

AGREEMENT AND THE INTERNAL SYNTAX OF BAFUT DPS

Pius N. Tamanji

University of Yaoundé 1, Cameroon

ptamanji@uycdc.uninet.cm

This article proposes an account of DP-internal agreement phenomena in Bafut. In this language, multiple elements agree with the head noun in the same DP but none of the agreeing elements stands in the expected Spec-Head relation required for agreement in Chomsky (1986b). The article proposes that in addition to the familiar Spec-Head relation, we also need a Head-Head configuration to check agreement in DPs. While the Spec-Head relation checks agreement on functional categories, the Head-Head configuration checks agreement on lexical categories. This analysis extends Chomsky's (1995) proposals for checking ϕ -features on arguments in clauses to the checking of non-argument agreement relations in the DP and also suggests a way of accounting for a rich agreement system without projecting agreement phrases.

Le présente article propose une nouvelle approche en vue de rendre compte des phénomènes d'accord à l'intérieur du SD en langue bafut. Dans cette langue, divers éléments s'accordent en nombre avec la tête du SD alors qu'aucun de ceux-ci ne se situe dans la relation *Spec-Tête* exigé dans Chomsky (1986b). C'est pourquoi, en plus de la relation *Spec-Tête* habituelle, l'article propose une configuration *Tête-Tête* pour contrôler l'accord dans les SDs. Pendant que la relation *Spec-Tête* contrôle l'accord sur les catégories fonctionnelles, la configuration *Tête-Tête* elle contrôle l'accord sur les catégories lexicales. Cette analyse étend les propositions de Chomsky (1995) en matière de contrôle des traits ϕ sur les arguments dans les propositions au contrôle des relations d'accord des non arguments dans les SDs tout en suggérant un moyen d'expliquer scientifiquement le riche système d'accord du bafut sans avoir besoin de projeter les syntagme d'accord.

0. INTRODUCTION

This article investigates the internal syntax of determiner phrases in Bafut¹ with a view to establishing how agreement features on modifiers² of the head noun are checked. In the determiner phrase (henceforth DP) in Bafut, like in many other Bantu languages, all modifiers follow and agree with the head noun as illustrated in the examples in (1). In these and subsequent examples, numbers in glosses represent noun class. The agreement morpheme is italicized.

- | | | | |
|-----|--|--|---|
| (1) | a. <i>ə-lúʔú w.á</i>
1-spoon 1-the
the spoon | b. <i>nì-bòʔò ny.á</i>
5-pumpkin 5-the
the pumpkin | c. <i>fì-ŋkōbī fy.á</i>
19-statue 19-the
the statue |
| | <i>ə-lúʔú n.tsìm</i>
1-spoon 1-every | <i>nì-bòʔò ní.tsìm</i>
5-pumpkin 5-every | <i>fì-ŋkōbī fí.tsìm</i>
19-statue 19-every |
| | <i>ə-lúʔú w.û</i>
1-spoon 1-that | <i>nì-bòʔò n.û</i>
5-pumpkin 5-that | <i>fì-ŋkōbī f.û</i>
19-statue 19-that |
| | <i>ə-lúʔú gh.á</i>
1-spoon 1-my | <i>nì-bòʔò n.á</i>
5-pumpkin 5-my | <i>fì-ŋkōbī f.á</i>
19-statue 19-my |
| | <i>ə-lúʔú yím.fùʔù</i>
1-spoon 1-white | <i>nì-bòʔò ní.fùʔù</i>
5-pumpkin 5-white | |

¹Bafut is a Grassfields Bantu language spoken in the North West Province of Cameroon. Population: 1,850,000 speakers.

²I use the word MODIFIER to include all satellites of the noun (determiners, quantifiers, possessive pronouns, genitives, adjectives, etc.)

fɪ-ŋkōbí	f.í	m-fɔ	nì-bɔʔʔ	n.í	m-fɔ
19-spoon	19-AM	1-chief	5-pumpkin	5-AM	1-chief
a chief's statue			a chief's pumpkin		

The standard Spec-Head approach to agreement (Chomsky 1986a) requires two elements in an agreement relation to be in a Spec-Head configuration. In this configuration, the agreeing element (e.g., a verb) is a head in X^0 position while the trigger of agreement (e.g., subject NP) is an XP in Spec position. In the Bafut examples in (1), we rather have a Head-Head kind of relation in which the modifying head categories (adjective, demonstrative, possessive pronoun, associative marker, etc.) agree with the head noun. This situation is made even more complicated by the fact that multiple elements agree with the head noun in the same construction; a situation which, in Chomsky's Spec-Head agreement, would require the projection of multiple agreement phrases.³ Two problems that I seek to resolve in this article are: (a) How agreement features on the modifiers of the head noun are checked given that all the elements in the agreement relation do not stand in the required Spec-Head configuration; and (b) how to account for multiple instances of agreement in the same DP without projecting multiple agreement phrases.

I will argue that in addition to the Spec-Head configuration, we need a Head-Head configuration to account for agreement in Bafut and other languages (Bantu and Romance) which exhibit a rich agreement system in the DP. While the Spec-Head configuration is required to check agreement on functional categories (determiners and quantifiers), the Head-Head configuration is needed to check agreement on lexical categories (adjectives and genitives). Extending Chomsky's (1995) proposal for checking agreement in clauses, I suppose that the agreement features are borne by the elements in the agreement relation (and not projected on an abstract head such as Agr^0) and that checking these features on adjectives and genitives involves covert raising of the features of the modifiers, in a head-to-head fashion, to the head noun which c-commands these modifiers from its derived position in Num^0 . This account extends Chomsky's (1995) proposal for checking ϕ -features on arguments in clauses to the checking of non-argument relations in the DP and suggests a way of dealing with a rich agreement system without resorting to the projection of agreement phrases.

In order to understand the account of agreement that I propose in this article, it is necessary to first understand the internal syntax of DPs in Bafut. The first section of the article, therefore, focuses on the internal syntax of Bafut DPs proposing that the unmarked noun-initial and determiner-final order attested in the examples in (1) above is the result of two movement processes: N^0 -to- Num^0 raising and movement of NumP to Spec-DP. The article also focuses on the internal structure of NP suggesting that adjectives and arguments of the noun are generated as adjuncts. In the second section I spell out my proposals for agreement.

1. THE INTERNAL SYNTAX OF THE DP

In this section I argue that the DP is underlyingly head-initial and that the noun-initial surface word order results from N^0 -to- Num^0 raising and further movement of NumP to Spec-DP.

³Note that The Minimalist Program (Chomsky 1995) seeks to eliminate AgrP from the system entirely.

Bafut exhibits a certain amount of variation in the distribution and interpretation of constituents of the DP. In the unmarked order, the noun precedes determiners. I illustrate this with a definite article and a demonstrative in (2).

- (2) a. **nìbɔʔɔ** **ny.á**
 5-pumpkin 5-the
 the pumpkin
- b. **nìbɔʔɔ** **n.ñ**
 5-pumpkin 5-that
 that pumpkin over there

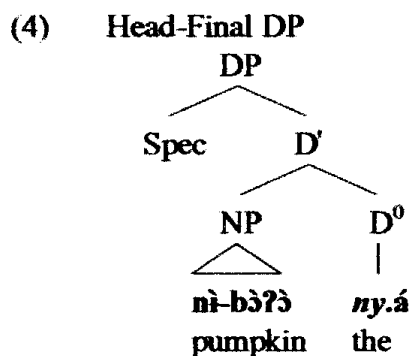
In contexts involving contrastive focus, the determiner precedes the noun as in (3).

- (3) a. **ny.áà** **nìbɔʔɔ**
 the(FOC) pumpkin
 the pumpkin (already mentioned)
- b. **n.ñ** **nìbɔʔɔ**
 that(FOC) pumpkin
 that pumpkin over there (opposed of any other)

I focus first on the unmarked noun-initial order in (2) and return to the marked D-initial order in (3) later. The question I will focus on is whether the noun-initial order in (2) is the underlying structure of the DP or whether this order is derived from a more abstract underlying structure. I will argue that the noun-initial order in (2) is derived from an underlying structure in which the determiner is in initial position.

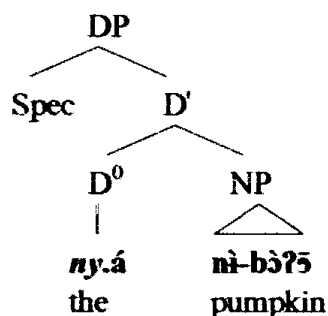
1.1 THE NOUN-INITIAL ORDER

From the order in (2), one might suppose that the DP in Bafut is underlyingly head-final as in (4).



If (4) is underlying, we do not need a transformation mapping a D-structure onto a surface structure. Elements would be generated directly in their surface positions. There are, however, reasons for thinking that, contrary to appearances, DPs in Bafut are underlyingly head-initial as in (5).

(5) Head-Initial DP

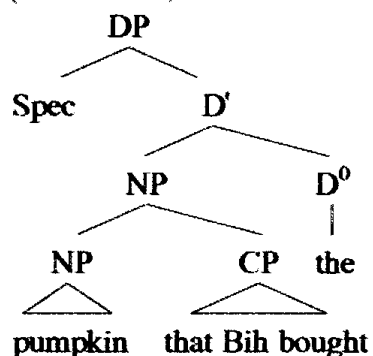


What reasons do we have for rejecting (4) in favor of (5)? One major reason for proposing that in the underlying structure of the DP in Bafut the determiner is generated in initial position concerns the distribution of relative clauses and quantifiers. In the DP, the relative clause (CP) always follows the determiner.

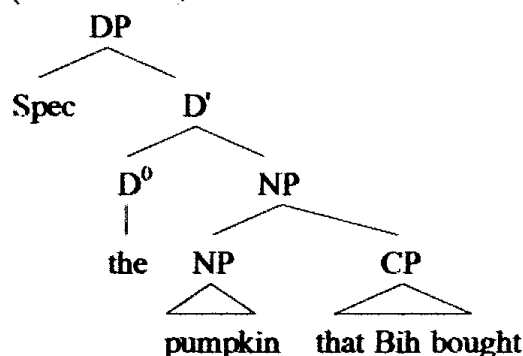
- (6) a. *nì-bòʔʔ ny.á mǎ Bih kǐ yùá*
 pumpkin the that Bih P2 buy
 the pumpkin that Bih bought
- b. **nì-bòʔʔ mǎ Bih kǐ yùá ny.á*
 pumpkin that Bih P2 buy the

Assuming the traditional view of relative clauses as adjuncts, one could assume that the relative clause in (6) is adjoined either to NP or DP. Adjoining the relative clause (CP) to NP yields the wrong word order in either the head-initial or head-final structure: *N-CP-D as the structures in (7) show.⁴

(7) a. (Head-Final) DP



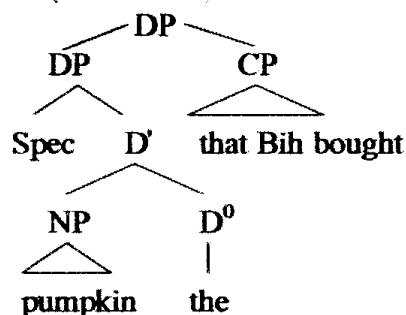
b. (Head-Initial) DP



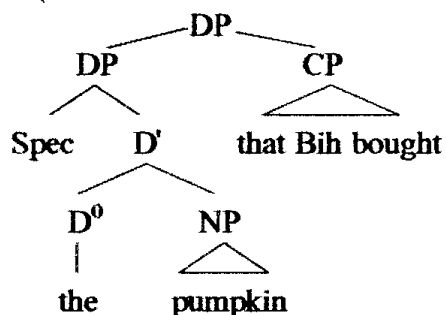
As the structures above show, adjoining CP to NP does not help decide between the head-final and head-initial structures. Adjoining it to DP as in (8) equally does not help decide between the two structures since both the head-initial and head-final structures produce the correct word order.

⁴Note also that extraposition of the CP is not motivated in current thinking.

(8) a. (Head-Final)



b. (Head-Initial)

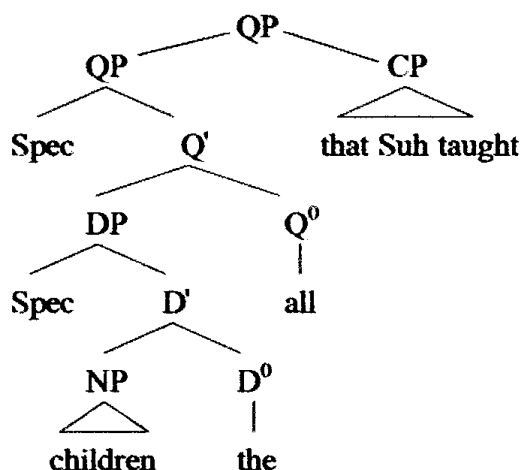


However, the head-final structure can no longer handle the data when quantifiers are introduced. In Bafut, a quantifier head always precedes the CP as illustrated in (9).

- (9) **b-śś by.á bí.tsim mé Suh kì dī?iá**
 2-children 2-the 2-all that Suh P2 teach
 all the children that Suh taught

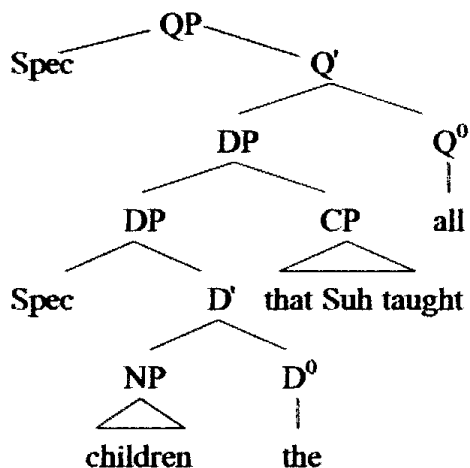
In the head-final structure, we are obliged to adjoin CP to QP as in (10) below in order to get the linear order in (9).

(10)



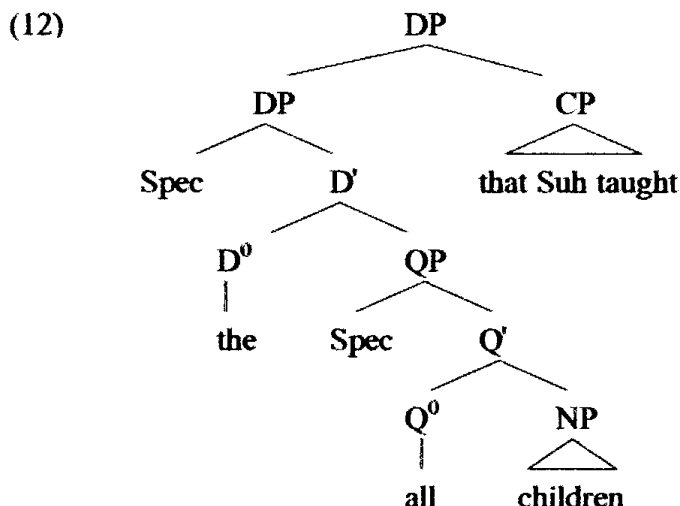
Recall, however, that in (8), we analyzed the relative clause as adjoined to DP. We now have two structural positions for the relative clause: a DP adjoined position and a QP-adjoined position, which is not a problem in itself. But this predicts DPs in which the relative clause precedes the quantifier head as in (11).

(11)



This order is, however, never attested in Bafut. But, why is (11) predicted in the first place? The structure in (11) is predicted because we have analyzed the DP as underlyingly head-final. Once the DP is head-final, QP is logically head-final, and if CP can adjoin to DP, there is no principled way of ruling out structures like (11).

If, on the other hand, we analyze the DP as underlyingly head-initial, we do not predict (11). The underlying structure of (9) would be (12).



This structure recognizes only one attachment site for the CP which is a DP-adjoined position. NP-movement to Spec-DP through Spec-QP then gives us the correct word order: [NP-D-Q-CP]. There is no way the relative clause can intervene between the determiner and the quantifier head, and so the structure in (11) does not arise.

Considering the head-initial structure as underlying, therefore, we account for the distribution of the relative clause and quantifiers without making wrong predictions such as the structure in (11). The structure in (12) is simple and ties in with the head-initial character of other phrases in Bafut and the DP in Bantu (Carstens 1991, Nkemnji 1995, Tamanji 1998). The only problem is that in the head-initial structure, we need to move NP to Spec-DP in order to derive the noun-initial surface word order, but, as we will see soon, NP movement is necessary for other purposes such as agreement. Based on the foregoing discussion, I proceed with assumption that DP in Bafut is underlyingly head-initial.

1.2 PRE-N DISTRIBUTION OF DETERMINER AND CONTRASTIVE FOCUS READING

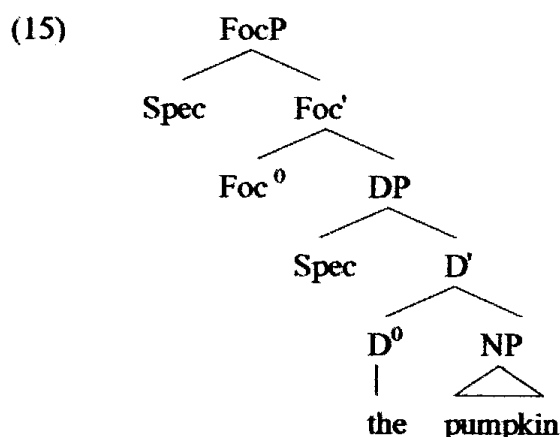
Having accounted for the unmarked word order in (2) in which the noun is in initial position, we are now ready to tackle the marked word order in (3) in which the exceptional occurrence of the determiner in initial position correlates with a contrastive focus interpretation. The examples in (3) are repeated here as (13).

- (13) a. *ny.áà* *nìbòʔʔ*
 the(FOC) pumpkin
 that pumpkin over there (opposed of any other)
- b. *n.ñ* *nìbòʔʔ*
 that(FOC) pumpkin
 the pumpkin (already mentioned)

In addition to accounting for (13), we also want to account for the related structure in (14) which shows restrictions on the pre-N distribution of the determiner. Although the definite article and the demonstrative can co-occur in post-nominal position, only the demonstrative, but not the definite article, can occur in initial position.

- (14) a. *nìbòʔò* *n.û* *ny.á*
 pumpkin that the
 the pumpkin over there
- b. *n.û* *nìbòʔò* *ny.á*
 that(FOC) pumpkin the
 that pumpkin over there
- c. **ny.áà* *nìbòʔò* *n.û*
 the(FOC) pumpkin that

Let us first examine the case in (13). Notice two things: (a) in pre-N position the root vowel of the determiner is long; (b) when the determiner is in pre-N position, the DP has a contrastive focus reading. Thus, the examples in (13) can only be interpreted with contrastive focus reference to a salient pumpkin already mentioned in the domain of discourse. This interpretation is not required in cases where the noun is in initial position as in the examples in (1). The length of the vowel and the interpretation of the examples in (13) suggest that in (13), we are dealing with a kind of focus. The determiner has moved to a focus position and lengthening of its vowel is due to stress on the determiner. What remains to be done is to characterize this focus position to which the determiner moves. I propose that this position is the head of a Focus Phrase as outlined in (15).



To derive the surface word order, NP first moves to Spec-DP giving rise to the unmarked noun-initial word order. Subsequently, the determiner further raises to FOC⁰ where it acquires a contrastive focus reading as in (13). The proposed structure in (15) is not entirely new in the literature. The structure recalls that proposed by Rizzi (1997) for the CP domain. Similarly, Androutsopoulou (1997) proposed a FocP for Modern Greek. Nkemnji (1995) also proposed a FocP structure to account for the pre-N distribution of possessive pronouns in Nweh. In addition to these, the structure adds to the structural parallels between clauses and DPs as FocP parallels CP in clauses.

Thus far, the proposal I have made is that the DP in Bafut is underlyingly head-initial. To derive the unmarked surface word order in which the noun is in initial position, NP moves to Spec-DP and to get the marked determiner-initial surface order

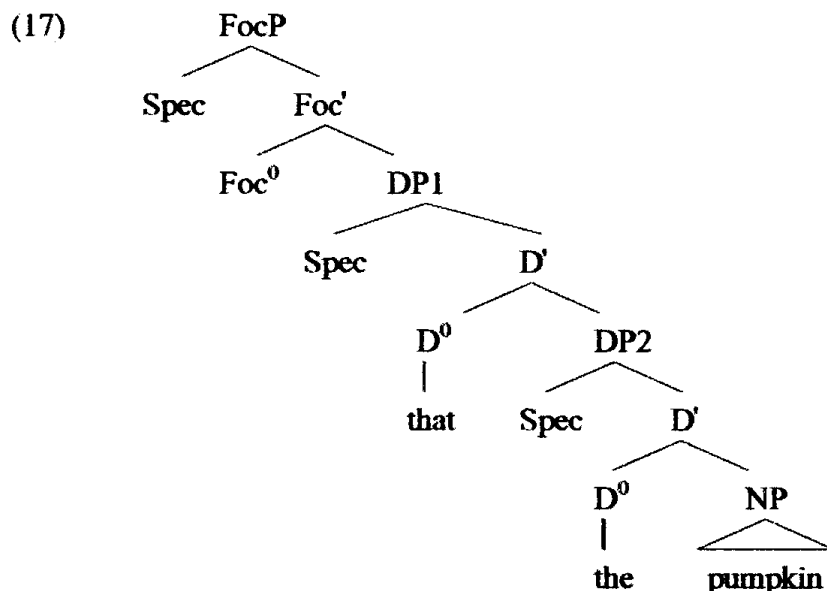
which correlates with a contrastive focus interpretation, the determiner further raises to Foc^0 . Now we return to the example in (14) in which the demonstrative, but not the definite article, can move to pre-N position.

1.3 RESTRICTIONS ON PRE-N DISTRIBUTION

In the previous section we observed that although the definite article and the demonstrative can co-occur in post-N position, only the demonstrative, but not the definite article, can occur in pre-N position. The question I want answer now is the following: If the definite article can move to pre-N, why does it fail to do so when it co-occurs with a demonstrative as in (14) repeated here as (16)?

- (16) a. nìbòʔò nî nyá
 pumpkin that the
 the pumpkin over there
- b. nî nìbòʔò nyá
 that(FOC) pump the
 that pumpkin over there
- c. * nyáà nìbòʔò nî
 the(FOC) pumpkin that

My answer to this question is that the proposed structure of the DP, the nature of the movement process alongside the Head Movement Constraint (HMC) of Travis (1984) account for this restriction in the distribution of the definite article and the demonstrative. First, given the structure of the DP I have proposed for Bafut, the underlying representation of (16) would be as outlined in (17).



In the derivation, NP first moves to Spec-DP1 through Spec-DP2 giving us the unmarked noun-initial order in (16a). Further raising of the demonstrative to Foc^0 yields the marked order in (16b) which correlates with a contrastive focus interpretation. For the definite article to occur in focus position, it has to move across the demonstrative. The HMC rules out this movement and so the ungrammatical (16c). If I am right about this account, then we have further reason for proposing that the DP in Bafut is underlyingly Head-Initial. This analysis of the distribution of the definite article and the

demonstrative cannot be consistent with a head-final structure. The head-final structure rather predicts that (16b) should be ungrammatical and (16c) grammatical.

1.4 N-RAISING AND THE DISTRIBUTION OF THE HEAD NOUN

Up to this point, we have focused on the distribution of determiners, demonstratives, quantifiers and relative clauses. We have said very little about material inside NP. I will now briefly discuss material inside NP showing that the distribution of elements require that we raise the head noun out of NP.

From a casual examination of the data we have seen so far, it is plausible to claim that the noun is generated directly in its surface position inside NP. People have argued that the noun raises out of NP in Romance and Kiswahili (Valois 1991, Bernstein 1993, Carstens 1991). There is also evidence that in the surface distribution in Bafut DPs, the noun moves out of NP. This evidence comes from the distribution of associative NPs and Bound Pronoun interpretation. Let us begin with the distribution of associative NPs.

The DP in (18) can be interpreted in three different ways.

- (18) **fɪ-ŋkóbí f.í m-fɔ́ w.á**
 statue AM chief the
 the chief's statue

- a. 'the chief' is possessor
- b. 'the chief' is theme (statue represents the chief)
- c. 'the chief' is agent (statue is made by the chief)⁵

These differences in interpretation can be represented structurally if we assume different syntactic positions for the DP [the chief]. The interpretation of bound pronouns suggests the syntactic positions.

In a DP containing two arguments (one of which is a QP and one contains a pronoun), a bound pronoun reading is possible between the arguments only if the DP containing the pronoun is c-commanded by the one containing the quantifier phrase. If the DP contains a possessor and an agent, the QP is contained in the possessor DP and the bound pronoun in the agent DP as shown in (19a)–(19b). The bound pronoun cannot be contained in the possessor DP as the ungrammatical (19c) shows.

- (19) a. **fɪ-ŋkóbí f.í [ə-tsítsà] f.í [m-fɔ́ n.tsím]**
 statue AM teacher AM chief every
 Agent Poss.
 every chief's statue made by a teacher (a statue belonging to every chief made by a teacher)⁶
- b. **fɪ-ŋkóbí f.í [ə-tsítsà y.à] f.í [m-fɔ́ n.tsím]**
 statue AM teacher his AM chief every
 Agent Poss.
 every chief's statue of (made by) his teacher

⁵The words THEME and AGENT are used simply as descriptive terms with no theoretical implications as regards theta-theory for instance.

⁶This example could also be interpreted in two ways: a) Chiefs' statues each made by a different teacher, b) chiefs' statues all made by one teacher. These alternative interpretations do not, however, affect the point made with these examples.

- c. *fi-ŋkōbí f.í [ø-tsítsà n.tsìmh] f.í [m-f̥ y.à]
 statue AM teacher every AM chief his
 Agent Poss

In the Binding Theory of Chomsky (1986a), the binder must c-command bindee. Given this, it must be the case that the quantifier phrase (i.e., the possessor DP 'every chief') is structurally higher than the agent DP 'his chief'. The example in (19c) is ungrammatical presumably because this c-command relation does not hold.

Similarly, in a DP containing an agent and a theme, the quantifier phrase can only be in the agent DP and the bound pronoun in the theme DP as illustrated in (20a)–(20c).

- (20) a. fi-ŋkōbí f.í [múndāŋwà'ànì n.tsìmh] f.í [ø-tsítsà]
 statue AM student every AM teacher
 Agent Theme

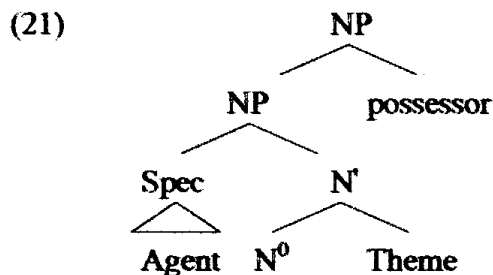
Every student's statue of a teacher (statue represents teacher, is made by student).

- b. fi-ŋkōbí f.í [múndāŋwà'ànì n.tsìmh] f.í [ø-tsítsà y.à]
 statue AM student every AM teacher his
 Agent Theme

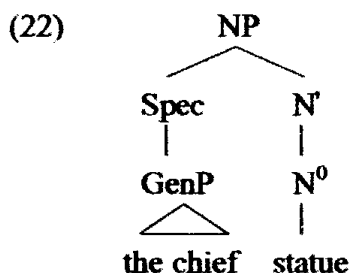
Every student's statue of his teacher.

- c. *fi-ŋkōbí f.í [múndāŋwà'ànì y.à] f.í [ø-tsítsà n.tsìmh]
 statue AM student his AM teacher every
 Agent Theme

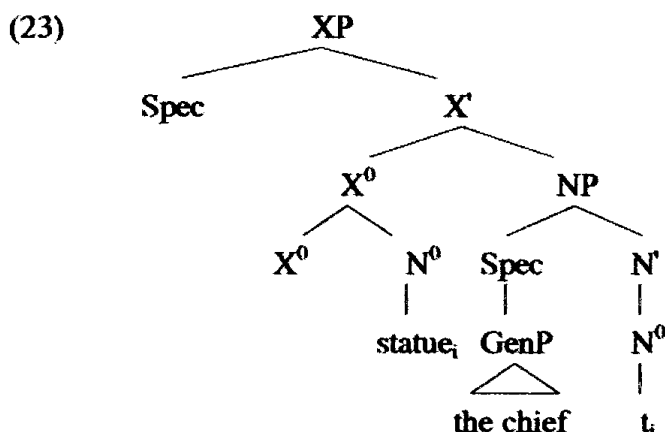
In (20b), the quantifier phrase (i.e., the agent DP 'every student') c-commands the theme DP 'his teacher'. In (20c), this c-command relation does not hold. The agent DP must, therefore, be structurally higher than the theme DP. These relations suggest the following hierarchy: Poss >> Agent >> Theme. A way of representing this hierarchy structurally is as in the tree diagram in (21) following proposals by Giorgi and Longobardi (1991).



To return to the example in (18), where 'the chief' is interpreted as the possessor, it is adjoined to NP. Where it is the agent, it occupies Spec-NP position and as theme, it is in complement of N⁰ position. If this analysis is correct, then we have evidence that the head noun always moves out of NP in Bafut. Let us focus on the structure in which 'the chief' is agent, that is, it is generated in Spec-NP as shown below.



The agent DP [the chief] precedes the head noun. However, in the surface distribution, the head noun always precedes the modifying DP. To derive the surface noun-initial order from (22), therefore, the noun must raise out of NP as shown in (23).

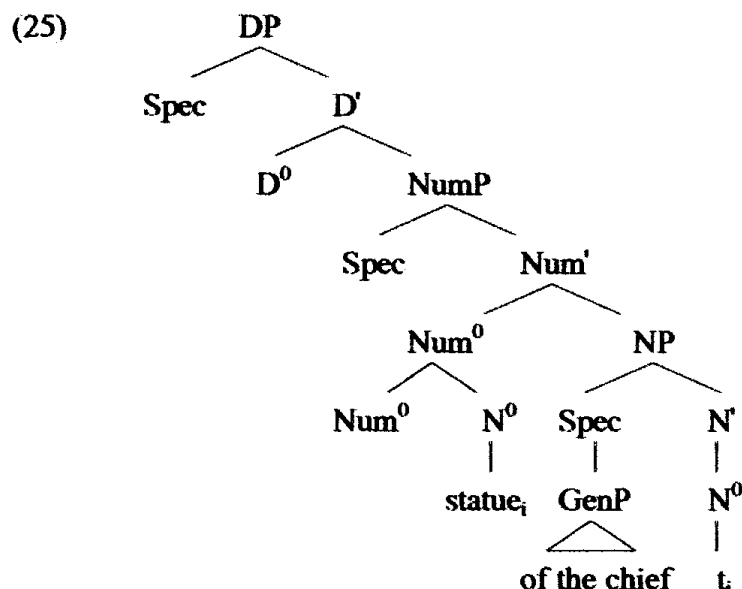


If the head noun always raises out of the NP, then there must be a functional projection situated above NP to host the raised head noun. What remains to be established is this functional projection. Dryer (1989) demonstrates the existence of singular, plural, dual, and trial number words from a variety of languages. This is illustrated with Dryer's data from Yapese, an Austronesian language.

- (24)
- a. **ea rea kaaroo neey**
 sg car this
 this car
 - b. **ea gal kaaroo neey**
 dual car this
 these two cars
 - c. **l'agruw ea kaaroo**
 two cars
 two cars
 - d. **ea pi kaaroo neey**
 pl car this
 these cars

Based on data of this type, Dryer proposes analyzing number as a syntactic category. Now observe that the Bafut examples discussed so far exhibit singular and plural number morphology. The only difference between Yapese and Bafut is that, whereas number in Yapese is lexical, in Bafut number is morphologically marked. Given the Yapese facts and considering that number is one of the defining characteristics of the Bantu nominal system, analyzing number in Bafut/Bantu as a syntactic category would

provide a unified account of number words and number morphology. I, therefore, propose that number words and number morphology are functional heads which select NP as complement.⁷ In Yapeese, singular, plural, and trial are overt, independent lexical items. For Bafut and other Bantu languages, singular and plural are represented syntactically as abstract features. Nouns raise and incorporate to the syntactic features triggering spell-out. Assuming this proposal to be correct, we can now substitute NumP for XP in (23) above:



Recall that we have all along assumed that in order to obtain the unmarked word order in which the noun is in initial position, we need to move NP to Spec-DP. With the foregoing evidence that the noun raises out of NP, we can no longer maintain this view since moving NP alone to Spec-DP will not give us the noun-initial order as the noun has been extracted out of NP. To get the correct order, we must move NumP (containing the raised noun) to Spec-DP as the reader can verify for himself/herself.

To summarize, I have argued that the DP in Bafut is underlyingly head-initial. That is to say, the underlying word order of a DP such as 'the chief' shows the determiner in initial position and the noun in final position. In the derivation, the noun first raises to Num⁰ and NumP further raises to Spec-DP giving rise to the unmarked noun-initial word order. Further raising of the determiner from D⁰ to Foc⁰ position yields the marked order in which the occurrence of the determiner in pre-N position correlates with a contrastive focus reading. This, in brief, completes the analysis of the internal syntax of the DP in Bafut. In the next section, I spell out my proposal for agreement. In the discussion, I will draw on some of the conclusions arrived at in the preceding sections especially the proposal that two kinds of movement account for word order facts in the Bafut DP: Head-to-Head movement (subject to the HMC) and XP-to-Spec movement.

2. DP-INTERNAL AGREEMENT IN BAFUT

This section accounts for the rich agreement system in Bafut DPs. The major question of interest is how agreement features on modifiers of the noun are checked, given that the noun does not stand in a Spec-Head relation with all its modifiers as

⁷ See Carstens (1991) for a similar proposal for the DP in Swahili.

required in the standard Spec-Head agreement approach of Chomsky (1986a). I will propose that in addition to the Spec-Head configuration, we need a Head-Head relation to account for agreement in Bafut DPs. While the Spec-Head relation is needed to check agreement on functional categories (quantifiers and determiners), the Head-Head relation is needed to check agreement on lexical categories (adjectives and genitives). First, I review previous approaches to agreement pointing out their inadequacies in accounting for agreement in Bafut DPs.

2.1 PREVIOUS APPROACHES TO AGREEMENT

One standard approach to agreement is Chomsky's (1986a) Spec-Head agreement hypothesis designed primarily to account for subject-verb agreement. In clauses, the verb may agree with the subject in person, number and, in some languages, gender/class. According to Chomsky (1986a), the subject-verb agreement morphology is licensed in a Spec-Head configuration with the subject in specifier of IP and the verb or auxiliary in head of IP position. In this configuration, the subject's person, number, and gender/class agreement features are checked against those of the verb or auxiliary.

It is important to note that the item which triggers agreement is in a specifier position while the agreeing element is in head position. If one were to extend this view of agreement to the DP in Bafut, we would expect to find the noun, which triggers agreement morphology on its modifiers, in a specifier position and the modifiers, which agree with the head noun, in head position. As we have seen from the discussion of the structure of the DP in preceding sections, the noun does not stand in a Spec-Head relation with all its modifiers. For illustration, let us consider determiner agreement (26a) and genitive agreement (26b).

- (26) a. *nì-bòʔò ny.á*
 pumpkin the
 the pumpkin
- b. *fì-ŋkōbī f.í m-fō*
 statue AM chief
 a chief's statue (i.e., a statue representing a chief)

The determiner (26a) and the genitive DP [of chief] (26b), agree with the head noun. According to the analysis of the DP structure in preceding sections, (26a) and (26b) have the surface structures in (27).

- (27) a. Noun - Determiner
- ```

 DP
 / \
 Spec D'
 | / \
 NumPi D0 NumP
 / \ | / \
 Num0 NP the Δi
 / \ |
Num0 N0 tj
 |
pumpkinj

```
- b. Noun - GenP
- ```

      DP
     /  \
  Spec   D'
   |     /  \
  NumPi D0  NumP
   /  \   |   /  \
 Num0 NP  Δi
 /  \   /  \
Num0 N0 N0 GenP
 |   |   |   /  \
statuej tj of chief
  
```

As the structures show, the noun and its modifier stand in an indirect Spec-Head configuration only in (27a). In (27b), the noun clearly does not stand in a Spec-Head configuration with the modifying genitive DP. It is obvious that, while we could get the Spec-Head hypothesis to account for agreement between the noun and a determiner as in (27a), it would be rather hard to achieve the same results in (27b) and in similar structures in which other agreeing modifiers such as adjectives, numerals, and possessive determiners are in a similar structural position to the genitive DP.

Another approach to agreement which focuses primarily on the DP is that of Carstens's (1991). Carstens proposes that in the DP in Bantu, agreement features are transmitted to modifiers of a noun through a government relation. She proposes that the head noun first raises to Num⁰, then the complex [Num⁰ + N⁰] raises to D⁰. From D⁰, the complex [D⁰ + Num⁰ + N⁰] then transmits gender plus number agreement features to every constituent within the c-command domain of D⁰, Num⁰, and N⁰, aside from items with their own gender features. Carstens's approach relies heavily on further raising the head noun from Num⁰ to D⁰. From this position, the noun governs all its modifiers and can thus transmit agreement features to them. N-raising from Num⁰ to D⁰ is possible in Swahili because the language lacks overt determiners. Bafut, on the other hand, has overt determiners. Raising the head noun further from Num⁰ to D⁰ would, therefore, pose a problem as the presence of an overt determiner would block movement into D⁰ position. Even if we assume that the noun adjoins to D⁰, we still run into word order problems. In a DP containing a head noun, an adjective, and a determiner, we would have to adjoin both the noun and the adjective to D⁰ in order to derive the correct N-Adjective-Determiner word order; a rather odd kind of adjunction unprecedented in the literature. Given that further raising of the head noun to D⁰ is not feasible in Bafut, extending Carstens's Government-Based Agreement (henceforth GBA) approach to Bafut would, therefore, provide only a partial account of DP agreement: When the noun raises to Num⁰, it governs AP and GenP. However, since it cannot proceed to D⁰, it fails to govern determiners and quantifiers which are above NumP. The noun can, therefore, assign agreement to adjectives and genitives but not to determiners and quantifiers.

To recapitulate, I have briefly reviewed two approaches to agreement: Chomsky's (1986a) Spec-Head approach and Carstens's (1991) GBA approach. The discussion has shown that whereas Chomsky's Spec-Head approach can account for agreement on functional categories such as determiners and quantifiers, it cannot account for agreement on adjectives and genitive phrases in Bafut. Carstens's GBA, on the other hand, accounts for agreement on adjectives and genitives but not quantifiers and determiners. As I will show immediately below, Carstens' proposal can be subsumed under Chomsky's (1995) feature raising hypothesis. This leads me to the following proposal for DP agreement in Bafut.

I propose that agreement in Bafut DPs is better accounted for if we assume two structural configurations: Spec-Head and Head-Head and adopt and extend Chomsky's (1995) proposals about feature checking in clauses. In Chomsky's proposal, tense (T) checks features of subject DPs while the verb (V) checks features of object DPs. The subject DP raises overtly to Spec-TP in order to satisfy other structural requirements such as the Extended Projection Principle (EPP), but in Spec-TP, its ϕ -features then enter into a checking relation with those of T. In the case of object DPs (and perhaps subject DPs in VSO languages), overt raising of the DP is not required for PF convergence and so only the features of the head noun raise covertly and adjoin to the

appropriate head category. Chomsky observes that the Head Movement Constraint (HMC) is understood to apply to feature movement in such instances.

If we extend these proposals to the DP in Bafut, we can check agreement on all modifiers of the noun in two structural configurations: Spec-Head and Head-Head. Agreement on functional categories (quantifiers and determiners) will be checked by movement of NumP (containing the noun which has raised out of NP) to the specifier position of QP and DP in the same way that ϕ -features of subject DPs are checked in Spec-TP. Features of lexical categories (adjectives and genitives) on the other hand, will be checked in the Head-Head relation via covert raising of the features of the modifiers, in a head-to-head fashion, to the noun (which has raised to Num⁰) similarly to raising the features of the object DP to AgrO⁰ (or its equivalent). My analysis of adjective and genitive agreement is consistent with Chomsky's assumption that the HMC applies to feature movement, as no head category intervenes between the noun in Num⁰ and the adjective and genitive inside NP. I spell out the details of this proposal in the following sections beginning with the case of functional categories which seems, in many ways, to be similar to the familiar Spec-Head approach to agreement.

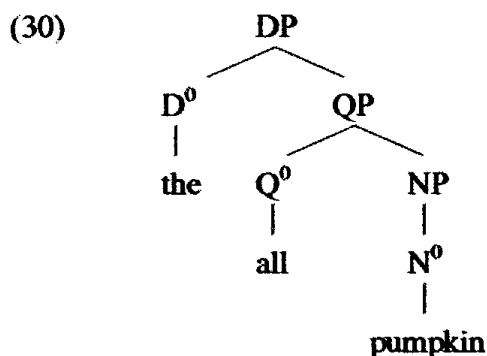
2.2 AGREEMENT ON FUNCTIONAL CATEGORIES

As pointed earlier, the functional categories (determiners and quantifiers) follow the head noun. In the examples in (28) showing agreement between a head noun and a determiner/quantifier, the head noun determines the agreement features of the determiner and quantifier.

- (28) a. *nì-bòʔò* *ny.á*
 5-pumpkin 5-the
 the pumpkin
- b. *nì-bòʔò* *ní.tsìm*
 5-pumpkin 5-every
 every pumpkin
- c. *nì-bòʔò* *ny.á* *ní.tsìm*
 5-pumpkin 5-the 5-all
 all of the pumpkin

The problem we face in accounting for the agreement pattern within the standard approach is that the noun and the determiner/quantifier are not exactly in the type of configuration expected in the Spec-Head approach to agreement. In the Spec-Head analysis, an XP triggers agreement on a head. Here, we have a head agreeing with another head. Given this head-head configuration, one would imagine that the agreement features could be checked in one of two ways: either the features of the noun raise covertly to Q⁰ and D⁰ or the noun raises overtly and adjoins to the determiner and quantifier in the way the verb adjoins to T⁰ to check its tense feature. Neither of these predicts the correct word order. Consider the structure in (30), which represents the DP in (29).

- (29) *nìbò'ò* *nyá* *nìtsìm*
 5-pumpkin 5-the 5-all
 all of the pumpkin

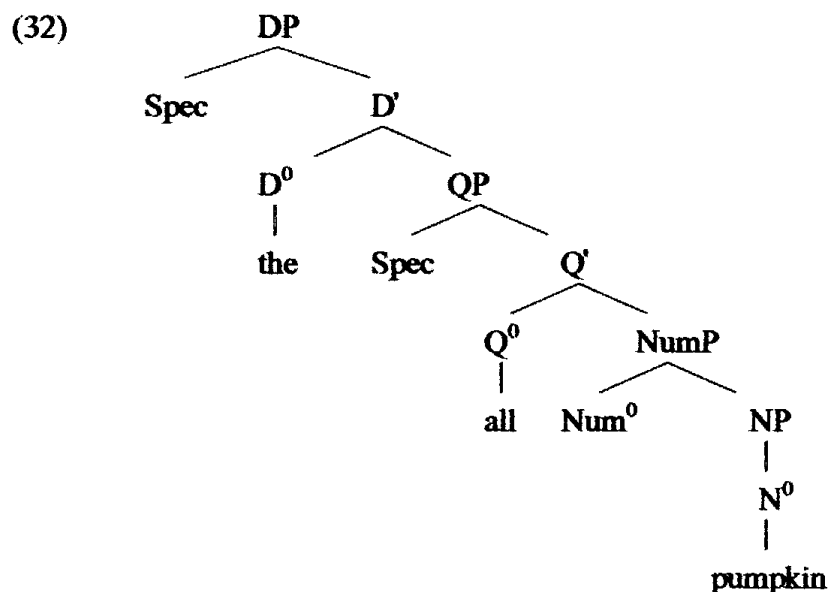


Raising only the features of the noun will not give us the noun-initial word order in (28) and (29). Adjoining the noun to the quantifier and determiner does not help either. The head noun would have to first adjoin to Q^0 to check the ϕ -features of the quantifier. In order to check the features of the determiner, the HMC requires the complex head [$N^0 + Q^0$] to raise to D^0 . The result of this would be the wrong word order: if adjunction is to the right, the order we get is *D-Q-N and if it is to the left, the order is *N-Q-D whereas the correct word order is N-D-Q. The situation becomes even more complicated if the DP has more constituents, as in (31) where an adjective has been introduced.

- (31) *nì-bòʔò* *ní.fùʔù* *ny.á* *ní.tsím*
 5-pumpkin 5-white 5-the 5-all
 all of the white pumpkin

In order to derive (31) from the structure in (30), we would be required to raise the adjective (which is adjoined to NP) along with the noun. In addition to violating constraints on movement (Heads adjoin to Heads and XPs to XPs), we end up with the wrong word order; *N-A-Q-D instead of N-A-D-Q.

These problems of agreement on quantifiers and determiners do not arise if we adopt the analysis of DP structure proposed in the first section alongside Chomsky's Spec-Head approach to agreement. In the examples in (28) and (29), the noun precedes the determiner and quantifier. Earlier, I established that the noun is generated in a position to the right of the determiner and the quantifier, as in (32).



The surface word order in which the noun precedes the determiner and quantifier results from two movement processes. First, the noun raises to Num⁰. When the noun raises to Num⁰, NumP inherits its number plus gender class features. Then NumP raises to Spec-QP where it checks the number plus gender class agreement features on the quantifier. Subsequently, NumP raises to Spec-DP and checks the agreement features of the determiner. Quantifier and determiner agreement follow naturally from the syntax of the DP proposed in the first section. Movement of NumP through Spec-QP to Spec-DP checks agreement on the quantifier and determiner. Quantifier and determiner agreement is simple and straightforward. Agreement on these two categories is checked in a Spec-Head configuration via the same movement processes that are independently required for word order facts. Assuming, as Chomsky suggests, that features are not necessarily erased once checked, we get the noun to check agreement features on multiple agreeing items in the same structure. Also, we do not need to project multiple agreement phrases, one for each instance of agreement.

2.3 AGREEMENT ON PHRASAL CATEGORIES

Two phrasal categories, AP and GenP follow and agree with the head noun in Bafut. For ease of exposition, let us consider one phrase at a time.

2.3.1 AP agreement

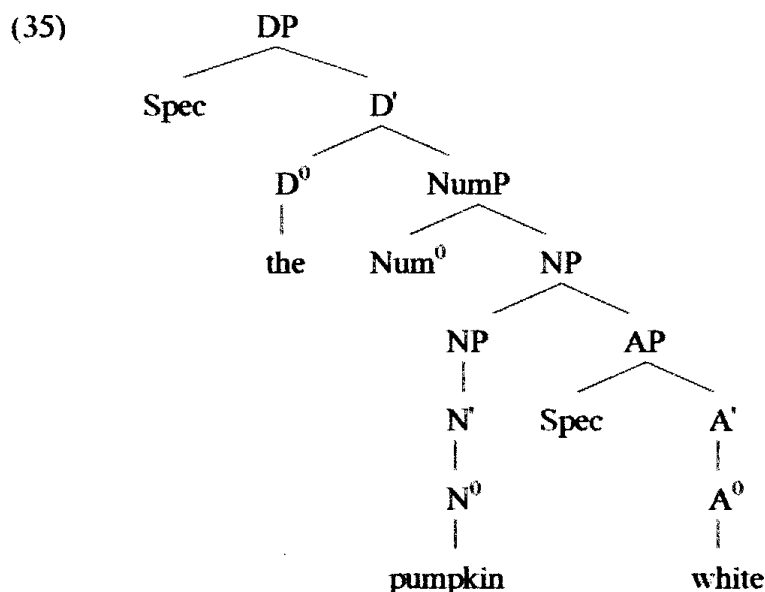
As is the case with the determiner and quantifier, the adjective follows the head noun and the agreement features of the adjective are determined by the head noun.

- (33) a. *nì-bòʔò* *ní.fùʔù*
 5-pumpkin 5-white
 a white pumpkin
- b. *mì-bòʔò* *mí.fùʔù*
 6-pumpkin 6-white
 white pumpkins
- c. *bì-lūʔū* *bí.fùʔù*
 2-spoon 2-white
 white spoons

In the structure of the NP I proposed in §1.4, the requirements for a Spec-Head configuration are not met. Following Valois (1991), Cinque (1994) and Crisma (1996) that adjectives are parallel to adverbs and therefore attached to various projections of DP, a DP like (34) would have the underlying structure in (35).⁸

- (34) *nì-bòʔò* *ní.fùʔù* *ny.á*
 5-pumpkin 5-white 5-the
 the white pumpkin

⁸It does not matter for the present discussion whether the adjective is right or left adjoined to the NP. Either of these adjunction sites will yield the correct word order assuming N⁰-to-Num⁰-raising.



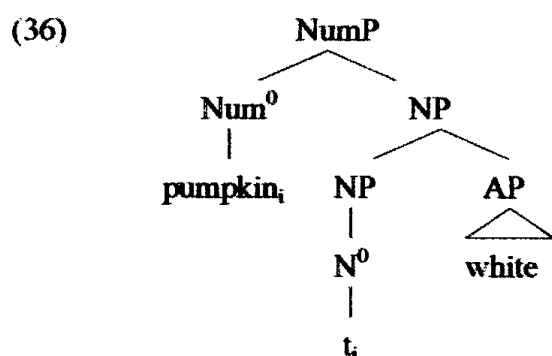
The noun-initial order in (34) is derived from (35) via N^0 -to- Num^0 raising and NumP movement to Spec-DP. At no stage in the derivation does the adjective stand in a Spec-Head relation with the head noun. Were we to insist on having the agreement features of the adjective checked in a Spec-Head configuration, we would expect to have an XP in Spec-AP. The relevant XP in this case is NP since it contains N which triggers agreement on the adjective. But then, moving NP involves moving AP as well since, in NP-adjoined position, AP is simply an extension of NP. It would therefore be difficult to check agreement on the adjective in the Spec-Head configuration.

An alternative way of approaching the problem, which still does not help much, is to assume that the agreement features on the adjective are checked via adjunction in the way a verb checks its tense features by adjoining to T^0 . In this view, one could imagine that the head noun first adjoins to A^0 and checks agreement on the adjective before moving on to Num^0 . Notice, however, that in the structure in (35), A^0 does not govern N^0 .

N-adjunction to the adjective should, therefore, be blocked by the HMC. Along similar lines, it is untenable to suppose that only the features of the noun raise to A^0 . Raising the features of a category covertly is like raising the category overtly. Although the MP program does not discuss the issue of constraints on feature movement explicitly, it is, however, observed that "...the HMC is understood to apply to feature movement" (Chomsky 1995:273). Assuming this, we would expect that raising the features of N should obey the HMC which restricts head movement to the next hierarchically higher head position. Since A^0 is not above N^0 , Head-Head movement is ruled out.

The long and short of it all is that the requirements for a Spec-Head configuration or N-adjunction to the adjective are not met in the structure of the DP I have proposed. The structure, however, allows for agreement on the adjective to be checked in a configuration which is similar to the one assumed in Carstens's GBA approach. As noted earlier, Carstens proposes that agreement in Bantu DPs is licensed in a structural government configuration. In her analysis, the head noun transmits agreement features to its modifiers from a governing position in D^0 . I adopt Carstens's views regarding the structural configuration but modify her idea of feature transmission. Transmitting agreement features from a governing position to constituents below this position (as

Carstens proposes) involves lowering. Given the increasing disfavor for lowering processes, I propose that licensing agreement on the relevant modifiers proceeds via raising the features of the modifier to the noun in a hierarchically higher position. If we adopt this view, we can account for agreement between the adjective and the head noun by assuming that the features of the adjective raise to the noun in Num⁰ in Bafut. Considering the structure in (35), after N⁰-to-Num⁰-raising, the derived structure is as in (36).

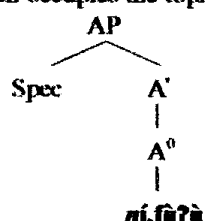


In its derived position in (36), the head noun is above NP and everything it contains including the adjective. There is no head category between the adjective and the noun that could block head-to-head movement. Num⁰, however, does not bear a strong A-feature so the adjective does not need to raise overtly. It remains in its base position and only its number plus gender class features raise to Num⁰ where they enter into a checking relation with those of the noun. This approach works successfully for all classes of adjectives that agree with the noun in Bafut. Pure and verbal adjectives are adjoined to NP and N-raising places the noun in a position from which it c-commands these adjectives. Raising the features of the adjective to the head noun proceeds without violating any locality constraints on movement given the absence of an intervening head category between the noun and the adjective. The general requirement for adjective agreement in Bafut then is that the noun always c-commands the adjective and the adjective is close enough to the noun; closeness here is defined in terms of the HMC.⁹

2.3.2 Genitive agreement

The case of genitive modifiers which include lexical genitives and possessive determiners is not very different from that of adjective agreement. Three kinds of genitive DPs can follow and agree with a head noun in the genitive construction in Bafut.

⁹One apparent problem of this proposal for adjective agreement is that the features of the adjective raise out of an adjunct which, in standard accounts, is treated as a barrier to movement. I will not take up this issue here in any detail beyond pointing out that the AP is a bare phrase. That is, it contains only the adjective head which occupies the topmost head node as illustrated below.

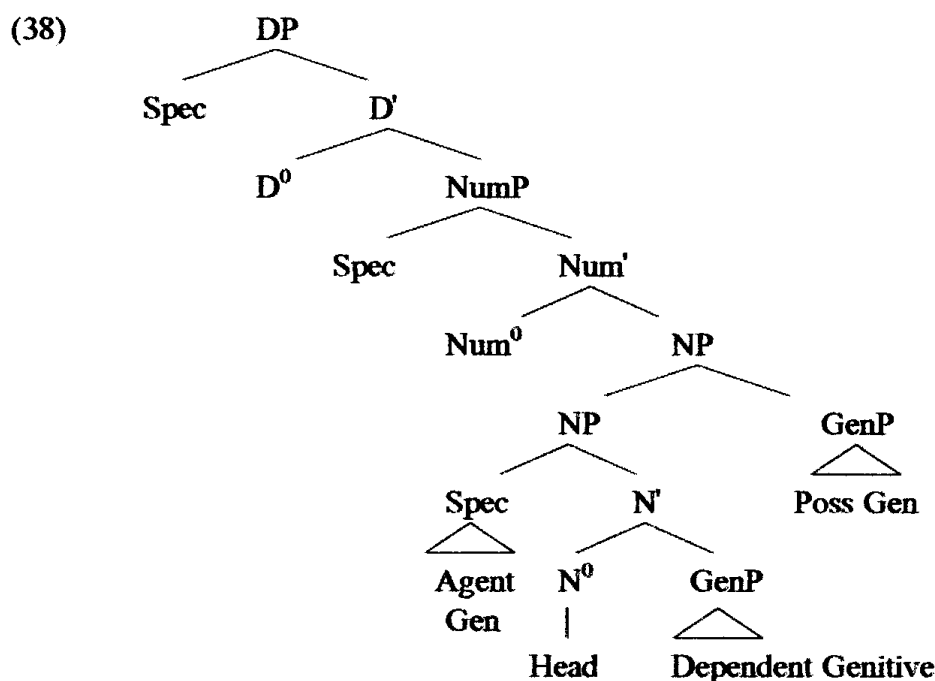


Since there is no other head node above the adjective, there is no principled reason why features of the adjective head cannot raise out of the AP.

These are possessor genitives, dependent genitives and agent genitives.¹⁰ Examples of constructions with these genitive DPs are repeated in (37).

- (37) a. *nì-bàʔà* *n.í* *m-fɔ̃* [Possessor]
 5-pumpkin 5-AM 1-chief
 a chief's pumpkin
- b. *bì-fūtō* *b.í* *m-fɔ̃* [Dependent Gen]
 2-photo 2-AM 1-chief
 pictures representing a chief
- c. *fì-ŋkōbī* *f.í* *ə-tsítsà* [Agent Gen]
 19-statue 19-AM 1-chief
 a statue made by a teacher

These genitive DPs stand in different semantic relations to the head noun. In the first section, I proposed to represent these semantic differences in the structure. Based on this, and other theoretical considerations such as c-command and binding reflexives, I postulated the following structure for the genitive construction in Bafut:



Of the three genitive DPs, only the agent genitive appears to stand in a Spec-Head configuration with the head noun. Even then, the relation is not exactly analogous to the standard Spec-Head relation which we find, for instance, between subject and verb in clauses. In subject verb agreement, the agreeing element (i.e., the verb) is in head position while the element that triggers agreement (the subject) is in specifier position. In the structure above, we have the mirror image of this relation: the agreeing element is in specifier position while the noun which triggers agreement is in head position. The head noun and the agent genitive are, therefore, not exactly in a Spec-Head configuration as is conceived of in clauses. One could, however, assume that what matters is for one of the two elements, regardless of whether it is the agreeing or the triggering element, to be in the specifier position and the other in a head position. With this, we

¹⁰ Agent is used here simply as a descriptive term with no theoretical significance in relation to theta-roles.

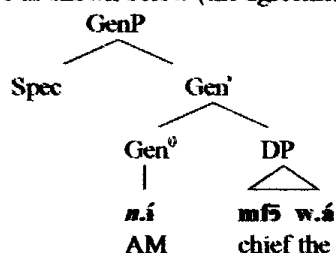
can account for agreement on the agent genitive. However, agreement on the possessor and dependent genitives cannot be accounted for in this way since it would be rather hard to get them in a Spec-Head relation with the head noun. We would, therefore, be required to posit a checking mechanism for the possessor and dependent genitives which is distinct from that of the agent genitive.

Another possibility, which still does not resolve the problem of agreement on genitive DPs, is to claim that in the genitive construction, only the features of the head noun raise to check those of the genitive DP. For theory-internal reasons, this is not possible. In the minimalist approach, feature raising is subject to the same conditions as category movement. If the features of the head noun have to raise, we expect them to proceed in the usual head-to-head fashion of ordinary head categories. That is, we expect the features to raise and adjoin to the next head category above it. In this case of genitive agreement, the head category to which the features of the head noun have to adjoin is Gen^0 . Gen^0 is not above N^0 , and as such, the HMC would block raising of the agreement features of the noun.

If we extend the analysis of adjective agreement outlined in the preceding section to genitive phrases, we do not face any of these problems. Moreover, we obtain a unified analysis of agreement which accounts for adjectives as well as all three types of genitive DPs in (37). In the analysis of adjective agreement, I proposed that the agreement features on an AP are checked via covert raising of the number plus gender class features of the adjective to the head noun in Num^0 . Let us apply the same line of argument to genitive agreement. In the structure in (38), the head noun raises to Num^0 for independent reasons specified in §1. N^0 -to- Num^0 raising places the noun in a position from which it c-commands all the genitive DPs. The complex head $[\text{N}^0 + \text{Num}^0]$, however, does not bear a strong D-feature so the genitive DPs do not need to raise. They remain in their base positions and only their number plus gender class features raise to $[\text{N}^0 + \text{Num}^0]$ where they enter into a checking relation with those of the head noun.¹¹

Raising the features of the agent and possessive genitives proceeds in the usual head-to-head fashion without violating the HMC. Raising the features of the dependent genitive, on the other hand, seems to violate the HMC given that N^0 (the underlying position of the head noun) dominates the dependent genitive and is therefore expected to block movement of the features of GenP to $[\text{Num}^0 + \text{N}^0]$. There are two ways of getting around this apparent problem. One is to assume that the agreement features of the dependent genitive are checked before N-raising applies. That is, before the head noun moves to Num^0 , the fea-

¹¹The apparent problem regarding extraction out of adjuncts which I pointed out in the analysis of adjectives also applies to possessor genitives. Following the standard account which rules out extraction out of adjuncts, we do not, in principle, expect features of the genitive to raise given its status as an adjunct. In my analysis, GenPs like APs are not treated as barriers to head-movement. Motivation for this is that the agreement morphology is on the associative morpheme (AM) which occupies the topmost head node in the genitive phrase as shown below (the agreement morpheme is in *italic*):



Since there is no other head category above Gen^0 that could block movement of the AM, GenP should therefore not count as a barrier to head movement in this structure.

tures of the dependent genitive raise to N^0 where they are checked against those of the head noun. The second alternative is to assume, following Chomsky (1995), that movement creates chains. N-raising forms a chain containing the head noun in Num^0 as the head and its trace in N^0 as the tail of the chain. The features of the dependent genitive raise to N^0 and become part of the chain. In this respect, the features are transmitted through the chain without violating the HMC.

Overall then, the features of all the genitive DPs in the structure in (37) are checked in the same fashion as those of adjectives. The number plus gender class features of these modifiers raise covertly to $[\text{Num}^0 + N^0]$ where they enter into a checking relation with those of the head noun.

This completes the account of agreement in DPs in Bafut. To recapitulate, I argued that neither Chomsky's Spec-Head agreement nor Carstens's GBA alone suffice to account for all the patterns of agreement on nominal modifiers in Bafut DPs. I then proposed that we obtain a simple and straightforward account of DP agreement if we adopt Chomsky's proposals about feature checking in clauses and assume two structural configurations; Spec-Head and Head-Head for DP agreement. When the noun raises to Num^0 , NumP inherits the number plus gender class features of the noun. Subsequently, NumP moves to Spec-QP and Spec-DP and checks agreement on determiners and quantifiers in the familiar way of Spec-Head agreement in clauses. Agreement features of GenP and AP , which are in a structural position lower than the complex head $[\text{N}^0 + \text{Num}^0]$, raise covertly in a head-to-head fashion and enter into a checking relation with those of the head noun.

3. CONCLUSION

I have shown that using two structural relations provides an account of DP agreement in Bafut. Although my approach makes use of two structural relations, it is not more costly than one that uses only one structural relation since the relations I use are independently required for word order facts. I have, therefore, exploited only relations that are already available in the system to account for agreement. Above all, there is the possibility of generalizing my approach to other languages: Bantu and Romance.

This account of DP agreement is an innovation in that it extends an approach developed for checking ϕ -features of arguments in clauses to a different domain: non-arguments (modifiers) in DPs and to new data: Bafut (a Grassfields Bantu language). The Spec-Head account of agreement with subject DPs extends to agreement of determiners and quantifiers, while the feature raising analysis of object DPs extends to genitive and adjective agreement. This account also helps to further develop some of Chomsky's ideas in the Minimalist Program. First, it suggests a way of dealing with a really rich agreement system without having to resort to the projection of agreement phrases, which Chomsky (1995) proposes to eliminate from the system entirely. Secondly, it exemplifies one of Chomsky's claims (in chapter 4 of the Minimalist Program) that features are not necessarily erased once checked. I use this idea in a different context (agreement in DPs) and change its mechanics to allow the noun to check agreement on multiple modifiers in the same construction.

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