined to a given noun must agree in class with it, i.e. have

¹ The Tshiluba data come from personally conducted interviews, supplemented by the literature (Willems 1949, De Clercq 1960, Kamwangamalu 1985). The Swahili data are mostly taken by the works of Perrott (1957) and Ngonyani (1999).

² In glossing Bantu examples we will use the following abbreviations: 1sg/pl = 1st person singular/plural, 2sg/pl = 2nd person singular/plural, cl = class (for 3rd person nominals); su = subject (e.g. 1sg.SU = 1st person singular subject; 1.SU = 3rd person subject belonging to class 1); do = direct object; io = indirect object; rel = relative marker; T/A = tense/aspect affix; I = final inflection; part = particle. In the course of the work we will avoid separating the verb stem and the final inflection when unnecessary.

the same prefix.³ An example of a noun modified by an adjective is given in (1), from Tshiluba; notice that also the verb agrees in class with its subject:⁴

- (1) mu-ntu mu-impe u-di-a
 cl.1-man cl.1-good 1.SU-eat-I
 ‘the good man eats’

A Bantu verbal form is also morphologically complex: besides the lexical stem, the final inflection and the subject prefix - which are generally obligatory,⁵ as in (1) above - it may in fact contain other affixes encoding information on tense/aspect (T/A henceforward), the eventual direct and/or indirect object(s), and even suffixes indicating syntactic processes like causative, applicative or passive. This is shown, for instance, in the applicative sentence in (2) below (still from Tshiluba), where the two internal arguments (the theme and the applied/indirect object) have pronominalized, i.e. have affixed onto the verb:

- (2) mu-ntu w-aka-tshi-mu-sumb-il-a (mu-ana) (tshi-muma)
 cl.1-man 1.SU-T/A-7.DO-1.IO-buy-appl-I (cl.1-boy) (cl.7-fruit)
 ‘the man has bought it (the fruit) for him (the boy)’

Relative clauses (RCs henceforward) are noun modifiers, like attributive adjectives;⁶ we may thus expect that the prefix of the noun modified by the RC – the

³ It is interesting to notice that, in dictionaries (e.g. De Clercq 1960 for Tshiluba), nouns are already inflected for class, i.e. they are listed with their prefix (e.g. *muntu* ‘man’), while adjectives are listed as bare stems (e.g. *impe* ‘good’), as their prefix changes in accordance to the noun they modify.

⁴ The prefix which attaches to an adjectival stem coincides with the class prefix of the noun it modifies, and gives information on gender and number. The subject prefix which attaches to a verbal stem often coincides with the class prefix of the subject noun as well; exceptions are represented by class prefixes starting with a nasal sound (e.g. class 1 in (1)): the nasal consonant is dropped when the affix is used as a subject prefix. Verbal prefixes typically give information on the person feature: in all Bantu languages there are specialized prefixes for 1st and 2nd person, both singular and plural, while 3rd person prefixes also carry class features; hence there will be as many 3rd person prefixes as there are inflectional classes (cf. Willems 1949, Kamwangamalu 1985).

Bantu language, thus, represent no exception to the universal tendency that only 3rd person pronouns are inflected for gender; the sole difference is that Bantu genders are more numerous than they are in other languages (18 in Tshiluba, 12 in Swahili), where gender is generally limited to (at most) masculine, feminine and neuter.

⁵ An exception is represented by the imperative, which lacks the subject prefix. In the course of this work we will meet with other marked forms lacking a subject prefix.

⁶ In this work we are abstracting away from the antisymmetrical analysis of relative clauses given in Kayne (1994) and related works (e.g. Bianchi 1999). However, the two analyses may

antecedent – will play some role in the structure of the RC. This is indeed the case, though the situation is much more complex with respect to the case exemplified in (1) above, where the noun modifier is an adjective. Indeed, adjectives are barely stems, which get prefixed in agreement with the modified DP. A RC is not as morphologically simple; rather, it is a full clause containing a verb, which has a complex structure itself, and may contain other arguments and adjuncts, in addition to the relativized one.

Therefore, a RC, whose verb may be as internally complex as the verbs exemplified in (1) or (2), is at the same time a noun modifier, which must be prefixed in agreement with the antecedent DP, like all modifiers. Consequently, the prefix of the modified DP must show up in the structure of the verb of the RC (as it does in adjectives), thus interfering in different ways with the other affixes which may be present. The situation will obviously change according to the syntactic relation (subject or object)⁷ holding between the modified DP and the predicate.

To complicate the picture even more, different Bantu languages encode RCs in different ways. In particular, the picture offered by Swahili and Tshiluba in this regard looks rather variegated. It will be the scope of this work to show how a unitary analysis can be provided, in spite of the notable superficial differences existing between the two languages.

This paper will proceed in the following way. Section 2 presents the empirical data: we will examine in detail how both subject and object relative clauses are constructed in Swahili and Tshiluba, two languages which behave alike in many respects, but diverge notably in the present one. Section 3 discusses the status of relative markers, and in particular how these differ from non-relative subject and object affixes. Section 4 presents the theoretical framework we will make use of, in order to individuate the positions occupied by relative markers in the complex Bantu verb structure; for this purpose a parallel between Bantu affixes and Romance clitic pronouns will be drawn. The framework in question will be applied to the relevant data in section 5. Finally, section 6 presents the conclusions reached so far.

2. Bantu Relative clauses: the data

As hinted at in the introduction, in Bantu languages there are no independent relative pronouns, or relative operators; in other words, there is nothing closely comparable to relative *wh*-phrases in English, with the exception of a particular construction in Swahili, which has emerged in relatively recent times (Perrott

in principle be made compatible, though this issue goes beyond the scope of the present paper.

⁷ In this work we will abstract away from the relativization of adjuncts.

1957).⁸ On average, the function performed by English *wh*-phrases is performed in Bantu by an affix – that I will call relative marker (RM) – which always agrees in class with the modified DP. Like subject and object pronouns, a Bantu relative marker indeed affixes onto the verb, i.e. it becomes part of the complex verbal form.

Therefore, the relative marker in Bantu has a double function: it represents an argument of the verb of the RC, and, at the same time, signals agreement with an antecedent DP, thus identifying the clause as a modifier of that particular DP. As a consequence, an interesting problem arises: whenever the object of the clause in question is relativized, there are two affixes competing for the leftmost position within the complex verbal form: the relative marker, as the RC is a noun modifier, which must be prefixed in agreement with the antecedent DP, and the subject prefix, which usually occupies such a position (cf. (1) and (2)). We will see that both options are witnessed to in the languages at hand.⁹

In the following sub-sections, we will analyse first subject relative clauses, where the modified DP qualifies as the subject of the RC, and then object relative clauses, where the antecedent DP is instead identified as the direct object. Both Swahili and Tshiluba admit several alternative structures, most of which will be presented.

2.1. Subject relative clauses

When the antecedent DP represents the subject of the relative clause, the situation is not excessively complex, and the differences between a RC and a normal clause are limited, as we will see.

In Swahili, a subject RC differs from a normal clause in the presence of a specialized relative marker, inflected for class and inserted after the T/A affix (Perrott 1957). Interestingly, though the subject pronoun and the relative marker denote the same referent, they surface as two separate entries, on either side of T/A. In this regard, compare (3), which is a normal, intransitive clause, whose verb is regularly subject-prefixed, and (4), which is the corresponding relative clause: the

⁸ Unlike most Bantu languages, among which Tshiluba, Swahili represents a sort of ‘lingua franca’, which has been deeply influenced by other languages, like English and Arabic, and others to a minor extent. This has led to a considerable simplification of the original Bantu features at all levels: in phonology, with the loss of the tone system; in the lexicon, with the incorporation of an extremely high percentage of loanwords; in syntax, with the reduction of the number of nominal classes. The emergence of a sort of relative operator, which recalls English *wh*-phrases, may be seen in this light.

⁹ Obviously, if the subject is relativized, relative marker and subject prefix should coincide. However, we will see in the next subsection that, in Swahili, the two syntactic roles are kept separate even in this case, while in Tshiluba a single morpheme will perform both roles, as expected.

verb has two affixes, agreeing in class with the same DP, which is at the same time subject and antecedent; the subject prefix occupies the leftmost position:

- (3) vi-tabu vi-li-tosha
cl.8-books 8.SU-T/A-suffice
'the books were enough'
- (4) vi-tabu vi-li-vyo-tosha
cl.8-books 8.SU-T/A-8.REL-suffice
'the books which were enough'

A slightly different case is exhibited by clauses with a generic tense reading, which express habitual actions: in this case there is no T/A affix, the verb stem follows the subject prefix, and the relative marker follows the verb stem, as in (5):

- (5) a. m-toto a-soma-ye
cl.1-child 1.SU-read-1.REL
'a child who reads'
- b. vi-tabu vi-tosha-vyo
cl.8-books 8.SU-suffice-8.REL
'the books which are enough'

In Tshiluba, on the contrary, there is no morphologically specialized form for the relative marker: this differs from a subject prefix only phonologically, in that the two affixes bear a different vowel tone (Willems 1949). In (6) a normal clause is given, with the subject prefix bearing a low tone; in (7) the prefix bears a high tone, which implies that the clause has a relative reading. Obviously enough, the difference between a subject RC and a normal clause will also be established by the context:

- (6) mu-ntu w̃-aka-kwata m-buji
cl.1-man 1.SU-T/A-take cl.5-goat
'the man has taken the goat'
- (7) mu-ntu w̃-aka-kwata m-buji (u-dia)
cl.1-man 1.REL-T/A-take cl.5-goat 1.SU-eat
'the man who has taken the goat (eats)'

To sum up, in a Tshiluba subject RC, subject prefix and relative marker coincide, in the sense that a single affix performs both roles simultaneously, as shown in (7); obviously enough, such an affix occupies the leftmost position within the RC. In Swahili, on the contrary, the two syntactic roles are kept apart, as indicated by the presence of two separate affixes – which clearly agree in features, as they denote the same referent – with the leftmost position occupied by the subject prefix, and the relative marker following the tense/aspect affix or the verb stem.

2.2. Object relative clauses

As hinted at before, the situation becomes more complex when the modified DP represents the object of the RC. In particular, in this case two different affixes compete for the leftmost position within the RC verbal form: the subject prefix, which always occupies such a position in non-relative finite clauses, and the relative marker – thematically an object¹⁰ – as the relative clause is a noun modifier, and, as such, should be prefixed in agreement with the modified DP. It is interesting to notice that the two languages under consideration encode the two mentioned possibilities.

In Swahili, the leftmost position is uniformly occupied by the subject prefix; the relative marker, which agrees in class with the modified DP, occupies an internal position. It will follow the tense/aspect affix, as in (8), or the verb stem, if the clause is to be interpreted with a generic tense, featuring no T/A affix, as in (9):

- (8) vi-tabu a-li-vyo-nunua (Juma) ni ghali
 cl.8-books 1.SU-T/A-8.REL-buy cl.1-Juma be expensive
 ‘the books which he/Juma bought are expensive’
- (9) vi-tabu a-nunua-vyo (Juma) ni ghali
 cl.8-books 1.SU-buy-8.REL cl.1-Juma be expensive
 ‘the books which Juma buys are expensive’

The sentences in (8) and (9) mirror indeed what observed in the subject relative clauses given in (4) and (5) above, with the sole difference that, in the case at hand, subject prefix and relative marker do not agree in class,¹¹ as they refer to two different arguments of the RC. The clause-internal position of the relative marker is the same in both cases; therefore, a Swahili relative marker is rather different from a nominal agreement prefix, like the one appearing on adjectives, which regularly occupies the leftmost position, before the stem. The fact that the relative marker is morphologically different from the usual nominal agreement prefixes is probably indicative in this regard.¹²

¹⁰ Remember that object affixes never occupy the leftmost position in a non-relative clause, where they are always preceded by the subject prefix and by the tense/aspect affix, if there is one.

¹¹ If both arguments of the RC belong to the same class, there will be class agreement between the two affixes, which is of course accidental.

¹² Swahili relative markers are in fact suffixed in *-o*, except for class 1 *-ye*, which is however morphologically different from class 1 nominal prefix appearing on adjectives (*m-*). On the non-accidental link between a different morphological form, and a different syntactic position, with respect to nominal agreement prefixes, I leave the question open for future research.

A slightly different situation is observed in sentences like (10) below, which represent a more recent innovation in the formation of RCs (Ngonyani 1999): there is a particle, *amba-*, which precedes the verb, and which must be suffixed in agreement with the modified DP; this represents the sole example of an independent relative operator – something roughly comparable to English *wh*-phrases – with class agreement. The verb is normally subject prefixed and contains no relative marker:

- (10) vi-tabu amba-vyo Juma a-li-nunua ni ghali
cl.8-books part-8.REL cl.1-Juma 1.SU-T/A-buy be expensive
‘the books which Juma bought are expensive’

Unlike Swahili, in Tshiluba the leftmost position within an object RC is uniformly occupied by the relative marker; this element thus receives the maximum of pragmatic prominence in the clause, somehow overshadowing the subject prefix. Indeed the subject prefix, not only is preceded by the relative marker, but occupies no fixed position either: crucially, its position within the complex verbal form seems to be deeply influenced by its person feature. In line with the well-known data on Ergative languages, and in particular on ergativity splits, 1st and 2nd person subjects pattern alike, and their behaviour differs from 3rd person ones.¹³

Several situations are thus possible, which will be examined in turn. To begin with, if the subject of the RC carries a 1st or 2nd person feature, the corresponding prefix will precede the tense/aspect affix (as in non-relative clauses), thus immediately following the relative marker, which still occupies the leftmost position, as in (11):

- (11) mu-ntu u-n-aka-bikila w-avu
cl.1-man 1.rel-1sg.SU-T/A-call cl.1-come
‘the man whom I have called has come’

The example in (11) confirms our previous intuition: in Tshiluba the relative marker – which is morphologically identical to the nominal agreement prefix adjoining to adjectival stems, unlike in Swahili – is pragmatically the most salient element. The RC, subject-prefixed as usual, is in fact further prefixed in class agreement with the antecedent; hence the subject prefix somehow loses prominence. This intuition is reinforced by the behaviour of 3rd person subjects: indeed a 3rd

¹³ Remember that Bantu languages in general, and Tshiluba in particular, are nominative languages. However, many linguists point out that no language is fully ergative, and this is due to the existence of the so-called splits (on the splits of ergativity, see, among others, Dixon 1979, Jelinek 1993, Mahajan 1994). Likewise, it is not so exceptional to find ergative behaviours in nominative languages (cf. Cocchi 1995 on ergativity in Standard Italian and Italian dialects).

person subject pronoun surfaces not as a prefix, but rather as a post-stem suffix, as shown in (12):¹⁴

- (12) ba-ntu b-aka-tuma-ye ba-lua
 cl.2-men 2.REL-T/A-send-1.SU 2.SU-come
 ‘the men that he has sent are coming’

If the verb of the RC has a progressive form, composed of the copula *di* ‘be’ + the lexical verb,¹⁵ the 3rd person subject pronoun suffixes to the copula, which is prefixed by the relative marker, while the lexical verb is regularly subject-prefixed and carries no trace of the relative marker, as in (13):¹⁶

- (13) ba-ntu ba-di-ye u-tuma ba-lua
 cl.2-men 2.REL-be-1.SU 1.SU-send 2.SU-come
 ‘the men that he is sending are coming’

Finally, if the RC has a 3rd person DP-subject, its verb is prefixed, as usual, by the relative marker (which represents the thematic object of the RC), while the subject-agreeing affix disappears altogether, and the DP-subject surfaces in postverbal position, as in (14) below; interestingly, this DP occupies the same linear position (after the verb stem) as the subject suffix *-ye* in (12) above:

- (14) ba-ntu b-aka-tuma mu-kalenge ba-lua
 cl.2-men 2.REL-T/A-send cl.1-chief 2.SU-come
 ‘the men that the chief has sent are coming’

¹⁴ Notice that also object affixes, which usually surface between the T/A and the stem, may appear as post-stem suffixes; a position for pronominal affixes is thus always available in post-verbal position in Bantu languages.

¹⁵ In Bantu progressive forms, both the copula and the lexical verb are subject-prefixed, as in (i) below from Tshiluba; the verb lacks the tense/aspect affix, in that information on these features is carried by the copula. However, object affixes may appear on the lexical verb (alone), between the subject prefix and the stem, as in (ii):

- (i) n-di n-sumba tshi-muma
 1sg.SU-be 1sg.SU-buy cl.7-fruit
 ‘I am buying fruit’
 (ii) mu-ana u-di u-tshi-sumba
 cl.1-boy 1.SU-be 1.SU-7.DO-buy
 ‘the boy is buying it’

¹⁶ With 1st and 2nd person subjects, both affixes precede the copula. This case is thus not different from (11) in the text, as seen in (i):

- (i) ba-ntu ba-n-di n-tuma ba-lua
 cl.2-men 2.REL-1sg.SU-be 1sg.SU-send 2.SU-come
 ‘the men that I am sending are coming’

Analogously, in case of a progressive verb, the DP subject is placed between the copula and the lexical verb; the latter is regularly subject-prefixed, while the copula is prefixed by the sole relative marker (the thematic object), and carries no subject suffix, as shown in (15); again, the DP follows the copula and precedes the verb, thus occupying the same linear position as the subject suffix in (13) above:

- (15) ba-ntu ba-di mu-kalenge u-tuma ba-lua
 cl.2-men 2.REL-be cl.1-chief 1.SU-send 2.SU-come
 ‘the men that the chief is sending are coming’

After describing this variegated bunch of data, in the rest of the paper I will try to devise a unitary analysis for Bantu RCs, which aims at accounting in a uniform way for the distribution of subject and object relative markers in both Tshiluba and Swahili.

3. Relative markers are *not* subject / object affixes

The first thing which needs pointing out is that relative markers are something different from non-relative subject and object pronominal affixes, though all of these elements similarly qualify as arguments of the predicate. The way they distribute in the two languages under analysis provides clear evidence in this regard, from both a morpho-phonological and a syntactic point of view.

To begin with, in Tshiluba the relative marker carries a different vowel tone with respect to the subject prefix: the latter is in fact characterized by a low tone, as shown in (16a), while the former carries a high tone, which spreads to the following vowel, as in (16b):

- (16) a. mu-ntu ù-di mu-nene
 cl.1-man 1.SU-be cl.1-big
 ‘the man is big’
 b. mu-ntu ú-dí mu-nene
 cl.1-man 1.REL-be cl.1-big
 ‘the man who is big’

Furthermore, though the relative marker agrees in class (i.e. gender and number) with the modified DP, it may not agree in person with it: a relative marker is in fact always inflected in the 3rd person. Hence, even when the antecedent carries a 1st or 2nd person feature, the relative marker will be 3rd person, i.e. class 1 (for singular pronouns) or class 2 (for plural ones), as in (17b) below.¹⁷ This is due to the fact that

¹⁷ Class 1 and 2 are in fact the classes which contain nouns referring to human beings; as 1st and 2nd person pronouns always indicate humans – or personified animals – they rightfully belong to this class, when treated as 3rd person elements.

Notice that, in (17b), the prefix of the RC and the one of the main clause do not agree in

relative markers are, first of all, nominal agreement prefixes, i.e. prefixes which attach to noun modifiers, like adjectives, and which are intrinsically 3rd person. In this regard, see the contrast in the person feature between the non-relative clause in (17a), and the relative one in (17b), whose subjects are inflected in the 1st person singular in both cases:

- (17) a. (meme) n-aka-kwata mbuji
 me 1sg.SU-T/A-take goat
 'I have taken a goat'
- b. meme w-aka-kwata mbuji (n-dia)
 me 1.REL-T/A-take goat 1sg.SU-eat
 'I, who has taken a goat, (eat)'

In Swahili, as discussed before, the relative marker differs morphologically from both subject and object affixes of the same class. For example, the relative marker relating to class 8 is *vyo*, as in (18a), while the subject and object affixes of this class are both *vi* (see (3) above and (18b) below):

- (18) a. vi-tabu a-li-vyo-nunua
 cl.8-books 1.SU-T/A-8.REL-buy
 'the books that he bought'
- b. a-li-vi-nunua (vi-tabu)
 1.SU-T/A-8.DO-buy cl.8-books
 'he bought them (the books)'

This is even clearer in the case of a 1st or 2nd person relativized subject. Unlike the subject-RC exemplified in (4) above, in the present case subject prefix and relative marker do not totally agree in features, as shown in (19): the former agrees in person with the antecedent, hence it is inflected in the 1st person, while the latter is always 3rd person (i.e. class 1 for humans, as in Tshiluba):

- (19) mimi ni-li-ye-soma
 me 1sg.SU-T/A-1.REL-read
 'I, who reads'

Furthermore, in Swahili ditransitive verbs, a direct object affix cannot co-occur with an indirect object one - as seen in (20a) - being Swahili an asymmetrical language (cf. Baker 1988, Alsina and Mchombo 1990, Bresnan and Moshi 1990, Cocchi 2000, and many others); indeed the sole indirect object affix can surface.

person feature, only the latter being 1st person singular (*n-*), though they both refer to the same person (*I*, the speaker). The same holds in English, as seen in the glosses: *who* agrees with a verb in the 3rd person, *has*, though its antecedent is *I*.

However, a relative marker can freely co-occur with an indirect object affix, even when the former refers to a direct object, as in (20b):

- (20) a. * m-toto a-li-ki-tu-pa ch-akula
 cl.1-child 1.SU-T/A-7.DO-1pl.IO-give cl.7-food
 ‘the boy gave it to us, the food’
 b. ch-akula a-li-cho-tu-pa
 cl.7-food 1.SU-T/A-7.REL-1pl.IO-give
 ‘the food which he gave us’

The partial conclusion which can be drawn at this point is the following one: as relative markers behave differently (either morpho-phonologically or syntactically) from both subject and object affixes, they must occupy different positions in the structure of the complex verbal form.

4. Looking for a position for relative markers

In the attempt of looking for a position for relative markers, I will first speculate on the similar behaviour exhibited by Bantu affixes in general, and the more widely studied Romance clitics. The idea is that the hypotheses formulated to account for the distribution of Romance clitics may shed some light on the behaviour of Bantu affixes, and possibly of Bantu relative markers as well.

Indeed, Romance clitics and Bantu affixes have many features in common, and it is this that, in the first instance, constitutes the intuitive basis for thinking that they should be given a unitary analysis (as in Cocchi 1999, 2000): both sets of elements carry inflectional agreement features (specified for person, gender and number), both take the place of a full DP argument, and in certain cases both can co-occur with such a DP (a phenomenon called clitic- or affix-doubling)¹⁸. Furthermore, both encode the same syntactic relations, such as subject, (direct or indirect) object, locative, impersonal and reflexive. Finally, both are unstressed and cannot occur in isolation, but must rather adjoin to a verbal form.

In order to account for Romance clitics distribution, recent works (Sportiche 1992; Manzini and Savoia 1999, 2001a-b, 2005; Poletto 2000, among others) postulate a structure consisting of a complex series of specialized pre-verbal projections. In particular, these authors assume that clitics are functional heads, which are merged directly in the position where they surface, rather than moving from a thematic, VP-internal position and adjoin to I°, or to any other inflectional head (as was in Kayne 1975, 1989, 1994, and related work).

Crucially, as pointed out by Manzini and Savoia (1999, 2001a-b, 2005), the traditional movement analysis does not adequately account for the rigid relative

¹⁸ On clitic doubling see, among the many, Suñer (1988), Torrego (1994).

order of clitics, which does not correspond to a similarly rigid order of DP-objects or tonic pronouns, or to the mutual exclusion patterns, namely those combinations of clitics which are ruled out despite the fact that the corresponding combinations of full DPs or tonic pronouns are perfectly acceptable. This criticism is strongly supported by the data relating to Bantu languages: indeed, it is well-known that, in asymmetrical languages like Swahili, it is possible to have two or more internal arguments, but only one affix may surface (cf. Baker 1988, Alsina and Mchombo 1990, Bresnan and Moshi 1990, Cocchi 1999, 2000).

Adapting original suggestions of Sportiche (1992) and Poletto (1993), Manzini and Savoia (1999, 2001a-b, 2005) propose an alternative module, consisting in a series of rigidly ordered projections, headed by clitics themselves, which are situated between C° and I° . Each clitic, thus, “lexicalizes” a specialized position; in other words, it gives morpho-phonological content to the head under which it is merged.

The positions where clitics are inserted, however, are not identified in terms of Case, as they were in Sportiche (1992); rather they are characterized in inflectional terms, and are ordered under a universal hierarchy, given in (21):

(21) DOP D R Q P Loc N

The highest positions in (21), namely DOP and D, are specialized for hosting subject clitics, while R, Q, P, Loc and N host all of the non-subject clitics, i.e. object, locative, reflexive (cf. Manzini and Savoia 2001b). Crucially, the DOP head is characterized by both nominal and intensional operator properties; it is in fact assumed to host the *di/de* particle typical of Romance partitive DPs, which, according to Cardinaletti and Starke (1999), is identified with the highest functional projection of the DP.¹⁹ Besides, such a position is also claimed to host the non-distinct subject clitics of Northern Italian dialects, which often co-occur with – and precede – inflected subject clitics, which lexicalize D (cf. Poletto 1993, Benincà 1994, Manzini and Savoia 2001a). The head Loc(ation) provides a syntactic representation for the spatial coordinate of discourse. As for the other positions, they correspond to the main inflectional properties associated with the arguments of the verb: Person, Noun (predicative properties), Quantification, Reference (strong quantification properties and/or specificity) and Definiteness.

The central idea of this approach is that a clitic pronoun consists in a bundle of features, among which we may find predicative information (N), definiteness (D), reference (R), and phi-features (P and Q), as well as the spatial location of the event

¹⁹ Notice that the hierarchical order of the clitic string given in (21) mirrors the order of functional projections assumed within the DP domain (cf. Giusti 1993, Cardinaletti and Starke 1999 and related work), with the lexical head N° at the bottom, and the position hosting the intensional operator properties DOP° at the top, above D° . In a certain sense, DOP° is thus the nominal counterpart of the complementizer area within the extended verbal projection.

(Loc), or operator properties (DOP). Of all the features it contains, each clitic will thus lexicalize the one – or, in other words, will be merged under the position – which is deemed more prominent in a given language, as a means of (micro-) parameter setting.

Furthermore, empirical evidence relating to the doubling of clitics on either side of the verb in many Italian dialects, as well as in Arbëresh dialects, argues in favour of the assumption that the series of inflectional positions given in (21) is generated recursively in all domains: in the modal domain between two different occurrences of C, in line with Rizzi (1997),²⁰ in the temporal domain between C and I, and in the predicative domain between I and V, as in (22):

(22) COP DOP D R Q P Loc N C DOP D R Q P Loc N I DOP D R Q
P Loc N V

The hierarchy given in (22) is assumed to be universal. However, in line with a Minimalist framework (cf. Chomsky 1995, 1998 and related work), we must hypothesize that not all languages necessarily project all of these positions; in any case, if they do, it will be obligatorily in the order given in (22). In addition, if a projection is lexicalized in one language – which means that the inflectional feature in question has a morphological correlate in that language – it may be lexicalized in all of the domains.

Shifting the discussion to Bantu languages again, the mentioned parallelism between Romance clitics and Bantu affixes is developed at length in Cocchi (1999, 2000, 2003), where it is claimed that Bantu affixes are the morphologically bound counterpart of Romance clitics; therefore, like the latter, each Bantu affix lexicalizes a specialized position. If this is on the right track, several facts concerning the complex distribution of Bantu affixes can be accounted for by assuming the structure in (22). In particular, in the mentioned works we reached the following conclusions:

- subject prefixes are generated in the series between COP and C, at least in the unmarked case;²¹
- the tense/aspect affix (the copula in progressive tenses) is generated under C, as it encodes temporal and aspectual properties;
- object and locative affixes are generated in the series between C and I;²²

²⁰ COP in (22) roughly corresponds to the higher C-projection, Force, in Rizzi (1997), while the lower C corresponds to Finiteness.

²¹ In the course of this work we will see that, in relative clauses, subject prefixes, though always lexicalizing D-heads, may surface in different domains.

²² These element can also be generated in a lower position, e.g. in the series between I and V, if they appear as post-stem suffixes; cf. fn. 14.

- the different behaviour of symmetrical languages (like Tshiluba) vs. asymmetrical ones (like Swahili) with regard to the number of non-subject affixes (only one in the latter vs. one, two or even three in the former) can be captured by assuming that, in languages like Swahili, all non-subject affixes compete for the same position, in that only one among R, Q, P, Loc and N is projected (call it N). Vice versa, in languages like Tshiluba, all positions except P are projected.²³

Following this line of reasoning, the variegated situation concerning relative markers can be given a straightforward account by assuming that these affixes, among the various projections given in (22), always lexicalize DOP° , a head which is compatible with relative pronouns in that it contains both nominal and operator-like features. Indeed, the relative marker has nominal features, as it encodes class agreement with a DP, but it has operator status as well, in line with all relative phrases (e.g. *wh*-phrases in English).

As a consequence, since all clitics/affixes are supposed to lexicalize the most prominent among the various features they contain, it comes as no surprise that relative markers will be merged under DOP° , as the operator features are undoubtedly the most prominent ones, being the sole features that differentiate relative markers from non-relative subject or object affixes.

Finally, the different distribution of relative markers in the various languages and/or in the various constructions may be made to follow from the distribution of the various occurrences of DOP in (22) above: relative markers can occupy different positions just because there are in the structure (on independent grounds) more positions which are suitable, in terms of feature content, to host them.

5. *The distribution of Bantu relative markers and other affixes*

5.1. *Swahili*

As hinted at before, for Swahili I have assumed on independent grounds (cf. Cocchi 1999, 2000) that indirect and direct object affixes and locative affixes are mutually exclusive; this restriction can be accounted for by assuming that all of these affixes compete for the same position. In turn, this amounts to saying that only one head, say N, among those hosting non-subject clitics (R, Q, P, Loc and N) is

²³ Indeed in Tshiluba the relative order of direct and indirect object affixes or locatives is not in the least influenced by the person feature, as it is, for instance, in Italian or French. Thus I assume that 1st and 2nd person affixes lexicalize the same positions as 3rd person ones, and this leads to the conclusion that the head P° is not projected (or is inactive) in this language, and similarly in the whole Bantu family.

projected; hence the structure in (22) above results simplified. As D and DOP positions are typically occupied by different types of elements, I assume that they are both projected, and they precede N, in line with (22).

As seen in section 2 above, in Swahili the relative marker – be it a subject or object substitute – never occupies the leftmost position within the verb of the RC; such a position is indeed always occupied by the subject prefix, which, I argue, lexicalizes D in the upper series. As the T/A affix lexicalizes C (as in Cocchi 1999, 2000), and the relative marker follows (though it precedes the eventual object affix in N), I assume that the latter lexicalizes DOP in the second series, as shown in (23), which corresponds to the subject-RC given in (4) above, and in (24), which is the structure of the object-RC given in (8):

- (23) COP DOP D N C DOP D N I ...
 vi li vyo tosha
- (24) COP DOP D N C DOP D N I ...
 a li vyo nunua

In generic tense clauses, characterized by the absence of a T/A affix, I assume that V raises to C, thus preventing the T/A affix to lexicalize such a head (cf. Cocchi 2003); indeed, V-(to-I)-to-C movement is a widespread independent phenomenon, which occurs, for instance, in imperative constructions.²⁴ However, verb raising to C does not affect the distribution of subject prefix and relative marker, which remains unchanged with respect to (23)-(24), as shown in (25), which corresponds to the object-RC given in (9) above:

- (25) COP DOP D N C DOP D N I ... (cf. (24))
 a nunua vyo ~~nunua~~

The variant in (10) above features instead the particle *amba-*, which precedes the relative marker. In this regard, we can assume that *amba-* is a relative operator belonging to the whole sentence (and not strictly to the complex verb); as such, it is merged under COP, i.e. the head endowed with (sentential) intensional operator properties. The relative marker is adjacent to it, in that it lexicalizes the upper DOP. As in the other Swahili cases, the subject prefix lexicalizes D in the upper series, thus following both *amba-* and the relative marker suffixed to it.²⁵ The derivation of (10) above is given in (26):

²⁴ Several occurrences of verbs lexicalizing C are found in Italian dialects too, especially in interrogative or imperative clauses, where subject clitics often follow the verb stem (Manzini and Savoia 2001a, 2005). Besides, verb movement to C is a widespread phenomenon in Germanic languages, in both interrogative and affirmative V-2 constructions (cf., among the many, Tomaselli 1990).

²⁵ With regard to (26), we may assume either that the relative marker is generated under the upper DOP, or that it is generated under DOP in the second series (as in the preceding cases),

- (26) COP DOP D N C DOP D N I ...
 amba vyo a li nunua

Given that in Swahili only one among the R, Q, P, Loc and N positions is projected, as assumed before, we can derive the ungrammaticality of (20a), contra the well-formedness of (20b) above. In particular, in Swahili the co-occurrence of two object affixes is impossible (cf. (20a)), as there is no available position for the direct object affix *-ki-*, being N already lexicalized by the indirect object *-tu-*, as shown in (27):

- (27) COP DOP D N C DOP D N I ...
 a li tu pa

This problem does not arise in (20b), a sentence which is only apparently similar to (20a). Crucially, in (20b) the indirect object affix co-occurs with an affix – the relative marker – which does not compete for the same position, irrespective of the fact that it thematically corresponds to the direct object, as in the preceding case. The prominence of the operator feature that the relative marker contains, in fact, causes the latter to lexicalize DOP instead of N. The well-formedness of (20b) is shown in (28): here the relativized direct object *-cho-* is merged under DOP in the second series, like all relative markers in Swahili, hence it does not compete with the indirect object affix, which normally lexicalizes N. Note in passing that the structure in (28) also explains why the relative marker precedes the indirect object affix:

- (28) COP DOP D N C DOP D N I ...
 a li cho tu pa

5.2. Tshiluba

In Tshiluba, direct and indirect object affixes can co-occur (between T/A and the verb stem), which means that more object clitic positions are needed, with respect to Swahili. I assume that – in addition to N – R, Q and Loc are projected, as we can have up to three non-subject affixes, one of which locative, with different orders (cf. Cocchi 1999, 2000). As the relative positioning of object affixes does not seem to be sensitive to the Person feature, I will claim that the P positions in (22) above are not projected, or are inactive (cf. fn 23).

The data presented in (11) to (15) above uniformly show that the relative marker – be it a subject or an object substitute – always occupies the leftmost position within a Tshiluba RC. Consequently, I claim that in Tshiluba, unlike Swahili,

but later on gets attracted by the relative operator *amba-*, and thus raises to DOP in the highest series (other intervening clitics do not create minimality effect, in that they do not carry the operator feature, which is the probe; cf. Chomsky 1995, 1998). We will not speculate further on this matter, as it is immaterial for the present discussion.

In compound forms like (34), we assume that the copula – which carries information on Tense and Aspect, just like the T/A affix – lexicalizes C (Cocchi 2003). As a consequence, the subject prefix, which precedes the copula, lexicalizes D in the upper series, while the subject prefix attached to the lexical verb (following the copula) lexicalizes one of the lower D's, on the right of C, as in (35):

(35) COP DOP D R Q Loc N C DOP D R Q Loc N I DOP D R Q Loc V
 u di u sumba

The data relating to RCs, and in particular to object-RCs like (13) above, show that the lower D-head involved in (35) is the one projected between I and V. The intermediate D-head of the inflectional domain, in fact, must be available for the subject 3rd person pronoun, which suffixes to the copula whenever this is prefixed by the object relative marker. The derivation of example (13) above is given in (36):

(36) COP DOP D R Q Loc N C DOP D R Q Loc N I DOP D R Q Loc V
 ba di ye u tuma

Examples like (13), thus, provide further evidence in favour of the recursion of the clitic/affix projections seen in (22) above: indeed, in these cases, two positions suitable to host subject pronouns (i.e. two D°-heads) must be available on the right of C°.²⁹

Finally, if the 3rd person subject is expressed by a full DP, as in (15) above, the latter should occupy the intermediate Spec(DP), i.e. the specifier of the D°-head generated between C and I (with the subject suffix generated in (36)); again, the presence of the full DP renders the subject suffix redundant, thus it will be absent – for economy reasons – on a par with what observed in (33). The derivation of (15) is sketched in (37):

(37) COP DOP D R Q Loc N C DOP D R Q Loc N I DOP D R Q Loc V
 ba di u tuma

The fact that in (15), unlike (14), the DP-subject does not follow the lexical verb, but the copula, confirms that the full DP and the subject affix check the same feature: the full DP is indeed generated under the specifier of the particular head where the affix must be merged when the DP is absent. Consequently, the two elements occupy the same position in the linear order.

6. Conclusions

In this work we have argued that Bantu relative markers uniformly lexicalize a DOP°-type head. The fact that these elements do not always occupy the same

²⁹ Obviously, if D° is necessarily generated in all domains, there is no principled reason to prevent the projection of the other heads as well.

position in different Bantu languages, and in different types of relative clauses, follows from a single assumption, which is independently motivated (Manzini and Savoia 1999, 2001b, 2005): consistently with (22) above, DOP-positions, as well as the other clitic/affix heads, are recursively projected in all of the functional domains. The various languages will thus establish, as a mean of (micro-)parameter setting, which DOP° will be lexicalized by the relative marker in the various cases, as shown in the derivations from (23) to (37). Pragmatic reasons may tentatively be advocated in order to explain, in the various cases, whether the relative marker or the subject prefix will occupy the leftmost position, and consequently whether the relative marker will appear in the modal domain, or in the inflectional one.

The fact that DOP is a specialized position for relative markers can be explained in terms of feature content. DOP contains in fact both nominal and operator-like features (Cardinaletti and Starke 1999), and the relative marker as well: it has nominal features, as it encodes class agreement with a DP (a relative clause is first of all a noun modifier, and, as such, it must agree in class with the antecedent DP, the relative affix being the agreement marker), but it has operator status as well, in line with all relative phrases. Besides, as clitics/affixes are assumed to be merged under the position corresponding to the most prominent feature they contain, it comes as no surprise that relative markers should be merged under DOP, as the operator feature is undoubtedly their most prominent, most marked one.

In Bantu, DOP° never hosts non-relative subject or object affixes, which do not have operator status, but only nominal properties. This explains the different distribution of these and relative markers. Hence, we can reach the conclusion that relative markers in Bantu always lexicalize heads of the DOP-type, while D-heads are reserved for subject affixes, and N-heads (also Q-, R- and Loc-heads in asymmetrical languages like Tshiluba) for object and locative affixes.

The fact that there exist a series of clitic/affixes projections above C°, and another one between C° and I°, as in (22) (cf. Manzini and Savoia 1999), explains that: a) the relative marker can occur either on the left or on the right of the tense/aspect affix, given that this lexicalizes C° (Cocchi 2000, 2003); b) the relative marker precedes all of the other (subject, object) affixes generated in the same series, as DOP is the leftmost head in each domain. A third series of positions, assumed to be projected between I° and V°, accounts instead for the distribution of Bantu affixes in the most complex cases, featuring progressive forms composed of a copula and a lexical verb, both of which normally carry a subject prefix.

In Swahili, the leftmost position within a RC is uniformly occupied by the subject prefix; this means that the relative marker always lexicalizes DOP in the inflectional domain. The sole exception is represented by the constructions with the relative operator *amba-*, which we assume to be generated in COP: this operator attracts the relative marker, which suffixes to it, under the adjacent position (the

upper DOP). The subject prefix will regularly occupy the highest D°-head, which immediately follows DOP, thus obtaining the observed order.

In Tshiluba, since the relative marker always occupies the leftmost position within a RC, we assume it to be generated under the highest DOP; consequently, it will always precede subject prefixes. The distribution of the latter, however, depends on their person feature. In particular, 1st and 2nd person prefixes can never be interpreted as relative markers, which are inherently 3rd person; this allows the co-occurrence of a relative marker and a 1st/2nd person subject prefix in the series above C° (the former always preceding the latter). On the contrary, the co-occurrence of a 3rd person subject prefix and a relative marker in the upper series is ruled out, as this would give rise to ambiguity of interpretation; therefore Tshiluba allows only one of them (the relative marker, which is pragmatically the most salient in this language) to be merged in the upper series, while the subject affix surfaces in a lower series, or is altogether eliminated, if a DP-subject is present.³⁰

As a further consequence, the peculiar structure of relative clauses also sheds some light on the movement of lexical verbs in Bantu. We may in fact assume that the verb, generated under V°, raises to I° in order to check its inflectional features, morphologically encoded in the final vowel or suffix. Moreover, in the case of generic tenses or imperatives, where the T/A affix (usually merged under C°) is absent, the verbs moves further to C°, as observed in examples like (5) above.

However, in compound forms, where the inflectional information is encoded in the copula, the lexical verb does not raise to I, but rather remains in V; in this way we can account for the fact that it can be preceded by two subject affixes, which regularly occupy D°-heads, both on the right of the copula in C°, as shown in (13) and (36). The lack of V-to-I movement in compound forms may be independently justified by hypothesizing that the copula – like all auxiliaries – is generated under I, and later on moves to C, so that the copy of the moved copula in I° prevents verb raising to such a position (Cocchi 2003).

This hypothesis permits to draw the generalization that non-tensed verbs, such as *utuma* in (13), occupy a lower position with respect to tensed ones, a conclusion that is not unknown to many languages (cf. Pollock 1989, Belletti 1990). Besides, the fact that non-tensed forms might carry subject or object affixes does not come as a surprise either: also in Romance languages clitic pronouns may attach to non-finite forms like infinitivals, past participles or gerunds. Though this phenomenon is

³⁰ Tone clashes may also be advocated in order to account for the impossible co-occurrence of a 3rd person subject prefix and a relative marker in the upper clitic/affix series.

As for the elimination of the subject affix in the presence of a full DP-subject, in the text we have discussed that this is probably due to the presence of the relative marker, which already satisfies the EPP requirements, being generated under a D-type head, and thus checking a D-type feature.

generally limited to non-subject clitics (object, locative, reflexive or impersonal), it can be extended to subject clitics in varieties which have them, like Northern Italian dialects. Finally, even the well-known case of Portuguese inflected infinitivals (see, among others, Raposo 1987) can be seen in a similar perspective, in that it involves a non-finite verbal form which carries a morpheme relating to the subject, exactly as in the Bantu forms under consideration.

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Gloria Cocchi (Università di Urbino)

indirizzo privato:

Via Castelfidardo, 50
50137 Firenze
tel. 055-600895

e-mail: g.cocchi@uniurb.it