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Decomposing Bantu Relatives^{*}

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1. Introduction

This paper examines two different strategies of forming Bantu relatives, the D(emonstrative)-strategy and the (P)ossessive strategy. In particular, I discuss the relative marker used in these strategies, as well as the asymmetries between subject and non-subject relatives. Consider first the D-strategy, illustrated by Bemba relatives:

(1) Subject relatives in Bemba

- a. umulumendo **a**-ka-belenga ibuku
1boy 1SM-FUT-read 5book
'The boy will read the book.'
- b. umulumendo ú-**u**-ka-belenga ibuku
1boy 1REL-1SM-FUT-read 5book
'the boy who will read the book'
- c. *umulumendo ú-**a**-ka-belenga ibuku
1boy 1REL-1SM-FUT-read 5book

(2) Object relatives in Bemba

- a. ibuku ilyo umulumendo **a**-ka-belenga
5book 5REL 1boy 1SM-FUT-read
'the book that the boy will read'
- b. *ibuku ilyo umulumendo **u**-ka-belenga
5book 5REL 1boy 1SM-FUT-read

Subject agreement/marking with class 1 nouns in Bemba is *a*- (as in (1a)). In the case of subject relativization, a relative marker agreeing with the head noun is followed by the

^{*} I'm deeply indebted to Thilo Schadeberg for discussing every possible aspect of Bantu with me. Without his expertise in Bantu, this paper would not be completed. I am grateful to Nancy Kula for providing and discussing the Bemba data with me. I would also like to thank Hamida Demirdache, the Leiden Bantu team (Leston Buell, Kristina Riedel, Jenneke van der Wal), as well as the audience of NELS36 and Leiden Wednesday Meeting for helpful comments and suggestions.

subject agreement, which differs from the typical subject agreement (1b) (i.e., *u-* is used instead of *a-*).¹ In object relatives, no such alternative agreement appears. As shown in (2a), the subject agreement marker remains *a-*. The affinity of the relative marker to demonstratives will be discussed in section 2.

Consider next the P-strategy in Chishona, which on surface looks quite similar to the D-strategy.

(3) Chishona non-subject relatives²

- a. ndímí dza-vá-nótaúra (Carter & Kahari 1978)
10language 10REL-2SM-speak
'the languages which they speak'
- b. Mbatya dza-v-aka-son-era vakadzi mwenga
10clothes 10REL-2SM -TN-sew-APL 2women 1bride
'clothes which the women sewed for the bride' (Demuth & Harford 1999)
- c. musí wa-nd-aka-şika (Fortune 1955)
3day 3REL-1sgSM-PST-arrive
'the day on which I arrived'

(3a-c) illustrate that an agreeing relative marker appears before the subject marker in non-subject relatives. The agreement which shows up on the relative marker is the same as regular subject concord/agreement. On the other hand, for subject relatives, either different tonal patterns are used to mark the relatives (as in (4) and (5)), or an infinitival is used (6).

- (4) a. murúme a-cá-tonga nyika (Fortune 1955)
1man 1SM-FUT-rule country
'a man who will rule the country'
- b. murúme á-ca-tongá nyika
1man 1SM-FUT-rule country
'A man will rule the country.'

- (5) zvi-nó-kú-rwádzaí (Carter & Kahari 1978)
8SM-TNS-2sgOM-trouble
'that which troubles you'

- (6) múunú wa-ku-húúva (Makonde, Kraal 2005)
1person 1REL-INF-have.problems
'a person (who is) in trouble'

¹ See also Schneider-Zioga (2005) for similar facts in Kinande as well as anti-agreement effects in languages like Berber (Ouhalla 1993 among others).

² The gloss for the relative marker needs to be adjusted once the marker is identified (for examples (3a-c) and (6)). I have also adjusted some glosses from published sources in order to be consistent through the paper.

In this talk, I argue that anti-locality plays a significant role in the derivation of Bantu relatives. I will show that both alternative agreement in subject relatives (D-strategy) and subject-nonsubject asymmetry (P-strategy) follow from anti-locality. In addition, the appearance of the relative marker in languages like Bemba is also closely related to anti-locality. Though the head-raising analysis of relativization is adopted, the relative marker does not form a constituent with the head noun at any stage of the derivation (contrary to typical head-raising analyses). Lastly, I discuss how the analysis proposed for Bantu can be extended to certain relatives in Dutch and English.

2. Relative markers in D-strategy

2.1 Demonstratives in Bantu

Relative markers in the D-strategy are closely tied with demonstratives. Though Demuth and Harford (1999) consider the relative marker in both Sesotho and Chishona to be relative complementizers (cf. Zeller 2004 and Henderson 2005), they note that the relative marker in Sesotho differs from that in Chishona in that the former is morphologically independent while the latter is not (i.e., a clitic). The examples in (7a,b) illustrate this difference.

(7) Demuth & Harford 1999 (ex. 1a, 1b)

- a. Setulo seo basadi ba-se-rek-ile-ng kajeno (Sesotho)
7chair 7REL 2women 2SM-7OM-buy-PERF-RL today
'The chair which the women bought today'
- b. Mbatya dza-v-aka-son-era vakadzi mwenga (Chishona)
10clothes 10REL-2SM-TN-sew-APL 2women 1bride
'Clothes which the women sewed for the bride'

In fact, the relative marker in Sesotho is based on demonstratives, which show the typical pronominal concord/agreement plus *o*. The pronominal concord differs from typical subject concord. The same holds in Bemba (see Givón 1969). Consider the examples of demonstratives in (8) and (9) (and compare them with examples with relative markers such as (7) for Sesotho, and (2) for Bemba).

(8) Sesotho

- a. setulo seo (Zeller 2004)
7chair 7DEM
'that chair'
- b. monna eo (Guma 1971)
1man 1DEM
'that man'

(9) Bemba

- a. ibuku ilyo
5book 5DEM
'that book'

- b. inganda iyo
 9house 9DEM
 'that house'

As (8) and (9) illustrate, the head noun agrees with the demonstrative, regardless whether we are dealing with a demonstrative in the relative clause or not. Further, the demonstratives in these languages can be used as independent pronouns (see also Guma 1971).

- (10) a. n-a-temwa ilyo (Bemba)
 I-TNS-like 5DEM
 'I like that one (*intended*: ibuku 'book').'
 b. n-a-temwa iyo
 I-TNS-like 9DEM house
 'I like that one (*intended*: inganda 'house').'

It should be noted that the demonstrative does not have the same phonological form as the complementizer (e.g., *ati* in Bemba), and that the demonstratives used in the relative clauses do not resemble interrogative words.

2.2 Subject relatives in Sesotho and Bemba

At first glance, subject relatives do not seem to use demonstratives as relative markers. Consider first (1b) repeated here, and (11):

- (1) b. umulumendo ú-u-ka-belenga ibuku (Bemba)
 1boy 1REL-1SM-FUT-read 5book
 'the boy who will read the book'
 (11) batho_i bá_i-phehá-ng dijó (Sesotho, Demuth 1995)
 2person 2REL+2SM-cook-RL 8food
 'People that cook food.'

Instead, it seems to be the case that either a shortened demonstrative (in Bemba) or a fused marker appears which expresses both relative marking and subject concord (in Sesotho). Demuth (1995) shows that if something is topicalized within the relative clause in Sesotho, we can see the relative marking being split from the subject concord, as in (12).

- (12) batho_i bá_i kajéno bá-phehá-ng dijó (Sesotho, Demuth 1995)
 2person 2REL today 2SM-cook-RL 8food
 'People that today cook food.'

I will therefore follow Demuth in assuming that in subject relatives in the D-strategy, the relative marker (i.e., the demonstrative) is phonologically reduced/fused.³

3. Head-raising and Anti-locality

3.1 Reconstruction

One of the motivations for a head-raising analysis is to capture reconstruction effects. Reconstruction data in Bemba illustrate a similar pattern as English (see Sauerland 2003): there is no reconstruction with Condition C; but reconstruction is available with variable binding.

- (13) Bushe ici e-cikope cakwa Yoani_i ico a_i-temwa
Q 7this is-7picture 7POSS.his John 7REL 1SM-likes
'Is this the picture of John_i that he_i likes?'
- (14) Bululu ua-kwe_i uo cila muntu_i a-temwa a-ikala ukutali
1relative 1POSS-his 1REL each person 1SM.like 1SM-live far.away
'The relative of his_i that every person_i likes lives far away.'

I will thus assume, following recent work on reconstruction and relativization that the head-raising analysis is available in Bemba-type of relatives.

3.2 The head noun and the demonstrative

Under the head-raising analysis à la Kayne (1994), Bianchi (1999, 2000), de Vries (2002), Sauerland (2003), Bhatt (2005), the head noun starts out together with the relative pronoun and moves (together) to SpecCP and further moves out of CP as illustrated in (15).⁴

- (15) [_{DP} the [_{CP} book_j [_{CP} [which t_j]_i [_{IP} Bill likes t_i]]]]

A comparable treatment for Bemba/Sesotho would be (16):

- (16) [_{DP} the [_{CP} book_j [_{CP} [t_j DEM]_i [_{IP} Bill likes t_i]]]]

At a first glance, the structure in (16) matches with Bemba NP-internal structure (note that demonstratives tend to follow the head noun). However, it should be noted that a relative clause is marked by a demonstrative pronoun even when the noun-demonstrative combination is illicit in non-relativization contexts. Consider the

³ For Bemba, this cannot be illustrated as easily, as topicalization within a relative clause is resisted by the informant. However, qua form, the shortened/reduced forms have clear affinity with the demonstratives.

⁴ The structure in (15) is a simplified structure taking in essence the idea in Bianchi (1999) that there must be two CP-like layers in the relative clause. For Bianchi, there is a ForceP on top of TopP within the relative clause. See Bhatt (2005) for further discussion.

sentences below with *fyonse* ‘everything’ in (17a) and the indefinite use of *ibuku* ‘book’ in (17b).

- (17) a. n-shi-belenga fyonse ifyo n-sha-temwa
1sgSM-NEG-read 8everything 8DEM 1sgSM -NEG-like
‘I don’t read anything that I don’t like.’
- b. nde-fwaya ukushita ibuku ilyo Chomsky a-lemba
1sgSM-want INF.buy 5book 5DEM Chomsky 1SM-TNS.write
‘I want to buy a book that Chomsky wrote.’

Despite of the fact that *fyonse* ‘everything’ and the indefinite *ibuku* ‘book’ do not appear with a demonstrative, we see the demonstrative showing up in relatives as in (17a,b). This suggests that the demonstrative in the relative clause does not start out in the embedded clause as part of the noun phrase, contrary to the standard raising analysis of *which*-relatives in English.⁵ Further, the demonstrative in relatives cannot be analyzed as a complementizer, which takes another form.

In other words, I have reached a paradoxical situation: a head-raising analysis for Sesotho and Bemba relatives (i.e., Demonstrative-based relativization), while the raised head and the demonstrative relative marker do not start out together in the relative clause. This raises the question of what the demonstrative in relatives is.

I argue that the demonstrative-based relative marker is comparable to the demonstrative in Contrastive Left Dislocation in Dutch (18): it is a spelled-out copy of the head noun (Grohmann 2003).

- (18) Die man, **die** ken ik niet.
that man that know I not
‘That man, I don’t know him.’

In other words, it is an “emergent” demonstrative pronoun. This notion is couched within the Anti-Locality proposal in Grohmann (2003).

3.3 Anti-locality (Grohmann 2003)

The intuition behind the anti-locality proposal in Grohmann is that very local movement (i.e., movement within a particular domain) yields non-distinct copies in the same “domain”, leading to a violation of Domain Exclusivity (19).

⁵ This also holds for English in the sense that the relative pronoun and the head noun are not necessarily a unit before movement.

(19) Condition on Domain Exclusivity (CDE) (modified version)

For a given domain (defined below), an object O in the phrase-marker must receive an exclusive interpretation at the interfaces, unless duplicity of O yields a drastic effect on the output of that domain.

As far as the PF-interface is concerned, no non-distinct copies of a movement operation can be left behind. We can either delete a copy (for example, in Nunes' (2004) account) or Spell-out the copy but change the phonetic shape of the copy, which Grohmann (2003) calls Copy Spell-out.

One of the examples of Copy Spell-out in Grohmann (2003) is Contrastive Left Dislocation (CLD). Grohman argues that CLD is a result of first moving the dislocated XP to the SpecTopP (via the IP-domain) and then further moves up to another Spec in the left periphery. This is illustrated in (20).

(20) $[_{CP} XP_i [_{TopP} XP_i V-Top^0 [_{IP} \dots XP_i \dots [_{VP} \dots XP_i \dots]]]]$

The last step, movement from SpecTopP to SpecCP, yields two non-distinct copies within a single domain (for Grohmann, this particular case corresponds to the discourse domain), violating the Condition on Domain Exclusivity (CDE). Copy spell-out can apply, with the lower copy realized as a d(emonstrative)-pronoun. Consider again the Dutch CLD example repeated in (21a).

(21) a. Die man, die ken ik niet.
that man that know I not

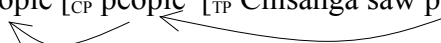
b. $[_{CP} XP [_{TopP} XP \Rightarrow RP V-Top^0 [_{IP} \dots XP [_{VP} \dots XP \dots]]]]$

As illustrated in (21b), the XP (i.e., *die man*) in TopP is spelled out as a demonstrative pronoun *die* (represented as RP in (21b)), satisfying CDE.

Consider now the movements postulated in relativization. Assuming the head-raising analysis, relativization in Bemba also involves “very local” movement. The head noun *abantu* ‘people’ raises from the embedded IP to SpecCP. It subsequently moves out of the CP further to the left periphery (see (22b)).⁶

(22) a. abántu ábo Chisanga á-mwéené mailo, na-bá-ya (Bemba)
2person 2REL Chisanga 1SM-see.PERF yesterday TNS-2SM-go
‘The people who Chisanga saw yesterday have gone’

b. $[_{DP} [_{CP} \text{people} [_{CP} \text{people} [_{TP} \text{Chisanga saw people}]]]]$



⁶ Bianchi (1999) assumes that the [+rel] feature is in Top⁰. I think that the first step of movement must be related to operator type of feature (e.g., [+rel]), while the second step of movement ensures that the head noun is accessible to the outside determiner.

It is the second step of movement which may constitute “very local” movement, movement within a domain which should obey CDE.

3.4 Analysis

1. Demonstrative relative marker

I assume following Fox and Pesetsky (2005) that the CP, VP and DP phases are relevant for Spell-out, and thus they are the relevant domains for CDE.⁷

The movement of *abantu* ‘people’ in (22a) violates CDE: there are two non-distinct copies of *abantu* in the CP phase/domain. Copy Spell-out can apply, spelling out the lower copy as a *d*-pronoun copy of the head noun. Note that Bantu nominals/pronouns have noun-class features (gender, number; see Carstens 1991). The demonstrative pronoun being spelled-out retains the noun-class features.⁸

- (23) [DP [CP *abantu* [CP *abantu* [TP Chisanga saw ~~*abantu*~~]]]
abo

As indicated in (23), *abantu* ‘person – class 2’ is spelled out as *abo* ‘demonstrative – class 2’.

2. Alternative agreement

Consider now subject relatives. Recall that in Bemba subject relatives, alternative agreement appears with Class 1 nouns (examples (1b) repeated here):

- (1) b. umulumendo ú-**u**-ka-belenga ibuku (Bemba)
 1boy 1REL-1SM-FUT-read 5book
 ‘the boy who will read the book’

As already mentioned, the typical subject agreement marker for class 1 nouns is *a*, and this has to be replaced by *u* in subject relatives. However, if the relativized subject originates from an embedded clause (i.e., when long distance extraction is involved), no demonstrative is present in the lower clause, nor is there alternative agreement:

- (24) n-ali-íshiba umwaana uo Peter a-lée-tóntonkanya (ati) á-ilé mailo
 I-TNS-know 1child 1DEM Peter 1SM-TNS-think that 1SM-left yesterday
 ‘I know the child who Peter thinks left yesterday.’

⁷ Fox and Pesetsky (2005) consider CP, VP and DP to be the relevant phases for Spell-out. If Spell-out domains (in the sense of Grohman 2003) can also be aligned with phases, the grammar is simpler. I leave it open as to whether vP or VP is a phase relevant for Spell-out (see Fox and Pesetsky 2005 for discussion).

⁸ The lowest copy is deleted. This can be due to linearization requirements (see Nunes 2004). One might wonder why we do not delete the copy in SpecCP if deletion is also a mechanism to satisfy CDE. Note that this copy involves checked features, and the identification of the operator position. In Bemba, a tonal strategy is also possible in some cases, but it may involve a tonal relative morpheme (see Cheng and Kula, to appear).

I follow Schneider-Ziogo (2005) in analyzing alternative agreement as Copy Spell-out. In other words, “very local” movement is involved in such cases as well. Movement of *umulumendo* ‘boy’ in (1b) is schematized in (25).

(25) [DP [CP boy [CP boy [IP boy ...V ...]]]

Both steps of movements involve “very local” movement. We have already dealt with the second step of movement: the non-distinct copies generated by the second step violate CDE; the lower copy can be spelled-out as a *d*-pronouns (thereby avoiding CDE). The non-distinct copies generated by the first step (because of subject relativization), can be rescued, by using a different concord/agreement.⁹

(26) [DP [CP boy [CP boy [IP boy ...V ...]]]

This analysis here crucially relies on the idea that subject agreement in Bantu languages can be pronominal (i.e., like a clitic pronoun (see Bresnan and Mchombo 1987, Baker 2003 among others). To get around the Condition on Domain Exclusivity, the lowest copy of *umulumendo* ‘boy’ can be Copy Spelled-out in the IP as a weak person pronoun, which according to Wiltschko (1998) is the spell-out of phi-features (AgrD).

Note that the Copy Spell-out pronominal clitic is necessarily different from the typical subject concord/agreement. As Bresnan and Mchombo (1987) show, the subject agreement is ambiguous between a pronominal and an agreement morpheme. In the case of Bemba, this means that pronominal realization of phi-features takes a different phonological realization than typical agreement (in the case of Class 1 nouns).¹⁰

Under this analysis, alternative agreement is also a strategy to rescue the derivation from Anti-locality. Note that in the case of long distance extraction (24)), there is no alternative agreement in the lower clause (the demonstrative relative marker appearing only next to the head noun). The lack of alternative agreement suggests that there is no successive cyclic movement – the movement from the lower clause subject position goes directly to the upper clause (SpecCP), before moving out of the upper CP (consistent with Fox and Pesetsky’s 2005 view on successive cyclicity, see below).

Thus far, the only domain that appears to play a role is the CP phase/domain. However, the Copy Spell-out yields different outputs depending on whether or not the

⁹ In the case of subject relativization, both the copy in the IP and the lower copy in the CP are in the same CP phase/domain. If the Condition on Domain Exclusivity considers the whole CP phase, it may be the case that the most economic way to avoid the condition is to Spell-out the second copy as a *d*-pronoun (and thus making it different from the first copy as well). However, the data in Bemba show that the output is evaluated from bottom up, first taking into account the lower CP, thereby ensuring that the copy in IP is changed before proceeding to the higher CP.

¹⁰ The cases in which the subject marker is considered as a pronominal element are the ones involving dislocated noun phrases (in Bresnan and Mchombo). And in the case discussed in this paper, it is a moved noun phrase. In other words, the pronominal element also has a “resumptive” role.

noun in question is outside of the IP or not. If it remains inside IP, it is spelled-out as a pronoun (clitic), while a noun outside of IP is spelled-out as a *d*-pronoun.

4. Relative markers in the P-strategy

Let us turn now to the P-strategy. This concerns relatives in languages such as Chishona (3b), Makwe (see Devos 2004)), Makonde (see Nsuka 1982). (3b) is repeated here for illustration.

- (3) b. Mbatya dza-v-aka-son-era vakadzi mwenga
10clothes 10REL-2SM-TN-sew-APL 2women 1bride
'clothes which the women sewed for the bride'

The relative marker in these languages is not based on demonstratives. Non-subject relativization in these languages resembles the Possessive construction (thus P(ossessive)-strategy). Both the possessives and non-subject relativization are marked by Agreement/Concord + linker/connective *-a*. Consider first examples of possessives in (27) and (28).

- (27) a. va-rwi v-á-mámbo (Carter & Kahari 1978)
2-warrior 2-POSS-king
'the warriors of the king'
b. gumbo r-a-kamṇana (Fortune 1955)
5leg 5-POSS-small.child
'the leg of the small child'
- (28) a. vá-no-aura (Carter & Kahari 1978)
2SM-TNS-speak
'they speak'
b. ndímí dz-a-vá-nótaúra
10language 10-POSS-2SM-TNS-speak
'the languages which they speak'

As mentioned in the introduction, the agreement in the relative is the same as subject concord/agreement.

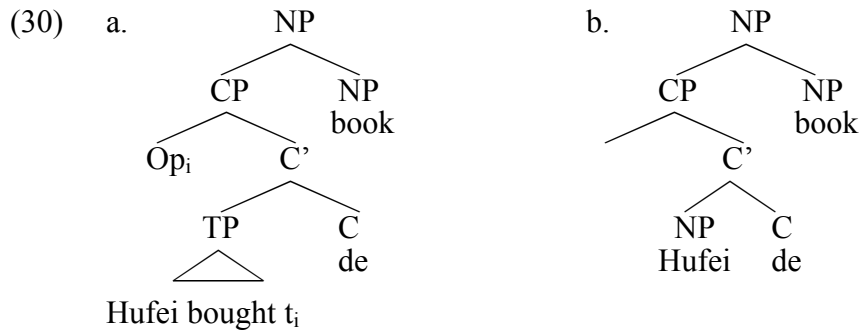
Possessive-based relatives can also be found outside of Bantu, e.g., in Chinese, and in Hebrew and Arabic (if one adopts Ouhalla's 2004 analysis of Arabic). Chinese relatives (all relative types) for instance, share with possessives in that both precede the modification marker/linker *de*, which precedes the head noun. This is illustrated in (29).

- (29) a. hufei *de* shu
Hufei DE book
'Hufei's book'

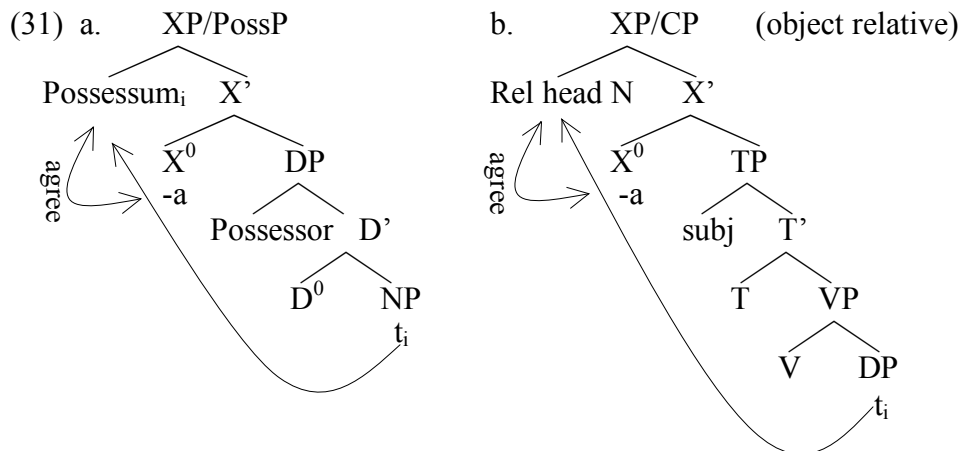
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- b. Hufei mai *de* shu (object relative)
 Hufei buy DE book
 ‘the book that Hufei bought’
- c. mai nei-ben shu *de* ren (subject relative)
 buy that-CL book DE person
 ‘the person who bought that book’

In Cheng (1986), *de* is analyzed as a C^0 . When *de* takes a noun phrase (30b), we have a possessive construction, and when *de* takes a clause, we have a relative clause (30b). In both cases, the CP headed by the linker/modification marker *de* adjoins to an NP.¹¹



Treating possessives and possessive relatives in Chishona along the same lines yields structures in (31a,b):¹²



In (31a), the possessum moves to SpecXP, triggering agreement with the possessive head. An object (possessive) relative can be derived the same way, assuming that the *-a* head takes a TP instead of a DP. The object noun phrase moves to SpecXP/CP, triggering “subject”-agreement with the head.

¹¹ See Aoun and Li (2003) for arguments that Chinese relatives have an adjunction structure.

¹² The possessor may start out from the NP and move subsequently to SpecDP (see Szabolcsi 1994).

To derive a finite subject relative using this strategy requires that the subject noun phrase be extracted. This again involves very local movement, just like in the D-strategy. As mentioned in the introduction, subject relatives in these languages can resort to either a tonal strategy, or an infinitive relative, as in (32a,b).

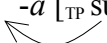
- (32) a. múunú w-a ku-húúva (Makonde, Kraal 2005)
 1person 1-POSS-15-have.problems.INF
 ‘a person (who is) in trouble’
 b. ‘ntáama w-á-bílá ku-káláng-íiw-a (Devos 2004)
 3sorghum 3-POSS-without 15-fry.INF-PASS-FV
 ‘sorghum that has not been fried’

The infinitival relatives in (32a,b) are also possessive relatives, as shown by the presence of the linker/connective *-a*. The difference between these relatives and the ones in (28) is that the verb in the relative is in an infinitival form. Infinitives in Bantu languages are nominals, with a class prefix (class 15 *ku*) and a stem, as illustrated in (33a,b).

- (33) a. ku-ndí-píndúr-a (Shona; Carter & Kahari 1978)
 15-1sgOM-answer-FV
 ‘to answer me’
 b. ku-tí-rwís-a
 15-1plOM-fight-FV
 ‘to fight against us’

Note that typical subject-concord/agreement is based on class-agreement, i.e., class 1 noun triggers class 1 agreement, etc., as we have seen in the introduction concerning class 1 subject agreement in Bemba. I treat the class 15 prefix in the infinitive as equivalent to subject agreement.¹³ Treating the prefix *ku* in this light allows us to treat subject infinitival possessive relatives as an alternative agreement strategy.

Consider the simplified representation of a subject possessive relatives in (34).

- (34) [XP  -a [TP subj T [VP V ...]]]

The movement of the subject to the Spec of XP constitutes “very local” movement (and certainly movement within a CP phase). Assuming that the class 15 prefix is a reflection of alternative agreement, we can treat this on a par with alternative agreement with class 1 nouns that we have seen in Bemba. In particular, after the subject noun phrase undergoes movement (e.g., in (34)), the lower copy undergoes Copy spell-out (triggered by CDE).

¹³ Meeussen (1967) assigns both the verbal prefix (i.e., class agreement prefix in verbs) and the prefix in infinitives to the “initial” slot. This indicates that they occupy the same position in a verbal structure.

Here, the pronominal form that is being spelled-out is *ku*, which can be considered to be a cases of “disagreement” or lack of agreement. The spell-out of *ku* also differs from the case of alternative agreement in Bemba in that it is not restricted to class 1 nouns, but rather for all noun classes. In other words, if the treatment here is on the right track, it is a better representation of alternative agreement (since it is across all classes).

5. Spell-out domains and successive-cyclicity

5.1 Spell-out domains and the nature of the spell-out

As mentioned earlier, we deviate from Grohmann (2003), who proposes the notion of Prolific Domain, with the definition in (35), and three predefined Prolific Domains (36).

(35) Prolific Domain

Let a Prolific Domain $\Pi\Delta$ be a contextually defined part of C_{HL} :

- (i) Each $\Pi\Delta$ spells out its context information and
- (ii) Spell Out feeds the PF and LF interface levels.

(36) Three Prolific Domains

- (i) Θ -Domain: its context information ranges over thematic relations
- (ii) Φ -Domain: its context information ranges over agreement properties
- (iii) Ω -Domain: its context information ranges over discourse information

These domains do not correspond entirely to the Spell-out domains for linearization in Fox & Pesetsky (2003, 2005), namely, CP, DP, vP/VP, though they certainly overlap. In the case of relativization, it does not appear to be the case that a domain smaller than a CP plays a role. Consider again schematic representations for relativization, for both subject and object relatives:

- (37) a. $[_{DP} D^0 [_{CP} \text{HeadN}_i [_{CP} \text{REL}_i [_{TP} \text{SUBJ}_i \dots]]]]$
 b. $[_{DP} D^0 [_{CP} \text{HeadN}_i [_{CP} \text{REL}_i [_{TP} \dots [_{VP} \dots \text{OBJ}_i \dots]]]]]]$

For both cases, the step from REL to HeadN is within the CP phase/domain, triggering Copy Spell-out to apply. In the case of subject relatives, the step from Subj to REL is also in one CP phase, while this is not the case for object relatives, since a vP/VP phase intervenes.¹⁴ Thus, it is only in the case of subject relativization that we see alternative agreement (both in Bemba class 1 nouns, and in Chishona infinitival subject relatives).

We have noted that when the Copy Spell-out takes place within TP, what is spelled-out is a personal pronoun, which are equivalent to phi-features (Wiltchko 1998). On the other hand, when Copy Spell-out takes place outside of TP (e.g., in SpecCP), what

¹⁴ I assume that the XP above TP in the case of a possessive relatives is also a CP, though it is most likely further dominated by a DP, as in regular relativized NPs.

is spelled-out is a demonstrative pronoun. The difference seems at first sight to be arbitrary. However, as Wiltschko (1998) argues, demonstrative pronouns are full DPs which can head an operator-variable chain. And with respect to Copy Spell-out, it is precisely when this takes place in an operator position that a demonstrative pronoun is being spelled-out. In other words, the output of Copy spell-out is sensitive to the position of the element.

5.2 Tension between successively cyclicity and anti-locality

We have seen earlier that long distance relativization in Bemba does not proceed successive cyclically. In particular, the head noun moves directly from the subject position to the higher CP (i.e., not through the embedded CP). Note that anti-locality does not a priori run counter successive cyclicity, since it only bans local movement within a particular domain. However, in cases of long distance operator movement involving a subject, as in (38a,b), the tension between successive cyclicity and anti-locality is apparent.

- (38) a. Who does Peter think left early?
b. The man who Peter thinks left early is John.

In particular, if there is movement from embedded SpecTP to embedded SpecCP (before subsequent movement to matrix CP), then it constitutes movement within the lower CP domain, which should lead to problems with Anti-locality (in particular CDE).

I follow Fox and Pesetsky (2005) in assuming that successive cyclic movement is driven by a particular aspect of Spell-out, namely Order Preservation. That is, linear order information from an earlier phase is preserved. Movement therefore is triggered to ensure that there is no order contradiction between phases. Consider the derivation of (38a) in (39).

- (39) [_{CP1} who does [_{IP} Peter [_{VP} think [_{CP2} ____ [_{IP} ____ left early]]]]]

In the CP2 phase, regardless of whether *who* moves to SpecCP or not, the linearization statement of *who* within this phase states that *who* precedes the VP *left early*. In other words, movement here does not change linear order. By economy, this movement does not take place. Movement of *who* can thus proceed directly from SpecTP to the higher phase (VP, and then to CP) without passing through the lower SpecCP2.¹⁵

This manner of direct movement (i.e., without successive cyclic movement to SpecCP) is possible in a language like English since the complementizer *that* is optional. Consider in contrast French, in which the complementizer *que* cannot be deleted:

¹⁵ With the presence of *that*, it is no longer possible to not undergo successive cyclic movement. Subject wh-movement with *that*-clauses therefore must proceed via SpecCP headed by *that*, which leads to the typical *that*-trace effect. I will discuss *that*-relatives in section 6.1, which do not display the *that*-trace effect.

- (40) a. Quelle fille est-ce que Pierre pense qui est partie?
b. la fille que Pierre pense qui est partie?

With an obligatory complementizer *que*, movement of the subject *wh*-phrase or relative head noun passes through the lower SpecCP (to ensure consistent linear ordering à la Fox and Pesetsky). Successive cyclic movement in this case yields “very local” movement. I suggest that the obligatory *que-qui* alternation is a response to Anti-locality (i.e., CDE), though I leave the precise details open in the interest of space.

6. Extension to other languages

The analysis proposed here concerning the demonstrative pronoun in relatives in Bemba has direct implications for languages which use demonstratives in relatives. I discuss English and Dutch here. For both languages, the complementizer happens to take the same form as the demonstrative. The extension that I present here will largely be speculative in nature due to page limit.

6.1 English *that*-relatives

Both *wh*-relatives and *that*-relatives are possible in English. Various previous works have argued that these relatives are derived differently (see Svenonius 1998 among others). Within a head-raising analysis of relatives, *that* is generally considered to be a complementizer. However, *that* does not behave like a complementizer in such cases. In fact, there are reasons to believe that *that* in *that*-relatives is not always a complementizer. First, it does not trigger the *that*-trace effect, as shown by the contrast between (41a) and (41b).

- (41) a. *Who_i do you think that t_i left early?
b. I know the man_i that t_i left early.

The extraction of the *wh*-phrase in (41a) out of the *that*-clause leads to ungrammaticality (the typical *that*-trace effect) while the extraction of the head noun in (41b) does not. Second, though *that* is obligatory in subject-relatives, it is not in object relatives.

- (42) a. the man *(that) left
b. the man (that) John saw

If *that* is a complementizer in (41b), it is unclear why it does not trigger the *that*-trace effect.¹⁶ Further, the obligatoriness of *that* in subject relatives such as (42a) does not follow from any known requirement. If on the other hand, we consider the possibility that *that* in *that*-relatives is a emergent pronoun, a result of Copy Spell-out, both

¹⁶ Under a Pesetsky and Torrego type of analysis (see Pesetsky and Torrego 2001), *that* in *that*-relatives is also a puzzling element.

peculiarities follow. First, there is no *that*-trace effect because it is not the complementizer *that*. It is a demonstrative pronoun. Second, it is obligatory in subject relatives because it is a Copy Spell-out demonstrative pronoun, whose presence has nothing to do with possible complementizer deletion.¹⁷

6.2 Dutch relatives

Van Riemsdijk (1997) notes that “[t]here is an obvious parallelism between the structure of relative clauses and that of left dislocation constructions. This is particularly true in Dutch and German: both relative clauses and CLD are characterized by a nominal head and a fronted *d*-pronoun.” (p.7) Consider first the CLD example in (18) (repeated here) and typical relatives clauses such as (43a,b).

- (18) Die man, **die** ken ik niet.
that man that know I not
‘That man, I don’t know him.’
- (43) a. het boek dat ik gelezen heb
the book that I read have
‘the book that I have read’
b. de man die ik niet ken
the man that I not know
‘the man that I don’t know’

The demonstratives in both CLD and relatives agree with the head noun in gender (neuter *dat*, non-neuter *die*).

Dutch is similar to English in that there are also *wh*-word based relative pronouns. The *wh*-based relative pronouns are connected to a preposition (44a,b), or it is a headless relative (44c).¹⁸ *D*-relatives cannot be used as headless relatives.

- (44) a. het house waarin ik woon
the house where.in I live
‘the house that I live in’
b. de manier waarop hij praat
the way where.on he talks
‘the way he talks’
c. Ik eet wat hij ook eet.
I eat what he also eats
‘I eat what he also eats.’

¹⁷ Under this analysis, the subject-object asymmetry regarding the presence of *that* should be related to the fact that in the case of subject relatives, there are two “very local” movement. Instead of Copy Spell-out of the phi-features in the subject position (bearing in mind that English does not normally use resumptive without island violations), English opts to make the demonstrative pronoun obligatory.

¹⁸ *Wat* is also used with relative heads such as *alles* ‘everything’, *iets* ‘something’ and *niks* ‘nothing’. These can be considered to be “Light-headed relatives” (Citko 2004).

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Die and *dat* in relative clauses have been standardly treated as relative pronouns, though it is unclear why there are both demonstrative based relative pronouns and *wh*-relatives. If we extend the current analysis of emergent demonstrative pronouns to Dutch *die/dat*-relatives, these relatives are formed by raising the head noun, and spelling out the lower copy as a demonstrative pronoun. The *wh*-relatives are mainly adjunct relatives, which may involve another strategy (such as a matching analysis, see Sauerland 2003).

In conclusion, in this paper, I argue that anti-locality is the source of subject/non-subject asymmetries in Bantu relatives. Both alternative agreement and the lack of finite subject possessive-relatives follow from the fact that a rescuing strategy can be applied. In both cases, the alternative strategy is to satisfy the Condition on Domain Exclusivity.

The demonstrative relative marker we see in languages like Bemba is a demonstrative pronoun spelled-out due to anti-locality. Since it is not a relative pronoun (i.e., not like *which* in English), it does not have to form a constituent with the head noun.

Anti-locality as proposed in Grohmann (2003) and adopted here aligns with Fox and Pesetsky (2005) in not allowing successive cyclic movement that is string vacuous. For anti-locality, such movement is undesirable (something extra has to take place) while for linearization Spell-out à la Fox and Pesetsky, such movement is not motivated.

Lastly, I have shown that the analysis for Bemba relatives, in particular, the emergent demonstrative pronoun in relatives may be extended to relative clause formation in English and Dutch.

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