

The Structure of Numeral Classifier Constructions in Korean*

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Kim, Young Kook. 2007. The Structure of Numeral Classifier Constructions in Korean. *The Linguistics Association of Korea Journal*, 15(4). 179–196. The present paper considers the structure of the numeral classifier constructions in Korean. With respect to the structure of NP in Korean, the Agreement Phrase(AgrP) occurs between DP and NP and the numeral classifiers moves to [Spec,AgrP] from the original position and check features by the corresponding features of the head noun raised into the head position of AgrP, when there is a feature checking procedure between the numeral classifier and its head nominal. On the other hand, when the nominal appears before quantifier phrase, the head nominal in numeral classifier constructions cannot take the determiner. This leads us to assume that the head noun moves to the determiner position due to a specificity feature.

Key Words: quantifier, numeral, classifier, DP-hypothesis, feature-checking, focus, adjective, restrictive, nonrestrictive, movement, functional.

1. Introduction

In this paper, I propose that pre-nominal attributive adjectives in Korean are base-generated in the adjunct position of the NP, just like in English. With respect to the status of the head noun in numeral classifier constructions, I follow Kim (1997) proposing that the head noun in Numeral Classifier constructions moves to D^0 within the DP-hypothesis.

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Concerning the position of the pre-modifying adjectives within the DP hypothesis (Cinque 1992), Kim (1997) argues that the pre-modifying adjectives in Korean are base-generated in [Spec,AgrP]. He divides the adjectives into two categories: one category is the restrictive adjective which remains in situ within the scope of the determiner while the other category is the nonrestrictive adjective which moves into [Spec,DP]. It is assumed that the adjectives are base-generated in [Spec,AgrP] and checks their agreement feature against the feature borne by N° merged to the head (Agr^o) of AgrP, and that the nonrestrictive adjective further raises into [Spec,DP] to check its non-focused feature out of the scope of the determiner. I, unlike Kim (1997), however, assume that the adjectives are base-generated in the specifier position of NP. They moves to [Spec,AgrP] to check a Focus feature and might further raises into [Spec,DP] to check a Topic feature, if any.

In this paper, I follow Kim's (1997) DP-hypothesis for the structure of Korean noun phrases, and the feature-checking theory (Chomsky 1995) as our theory framework.

In Section 2 I will sketch the basic idea of feature-checking configuration advanced by Chomsky (1995). Section 3 considers the DP-hypothesis. Within the DP structure, Agreement Phrase(AgrP) occurs between DP and NP. Pre-modifying Adjectives check their features such as number or gender, in AgrP by those of the head noun merged into the head of AgrP. Section 4 deals with the structure of numeral classifier constructions. If the classifier has any features like number to be checked by those of the head noun, it moves to [Spec,AgrP]. And the head noun in Numeral Classifier constructions moves to the Determiner position due to the specificity feature. Section 5 is the conclusion.

2. Feature Checking Theory (Chomsky (1995))

According to the feature-checking theory or the minimalist program advanced by Chomsky (1995), the notion of free movement by Move- α

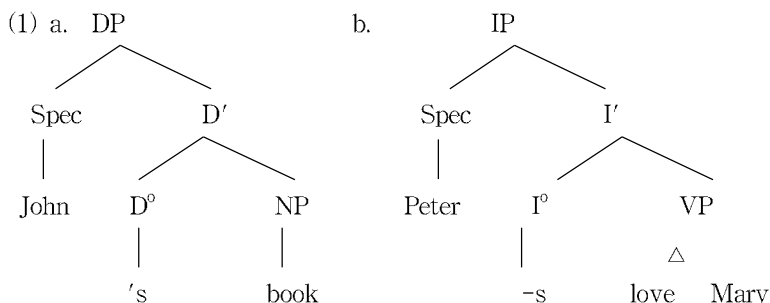
is replaced by that of feature-driven movement. All the movement must be feature-driven. For example, Case features must be checked in a derivation, a DP(or NP) will move to check them. If the feature-checking fails, the structure would crash. In other words, the movement driven by Case theory reduces to feature-checking theory. In the feature checking theory, case-marking is assumed to be an instance of feature-checking between a functional category and its Spec. In GB theory¹⁾, Nominative Case is assigned to an NP in [Spec,IP] while Accusative Case is assigned by verbs to the object remaining in situ inside VP. In the checking theory, on the other hand, both Nominative and Accusative case are checked in a uniform way; the subject or the object can have one general structural configuration of checking. See Chomsky (1995) and Kim (1997) for more detailed discussions of the feature-checking theory.

3. The DP-Hypothesis

With respect to the structure of noun phrases, there are two main groups: one group, following Cinque (1980), has adopted the idea that NPs and clauses have a parallel structure while the other group argues that NPs are radically different from clauses or verb phrases (VPs) (Grimshaw 1986).

Concerning what is the head of the noun phrases, Abney (1987) proposes that the noun phrase is headed by a functional category, namely, D(eterminer). We call this idea the DP(Determiner Phrase)-hypothesis. The main point of Abney (1987) is to argue for a parallel structure for noun phrases and clauses. Thus the noun phrase can be headed by a functional category D^0 just as the sentence is headed by a functional category I^0 , as follows:

1) Strictly speaking, it is difficult to call this framework GB theory. However, For our convenience of exposition, I will use this name here.



In this analysis, D(eterminer) is similar to the Infl in Inflectional Phrase(IP): the nominal *John* in [Spec,DP] checks the Case of the *-’s* morpheme in D just like the subject *Peter* checks the Nominative Case of Infl *-s* through specifier-head agreement.

The parallel syntactic treatment of D and I is reflected by their semantic similarity. The function of the determiner is to specify the reference set of a noun phrase. Abney (1987) says:

"The noun provides a predicate, and the determiner picks a particular set of numbers of that predicate's extension. The same function is performed in the verbal system by Tense. The VP provides a predicate, that is, a class of events, and Tense (Infl) locates a particular event in time."

Following Cinque (1992) and Abney(1987), Kim (1997) assumes that the DP-structure also contains a FOCUS position ([Spec,AgrP]) and a TOPIC position ([Spec,DP]). See Kim (1997) for the detailed discussion of TOPIC and FOCUS features in clauses and noun phrases.

Szabolcsi (1990) argues that Noun Phrases contain a pre-determiner position, observing that in (2) the possessor *Mari* marked for Dative (case) appears before the determiner. The example in (2) is reproduced from Szabolcsi (1990).

- (2) [DP Mari-nak [D° a [NP vendeg-e-∅]]]
 Mary-Dat the guest-Poss-3Sg²⁾

Szabolcsi (1990) proposes that the NP *Mari* in (2) has moved to [Spec,DP] where it receives Dative Case, and points out that the movement is an instance of A'-movement.

A similar analysis can be applied to Korean³).

- /
- (3) a. [_{DP} ku yeppun yeca]
 the pretty woman
- /
- b. [_{DP} [yeppun] [_{D°} ku] [_{t_i}] [_{NP} yeca]]

An attributive adjective can move to a position preceding its determiner⁴, that is [Spec,DP]. Note that the pre-determiner position is an A-bar-position. The interpretation for (3a) is different from that of (3b) in that when the adjective appears in the pre-determiner position, [Spec,DP], as in (4b), the adjective loses FOCAL stress, as in (3b), but when the adjective occurs in [Spec,XP⁵], as in (4a), the FOCAL stress on the adjective is valid⁶, as illustrated in (3a).

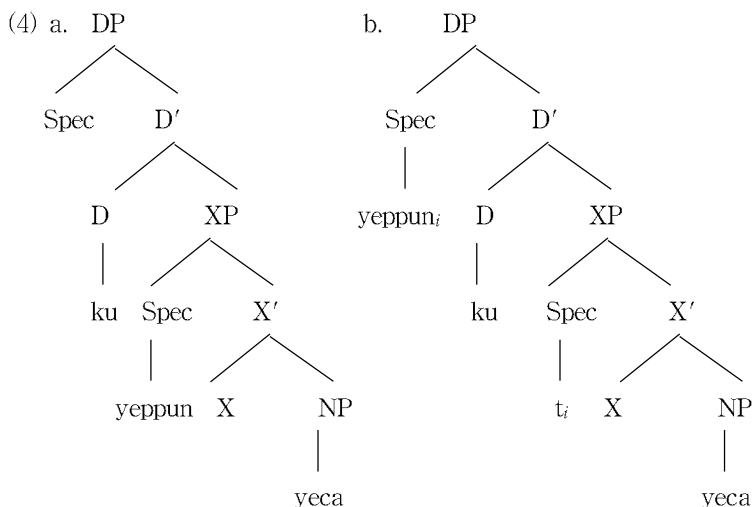
2) Here Poss means 'Possessive,' and 3Sg indicates third person singular.

3) The word having the symbol / means that it is FOCUSED.

4) I argue that the movement of an attributive adjective to the pre-determiner position is due to a NON-FOCUS feature.

5) Kim (1997) proposes that Korean adjectives are base-generated in [Spec,XP] in a DP structure like in (4a), and that the XP is a functional category called Agreement Phrase (AgrP).

6) See Kim (1997) for a detailed discussion of this kind of contrast between a focused adjective and a de-focused(non-focused) adjective.



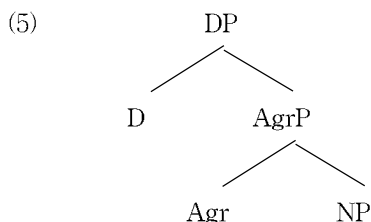
[Spec,DP] is the position where the de-focused (topic or non-focused) element can appear, while [Spec,XP] in the DP-structure (as in (4)) is the position showing contrastive FOCUS. In short, I divide pre-modifying adjectives into two categories: restrictive adjectives and nonrestrictive adjectives. Restrictive adjectives receive focal stress in [Spec,XP] between DP and NP while nonrestrictive adjectives lose focus feature and occur out of the scope of the determiner, presumably, in [Spec,DP].

3.1. The existence of a functional category between DP and NP

Ritter (1988) proposes that the determiner is split into D(eterminer) and AGR(ement). Her analysis on noun phrases reminds us of the Split-Infl Hypothesis (Pollock 1989) where Infl is divided into two functional categories: Tense and Agreement. Since her analysis the existence and nature of DP-internal functional categories has attracted a lot of attention.

Following Ritter (1988), Kim(1977) argues that Korean noun phrases contain two functional categories, namely, D(eterminer) and

Agr(eement), as illustrated in (5) below:



He contends that the pre-modifying adjective and relative clauses in Korean are base-generated in [Spec,AgrP]. With respect to the status of adjectives⁷⁾, he follows the assumption that adjectives are specifiers; Jackendoff (1977) suggests that adjectives are base-generated in the specifier positions of lexical categories and Cinque (1992) argues that adjectives are base-generated in the specifier position of functional categories.

3.2. The positions of the adjectives

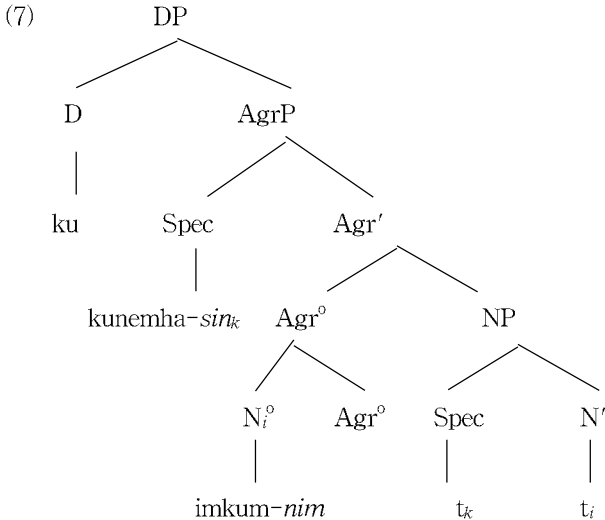
In this paper, I assume that the adjective is base-generated in the specifier position of NP and that if it has any features to be checked by those of the head noun, it moves to [Spec,AgrP] and checks the

7) Of course, the status of attributive pre-nominal adjectives has been controversial. The proposals may be divided into two groups. The first group contends that the adjectives are base-generated in specifier positions (Jackendoff 1977 and Cinque 1992). The second group proposes that the adjectives are heads (X^0); in Abney (1987) adjectives are assumed to take NPs as their complements, and in Valois (1991) adjectives are taken to adjoin to the head of Number Phrase. The latter position is motivated on the grounds that the adjectives and nouns in Romance and Germanic exhibit rich agreement. But in the case of Korean noun phrases agreement holds with the pre-nominal adjectives. This means that even though the adjective may adjoin to N^0 (or heads), it surely cannot be X^0 but must be XP. Given this, we can argue that the pre-nominal adjectives showing agreement with the head noun are not X^0 but XP and should then appear in the specifier positions. In addition, note that Jackendoff's conception of a specifier is not the standard one so that when he says adjectives are specifier he is saying something quite different from Cinque.

features against those of the head noun. When a pre-nominal adjective moves in [Spec,AgrP], the head noun N° in NP moves to Agr° to check the agreement features between the adjective and the noun.

Given the structure for Korean noun phrases presented in (5), the features of a pre-nominal (restrictive) adjective requires the adjective to move into the specifier position of AgrP, and the noun in N° moves to the Agr° position to check its features against the corresponding features occurring in [Spec,AgrP]. The positing of the functional category AgrP between DP and NP makes it possible to have agreement in plural ('-tul' in (8)) or honorific feature ('-sin' and '-nim' in (6)) between the raised adjective in [Spec,AgrP] and the head noun adjoined to Agr° . Then the structure for (6) will be (7), as shown below:

- (6) a. ku [AP kunemha-sin] imkum-nim
 the dignified-Hon king-Hon]
 'the dignified king'



- (8) a. *sonim-tul-uy tochakkwangkyeng-tul*
 guest-Pl-Gen⁸⁾ arrival scene-Pl
 'the scenes of the guests' arrival'
- b. * *Han sonnim-uy tochakkwangkyeng-tul*
 one guest-Gen arrival scene-Pl
 ('the scenes of one guest's arrival)
 (examples from J-Y. Yoon, 1990)

I simply assume that N° moves to Agr° to check the agreement features between the adjective and the head noun adjoined to Agr° , only when an adjective moves in [Spec,AgrP]. On the other hand, in case of a non-focused (nonrestrictive) adjective, as exemplified in (3b), the adjective moves into [Spec,DP] to get out of the scope of the determiner.

In summary, unlike Kim (1997), I argue that both adjectives and their head noun are base-generated inside NP and that the restrictive adjective moves into [Spec,AgrP] to check features while the nonrestrictive adjective further raises into [Spec,DP].

4. The structure of Numeral Classifier Constructions

This section is concerned with the movements of the head noun and the numeral classifier phrase in Korean numeral classifier constructions in DP-hypothesis. Kim (1997) argues that the Korean Numeral-Classifier is a kind of Quantifier which selects the head noun, and that the head noun itself may move up to D° due to a specificity feature (Mahajan, 1990) of the head noun.

4.1. The Movement of the numeral classifier and the head Noun in Korean Num-CI Constructions

Young Wha Kim (2007) presents the following examples.

8) Here Gen and Pl mean Genitive and Plural, respectively.

- (9) a. *sey* myeng-uy haksayng-*tul*
 three CL-Gen student-Pl
 b. * *han* myeng-uy haksayng-*tul*
 one CL-Gen student-Pl

She doesn't mention the existence of any number feature checking procedure between numeral classifiers and head nouns but simply assumes that the genitive numeral classifier moves into [Spec,DP] from the original position. I assume, however, that there should be a number agreement (or feature-checking) procedure between the numeral classifier phrase and its head noun, as illustrated in the above examples. The examples show us that there should be agreement feature checking between the numeral classifier and its head noun. To explain the (un)acceptability of examples in (9), I argue that the genitive phrase 'sey myeng-uy' should move from its base-generated position to [Spec,AgrP] and that the head noun should raise to the head of AgrP. Then they can check their number features in AgrP. This phenomenon assures us of our assumption of AgrP which enables the adjective and its head noun to check some features.

On the other hand, we can notice that the head nominal in Num-CL constructions cannot take the determiner, when the nominal appears before QP.

- (10) a. [DP (* i) [NP chayk] [QP twu kwon]]
 (this) book two CL
 '(these) two books'
 b. [DP (* i) [NP so] [QP twu mari]]
 (this) cow two CL
 '(these) two cows' or 'two heads of cows'
 c. [DP (* i) [NP cip] [QP yel chay]]
 (this) house ten CL
 '(these) ten houses'

Alan Kim (1995) characterizes a [Numeral +Classifier] sequence in

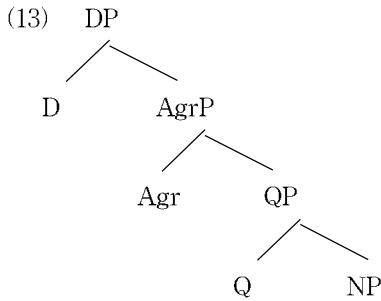
Korean as a Quantifier Phrase, as exemplified in (11) and (12):

(11) [_{QP} Numeral + Classifier]

(12) a. [_{NP} chayk] [_{QP} twu kwon]
 book two CL
 'two books'

b. * [twu] [_{NP} chayk] [kwon]
 two book CL

With respect to the structure of the Num-Cl in Korean, the Num-Cl (QP) constructions in Korean are selected by D⁰; AgrP can occur between DP and QP, as illustrated in (13).



The fact that head nominal in Num-CL constructions cannot take the determiner, if the nominal occurs before QP, leads us to think of a movement analysis of the head noun: the movement of N to D. The absence of the determiner in (10) is attributable to the movement of the noun to the determiner position. N⁰-to-D⁰ movement can be found in some European languages.

(14) a. [_{DP} Hus_i-et [_{NP} t_i]] (Danish)
 House-the

b. [_{DP} Omu_i-l [_{NP} t_i]] (Romanian)
 House-the

c. [_{DP} Kudo_i-S' [_{NP} t_i]] (Mordvian)
 House-the

- d. [_{DP} Mendi_i-a [_{NP} t_i]] (Basque)
 House-the

This analysis for European languages is advanced by Delsing (1988) and Taraldsen (1990). However, when an attributive adjective intervenes between the determiner and the head noun, the head noun cannot raise to the determiner. The Danish examples show in (15) below:

- (15) a. Hus-et
 house-the
 b. Det gamle hus
 the old house
 c. * Hus-et gamle

Delsing assumes that the noun in (15a) is moved from N^o to D^o. In (15b) the movement is prohibited because the adjective *gamle* 'old' is present, blocking the movement.

Longobardi (1991) also assumes that proper names may raise from N^o to D^o in some languages. In this way, he explains why an article (determiner) is obligatory when the phrase contains an adjective, as in (16) and (17).

- (16) a. Gianni (Italian)
 b. Il simpatico Gianni
 the sympathetic Gianni
 (17) a. Johann (German)
 b. Der sympathische Johann
 the sympathetic Johann

The same phenomenon can be seen in Korean Numeral-classifier constructions. Only when an intervening pre-nominal adjective appears between DP and NP, as shown in (18) below, can the determiner appear. It is probable that the pre-nominal adjective prevents the head noun from raising to the D^o position in Korean, just as the intervening

adjective prevents the head noun from moving to the determiner position as in (16)-(17). In contrast, when a pre-nominal adjective does not intervene between DP and NP, the head noun N^0 can move to the determiner position, as shown in (19):

- (18) a. [DP (i) [AgrP [AP kun] [NP sayngsun] [QP twu mari]]]
 (these) big fish two CL
 '(these) two big fish'
- b. [DP (i) [AgrP [AP pulkun] [NP cip] [QP yel chay]]]
 (these) red house ten CL
 '(these) ten red houses'
- (19) a. [DP sayngsun_i [QP twu mari [NP t_i]]]
 fish two CL
 'two fish'
- b. [DP cip_i [QP yel chay [NP t_i]]]
 house ten CL
 'ten houses'

It remains for us to determine what the position of *sayngsun* 'fish,' *so* 'cow,' or *cip* 'house' in (18) above is. Notice that even though the head nominal N^0 cannot move to D^0 when an pre-nominal adjective appears, the noun N^0 can appear before QP, as seen in (18). With respect to the position of the head noun, I propose that it is simply Agr^0 to which N^0 moves. Recall that when the pre-nominal adjectives occur in [Spec,AgrP], the head noun N^0 moves to Agr^0 to check the agreement features between the adjective and the noun.

If we assume that QP is base-generated preceding NP, the S-Structure for (20a) must be (21b).

- (20) a. [NP yeca] [QP twu myeng]
 woman two Cl
 'two women'
- b. * ku [NP yeca] [QP twu myeng]
 the woman two Cl

- (21) a. [_{NP} *yeca*] [_{QP} *twu myeng*]
 woman two CI
- b. [_{DP} [_{D°} [_{NP} *yeca*]]] [_{QP} *twu myeng*] [_{NP} *t_i*]
 woman two CI

If the head noun nominal *yeca* 'woman' in (20a) is base-generated preceding *twu myeng* 'two CI' without movement, as in (21a), we cannot account for why the form [Noun + QP] cannot take the determiner, as shown in (20b). If we assume the movement of the head noun to D°, as in (21b), we can explain why the form [Noun + QP] does not take the determiner: that is, once the head noun moves to D°, filling the D-position, just as in the movement of proper noun (name) to D° in Italian or German, the determiner cannot be inserted in the D°-position. In addition, the movement analysis can account for the base-generated word order [QP+NP].

Now a question arises: what makes the head noun nominal (in Num-CI constructions) move up to D°? Based on Mahajan⁹⁾ (1990) and Bhattacharya¹⁰⁾ (1996), I assume that the head noun in the

9) In Mahajan (1990) a syntactic definition of specificity is given, as follows:

- (i) a. Objects can be Case-marked either by V or by the head of the Object Agreement Phrase.
 b. Non-specific objects receives Case from V within the VP while specific objects are case-marked by the head of the Object Agreement Phrase.
 c. Specificity Filter: Only specific DPs can (and must) be Case-marked by Agreement while non-specific DPs must be case-marked in some other way.

10) Based on Mahajan (1990), Bhattacharya (1996) also makes use of specificity in analyzing the movement of Num-CI in Bangla. With regard to what drives the leftward NP-movement, Bhattacharya (1996) proposes that a presuppositional/specific feature of the Q head drives leftward movement of the NP, as in (i). The moved object gives a specific reading, as the English translation in (i) indicates:

- (i) [_{QP} [_{NP} *boi*]_i] [_Q *du-To*] *t_i* *dekhechi*
 book two-CI seen
 'I have seen the two books.'
- (ii) *ami* [_{du-To} [_{boi}]] *dekhechi*
 I two-CI book seen

numeral-classifier constructions moves up to D° due to a specificity feature of the head noun¹¹).

In short, a nominal element with a specificity feature moves out of its base-generated position to some higher position. Following this argument, I propose that the head noun in Numeral classifier constructions bearing a specificity feature moves out of its original position to D° to check its specificity feature against a corresponding feature borne out by D° .

5. Conclusion

With respect to the structure of noun phrases, I follow the argument of Kim (1997) that Korean noun phrases contain two functional categories, namely, D(eterminer) and Agr(eement). Pre-modifying adjectives are divided into two categories: restrictive adjectives and nonrestrictive adjectives. Restrictive adjectives receive focal stress in [Spec,AgrP] while nonrestrictive adjectives lose focus feature and occur out of the scope of the determiner, or in [Spec,DP].

Unlike Kim (1997), in this paper, I argues that both adjectives and their head noun are base-generated inside NP and that the restrictive adjective moves into [Spec,AgrP] to check some features while the

'I have seen two books.'

11) Let us consider the following examples:

(i) [DP [D^o [N^o *khong*]_i [QP se pwutay [NP t_i]]]] cwuseyo.
 bean three CL(bag) give me

'Please give me three notebooks.'

(ii) [DP[D^oce[_{AgrP} palan [Agr^o [N^o *khong*]_i] [QP se pwutay [NP t_i]]]] cwuseyo.
 blue bean three CL(bag) give me

'Please give me three bags of those blue beans.'

The semantic difference of *khong* between (i) and (ii) lies in the specificity of *khong*: *khong* in (i) is indefinite but specified while that in (ii) is not specified. The modifying adjective *palan* 'blue' specifies the referent of *khong* in (ii). If a customer says sentence (i) to a shop assistant, he assumes that the assistant knows what kind of beans he wants. In contrast, when sentence (ii) is uttered, the customer assumes that the assistant does not know what kind of beans he wants, and so he specifies the referent of beans that he wants to buy by adding a pre-nominal adjective.

nonrestrictive adjective further raises into [Spec,DP].

Concerning the structure of the numeral classifier construction, when some (such as number) agreement (or feature-checking) procedures take place between the genitive numeral classifier phrase and its head noun, the classifier phrase moves into [Spec,AgrP] from its original position and checks its features by the corresponding features of the head noun raised into the head of AgrP.

Finally, I assume the movement of the head noun to D° . This assumption can explain why the form [Noun + QP] does not take the determiner; that is, once the head noun moves to D° , filling the D-position, just as in the movement of proper noun (name) to D° in Italian or German, the determiner cannot be inserted in the D° -position. In other words, a nominal element with a specificity feature moves out of its base-generated position to some higher position.

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