

Word Order and NP Structure in Korean: A Constraint Based Approach ^{*}

Jong-Bok Kim ^a, Nam-Geun Lee ^b, and Yae-sheik Lee ^c

^a School of English, Kyung Hee University
Seoul, 130-701, Korea
jongbok@khu.ac.kr

^b Dept. of English Education, Chosun University
Kwangju, 501-759, Korea
nglee@chosun.ac.kr

^c Dept. of English Education, Kyungpook University
Daegu, 702-701, Korea
yaesheik@knu.ac.kr

Abstract. The flexibility of Korean NP structures has been well-observed, but there have been few attempts to provide precise syntactic structures. This paper first reviews the basic distributional properties of Korean prenominal expressions as well as constraints in ordering, and then sketches a constraint-based, lexicalist analysis for Korean NP structures. Arguing for surface-based syntactic structures with more flexible subcategorization requirements, the paper shows that this lexicalist-based analysis can in a simple manner capture the flexible orderings of prenominal expressions as well as generate proper and precise NP structures, without resorting to functional projections.

Keywords: NP structure, prenominal, determinant, ordering

1 Introduction

It is well-known that prenominal expressions in Korean display a high flexibility in their distributional possibilities. For example, the prenominal expression ‘honest’ can either precede or follow a determiner:

- (1) a. ku chakha-n haksayng ‘the honest student’
the honest-MOD student
b. chakha-n ku haksayng ‘the honest student’
honest-MOD the student

Such prenominal expressions can be largely classified into two: deterministic ones and phrasal-prenominal ones.¹ The deterministic prenominals, which we call determinants here, roughly correspond to determiners in English (cf. Jackendoff 1977, Huddleston and Pullum 2002 for English). These lexical determinants can be classified as follows:

- (2) a. characteristic: *say* ‘new’, *hun* ‘old’, *yes* ‘old’, *ttan* ‘other’ ...
b. indicative: *i* ‘this’, *ku* ‘the’, *ce* ‘that’, ...

^{*} Many ideas given here are from Kim (2010). We thank three reviewers for the constructive comments and suggestions.

¹ Hong (2010) classifies prenominal elements into two groups in accordance with their distributional possibilities: specifiers and modifiers. These two groups are similar to our classifications: lexical determinants and phrasal prenominals. Prenominal specifiers in Hong (2010) include most of the lexical determinants given in (2) whereas Hong’s modifiers consist of relative clauses and genitive NPs. Such classifications can be also found in traditional literature including Chang (1995), Sohn (1999), Lee and Ramsey (2000), and others. See Hong (2010) for further discussion.

- c. interrogative: *ene* ‘which’, *mwusen* ‘what’, *etten* ‘which’,...
- d. quantificational: *motun* ‘all’, *myech* ‘some’, *yelye* ‘several’,...
- e. numeral: *han* ‘one’, *twu* ‘two’, *sey* ‘three’,...

Unlike these lexical determinants, there are also phrasal prenominal expressions like adjectival elements, relative clauses, and genitive-marked possessive NPs:²

- (3) a. Adjectival:
 acwu [khu-ko] [pissa-n] [ppalka-n] chayk
 very big-and expensive-MOD red-MOD book
 ‘a very big and expensive read book’
- b. Relative:
 [Mia-ka ilk-un] ku chayk
 Mia-NOM read-MOD the book
 ‘the book that Mia read’
- c. Genitive:
 [Mia-uy] ku chayk
 Mia-GEN the book
 ‘Mia’s book’

The ordering of these phrasal prenominal elements is much more flexible than that of the lexical determinants. Consider some illustrative examples:

- (4) a. [Mia-ka ilk-un] [ku] [pissa-n] chayk
 Mia-NOM read-MOD the expensive book
 ‘the expensive book that Mia read’
- b. [ku] [Mia-ka ilk-un] [pissa-n] chayk
- c. [ku] [pissa-n] [Mia-ka ilk-un] chayk

As shown here, the relative clause ‘Mia read’ can precede or follow the indicative determinant *ku*. Its position is also free with the adjectival modifier *pissa-n* ‘expensive’.

In principle, prenominal modifiers occur in almost any order, and some orders are more marked than others. However, there also exist certain ordering constraints which a proper grammar needs to capture. In this paper, we offer a constraint-based, lexicalist approach that can capture such a complex ordering system in the NP structure.

2 Basic Ordering Properties

As is well known, the internal NP structure in Korean is a lot different from the one in English. Some of the language peculiar properties can be summarized as following:

Property 1: The (indicative) determinant is optional and even the countable noun requires no determinant:

- (5) a. ku haksayng-i tali-ess-ta
 the student-NOM run-*pst*-DECL
 ‘The student ran.’
- b. haksayng-tul-i tali-ess-ta
 student-PL-NOM run-*pst*-DECL
 ‘(The) Students ran.’

² The adjectival expression *pissa-n* ‘expensive-MOD’ or *chakha-n* ‘honest-MOD’ is derived from the adjectival predicate *pissa-ta* ‘expensive’ *chakha-ta* ‘honest’ with the attachment of the prenominal modifying suffix *-n*. Instead of treating this as a subject relative clause here, for the reason of simplicity, we gloss this simply as an adjectival expression. See Chang (1995) and Kim (2004) and references therein.

- c. haksayng-i tali-ess-ta
 student-NOM run-*pst*-DECL
 ‘(The/A) student(s) ran.’

Unlike English, the language does not require the countable singular noun to combine with a determiner. The (in)definiteness of the NP is interpreted, dependent upon the context. That is, the context provides a clue to its definiteness:

Property 2: Indicative and characteristic determinants cannot be repeated. Though having to do with semantics, no two indicative determinants or characteristic determinants can occur together:

- (6) a. *ku ce chayk ‘the that book’
 b. *say ttan chayk ‘new other book’

Even an adjectival element between the two indicative elements cannot save the repetition as in **ku chakha-n ku haksayng* ‘the honest the student’.

Property 3: Interrogative determinants can occur either before or after the characteristic or indicative determinant when interpreted as an indefinite article:

- (7) a. ku enu nwukwu-ka ku-uy nwumul-ul ttak-a cwul-kkayo?
 the which who-NOM he-GEN tears-ACC wipe-COMP give-Q
 ‘Who can wipe out his tears?’
 b. enu ku nwukwu-ka ku-lul swip-key yongsehal swu iss-ul-kka?
 which the who-NOM he-ACC easily forgive can exist-FUT-Q
 ‘Who can forgive him so easily?’

Leaving aside the exact function of *enu* here, we can at least observe the flexible distribution of the determinant. Consider the corpus examples in the following:

- (8) a. i chayk-i [ku etten chayk-pota] cwungyo-hata
 this book-NOM the some book-than importance-do
 ‘This book is more important than any book.’
 b. cepeney [etten ku salam-i] na-eykey kopayk-ul hayesse
 last time some the man-NOM I-DAT confess-ACC did
 ‘Last time, the certain man confessed to me.’

As attested by such naturally occurring data, the indefinite uses of the determinant *etten* can appear either before or after the indicative determinant.

Property 4: Numerals can be only in the post-determinant position. They can neither modify a fully saturated NP nor can appear with a quantifier:

- (9) a. ku twu [salam] ‘the two men’
 b. *twu [ku salam] ‘two the men’
 c. *twu [motun salam] ‘two all men’

The numeral cannot precede a determinant, but must appear only immediately preceding a head noun or a classifier.³ To be more specific, the numeral expression combines only with a lexical noun, indicating that it behaves like a lexical compound.

Property 5: Characteristic determinants can only be in the pre-head noun position. Korean has a handful number of characteristic determinants, which are canonically monosyllabic, but these always appear closest to the head noun:

³ The numeral with a classifier can appear in various positions. For example, as in *haksayng twu myeong* ‘student two classifier’, the unit can appear. See Kim and Yang (2006) for the discussion of numeral classifier constructions and references therein.

- (10) a. khu-n say chayk ‘big new book’
 b. *say khu-n chayk ‘new big book’

Property 6: Adjectival, relative, and genitive determinants behave a lot differently from lexical determinants. As noted earlier, these phrasal determinants are quite flexible in their distributional possibilities. For example, the genitive and adjectival modifier are interchangeable in terms of ordering:

- (11) a. [Mia-uy] [acwu khu-n] chayk
 Mia-GEN very big-MOD book
 b. [acwu khu-n] [Mia-uy] chayk
 very big-MOD Mia-GEN book

Given the three phrasal determinants, the possible ordering will then be total six. All these factorial possibilities are in fact acceptable:

- (12) a. [Mia-ka ilk-un] [acwu khu-n] [Chelswu-uy] chayk
 Mia-NOM read very big-MOD Chelswu-GEN book
 ‘Chelswu’s very big book that Mia read’
 b. [Mia-ka ilk-un] [Chelswu-uy] [acwu khu-n] chayk
 c. [acwu khu-n] [Mia-ka ilk-un] [Chelswu-uy] chayk
 d. [acwu khu-n] [Chelswu-uy] [Mia-ka ilk-un] chayk
 e. [Chelswu-uy] [acwu khu-n] [Mia-ka ilk-un] chayk
 f. [Chelswu-uy] [Mia-ka ilk-un] [acwu khu-n] chayk

As shown here, the relative, adjectival, and genitive phrasal determinants are all interchangeable, allowing total 6 ordering possibilities. In (12a), we have the ordering of the object relative clause, adjectival modifier (relative clause), and genitive NP. The ordering from (12b) and (12f) also show us that these three can be freely permuted though certain preferences can be given to one of these depending on the context.

3 Simple NP Structures

3.1 NPs with an Indicative Determinant

As we have seen earlier, even though prenominal determinants have great freedom in their distributions, there are certain constraints that the grammar needs to observe.

The first thing to note concerns the optionality of determinants. Their optionality has often led literature to assume that the Korean NP structure is non-configurational or lacks the category D.⁴ However, as we have noted, the absence of the determiner does not mean its non-existence in the interpretation of NP structures: context provides its deterministic meaning. For example, the countable NPs in (13) do not have any determiners, but are acceptable in the language:

- (13) a. haksayng-i sensayngnim-ul manna-ss-ta
 student-NOM teacher-NOM meet-*pst*-DECL
 ‘(lit.) Student met teacher.’
 b. kay-ka cic-nun-ta
 dog-NOM bark-PRES-DECL
 ‘(lit.) Dog barks.’

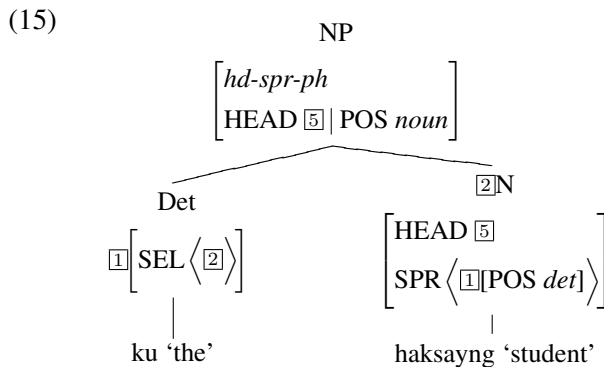
⁴ This in turn means that the NP structure is not projected into the intermediate category or the Det cannot serve as the head. However, there are also DP analyses suggested for Korean (cf. Hong 2010), basically motivated from Abney (1987) and other subsequent analyses for English within the framework of the traditional movement approaches.

The context assigns either an indefinite or definite interpretation to the NPs here, even a singular or plural reading. As such, Korean nouns lack Det and require no plural marking.

Even though the appearance of determiners is optional, they are controlled by certain ordering restrictions when they appear. In particular, as we have seen, indicative determinants such as *ku* ‘the’ or *ce* ‘that’ cannot be repeated; they cannot follow a numeral like *twu* ‘two’ as in **twu ku salam* ‘two the men’. To capture such fundamental ordering constraints, we assume that indicative determinants, corresponding to English definite articles, are selected by the head noun. In addition, we also assume that the determinants are selecting their heads. This bi-directional selection can be represented in the lexical entries for common nouns (typed as *cn*) and indicative determinants (*det-ind*):⁵

$$(14) \quad \begin{array}{l} \text{a.} \left[\begin{array}{l} \textit{cn} \\ \text{FORM} \langle \textit{haksayng} \rangle \\ \text{HEAD} \mid \text{POS} \textit{ noun} \\ \text{SPR} \langle \text{Det} \rangle \end{array} \right] \\ \text{b.} \left[\begin{array}{l} \textit{det-ind} \\ \text{FORM} \langle \textit{ku} \rangle \\ \text{HEAD} \mid \text{POS} \textit{ det} \\ \text{SEL} \langle \left[\begin{array}{l} \text{POS} \textit{ noun} \\ \text{SPR} \langle \text{Det} \rangle \end{array} \right] \rangle \end{array} \right] \end{array}$$

The common noun *haksayng* now requires a determinant specifier as its subcategorization requirement.⁶ Meanwhile, the determinant *ku* ‘the’ is taken to be a functor selecting its nominal head through the feature SEL (select).⁷ These lexical entries will then project a structure like the following:



This structure is similar to the English counterpart in that the head noun combines with its determiner specifier serving as the functor. The combination here is licensed by the grammar rule, Head-Specifier Rule, one of the well-formed conditions on phrasal elements:⁸

$$(16) \quad \text{Head-Specifier Rule:} \\ \left[\begin{array}{l} \textit{hd-spr-ph} \\ \text{SPR} \langle \quad \rangle \end{array} \right] \rightarrow \boxed{1}, \mathbf{H} \left[\begin{array}{l} \text{SPR} \langle \boxed{1} \rangle \end{array} \right]$$

⁵ For the typed feature structure system, see Sag et al. (2002), Kim (2004). The feature attributes we use here include COMPS (complements), GCASE (grammatical case), MOD (modifying), POS (parts of speech), SPR (specifier), SEL (selection).

⁶ The italicized words *cn* and *det-ind* here mean the type of these two feature structures.

⁷ This bidirectional selection is motivated by both syntactic and semantic reason too. For syntactic motivations in English, see Pollard and Sag (1994), Van Eynde (2007) and Kim and Sells (2009). For the semantic motivations in Korean, see Kim (2006).

⁸ The head-specifier phrase and head-modifier phrase are subtypes of the head-functor phrase in which the nonhead functor (specifier and modifier) selects the head expression (see Van Eynde 2007). Just like the traditional X-bar system, the grammar here also assumes there are other well-formed phrases such as head-complement and head-modifier phrases. See Kim (2004) for the other well-formed phrases in Korean.

The grammar rule basically specifies that a head element can combine with its specifier, forming a well-formed head-specifier-phrase. The idea that the head noun requires a determiner in Korean departs from the traditional wisdom in which the determiners are taken to be adnominal adjuncts, but it straightforwardly captures many ordering possibilities as well as restrictions.

3.2 Bare NPs

As we have noted, canonical uses of the common noun or complex noun do not accompany a determiner:

- (17) hwakana-n sensayngnim-i sikhulewu-n haksayng-ul pnull-ess-ta
 angry-MOD teacher-NOM noisy-MOD student-ACC call-*pst*-DECL
 ‘The/A angry teacher called a/the noisy student.’

Even though there is no definite or indefinite article, the grammar needs to offer a way of interpreting bare NPs. That is, we need to project such bare NPs as saturated ones. An economical way is to assume a unary Head-Only Rule like the following:

$$(18) \quad \text{NP} \left[\begin{array}{l} \textit{hd-only-ph} \\ \text{POS } \textit{noun} \\ \text{VAL | SPR} \langle \quad \rangle \end{array} \right] \rightarrow \mathbf{H} \left[\begin{array}{l} \text{POS } \textit{noun} \\ \text{VAL | SPR} \langle \text{Det} \rangle \end{array} \right]$$

The rule basically allows an N or N' head requiring a determiner (as noted by its SPR value) to be directly projected into a saturated NP without combining it. This kind of direct pumping-up rule will then allow us to generate determiner-less NPs.

3.3 NPs with a Quantificational Determinant

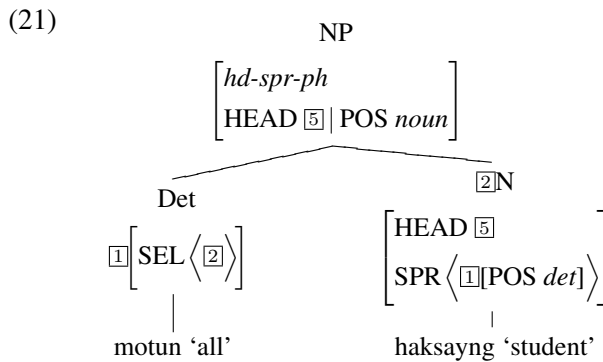
The main difference of the quantificational determiner from the indicative determiner is that the former can combine with any type of nominal expression:

- (19) a. motun [haksayng] ‘all students’
 all student
 b. ku motun [chakha-n haksayng] ‘all the honest students’
 the all honest-MOD student
 c. motun [ku chakha-n haksayng] ‘all the honest students’
 all the honest-MOD student

As illustrated here, the quantificational determiner *motun* can select either a lexical noun, an N', or a saturated NP. One can assume that quantificational determiners can combine with any nominal expression, N, N' or NP. This would then license all these three ordering possibilities. However, as in (19b) and (19c), it can be preceded or followed by the indicative determiner, implying that in such cases, it cannot be a determiner. The direction we take is that even though there is no difference in the POS value, the quantificational determiner can function either as a specifier or a modifier, as represented in the following:

$$(20) \quad \begin{array}{ll} \text{a.} & \left[\begin{array}{l} \textit{det-quant} \\ \text{FORM} \langle \textit{motun} \rangle \\ \text{HEAD | POS } \textit{det} \\ \text{SEL} \left\langle \left[\begin{array}{l} \text{POS } \textit{noun} \\ \text{SPR} \langle \textit{X} \rangle \end{array} \right] \right\rangle \end{array} \right] \\ \text{b.} & \left[\begin{array}{l} \textit{det-quant} \\ \text{FORM} \langle \textit{motun} \rangle \\ \text{HEAD | POS } \textit{det} \\ \text{MOD} \langle [\text{POS } \textit{noun}] \rangle \end{array} \right] \end{array}$$

The lexical entry (20a) specifies that *motun* selects a noun or an N' still seeking for a specifier (X). Meanwhile, (20b) indicates that *motun* functions as a modifier to a nominal expression, saturated or not. Given these dual functions of the quantificational determiner, the present analysis then can generate two different structures. When it functions as a specifier, we would have the following simple saturated NP structure:



The structure is just like the one for *all students* in which *all* functions as a determiner. As assumed, when the quantificational determiner functions as a modifier, we would have the following structures:

- (22) a. $[_{NP} \textit{motun} [_{NP} \textit{ku} [_N \textit{haksayng}]]]$ 'all the student'
 b. $[_{NP} \textit{ku} [_{N'} \textit{motun} [_N \textit{haksayng}]]]$

In both structures, the pronominal element *motun* is selecting a nominal expression. In (22a), it combines with a full NP whereas in (22b) it selects a noun head.

One thing to note here is that even though we take these quantificational expressions as determinants, they are not required by the head noun. Such modifying cases are thus different from the head-specifier phrases with bidirectional selections, and licensed by the following head-modifier rule:

- (23) Head-Modifier Rule:
 $[hd-modifier-ph] \rightarrow [MOD \langle \boxed{2} \rangle], H\boxed{2}X$

The difference from the head-specifier-phrase is thus that the head-modifier-phrase does not have a bidirectional selection: it is only the functor (modifier) that bears the feature MOD.

3.4 NPs with an Interrogative Determinant

The interrogative determinants like *ene* 'which' or *mwusen* 'what' combine only with an unsaturated NP. Consider the following:

- (24) a. *ene chayk-i inki-ka iss-e?*
 which book-NOM popularity-NOM exist?
 'Which book is popular?'
 b. *ku ene chayk-i inki-ka iss-kess-e?*
 the which book-NOM popularity-NOM exist?
 'No book will be popular.'
 c. **ene ku chayk-i inki-ka iss-e?*
 which the book-NOM popularity-NOM exist?
 'Which book is popular?'

The expression in (24a) is interrogative, but the one in (24b) where *ene* follows the indicative determinant is not an interrogative but an indefinite determinant. (24c) illustrates that the interrogative cannot combine with a saturated NP (cf. Chang 1995, Sohn 1999, Hong 2010). That is, the

interrogative expression is an indefinite determinant when not closing off the noun phrase. Further examples clearly show this fact:

- (25) a. i chayk-i [ku etten chayk-pota] cwungyo-hata
 this book-NOM the which book-than importance-do
 ‘This book is more important than any book.’
- b. [ku ene chayk-to] i chayk-ul taysinha-l swu eps-ta
 the some book-also this book-ACC replace-MOD can not.exist-DECL
 ‘No book can replace this book.’

The observations imply that the interrogative determinant will have the following lexical entry:

- (26)
$$\left[\begin{array}{l} \textit{det-inter} \\ \text{FORM } \langle \textit{ene} \rangle \\ \text{HEAD} \mid \text{POS } \textit{det} \\ \text{SEL} \left\langle \left[\begin{array}{l} \text{POS } \textit{noun} \\ \text{SPR } \langle \textit{Det} \rangle \end{array} \right] \right\rangle \\ \text{QUE } + \end{array} \right]$$

The interrogative determinant is thus just like the indicative determinant, functioning as the specifier of an unsaturated NP. This lexical entry will block us from generating cases (24c) where it combines with a full NP.

However, when the determinant modifies a nominal expression (N, N', or even a full NP), it is used only as indefinite:

- (27)
$$\left[\begin{array}{l} \textit{det-indef} \\ \text{FORM } \langle \textit{ene} \rangle \\ \text{HEAD} \mid \text{POS } \textit{det} \\ \text{MOD} \left\langle \left[\text{POS } \textit{noun} \right] \right\rangle \end{array} \right]$$

The use of *ene* as an indefinite post-nominal element thus allows the determinant to combine either a saturated NP as in *ene ku nwuka* ‘some the who’ or an unsaturated one *ku ene nwuka* ‘the some who’.

As pointed out by a reviewer, this analysis differentiates the interrogative use of *ene* from the indefinite use of *ene*. It is natural to assign two different entries for two different meanings and their position tell us the different uses. The interrogative use is in the complementary distribution with the indicative one to avoid any clash in meaning between definiteness and indefiniteness.

4 NPs with Phrasal Determinants

As we have noted earlier, phrasal elements like relative clauses and possessive NPs can also function as a prenominal expression. In particular, observe the following:

- (28) a. Mia-uy chinkwu ‘Mia-GEN friend’
 b. ku [Mia-uy] chinkwu ‘the Mia-GEN friend’
 c. [Mia-uy] [ku chinkwu] ‘Mia-GEN the friend’

These simple data indicate that the possessive NP can select either a full NP or an unsaturated NP, as quantificational determinants.⁹ The genitive marked noun will have a lexical entry like the following:¹⁰

⁹ The possibility of examples like (28b) hinders us from taking the genitive NP as an NP specifier.

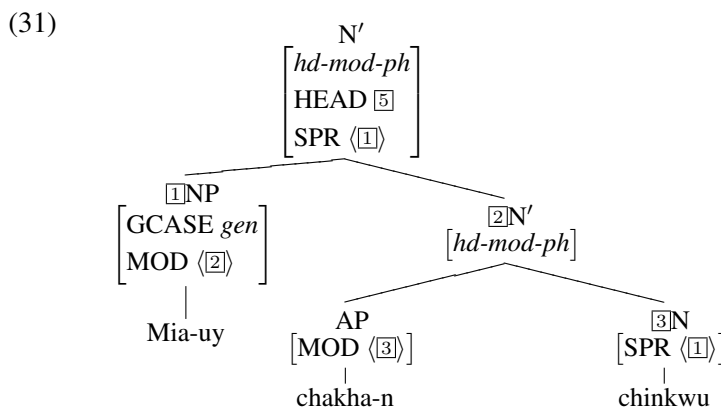
¹⁰ The feature GCASE stands for grammatical case whereas SCASE means semantic case. See Kim (2004).

- (29) $\left[\begin{array}{l} \textit{noun-gen} \\ \text{FORM } \langle \textit{Mia-uy} \rangle \textit{ 'Mia-GEN'} \\ \text{HEAD } | \text{GCASE } \textit{gen} \\ \text{MOD } \langle \{ \textit{nominal} \} \rangle \end{array} \right]$

The difference from English is thus that the genitive NP is not a specifier but serves as a functor (a modifier) to any nominal category. The categorical freedom of the selected head then licenses the following three variations:

- (30) a. *Mia-uy chinkwu* ‘Mia-GEN friend’
 b. *Mia-uy chakha-n chinkwu* ‘Mia-GEN honest-MOD friend’
 c. *Mia-uy ku chakha-n chinkwu* ‘Mia-GEN the honest-MOD friend’
 d. *ku Mia-uy chakha-n chinkwu* ‘the Mia-GEN honest-MOD friend’

Let us consider the structure of (30b) that the present analysis generates:¹¹



The head noun *chinkwu* ‘friend’, requiring a specifier, is modified by the adjectival adnominal *chakha-n* ‘honest-MOD’. This *head-modifier-ph* again combines with the functor, genitive NP, forming a modifier phrase. The final expression still requires a specifier which will be discharged by the Head-Only Rule.

The genitive NP can also select a full NP as represented in the following for (30c):

- (32) $[_{NP} \textit{Mia-uy} [_{NP} \textit{ku} [_{N'} \textit{chakha-n} [_{N} \textit{chinkwu}]]]]]$

The difference from the one in (31) is that the genitive NP *Mia-uy* now selects a full NP. By allowing the genitive NP to be a functor combining with any level of nominal expression, the analysis will further allow a structure like the following:

- (33) $[_{NP} \textit{ku} [_{N'} \textit{Mia-uy} [_{N'} \textit{chakha-n} [_{N} \textit{chinkwu}]]]]]$

Different from (32), this structure licenses the genitive NP to modify an N', forming another N'h. The indicative determinant *ku* then can combine with this intermediate phrase, saturating the required SPR (specifier value).

When interacting with other lexical determinants, relative clauses and genitive NPs also have flexible distribution, as we have seen. For example, they can occur before or after a quantificational determinant:

- (34) a. *i motun Mia-uy chayk-tul*
 this all Mia-GEN book-PL

¹¹ To be more precise, this structure is a simplified one. The SPR value required by the head noun can be discharged by the Head-Only Rule at either at the final stage or at the phrasal level of *chakha-n chinkwu* ‘honest-MOD friend’.

- b. i Mia-uy motun saylowu-n chayk-tul
 this Mia-GEN all new book-PL
- c. Mia-uy motun i saylowu-n chayk-tul
 Mia-GEN all this new book-PL

Since the quantificational determinant is also selecting any nominal expression, this freedom is a natural expectation.

5 Conclusion

Korean NP structures are, as is well-known, quite flexible in terms of the ordering of internal elements. However, this does not mean that there exist no ordering constraints. The challenges for theoretical or computational approaches have been to constrain the word ordering between various prenominal expressions while keeping their freedom in distributional possibilities as much as possible.

In this paper, we have sketched a direction for this within a constraint-based, lexicalist framework. The main gist of the analysis is to assign the selectional properties to the prenominal determinants (with the feature SEL). This SEL feature is also differentiated from the MOD feature which is not linked to bidirectional selections. This analysis, departing from the traditional wisdom where all these prenominal determinants are taken to be simple modifiers, can provide us with an effective way of constraining the ordering possibilities among prenominals as well as precise NP structures.

References

- Abney, Steven. 1987. *The English noun phrase in its sentential aspect*. Ph.D. dissertation, MIT.
- Chang, Suk-Jin. 1995. *Korean*. John Benjamins Publishing.
- Fukui, Naoki, and Hiromu Sakai. 2003. The visibility guideline for functional categories: Verb raising in Japanese and related issues. *Lingua* 113:321–375.
- Huddleston, Rodney D. and Geoffrey K. Pullum. 2002. *The Cambridge Grammar of the English Language*. Cambridge University Press.
- Hong, Yong-Cheol. 2010. Peripheral Nominal Modifiers and Noun Phrase Structure in Korean (in Korean). *Studies in Generative Grammar* 20.1: 27–50.
- Jackendoff, Ray. 1977. *X-bar Syntax: A Study of Phrase Structure*. MIT Press, Cambridge, Mass.
- Kim, Jong-Bok. 2004. *Korean Phrase Structure Grammar*. (In Korean). Hankuk Publishing.
- Kim, Jong-Bok. 2006. Minimal Recursion Semantics: An Application into Korean. *Journal of the Linguistic Association of Korea*, 14.2: 59–85.
- Kim, Jong-Bok. 2010. On the NP Structure and Prenominal Ordering in Korean. To appear in *Studies in Language*.
- Kim, Jong-Bok, and Jahyung Yang. 2006. Processing Korean numeral classifier constructions in a typed feature structure grammar. Petr Sojka, Ivan Kopecek and Karel Pala (Eds.): *TSD (Test, speech and dialogue): LNAI 3206*, pp. 1.8. Springer-Verlag Berlin Heidelberg.
- Lee, Iksop and Robert Ramsey. 2000. *The Korean Language*. State University of New York Press.
- Sag, Ivan, Tom Wasow, and Emily Bender. 2002. *Syntax: A Formal Introduction*. CSLI Publications.
- Sohn, Ho-Min. 1999. *The Korean Language*. Cambridge University Press.
- Van Eynde, Frank. 2007. The Big Mess Construction. In Stefan Müller (ed.), *The Proceedings of the 14th International Conference on Head-Driven Phrase Structure Grammar*, pp. 415–433, Stanford: CSLI Publications.