Agreement and the EPP in Kinyarwanda Applicatives*

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1. Introduction

In Government-Binding (GB)-theory and early versions of the Minimalist Program (MP) up to and including Chomsky (1995), it was assumed that agreement relations are established in Spec-Head configurations. For an argument DP to agree with (features of) a head F, the DP hence needed to *move* to [Spec, F], sometimes covertly. This view has changed in Chomsky (2000), however, and it has since been assumed that F can agree with a DP as long as F c-commands the DP and no locality conditions are violated. Movement into specifier positions is hence no longer required for agreement. In Chomsky (2000, 2001), the operation Move is solely triggered by *EPP-features*, which are associated with the functional heads C, T and v.

In his excellent introduction to, and critical discussion of, the MP, Grewendorf (2002) highlights the stipulative character of an account of syntactic movement in terms of the EPP. Formally, the trigger for movement is the EPP-feature: if a syntactic head F is equipped with such a feature (and if the numeration does not include an expletive which could check this feature by being merged into [Spec, F]), then movement has to take place. However, this still leaves open the question of why EPP-features and the associated movement steps are necessary in the first place.

In this paper I propose a possible answer to this question which is based on the idea that not only the functional heads C, T and v, but also the lexical head V, can be equipped with an EPP-feature. The specifier of VP is usually filled with the verb's internal argument, but I suggest that an EPP-feature associated with V may trigger movement of a DP which is not selected by the verb to a second specifier on top of the first. My major claim is that this movement is required to establish agreement between the moved DP and the functional head v, which agrees with the closest DP in its c-command domain. This means that in order for v to agree with a DP located further down in the VP than the verb's argument, this DP must move, but the movement step itself is not triggered by a feature associated with v, but by an EPP-feature associated with the verb.

I substantiate my proposal empirically through a discussion of locative applicative constructions in Kinyarwanda, a Bantu language spoken in Rwanda and its neighbouring countries (Kimenyi 1980, Ngoboka 2005). In section 2, I introduce Kinyarwanda

locative applicatives and argue that they are derived by preposition incorporation. Section 3 suggests that the word order in this type of applicative is derived by DP-movement of the applied object to a second [Spec, V], and in section 4 I argue that this movement step is triggered by the EPP-feature of V. Sections 5 and 6 offer a thorough discussion of object asymmetries in Kinyarwanda locative applicatives, which provides the empirical evidence for the theory developed in sections 3 and 4. Section 7 concludes the paper.

2. Locative applicatives and preposition incorporation

Applicative constructions are formed by adding a special morpheme (the applicative marker) to the verb; as a result, a new object DP is added. In Kinyarwanda applicatives, this newly added *applied object* may bear all kinds of thematic roles, depending on the choice of applicative marker and the context (see Kimenyi 1980, Ngoboka 2005). In the applicative in (1b), for example, the applied object is the *instrument*: [1]

(1) a. *Umugabo y-a-tém-ye*   *igití n'úmuhoro.*
         man   SP-PST-cut-ASP   tree   with.machete
         'The man cut the tree with the machete.'
     b. *Umugabo y-a-tém-<u>eesh</u>-eje*   *igití umuhoro.*
         man   SP-PST-cut-APPL-ASP   tree   machete
         'The man cut the tree with the machete.' (Ngoboka 2005: 109)

In (1a), the verb is transitive and only selects the theme argument *igití*, 'tree', as a DP object; the instrument *umuhoro*, 'machete', is introduced by the preposition *na*, 'with'. In contrast, the verb in (1b) is extended by means of the applicative marker *-eesh-*, and the resulting applicative is a double object construction in which both the theme and the instrument are realised as object DPs.

In this paper, I am concerned with the syntactic properties of *locative applicatives* in Kinyarwanda. Examples are given in (2b) and (3b):
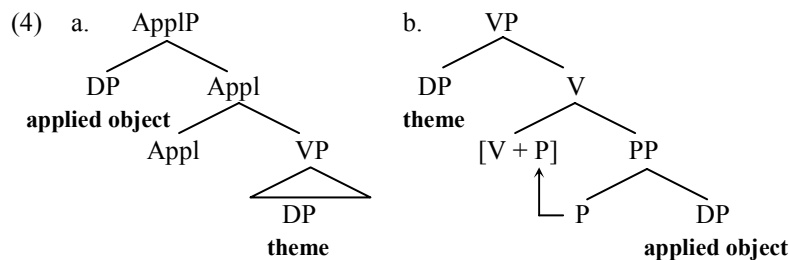
(2) a. *Umufuundi y-o-óme-tse*   *amatáfaári ku rukutá.*
         builder   SP-PST-stick-ASP   bricks   on wall
         'The builder stuck bricks on the wall.'
     b. *Umufuundiy-o-óme-tse-<u>hó</u>*   *urukutá amatáfaári.*
         builder   SP-PST-stick-ASP-APPL   wall   bricks
         'The builder stuck bricks on the wall.' (Ngoboka 2005: 46)

(3) a. *Umwáana y-a-ménn-ye*   *amáazi mu mwoobo.*
         child   SP-PST-pour-ASP   water   in   hole
         'The child poured water into a hole.'

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[1]   Morphemes are glossed as follows: APPL = applicative; ASP = aspect; FV = final vowel; OC = object clitic; PASS = passive; PST = past tense; SP = subject prefix.

   b. ? *Umwáana y-a-ménn-ye-<u>mó</u>*   *umwoobo amáazi.*
       child   SP-PST-pour-ASP-APPL hole   water
       'The child poured water into a hole.' (Ngoboka 2005: 46)

In the (a)-examples, the goal of the event is realised by a PP headed by a preposition (*ku* and *mu* respectively). In the corresponding applicatives, the applicative markers *-hó/-mó* are suffixed to the verb. As a result, the goal argument has become the applied object DP of the derived double object construction.

    Applicative constructions in Bantu have received considerable attention in the literature. Researchers such as Bresnan & Moshi (1990), Alsina & Mchombo (1993) or Harford (1993) assume that applicative formation is a morpho-lexical process. According to this view, the applicative morpheme is added in the lexical component of grammar and modifies the argument structure by adding an additional object. In contrast, proponents of a syntactic approach associate the applicative morpheme with an independent syntactic head, although opinions differ concerning the position of the applicative head in the structure. Two prominent syntactic accounts are illustrated in (4):

(4)   a.   ApplP   b.   VP

          DP   Appl   DP   V
  applied object   **theme**
            Appl   VP   [V + P]   PP
                  DP   P   DP
              theme   **applied object**

(4a) illustrates a proposal found in Marantz (1993), Pylkkänen (2000), McGinnis (2001) and Anagnostopoulou (2003), among others. Here, the applicative marker (labeled Appl in (4a)) selects the VP as its complement and introduces the applied object in its specifier. The alternative in (4b) shows Baker's (1988, 1992, 1997) *preposition incorporation* analysis of applicatives (also adopted in Nakamura 1997). In Baker's theory, the applicative marker is an affixal preposition and the head of a PP-complement of the verb; due to its affixhood, it undergoes head movement and incorporates into the verb. The applied object is merged as the argument of the applicative marker inside the PP.

    I argue in this paper that Kinyarwanda locative applicatives are derived syntactically by preposition incorporation, as shown in (4b). Note that the following examples provide strong evidence against a lexical treatment of locatives:

(5)   *Umufuundi y-o-óme-tse*   *urukutá hó*   *amatáfaári.*
     builder   SP-PST-stick-ASP wall   APPL bricks
     'The builder stuck bricks on the wall.'

(6)   *Umwáana y-a-ménn-ye*   *umwoobo mó*   *amáazi.*
     child   SP-PST-pour-ASP hole   APPL water
     'The child poured water into a hole.' (Ngoboka 2005: 46)

(5) and (6) differ from the applicative constructions in (2b) and (3b) above in one small, but important, respect: in contrast to (2b) and (3b), the applicative marker in the examples (5) and (6) is *not attached to the verb*, but appears between the two objects. This situation cannot be explained by lexical theories, in which the applicative marker is treated as a bound morpheme which combines with the verb in the lexicon. However, the data in (5) and (6) are compatible with a syntactic analysis which treats the applicative marker as a syntactically independent, "mobile" element which cliticises either to the verb or to a noun.

Furthermore, I adopt Baker's (1988) analysis represented in (4b) for locative applicatives rather than the alternative syntactic analysis in (4a) for the following reasons. First, the applicative markers *-hó* and *-mó* and the prepositions *ku* and *mu* used in the corresponding dative constructions are phonologically similar – a fact that is consistent with the view that the former elements are clitic-like or affixal variants of the latter. Second, and more importantly, the claim that the locative applicative marker is a syntactic head which introduces the applied object in its specifier does not explain why there are locative applicative constructions *without an applied object*:

(7) *Umufuundi y-o-óme-tse-hó*   *amatáfaári.*
     builder   SP-PST-stick-ASP-APPL bricks
     'The builder stuck bricks there.'

(8) *Umwáana y-a-ménn-ye-mó*   *amáazi.*
     child   SP-PST-pour-ASP-APPL water
     'The child poured water into it/there.' (Ngoboka 2005: 47)

(7) and (8) show that the applied object can be omitted in locative applicatives; when it is absent, the applicative marker is interpreted as a prepositional proform (Kimenyi 1995). This finding does not follow straightforwardly from the analysis underlying the structure in (4a); it would only be compatible with this structure if it is assumed that the specifier associated with a locative Appl-head is optional (or alternatively, that [Spec, Appl] can optionally be filled with a phonetically null applied object). This assumption, however, is problematic, given that overt applied objects are obligatory with all other types of applicatives in Kinyarwanda. Compare the instrumental applicatives in (9) and (1b) above:

(9) **Umugabo y-a-tém-eesh-eje*   *igití.*
      man   SP-PST-cut-APPL-ASP   tree
      intended meaning: 'The man cut the tree with something/it.'

If both locative and instrumental applicatives were represented by the structure in (4a), the contrast between (7)/(8) and (9) would require the stipulation that specifiers are optional with locative applicative markers, but obligatory with other Appl-heads. However, if one assumes (as I do) that locative applicatives are represented through a structure like (4b), while an analysis such as (4a) (or even a lexical approach) is adopted for other types of applicatives, then the difference between (7)/(8) and (9) can be derived from the different syntactic representations of these constructions. Whereas the obligatoriness of the applied object in applicatives such as (9) could be seen as a consequence

of the obligatory presence of a specifier, the omissibility of the applied object in a locative applicative follows directly from the prepositional status of the applicative marker: complements of locative prepositions are often optional (compare English *He walked out the room* and *He walked out*); in (7) and (8), the prepositional applicative marker is simply used intransitively, and the PP is interpreted as a proform.

Another argument in favour of the analysis in (4b) will be presented in section 6.3, where I show that in certain instances of the locative applicative construction, the applied object is in a position which is c-commanded by the theme. Notice that the structure in (4a) does not include such a position, since here, the applied object is merged into a position from where it c-commands the theme inside the VP. In contrast, the base position of the applied object inside the PP in the structure in (4b) is below that of the theme, and data which show that the applied object can indeed remain in this position therefore provide additional support for the preposition incorporation-analysis. Before I discuss these data, however, I first address the word order facts in Kinyarwanda locatives, which suggest that in examples such as (2b) and (3b), the applied object DP moves out of the PP to a position above the theme.
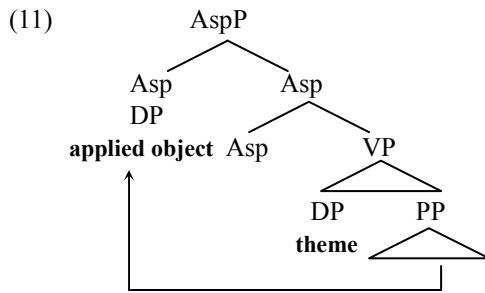
3. Word order, locality and multiple specifiers

As (10) shows, the applied object obligatorily precedes the theme in locative applicatives:[2]

(10) a. *Umubooyi y-a-ménn-ye-hó* *umwáana amáazi.* (√ AO > T)
  cook SP-PST-pour-ASP-APPL child water
  'The cook poured the water on the child.'
 b. * *Umubooyi y-a-ménn-ye-hó* *amáazi umwáana.* (* T > AO)
  cook SP-PST-pour-ASP-APPL water child
  'The cook poured the water on the child.'

The word order in (10a) does not follow directly from the structure in (4b) and therefore can only be derived by movement. This is in fact the proposal made in Baker (1997), who assumes that the applied object moves from inside the PP-complement of the verb to the specifier of a functional category Asp from where it asymmetrically c-commands the theme in [Spec, V] (see also Nakamura (1997)):

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2 In contrast, the word order of other types of applicatives in Kinyarwanda is more flexible, see McGinnis (2001), Ngoboka (2005), Zeller & Ngoboka (2006).

(11)

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              AspP
          /          \
       Asp            Asp
       DP          /       \
  applied object  Asp       VP
        ↑              /        \
        |             DP         PP
        |           theme       /\
        |_____|
```

Movement of the applied object is triggerd by case requirements. Baker (1988) argues that the complement of an incorporated preposition can no longer receive oblique case (a proposal which I henceforth adopt). Therefore, the applied object must move to a position where it can receive (or check) structural case, and Baker (1997) takes this position to be [Spec, Asp].

However, this derivation poses a problem with locality. Notice that A-movement of the applied object in (11) crosses the theme DP, which is located in [Spec, V]. The movement step depicted in (11) therefore violates the *Minimal Link Condition* (Chomsky 1995):
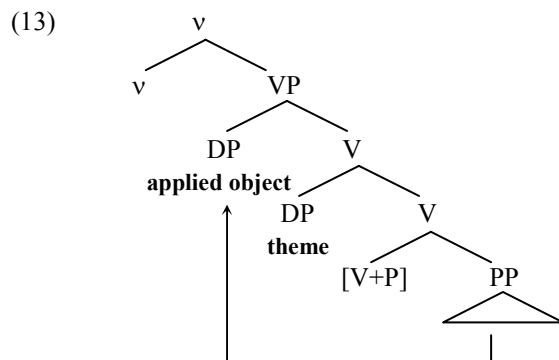
(12) *The Minimal Link Condition* (MLC) (Chomsky 1995: 311)
      K attracts α only if there is no β, β closer to K than α, such that K attracts β.

The locality concept of 'closeness' in (12) is defined in terms of c-command (see (14) below for a formal definition). Since the theme in [Spec, V] c-commands the applied object inside the PP, it counts as closer to the attracting head Asp than the applied object. Movement of the latter to [Spec, Asp] should therefore be blocked by the MLC.

We seem to be facing a dilemma now. The preposition incorporation-analysis implies that the applied object originates in a position below the theme, while the word order facts force us to assume that the applied object moves to a position from where it c-commands the theme – but any movement which brings the applied object into such a position would have to cross the theme and therefore seems to be ruled out by the MLC.

However, the dilemma is only apparent. As it turns out, there is a movement operation which allows the applied object to cross the theme without violating the MLC: the applied object can move to a *second specifier* of the VP:

(13)

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                    ν
              ┌─────┴─────┐
              ν           VP
                    ┌─────┴─────┐
                   DP           V
              applied object ┌──┴──┐
                            DP      V
                          theme ┌───┴───┐
                              [V+P]     PP
                                       /  \
                                      /____\
```

The movement operation in (13) yields the correct surface order applied object > theme. Importantly, it does not violate the MLC: the legitimacy of (13) follows from the characterisation of closeness which is part of Chomsky's (2000: 122) definition of locality:

(14)   *Locality*: D(P) is the c-command domain of P, and a matching feature G is closest to P if there is no G' **in D(P)** matching P such that G is in D(G').

In Chomsky (2000, 2001, 2005), the set of uninterpretable φ-features of a functional head is called the *probe* P. This probe has to find a matching *goal* G in its c-command domain (as stated in (14)). Possible goals are the interpretable φ-features of DPs. DPs also have uninterpretable structural case (CASE) features, whose function it is to activate the goal. For a derivation to converge at the interfaces, uninterpretable features must be deleted under agreement. Once a probe has found a matching goal, agreement between F and the DP is established, and the uninterpretable features of F and DP (= F's φ-features and CASE of DP) are erased.

The crucial part of (14) (which I have highlighted in bold) is that for a goal G' to be closer to a probe P than G, G' must be in the c-command domain D(P) of the probe. If we apply this definition of closeness to the movement constraint in (12), then it implies that the theme in (13) does not block movement of the applied object: for β to be closer to K than α, β must be in the c-command domain of K.[3] But heads do not c-command their specifiers. Therefore, if the verb in Kinyarwanda locatives has a feature which attracts the closest DP with a matching feature, it will attract the applied object, since the theme in [Spec, V] is not c-commanded by the verb. Consequently, the applied object can move across the theme to a second [Spec, V], as shown in (13). In contrast, the attracting head in (11) is Asp, which c-commands the theme in [Spec, V]. Therefore, the theme is closer to Asp than the applied object, and movement of the latter across the former would be banned by the MLC.

In Chomsky (2000, 2001), it is argued that DP-movement to specifier positions is triggered exclusively by EPP-features. The derivation in (13) can hence be captured

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3   For the sake of simplicity, I treat K in (12) as the attracting head which contains the probe. In Chomsky (1995), K is actually the root node, i.e. the highest projection of the head which contains the attracting feature. Strictly speaking, then, one would have to say that for β to be closer to K than α, β must be in the c-command domain of *the head* (the label) of K. I ignore this complication here.

formally by assuming that the verb in Kinyarwanda locatives may be equipped with an EPP-feature which triggers movement of the applied object to a second specifier of VP. In this respect, V in Kinyarwanda is analogous to ν in languages with object shift, where the EPP-feature of ν triggers movement of an object DP to a higher [Spec, ν] above the selected external argument in the lower [Spec, ν] . Similarly, V in Kinyarwanda selects the theme argument in [Spec, V], and if V has an EPP-feature, then the applied object DP moves across the theme and creates a second specifier.[4]

However, as Grewendorf's (2002) remarks remind us, although syntactic movement can be technically implemented through the stipulation of EPP-features, this does not yet explain why movement takes place at all. In the next section, I suggest that, regarding the movement of the applied object in locative applicatives, such an explanation can be found in the way object agreement is established in Kinyarwanda.

4. The EPP and Agree

As noted in the introduction, earlier versions of the MP assume that feature checking under agreement requires a Spec-Head relation between checker and checkee. However, in Chomsky (2000), it is assumed that Spec-Head configurations are no longer required for agreement. Rather, agreement between a probe and a goal is now established by the operation *Agree*, which merely requires the goal to be in the c-command domain of the probe (subject to the locality definition in (14) above). This view of agreement allows to explain agreement between T and nominative subjects in expletive constructions without having to assume covert movement:

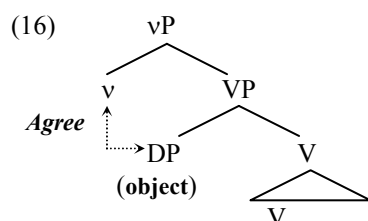(15) *There are several people in the room.*

In (15), the EPP-feature of T is checked by the expletive *there*, which is merged in [Spec, T]. The uninterpretable φ-features of T seek and locate the interpretable φ-features of the subject DP *several people,* which is located inside the VP. Agree can now be established between T and the subject, and the φ-features of T (the probe) and the CASE-feature of the subject DP can be erased in this configuration – covert movement of the subject to [Spec, T] is hence no longer required for feature checking and deletion.

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4 The idea that V can have an EPP-feature contradicts Chomsky's (2000) assumption that EPP-features are only associated with the so-called "core functional categories" C, T and ν. However, I am not aware of any empirical arguments that rule out the possibility of associating EPP-features with lexical categories, particularly given that ν, although classified as a functional category, has the selectional properties of a lexical head. Furthermore, as discussed in Radford (2004), the idea of V bearing an EPP-feature may also explain data like the following (see Radford 2004: 359ff.):

(i) *The DA will prove the witness conclusively to have lied.*

(i) is an ECM-construction; the position of the subject of the infinitive in front of the adverb shows that the DP has moved to the matrix clause to check objective case. Since English has no object shift, the DP in (i) must have moved to the highest [Spec, V] of the matrix clause (assuming that the adverb is located in a lower specifier of V), see also Chomsky (2005). Under current assumptions, this movement step must have been triggered by an EPP-feature associated with the matrix verb. (See section 7 for some discussion of the idea that the verb *inherits* the EPP-feature from the functional head ν.)

The operation Agree also accounts for object agreement in English-type languages, where the object DP does not undergo object shift but remains in [Spec, V]:

(16)

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              vP
            /    \
          v        VP
         ↑        /  \
  Agree  ┆     DP      V
         └┄→ DP        /\
       (object)       /  \
                     V
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In Chomsky (1995, 2000), it is suggested that the CASE- and φ-features of an object DP are checked against the φ-features of the functional head ν under object agreement. This can be achieved on the basis of the structure in (16), where the φ-features of ν locate the matching φ-features of the DP in [Spec, V], and the uninterpretable features of ν and DP are erased under Agree.

I now propose that object agreement is also the reason for why the applied object moves to a second [Spec, V] in Kinyarwanda locative applicatives. I argue that the applied object moves *in order to reach the Agree-domain of ν without violating locality*. Recall that the applied object cannot receive oblique case *in situ* from the incorporated preposition and can only be licensed by structural case. An applied object DP in Kinyarwanda locatives is therefore obligatorily equipped with a CASE-feature, which has to be erased under Agree. But Agree is subject to the locality condition in (14), and ν cannot agree with the applied object if the latter remains inside the PP, because the φ-features of the theme DP in [Spec, V] are closer to the probe of ν. However, the applied object can agree with ν once it is moved to a position above the theme. As was shown in section 3, the only legitimate operation that achieves this result is movement of the applied object to a higher [Spec, V].

This analysis has an interesting consequence. With Baker (1997), it assumes that DP-movement is required in order to establish an agreement relation between the moved DP and a functional head which checks the DP's CASE-feature. Crucially, however, and in contrast to what has been argued by Baker (1997), the resulting agreement relation is *not* established in a Spec-Head configuration between the DP and the attracting head, but via Agree between the DP and a *higher* functional head which c-commands it.

This claim therefore provides one possible answer to the question raised by Grewendorf's (2002) critical comments about the motivation for syntactic movement in the current Minimalist framework. Syntactic movement may still be required in order to establish the right syntactic configuration for feature checking and agreement, but this configuration does not have to be a Spec-Head relation between the attracting feature and the moved constituent. Rather, a head may attract a DP to its specifier in order to allow this DP to check its features against the features of a different head, which is higher in the structure. For such "altruistic attraction" to be possible, the attracting head must itself have a feature which causes the DP to move to its specifier – which is exactly the task performed by an EPP-feature.

5. Object asymmetries in locative applicative constructions

In this and the following section I present a systematic discussion of object asymmetries in Kinyarwanda locative applicatives. The data provide empirical evidence for the theoretical analysis presented in the preceding sections.

Before I turn to the data, let me introduce two additional assumptions which have been made in the literature and which I adopt here. The first concerns object markers in Kinyarwanda, which I take to be incorporated object pronouns rather than agreement markers.[5] Following Baker (1988), I assume that incorporation of its head is one way in which a nominal expression can escape the Case Filter. I therefore assume that if the applied object is a pronominal D which incorporates into the verb by adjoining to V, it neither needs oblique nor structural case. The theme can incorporate into the verb as well, by adjoining to ν (to which the verb has moved). Since ν and D have φ-features, I assume that if the theme adjoins to ν, ν's uninterpretable φ-features are checked and deleted.

My second assumption also has to do with case. Since the locative applicative construction is syntactically derived from a construction with only one object DP and a PP (see (4b) above), I assume that, apart from the subject's CASE-feature, only one more CASE-feature is part of the initial numeration of a locative. However, locative applicatives are double object constructions, so if only one object DP can have CASE, the question is how the second DP can be licensed. One possibility is incorporation, as discussed above. Based on Larson's (1988) analysis of double object constructions in English, I assume that, in addition to incorporation, a DP in a locative applicative may also be licensed by getting *inherent case* from the verb. However, this requires that there is a thematic relation between the verb and the DP; therefore, this option is not available for the applied object, which is the argument of the prepositional applicative marker. The only DP which can be licensed by inherent case in locative applicatives is therefore the theme.[6]

Let me now turn to the object asymmetries in Kinyarwanda locative applicatives. In general, it holds that the applied object can adopt what Bresnan & Moshi (1990) call "primary object properties" in the presence of a theme DP, but not vice versa. To put it differently, the two object DPs in Kinyarwanda locatives behave asymmetrically with respect to the following movement operations:

- A-movement in passives
- Incorporation (cliticisation) and Left Dislocation
- A-bar movement in relative clauses

I discuss the relevant data in the following subsections.

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5   Object markers in Kinyarwanda cannot co-occur with postverbal object DPs, which renders an analysis as agreement markers implausible. See Zeller & Ngoboka (2006) for the relevant data.

6   The fact that the theme can get inherent case from the verb may be a result of P-incorporation: the incorporated preposition transfers its case-assigning properties to the host after incorporation.

5.1 Passivisation

(17) shows that, whereas the applied object can be passivised, the theme cannot:

(17) a. *Umwáana y-a-ménn-w-e-hó*   *amáazi n'úmubooyi.*
       child   SP-PST-pour-PASS-ASP-APPL water   by cook
       Lit.: 'The child was poured water on by the cook.'
    b. **Amáazi y-a-ménn-w-e-hó*   *umwáana n'úmubooyi.*
       water   SP-PST-pour-PASS-ASP-APPL   child   by cook
       'The water was poured on the child by the cook.'

The contrast in (17) follows from the analysis outlined in sections 3 and 4. In (17a), the applied object has a CASE-feature, and V has an EPP-feature. The applied object moves to [Spec, V] from where it agrees with ν. Assuming that in a passive, ν is defective, it follows that the applied object remains active, and can now enter Agree with the uninterpretable φ-featurs of T.[7] Once Agree has erased the probe of T and the CASE-feature of the applied object, the latter can move from the higher [Spec, V] to [Spec, T] to check T's EPP-feature, as in (17a). Alternatively, an expletive *pro* can be inserted into [Spec, T], which checks T's EPP-feature, in which case the applied object can remain in [Spec, V], as shown in (18):

(18)   ?*H-aá-menn-w-e-hó*   *umwáana amáazi n'úmubooyi.*
       EXPL-PST-pour-PASS-ASP-APPL child   water   by cook
       Lit.: 'It was the child poured water on by the cook.'

Theme passivisation in (17b) is blocked for two reasons. First, due to the fact that the CASE-feature is associated with the applied object, the theme must have inherent case and therefore cannot become the subject of a passive (see Baker 1988; Nakamura 1997). Second, theme passivisation is also blocked by locality (see Ura 1996, McGinnis 2001, Anagnostopoulou 2003): the applied object in the higher [Spec, V] c-commands the theme in the lower [Spec, V] and is hence closer to T (note that I do not assume that two specifiers of the same head are equidistant). Therefore, Agree between T and the theme could not be established even if the theme had a CASE-feature.

Theme passivisation is therefore blocked in (17b) because of the presence of an applied object. This account is confirmed by the possibility of theme passivisation in (19):

(19) *Amáazi y-a-ménn-w-e-mó*   *n'úmubooyi.*
       water   SP-PST-pour-PASS-ASP-APPL   by cook
       'The water was poured there by the cook.'

(19) is an applicative in which the applicative marker is used as a prepositional proform (see section 2). Since there is no applied object, the theme is the closest DP to T and can be associated with a CASE-feature. Consequently, theme passivisation is possible.

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[7]   If a functional head is *defective*, the set of its φ-features is incomplete, and the CASE-feature of the DP with which it agrees is not deleted under Agree. The DP therefore remains active and can enter the Agree-operation with another head. This allows for successive cyclic A-movement in Raising and passive constructions, where the same DP checks and deletes the sets of φ-features of a number of functional heads, all but the last one being defective (see Chomsky 2000).

5.2   Incorporation and Left Dislocation

In a locative applicative, only the applied object can be realised as an object marker; in the presence of a full applied object-DP, the theme cannot incorporate. Since left-dislocated topics (in parentheses in (20)) require pronouns in the associated sentence to which they can be anaphorically linked, left dislocation (LD) is also possible only with the applied object:

(20) a.   (*Umwáana*)   *umubooyi   y-a-<u>mú</u>-menn-ye-hó*   *amáazi.*
           child   cook   SP-PST-OC-pour-ASP-APPL   water
           '(The child,) the cook poured water on him/her.'
      b. *(*Amáazi*) *umubooyi   y-a-<u>yá</u>-menn-ye-hó*   *umwáana.*
           water   cook   SP-PST-OC-pour-ASP-APPL child
           '(The water,) the cook poured it on the child.'

In (20a), the applied object has incorporated into the verb as an object marker (in italics) and thereby fulfills the Case Filter; the CASE-feature is associated with the theme. Since there is no applied object DP in need of case-checking, the verb is not associated with an EPP-feature, so there is no movement to a second specifier of VP, and the theme can agree with v, (21). In (20b), however, the applied object has not incorporated into V and therefore must have a CASE-feature, which can only be checked if the applied object moves to [Spec, V] to agree with v. In this configuration, incorporation of the theme is blocked by the MLC, since the applied object in the higher [Spec, V] is now closer to the attracting head v, (22):[8]

(21) $[_{TP}$ *umubooyi* [v [$_{VP}$ *amáazi* [$_{V}$ -<u>*mú*</u>-*menn-ye-hó* [$_{PP}$ t$_{hó}$ t$_{mú}$]]]]]
                          Agree   *incorporation*

(22) *$[_{TP}$ *umubooyi* [*y-a-<u>yá</u>-menn-ye-hó* [$_{VP}$ *umwáana* [t$_{yá}$ [$_{PP}$ t$_{hó}$ t$_{umwáana}$]]]]]
                                   Agree
                            no incorporation

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8   Lack of space prevents me from discussing in sufficient detail the precise status of incorporation and head adjunction in the MP. Zeller & Ngoboka (2006), following a proposal by Anagnostopoulou (2003), argue that D-incorporation in Kinyarwanda is triggered by gender features of the attracting head and is subject to the MLC. (A gender feature is also associated with the applied object DP in (20b)/(22); it counts as a potential goal and therefore blocks incorporation of the theme.) In contrast, Chomsky (2000: 134) states that head adjunction is "not part of narrow syntax", has no selector and is optional. But, as (20) and other examples below show, head adjunction clearly is influenced by, and has consequences for, syntactic movement operations.
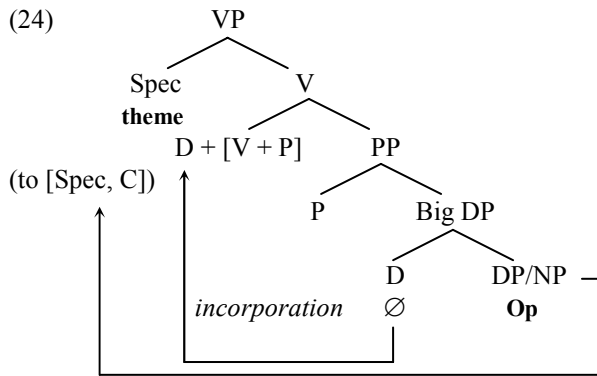
5.3   Relative clause extraction

Finally, (23) shows that only the applied object of a locative applicative can be extracted in a relative clause construction. Relativisation of the theme is not possible:

(23) a. *umwáana umubooyi y-a-∅-ménn-ye-hó   amáazi.*
       child   cook   SP-PST-D$_{AO}$-pour-ASP-APPL water
       'the child on whom the cook poured the water'
   b. **amáazi umubooyi y-a-∅-ménn-ye-hó   umwáana.*
       water   cook   SP-PST-D$_{theme}$-pour-ASP-APPL child
       'the water which the cook poured on the child'

In order to explain the contrast in (23), I adopt the analysis of Kinyarwanda relative clauses put forward in Zeller & Ngoboka (2006), which is based on a proposal by Boeckx (2003). Boeckx (2003) argues that the argument position corresponding to the relativised constituent in a relative clause is occupied by a complex "Big DP" (cf. Uriagereka 1995; Cecchetto 1999, 2000; Belletti 1999) whose head selects the relative operator as its (NP- or DP-) complement. When the relative operator moves to [Spec, C], the D-head of the Big DP is stranded inside the relative clause and now functions as a resumptive pronoun. In Zeller & Ngoboka (2006), we suggest that the stranded head of the Big DP is phonetically null in Kinyarwanda object relative clauses. However, since this D-head acts as a resumptive pronoun, we argue that it must also incorporate, just like other (overt) object pronouns in Kinyarwanda. The relation between the relative operator and the incorporated zero pronoun in relative clauses is hence comparable to the relation between a left-dislocated topic and an incorporated pronoun in LD-constructions.[9]

    This analysis implies that the contrast in (23) can be explained along the same lines as (20): In (23a), the zero pronoun which corresponds to the head of the applied object Big DP has incorporated (thus Big DP escapes the Case Filter), and the relative operator has moved to [Spec, C]. The theme checks its CASE-feature against v:

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[9]   Although this parallel suggests that the Big DP-analysis can also be adopted for LD-constructions, a uniform treatment of relative clauses and LD does not explain the crucial difference between these two constructions in Kinyarwanda: while the incorporated pronoun in LD-constructions is overtly realised as an object marker (see (20)), the incorporated D-head in relative clauses in Kinyarwanda is phonetically zero. Since I cannot exclude the possibility that this difference is due to different structural representations of relative clauses and LD-constructions, I remain agnostic about the syntax of LD-constructions in Kinyarwanda in this article (but see Zeller (2005) for an analysis of LD in Zulu, a Southern Bantu language, in terms of the Big DP-proposal).

(24)

```
                        VP
                  ┌─────┴─────┐
               Spec           V
              theme     ┌─────┴─────┐
            D + [V + P]            PP
(to [Spec, C])          ┌─────┴─────┐
                        P        Big DP
                             ┌─────┴─────┐
                             D          DP/NP
                    incorporation  ∅       Op
```

In (23b), however, the applied object bears a CASE-feature and therefore occupies the higher [Spec, V]. Relativisation of the theme is now blocked, because the head of the Big DP corresponding to the theme cannot incorporate into ν from the lower [Spec, V], due to the intervening applied object DP.

6. The asymmetries disappear

In this section I provide further evidence for the proposed analysis by looking at contexts in which the theme *can* adopt primary object properties. As I show below, the theme can undergo movement operations under the following conditions:

- The Theme can be passivised, relativised and can incorporate when the applied object is an *incorporated pronoun*
- The Theme can be passivised and can incorporate when the applied object undergoes *relativisation*
- The Theme can be relativised and can incorporate when the applied object is the *subject of a passive*

As I show in the following subsections, the fact that the theme can incorporate, be passivised and relativised whenever the applied object has been subject to any one of these operations follows directly from the analysis that I offered to explain the object asymmetries discussed in section 5.

6.1. Applied object incorporation

As was shown in section 5.2, the applied object can incorporate into the verb, in which case the theme has a CASE-feature and occupies the single specifier of VP (see (21) above). This situation now allows for the theme to be *passivised*:

√ Theme passivisation with incorporated applied object:

(25) (*Umwáana*) *amáazi y-a-<u>mú</u>-menn-w-e-hó*   *n'úmubooyi.*
    child   water   SP-PST-OC-pour-PASS-ASP-APPL   by cook
    '(The child,) the water was poured on him/her by the cook.'

    Since the theme has CASE, and since the applied object does not occupy a higher [Spec, V], the theme can agree with both defective v and T and become the subject of the passive. The grammatical (25) contrasts minimally with the ungrammatical example in (17b), where the applied object is a full DP with CASE, which therefore occupies [Spec, V].

    As was shown in (20b) and (22) above, theme *incorporation* is blocked by a full applied object DP in the higher [Spec, V]. However, if the applied object incorporates into V, nothing prevents the theme from incorporating into v, thereby checking the φ-features of v. As a result, both the applied object and the theme may be realised as object markers on the verb in Kinyarwanda; as (26b) and (26c) show, either of the two pronouns can be anaphorically linked to a left-dislocated topic phrase:

√ Theme incorporation with incorporated applied object:

(26) a. *Umubooyi y-a-<u>yá</u>-<u>mu</u>-menn-ye-hó.*
     cook   SP-PST-OC-OC-pour-ASP-APPL
     'The cook poured it on him/her.'
   b. *Amáazi, umubooyi y-a-<u>yá</u>-<u>mu</u>-menn-ye-hó.*
     water   cook   SP-PST-OC-OC-pour-ASP-APPL
     'The water, the cook poured it on him/her.'
   c. *Umwáana, umubooyi y-a-<u>yá</u>-<u>mu</u>-menn-ye-hó.*
     child   cook   SP-PST-OC-OC-pour-ASP-APPL
     'The child, the cook poured it on him/her.'

Finally, it is not surprising that incorporation of the applied object also creates a context in which the theme can be *relativised*:

√ Theme relativisation with incorporated applied object:

(27) *amáazi umubooyi y-a-∅-<u>mú</u>-menn-ye-hó*
    water   cook   SP-PST-D$_{theme}$-OC-pour-ASP-APPL
    'the water that the cook poured on him/her'

As was argued in section 5.3, relativisation of the theme requires the zero-head of a Big theme-DP to incorporate. If the applied object is a full DP, it blocks this operation, and theme relativisation is impossible. In (27), however, the applied object is an incorporated pronoun; consequently, the head of the Big theme-DP can incorporate into v, and movement of the relative operator from [Spec, Big D] to [Spec, C] is therefore licensed.

6.2 Applied object relativisation

Relativisation of the applied object implies incorporation of the head of the Big DP corresponding to the applied object; as argued above, Big DP also escapes the Case Filter through this operation. This means that the Big DP does not need to move from the complement position of the applicative marker to [Spec, V], but can remain *in situ*, see (24). We therefore expect that the same operations which were made available for the theme through object marking of the applied object are also available if the applied object is a relative operator. This expectation is borne out:

√ Theme passivisation with relativised applied object:

(28) *umwáana amáazi y-a-∅-ménn-w-e-hó   n'úmubooyi*
     child   water   SP-PST-D$_{AO}$-pour-PASS-ASP-APPL by cook
     'the child on whom the water was poured by the cook'

√ Theme incorporation with relativised applied object:

(29) *umwáana umubooyi y-a-<u>yá</u>-∅-menn-ye-hó*
     child   cook   SP-PST-OC-D$_{AO}$-pour-ASP-APPL
     'the child on whom the cook poured it'

Since the Big DP does not need CASE and therefore does not move to [Spec, V], the theme can agree with ν and T and move to [Spec, T] in a passive, as in (28), or can incorporate into ν as an object marker, (29). (Relativisation of the theme in the context of a relativised applied object is of course excluded on independent grounds.)

6.3 Applied object passivisation

Above I discussed the fact that the theme cannot incorporate into the verb when the applied object is a full DP. Since relativisation also requires incorporation, this option is ruled out for the theme as well. Interestingly, however, if the applied object has become the subject of a passive, both incorporation and relativisation of the theme are possible:

√ Theme incorporation with passivised applied object:

(30) (*Amáazi*), *umwáana y-a-<u>yá</u>-menn-w-e-hó*   *n'úmubooyi.*
      water   child   SP-PST-OC-pour-PASS-ASP-APPL by cook
     Lit.: '(The water,) the child was it poured on by the cook.'

√ Theme relativisation with passivised applied object:

(31) *amáazi umwáana y-a-∅-ménn-w-e-hó*   *n'úmubooyi.*
     water   child   SP-PST-D$_{Theme}$-pour-PASS-ASP-APPL by cook
     Lit.: 'the water which the child was poured on by the cook'

As I argued above, theme incorporation into the verb in ν is blocked if the applied object-DP is located in the higher [Spec, V], since the applied object is then closer to the attracting head ν than the theme. One may therefore suspect that the grammaticality of

(30) and (31) is due to the fact that the applied object is no longer in [Spec, V] in these constructions, but has moved further to [Spec, T]. According to this analysis, only the invisible copy/trace of the applied object in the higher [Spec, V] would intervene between the theme and ν in (30) and (31), and since traces do not induce locality violations (Chomsky 2000, 2001), theme movement would be allowed.

However, there is a problem with this approach. If the theme D-head has to wait until the applied object has moved to [Spec, T] before it can move to ν, then theme incorporation is countercyclic. In the derivational, bottom-up system of the MP, the theme would have to move and adjoin to ν *before* νP merges with T. But then the applied object would still be in [Spec, V], and theme movement would violate the MLC.

More importantly, the following example shows that the applied object does not have to be in [Spec, T] in a passive for theme incorporation to become possible:

(32) *H-aá-ya-menn-w-e-hó*   *umwáana n'úmubooyi.*
     EXPL-PST-OC-pour-PASS-ASP-APPL   child   by cook
     Lit.: 'It (= expl.) was the child poured it (= the water) on by the cook.'

In (32), as in (30), the applied object has been passivised, but a *pro*-expletive has been merged in [Spec, T] to check T's EPP-feature. The applied object *umwáana*, 'child', has remained inside the VP (compare (18) above). The fact that theme incorporation is possible in (32), however, now leads to an important conclusion: in contrast to (18) above, the applied object DP can*not* be in [Spec, V] in (32) – if it was, it would block theme incorporation in the same way that an applied object DP in an active construction blocks theme incorporation (compare (22) in section 5.2). But if the applied object is neither in [Spec, T] nor in [Spec, V], there is only one option left: the applied object DP in (32) must be *in its base position inside the PP*:

(33)
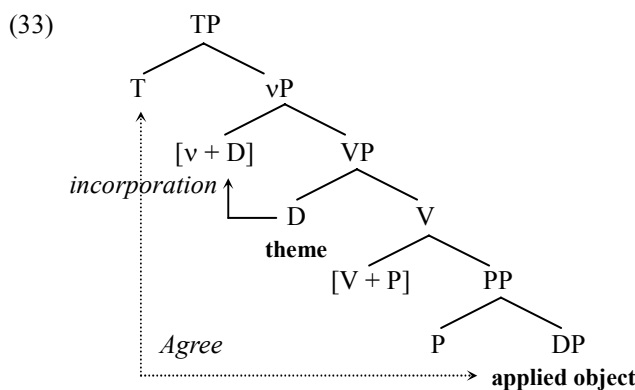
As shown in (33), the operation Agree can be established between the probe of T (its φ-features) and its goal inside the PP (the φ-features of the applied object). (The φ-features of ν are checked via incorporation.) In (32), an expletive is then merged in [Spec, T] to check T's EPP-feature. Importantly, however, (33) also serves as the basic structure for the examples in (30) and (31): Once the φ-features of T and the CASE-feature of the applied object have been erased after Agree, the applied object can move to [Spec, T] *directly from its base position inside the PP* to check T's EPP-feature, and we derive

(30) or (31). This means that in these examples, theme incorporation is licensed not because the applied object has vacated the higher [Spec, V], but because it has never been in this position in the first place. Consequently, the above examples are the only instances where the verb in a locative applicative does not have to have an EPP-feature despite the presence of a full applied object DP.

As noted, theme incorporation in (30) and (31) is possible because the applied object has remained inside the PP. However, at the same time, the applied object can remain inside the PP only *because* of theme incorporation – these two aspects of this construction feed each other. Recall the reasons for why the applied object normally has to move to [Spec, V]: if a full theme DP occupies [Spec, V], it blocks agreement between the applied object inside the PP and the functional heads v and T above VP. Therefore, an applied object DP can never remain inside the PP if a theme DP is in [Spec, V], neither in an active construction (recall the ungrammatical word order [theme > applied object], shown in (10b) in section 3) nor in a passive, as shown in (34):

(34) *H-aá-menn-w-e-hó*   *amáazi   umwáana   n'úmubooyi.*
      EXPL-PST-OC-pour-PASS-ASP-APPL   water   child   by cook
      Lit: 'It was the child the water poured on by the cook.'

In (32), however, the theme is no longer in [Spec, V]; as a pronominal D-head, it has moved and adjoined to v. This means that the only element which intervenes between the applied object in the PP and v or T is the copy of the theme-D, but as noted above, copies of moved elements never block feature matching. Furthermore, since a head adjoined to another head does not c-command "outside" (see Chomsky 2000: 117), the D-head adjoined to v in (32) does not block Agree between the applied object and T either (for the same reason, the theme does not block movement of the applied object to [Spec, T] in (30)).[10] Therefore, only if the theme is an object marker can the applied object DP be licensed *in situ*.[11]

To conclude this section, let me finally point out that the example in (32) provides strong evidence for the preposition incorporation-analysis of locative applicatives that I have adopted in this article. In the analyses proposed by e.g. Marantz (1993) or Anagnostopoulou (2003), there is only one syntactic position for the applied object below [Spec, T], namely the specifier position of the applicative marker, in which the applied object originates (see (4a) in section 2). Since the applied object c-commands the theme from this position, the impossibility of theme incorporation in examples such as (20b)/(22) in section 5.2 is explained both by this account and by my analysis: theme incorporation across the applied object violates the MLC – with respect to (20b)/(22), it

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[10] Note that in (31), the Big DP which includes the relative operator is still in [Spec, V] when T agrees with the applied object. This is not a problem, since the relative operator in the complement position of the incorporated D-head does not intervene between T and the applied object in terms of the MLC/Locality, because it does not c-command the applied object.

[11] In addition, it is important to note that the applied object is only licensed inside the PP in a passive construction. Theme incorporation in (30)-(32) checks and erases the φ-features of v; therefore, the CASE-feature of the applied object must be checked against the φ-features of T. This is only possible in a passive, since there is no external argument - in an active construction, T's φ-features are checked against those of the thematic subject DP in [Spec, v], and the applied object's CASE-feature would remain unchecked if the applied object stayed inside the PP.

is immaterial whether the applied object is merged or moved into the position from where it c-commands the theme. However, the grammaticality of example (32) is *not* explained by an analysis according to which the applied object originates in a position above the theme, because such an analysis implies that the applied object occupies this position in (32) as well. But then, the applied object would also c-command the theme in this example, and theme incorporation should be blocked by the MLC. The grammaticality of (32) can only be explained by an analysis which assumes that there is also a position for the applied object *below* the theme, which is occupied by the applied object in (32). The existence of such a position is a corollary of the preposition incorporation-theory of applicatives defended here.

7. Conclusion

In Chomsky's (2000, 2001) version of the MP, in which feature checking no longer requires Spec-Head relations, the possibility of DP-movement is captured through the idea that EPP-features of syntactic heads attract DPs to their specifiers. However, this idea does not answer the question of why syntactic movement exists at all. I have presented one possible answer to this question by arguing that an EPP-feature might be needed to trigger a movement operation through which the moved DP circumvents a locality violation. The properties of locative applicatives in Kinyarwanda support an analysis according to which the applied object moves from a position inside the complement of V to a (second) specifier of V in order to be in a position from where it can agree with ν and check its CASE-feature. However, this movement step cannot be triggered by ν; in order to make it possible, V must have an EPP-feature.

    Chomsky (2000, 2001) assumes that movement of a DP to the specifier of a head F with an EPP-feature also requires that F agrees with the DP. For example, before the subject DP moves to [Spec, T] to check T's EPP-feature, Agree has to be established between T and the subject in its base position ([Spec, ν]). However, in my analysis, it is ν, not the verb, which agrees with the applied object, but it is the verb's EPP-feature which triggers movement to [Spec, V], and Agree between ν and the applied object is only established as a result of movement. The question is whether this aspect of my analysis can be reconciled with Chomsky's view on the relation between agreement and the EPP.

    A positive answer to this question may be provided by an important idea put forward in Chomsky (2005). There, Chomsky argues that the syntactic categories T and V are not themselves equipped with formal features, but only *inherit* these features from their selecting heads, i.e. C and ν (according to Chomsky (2001, 2005), only CP and νP, but not TP and VP, are *phases*, and only phase heads can trigger movement operations). According to this view, it is C, not T, which carries φ-features; T manifests them only as a consequence of being selected by C. Applying this idea to the analysis proposed here, one could assume that the verb is not lexically equipped with an EPP-feature. Rather, this feature, like the φ-features, is associated with ν. Since ν selects V, it transfers its EPP-feature to the verb; consequently, the applied object is attracted to [Spec, V] from

where it enters the Agree-relation with the φ-features of v.[12] According to this view, both Agree and Move are ultimately triggered by features of the functional head v.

It has to be kept in mind that this approach only works if it is indeed the EPP-feature of v, but *not* v's set of φ-features, which is transferred to V in Kinyarwanda. If V inherited v's φ-features as well (as is suggested in Chomsky 2005), then it would be V, not v, which would agree with an object DP in [Spec, V]. Then, however, it would not be clear why the verb in Kinyarwanda can no longer agree with the theme in the lower [Spec, V] once the applied object has moved to the higher specifier. Movement of the applied object causes the theme to lose its "primary object" properties; in order to explain this fact in terms of the MLC, as I have done in this article, it is necessary to assume that the φ-features remain associated with v in Kinyarwanda.

In the light of the latter remark, it would be interesting to explore the possibility that Chomsky's (2005) proposal about the transfer of formal features from the heads C and v to the heads T and V is a parameterised operation. Perhaps languages differ with respect to whether φ-features and EPP-features remain associated with a particular phase head or whether they are transferred to the category selected by the phase head. For example, in languages in which not only the EPP-feature, but also v's φ-features, are transferred to V, the theme may in fact preserve its primary object-properties in applicative constructions, even when the applied object is attracted by V and moves to a second [Spec, V]. It remains to be tested in how far the empirical syntactic properties of applicatives in different languages are compatible with this theoretical approach.

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12   Notice that the idea that T and V inherit features from C and v which then trigger DP-movement to [Spec, V] or [Spec, T] raises problems with the extension condition (cf. Chomsky 1995). For example, in order for V to inherit a formal feature from v, v must first merge with VP, creating vP. However, subsequent movement of a DP to [Spec, V] no longer creates a phrase marker which includes the former vP as a proper part and therefore violates the extension condition. This problem is not addressed in Chomsky (2005).

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