Anti-Agreement: Locality of Movement or Agreement?

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1 Introduction

In many languages, argument-verb agreement is altered or suppressed when the argument is extracted, a phenomenon known as an Anti-Agreement Effect (AAE). Various approaches in the literature take AAE to result from locality restrictions on binding (Ouhalla 1993), movement (Schneider-Zioga 2007; Cheng 2006), or agreement (Boeckx 2003). In this paper, I review these approaches and argue that AAEs in Bantu offer evidence in favor of the latter approach.

2 Anti-Agreement and locality

2.1 The complete functional complex and binding

AAEs have chiefly been discussed in the context of local subject extraction, as observed in a broad array of languages (Ouhalla 1993; Richards 2001 and references therein). For example, Ouhalla (1993: 479) notes that in Tarafit Berber a verb that typically agrees in gender, number, and person with its subject shows no agreement when that subject is extracted. Rather, the verb appears in a participle form.

(1) a. man tamghart ay yzri-n Mohand? Tarafit Berber
   which woman COMP see-PART Mohand
   ‘Which woman saw Mohand?’

   b. *man tamghart ay t-zra Mohand?
      which woman COMP 3FEM.SG-see Mohand
      ‘Which woman saw Mohand?’

Beginning with Ouhalla (1993), much of the discussion surrounding AAEs has centered upon explaining locality restrictions that AAEs are often subject to. As Ouhalla observed, AAEs in Berber only hold if it is the local subject that is extracted. If an embedded subject is extracted, AAEs do not arise:

(2) man tamghart ay nna-n qa t-zra Mohand?
    which woman COMP said-3PL that 3FS-saw Mohand
    ‘Which woman said that she saw Mohand?’

Focusing on such facts, Ouhalla argues that AAE is not about agreement directly, but is rather about binding restrictions on the null pronoun that he takes rich agreement to license. Assuming that pronouns must not be bound by an A-bar operator within their local domain, Ouhalla argues that agreement is suppressed
on the verb in subject extraction in order to prevent a null pronoun from occurring in the subject position and being bound by the extracted subject.

The problem with this account is the domain over which Ouhalla takes this A-bar disjointness restriction to hold. Ouhalla takes it to be the local Complete Functional Complex (CFC), in other words the local clause. This view is both supported and contradicted by data from Irish. McCloskey (1990) shows that, just as in AAE, local subject resumptive pronouns are disallowed while embedded subject resumptives are acceptable. This has led to the widespread intuition that resumption and AAE are different phenomena with a common explanation. However, McCloskey also demonstrates that Irish resumptive pronouns occur in local object positions, a position within the local CFC of the A-bar operator. This contradicts Ouhalla’s account.

(3) an fear ar shíl mé go raibh sé breoite
the man COMP thought I COMP was he ill
‘the man that I thought was ill’

The facts from Irish do not completely rule out Ouhalla’s account; however, they do show that the CFC cannot be the locality domain relevant for Ouhalla’s principles of A-bar binding. If there were a natural locality domain that contained the local subject position, but not the local object or embedded subject positions, the account could still hold. Unfortunately, that does not seem to be the case.

2.2 Anti-locality and movement
Recently, AAEs have been discussed for Bantu languages as well (Schneider-Zioga 2007; Cheng 2006; Henderson 2009). Unlike in Berber, AAE in Bantu involves replacing the canonical agreement morpheme on the verb with a different morpheme. It should also be noted that this morpheme only appears with third person singular nouns of class 1 (a fact I return to below):

(4) a. u-mulumendo a-ka-belenga ibuku Bemba
    AUG-1boy 3SG-FUT-read 5book
    ‘The boy will read the book.’ (Cheng 2006)

    b. u-mulumendo ú-u-ka-belenga ibuku
       AUG-1boy 1REL-AAE-FUT-read 5book
       ‘the boy who will read the book’

    c. *u-mulumendo ú-a-ka-belenga ibuku
       AUG-1boy 1REL-3SG-FUT-read 5book

Examining AAE in Bantu, Cheng (2006) argues that AAE results from the history of movement of the extracted argument, combined with (anti-)locality restrictions on movement, anti-locality being the idea that movement must be too short.
Cheng adopts Grohmann’s (2000) characterization of anti-locality. Briefly put, Grohmann’s idea is that movement cannot take place within a prolific domain. The latter are distinct domains within clause structure, basically lining up with the traditional sets of projections associated with the CP, TP, vP domains. This version of anti-locality rules out, for example, movement of an XP from the complement of V to SpecVP or from FocP to TopP within the left periphery.

In addition to this restriction, however, Grohmann also argues that at least in some languages movement may take place within a prolific domain as long as such anti-locality violations are repaired by spelling out a minimal copy of each member of the movement chain. Adopting this idea, Cheng argues that relative complementizers as well as the AAE morpheme in Bantu are in fact minimal copy spell-outs of the extracted subject. In non-subject relative, for instance, the relative complementizer takes the form of a demonstrative pronoun of the same noun class and number of the extracted NP. Cheng argues that Bantu relatives suggest a head-raising analysis that requires movement through two adjacent SpecCP positions, an anti-locality violation; she further argues that the demonstrative relative marker is a minimal copy spell-out required to repair this violation.

(6)  
\[
\text{[DP [CP ibuku [CP ibuku [IP umulumendo ...V ... ]] ] ]}
\]

\[
\bullet
\]

\[
\text{ibuku  iliyo umulumendo...}
\]

Along the same lines, Cheng argues that the subject position in Bemba, SpecIP, also counts as part of the SpecCP domain for computing anti-locality. This follows Rizzi’s (1997) argument that the highest projection of SpecIP (SpecFinP) is ambiguous between the CP and IP domains. In subject extraction, then, anti-locality is violated, requiring repair by spelling out the lower copy in some minimal way. Cheng argues this is the nature of the AAE morpheme:

(7)  
\[
\text{u-mulumendo ú-u-ka-belenga ibuku Bemba}
\]
\[
\text{AUG-1boy 1REL-AAE-FUT-read 5book}
\]
‘the boy who will read the book’
One can see that Cheng’s account has run into the same problem as Ouhalla’s though from the opposite direction. While the domain assumed for A-bar binding by Ouhalla (the Complete Functional Complex) was too large, the domain assumed by Cheng for anti-locality is too small. Thus, Cheng is forced to argue, contra Grohmann, that projections belonging to the IP domain may count as members of the CP domain. Again, for both authors, the problem seems to be that there is no natural domain that encompasses the local subject position, but not the local object or embedded subject positions.

2.3 Agree and anti-agreement

Both Ouhalla (1993) and Cheng (2006) seek to derive AAE from independently-defined locality domains. Boeckx (2003), however, takes a differently approach, arguing that the locality restrictions on AAE derive from the local nature of the Agree operation itself, a locality imposed by minimality. Boeckx’s account of anti-agreement builds upon Richards (2001) proposal that any movement chain may move through only one strong position. Strong positions are defined by strong features. Richards takes strong features to essentially be instructions to PF to pronounce the checking element in its specifier. Thus, if the same element checks two strong features, this leads to uninterpretability at PF since PF will be instructed to pronounce the same element in two different places.

In Bantu, subject-related agreement (phi-)features are standardly associated with movement (Kinyalolo 1991; Carstens 2001), making them strong features in Richards’ sense. Assuming these features to reside in T makes SpecTP a strong position. The fact that extraction for relativization requires movement (and often agreement) also makes the final landing site of relativized elements (assumed here to be SpecCP) a strong position. Subject extraction thus falls under Richards’ definition of an illegitimate chain, incurring what I refer to here as a Strong Chain Violation (SCV).
Building on this, Boeckx (2003) argues that strong chain violations can be repaired in the derivation one of two ways. One way is by stranding a piece of the moving element in the lower position while the remainder of the XP moves to the higher position. Boeckx argues that these are the mechanics behind what is traditionally referred to as resumption. Another way is by establishing an Agree relation between the two strong positions, making them count as one strong position for computational purposes. For subject extraction, this is illustrated in (10):

\[
\text{(10) CP} \\
\text{DP} \\
\text{C} \\
\text{TP} \\
\text{[φ]} \\
\text{t} \\
\text{T} \\
\text{vP} \\
\text{[φ]} \\
\text{t} \\
\text{v}
\]

Boeckx argues that the Agree option is preferred to the stranding (resumption) option and that the Agree relation in (11) underlies AAEs. The locality restrictions on AAE (as well as resumption) follow indirectly from the system simply due to the fact that Agree is subject to minimality. That is, two appropriate sets of features may undergo Agree so long as there is no third element of the same type in between them, blocking the relation.

\[
\text{(11) \ [-φ] \ [+φ] \ [+φ]}
\]

Resumption, Boeckx argues, is resorted to just in case the Agree option of resolving a strong chain violation is blocked by minimality, a situation that is more likely to occur the greater the representational distance is between the probe and goal of the Agree relation.

Crucially, in the case of a locally extracted subject, there is very little, if any, structure in between the probe and goal. Returning to the structure in (10), if SpecCP and SpecTP are the two strong positions causing a strong chain violation, then the Agree option is virtually guaranteed since C selects T. On the other hand, it is less likely that the Agree option will be available in the case of local objects or embedded subjects since it is more likely that some intervener will be present.
in the structure (say, phi features of little v or the embedded C). The system thus explains the apparent locality restrictions on AAE, but without resorting to independently defined (anti-)locality domains.\(^1\)

### 3 Anti-agreement in Bantu

In this section, I will demonstrate that the morphosyntactic facts of AAE in Bantu support the Boeckx/Richards Agree account of AAE as well as telling us something more about the nature of anti-agreement. I review these facts below.

#### 3.1 The relative prefix in subject relatives

Many Bantu languages employ a relative marker that prefixes to the verb form as in Bemba above. If the language employs augment vowels, this marker is typically identical to the augment vowel of the relativized NP (but cf. Kinande, Schneider-Zioga 2007).

\[(12)\]
\[
\begin{align*}
\text{a. } & \text{e-kitabo} & \text{e-ki-yulise} & \text{Luganda} \\
& \text{AUG-7book} & \text{7REL-7AGR-torn} & \text{‘the book that is torn’ (Walusimbi 1996)} \\
\text{b. } & \text{a-kambe} & \text{a-ka-meyeyse} & \\
& \text{AUG-12knife} & \text{12REL-12AGR-broken} & \text{‘the knife that is broken’} \\
\text{c. } & \text{a-basajja} & \text{a-ba-kola} & \\
& \text{AUG-2men} & \text{2REL-3PL-work} & \text{‘the men who are working’}
\end{align*}
\]

\[(13)\]
\[
\begin{align*}
\text{a. } & \text{u-mulumendo} & \text{ú-u-ka-belenga} & \text{ibuku} & \text{Bemba} \\
& \text{AUG-1boy} & \text{1REL-1SM-FUT-read} & \text{5book} & \text{‘the boy who will read the book’} \\
\text{b. } & \text{a-balumendo} & \text{á-ba-kabelenga} & \text{ibuku} & \\
& \text{AUG-2people} & \text{2REL-3PL-FUT-read} & \text{book} & \text{‘the people who will read the book’}
\end{align*}
\]

\(^1\) I say ‘apparent’ because under this system the restrictions on AAE and resumption are predicted not to be absolute. Thus, it is possible, if no interveners are present, for the Agree option to be used with local objects and/or embedded subjects. We therefore expect at least some languages to allow local subject resumption and other languages to display AAEs with local objects or embedded subjects. Even in Bantu, such exceptions can be found. Swahili is a language with local subject resumption (and no AAE) while Kinande optionally displays AAE with extracted embedded subjects (see Schneider-Zioga 2000, example (16)).
Though the function of the augment vowel in Bantu is not entirely understood and seems to vary somewhat from language to language (see Hyman and Katamba 1993), this marker is typically taken to encode aspects of referentiality such as definiteness or specificity. In languages with single vowel augments, the shape of the augment is determined phonologically (Nurse and Philipson 2003: 17) while other languages have full CV prefixes that are determined based upon the number and class (gender) of the noun they attach to.

I propose that the identity of the relative vowel with the augment in the data in (12-13) reflects an agreement relation between the phi-features in C and the relativized NP. Since the augment encodes referentiality, I assume that this agreement relation at least involves the feature I will call [ref]. It may also include class and number in languages with full CV prefixes. I am assuming that the relative prefix is spelled out in C.

(14) CP AGREE
    NP
      [+ref] C TP
      [-ref] tNP

3.2 The relative marker and the AAE morpheme
A second interesting observation is that in languages with distinct relative prefixes and AAE morphemes, they are also typically identical in shape. That is, the AAE morpheme is typically the augment vowel of singular nouns from noun class 1. This is sometimes hard to see because the vowels are adjacent and collapse phonologically, as they do in Bemba:

(15) u-mulumendo ú-u-ka-belenga ibuku ⇒ ú:kabelenga Bemba
    AUG-1boy 1REL-1SA-FUT-read 5book
    ‘the boy who will read the book’

The correlation is easier to see in Dzamba where the negative morpheme separates the relative and subject agreement morphemes. In subject extraction, one can see that the AAE morpheme is identical to the relative prefix, which is itself identical with the augment of the relativized NP (data from Bokamba 1976):
I propose that AAE morphemes are a reflection of an Agree relation between phi-features of T and C (the phi-features of the latter having been valued by the inherent phi-features of the relativized NP). This is illustrated in (15):

The correlations noted here between the relative marker and the AAE morpheme are exactly what is predicted if a C-T Agree relation is behind AAEs. However, the derivation in (17) raises some interesting technical questions that must be dealt with. I tackle these in the next section.

4 Anti-agreement and [person]
The most pressing question presented by (17) involves the sets of phi-features involved in the C-T Agree relation. As discussed in section 3.1, phi-features in C spelled out as the relative marker may encode class, number, and [ref]. They may not encode [person]. However, phi-feature in T that reflect subject-verb agreement do not encode [ref]. Rather, they encode person, number, and class.

(18) Phi in C:  [ref], ([class], [num])
Phi in T:  [pers], [class], [num]
In the next subsection, I seek to resolve this conflict.

4.1 [Person] and [ref]: Same feature, different domain
Longobardi (2005) develops a mapping theory for nominal expressions, summarized by the two principles below:

(19) a. *Denotation Hypothesis*: Individuals are denoted in (the head) D.
    b. *Licensing Condition*: Arguments denote individuals

The principles in (19) require that the syntactic head D be present in the structure in order for a nominal expression to be an argument and therefore count as a referential individual. Interestingly, Longobardi (2008) modifies these proposals somewhat, arguing that the syntactic head D is minimally composed of the feature [person]. Indeed, Longobardi argues that the feature [person] is what gives the head D its referential properties. This is expressed in his revised Denotation Hypothesis:

(20) *(Revised) Denotation Hypothesis*: Individuals are denoted through the Person feature.

Longobardi’s mapping hypothesis thus provides a straightforward way out of the technical problem contained in (19) above. Namely, the features we have designated here as [ref] and [person] are in fact the same feature (which I refer to here as [person], following Longobardi (2008). It is therefore possible for them to undergo an Agree relation. Of course, for this Agree relation to have any effect, it must be that in (17) above, the values for [person] in C and T differ. I propose that this is the case. While the [person] feature in T ranges over the traditional person values {1,2,3}, the [person] feature in C is sensitive to nominal values for [person], namely referential values such as definiteness or specificity.²

Note, however, that the features [class] and [number] would be unaffected by the C-T Agree relation being discussed here since these features, unlike [person], do not vary in their possible values across the C and T domains. Therefore, if the present account is on the right track, we expect to see some evidence that AAE appears to affect only the feature [person]. In fact, such evidence exists and I turn to this below.

4.2 Evidence for [person] in AAE
As briefly stated above, AAE in Bantu with full noun phrases is limited to third person singular nominals of noun class 1. This is the noun class that contains most

² Perhaps this difference between [person] values in C and T derives from the different functions of the CP and TP domain. While the latter is concerned with inflectional information, the former is concerned with referential information with regard to discourse. Further exploration along these lines is beyond the scope of this paper.
human nouns in Bantu. Third plural NPs or third singular NPs from other noun classes do not trigger AAE:

(21) a. abalumendo a-ba-kabelenga ibuku  *Bemba*
   2people 2REL-3PL-FUT-read book
   ‘the people who will read the book’

b. Izibata i-zi-komelaki iloso
   5duck 5REL-5SA-ate rice
   ‘the duck that ate the rice’

A key to understanding this behavior comes from examining clefted pronominal subjects. Here one finds that the AAE morpheme shows up with all singular pronouns. Moreover, there is a leveling effect with plural pronouns: all plural pronouns trigger third plural agreement. The data below is from Bemba and illustrates the insensitivity of AAE to the feature person.³

(22) a. Ni-ne  u-u-ka-belenga ibuku
   Cop-1sg REL-AAE-FUT-read 5book
   'It is I who will read the book'

b. Ni-we  u-u-kabelenga ibuku
   Cop-2sg REL-AAE-FUT-read 5book
   'It is you who will read the book'

(23) a. Ni-fwe  a-ba-ka-belenga ibuku
   Cop-1pl REL-3PL-FUT-read book
   'It is we who will read the book'

b. Ni-mwe  a-ba-kabelenga ibuku
   Cop-2pl REL-3PL-FUT-read book
   'It is you all who will read the book'  (P. Mupeta, p.c.)

More recently, Ouhalla (2005) has revisited his work on anti-agreement, noting that some dialects of Berber do not fully suppress subject-verb agreement in the context of subject of extraction. Rather, they suppress [person] while keeping gender and/or plural agreement (compare with (1a) above).

³ Kinyalolo (1991: 36) explores similar facts in KiLega, noting that his data suggests that agreement with the extracted operator is anti-person.
This isolation of the feature \[\text{[person]}\] in subject extraction is captured under the present proposal. Since C either doesn’t have \([\text{class}]\) and \([\text{number}]\) features or has the same value for them as T, they are unaffected by the C-T Agree relation that obtains under subject extraction. However, \([\text{person}]\) is affected: \([\text{person}]\) on T gets the value of \([\text{person}]\) on C.\(^4\)

### 4.3 The varying forms of AAE

Ouhalla’s (2005) discussion of Berber dialects is intriguing since it suggests that whether or not a language displays AAE and how AAE is displayed is at least partially determined by the particular morphological facts of the language. For example, Berber dialects that allow number to be expressed independently of person maintain number in AAE contexts while others do not. Moreover, the (nominal) referential value of the \([\text{person}]\) feature is expressed by the appearance of the participial morpheme, a nominalizing particle in Berber.

In Bantu, on the other hand, the nominal value of \([\text{person}]\) in AAE contexts results in lack of agreement in traditional person values on the verb and the presence of the AAE morpheme, identical in shape to the class 1 augment. We might suppose that AAE is absent with other noun phrases in Bantu since the noun classes those NPs belong to are defined exclusively by the features \([\text{class}]\) and \([\text{number}]\), not referencing the feature \([\text{person}]\).

For Bantu, this can be formalized in a realizational framework like Distributed Morphology (DM; Halle and Marantz 1994) that relies on disjunctively ordered sets of lexical insertion rules. In such a system, syntax and morphology manipulate formal features (including phi-features) and only later are phonological forms inserted based on the values and organization of these features. These phonological forms (called Vocabulary Items) compete with one another for insertion, with the most highly specific vocabulary item winning the competition. Given such a system, and given the account of AAE argued for here, it should be the case that the AAE pattern of a language should be mostly derivable from its regular subject agreement paradigm. That is, the AAE pattern should be what emerges when one replaces the traditional \([\text{person}]\) values with

\(^4\) An implication of these conclusions is that only \([\text{person}]\) defines a strong position in Richards’ (2001) sense. The system also requires that phi-features on T valued by the subject can remain active in the derivation, since they can be ‘re-valued’ by Agree with C after the SVC occurs. Unfortunately, I do not have the space here to fully explore these implications.
referential values that obtain under the C-T Agree relation. I illustrate here with Bemba. (25) gives the regular subject agreement paradigm for Bemba:

(25) /tú-/ ↔ [1 pers], [pl]
    /n-/ ↔ [1 pers]
    /mu/ ↔ [2 pers], [pl]
    /u/ ↔ [2 pers]
    /a/ ↔ [3 pers]
    /ba/ ↔ [pl]

Restricting attention to class 1 nouns for now, note that in the absence of a specified \{1,2,3\} person feature, any [pl] specification will be spelled out at /ba-/,
deriving the fact that all plural pronouns trigger /ba-/ when extracted. Note also that in the absence of a specified \{1,2,3\} value for person and in the absence of a [plural] feature, none of the rules in (25) can apply. In that case, when the only feature present is a person feature with a referential value, the augment rule in (26) will apply.\(^5\)

(26) /V-/ ↔ [ref]

This explains why the AAE morpheme and the augment are identical: they are the same vocabulary item inserted based upon the same feature value.

As suggested above, other noun classes are all third person and are differentiated solely by their values for [number] and [class]. The subject agreement morphemes for these classes therefore need not reference the feature [person] at all. In that case, their insertion will not be affected by the values for [person], explaining why no AAE arises with these nouns.

(27) /ú-/ ↔ [class 3]  /í-/ ↔ [class 3], [pl]
    /lí-/ ↔ [class 5]  /y’á-/ ↔ [class 5], [pl]
    /cí-/ ↔ [class 7]  /fí-/ ↔ [class 7], [pl]
    /í-/ ↔ [class 9]  /shí-/ ↔ [class 9], [pl]
    /lú-/ ↔ [class 11] /ká-/ ↔ [class 11], [pl]
    /bú-/ ↔ [class 13] /kú-/ ↔ [class 13], [pl]

A question does arise with regard to competition between the vocabulary item /ba/ in (25) which is specified for [pl] only, the vocabulary item in (26) specified for [ref] only, and those vocabulary items in (27) specified for [class] only. In order to decide competition between these forms in get the right results, it must be that

\(^5\) Recall that the phonological form of the augment in Bemba is determined phonologically, hence the underspecified vowel. In languages with full CV prefixes, the rule in (26) would be replaced by a larger set of insertion rules that reference class and number. However, the same principles would otherwise apply.
the [class]-specified items are considered more highly specified than the /ba/ item while the augment vocabulary item in (26) is the least specified of the three. While I haven’t the space to fully explore this here, it seems promising that this ranking can be derived from the universal feature hierarchy of Harley and Ritter (2002). In that hierarchy, class is dependent upon individuation (which includes number) while all features are ultimately dependent upon referentiality.

5 Conclusions
In this paper, I have reviewed approaches to AAE based upon independently defined domains and suggested they have been inadequate. I have also suggested that deriving locality effects indirectly via minimality and an Agree relation between C and T is more promising, demonstrating that AAEs in Bantu provide strong morphosyntactic evidence for this approach. Moreover, I have discussed the fact that Bantu offers evidence that AAE uniquely affects the expression of the feature [person] and supports Longobardi’s view that [person] takes on referential values in the nominal domain.

References


