TYPES OF SCRAMBLING IN KOREAN SYNTAX

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ABSTRACT

EUNSUK LEE: Types of Scrambling in Korean Syntax

(Under the direction of Randall Hendrick)

This dissertation aims to deepen our understanding of free word order phenomena or "scrambling." It offers a unified approach to some fundamental limitations on scrambling both in clauses and in noun phrases of Korean. These would have been attributed to a headedness parameter in earlier syntactic theories but are problematic in more recent syntactic theories in the minimalist framework where such a parameter cannot be naturally stated.

Korean scrambling has several limitations. It is blocked from preposing the verb. It does not commute noun phrases that bear the same Case, nor does it prepose the right member of a small clause. I argue that these descriptive generalizations follow from a single, elegant restriction: only semantically complete or 'saturated' constituents can scramble. My contention is that this restriction is part of Universal Grammar and should be an organizing principle of all natural languages. The universality of the restriction is challenged by scrambling phenomena in Turkish which have different properties than their Korean counterparts. This variation is explained by recognizing two types of scrambling distinguished by their landing site.

TABLE OF CONTENTS

ABBREVIATIONS vii

CHAPTER 1. INTRODUCTION 1

1.1 ISSUES IN THE STUDY OF SCRAMBLING 1

1.2 ORGANIZATION 9

CHAPTER 2. BACKGROUND ASSUMPTIONS ABOUT KOREAN CLAUSAL ORGANIZATION 11

2.1 INTRODUCTION 11

2.2 TWO DIFFERENT VIEWS OF SCRAMBLING WITHIN GENERATIVE GRAMMAR 14

2.2.1 SCRAMBLING AS BASE-GENERATION 15

2.2.2 SCRAMBLING AS MOVEMENT 19

2.2.3 THE ADVANTAGE OF THE MOVEMENT APPROACH 22

2.3 TWO TYPES OF SCRAMBLING 25

2.3.1 A-SCRAMBLING 26

2.3.2 A-BAR SCRAMBLNG 28

2.4 SCRAMBLING AS DISTINCT FROM TOPICALIZATION 33

2.4.1 BASIC PROPERTIES OF TOPICALIZATION 33

2.4.2 SCRAMBLING VS. TOPICALIZATION 38

2.5 SUMMARY 41

CHAPTER 3. A SEMANTIC RESTRICTION ON SCRAMBLING IN KOREAN 43

3.1 INTRODUCTION 43

3.2 RESTRICTIONS ON SCRAMBLING IN KOREAN 45

3.2.1 NO RIGHTWARD SCRAMBLING OVER THE VERB 45

3.2.2 NO LEFTWARD SCRAMBLING OVER THE SAME CASE -MARKER 47

3.2.3 SCRAMBLING AND SMALL CLAUSES 51

3.3 A HYPOTHESIS BASED ON THEMATIC ROLES 54

3.3.1 THEMATIC ROLES 54

3.3.2 AN EXPLANATION WITH THEMATIC ROLES 57

3.4 A HYPOTHESIS BASED ON SEMANTIC COMPLETENESS 67

3.4.1 SEMANTIC COMPLETENSS VS. SEMANTIC INCOMPLETENESS 67

3.4.2 AN EXPLANATION WITH SEMANTIC COMPLETENESS 69

3.5 THE ADVANTAGE OF THE HYPOTHESIS BASED ON SEMANTIC COMPLETENESS 78

3.6 SUMMARY 83

CHAPTER 4. THE SEMANTIC RESTRICTION AS IT INTERACTS WITH CLAUSE STRUCTURE 85

4.1 INTRODUCTION 85

4.2 WHY DO PREDICATES FAIL TO SCRAMBLE? 89

4.2.1 THETA-ROLES 89

4.2.2 THETA-ROLES AS ANAPHORS (WILLIAMS 1989) 90

4.3 A CATEGORICAL BAN AGAINST PREDICATES SCRAMBLING IN UG 94

4.3.1 PREDICATE SCRAMBLING IN TURKISH 94

4.3.2 RECONSTRUCTION AND A-BAR SCRAMBLING 100

4.3.3 PREDICATE SCRAMBLING AS A-BAR SCRAMBLING (IN TURKISH SUBSCRAMBLING) 105

4.3.4 PREDICATE SCRAMBLING AS A-BAR SCRAMBLING (IN KOREAN VP-FOCUS CONSTRUCTION) 109

4.4 SUMMARY 113

CHAPTER 5. THE SEMANTIC RESTRICTION AS IT INTERACTS WITH NOUN PHRASE STRUCTURE 115

5.1 INTRODUCTION 115

5.2 THE STRUCTURE OF NOUN PHRASES IN KOREAN 119

5.2.1 ABNEY'S (1987) DP-HYPOTHESIS 119

5.2.2 YOON'S (1990) DELIMITER PHRASE ANALYSIS 120

5.2.3 THE POSITION OF DEMONSTRATIVES, POSSESSIVE PHRASES, AND ADJECTIVE PHRASES 126

5.2.4 THE CONFIGURATIONAL STRUCTURE OF KOREAN NOUN PHRASES 129

5.3 SCRAMBLING IN NOUN PHRASES 130

5.3.1 SCRAMBLING IN NOUN PHRASES BETWEEN DEMONSTRATIVES AND GENITIVE PHRASES 131

5.3.2 SCRAMBLING IN NOUN PHRASES BETWEEN DEMONSTRATIVES AND COMPLEMENT NOUNS 132

5.3.3 SCRAMBLING IN NOUN PHRASES BETWEEN ADJECTIVE PHRASES AND COMPLEMENT PHRASES.. 136

5.4 EXPLANATION FOR SCRAMBLING IN NOUN PHRASES 138

5.4.1 SCRAMBLING TO THE SPEC OF DELP 139

5.4.2 SCRAMBLING IN NOUN PHRASES AS A-BAR SCRAMBLING 145

5.4.3 THE BAN ON THE SCRAMBLING OF THE NOUN IN NOUN PHRASES 148

5.5 SUMMARY 153

CHAPTER 6. RESULTS AND CONCLUSION 155

REFERENCES 159

ABBREVIATIONS

ACC	Accusative
AGR	Agreement
COMP	Complementizer
DCL	Declarative particle
DAT	Dative
DEL	Delimiter
DEM	Demonstrative
D	Determiner
FOC	Focus
GEN	Genitive
HON	Honorific
INFL	Inflection
LF	Logical Form
LOC	Locative
NEG	Negation
NMZ	Nominalizer clitic
NOM	Nominative
OBJ	Object
OP	Operator
OSV	Object Subject Verb
OVS	Object Verb Subject

PF	Phonetic Form
PL	Plural
POSS	Possessive
PRES	Present
PROG	Progressive
PST	Past
Q	Question particle
SG	Singular
SOV	Subject Object Verb
SVO	Subject Verb Object
SUB	Subject
T	Tense
Θ	Thematic
TOP	Topic
VSO	Verb Subject Object
VOS	Verb Object Subject

CHAPTER 1. INTRODUCTION

1.1 ISSUES IN THE STUDY OF SCRAMBLING

Some languages, such as English, have a fixed word order in most circumstances. Others allow considerable variation in how noun phrases of a given sentence are linearly ordered without a change in semantic value. In Korean, for instance, a nominative noun phrase and an accusative noun phrase are often inverted in sentences involving transitive verbs, as illustrated in (1-1) and (1-2). This variation in word order is referred to in the literature as "scrambling."

(1-1) 철수가 책을 읽는다

Chelswu-ka chyak-ul ilk-nun-ta

Chelswu-NOM book-ACC read-PRES-DCL

'Chelswu reads a book.'

(1-2) 책을 철수가 읽는다

chyak-ul Chelswu-ka ilk-nun-ta

book-ACC Chelswu-NOM read-PRES-DCL

'*Chelswu reads a book.'*

Ross (1967) was the first generative treatment of scrambling. Ross proposed a transformational rule to account for facts of this type. Although various approaches have been proposed within generative grammar since then, the free word order phenomenon still continues to provide a useful test for hypotheses about universal grammar.

This dissertation is written from the perspective of the principles and parameters approach to syntactic structure and aims to develop our understanding of scrambling in Korean from that perspective. I investigate this issue by asking the following questions: 1) Can we present a unified approach to the numerous properties of scrambling in Korean?; 2) Why are predicates resistant to scrambling in clauses?; 3) Is scrambling within noun phrases the same as scrambling in clauses? In the Government and Binding framework of Chomsky (1981), these questions would be answered with a headedness parameter and by distinguishing landing sites for movement according to whether they could in principle be directly assigned a thematic role. More recent work in syntactic theory, e.g. the minimalist framework of Chomsky (1995), prevents the formulation of such answers and requires that these questions be examined anew.

Scrambling has often been described as a process that applies without constraint. This is implicit in the very notion of a "free word order" language. However, this traditional view is overly simplified. According to traditional grammar of Korean such as Nam (2001) and Martin (1992), there are several restrictions on Korean scrambling. Consider (1-3) ~ (1-6).

(1-3) 철수가 영희가 밥을 먹었다고 말했다

Chelswu-ka Younghee-ka pap-ul mekessta-ko malhyassta

Chelswu-NOM Younghee-NOM meal-ACC ate-COMP said

'Chelswu said that Younghee ate a meal.'

(1-4)*철수가 영희가 먹었다고 밥을 말했다

Chelswu-ka Younghee-ka t_j mekessta-ko pap-ul$_j$ malhyassta

Chelswu-NOM Younghee-NOM ate-COMP meal-ACC said

'Chelswu said that Younghee ate a meal.'

(1-5)*철수가 밥을 먹었다고 영희가 말했다

Chelswu-ka t_i pap-ul mekessta-ko Younghee-ka$_i$ malhyassta

Chelswu-NOM meal-ACC ate-COMP Younghee-NOM said

'Chelswu said that Younghee ate a meal.'

(1-6)*철수가 먹었다고 영희가 밥을 말했다

Chelswu-ka t_i t_j mekessta-ko Younghee-ka$_i$ pap-ul$_j$ malhyassta

Chelswu-NOM ate-COMP Younghee-NOM meal-ACC said

'Chelswu said that Younghee ate a meal.'

In (1-4) ~ (1-6), the noun phrases 영희가 *Younghee-ka* 'Younghee-NOM' and 밥을 *pap-ul* 'meal-ACC' scrambled over their predicate, the verb 먹었다 *mekessta* 'ate'. This rightward

scrambling over the verb is not allowed in Korean, and thus (1-4) ~ (1-6) are ungrammatical.

In (1-7) and (1-8), we see another restriction on scrambling in Korean.

(1-7) 구름이 비가 된다

kwulum-i pi-ka toy-n-ta

cloud-NOM rain-NOM become-PRES-DCL

'The cloud becomes the rain.'

(1-8)*비가 구름이 된다

pi-ka kwulum-i toy-n-ta

rain-NOM cloud-NOM become-PRES-DCL

*'*The cloud becomes the rain.'*

In (1-8), the noun phrase 비가 *pi-ka* 'rain-NOM' scrambles over the same Case-marked noun phrase 구름이 *kwulum-i* 'cloud-NOM'. Apparently a noun phrase cannot scramble over another noun phrase with the same Case-marking.

The unacceptability of scrambling the right member of a small clause is another of the restrictions on scrambling in Korean. Thus, the bracketed small clause in (1-9) cannot be scrambled to produce (1-10) ~ (1-12).

(1-9) 사람들이 [그를 부자로] 생각했다

salam-tul-i [ku-lul$_i$ pwuca-lo$_j$] syangkakhya-ss-ta

person-PL-NOM [he-ACC rich man-as] think-PST-DCL

'*People thought of him as a rich man.*'

(1-10)*사람들이 부자로 [그를] 생각했다

salam-tul-i pwuca-lo$_j$ [ku-lul$_i$ t_j] syangkakhya-ss-ta

person-PL-NOM rich man-as [he-ACC] think-PST-DCL

'*People thought of him as a rich man.*'

(1-11)*부자로 사람들이 [그를] 생각했다

pwuca-lo$_j$ salam-tul-i [ku-lul$_i$ t_j] syangkakhya-ss-ta

rich man-as person-PL-NOM [he-ACC] think-PST-DCL

'*People thought of him as a rich man.*'

(1-12)*부자로 그를 사람들이 [ ] 생각했다

pwuca-lo$_j$ ku-lul$_i$ t_j' salam-tul-i [t_i t_j] syangkakhya-ss-ta

rich man-as he-ACC person-PL-NOM [ ] think-PST-DCL

'*People thought of him as a rich man.*'

In (1-10) ~ (1-12), where the right member of a small clause is scrambled over its specifier (or small clause subject), the sentences become ungrammatical.

The restrictions on scrambling traditionally observed are a heterogeneous disjunctive set of properties. One of the purposes of this dissertation is to present a unified approach to these properties of scrambling in Korean. Minimalist syntax conceptualizes initial merger as driven by semantic requirements like the Θ–criterion. Merger as movement is driven to remove formal features that cannot be interpreted at Logical Form (LF) (or Phonetic Form (PF)). In this sense, initial merger forms semantically complete expressions from semantically incomplete ones. Movement (merger of a constituent already in a tree) forms syntactic expressions composed of only semantically interpretable constituents. Movement cannot operate on semantically incomplete expressions and complete them both syntactically and semantically. The intuition behind this system is that merger (and movement as merger) are elementary (they can only do one thing at a time) and merger to satisfy the Θ–criterion (semantic completeness) has precedence over merger as movement. From this intuition follows the basic thesis of this dissertation: scrambling (by movement) of semantically incomplete expressions is banned.

The empirical content of this thesis can, perhaps, best be seen by considering again the Korean small clause construction. In (1-10) ~ (1-12), the noun phrase 부자로 *pwuca-lo* 'rich man-as' is not allowed to scramble, unlike the other noun phrase 그를 *ku-lul* 'he-ACC' in (1-13) and (1-14).

(1-13) 그를	부자로	사람들이	[	]	생각했다
ku-lul$_i$	pwuca-lo$_j$	salam-tul-i	[t_i	t_j]	syangkakhya-ss-ta
he-ACC	rich man-as	person-PL-NOM	[	]	think-PST-DCL

'*People thought of him as a rich man.*'

(1-14) 그를 사람들이 [부자로] 생각했다

ku-lul$_i$ salam-tul-i [t_i pwuca-lo$_j$] syangkakhya-ss-ta

he-ACC person-PL-NOM [rich man-as] think-PST-DCL

'*People thought of him as a rich man.*'

If we follow the general perspective of this dissertation that only semantically complete expressions scramble, the contrast between 그를 *ku-lul* 'he-ACC' and 부자로 *pwuca-lo* 'rich man-as' is explained by the fact that the latter is semantically a function with an unsaturated argument, while the former denotes an individual.

Scrambling is not completely uniform crosslinguistically. Predicates in Turkish are mobile in a way they are not in Korean. Why are Korean predicates so resistant to scrambling? I address this issue by combining Miyagawa's (2001, 2003) analysis of the landing site of scrambled constituents with my general claim that only semantically complete expressions scramble.

My principal thesis can be further tested by its ability to explain the behavior of complex noun phrases in Korean. Korean has a variable ordering within the noun phrases, as shown in (1-15) and (1-16). Superficially, this word order freedom appears to parallel the freedom we have observed within clauses and presents us with instance of scrambling against which we can test the analysis of the scrambling in clauses.

(1-15) 철수의 그 차

Chelswu-uy ku cha

Chelswu-GEN that car

‘*that car of Chelswu’s*’

(1-16) 그 철수의 차

ku Chelswu-uy cha

that Chelswu-GEN car

‘*that car of Chelswu’s*’

Korean scrambles pre-nominal modifiers in noun phrases, as illustrated in (1-15) and (1-16). However, the noun 차 *cha* ‘car’ does not scramble, as shown by the unacceptability of (1-17) and (1-18). The noun must be final in its phrase even though the other constituents in the noun phrases are relatively free.

(1-17)*차 철수의 그

cha Chelswu-uy ku

car Chelswu-GEN that

‘*that car of Chelswu’s*’

(1-18)*철수의 차 그

Chelswu-uy cha ku

Chelswu-GEN car that

'that car of Chelswu's'

This behavior of the noun in (1-17) and (1-18) superficially resembles that of the verb which also appeared phrase finally in case of scrambling in clauses. However, the scrambling in (1-15) and (1-16) and its restriction in (1-17) and (1-18) are not explained by the hypothesized ban against scrambling semantically unsaturated constituents in clauses. The limit on predicate scrambling can tell why V is final in its phrase but cannot be extended to why N is final in its phrase. The explanation for the restriction on scrambling in clauses relies on Miyagawa's claim that an EPP (Extended Projection Principle)-/Focus-feature is the motivation for scrambling. Because the noun phrases do not have an EPP-feature, our thesis predicts that there should be significant asymmetries between scrambling in noun phrases and scrambling in clauses.

1.2 ORGANIZATION

This dissertation is organized as follows.

Chapter 2 presents some fundamental assumptions by identifying the properties that make scrambling distinct from topicalization and by reviewing why scrambling is given a movement analysis within a generative grammar rather than a base-generation analysis. The chapter also presents the motivation for the distinction between two types of scrambling: A-scrambling and A-bar scrambling.

In chapter 3, I present the general thesis of this dissertation. I show that a unified approach to the numerous properties of scrambling in Korean can be stated by a ban on the scrambling of semantically incomplete constituents.

In chapter 4, I investigate the question of why predicates are resistant to scrambling in Korean. In particular, I address this issue by examining the interaction between Miyagawa's EPP-analysis on scrambling and my hypothesis that only semantically complete expressions scramble.

Chapter 5 examines scrambling within noun phrases in Korean. Specifically, it presents us with answers for the following questions: Where is the landing site of scrambled constituents within noun phrases? Is the scrambling within noun phrases A-scrambling or A-bar scrambling? What prevents the head noun from scrambling in noun phrases? I show that the EPP analysis that explains scrambling at the clausal level does not extend to the noun phrase because it lacks an EPP requirement. As a result we expect, and find, significant asymmetries between scrambling in the two phrasal domains.

Chapter 6 summarizes the main results of this dissertation and briefly addresses its broader significance.

CHAPTER 2. BACKGROUND ASSUMPTIONS ABOUT KOREAN CLAUSAL ORGANIZATION

2.1 INTRODUCTION

Scrambling is used in the literature as a cover term for a process that derives non-canonical word order patterns in so-called "free word order languages" such as German, Hindi, Japanese, Korean and Turkish. In such languages, constituents can appear in a wide variety of surface orders, without changing the core meaning of the sentence.

Korean, one of these free word order languages, is typologically a Subject-Object-Verb (SOV) language. That is to say, the basic word order is subject-object-verb. An SOV language such as Korean is characterized by a verbal predicate that comes at the end of the sentence. More generally Korean is a head-final language in the sense that dependent elements usually precede their heads.[1]

Korean allows scrambling among pre-predicate nominal elements without changing the core meaning of the sentence. Typical Korean examples are given in (2-1) and (2-2), where (2-1) is in the canonical order, and (2-2) is its "scrambled" counterpart. The two sentences have the same meaning in the sense that if one is true, the other is true as well.

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[1] Kayne (1994, 2005) treats head-final languages as derived by a leftward movement of complement from a universal Specifier-Head-Complement order. He abandons the standard X-bar assumption (Chomsky 1986a) and proposes that syntactic structure is universally and without exception of the form Specifier-Head-Complement (SVO). In Kayne's analysis, the SOV order of head-final languages such as Korean and Japanese is derived by the movement of complement from the universal Spec-Head-Complement (SVO) ordering. Compare Larson (1988) and Barbiers (2000) for discussion of SOV order as derived by the generation/merge of the object on the Spec of its own V yielding SOV order without positing a universal SVO order underlyingly with extensive use of leftward movements to derive alternative orders.

(2-1) 철수가 책을 읽는다

Chelswu-ka chyak-ul ilk-nun-ta

Chelswu-NOM book-ACC read-PRES-DCL

'Chelswu reads a book.'

(2-2) 책을 철수가 읽는다

chyak-ul Chelswu-ka ilk-nun-ta

book-ACC Chelswu-NOM read-PRES-DCL

'Chelswu reads a book.'

Evidence for the assumption that (2-1) is the canonical word order in contrast to (2-2) comes from the fact that the nominative or accusative Case markers can be optionally omitted in (2-1) without affecting its acceptability, as illustrated in (2-3) and (2-4) (Lee and Ramsey 2000).

(2-3) 철수 책 읽는다

Chelswu chyak ilk-nun-ta

Chelswu book read-PRES-DCL

'Chelswu reads a book.'

(2-4)?책 철수 읽는다

chyak Chelswu ilk-nun-ta

book Chelswu read-PRES-DCL

'?*The book Chelswu reads.*'

In sentences where there are no Case markers, such as those in (2-3) and (2-4), the natural interpretation is that the first noun phrase is the subject, and the second noun phrase is the object. Since this interpretation is semantically difficult in the case of (2-4), sentences (2-4) and (2-2) have standardly been taken to be less basic or fundamental than those in (2-1) and (2-3).

The variation of word order of 책을 *chyak-ul* 'book-ACC' from (2-1) to (2-2) is referred to as *scrambling*. Ross (1967) was the first person who attempted to model scrambling in a generative grammar. Since Ross's pioneering work, various approaches to scrambling phenomena have been explored within generative grammar.

Section 2.2 investigates two basic approaches that have been highly influential: a base generation approach (Hale 1983; 1992, Kitagawa 1990, Bošković and Takahashi 1998, Bayer and Kornfilt 1994, Fanselow 2001) and a movement approach (Ross 1967, Saito 1985; 1992, Tada 1993, Webelhuth 1989, Müller and Sternefeld 1994, Grewendorf and Sabel 1999). This section presents reason to view Korean scrambling as the result of a movement operation.

Once it is concluded that scrambling is to be accounted for by movement, the kind of movement scrambling employs is the next thing to be investigated. Section 2.3 contrasts two potential types of scrambling cross-linguistically: A-scrambling versus A-bar scrambling.

While A-scrambling has the property of A-movement such as passivization and raising, A-bar scrambling has the property of A-bar movement such as wh-movement and topicalization.[2] This section argues that Korean scrambling shows properties associated with A-scrambling.

Section 2.4 highlights the properties of scrambling that distinguish it from topicalization, another leftward movement that has the potential to modify the unmarked SOV order of the Korean clause, since both scrambling and topicalization are referred to as leftward movement operations.

Section 2.5 summarizes the main results of this chapter.

2.2 TWO DIFFERENT VIEWS OF SCRAMBLING WITHIN GENERATIVE GRAMMAR

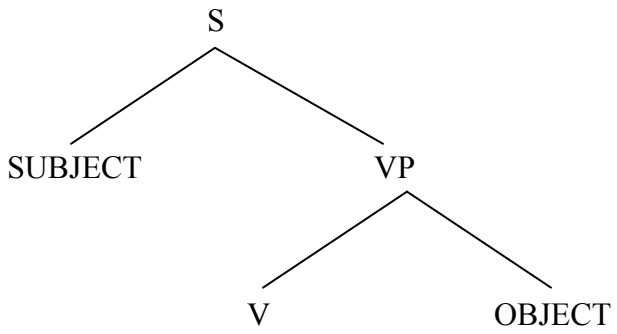
There are two prominent, competing views of scrambling within a generative grammar: a base generation approach and a movement approach. According to the former, the free word order is the result of free generation of constituents, not the result of the movement. On the other hand, the latter claims that the free word order is the result of movement. In this section I will outline these two approaches, and then, consider empirical evidence that leads me to conclude that scrambling involves a movement operation.

[2] See Chomsky (1981) for this subdivision of movements into A-movements and A-bar movements.

2.2.1 SCRAMBLING AS BASE-GENERATION

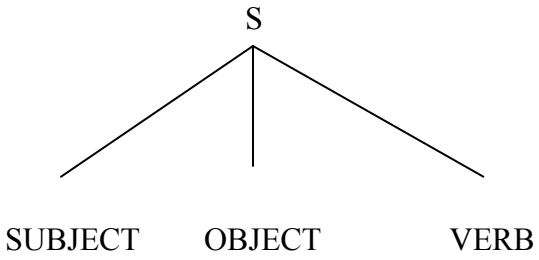
Hale (1983, 1992) identified two classes of languages: configurational and non-configurational. The former make use of a hierarchical (binary branching) constituent structure in which the subject and the other phrases are in an asymmetrical relation to the verb. That is, a configurational language is associated with a VP node, and the subject is not a sister of the verb (Fanselow 2001, Neeleman 1994, Saito and Hoji 1983, Bayer and Kornfilt 1994), as shown in (2-5).

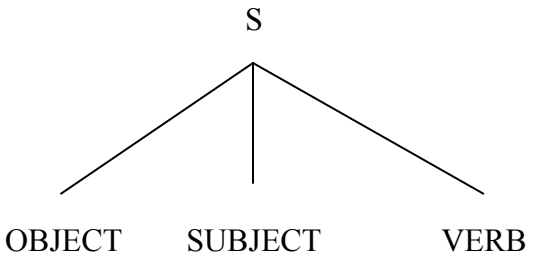
(2-5) Configurational language



On the other hand, the non-configurational word order languages are associated with a flat phrase structure, in Hale's analysis. On this view the subject and object are not separated by a VP-boundary, making it possible that all phrases in a sentence are in a symmetrical sister, relation to the verb. Hale's project was to derive free word order properties of non-configurational languages from this flat sentence structure. Because there is no VP node in non-configurational languages (Hale 1980), verb-final languages in which the word order is flexible would look like (2-6).

(2-6) Non-configurational language





What are the properties of non-configurational languages (e.g. Walpiri) that correlate with its flat structure? The primary property is free linear ordering of constituents, i.e. free word order. This follows from the flat structure because the nominal arguments of the verb are not hierarchically distinguished. Their hierarchical symmetry is equated with the ability of their linear order to commute. Besides free word order, such languages allow extensive use of phonologically null pronouns and discontinuous constituents. More recent base-generation analyses have been proposed in the sprit of Hale's early work to explain the free word order phenomenon (Kitagawa 1990, Bošković and Takahashi 1998, Bayer and Kornfilt 1994, Fanselow 2001).

To see how Hale's non-configurational account would yield the scrambled word order in Korean, consider (2-7) ~ (2-11).

(2-7) 철수가 책을 읽는다

Chelswu-ka chyak-ul ilk-nun-ta

Chelswu-NOM book-ACC read-PRES-DCL

'Chelswu reads a book.'

(2-8) 책을 철수가 읽는다

chyak-ul Chelswu-ka ilk-nun-ta

book-ACC Chelswu-NOM read-PRES-DCL

'Chelswu reads a book.'

(2-9) 철수가 영희에게 책을 주었다

Chelswu-ka Younghee-eke chyak-ul cu-ess-ta

Chelswu-NOM Younghee-DAT book-ACC give-PST-DCL

'Chelswu gave Younghee a book.'

(2-10) 철수가 책을 영희에게 주었다

Chelswu-ka chyak-ul Younghee-eke cu-ess-ta

Chelswu-NOM book-ACC Younghee-DAT give-PST-DCL

'Chelswu gave Younghee a book.'

(2-11) 책을 철수가 영희에게 주었다

chyak-ul Chelswu-ka Younghee-eke cu-ess-ta

book-ACC Chelswu-NOM Younghee-DAT give-PST-DCL

'Chelswu gave Younghee a book.'

The non-configurational approach would hold that constituent orders in (2-7) ~ (2-8) and (2-9) ~ (2-11) are base generated in place without resort to movement operations. On this account, theta assignment and Case assignment do not universally presuppose adjacency between assigner and assignee and instead allow discontinuous relations. This makes free word order a result of free generation of phrases in an arbitrary order as in (2-7) ~ (2-8) and (2-9) ~ (2-11),since theta-marking and Case marking across an intervening element should by hopothesis be possible.

However, there is significant evidence that prevents us from viewing Korean as non-configurational in Hale's sense. Korean has a VP node unlike the putative non-configurational languages. Choi (1999) demonstrates that Korean topicalizes (preposes) VPs which include all non-subject arguments, while it does not allow for VP topicalization with subject. Consider (2-12) ~ (2-14).

(2-12) 철수가 책을 읽기조차 하였다

Chelswu-ka chyak-ul ilk-ki-cocha ha-eyss-ta

Chelswu-NOM book-ACC read-NMZ-even do-PST-DCL

'Chelswu did even read a book.'

(2-13) 책을 읽기조차 철수가 하였다

chyak-ul ilk-ki-cocha Chelswu-ka ha-eyss-ta

book-ACC read-NMZ-even Chelswu-NOM do-PST-DCL

'Even read a book, Chelswu did.'

(2-14)*철수가 읽기조차 책을 하였다

Chelswu-ka ilk-ki-cocha chyak-ul ha-eyss-ta

Chelswu-NOM read-NMZ-even book-ACC do-PST-DCL

*'*Chelswu even read, book did.'*

(2-13) illustrates the VP topicalization in which all non-subject arguments are included and (2-14) does the topicalization of [subject + verb]. The contrast in acceptability between (2-13) and (2-14) leads us to conclude that Korean has a VP node and that Korean is configurational.[3]

2.2.2 SCRAMBLING AS MOVEMENT

Movement operations map one syntactic tree onto a second by targeting a constituent of the first tree for adjunction or substitution in the second tree. The movement operation leaves a trace element in the targeted position that constitutes a chain with the moved constituent. This trace, yielded from movement operation, forms the chain with the antecedent called antecedent-chain, where every trace should be a member of a chain.

[3] Japanese and Dutch are configurational in a similar way (Saito 1985, Yatsushiro 1997 for Japanese, and Neeleman 1994 for Dutch).

Accordingly, when 책을 *chyak-ul* 'book-ACC' is targeted for movement in (2-15), we derive (2-16). Similarly movement of 책을 *chyak-ul* 'book-ACC' in (2-17) produces either (2-18) or (2-19). In the movement structures we form the chain (*chyak-ul, t*).[4]

(2-15) 철수가 책을 읽는다

Chelswu-ka chyak-ul ilk-nun-ta

Chelswu-NOM book-ACC read-PRES-DCL

'*Chelswu reads a book.*'

(2-16) 책을 철수가 읽는다

chyak-ul$_i$ Chelswu-ka t_i ilk-nun-ta

book-ACC Chelswu-NOM read-PRES-DCL

'*Chelswu reads a book.*'

(2-17) 철수가 영희에게 책을 주었다

Chelswu-ka Younghee-eke chyak-ul cu-ess-ta

Chelswu-NOM Younghee-DAT book-ACC give-PST-DCL

'*Chelswu gave Younghee a book.*'

[4] Korean has the order of Subject, Indirect Object and Direct Object as a basic order (Choi 1999, Lee and Ramsey 2000).

(2-18) 철수가 책을 영희에게 주었다

Chelswu-ka chyak-ul$_i$ Younghee-eke t_i cu-ess-ta

Chelswu-NOM book-ACC Younghee-DAT give-PST-DCL

'Chelswu gave Younghee a book.'

(2-19) 책을 철수가 영희에게 주었다

chyak-ul$_i$ Chelswu-ka Younghee-eke t_i cu-ess-ta

book-ACC Chelswu-NOM Younghee-DAT give-PST-DCL

'Chelswu gave Younghee a book.'

In terms of scrambling as a movement operation (Ross 1967, Saito 1985; 1992, Fukui 1993, Miyagawa 1997; 2001; 2003, Grewendorf and Sabel 1999, Müller and Sternefeld 1994, Haider and Rosengren 2003 among others), the argument 책을 *chyak-ul* 'book-ACC' in (2-15) and (2-17) begins in a local sister relation with its associated predicate, maintaining adjacency between thematic role assigner and assignee. (2-16), (2-18) and (2-19), where adjacency between thematic role assigner and assignee is not maintained, are derived from (2-15) and (2-17) by the movement of 책을 *chyak-ul* 'book-ACC' constituents. In this way it is possible that movement is responsible for scrambling the basic Korean word order.

Under the movement approach, it is claimed that the direct object NP is adjacent to the verbal predicate underlyingly, from which it receives a thematic role under sisterhood. So, there is one basic word order where predicate argument relations are represented structurally, and the alternate orders are derived by means of some sentence-internal movement operation, producing a syntactic chain.

2.2.3 THE ADVANTAGE OF THE MOVEMENT APPROACH

The movement approach holds that both the scrambled sentences and its unscrambled counterpart share a common source at the level of D-structure, in which lexical items are inserted and receive thematic roles before the movement of constituents.

One could avoid the movement analysis by generating (2-20) and (2-21) from different initial structures at D-structure. This "base generation" approach would require us to assign thematic roles in a non-uniform way. In (2-20) the theme relation would be assigned to the sister of the verb. In (2-21) the thematic relation would be assigned to a non-sister. The same account applies to the thematic relation in (2-22) ~ (2-23).

(2-20) 철수가 책을 읽는다

Chelswu-ka chyak-ul ilk-nun-ta

Chelswu-NOM book-ACC read-PRES-DCL

'Chelswu reads a book.'

(2-21) 책을 철수가 읽는다

chyak-ul Chelswu-ka ilk-nun-ta

book-ACC Chelswu-NOM read-PRES-DCL

'Chelswu reads a book.'

(2-22) 철수가 영희에게 책을 주었다

Chelswu-ka Younghee-eke chyak-ul cu-ess-ta

Chelswu-NOM Younghee-DAT book-ACC give-PST-DCL

'Chelswu gave Younghee a book.'

(2-23) 책을 철수가 영희에게 주었다

chyak-ul Chelswu-ka Younghee-eke cu-ess-ta

book-ACC Chelswu-NOM Younghee-DAT give-PST-DCL

'Chelswu gave Younghee a book.'

In a minimalist account which abaondos a single level of lexical insertion (i.e. D-structure), XPs can be directly merged to theta-positions where the formal grammatical features of arguments enter the checking relation with their head. This method of analysis makes it possible that different orders of constituents can be generated by merge, so long as the constituents in question are arguments assigned a thematic role (Fanselow 2001).[5] This is because the order of application of merge is free. As a result NPs could be freely base-generated by merge, one could regard the free word order of Korean in (2-20) ~ (2-23) as the direct merge of NPs with the same thematic relation to distinct syntactic positions.

Even this updated, base generation approach will not cover all instances of scrambling, however. As (2-24) and (2-25) illustrate, Korean scrambles non-arguments such as adverbs in addition to nominal arguments. Since only NPs are directly merged to their

[5] Pure Merge in theta-position is required of (and restricted to) arguments (Chomsky 2000:103).

theta-positions, scrambling of adverbs, which have no Φ-features, cannot be explained on the base generation approach.[6]

(2-24) 철수가 영희를 길에서 만났다

Chelswu-ka Younghee-lul kil-yese manna-ss-ta

Chelswu-NOM Younghee-ACC street-LOC meet-PST-DCL

'Chelswu met Younghee on the street.'

(2-25) 길에서 철수가 영희를 만났다

kil-yese Chelswu-ka Younghee-lul manna-ss-ta

street-LOC Chelswu-NOM Younghee-ACC meet-PST-DCL

'Chelswu met Younghee on the street.'

(2-26)*철수가 영희를 만났다 길에서

Chelswu-ka Younghee-lul manna-ss-ta kil-yese

Chelswu-NOM Younghee-ACC meet-PST-DCL street-LOC

'Chelswu met Younghee on the street.'

Within minimalist accounts of syntactic structure that explain that structure by thematic roles and Φ–feature, the syntax of adjuncts generally is opaque and their interaction with scrambling is problematic (Chametzky 2000). Since non-arguments lack Φ-features and are not assigned thematic roles, their word order flexibility is unexplained. It is left

[6] Φ-features are grammatical features such as person, number, gender and Case (Chomsky 1981, Kerstens 1993).

unexplained why (2-24) and (2-25) are acceptable in Korean but (2-26) is not. Thus, the present dissertation will make use of the movement approach.[7]

2.3 TWO TYPES OF SCRAMBLING

If freedom in word order results from a syntactic movement operation, a question arises with respect to whether it patterns with A-movement such as passivization and raising, or A-bar movement such as wh-movement and topicalization.[8] The A-movement vs. A-bar movement distinction comes from the distinction between A-position and A-bar position. The former is a position to which a theta-role can be assigned (subject and object positions). For instance, the NPs *John* and *books* in the sentence *John read books* are in A-positions. A-positions are also known as Argument positions. A position which is not an A-position is called an A-bar position. For example, the position occupied by operators such as *what* in the sentence *what did he read?* is an A-bar position. A-bar positions are non-argument positions (Chomsky 1981, 1993).[9]

Most diagnostics for A-/A-bar movement rely on binding facts. The issue of the binding properties of the scrambled phrases is a research topic pursued most completely by

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[7] Fanselow (2001) must allow adjuncts to be freely generated in order to explain their flexible ordering. But because adjuncts are not merged to check a feature or receive a thematic relation, he loses the ability to explain why adjuncts are blocked from appearing in source positions, such as (2-26). Fanselow's proposal is also unable to explain the reconstruction effects that scrambling within a nominal exhibits. See 5.4.2 for presentation of this phenomenon.

[8] See Fanselow (1990), Miyagawa (1990), Lee and Santorini (1994), Haider (1991), Lee (1993) for a discussion of scrambling as A-movement. See Saito (1989), Müller and Sternefeld (1994) for a discussion of scrambling as A-bar movement. Webelhuth (1989) identifies some mixed cases of scrambling that are both.

[9] Since Chomsky (1986) the A/A-bar distinction is not a theoretically coherent distinction because [Spec, IP] is not assigned a theta-role directly, so that passivization and raising to subject lose their status as A-movement in this technical sense. Within the minimalist program the distinction is recast in terms of whether a feature of T is checked, corresponding to A-movement, or a feature of C is checked, corresponding to A-bar movement.

Webelhuth (1989) and Mahajan (1990). They asked whether scrambling patterns with A-movement or A-bar movement with respect to its interaction with binding theory.

2.3.1 A-SCRAMBLING

When elements undergo A-movement, binding relations are entirely determined on the basis of the surface structure, as illustrated in (2-27) and (2-28): A-movement either creates a binding relation which does not obtain in the base order, or destroys the binding relation which obtains in the base order (Büring 2005).

(2-27)*It seems to himself$_i$ that John$_i$ is charming.

(2-28) John$_i$ seems to himself$_i$ [t_i to be charming].

Scrambling in Korean has this property of A-movement. As illustrated in (2-29) and (2-30), clausal-internal scrambling, (also termed "short scrambling"), is A-movement in the sense that the movement creates a binding relation which does not obtain in the base order.[10] Scrambling with this characteristic of A-movement is standardly called A-scrambling.

[10] Clausal-internal scrambling in Japanese also has the property of A-movements in a similar way (Saito 1992, Nishigauchi 2000).

(2-29)*서로의 선생님이 철수와 영희를

selo$_i$-uy sensyangnim-i [Chelswu wa Younghee]$_i$-lul

each other-GEN teacher-NOM Chelswu and Younghee-ACC

꾸짖었다

kkwucic-ess-ta

scold-PST-DCL

'Each other$_i$'s teachers scolded Chelswu and Younghee$_i$.'

(2-30) 철수와 영희를 서로의 선생님이

[Chelswu wa Younghee]$_i$-lul selo$_i$-uy sensyangnim-i

Chelswu and Younghee-ACC each other-GEN teacher-NOM

꾸짖었다

kkwucic-ess-ta

scold-PST-DCL

'Each other$_i$'s teachers scolded Chelswu and Younghee$_i$.'

(2-30), where clause-internal scrambling occurs, has a lexical anaphor 서로 *selo* 'each other'. As an anaphor it must be A-bound for the purposes of Principle A of the binding theory

(Chomsky 1981, 1986b).[11] The lexical anaphor 서로 *selo* 'each other' is not A-bound in (2-29) showing the canonical Korean word order, since its antecedent 철수와 영희를 *Chelswu wa Younghee-lul* 'Chelswu and Younghee-ACC' does not c-command the anaphor. 서로 *selo* 'each other' is A-bound in example (2-30) that exhibits the scrambled word order. The contrast in acceptability between (2-29) and (2-30) can be explained if we adopt the hypothesis that the scrambling in (2-30) is a sub-type of A-movement.

2.3.2 A-BAR SCRAMBLNG

Elements which undergo A-bar movement do not affect binding relations, as illustrated in (2-31) and (2-32). That is, an element which moves to an A-bar position behaves as though it "reconstructs" to its original base position where its binding relations are determined (Büring 2005).

(2-31)*He$_i$ likes John$_i$.

(2-32)*Who$_i$ does he$_i$ like t_i? (strong crossover)

Strong crossover occurs in configurations in which a wh-element or quantificational NP undergoes A-bar movement across a pronominal which c-commands the extraction site, as in (2-32). *Who* has moved across *he* in (2-32). The fact that *he* cannot be co-indexed with t_i (which would yield the reading: *which x, x likes x*), is referred to as 'strong crossover', because on the intended reading the structure is strongly ungrammatical (Postal 1971, Wasow

[11] An NP is A-bound when it is co-indexed with a c-commanding NP in an A-position.

1972). Since the wh-trace, being a variable, must be A-free, binding by *he* would constitute a Principle C violation (Chomsky 1977; 1981; 1982).

Some scrambling in Korean has the property of A-bar movement. As in (2-33) and (2-34), long distance scrambling is A-bar movement in the sense that scrambling as movement does not affect binding relations.[12] Scrambling as A-bar movement is called A-bar scrambling.

(2-33)*서로의 선생님이 영한이 철수와 영희를

selo$_i$-uy sensyangnim-i [Younghan-i [Chelswu wa Younghee]$_i$-lul

each other-GEN teacher-NOM Younghan-NOM Chelswu and Younghee-ACC

꾸짖었다고 생각한다

kkwucic-ess-ta ko] saengkakha-n-ta

scold-PST-DCL COMP think-PRES-DCL

'Each other$_i$'s teachers think that Younghan scolded Chelswu and Younghee$_i$.'

[12] Long distance scrambling in Japanese also has the property of A-bar movements in a similar way (Saito 1992, Nishigauchi 2000).

(2-34)*철수와 영희를 서로의 선생님이 영한이

[Chelswu wa Younghee]$_i$-lul selo$_i$-uy sensyangnim-i Younghan-i

Chelswu and Younghee-ACC each other-GEN teacher-NOM Younghan-NOM

꾸짖었다고 생각한다

kkwucic-ess-ta ko] saengkakha-n-ta

scold-PST-DCL COMP think-PRES-DCL

'Each other$_i$'s teachers think that Younghan scolded Chelswu and Younghee$_i$.'

(2-34), where long distance scrambling occurs, has a lexical anaphor 서로 *selo* 'each other', which must be A-bound. The 서로 *selo* 'each other' is not A-bound either in the neutral word order (2-33) or in the scrambled word order (2-34). Scrambling in (2-34) does not change the binding relations in (2-33) and thus is A-bar movement.

Long distance scrambling in (2-34) is not an isolated example of A-bar scrambling. Korean contains a VP-focus construction which is also an instance of A-bar scrambling in the sense that scrambling as movement does not affect binding relations. This construction is formed by attaching a focus marker 는/은 *–(n)un* (or an accusative Case marker –를/을 *(l)ul*) to VP. The focused (marked) VP scrambles to clause initial position. This construction allows preposing of unergative verbs and transitive verbs with their objects, as shown in (2-36) and (2-38), respectively (Hagstrom, 1997).[13]

[13] The VP-focus construction is discussed further in Section 4.3.3.

(2-35) 철수가 (빨리) 뛰기는 하였다

Chelswu-ka [(ppalli) ttwi-ki-nun] ha-eyss-ta

Chelswu-NOM (fast) run-NMZ-FOC do-PST-DCL

'Run fast, Chelswu did, (but not other things).'

(2-36) (빨리) 뛰기는 철수가 하였다

[(ppalli) ttwi-ki-nun]$_i$ Chelswu-ka t_i ha-eyss-ta

(fast) run-NMZ-FOC Chelswu-NOM do-PST-DCL

'Run fast, Chelswu did, (but not other things).'

'As for running fast, Chelswu did.'

(2-37) 철수가 빵을 먹기는 하였다

Chelswu-ka ppang-ul mek-ki-nun ha-eyss-ta

Chelswu-NOM bread-ACC eat-NMZ-FOC do-PST-DCL

'Eat the bread, Chelswu did, (but not other things).'

(2-38) 빵을 먹기는 철수가 하였다

[ppang-ul mek-ki-nun]$_i$ Chelswu-ka t_i ha-eyss-ta

bread-ACC eat-NMZ-FOC Chelswu-NOM do-PST-DCL

'Eat the bread, Chelswu did, (but not other things).'

'As for eating the bread, Chelswu did.'

(2-35) and (2-37) show the structure before VPs prepose and (2-36) and (2-38) show the structure with VP-preposing.

Like the case of long distance scrambling in (2-34), the preposed VP in (2-40) has the property of A-bar movement in that the binding relations do not change.

(2-39) M 과 J 가 C 에게 서로의 친구를 소개시키기는 하였다

M-kwa-J-ka$_i$ C-yekye selo$_i$-uy-chinkwu-lul sokyasikhi-ki-nun ha-eyss-ta

M-and-J-NOM C-DAT each other-GEN-friend-ACC introduce-NMZ-FOC do-PST-DCL

'Introduce each other's friends to C, M and J did.' (each other=M & J)

(2-40) 서로의 친구를 소개시키기는 M 과 J 가 C 에게 하였다

selo$_i$-uy-chinkwu-lul sokyasikhi-ki-nun M-kwa-J-ka$_i$ C-yekye ha-eyss-ta

each other-GEN-friend-ACC introduce-NMZ-FOC M-and-J-NOM C-DAT do-PST-DCL

'Introduce each other's friends to C, M and J did.' (each other=M & J)

(2-40), where the VP is preposed, has a lexical anaphor 서로 *selo* 'each other', which must be A-bound. The 서로 *selo* 'each other' is A-bound both in the neutral word order (2-39) and in the scrambled word order (2-40). Scrambling in (2-40) does not change the binding relations in (2-39) and thus is A-bar movement.

2.4 SCRAMBLING AS DISTINCT FROM TOPICALIZATION

At first glance one might be tempted to assimilate sentences like (2-2), repeated as (2-41), to 'topicalized' constructions like (2-42) familiar to speakers of English.

(2-41) 책을 철수가 읽는다

chyak-ul Chelswu-ka ilk-nun-ta

book-ACC Chelswu-NOM read-PRES-DCL

'Chelswu reads a book.'

(2-42) This book, Chelswu read last night.

In this section, we will compare topicalization with scrambling. We find asymmetries between topicalization and scrambling that lead us to conclude that scrambling needs to be distinguished from such topicalized structures.

2.4.1 BASIC PROPERTIES OF TOPICALIZATION

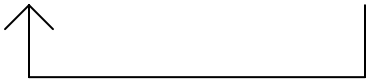
Scrambling is a leftward movement. Topicalization is also a leftward movement. It is reasonable to ask why we should recognize two distinct kinds of leftward movement. In this sub-section, we will examine properties of topicalization that lead us to distinguish it from scrambling.

Topicalization refers to the preposing of some constituents to clause initial position. In Chomsky (1977), the clause initial position is assumed to be [Spec, TopP]. Chomsky suggests that Top is base-generated in [Spec, TopP] and that there is covert wh-movement

within CP which occurs to the right of Top as a complement. On this assumption, we might say that a sentence such as (2-43) would be derived in the manner indicated schematically in (2-44) below.

(2-43) This book, Chelswu really read.

(2-44) [$_{TopP}$ This book$_i$ [$_{CP}$ OP$_i$ [$_{IP}$ Chelswu really read t_i]]]



wh-movement

Unlike topics in English, topics in Korean are morphologically marked by dedicated topic particles 는/은 *n(un)*, thus the Korean counterpart of (2-43) is (2-45).[14]

(2-45)	이	책은	철수가	실제로	읽었다
	i	chyak-un	Chelswu-ka	silcyelo	ilk-ess-ta
	this	book-TOP	Chelswu-NOM	really	read-PST-DCL

'This book, Chelswu really read.'

The topic particle, 는/은 *(n)un*, has two functions. One is to mark the topic of the sentence, and the other is to mark the focus of an element which is contrasted with some other element, either present or understood, in the sentence or discourse. It is generally

[14] According to the phonological environment, the topic particles 는 *nun* and 은 *un* are differently selected. For example, when there is no final consonant at the ending of the noun, 는 *nun* is used, but if there is a final consonant at the ending of the noun, 은 *un* is taken (Lee and Ramsey 2000).

reported that a 는/은 (*n)un*-marked element in sentence initial position receives the topic reading, as in (2-46), and a 는/은 *(n)un*-marked element in sentence medial position receives the (contrastive) focus reading, as in (2-47) (Lee 1993).

(2-46) 철수는 책을 좋아한다

Chelswu-nun chyak-ul cohaha-n-ta

Chelswu-TOP book-ACC like-PRES-DCL

'As for Chelswu, he likes a book.'

(2-47) 철수가 책은 좋아한다

Chelswu-ka chyak-un cohaha-n-ta

Chelswu-NOM book-TOP like-PRES-DCL

'Chelswu likes a book, (but not other things).'

Given the correlation between the topic and contrastive focus readings of a 는/은 *(n)un*-marked phrase with their position in a sentence, we conclude that it is only the sentence-initial 는/은 *(n)un*-marked phrases which correspond to "topicalization," and that such 는/은 *(n)un*-marked phrases occupy the highest Spec position in the phrase structure.[15]

[15] Although it is only the clause initial 는/은 *(n)un*-marked phrases which correspond to "topicalization", the clause initial 는/은 *(n)un*-marked phrases do not necessarily receive the topic reading. The clause initial 는/은 *(n)un*-marked phrase in (2-46) receives the focus reading as well as the topic reading, as in (i) below.

(i) 철수는 책을 좋아한다
Chelswu-nun chyak-ul cohaha-n-ta
Chelswu-TOP book-ACC like-PRES-DCL
'As for Chelswu, he likes a book.'
'Chelswu likes a book, (but no others do).'

The second property of topicalization is that only a definite noun phrase can be topicalized. Non-specific indefinite noun phrases cannot be topicalized, as shown by the contrast in (2-48) and (2-49).

(2-48) 영희는 철수가 좋아하였다

Younghee-nun Chelswu-ka coaha-eyss-ta

Younghee-TOP Chelswu-NOM like-PST-DCL

'Younghee, Chelswu liked.'

(2-49)*누군가는 철수가 좋아하였다

nwukwunka-nun Chelswu-ka coaha-eyss-ta

someone-TOP Chelswu-NOM like-PST-DCL

'Someone, Chelswu liked.'

The third property of topicalization is that wh-phrases cannot be marked with the 는/은 *(n)un*-marker, as in (2-50). That is, a wh-phrase cannot be used as the topic.

(2-50)*철수가 영희가 무엇은 샀는가

Chelswu-ka Younghee-ka mwues-un sass-nun-ka

Chelswu-NOM Younghee-NOM what-TOP buy-PRES-Q

물었다

mwul-ess-ta

ask-PST-DCL

'*Chelswu asked what Younghee bought.*'

The final property of topicalization is that it can license a resumptive pronoun, as illustrated in (2-51).[16]

(2-51)?철수는 영희가 그를 좋아한다

Chelswu-nun$_i$ Younghee-ka ku-lul$_i$ cohaha-n-ta

Chelswu-TOP Younghee-NOM he-ACC like-PRES-DCL

'As for Chelswu$_i$, Younghee likes him$_i$.'

The above-mentioned properties of topicalization are distinguished from those of scrambling in the next sub-section.

[16] As denoted by '?' in (2-51), the use of a resumptive pronoun is somewhat marginal. Nevertheless, the contrast between (2-51) and (2-58) is clear.

2.4.2 SCRAMBLING VS. TOPICALIZATION

Topics in Korean are located in the clause-initial position, as observed in (2-46) and (2-47). In contrast, a "scrambled" constituent in Korean need not be in the clause-initial position, as shown in (2-52) and (2-53).

(2-52) 여기서 내가 너를 기다렸다

eyki-se nya-ka ne-lul kital-eyss-ta

here-LOC I-NOM you-ACC wait-PST-DCL

'I waited for you here.'

(2-53) 여기서 너를 내가 기다렸다

eyki-se ne-lul nya-ka kital-eyss-ta

here-LOC you-ACC I-NOM wait-PST-DCL

'I waited for you here.'

In (2-53), 너를 *ne-lul* 'you-ACC' has been scrambled to a non-clause-initial position.

Secondly, in contrast to topicalization where non-specific indefinites cannot be preposed, scrambling allows for preposing of non-specific indefinites, as shown (2-54).[17] In (2-54), the indefinite quantifier 누군가 *nwukwunka* 'someone' can only be non-specific. Nevertheless, it freely undergoes scrambling, as in (2-54).

[17] The example in (2-54) is reproduced from Lee (1993).

(2-54) 누군지는 모르지만, 누군가를 철수가

nwukwun-ci-nun molu-ciman nwukwunka-lul Chelswu-ka

who-NMZ-TOP don't know-but someone-ACC Chelswu-NOM

좋아한다

cohaha-n-ta

like-PRES-DCL

'I don't know who she is, but someone, Chelswu likes.'

Thirdly, while wh-phrases cannot be used as the topic as in (2-50), scrambling of the wh-phrase is allowed, as in (2-56) and (2-57).

(2-55) 철수가 영희가 무엇을 샀는가

Chelswu-ka Younghee-ka mwues-ul sass-nun-ka

Chelswu-NOM Younghee-NOM what-ACC buy-PRES-Q

물었다

mwul-ess-ta

ask-PST-DCL

'Chelswu asked what Younghee bought.'

(2-56) 철수가 무엇을 영희가 샀는가

Chelswu-ka mwues-ul Younghee-ka sass-nun-ka

Chelswu-NOM what-ACC Younghee-NOM buy-PRES-Q

물었다

mwul-ess-ta

ask-PST-DCL

'*Chelswu asked what Younghee bought.*'

(2-57) 무엇을 철수가 영희가 샀는가

mwues-ul Chelswu-ka Younghee-ka sass-nun-ka

what-ACC Chelswu-NOM Younghee-NOM buy-PRES-Q

물었다

mwul-ess-ta

ask-PST-DCL

'*Chelswu asked what Younghee bought.*'

In (2-56) and (2-57), wh-phrase 무엇을 *mwues-ul* 'what-ACC' has been clause-internally scrambled and long distance scrambled, respectively.

Finally, while topicalization can license a resumptive pronoun, as in (2-51), scrambling cannot, as illustrated in (2-58).

(2-58)*철수를 영희가 그를 좋아한다

Chelswu-lul$_i$ Younghee-ka ku-lul$_i$ cohaha-n-ta

Chelswu-ACC Younghee-NOM he-ACC like-PRES-DCL

'Chelswu$_i$, Younghee likes him$_i$.'

2.5 SUMMARY

In this chapter, I have investigated two different views of scrambling. One involves generating distinct word order patterns initially in the base. The other involves deriving distinct word order patterns by movement from a single base ordering. In the movement approach, the non-canonical word orders can be derived from a base word order by syntactic movement. On the base generation approach, if the construction of a base word order id determined by checking features and thematic relations during merger, scrambling cannot be explained. The difficulty is that in Korean scrambling of non-arguments such as adverbs is allowed despite their absence of Φ-features or thematic relations. Yet non-arguments show the same scrambling properties as arguments. This observation leads us to conclude that the free word order cannot be reduced to the free generation of constituents, but can be fed by the movement operation.

Once it is concluded that scrambling is the result of the movement operation, the question arises what kind of movement is involved: A-movement or A-bar movement. In connection with this question, two types of scrambling are traditionally distinguished: A-scrambling and A-bar scrambling. A-scrambling has the property of A-movement in the sense that scrambling either creates a binding relation which does not obtain in the base order or destroys the binding relation which obtains in the base order. In contrast, A-bar

scrambling has the property of A-bar movement in the sense that scrambling does not affect binding relations.

Since both topicalization and scrambling are leftward movements, I have compared the syntactic properties of topicalization with those of scrambling and catalogued ways in which they differ. Firstly, while a scrambled constituent in Korean need not be in the clause-initial position, topics in Korean are located in the clause-initial position. Secondly, in contrast to scrambling where non-specific indefinites can be preposed, topicalization does not allow for preposing of non-specific indefinites. Thirdly, topicalization of wh-phrases is not permissible, while scrambling of wh-phrases is permissible. Finally, topicalization can license a resumptive pronoun, while scrambling cannot.

CHAPTER 3. A SEMANTIC RESTRICTION ON SCRAMBLING IN KOREAN

3.1 INTRODUCTION

In this chapter I explore general limitations on scrambling in Korean. Recall from the discussion in Chapter 1 that Korean is typologically an SOV language, characterized by a predicate that comes at the end of the sentence as in (3-1).

(3-1) 철수가 책을 읽는다

Chelswu-ka chyak-ul ilk-nun-ta

Chelswu-NOM book-ACC read-PRES-DCL

'Chelswu reads a book.'

However, Korean sentences routinely diverge from the basic SOV order in (3-1), and the scrambled sentences like (3-2) are fully grammatical.

(3-2) 책을 철수가 읽는다

chyak-ul Chelswu-ka ilk-nun-ta

book-ACC Chelswu-NOM read-RES-DCL

'Chelswu reads a book.'

Traditionally the flexibility of syntactic constituents in Korean is attributed to its rich system of overt Case-markers. Since the grammatical function of a noun phrase is marked by the Case-markers, the linear ordering of the subject and the direct object can change, leaving the underlying interpretation and grammaticality of the sentence unaffected.

Scrambling is often thought of as a process that applies without a constraint (except the limit of ambiguity). However, this view is overly simplified. According to such traditional Korean grammars as Nam (2001), Martin (1992) and Jo (1986), there are important restrictions on Korean scrambling.

Section 3.2 investigates the generality of scrambling in Korean, focusing on three important restrictions on scrambling: no rightward scrambling over the verb, no leftward scrambling over the same Case-marker, and no scrambling within small clauses.

Section 3.3, section 3.4, and section 3.5 search for a unified approach to these restrictions. In section 3.3, I form a hypothesis based on thematic roles. It uses the existence of theta-roles to conjecture that only theta-role-assigned constituents can scramble. In section 3.4, I form a competing hypothesis. This hypothesis uses the distinction between semantic completeness and semantic incompleteness to argue that only semantically complete constituents can scramble. In section 3.5, after I compare the two hypotheses empirically, I conclude that the three restrictions on Korean scrambling are explained by the single generalization that predicates (semantically incomplete constituents) do not scramble.

Section 3.6 summarizes the main results of this chapter.

3.2 RESTRICTIONS ON SCRAMBLING IN KOREAN

Traditional Korean grammars recognize limitations on scrambling. In this section, we present three of those restrictions on scrambling: no rightward scrambling over the verb, no leftward scrambling over the same Case-marker, and no scrambling within small clauses.

3.2.1 NO RIGHTWARD SCRAMBLING OVER THE VERB

In Korean, the scrambling of the constituents in a sentence is permissible as long as the verb occurs sentence-finally. That is to say, there is no rightward scrambling over the verb in Korean, nor can the verb be scrambled to the left of its arguments. Consider (3-3) ~ (3-5).

(3-3) 철수가 영희가 밥을 먹었다고 말했다

Chelswu-ka Younghee-ka pap-ul mekessta-ko malhyassta

Chelswu-NOM Younghee-NOM meal-ACC ate-COMP said

'Chelswu said that Younghee ate a meal.'

(3-4)*철수가 영희가 먹었다고 밥을 말했다

Chelswu-ka Younghee-ka mekessta-ko pap-ul malhyassta

Chelswu-NOM Younghee-NOM ate-COMP meal-ACC said

'Chelswu said that Younghee ate a meal.'

(3-5)*철수가		먹었다고	영희가	밥을	말했다
	Chelswu-ka	mekessta-ko	Younghee-ka	pap-ul	malhyassta
	Chelswu-NOM	ate-COMP	Younghee-NOM	meal-ACC	said

'Chelswu said that Younghee ate a meal.'

Each instance of (3-3) ~ (3-5) has two clauses: a matrix clause and an embedded clause. In traditional Korean grammar, scrambling in (3-4) and (3-5) is not permissible where 영희가 *Younghee-ka* 'Younghee-NOM' and 밥을 *pap-ul* 'meal-ACC' have scrambled over their predicate, the verb 먹었다 *mekessta* 'ate'. Scrambling is not permissible when any argument of (3-3) is positioned to the right of its predicate.

Kayne (1994) is able to correlate linear order with hierarchical order. Abandoning standard X-bar assumption (Chomsky 1986a), Kayne argues that there is a universal Specifier-Head-Complement (Subject-Verb-Object) ordering, and that specifiers are the only instances of adjuncts. Kayne's claim (combined with the standard ban on lowering operations) leads us to conclude that there can be no rightward movement operations in any language (Kayne 2005).[18] Following Kayne (1994, 2005), we conclude that the moved constituent in (3-4) and (3-5) must be the verb 먹었다 *mekessta* 'ate', as illustrated in (3-6) and (3-7).

[18] Although I assume Kayne's antisymmetry syntax, the structure of the examples in this dissertation is represented in the framework of standard X-bar assumption for expository convenience.

(3-6)*철수가 영희가 먹었다고 밥을 말했다

Chelswu-ka Younghee-ka mekessta-ko$_k$ pap-ul t_k malhyassta

Chelswu-NOM Younghee-NOM ate-COMP meal-ACC said

'Chelswu said that Younghee ate a meal.'

(3-7)*철수가 먹었다고 영희가 밥을 말했다

Chelswu-ka mekessta-ko$_k$ Younghee-ka pap-ul t_k malhyassta

Chelswu-NOM ate-COMP Younghee-NOM meal-ACC said

'Chelswu said that Younghee ate a meal.'

(3-6) and (3-7) illustrate the ban on leftward scrambling of the verb over the arguments.

3.2.2 NO LEFTWARD SCRAMBLING OVER THE SAME CASE -MARKER

Korean prohibits scrambling of a NP over another NP when they are assigned the same morphological Case (Kim 1989, 1990). That is, there is no leftward scrambling over the same Case-marker.

(3-8) 구름이 비가 된다

kwulum-i pi-ka toy-n-ta

cloud-NOM rain-NOM become-PRES-DCL

'The cloud becomes the rain.'

(3-9)*비가 구름이 된다

pi-ka kwulum-i toy-n-ta

rain-NOM cloud-NOM become-PRES-DCL

'**The cloud becomes the rain.'*

In (3-8), the sentence has two instances of nominative Case marking (realized by 이-*i* and 가-*ka*).[19] However, when scrambling is applied to produce the sentence (3-9), the result is ungrammatical.

Kim's (1989, 1990) descriptive constraint mentioned above also covers the Korean double accusative construction. This construction admits a second accusative Case-marked noun if it represents the part, kind, or number of the first accusative Case-marked noun. The example in (3-10) illustrates the double accusative construction. (3-11) ~ (3-13) demonstrate that in the double accusative construction sentence, scrambling is not permissible.

(3-10) 어떤 사람이 그 여자를$_i$ 팔을$_j$ 잡아끌었다

etten salam-i ku eyca-lul$_i$ pal-ul$_j$ capakkul-ess-ta

certain person-NOM the woman-ACC arm-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

[19] In Korean, the nominative Case-markers are 이-*i* and 가 *–ka*. The choice between 이-*i* and 가 *–ka* is determined phonologically: the former is chosen when the preceding syllable ends in a consonant, and the latter, when it ends in a vowel (Lee and Ramsey 2000).

(3-11)*어떤 사람이 팔을 그 여자를 잡아끌었다

etten salam-i pal-ul$_j$ ku eyca-lul t_j capakkul-ess-ta

certain person-NOM arm-ACC the woman-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-12)*팔을 어떤 사람이 그 여자를 잡아끌었다

pal-ul$_j$ etten salam-i ku eyca-lul t_j capakkul-ess-ta

arm-ACC certain person-NOM the woman-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-13)*팔을 그 여자를 어떤 사람이 잡아끌었다

pal-ul$_j$ ku eyca-lul$_i$ t_j' etten salam-i t_i t_j capakkul-ess-ta

arm-ACC the woman-ACC certain person-NOM pull-PST-DCL

'*A certain person pulled the woman's arm.'*

In (3-10) ~ (3-13), the sentence has two accusative morphological Cases realized by Case-markers 을 *–ul* and 를 *–lul*.[20] In (3-10) ~ (3-12), when leftward scrambling over the same Case-marker occurs, the sentence becomes ungrammatical.

However, even in the double accusative construction, scrambling may occur as long as the second accusative NP is preceded by the first accusative NP, as in (3-14) ~ (3-16).

[20] In Korean, the accusative Case-markers are 을 *–ul* and 를 *–lul*. The choice between 을 *–ul* and 를 *–lul* is determined phonologically: the former is chosen when the preceding syllable ends in a consonant, and the latter, when it ends in a vowel (Lee and Ramsey 2000).

(3-14) 어떤 사람이 그 여자를 팔을 잡아끌었다

etten salam-i ku eyca-lul$_i$ pal-ul$_j$ capakkul-ess-ta

certain person-NOM the woman-ACC arm-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-15) 그 여자를 팔을 어떤 사람이 잡아끌었다

ku eyca-lul$_i$ pal-ul$_j$ etten salam-i t_i t_j capakkul-ess-ta

the woman-ACC arm-ACC certain person-NOM pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-16) 그 여자를 어떤 사람이 팔을 잡아끌었다

ku eyca-lul$_i$ etten salam-i t_i pal-ul$_j$ capakkul-ess-ta

the woman-ACC certain person-NOM arm-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

In (3-15), both the first accusative NP 그 여자를 *ku eyca-lul* 'the woman-ACC' and the second accusative NP 팔을 *pal-ul* 'arm-ACC' are scrambled over the nominative NP 어떤 사람이 *etten salam-i* 'certain person-NOM'. In (3-16), the first accusative NP 그 여자를 *ku eyca-lul* 'the woman-ACC' is scrambled over the nominative NP 어떤 사람이 *etten salam-i* 'certain person-NOM'. In both sentences, the second accusative NP is preceded by the first accusative NP.

3.2.3 SCRAMBLING AND SMALL CLAUSES

Small clauses have the subject-predicate constituent without a finite verb. Instead a NP, PP, or AP serves as the predicate in such a constituent. Thus the PP in (3-17) and the NP in (3-18) are standardly analyzed as small clauses with *him* as the subject.

(3-17) I want [$_{PP}$ him out of my sight]

(3-18) They consider [$_{NP}$ him a great thinker]

In Korean, scrambling within a small clause is not permissible. That is to say, in the small clause, scrambling between the subject and its predicate is not acceptable. Consider (3-19) ~ (3-22) and (3-23) ~ (3-26).

(3-19) 사람들이	그를	부자로	생각했다
salam-tul-i	ku-lul$_i$	pwuca-lo$_j$	syangkakhya-ss-ta
person-PL-NOM	he-ACC	rich man-as	think-PST-DCL

'*People thought of him as a rich man.*'

(3-20)*사람들이	부자로	그를		생각했다
salam-tul-i	pwuca-lo$_j$	ku-lul$_i$	t_j	syangkakhya-ss-ta
person-PL-NOM	rich man-as	he-ACC		think-PST-DCL

'*People thought of him as a rich man.*'

(3-21)*부자로 사람들이 그를 생각했다

pwuca-lo$_j$ salam-tul-i ku-lul$_i$ t_j syangkakhya-ss-ta

rich man-as person-PL-NOM he-ACC think-PST-DCL

'People thought of him as a rich man.'

(3-22)*부자로 그를 사람들이 생각했다

pwuca-lo$_j$ ku-lul$_i$ t_j' salam-tul-i t_i t_j syangkakhya-ss-ta

rich man-as he-ACC person-PL-NOM think-PST-DCL

'People thought of him as a rich man.'

(3-23) 그 교수가 영한을 사위로 삼았다

ku kyoswu-ka Younghan-ul$_i$ sawi-ro$_j$ sam-ass-ta

the professor-NOM Younghan-ACC son-in-law-as make-PST-DCL

'The professor made Younghan his son-in-law.'

(3-24)*그 교수가 사위로 영한을 삼았다

ku kyoswu-ka sawi-ro$_j$ Younghan-ul$_i$ t_j sam-ass-ta

the professor-NOM son-in-law-as Younghan-ACC make-PST-DCL

'The professor made Younghan his son-in-law.'

(3-25)*사위로 그 교수가 영한을 삼았다

sawi-ro$_j$ ku kyoswu-ka Younghan-ul$_i$ t_j sam-ass-ta

son-in-law-as the professor-NOM Younghan-ACC make-PST-DCL

'*The professor made Younghan his son-in-law.*'

(3-26)*사위로 영한을 그 교수가 삼았다

sawi-ro$_j$ Younghan-ul$_i$ t_j' ku kyoswu-ka t_i t_j sam-ass-ta

son-in-law-as Younghan-ACC the professor-NOM make-PST-DCL

'The professor made Younghan his son-in-law.'

In (3-19) ~ (3-22) and (3-23) ~ (3-26), when two constituents of a small clause are scrambled, the sentence becomes ungrammatical. However, in (3-27) ~ (3-28) and (3-29) ~ (3-30), the sentence is acceptable as long as these two constituents of a small clause preserve their sequence.

(3-27) 그를 부자로 사람들이 생각했다

ku-lul$_i$ pwuca-lo$_j$ salam-tul-i t_i t_j syangkakhya-ss-ta

he-ACC rich man-as person-PL-NOM think-PST-DCL

'*People thought of him as a rich man.*'

(3-28) 그를 사람들이 t_i 부자로 생각했다

ku-lul$_i$ salam-tul-i t_i pwuca-lo$_j$ syangkakhya-ss-ta

he-ACC person-PL-NOM rich man-as think-PST-DCL

'*People thought of him as a rich man.*'

(3-29) 영한을 사위로 그 교수가 t_i t_j 삼았다

Younghan-ul$_i$ sawi-ro$_j$ ku kyoswu-ka t_i t_j sam-ass-ta

Younghan-ACC son-in-law-as the professor-NOM make-PST-DCL

'*The professor made Younghan his son-in-law.*'

(3-30) 영한을 그 교수가 t_i 사위로 삼았다

Younghan-ul$_i$ ku kyoswu-ka t_i sawi-ro$_j$ sam-ass-ta

Younghan-ACC the professor-NOM son-in-law-as make-PST-DCL

'The professor made Younghan his son-in-law.'

3.3 A HYPOTHESIS BASED ON THEMATIC ROLES

3.3.1 THEMATIC ROLES

Thematic roles (henceforth Θ-roles) have played an important part in linguistic theory since the ground breaking work in Gruber (1965), Fillmore (1965, 1968), and Jackendoff (1972, 1976). While Θ-roles were identified intuitively in this early work, subsequent work in formal semantics, particularly Montague Grammar, stressed the importance of entailment relations between sentences.

Since Jackendoff (1976) it has been common to use entailment relations to characterize Θ-roles. On this view Θ-roles serve to define classes of predicates that license similar entailments (Parsons 1990, Dowty 1991). For instance, consider the following two-place predicates: *murder, nominate,* and *interrogate*. These predicates license similar entailments: 1) the subject argument of each predicate performs a volitional act, 2) it intends to be the sort of act identified by the verb, and 3) in each case the subject causes an event to take place involving the object argument. The subject of these predicates has the same Θ-role, which we can identify as Agent for expository convenience. Not all subjects of all predicates are Agents in this sense. The first entailment is not shared by *kill*, since non-volitional things such as traffic accidents can also kill. The second entailment is not shared by *convince* or *kill*, since we can convince or kill unintentionally, but cannot murder or nominate unintentionally. The last entailment is not shared by *look at*, since it does not cause the event to take place involving the object argument. The subjects of these predicates have distinct Θ-roles although there is considerable variation among researchers on how to identify them. Some authors identify the subject of psychological predicates *convince* as a source, others take it to be a theme, and still others suggest a distinct role stimulus. More recently there was often a debate about whether Θ-roles can be partitioned into strict classes with necessary and sufficient criteria.

While there has been a lack of consensus of the inventory of Θ-roles, the general notion of Θ-roles has played an important role in syntactic theorizing. Θ-roles are integral to the Θ-criterion in Chomsky (1981). This condition stipulates that each argument receives

exactly one Θ-role and that each Θ-role is assigned to exactly one argument. The Θ-criterion accounts for the ungrammaticality of (3-31).

(3-31)**Jane loved Mary John*.

The two-place predicate *love* bears two Θ-roles, but the sentence has three arguments, *Jane*, *Mary*, and *John*. One of them fails to receive a Θ-role, and the sentence violates the Θ-criterion as a result. It is significant that the Θ-criterion applies to Θ-roles in general rather than to any specific role. Further refinements of the Θ-criterion make it apply to a "chain." A chain is a technical object composed of the moved NP and its traces.[21] The chain plays a central role in the syntactic theory of movement (including scrambling). Unlike an ordinary relationship between two co-indexed NPs, the chain-relation between an antecedent and its trace requires that they act like a single NP. We state the Θ-criterion in terms of chains in (3-32).

(3-32) Θ-criterion

Each argument A appears in a chain containing a unique visible Θ-position P, and each Θ—position P is visible in a chain containing a unique argument A. (Chomsky, 1986b: 97)

[21] In the case of a single NP simply remaining in its base-generated position, the NP is regarded as a one-member chain.

3.3.2 AN EXPLANATION WITH THEMATIC ROLES

The Θ-roles given in the above characterization can be used to frame a hypothesis to explain the numerous restrictions on scrambling in Korean in section 3.2. Let us entertain the hypothesis in (3-33).[22]

(3-33) X may scramble if and only if X heads a chain containing a unique visible Θ-position P.

The principle in (3-33) only allows X to scramble if it has been assigned a Θ-role. In (3-14) ~ (3-16), repeated below as (3-34) ~ (3-36) for the readers' convenience, we see an acceptable case of scrambling in the double accusative construction.

(3-34) 어떤 사람이 그 여자를 팔을 잡아끌었다
etten salam-i ku eyca-lul$_i$ pal-ul$_j$ capakkul-ess-ta
certain person-NOM the woman-ACC arm-ACC pull-PST-DCL
'A certain person pulled the woman's arm.'

(3-35) 그 여자를 팔을 어떤 사람이 t_i t_j 잡아끌었다
ku eyca-lul$_i$ pal-ul$_j$ etten salam-i t_i t_j capakkul-ess-ta
the woman-ACC arm-ACC certain person-NOM pull-PST-DCL
'A certain person pulled the woman's arm.'

[22] The principle in (3-33) has Fanselow's (2001) treatment of variable word order (introduced in chapter 2) as special subcase, namely when chains are singletons.

(3-36) 그 여자를 어떤 사람이 팔을 잡아끌었다

ku eyca-lul$_i$ etten salam-i t_i pal-ul$_j$ capakkul-ess-ta

the woman-ACC certain person-NOM arm-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

In (3-35), the scrambled constituent 그 여자를 팔을 *ku eyca-lul$_i$ pal-ul$_j$* 'the woman-ACC arm-ACC' has been assigned a Θ-role by the verb 잡아끌었다 *capakkul-ess-ta* 'pull-PST-DCL' making it available for scrambling.[23]

However, in (3-10) ~ (3-13), repeated below as (3-37) ~ (3-40), scrambling causes grammaticality judgments to degrade. The hypothesis in (3-33) will attribute this degradation to the fact that the scrambled constituent has not been given a Θ-role.

(3-37) 어떤 사람이 그 여자를 팔을 잡아끌었다

etten salam-i ku eyca-lul$_i$ pal-ul$_j$ capakkul-ess-ta

certain person-NOM the woman-ACC arm-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

[23] Scrambling of 그 여자를 *ku eyca-lul* 'the woman-ACC' in (3-36) will be explained after the discussion of (3-40) below.

(3-38)*어떤 사람이 팔을 그 여자를 잡아끌었다

etten salam-i pal-ul$_j$ ku eyca-lul t_j capakkul-ess-ta

certain person-NOM arm-ACC the woman-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-39)*팔을 어떤 사람이 그 여자를 잡아끌었다

pal-ul$_j$ etten salam-i ku eyca-lul t_j capakkul-ess-ta

arm-ACC certain person-NOM the woman-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-40)*팔을 그 여자를 어떤 사람이 잡아끌었다

pal-ul$_j$ [ku eyca-lul$_i$ t_j'] etten salam-i [t_i t_j] capakkul-ess-ta

arm-ACC the woman-ACC certain person-NOM pull-PST-DCL

'A certain person pulled the woman's arm.'

In (3-38) and (3-39), the scrambled constituent 팔을 *pal-ul$_j$* 'arm-ACC' is not given a Θ-role. One might think that it is provided a Θ-role from the verb 잡아끌었다 *capakkul-ess-ta* 'pull-PST-DCL', but the verbal predicate gives a Θ-role to the whole NP 그 여자를 팔을 *ku eyca-lul$_i$ pal-ul$_j$* 'the woman-ACC arm-ACC', not just the second NP 팔을 *pal-ul$_j$* 'arm-ACC'. The reason why the verb assigns the Θ-role to the whole NP in (3-38) and (3-39) is that the theme of the predicate *pull* is 그 여자를 팔을 *ku eyca-lul$_i$ pal-ul$_j$* 'the woman-ACC arm-ACC' as a whole, not just 팔을 *pal-ul$_j$* 'arm-ACC'.

In (3-40), two constituents have scrambled. First the whole NP 그 여자를 팔을 *ku eyca-lul*$_i$ *pal-ul*$_j$ 'the woman-ACC arm-ACC' has scrambled from its underlying position, and then the second NP 팔을 *pal-ul*$_j$ 'arm-ACC' scrambles from the intermediate position t_j'. The first scrambled constituent has been given a Θ-role, but the second scrambled constituent is not given a Θ-role. The fact that the second scrambled constituent has not been given a Θ-role gives us the degradation of acceptability in (3-39).

In (3-36), we can see another possible case of scrambling in the double accusative construction. By the hypothesis in (3-33), the scrambled constituent 그 여자를 *ku eyca-lul*$_i$ 'the woman-ACC' must have been given a Θ-role by the predicate (here the second accusative NP *pal-ul*$_j$ 'arm-ACC'). The claim that the second accusative NP 팔을 *pal-ul*$_j$ 'arm-ACC' gives the first accusative NP 그 여자를 *ku eyca-lul*$_i$ 'the woman-ACC' a Θ-role in the double accusative construction is made plausible by the fact that the first accusative NP always expresses an argument of a relation. In the Korean double accusative construction, the second accusative Case-marked NP represents the part, kind, or number of the first one. That is, the first accusative Case-marked NP is an argument of that relation and receives a Θ-role from that relation.[24]

The same account can be provided for small clause examples in (3-19) ~ (3-22) and (3-27) ~ (3-28), repeated below as (3-41) ~ (3-44) and (3-45) ~ (3-46).

[24] The two accusative NPs are in part/whole relations. In terms of Jackendoff (1976), this relation can be stated as the function BE_{POSS} (2^{nd} NP, 1^{st} NP).

(3-41) 사람들이 그를 부자로 생각했다

salam-tul-i ku-lul$_i$ pwuca-lo$_j$ syangkakhya-ss-ta

person-PL-NOM he-ACC rich man-as think-PST-DCL

'*People thought of him as a rich man.*'

(3-42)*사람들이 부자로 그를 생각했다

salam-tul-i pwuca-lo$_j$ ku-lul$_i$ t_j syangkakhya-ss-ta

person-PL-NOM rich man-as he-ACC think-PST-DCL

'*People thought of him as a rich man.*'

(3-43)*부자로 사람들이 그를 생각했다

pwuca-lo$_j$ salam-tul-i ku-lul$_i$ t_j syangkakhya-ss-ta

rich man-as person-PL-NOM he-ACC think-PST-DCL

'People thought of him as a rich man.'

(3-44)*부자로 그를 사람들이 생각했다

pwuca-lo$_j$ ku-lul$_i$ t_j' salam-tul-i t_i t_j syangkakhya-ss-ta

rich man-as he-ACC person-PL-NOM think-PST-DCL

'*People thought of him as a rich man.*'

(3-45) 그를 부자로 사람들이 생각했다

ku-lul$_i$ pwuca-lo$_j$ salam-tul-i t_i t_j syangkakhya-ss-ta

he-ACC rich man-as person-PL-NOM think-PST-DCL

'*People thought of him as a rich man.*'

(3-46) 그를 사람들이 부자로 생각했다

ku-lul$_i$ salam-tul-i t_i pwuca-lo$_j$ syangkakhya-ss-ta

he-ACC person-PL-NOM rich man-as think-PST-DCL

'*People thought of him as a rich man.*'

In (3-45), which is a possible case of scrambling in the small clause, the scrambled constituent 그를 부자로 *ku-lul$_i$ pwuca-lo$_j$* 'he-ACC rich man-as' is given a Θ-role by the verb 생각했다 *syangkakhya-ss-ta* 'think-PST-DCL'. In (3-46), which is another possible case of scrambling in the small clause, the scrambled constituent 그를 *ku-lul$_i$* 'he-ACC' is given a Θ-role by the NP predicate 부자로 *pwuca-lo$_j$* 'rich man-as'.

However, in (3-42) ~ (3-44) where the grammatical judgment has been degraded by scrambling, the scrambled constituent is not given a Θ-role. In (3-42) and (3-43), the scrambled constituent 부자로 *pwuca-lo$_j$* 'rich man-as' has not been given a Θ-role. Like the case of (3-38) and (3-39), one might think that it is provided a Θ-role from the verb 생각했다 *syangkakhya-ss-ta* 'think-PST-DCL', but the verb predicate gives a Θ-role to the small clause 그를 부자로 *ku-lul$_i$ pwuca-lo$_j$* 'he-ACC rich man-as' as a whole, not just the NP predicate 부자로 *pwuca-lo$_j$* 'rich man-as'.

In (3-44), again like the case of (3-40), there are two instances of scrambling. The first one is the scrambling of the entire small clause 그를 부자로 *ku-lul$_i$ pwuca-lo$_j$* 'he-ACC rich man-as' from its underlying position, and the second one is the scrambling of the NP predicate 부자로 *pwuca-lo$_j$* 'rich man-as' from the intermediate position *t$_j$*'. The first scrambled constituent is given a Θ-role, but the second scrambled one is not given a Θ-role. The validity of this assertion can be found from the fact that the NP predicate of small clauses is not in A-position. Θ-roles can be assigned to only A-positions and the NP predicate 부자로 *pwuca-lo$_j$* 'rich man-as' is not in A-position. In addition, consider (3-47) ~ (3-49).

(3-47) 사람들이 철수를 부자로 생각했다

salam-tul-i Chelswu-lul$_i$ pwuca-lo$_j$ syangkakhya-ss-ta

person-PL-NOM Chelswu-ACC rich man-as think-PST-DCL

'*People thought of Chelswu as a rich man.*'

(3-48) 사람들이 모든 철수를 부자로 생각했다

salam-tul-i motun Chelswu-lul$_i$ pwuca-lo$_j$ syangkakhya-ss-ta

person-PL-NOM every Chelswu-ACC rich man-as think-PST-DCL

'*People thought of every Chelswu as a rich man.*'

(3-49)*사람들이	철수를	모든	부자로	생각했다
salam-tul-i	Chelswu-lul$_i$	motun	pwuca-lo$_j$	syangkakhya-ss-ta
person-PL-NOM	Chelswu-ACC	every	rich man-as	think-PST-DCL

'*People thought of Chelswu as every rich man.*'

In (3-48) and (3-49), 철수를 *Chelswu-lul*$_i$ 'Chelswu-ACC' is easily quantified but 부자로 *pwuca-lo*$_j$ 'rich man-as' resists being quantified, respectively. The resistance of 부자로 *pwuca-lo*$_j$ 'rich man-as' shows that it is a predicate. In (3-41) ~ (3-46), 부자로 *pwuca-lo*$_j$ 'rich man-as' is not assigned a Θ-role and thus not allowed to be scrambled.

The hypothesis in (3-33) unifies the numerous restrictions on scrambling by preventing the scrambling of the phrases without Θ-roles. That is to say, only phrases assigned a Θ-role can be scrambled. We have seen that the prohibition of scrambling phrases that lack Θ-roles can explain the pattern of scrambling in both the double accusative construction and the small clause construction.

This explanation may also explain the restriction on the leftward scrambling of the verb over the arguments. In (3-6) and (3-7), repeated below as (3-50) and (3-51) for the readers' convenience, the scrambled constituent is the verb 먹었다 *mekessta* 'ate' and it lacks a Θ-role. Scrambling in (3-50) and (3-51) is not acceptable in the light of (3-33).

(3-50)*철수가 영희가 먹었다고 밥을 말했다

Chelswu-ka Younghee-ka mekessta-ko$_k$ pap-ul t_k malhyassta

Chelswu-NOM Younghee-NOM ate-COMP meal-ACC said

'Chelswu said that Younghee ate a meal.'

(3-51)*철수가 먹었다고 영희가 밥을 말했다

Chelswu-ka mekessta-ko$_k$ Younghee-ka pap-ul t_k malhyassta

Chelswu-NOM ate-COMP Younghee-NOM meal-ACC said

'Chelswu said that Younghee ate a meal.'

However, the extension of this explanation to the restriction on the leftward scrambling over the same Case-marker in (3-8) and (3-9), repeated below as (3-52) and (3-53) for the readers' convenience, is problematic.

(3-52) 구름이 비가 된다

kwulum-i pi-ka toy-n-ta

cloud-NOM rain-NOM become-PRES-DCL

'The cloud becomes the rain.'

(3-53)*비가 구름이 된다

pi-ka kwulum-i toy-n-ta

rain-NOM cloud-NOM become-PRES-DCL

*'*The cloud becomes the rain.'*

In (3-52) and (3-53), both 구름이 *kwulum-i* ‘cloud-NOM’ and 비가 *pi-ka* ‘rain-NOM’ are assigned a Θ-role, but the scrambling of 비가 *pi-ka* ‘rain-NOM’ is not allowed.[25] To explain this problem, we need to assimilate it to superiority phenomena.[26] Between 구름이 *kwulum-i* ‘cloud-NOM’ and 비가 *pi-ka* ‘rain-NOM’, the former is superior in the hierarchical structure. When the scrambling is applied to them, it has to be applied to 구름이 *kwulum-i* ‘cloud-NOM’. If the structurally inferior 비가 *pi-ka* ‘rain-NOM’ is scrambled, then it violates the Minimal Link Condition of Chomsky (1995), which is designed to capture superiority phenomena.

The restriction on the leftward scrambling over the same Case-marker is not an isolated problem. We also find a problem for the hypothesis in (3-33) in (3-55) and (3-56).

(3-54)	내가	학교에서	한 시에	너를	기다렸다
	nya-ka	hakkyo-yese	han si-ye	ne-lul	kitary-eyss-ta
	I-NOM	school-LOC	one o’clock-at	you-ACC	wait-PST-DCL

‘I waited for you at the school at one o’clock.’

[25] In terms of Jackendoff (1976), 비가 *pi-ka* ‘rain-NOM’ has a Θ–role, as shown in GO_{IDENT} (CLOUD, y, RAIN).

[26] If a transformation can in principle be applied to two constituents in the structure, it has to be applied to the one that is structurally superior. This condition on the application of transformations is often called the superiority condition, after Chomsky (1977).

(3-55) 학교에서 내가 한 시에 너를 기다렸다

hakkyo-yese$_i$ nya-ka t_i han si-ye ne-lul kitary-eyss-ta

school-LOC I-NOM one o'clock-at you-ACC wait-PST-DCL

'I waited for you at the school at one o'clock.'

(3-56) 학교에서 한 시에 내가 너를 기다렸다

hakkyo-yese$_i$ han si-ye$_j$ nya-ka t_i t_j ne-lul kitary-eyss-ta

school-LOC one o'clock-at I-NOM wait-PST-DCL

'I waited for you at the school at one o'clock.'

In (3-55), the locative adjunct 학교에서 *hakkyo-yese* 'school-LOC' does not have a Θ-role, but it is scrambled nonetheless. In (3-56), both the locative adjunct 학교에서 *hakkyo-yese* 'school-LOC' and the temporal adjunct 한 시에 *han si-ye* 'one o'clock-at' do not have a Θ-role, but they have scrambled as well. This kind of scrambling cannot be explained by the Θ-role hypothesis.

3.4 A HYPOTHESIS BASED ON SEMANTIC COMPLETENESS

3.4.1 SEMANTIC COMPLETENSS VS. SEMANTIC INCOMPLETENESS

In the tradition of formal semantics, expressions are partitioned into two classes. One class is semantically complete or "saturated." The second class is semantically incomplete or unsaturated. Predicates are regarded as incomplete, or unsaturated, and this semantic incompleteness is made complete, or saturated, by composing them (via functional

application) with semantically complete terms. There are two types of saturated meanings which represent semantic completeness: entities (or individuals) and truth-values. In this analysis, the unsaturated meanings are construed as functions. The unsaturated meanings take arguments, and saturation consists in the application of a function to its arguments. For instance, let us consider the simple example (3-57) with an intransitive verb.

(3-57) John smokes.

The semantic composition of (3-57) is translated with the logical notation in (3-58).

(3-58) λx[smoke'(x)](j)

The notation (3-58) tells us that the predicate *smoke* is a function from individuals to truth-values (<e ,t>). This function *smoke* is semantically incomplete. As a result it requires a semantically complete entity as an argument to saturate its incomplete part, the variable x. In (3-58) the entity *j* is applied to saturate this function. This treatment extends to the next example (3-59) with a transitive verb.

(3-59) John loves Mary.

The semantic composition of (3-59) is translated with the logical notation in (3-60).

(3-60) λyλx [love'(y)(x)](m)(j)

According to (3-60), the predicate *love* is given a function from individuals to functions from individuals to truth-values (<e, <e, t>>). In other words, this function *love* is semantically incomplete in two respects, corresponding to the two arguments required by *love*. Thus, it takes the two semantically complete objects m and j as arguments in turn to saturate it.

3.4.2 AN EXPLANATION WITH SEMANTIC COMPLETENESS

The concept of a function as it is used in formal semantics allows us to frame an alternative hypothesis to explain the limitations on scrambling in Korean. Specifically, let us entertain the hypothesis in (3-61)

(3-61) X may scramble if and only if X is semantically complete.

(3-11) ~ (3-13) in (3-10) ~ (3-13), repeated below as (3-63) ~ (3-65) in (3-62) ~ (3-65), are judged unacceptable because of the application of scrambling.

(3-62)	어떤	사람이	그	여자를	팔을	잡아끌었다
	etten	salam-i	ku	eyca-lul$_i$	pal-ul$_j$	capakkul-ess-ta
	certain	person-NOM	the	woman-ACC	arm-ACC	pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-63)*어떤 사람이 팔을 그 여자를 잡아끌었다

etten salam-i pal-ul$_j$ ku eyca-lul t_j capakkul-ess-ta

certain person-NOM arm-ACC the woman-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-64)*팔을 어떤 사람이 그 여자를 잡아끌었다

pal-ul$_j$ etten salam-i ku eyca-lul t_j capakkul-ess-ta

arm-ACC certain person-NOM the woman-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-65)*팔을 그 여자를 어떤 사람이 잡아끌었다

pal-ul$_j$ ku eyca-lul$_i$ t_j' etten salam-i t_i t_j capakkul-ess-ta

arm-ACC the woman-ACC certain person-NOM pull-PST-DCL

'A certain person pulled the woman's arm.'

The scrambled constituents in (3-63) ~ (3-65) are semantic functions which are incomplete and by (3-61) they are not permissible candidates for scrambling. In (3-63) and (3-64), the scrambled constituent 팔을 *pal-ul$_j$* 'arm-ACC' is semantically incomplete, as 팔을 *pal-ul$_j$* 'arm-ACC' needs to be composed with 그 여자를 *ku eyca-lul$_i$* 'the woman-ACC' to convey the complete meaning of the object in the double accusative construction (3-62) ~ (3-65). The unsaturated meaning of the second NP 팔을 *pal-ul$_j$* 'arm-ACC' is saturated by taking an argument, the first NP 그 여자를 *ku eyca-lul$_i$* 'the woman-ACC'. In (3-65), there are two

scramblings. The first one is the scrambling of the whole NP 그 여자를 팔을 *ku eyca-lul*$_i$ *pal-ul*$_j$ 'the woman-ACC arm-ACC' from its underlying position and the second one is the scrambling of the second NP 팔을 *pal-ul*$_j$ 'arm-ACC' from the intermediate position t_j'. The first scrambled constituents are not semantically incomplete, but the second scrambled constituent is semantically incomplete. In both (3-63) ~ (3-64) and (3-65), the scrambling of the phrases which are semantically incomplete makes each example ungrammatical. That is, as shown in (3-62) ~ (3-65), the phrases corresponding to functions cannot be scrambled.

Consider (3-66). It is possible to produce (3-67) (repeating the earlier (3-15)) because the scrambled constituent 그 여자를 팔을 *ku eyca-lul*$_i$ *pal-ul*$_j$ 'the woman-ACC arm-ACC' is semantically complete.

(3-66) 어떤 사람이 그 여자를 팔을 잡아끌었다

etten salam-i ku eyca-lul$_i$ pal-ul$_j$ capakkul-ess-ta

certain person-NOM the woman-ACC arm-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-67) 그 여자를 팔을 어떤 사람이 잡아끌었다

ku eyca-lul$_i$ pal-ul$_j$ etten salam-i t_i t_j capakkul-ess-ta

the woman-ACC arm-ACC certain person-NOM pull-PST-DCL

'A certain person pulled the woman's arm.'

(3-68) 그 여자를 어떤 사람이 팔을 잡아끌었다

ku eyca-lul$_i$ etten salam-i t_i pal-ul$_j$ capakkul-ess-ta

the woman-ACC certain person-NOM arm-ACC pull-PST-DCL

'A certain person pulled the woman's arm.'

In (3-68), which is another possible case of scrambling in the double accusative construction (3-66), the scrambled constituent 그 여자를 *ku eyca-lul$_i$* 'the woman-ACC' is also semantically complete.

In the case of the small clauses where the grammatical judgment has been degraded by scrambling, the scrambled phrases are functions. Consider again (3-20) ~ (3-22), repeated below as (3-70) ~ (3-72). In (3-69) ~ (3-72), the scrambled phrase 부자로 *pwuca-lo$_j$* 'rich man-as' is semantically incomplete.

(3-69) 사람들이 그를 부자로 생각했다

salam-tul-i ku-lul$_i$ pwuca-lo$_j$ syangkakhya-ss-ta

person-PL-NOM he-ACC rich man-as think-PST-DCL

'People thought of him as a rich man.'

(3-70)*사람들이 부자로 그를 생각했다

salam-tul-i pwuca-lo$_j$ ku-lul$_i$ t_j syangkakhya-ss-ta

person-PL-NOM rich man-as he-ACC think-PST-DCL

'People thought of him as a rich man.'

(3-71)*부자로 사람들이 그를 생각했다

pwuca-lo$_j$ salam-tul-i ku-lul$_i$ t_j syangkakhya-ss-ta

rich man-as person-PL-NOM he-ACC think-PST-DCL

'People thought of him as a rich man.'

(3-72)*부자로 그를 사람들이 생각했다

pwuca-lo$_j$ ku-lul$_i$ t_j' salam-tul-i t_i t_j syangkakhya-ss-ta

rich man-as he-ACC person-PL-NOM think-PST-DCL

'People thought of him as a rich man.'

Like the case of (3-63) and (3-64), one might think that in (3-70) and (3-71) the scrambled constituent is semantically complete. However, in fact, this is not the case since the unsaturated meaning of the NP predicate 부자로 *pwuca-lo$_j$* 'rich man-as' is supplemented by taking its argument *ku-lul$_i$* 'he-ACC'. The NP predicate 부자로 *pwuca-lo$_j$* 'rich man-as' functions as a semantic predicate. The validity of this assertion is supported by the distribution of quantifiers in (3-73) and (3-74). The resistance of an NP predicate 부자로 *pwuca-lo* 'rich man-as' to quantification in small clauses suggests that it is a function (of type <e, t>).

(3-73) 사람들이 모든 의사를 부자로 생각했다

salam-tul-i motun uysa-lul pwuca-lo syangkakhya-ss-ta

person-PL-NOM every doctor-ACC rich man-as think-PST-DCL

'People thought of every doctor as a rich man.'

(3-74)*사람들이 의사를 모든 부자로 생각했다

salam-tul-i uysa-lul motun pwuca-lo syangkakhya-ss-ta

person-PL-NOM doctor-ACC every rich man-as think-PST-DCL

'**People thought of a doctor as an every rich man.*'

In (3-72), again like the case of (3-65), there are two instances of scrambling. The first one is the scrambling of the entire small clause 그를 부자로 *ku-lul*$_i$ *pwuca-lo*$_j$ 'he-ACC rich man-as' from its underlying position and the second one is the scrambling of the NP predicate 부자로 *pwuca-lo*$_j$ 'rich man-as' from the intermediate position t_j'. The first scrambled constituent is not semantically incomplete, but the second scrambled constituent is semantically incomplete. In all of (3-70) ~ (3-72), the scrambling of phrases corresponding to semantic functions is prevented.

On the other hand, in (3-75), which is a possible case of scrambling of the small clause, the scrambled constituent 그를 부자로 *ku-lul pwuca-lo* 'he-ACC rich man-as' is semantically complete (corresponding to the type <t>).

(3-75) 그를 부자로 사람들이 생각했다

ku-lul$_i$ pwuca-lo$_j$ salam-tul-i t_i t_j syangkakhya-ss-ta

he-ACC rich man-as person-PL-NOM think-PST-DCL

'People thought of him as a rich man.'

(3-76) 그를	사람들이			부자로	생각했다
ku-lul$_i$	salam-tul-i	t_i		pwuca-lo$_j$	syangkakhya-ss-ta
he-ACC	person-PL-NOM			rich man-as	think-PST-DCL

'People thought of him as a rich man.'

In (3-76), which is another possible case of scrambling from the small clause, the scrambled constituent 그를 *ku-lul*$_i$ 'he-ACC' is complete (corresponding to the type <e>). In neither (3-75) nor (3-76) are the scrambled phrases functions (of type <e, t> or higher).

The hypothesis (3-61) unifies the restrictions on scrambling by preventing the scrambling of the phrases corresponding to functions. Only the phrases which are semantically complete can be scrambled. That is, a phrase that is an unsaturated function cannot be scrambled. The prevention of the scrambling of the semantically incomplete phrases can explain the scrambling in the double accusative construction and the small clause.

This explanation may also extend to the restrictions on the leftward scrambling of the verb over its arguments. In (3-6) and (3-7), repeated as (3-77) and (3-78), the scrambled constituent is the verb 먹었다 *mekessta* 'ate'. Of course, as a predicate function, it is semantic incomplete in the sense that it needs to take two arguments to form a sentence of the semantic type <t>. The scrambling in (3-77) and (3-78) is not acceptable in the light of (3-61).

(3-77)*철수가 영희가 먹었다고 밥을 말했다

Chelswu-ka Younghee-ka mekessta-ko$_k$ pap-ul t_k malhyassta

Chelswu-NOM Younghee-NOM ate-COMP meal-ACC said

'Chelswu said that Younghee ate a meal.'

(3-78)*철수가 먹었다고 영희가 밥을 말했다

Chelswu-ka mekessta-ko$_k$ Younghee-ka pap-ul t_k malhyassta

Chelswu-NOM ate-COMP Younghee-NOM meal-ACC said

'Chelswu said that Younghee ate a meal.'

Finally, unlike the case of the explanation with Θ-roles, this explanation accounts for the restriction on the leftward scrambling over the same Case-marker in (3-8) and (3-9), repeated below as (3-79) and (3-80).

(3-79) 구름이 비가 된다

kwulum-i pi-ka toy-n-ta

cloud-NOM rain-NOM become-PRES-DCL

'The cloud becomes the rain.'

(3-80)*비가 구름이 된다

pi-ka kwulum-i toy-n-ta

rain-NOM cloud-NOM become-PRES-DCL

*'*The cloud becomes the rain.'*

In (3-79) and (3-80), unlike 구름이 *kwulum-i* ‘cloud-NOM’, 비가 *pi-ka* ‘rain-NOM’ is a semantic predicate; it is saturated by applying to an argument 구름이 *kwurum-i* ‘cloud-NOM’. The validity of this assertion is again supported by the distribution of quantifiers. The resistance of 비가 *pi-ka* ‘rain-NOM’ to quantification in (3-82) suggests that it is a function (of type <e, t>). The scrambling of the semantically incomplete phrase 비가 *pi-ka* ‘rain-NOM’ is prevented. In this case, we don’t need to use the additional explanatory device of the superiority condition.

(3-81) 모든 구름이 비가 된다

motun kwurum-i pi-ka toy-n-ta

every cloud-NOM rain-NOM become-PRES-DCL

‘*Every cloud becomes the rain.*’

(3-82)*구름이 모든 비가 된다

kwulum-i motun pi-ka toy-n-ta

cloud-NOM every rain-NOM become-PRES-DCL

‘**The cloud becomes every rain.*’

Therefore, the semantically incomplete 비가 *pi-ka* ‘rain-NOM’ in (3-79) cannot be scrambled to produce (3-80) by the hypothesis in (3-61).

3.5 THE ADVANTAGE OF THE HYPOTHESIS BASED ON SEMANTIC COMPLETENESS

In the previous sections, we have tried to explain the restrictions of Korean scrambling in two different ways. The first way is to use the notion of theta-roles. In this way, scrambling is permissible if and only if scrambled phrases are assigned a Θ-role. On this view if a scrambled phrase lacks a Θ-role, it is unaviailable for scrambling. The second potential like of explanation is to use the distinction between semantic completeness and semantic incompleteness. In formal semantics, expressions are divided into two classes: semantically complete ones and incomplete ones. From this vantage point a phrase is available for scrambling only if it is semantically complete. If a phrase is semantically incomplete, then it is unavailable for scrambling.

The two conceptualizations diverge with regard to phrases that are semantically complete but have no obvious Θ–role. If only Θ–marked phrases scramble, such a phrase should be frozen in place. If semantically complete expressions are available for scrambling, the constituent should be mobile.

The examples in (3-83) ~ (3-88) test these competing predictions. (3-83) contains the locative adjunct 학교에서 *hakkyo-yese* 'school-LOC' and the temporal adjunct 한 시에 *han si-ye* 'one o'clock-at'. 학교에서 *hakkyo-yese* 'school-LOC' and 한 시에 *han si-ye* 'one o'clock-at' in (3-83) are adjuncts and not arguments of the verb 기다리 *kitary-* 'wait' in that they are absent in (3-84) and that long distance scrambling of them is not acceptable in (3-85) ~ (3-86).[27]

[27] I assume that (3-83) is the underlying form of (3-87) and (3-88). Under the movement approach to scrambling, it is generally assumed that the direct object NP 너를 *ne-lul* 'you-ACC' is adjacent to the predicate

(3-83) 내가 학교에서 한 시에 너를 기다렸다

nya-ka hakkyo-yese han si-ye ne-lul kitary-eyss-ta

I-NOM school-LOC one o'clock-at you-ACC wait-PST-DCL

'I waited for you at the school at one o'clock.'

(3-84) 내가 너를 기다렸다

nya-ka ne-lul kitary-eyss-ta

I-NOM you-ACC wait-PST-DCL

'I waited for you.'

(3-85) 영희가 내가 학교에서 한 시에

Younghee-ka nya-ka hakkyo-yese$_i$ han si-ye$_j$

Younghee-NOM I-NOM school-LOC one o'clock-at

너를 기다렸다고 생각했다

ne-lul kitary-eyss-ta-ko syangkakhya-ss-ta

you-ACC wait-PST-DCL-COMP think-PST-DCL

'Younghee thought that I waited for you at the school at one o'clock.'

기다렸다 *kitary-eyss-ta* 'wait-PST-DCL' underlyingly, from which it receives a Θ–role under sisterhood.

(3-86)*학교에서 한 시에 영희가 내가

hakkyo-yese$_i$ han si-ye$_j$ Younghee-ka nya-ka t_i t_j

school-LOC one o'clock-at Younghee-NOM I-NOM

너를 기다렸다고 생각했다

ne-lul kitary-eyss-ta-ko syangkakhya-ss-ta

you-ACC wait-PST-DCL-COMP think-PST-DCL

'*Younghee thought that I waited for you at the school at one o'clock.*'

(3-87) 학교에서 내가 한 시에 너를 기다렸다

hakkyo-yese$_i$ nya-ka t_i han si-ye ne-lul kitary-eyss-ta

school-LOC I-NOM one o'clock-at you-ACC wait-PST-DCL

'I waited for you at the school at one o'clock.'

(3-88) 학교에서 한 시에 내가 너를 기다렸다

hakkyo-yese$_i$ han si-ye$_j$ nya-ka t_i t_j ne-lul kitary-eyss-ta

school-LOC one o'clock-at I-NOM wait-PST-DCL

'*I waited for you at the school at one o'clock.*'

In (3-87), the locative adjunct 학교에서 *hakkyo-yese* 'school-LOC' does not have a Θ-role, but it has scrambled. In (3-88), neither the locative adjunct 학교에서 *hakkyo-yese* 'school-LOC' nor the temporal adjunct 한 시에 *han si-ye* 'one o'clock-at' have Θ-roles, but they

have scrambled as well. This scrambling cannot be explained by the Θ-role hypothesis. However, by the hypothesis with semantic completeness, the scrambling in (3-87) and (3-88) can be explained, since both the locative adjunct 학교에서 *hakkyo-yese* 'school-LOC' and the temporal adjunct 한 시에 *han si-ye* 'one o'clock-at' are semantically complete.

The examples in (3-89) ~ (3-91) work in the same pattern. (3-89) contains two temporal adjuncts and two locative adjuncts.

(3-89) 내가 서울에서 여기서 일요일에 한 시에 너를

nya-ka sewul-eyse eyki-se ilyoil-ye han si-ye ne-lul

I-NOM Seoul-LOC here-LOC Sunday-on one o'clock-at you-ACC

기다렸다

kitary-eyss-ta

wait-PST-DCL

'I waited for you here in Seoul at one o'clock on Sunday.'

(3-90) 서울에서 일요일에 내가 여기서 한 시에 너를

sewul-eyse$_i$ ilyoil-ye$_k$ nya-ka t_i eyki-se t_k han si-ye ne-lul

Seoul-LOC Sunday-on I-NOM here-LOC one o'clock-at you-ACC

기다렸다

kitary-eyss-ta

wait-PST-DCL

'I waited for you here in Seoul at one o'clock on Sunday.'

(3-91) 서울에서 여기서 일요일에 한 시에 내가 너를

sewul-eyse$_i$ eyki-se$_j$ ilyoil-ye$_k$ han si-ye$_l$ nya-ka t_i t_j t_k t_l ne-lul

Seoul-LOC here-LOC Sunday-on one o'clock-at I-NOM you-ACC

기다렸다

kitary-eyss-ta

wait-PST-DCL

'I waited for you here in Seoul at one o'clock on Sunday.'

In (3-90), the locative adjunct 서울에서 *sewul-eyse* 'Seoul-LOC' and the temporal adjunct 일요일에 *ilyoil-ye* 'Sunday-on' do not have a Θ–role, but they are scrambled. In (3-91), two locative adjunct 서울에서 여기서 *sewul-eyse eyki-se* 'Seoul-LOC here-LOC' and two

temporal adjunct 일요일에 한 시에 *ilyoil-ye han si-yel* 'Sunday-on one o'clock-at' do not have the Θ–role, but they are again scrambled.

The empirical evidence in (3-83) ~ (3-88) and (3-89) ~ (3-91) illustrates that phrases that are semantically complete but that lack θ-roles can scramble. This observation leads us to prefer the hypothesis that semantic completeness is a prerequisite to scrambling and gives a unified account of the restrictions on scrambling in Korean. In Korean, only semantically complete phrases scramble. In other words, semantically incomplete phrases (i.e. predicates) do not scramble.[28]

3.6 SUMMARY

The aim of this chapter has been to present a unified approach to the numerous restrictions on scrambling in Korean. Specifically, it has been concerned with explaining why Korean does not allow for rightward scrambling over the verb, leftward scrambling over the same Case-marker, or scrambling of the right-hand member of a small clause.

In order to explain these restrictions we have entertained two competing lines of explanation. The first line of explanation is based on the notion of theta-roles. Scrambling is

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[28] The present account is challenged by the acceptability of scrambling in (ii) if quantified expressions are treated as standard generalized quantifiers, being of the type <<e,t>, <<e,t>,t>>. The problem is that the expression motun kwaca-lul is not in of itself completely saturated semantically. It may be that the inferences licensed by the conservativity of determiners would allow us to assimilate examples like (ii) to the small clause examples that are well behaved on the terms of our analysis.

(i) 영희가 모든 과자를 먹었다
Younghee-ka motun kwaca-lul mekessta
Younghee-NOM every cookie-ACC ate
'Younghee ate every cookie.'

(ii) 모든 과자를 영희가 먹었다
motun kwaca-lul Younghee-ka mekessta
every cookie-ACC Younghee-NOM ate
'Younghee ate every cookie.'

permissible if and only if the scrambled phrase is assigned a theta-role. If the scrambled phrase lacks a theta-role, then scrambling is not acceptable. The second line of explanation is based on the notion of semantic completeness (or saturation). In formal semantics, expressions are divided into two classes: semantically complete expressions and incomplete ones. From this vantage point we could hypothesize that scrambling is permissible if and only if the scrambled phrase is semantically complete.

We considered the natural question whether one line of explanation has a comparative advantage over the other. If phrases with theta-roles but without semantic completeness scramble, then the first hypothesis has the advantage. If phrases that are semantically complete but lack theta-roles scramble, the second hypothesis is preferable. The ability of locative adjuncts and temporal adjuncts to scramble that the second hypothesis is empirically better than the first.

CHAPTER 4. THE SEMANTIC RESTRICTION AS IT INTERACTS WITH CLAUSE STRUCTURE

4.1 INTRODUCTION

In Chapter 3 I argued that scrambling is permissible in Korean when the scrambled constituent is semantically complete and impermissible when the constituent is semantically incomplete. If we understand the traditional term 'predicate' as denoting a semantically incomplete expression (of type <e, t> or higher), we can summarize the main conclusion of Chapter 3 as (4-1).

(4-1) Predicates must not scramble.

The generalization in (4-1) means that in a sentence like (4-2) the predicate 부자로 *pwuca-lo* 'rich man-as' is unable to scramble.

(4-2) 사람들이	그를	부자로	생각했다
salam-tul-i	ku-lul$_i$	pwuca-lo$_j$	syangkakhya-ss-ta
person-PL-NOM	he-ACC	rich man-as	think-PST-DCL

'*People thought of him as a rich man.*'

In (4-2) 부자로 *pwuca-lo* ‘rich man-ro’ is an NP predicate of the small clause 그를 부자로 *ku-lul pwuca-lo* ‘he-ACC rich man-as’. Scrambling of the predicate 부자로 *pwuca-lo* ‘rich man-ro’ causes the acceptability of (4-2) to degrade, as in (4-3) ~ (4-5).

(4-3)*사람들이 부자로 그를 생각했다

salam-tul-i pwuca-lo$_j$ ku-lul$_i$ t_j syangkakhya-ss-ta

person-PL-NOM rich man-as he-ACC think-PST-DCL

‘*People thought of him as a rich man.’*

(4-4)*부자로 사람들이 그를 생각했다

pwuca-lo$_j$ salam-tul-i ku-lul$_i$ t_j syangkakhya-ss-ta

rich man-as person-PL-NOM he-ACC think-PST-DCL

‘*People thought of him as a rich man.’*

(4-5)*부자로 그를 사람들이 생각했다

pwuca-lo$_j$ ku-lul$_i$ t_j’ salam-tul-i t_i t_j syangkakhya-ss-ta

rich man-as he-ACC person-PL-NOM think-PST-DCL

‘*People thought of him as a rich man.’*

On the other hand, the pronoun 그를 *ku-lul* ‘he-ACC’ is semantically complete (of type <e>). The small clause 그를 부자로 *ku-lul pwuca-lo* ‘he-ACC rich man-as’ is also a semantically complete expression (of type <t>). The generalization of (4-1) predicts that they should be available for scrambling. This prediction is confirmed by the acceptability of (4-6) and (4-7).

In (4-6) and (4-7) below, the scrambled constituent is not a predicate and thus does not lower the acceptability of the sentence.

(4-6) 그를 부자로 사람들이 t_i t_j 생각했다

ku-lul$_i$ pwuca-lo$_j$ salam-tul-i t_i t_j syangkakhya-ss-ta

he-ACC rich man-as person-PL-NOM think-PST-DCL

'People thought of him as a rich man.'

(4-7) 그를 사람들이 t_i 부자로 생각했다

ku-lul$_i$ salam-tul-i t_i pwuca-lo$_j$ syangkakhya-ss-ta

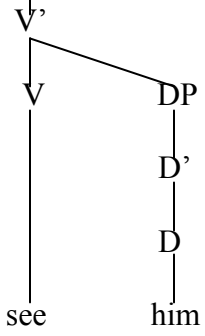
he-ACC person-PL-NOM rich man-as think-PST-DCL

'People thought of him as a rich man.'

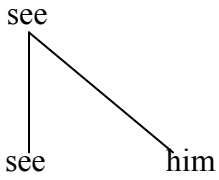
The generalization of (4-1) forces us to face two questions. The first question is why (4-1) should hold. The second is whether it holds categorically or needs to be parameterized in some fashion. With respect to the first question, section 4.2 argues that the generalization of (4-1) can be derived from other more general claims about how Θ–roles are linked to syntactic phrases or how arguments combine with selecting head functions. In order to present a theoretical explanation for the generalization in (4-1), I draw on Williams' (1989) intuition that arguments of a predicate are in a binding relation with the predicate in some way. From this perspective, a scrambled predicate moves to a position where it cannot semantically compose with its argument.

This semantic account of why predicates do not scramble is especially useful to the minimalist view of phrase structure. In the Government Binding framework of Chomsky (1981) heads of phrases are uniquely represented and subjected to strong limits on their movement. The head movement constraint in particular would block scrambling of the predicate (either as adjunction to some phrasal projection or as a substitution for a phrasal position) in such a theory. In the minimalist program of Chomsky (1995) phrases are labelled by their head as in (4-8b) which replaces the more traditional (4-8a). It becomes formally difficult to stipulate that only the top instance of '*see*' can be copied (i.e. "moved") to a given landing site. Recognizing this limited expressive power of minimalist phrase structure forces us to look for a semantic account of scrambling and its limitations. (4-1) fits that bill.

(4-8) a.



b.



Section 4.3 deals with the second question of whether the generalization in (4-1) is categorical or needs to be parameterized. I will draw out the consequences of viewing the semantic restriction in (4-1) as universal. To maintain this strong claim I will consider in detail examples of predicate scrambling in Turkish and Korean. Turkish is a language that

exhibits predicate scrambling generally. In Turkish, APs scramble out of containing NPs (a phenomenon which Kornfilt (2003) dubs 'subscrambling'). Subscrambling APs is an instance of predicate scrambling, since adjectives are predicates in the relevant sense. I also show that even Korean exhibits a limited form of predicate scrambling in the so-called VP-focus construction introduced in chapter 2. This construction is formed by attaching a focus marker 는 *nun* 'FOC' to VP. These two phenomena might be taken as prima facie evidence that the prohibition against the scrambling of predicates in (4-1) needs to be parameterized or weakened in some other fashion. Closer inspection, however, reveals that this is not in fact the case. I will argue in this chapter that (4-1) is a categorical ban against predicate scrambling in UG. The apparent variation will be attributed to how (4-1) interacts with the clausal syntax of the two languages. Evidence of this interaction comes from a correlation between predicate scrambling and what have been called reconstruction effects in scrambled constituents. Reconstuction of predicates is also discussed in Heycock (1995). She argues that non-referential phrases, including predicates, must undergo reconstruction, while referential phrases can remain in their displaced positions. My approach in this chapter similarly places reconstruction effects at the center of cases where (4-1) appears not to hold.

4.2 WHY DO PREDICATES FAIL TO SCRAMBLE?

4.2.1 THETA-ROLES

A thematic role (*θ–role*) is the semantic relation that an argument stands in to the predicate function of a sentence. In (4-9), *John* is understood as an agent (the entity initiating

an action); *the car* is a theme. In (4-10), *Daniel* is understood as an experiencer (the entity that undergoes psychological states), and *his girl friend* is a theme.

(4-9) John broke the car.

(4-10) Daniel loves his girl friend.

Each thematic role in a sentence is assigned to a single noun phrase, and each noun phrase bears a unique thematic role. This is the content of the theta criterion proposed in Chomsky (1981). For instance, for the verb *give*, which is associated with the Θ-roles of Agent, Goal and Theme, a grammatical sentence might look like (4-11).

(4-11) John gave Mary a book.

In (4-11), the three theta roles are assigned to *John*, *Mary* and *a book*, respectively. The sentence would be ungrammatical if any of these arguments were absent because of the theta criterion.

4.2.2 THETA-ROLES AS ANAPHORS (WILLIAMS 1989)

A lexical entry is the portion of the lexicon specifying the properties of a single lexical item. Every lexical entry includes the idiosyncratic information of the lexical item such as its unpredictable phonological, semantic, and syntactic information. A Θ-grid of a predicate is one kind of such information. The Θ-grid is the lexical specification of the

thematic properties of the predicate.[29] It makes a lexical Head, H, induce argument positions with specific Θ-roles in syntactic structure. For instance, the head *open* has a theta-grid which induces obligatorily one argument position (theme), and optionally two more (agent and instrument). This Θ-grid accounts for what the sentences in (4-12) ~ (4-15) have in common.

(4-12) John opened Bill's door (with his key).

(4-13) John's key opened Bill's door.

(4-14) Bill's door opened.

(4-15) Bill's door was opened (by John).

The theta-grid of *open* is usually represented as in (4-16).

(4-16) OPEN <Agent, Theme, Instrument>

In the minimalist program, arguments of H are initially merged by the need to satisfy the Θ-criterion. Arguments of Head are assigned their Θ-role as they are merged to form a syntactic structure. As a result all the arguments of a Head, H, will appear in H^{MAX}. Those arguments will of necessity c-command their selecting head, H.

[29] It is sometimes identified with the argument structure of a lexical item (Grimshaw 1990).

Williams (1989) proposes that the Θ–role assignment relation is a relation subject to binding theory and thus derives a c-command restriction on predication. He argues that Θ–role assignment is a relation between two Θ–roles. He assumes that nouns as well as verbs (and adjectives) have a Θ–role. In Williams (1989), the verbal Θ–role is like an anaphor, and is subject to binding by the Θ-role of verb's nominal argument. When a predicate scrambles to above the position of its arguments, its Θ-role cannot be bound by its antecedent.

In the spirit of Williams' (1989) intuition above, let us entertain the proposal in (4-17). The proposal is formulated in (4-17a) in terms of Θ-roles. In (4-17b) it is stated in formal semantics terms.[30]

(4-17) a. A phrase XP saturates a Θ-role of a head H only if XP c-commands H.

b. A phrase XP saturates an argument of a semantic function H (by functional application) only if XP c-commands H.

For the purposes of this chapter the two formulations can be thought of as equivalent, although the results of the inquiry in chapter 3 would lead us to regard (4-17b) as the more empirically adequate formulation.

By (4-17a) the arguments c-commanding a Θ-role of a predicate can saturate that Θ-role. Similarly by (4-17b) the argument of a predicate function must c-command that predicate in order to be available for functional application. When a predicate scrambles to

[30] Standard formal semantics adopt a strong version of compositionality that requires sisters to compose. Such theories would require H and XP in (4-17b) to be in a mutual c-command relation.

above the arguments, the Θ-role (or argument) of that predicate remains unsaturated.[31] Predicate scrambling thus gives rise to the violation of the Principle of Full Interpretation (cf. Chomsky 1995) that requires that every element at LF must receive an appropriate interpretation.

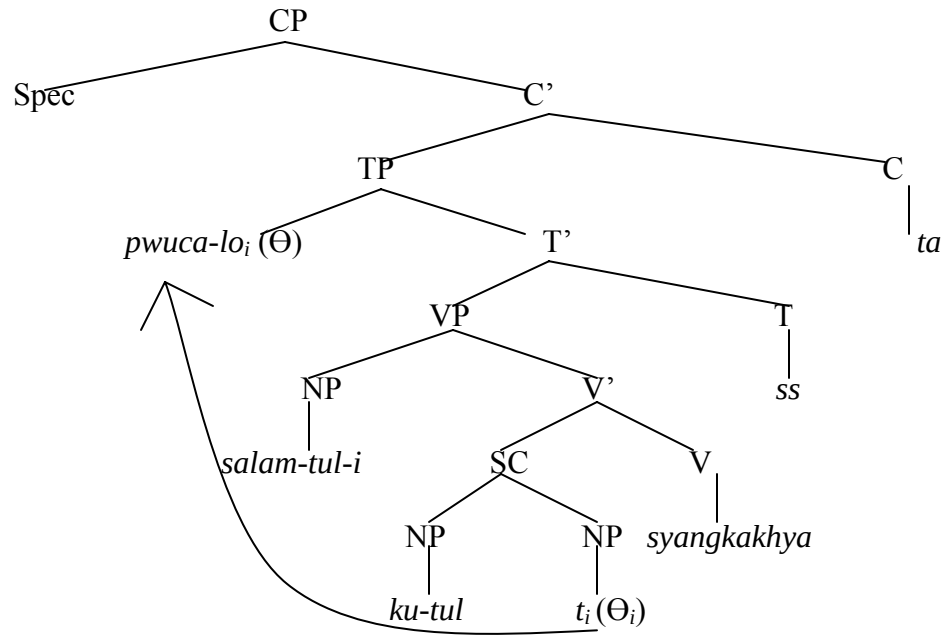
The unacceptability of (4-4), here repeated as (4-18), is explained by the failure of the saturation of a predicate's Θ-role (or argument). (4-19) illustrates the structure of (4-18) where scrambling of the NP predicate 부자로 *pwuca-lo* 'rich man-as' causes the acceptability of a sentence to degrade. The tree in (4-19) is represented in classic standard X-bar terms for expository convenience. For the sake of explicitness I also adopt Miyagawa's (2003) analysis of scrambling in Japanese and Korean that treats it as an instance of A-movement to [Spec, TP] triggered to check an EPP feature on the head T.

(4-18)*부자로	사람들이	그를		생각했다
pwuca-lo$_j$	salam-tul-i	ku-lul$_i$	t_j	syangkakhya-ss-ta
rich man-as	person-PL-NOM	he-ACC		think-PST-DCL

'*People thought of him as a rich man.*'

[31] If movement leaves a copy in the original base position, as is typically assumed in the minimalist framework, we would require every instance of X and HP to satisfy (4-17).

(4-19)



In (4-19), the predicate 부자로 *pwuca-lo* 'rich man-as' moves to [Spec, TP] and thus it is not bound by the nominal argument *ku-lul* 'he-ACC'. The proposal in (4-17) says that the scrambling of predicate 부자로 *pwuca-lo* 'rich man-as' give rise to the failure of its Θ-role (or argument) saturation, which makes (4-18) unacceptable.

4.3 A CATEGORICAL BAN AGAINST PREDICATES SCRAMBLING IN UG

4.3.1 PREDICATE SCRAMBLING IN TURKISH

Historical linguists have sometimes grouped Turkish, Japanese, and Korean into a single language family, Altaic, and syntacticians have often found it illuminating to compare closely related languages to observe the parameterization of a general syntactic principle (e.g.

Kayne 1994).[32] Like Korean and Japanese Turkish typically exhibits SOV (Subject-Object-Verb) order in simple transitive sentences as in (4-20).

(4-20) Ayşe gazeteyi okuyor (SOV)

Ayşe newspaper-ACC read-PRES

'Ayşe is reading the newspaper.'

Turkish also shows other variant orders such as OSV (Object-Subject-Verb), SVO (Subject-Verb-Object), OVS (Object-Verb-Subject), VOS (Verb-Object-Subject), and VSO (Verb-Subject-Object), as illustrated in (4-21) ~ (4-25) respectively (Hoffman, 1992).

(4-21) Gazeteyi Ayşe okuyor (OSV)

newspaper-ACC Ayşe read-PRES

'Ayşe is reading the newspaper.'

(4-22) Ayşe okuyor gazeteyi (SVO)

Ayşe read-PRES newspaper-ACC

'Ayşe is reading the newspaper.'

[32] Altaic is a proposed language family which includes some 60 languages spoken by about 250 million people, mostly in and around Central Asia and the Far East. See Anderson (1991).

(4-23) Gazeteyi okuyor Ayşe (OVS)

newspaper-ACC read-PRES Ayşe

'Ayşe is reading the newspaper.'

(4-24) Okuyor gazeteyi Ayşe (VOS)

read-PRES newspaper-ACC Ayşe

'Ayşe is reading the newspaper.'

(4-25) Okuyor Ayşe gazeteyi (VSO)

read-PRES Ayşe newspaper-ACC

'Ayşe is reading the newspaper.'

These facts suggest that Turkish is a "free word order" language much like Japanese and Korean. The Korean counterparts to the Turkish (4-20) ~ (4-25) are provided in (4-26) ~ (4-31) below. Notice that, while the nominal arguments are freely reordered in both Korean and Turkish, the position of V is restricted in Korean to clause final position.

(4-26) 철수가 신문을 읽는다

Chelswu-ka sinmwun-ul ilk-nun-ta (SOV)

Chelswu-NOM newspaper-ACC read-PRES-DCL

'Chelswu reads a newspaper.'

(4-27) 신문을 철수가 읽는다

sinmwun-ul Chelswu-ka ilk-nun-ta (OSV)

newspaper-ACC Chelswu-NOM read-PRES-DCL

‘*Chelswu reads a newspaper.’*

(4-28)*철수가 읽는다 신문을

Chelswu-ka ilk-nun-ta sinmwun-ul (SVO)

Chelswu-NOM read-PRES-DCL newspaper-ACC

‘Chelswu reads a newspaper.’

(4-29)*신문을 읽는다 철수가

sinmwun-ul ilk-nun-ta Chelswu-ka (OVS)

newspaper-ACC read-PRES-DCL Chelswu-NOM

‘*Chelswu reads a newspaper.’*

(4-30)*읽는다 신문을 철수가

ilk-nun-ta sinmwun-ul Chelswu-ka (VOS)

read-PRES-DCL newspaper-ACC Chelswu-ka

‘Chelswu reads a newspaper.’

(4-31)*읽는다 철수가 신문을

ilk-nun-ta Chelswu-ka sinmwun-ul (VSO)

read-PRES-DCL Chelswu-NOM newspaper-ACC

'Chelswu reads a newspaper.'

In addition to the difference in the placement of V, Turkish and Korean contrast in whether predicates more generally can scramble. Consider the following Turkish examples (Kornfilt, 2003).

(4-32) Dün sokak-ta [[çok yaşlı] bir adam]-a rasla-dı -m

Yesterday street-LOC very old a man-DAT meet-PST-1SG

'*Yesterday I met a very old man in the street.'*

(4-33) Dün sokak-ta [[e_i bir adam]-a rasla-dı -m *çok yaşlı*$_i$

Yesterday street-LOC a man-DAT meet-PST-1SG very old

'*Yesterday I met a very old man in the street.'*

In (4-33), the AP *çok yaşlı* 'very old' has scrambled out of the NP containing it. An adjective is a predicate in that it is not semantically complete.

Korean behaves very differently from Turkish. Consider whether APs in Korean scramble in the way Turkish APs do.

(4-34) 내가 어제 길에서 두 명의 학생들을 보았다

nya-ka eoce kil-yese [twu meyng-uy haksyangtul-ul] po-ass-ta

I-NOM yesterday street-LOC two person-GEN students-ACC see-PST-DCL

'*Yesterday I saw two students in the street.*'

(4-35)*두 명의 내가 어제 길에서 학생들을 보았다

twu meyng-uy$_i$ nya-ka eoce kil-yese [t_i haksyangtul-ul] po-ass-ta

two person-GEN I-NOM yesterday street-LOC students-ACC see-PST-DCL

'*Yesterday I saw two students in the street.*'

(4-36) 철수가 저 작은 아이를 보았다

Chelswu-ka [ce cakun ai-lul] po-ass-ta

Chelswu-NOM that small kid-ACC see-PST-DCL

'*Cheolsso saw that small kid.*'

(4-37)*작은 철수가 저 아이를 보았다

cakun$_i$ Chelswu-ka [ce t_i ai-lul] po-ass-ta

small Chelswu-NOM that kid-ACC see-PST-DCL

'*Cheolsso saw that small kid.*'

In (4-35) and (4-37), subscrambling an AP out of either a non-specific NP or a specific NP respectively is not allowed in Korean.

4.3.2 RECONSTRUCTION AND A-BAR SCRAMBLING

As I explained in chapter 2, it is common to distinguish two types of scrambling: one that patterns with A-movement such as passivization and the other that patterns with A-bar movement such as wh-movement (Mahajan 1990, Webelhuth 1989). Mahajan argues that in Hindi clause-internal scrambling can be either A- or A-bar movement, while long distance scrambling is necessarily A-bar movement. A-scrambling moves a phrase to an A-position such as [Spec, TP], while A-bar scrambling moves a phrase to an A-bar position such as [Spec, CP].[33]

Based on Japanese data containing the lexical anaphor *otagai* 'each other', Saito (1992) generalizes Mahajan's (1990) distinction by showing that it is applicable to Japanese as well.[34] Saito (1989) also makes the point that A-bar scrambling is subject to reconstruction. Consider Japanese A-bar scrambling in (4-39).

(4-38) John-ga [Mary-ga nani-o$_i$ hyonda ka] sitta
John-NOM Mary-NOM what-ACC read Q know-PST
'*John knew what Mary read.*'

(4-39) nani-o$_i$ John-ga [Mary-ga t_i yonda ka] sitta
what-ACC John-NOM Mary-NOM read Q know-PST
'*John knew what Mary read.*'

[33] Webelhuth (1989) proposes that scrambling is uniformly movement to a third type of position, the non-A-position/non-A-bar position, and that this position has the binding properties of both A- and A-bar positions.

[34] See Kawamura (2004) for an argument that clause-internal scrambling differs from regular A-movement and that long distance scrambling behaves differently from typical A-bar movement.

In (4-39) which is an instance of A-bar scrambling, the wh-phrase *nani-o* 'what-ACC' in the embedded clause is in [Spec, CP] of the matrix clause. If the scrambled wh-phrase *nani-o* 'what-ACC' remains in [Spec, CP] of the matrix clause, the wh-phrase must take the matrix scope. However, the wh-phrase in (4-39) has embedded scope just like (4-38). (4-38) and (4-39) both have the same interpretation where the wh-phrase has the embedded scope. This fact suggests that A-bar scrambled constituents can be interpreted at the base position.

Reconstruction is an LF operation whereby fronted constituents returned to their base positions for interpretation (cf. Chomsky 1981). In the classic formulation of Government and Binding Theory in Chomsky (1981), reconstruction was limited to elements in A-bar position. While the original theoretical distinction between A- and A-bar position in terms of Θ–marking (Chomsky 1981) is no longer widely assumed, we will understand the specifier of TP (subject) position to be an A-position and the specifier of CP to be an A-bar position. We will follow Chomsky (1993) and assume that reconstruction holds only for A-bar movement, not for A-movement.[35] Reconstruction effects are diagnostic of these different structural positions. We thus expect A-bar scrambling to exhibit reconstruction effects that are absent in A-scrambling.

This distinction between A-scrambling and A-bar scrambling with respect to reconstruction effect accounts for variation in anaphor-binding in Korean and Turkish. First, consider the Korean lexical anaphor 서로 *selo* 'each other' which must be A-bound.[36] The lexical anaphor 서로 *selo* 'each other' cannot be A-bound in (4-40) showing the canonical Korean word order, while it is A-bound in (4-41) showing the scrambled word order. On the

[35] But see Lasnik and Hendrick (2003) for a different view.

[36] An NP is A-bound when it is co-indexed with a c-commanding NP in an A-position (Chomsky 1981).

other hand, in the case of long distance scrambling, the lexical anaphor 서로 *selo* 'each other' can be A-bound neither in the neutral word order (4-42) nor in the scrambled word order (4-43).

(4-40)*서로의 선생님이 철수와 영희를

$selo_i$-uy sensyangnim-i $[[Chelswu\ wa\ Younghee]_i$-$lul]_j$

each other-GEN teacher-NOM Chelswu and Younghee-ACC

꾸짖었다

kkucic-ess-ta

scold-PST-DCL

'Each other$_i$'s teachers scolded Chelswu and Younghee$_i$.'

(4-41) 철수와 영희를 서로의 선생님이

$[[Chelswu\ wa\ Younghee]_i$-$lul]_j$ $selo_i$-uy sensyangnim-i t_j

Chelswu and Younghee-ACC each other-GEN teacher-NOM

꾸짖었다

kkucic-ess-ta

scold-PST-DCL

'Each other$_i$'s teachers scolded Chelswu and Younghee$_i$.'

(4-42)*서로의 선생님이 영한이 철수와 영희를

$selo_i$-uy sensyangnim-i [Younghan-i [[Chelswu wa Younghee]$_i$-lul]$_j$

each other-GEN teacher-NOM Younghan-NOM Chelswu and Younghee-ACC

꾸짖었다고 생각한다

kkucic-ess-ta ko] syangkakha-n-ta

scold-PST-DCL COMP think-PRES-DCL

'Each other$_i$'s teachers think that Younghan scolded Chelswu and Younghee.'

(4-43)*철수와 영희를 서로의 선생님이 영한이

[[Chelswu wa Younghee]$_i$-lul]$_j$ $selo_i$-uy sensyangnim-i [Younghan-i t_j

Chelswu and Younghee-ACC each other-GEN teacher-NOM Younghan-NOM

꾸짖었다고 생각한다

kkucic-ess-ta ko] syangkakha-n-ta

scold-PST-DCL COMP think-PRES-DCL

'Each other$_i$'s teachers think that Younghan scolded Chelswu and Younghee.'

In (4-41), 철수와 영희를 *Chelswu wa Younghee-lul* 'Chelswu and Younghee-ACC' is scrambled clause-internally to the A-position [Spec, TP]. In (4-43), it is scrambled out of a finite clause to the A-bar position [Spec, CP]. In (4-41), the lexical anaphor 서로 *selo* 'each other' is A-bound, while in (4-43) it cannot be. The reason is that clause-internal scrambling moves a phrase to A-position and thus 철수와 영희를 *Chelswu wa Younghee-lul* 'Chelswu

and Younghee-ACC' does not undergo reconstruction, whereas long distance scrambling moves a phrase to A-bar position and thus 철수와 영희를 *Chelswu wa Younghee-lul* 'Chelswu and Younghee-ACC' necessarily undergoes reconstruction.

The distribution of the Korean anaphor 서로 *selo* 'each other' contrasts with that of its Turkish counterpart *birbirlerinin* 'each other-AGR-GEN' which, as an anaphor, must also be A-bound. Consider the following Turkish examples (Kural 1992).

(4-44)*[[Birbirlerinin sekreterleri] adamlari$_i$ dün aramiş]
each other-AGR-GEN secretary-PL-AGR-NOM men-ACC yesterday call-PST-AGR
'Each other$_i$'s secretaries called the men$_i$ yesterday.'

(4-45)*Adamlar [[Birbirlerinin sekreterleri] t$_i$ dün aramiş]
men-ACC each other-AGR-GEN secretary-PL-AGR-NOM yesterday call-PST-AGR
'Each other$_i$'s secretaries called the men$_i$ yesterday.'

(Kural, 1992)

In (4-45), the clause-internally scrambled phrase moves to the A-bar position and thus necessarily reconstruct at LF. The reconstruction at LF of the anaphor in (4-45) leads to the violation of Principle A of the Binding Theory and thus the Turkish lexical anaphor *birbirlerinin* 'each other-AGR-GEN' fails to be bound.

4.3.3 PREDICATE SCRAMBLING AS A-BAR SCRAMBLING (IN TURKISH SUBSCRAMBLING)

Miyagawa (2001, 2003) has provided an analysis of scrambling in Japanese and Korean that recognizes two mechanisms which lead to the OSV order. One is the A-movement of the object to satisfy the EPP, and the other is an A-bar movement of the object for focus reasons. In the former case, the object appears in [Spec, TP], while in the latter, it is adjoined to TP or higher. Because of the absence of reconstruction effects in scrambling to an A-position and because (4-17) requires the arguments of a verb to c-command the verb, we derive the prohibition against scrambling of predicates in Korean. At the same time, because Turkish scrambling is to an A-bar position which exhibits reconstruction effects, predicates will scramble in Turkish in contrast to Korean.

Miyagawa (2001, 2003) argues that A-scrambling is triggered by the EPP feature on T. To support his claim, Miyagawa provides evidence from Japanese data involving a universal quantifier *zen'in* 'all' in the context of negation.

(4-46) zen'in-ga sono tesuto-o uke-nakat-ta (S O V)
all-NOM that test-ACC take-NEG-PST
'All did not take that test.'
*not>all, all>not

(4-47) sono tesuto-o$_i$ zen'in-ga t_i uke-nakat-ta (O S V)

that test-ACC all-NOM take-NEG-PST

'That test, all didn't take.'

not>all, all>not

(4-46) has an SOV order, while (4-47) has a scrambled OSV order. In both (4-46) and (4-47) above, a universal quantifier *zen'in* 'all' occurs in the subject position. However, (4-46) and (4-47) do not have the same reading in that (4-47) has another reading as well as the reading of (4-46). The reading of (4-46) is a total negation (meaning that none of the people referred to by *zen'in* 'all' took the test). This reading can be explained by Klima's (1964) assumption that negation must c-command a quantifier in order to take scope over that quantifier. In (4-46), the quantifier *zen'in* 'all' is in [Spec, TP], which is out of the negation domain.[37] (4-47) has a same reading as (4-46), but it may have an additional reading, a partial-negation reading. This is the reading that some, but not all, took the test. The negation in this reading only partially negates the referent of *zen'in* 'all'. In the partial-negation reading of (4-47), the quantifier *zen'in* 'all' is in the negation domain. What fills in [Spec, TP] is the object, rather than the subject. The quantifier subject *zen'in* 'all' stays in-situ in [Spec, vP], which is in the domain of negation.

The scrambling of the sort Miyagawa (2001) observed is A-movement to [Spec, TP] triggered by the EPP feature on T. Scrambling to check EPP feature is unique and has no reconstruction effect. Following Williams' (1989) intuition (discussed in section 4.2.2) that a verb's Θ-roles are anaphors subject to binding by the verb's nominal argument, I derive the

[37] We assume that the position of negation is between the vP and T. (see Laka (1990) and Pollock (1989))

prohibition against the scrambling of predicates from Miyagawa's scrambling analysis. A constituent scrambled to [Spec, TP] does not show reconstruction effects. A predicate that undergoes A-scrambling will position the predicate's Θ-roles in a position where the predicate's arguments (or its Θ–roles) cannot be licensed for (4-17). My proposal thus correlates the lack of predicate scrambling with the lack of reconstruction effects in scrambled constituents.

When scrambling is to an A-bar position, it should show reconstruction effects. The instance of A-bar scrambling is observable in Turkish (4-44) and (4-45), repeated as (4-48) and (4-49).

(4-48)*[[Birbirlerinin sekreterleri] adamlari$_i$ dün aramiş]

each other-AGR-GEN secretary-PL-AGR-NOM men-ACC yesterday call-PST-AGR

'Each other$_i$'s secretaries called the men$_i$ yesterday.'

(4-49)*Adamlar$_i$ [[Birbirlerinin sekreterleri] t$_i$ dün aramiş]

men-ACC each other-AGR-GEN secretary-PL-AGR-NOM yesterday call-PST-AGR

'Each other$_i$'s secretaries called the men$_i$ yesterday.'

(Kural, 1992)

The examples of anaphor-binding in (4-48) and (4-49) indicate that scrambling in Turkish example (4-49) is movement to A-bar position. If the scrambled object *adamlar* 'men-ACC' were in an A-position in Turkish, (4-49) could not be ruled out. *Adamlar* 'men-ACC' in the putative A-position would A-bind the lexical anaphor *birbirlerinin* 'each other-AGR-GEN',

but this is counter factual. The problem in (4-49) does not stem from the position of the anaphor or the antecedent, since an anaphor inside a NP can be bound from a higher A-position as shown by (4-50). Moreover, anaphors are not excluded from the subject position, as illustrated in (4-51) and anaphors can be bound by non-subjects, as in (4-52) (Kural, 1992).

(4-50) Adamlarį [birbirlerininį sekreterlerini] aramiş

man-PL-NOM each other-AGR-GEN secretary-AGR-ACC call-PST-AGR

'The men called each other's secretaries.'

(4-51) Adamlarį [birbirlerininį Ahmet'i aradığını]

man-PL-NOM each other-AGR-GEN Ahmet-ACC call-PST-COMP-AGR-ACC

sanıyor

think-PRES-AGR

'The men think [each other called Ahmet].'

(4-52) Ahmet adamlariį birbirlerineį göstermiş

Ahmet-NOM man-PL-ACC each other-AGR-DAT show-PST-AGR

'Ahmet showed the men to each other.'

The problem in (4-49) is the relationship between anaphor and antecedent. Kural (1992) argues that the scrambled object *adamlar* 'men-ACC' is in A-bar position in (4-49), and thus does not bind the anaphor. I will accept Kural's conclusion here.

Once we recognize the correlation between A-bar scrambling of predicate and reconstruction effects in Turkish, we can attribute Turkish predicate scrambling in (4-33) to the reconstruction effects of A-bar scrambling. Since subscrambling of adjectives in Turkish is not to [Spec, TP] for the purpose of the EPP, it must be A-bar scrambling. Thus, we predict that it undergoes reconstruction effects. This is a desirable prediction, since the predicate's Θ-roles (or arguments) are able to be saturated when the predicate is reconstructed to its base position.

4.3.4 PREDICATE SCRAMBLING AS A-BAR SCRAMBLING (IN KOREAN VP-FOCUS CONSTRUCTION)

My hypothesized correlation between predicate scrambling, reconstruction effects, and A-bar scrambling is confirmed by the VP-focus construction in Korean. Although Korean does not scramble AP predicates out of a containing NP, it does have one instance of predicate scrambling. Korean grammars traditionally identify a "VP-focus" construction. This construction is formed by attaching a focus marker 는/은 *–(n)un* (or an accusative Case marker –를/을 *(l)ul*)to VP. The focused VP scrambles to clause initial position. This construction allows preposing of unergative verbs and transitive verbs with their objects, as shown in (4-54) and (4-56), respectively (Hagstrom, 1997).[38]

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[38] In (4-56), the verb must take its object along when it scrambles, as shown in (i-iii).

(i) 철수가 빵을 먹기는 하였다
Chelswu-ka ppang-ul mek-ki-nun ha-eyss-ta
Chelswu-NOM bread-ACC eat-NMZ-FOC do-PST-DCL
'Eat the bread, Chelswu did, (but not other things).'

(4-53) 철수가 (빨리) 뛰기는 하였다

Chelswu-ka [(ppalli) ttwi-ki-nun] ha-eyss-ta

Chelswu-NOM (fast) run-NMZ-FOC do-PST-DCL

'*Run fast, Chelswu did, (but not other things).*'

(4-54) (빨리) 뛰기는 철수가 하였다

[(ppalli) ttwi-ki-nun]$_i$ Chelswu-ka t_i ha-eyss-ta

(fast) run-NMZ-FOC Chelswu-NOM do-PST-DCL

'*Run fast, Chelswu did, (but not other things).*'

'*As for running fast, Chelswu did.*'

(4-55) 철수가 빵을 먹기는 하였다

Chelswu-ka ppang-ul mek-ki-nun ha-eyss-ta

Chelswu-NOM bread-ACC eat-NMZ-FOC do-PST-DCL

'*Eat the bread, Chelswu did, (but not other things).*'

(ii)*먹기는 철수가 빵을 하였다
mek-ki-nun$_i$ Chelswu-ka ppang-ul t_i ha-eyss-ta
eat-NMZ-FOC Chelswu-NOM bread-ACC do-PST-DCL
'*Eat the bread, Chelswu did, (but not other things).*'

(iii) 빵을 먹기는 철수가 하였다
[ppang-ul mek-ki-nun]$_i$ Chelswu-ka t_i ha-eyss-ta
bread-ACC eat-NMZ-FOC Chelswu-NOM do-PST-DCL
'*Eat the bread, Chelswu did, (but not other things).*'

Yatsushiro (1997) offers an explanation for why it is not possible to prepose transitive verbs alone. Yatsushiro argues that the derivation (ii) results in the violation of some version of the Proper Binding Condition. In (ii), the VP 먹기는 *mek-ki-nun* 'eat-NMZ-FOC' includes the trace of the object 빵을 *ppang-ul* 'bread-ACC' and the trace of the object in the scrambled VP is not bound by its antecedent.

(4-56) 빵을 먹기는 철수가 하였다

[ppang-ul mek-ki-nun]$_i$ Chelswu-ka t_i ha-eyss-ta

bread-ACC eat-NMZ-FOC Chelswu-NOM do-PST-DCL

'Eat the bread, Chelswu did, (but not other things).'

'As for eating the bread, Chelswu did.'

(4-53) and (4-55) show the structure before VPs prepose and (4-54) and (4-56) show the structure with VP-preposing. In (4-54) and (4-56), the VP constituent nominalized by –기 –*ki* scrambles to A-bar position above TP. As my hypothesis predicts, the focused VP allows reconstruction of anaphors, as shown in (4-57) ~ (4-60) below.

(4-57) M 과 J 가 C 에게 서로의 친구를 소개시키기는 하였다

M-kwa-J-ka$_i$ C-yekye selo$_i$-uy-chinkwu-lul sokyasikhi-ki-nun ha-eyss-ta

M-and-J-NOM C-DAT each other-GEN-friend-ACC introduce-NMZ-FOC do-PST-DCL

'Introduce each other's friends to C, M and J did.' (each other=M & J)

(4-58) 서로의 친구를 소개시키기는 M 과 J 가 C 에게 하였다

selo$_i$-uy-chinkwu-lul sokyasikhi-ki-nun M-kwa-J-ka$_i$ C-yekye ha-eyss-ta

each other-GEN-friend-ACC introduce-NMZ-FOC M-and-J-NOM C-DAT do-PST-DCL

'Introduce each other's friends to C, M and J did.' (each other=M & J)

(4-59)*그들이 C 에게 M 과 J 의 친구를 소개시키기는 하였다

kutul-i_i C-yekye M-kwa-J_i-uy-chinkwu-lul sokyasikhi-ki-nun ha-eyss-ta

they-NOM C-DAT M-and-J-GEN-friend-ACC introduce-NMZ-FOC do-PST-DCL

'Introduce M and J's friends to C, they did.' (they=M & J)

(4-60)*M 과 J 의 친구를 소개시키기는 그들이 C 에게 하였다

M-kwa-J_i-uy-chinkwu-lul sokyasikhi-ki-nun kutul-i_i C-yekye ha-eyss-ta

M-and-J-GEN-friend-ACC introduce-NMZ-FOC they-NOM C-DAT do-PST-DCL

'Introduce M and J's friends to C, they did.' (they=M & J)

In (4-58), the anaphor in the scrambled VP is bound by the subject, and in (4-60), the R-expression in the scrambled VP is bound by the pronoun in the subject. (4-58) and (4-60) show that the scrambled VP reconstructs to the base-generated position and thus VP-scrambling is A-bar movement.

The consideration of predicate scrambling as A-bar scrambling gives us a clue of the explanation for why the verb cannot move to an A-bar position in Korean (making it like Turkish). Assuming that such movement requires the morphological marking of 는/은 *(n)un* 'TOP' only to phrases and has the semantics of topicalization/old information, I argue that in Korean the topic interpretation is correlated with reconstruction effects. Prince (1986) argues on the basis of variation in the Germanic languages that information packaging requirements (like topichood) are paired with syntactic structures in a language specific fashion. Suppose this is true. We could then say that Turkish does not pair topichood status with the A-bar position (of the specifier in CP) in the way Korean does, speculatively because it does not

have a topic morpheme dedicated for this position. Turkish will then be able to "scramble" to the A-bar position in a way that Korean cannot. Korean can only topicalize to that position.

4.4 SUMMARY

This chapter has investigated the generalization from chapter 3 that scrambling is limited to semantically complete expressions. In particular, I have probed the basis of this generalization by raising the following two questions: Why are predicates resistant to scrambling? Does the ban against predicate scrambling hold categorically or need to be parameterized?

Regarding the reason of the ban against predicate scrambling, I draw on Miyagawa's (2001, 2003) analysis of scrambling and Williams' (1989) work on the nature of theta-roles. Miyagawa argues that scrambling to check EPP feature on T is unique and exhibits no reconstruction effect. Williams argues that a verb's theta–roles are anaphors subject to binding by the verb's nominal argument. From the synthesis of these two general claims, we can derive the prohibition against the scrambling of predicates in A-scrambling. A constituent scrambled to [Spec, TP] does not show reconstruction effects. A predicate that undergoes A-scrambling will position the predicate's theta–roles in a position where the predicate's arguments (or its Θ–roles) cannot be licensed. We thus correlate the lack of predicate scrambling with the lack of reconstruction effects in constituents scrambled to [Spec, TP].

With respect to the question whether the ban against predicate scrambling is categorical or not, I have provided empirical evidence that the resistance to predicate

scrambling is universal for A-scrambling. I have considered instances of predicate scrambling in Turkish and Korean. In Turkish, adjective phrases acceptably scramble out of containing noun phrases. Subscrambling of adjective phrases is an instance of predicate scrambling. The correlation between predicate scrambling and reconstruction effects identifies predicate scrambling in Turkish as A-bar scrambling. The correlation between predicate scrambling, reconstruction effects and scrambling to an A-bar landing site is also confirmed by the VP-focus construction in Korean. When the focused VP with anaphors scrambles to above [Spec, TP], it allows for reconstruction effects of anaphor binding.

CHAPTER 5. THE SEMANTIC RESTRICTION AS IT INTERACTS WITH NOUN PHRASE STRUCTURE

5.1 INTRODUCTION

Scrambling of nominal arguments in clauses is common in Korean. In chapter 3 and 4 I have investigated this word order variability and argued that while scrambling is generally available, predicates (i.e., semantically unsaturated constituents) do not scramble. This observation follows from a semantic restriction that requires arguments of a semantic function to c-command that function (or that requires an argument with a given Θ–role to c-command the head assigning that Θ–role). This explanation for why predicates are resistant to scrambling in Korean is built upon Miyagawa's (2001) minimalist analysis of scrambling in Japanese and Korean. Miyagawa treats Korean scrambling as A-movement to [Spec, TP] triggered by an EPP feature on T. Korean scrambling contrasts with scrambling in Turkish, which is to an A-bar position. Following the EPP-analysis of scrambling in Miyagawa (2001), I argued that there is a correlation between the lack of predicate scrambling and the lack of reconstruction in scrambled constituents. In EPP-driven A-scrambling, scrambling can create new binding relations, a property associated with A-movement. The scrambled constituent moves to [Spec, TP] and does not show reconstruction effects. Of course, not all movement behaves like A-movement. In A-bar scrambling, scrambled constituents move out of TP. Since the constituents in such A-bar position show reconstruction effects, the scrambled predicate can satisfy the semantic restriction that arguments c-command their

predicates. In this kind of scrambling, predicates are allowed to be scrambled. The empirical generalization about scrambling that emerges is that predicates do not scramble to A-positions.

In this chapter, we turn attention to the behavior of noun phrases with the goal of determining whether the theory developed in chapters 3 and 4 is consistent with the word order observable in noun phrases. Korean has a variable ordering within the noun phrases, as shown in (5-1) ~ (5-2).[39] Superficially, this word order freedom appears to parallel the freedom we have observed within TP and presents us with an instance of scrambling against which we can test further the analysis of chapter 4.[40]

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[39] Kang (1994) and Sohn (1999) suggest that Korean has a definite determiner 그 *ku* 'the' which is homophonous to the demonstrative 그 *ku* 'that' and is historically derived from it.

[40] Scrambling out of a noun phrases is not available, as the contrast below demonstrates. The contrast in (i) ~ (ii) is preserved in (iii) and (iv), although (i) ~ (ii) and (iii) ~ (iv) have a definite embedded nominal and an indefinite embedded nominal, respectively.

(i) 내가 철수의 호랑이의 사진을 샀다.
nya-ka [Chelswu-uy holangi-uy sacin-ul] sassta
I-NOM Chelswu-GEN tiger-GEN picture-ACC bought
'I bought Chelswu's picture of the tiger.'

(ii)*호랑이의 내가 철수의 사진을 샀다.
holangi-uy nya-ka [Chelswu-uy sacin-ul] sassta
tiger-GEN I-NOM Chelswu-GEN picture-ACC bought
'(lit.) The tiger I bought Chelswu's picture of'

(iii) 내가 철수의 누군가의 사진을 샀다.
nya-ka [Chelswu-uy nwukwunka-uy sacin-ul] sassta
I-NOM Chelswu-GEN someone-GEN picture-ACC bought
'I bought Chelswu's picture of someone.'

(iv)*누군가의 내가 철수의 사진을 샀다.
nwukwunka-uy nya-ka [Chelswu-uy sacin-ul] sassta
someone-GEN I-NOM Chelswu-GEN picture-ACC bought
'(lit.) Someone I bought Chelswu's picture of'

(5-1) 철수의 그 차

Chelswu-uy ku cha

Chelswu-GEN that car

‘*that car of Chelswu’s*’

(5-2) 그 철수의 차

ku Chelswu-uy cha

that Chelswu-GEN car

‘*that car of Chelswu’s*’

A pre-nominal demonstrative and genitive noun phrase may be commuted, as shown above. However, the noun 차 *cha* ‘car’ does not scramble, as shown by the unacceptability of (5-3) and (5-4). The noun must be final in its phrase even though the other constituents in the noun phrases are relatively free.

(5-3)*차 철수의 그

cha Chelswu-uy ku

car Chelswu-GEN that

‘*that car of Chelswu’s*’

(5-4)*철수의 차 그

Chelswu-uy cha ku

Chelswu-GEN car that

'that car of Chelswu's'

This behavior of the noun in (5-3) ~ (5-4) resembles that of the verb which also appeared phrase finally in chapter 3. The scrambling in (5-1) ~ (5-2) and the restriction on scrambling in (5-3) ~ (5-4) are not easily explained by the proposal of chapter 4 that arguments of a predicate function must c-command that predicate. The limit on predicate scrambling can tell us why V is final in its phrase but cannot be extended to explain why N is final in its phrase. Nouns like 차 *cha* 'car' in (5-2) are not in a function argument relation with 철수 *Chelswu* 'Chelswu' in (5-2). Assuming this is true, it is unclear why 철수 *Chelswu* 'Chelswu' must c-command 차 *cha* 'car' as in (5-2) rather than conversely as in (5-3).

The remainder of this chapter is organized as follows. Section 5.2 argues that the structure of noun phrases in Korean is a phrase headed by a functional category. Following Abney (1989) and Yoon (1999), this functional category is Delimiter.

Section 5.3 presents three instances of scrambling in noun phrases in Korean: scrambling between demonstratives and genitives, scrambling between demonstratives and complement nouns, and scrambling between adjectives and complement nouns.

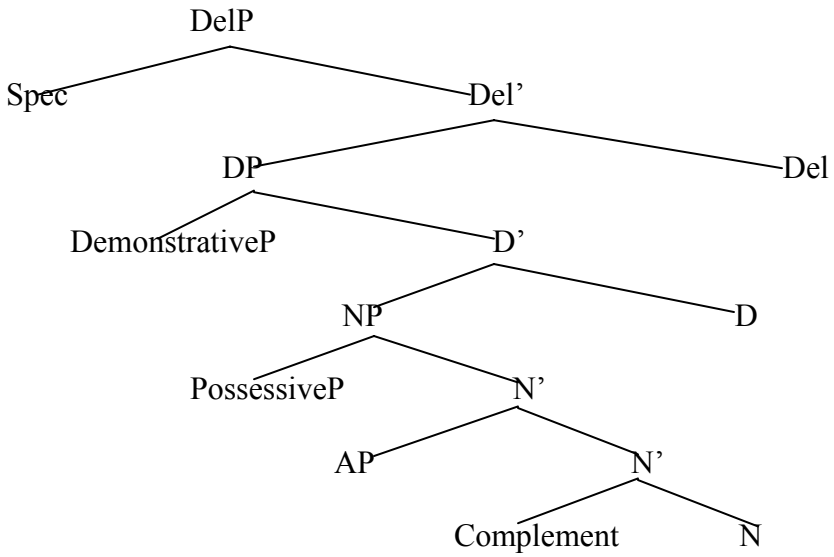
Section 5.4 investigates the scrambling in noun phrases by examining the following questions: What position does the scrambled constituent occupy in the structure of Korean noun phrases?; Is this movement driven by an EPP?; What prevents the head noun in noun phrases from scrambling?

Section 5.5 summarizes the main results of this chapter.

5.2 THE STRUCTURE OF NOUN PHRASES IN KOREAN

Following Abney (1987)'s DP-hypothesis, I assume that noun phrases are headed by a functional category. In Korean this category is Del(imiter) following Yoon (1990). (5-5) is the configurational structure of Korean noun phrases which we assume. In this section, it will be discussed how we achieve (5-5).

(5-5)

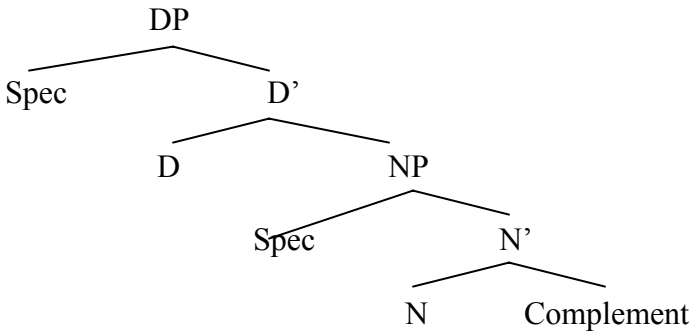


5.2.1 ABNEY'S (1987) DP-HYPOTHESIS

Abney (1987) gives NP a structure parallel to IP. His proposal is based in part on the observation that in Hungarian and Turkish a head noun agrees with the specifier noun phrase, in the same way that a predicate agrees with the subject NP in a sentence. Abney proposes that a functional category under which AGR is located heads a noun phrase, just as at the

sentence level a functional category T (or INFL) carries AGR and serves as the head of the clause. Observing that determiners and genitive NPs cannot co-occur in English, Abney suggests that the functional category D, dominating determiners or possessive *'s* (corresponding to AGR), serves as the head of Determiner Phrase. D (AGR) assigns Case to its specifier, just as INFL (AGR) assigns Case to its subject. The following structure is what Abney (1987) proposes for English noun phrases.

(5-6)



5.2.2 YOON'S (1990) DELIMITER PHRASE ANALYSIS

Adopting Abney's (1987) DP-hypothesis, Yoon (1990) suggests that the functional category DP is dominated in Korean by a higher functional category Delimiter Phrase (henceforth DelP), which is headed by a delimiter. Yoon's proposal is designed to capture the fact that delimiters like 만 *man* 'only', 조차 *cocha* 'even', and 까지 *kkaci* 'up to' can occur between N and the case marker in Korean. The complement of Del is DP, which is headed by D (containing AGR). The order of the AGR morpheme and the delimiter in noun phrases gives us a clue to the hierarchical order between DP and DelP. Although there is no person agreement between subject and predicate in Korean, we do see two other agreement

phenomena between subject and the verb: honorification and number agreement. Consider (5-7) ~ (5-10).

(5-7) 손님들이 부엌에서 물을 마시고들 있습니다

sonnim-tul-i puekh-yese mwul-ul masiko-tul issupnita

guest-PL-NOM kitchen-LOC water-ACC drink-PL being

'Guests are drinking water in the kitchen.'

(5-8)*손님이 부엌에서 물을 마시고들 있습니다

sonnim-i puekh-yese mwul-ul masiko-tul issupnita

guest-NOM kitchen-LOC water-ACC drink-PL being

'A guest is drinking water in the kitchen.'

(5-9) 선생님이 철수에게 책을 주시었다

sensyang-nim-i Chelswu-eykey chyak-ul cu-si-ess-ta

teacher-HON-NOM Chelswu-DAT book-ACC give-HON-PST-DCL

'A teacher gave Chelswu a book.'

(5-10)*하인이 철수에게 책을 주시었다

hain-i Chelswu-eykey chyak-ul cu-si-ess-ta

servant-NOM Chelswu-DAT book-ACC give-HON-PST-DCL

'A servant gave Chelswu a book.'

In (5-7) ~ (5-8), we observe number agreement in clauses. In (5-7), both the subject NP and its verb are marked for plural. However, in (5-8), the subject is singular while the verb contains the plural marker, hence violating number agreement. In (5-9) ~ (5-10), we find honorific agreement in clauses. In (5-9), the social position of the subject NP 선생님 *sensyang-nim* 'teacher-HON' is pragmatically superior to that of the speaker and both the subject NP and its verb contain the honorific marker 님 *nim* '-HON' and 시 *si* '-HON', respectively.[41] However, in (5-10), the social position of the subject NP 하인 *hain* 'servant' is pragmatically inferior to that of the speaker and the subject NP does not match with its verb in terms of honorific. The result is ungrammatical.

This pattern of agreement can be seen not only in clauses but also in the DelP.[42]

(5-11) 손님들의 도착광경들

sonnim-tul-uy tochakkwangkeyng-tul

guest-PL-GEN arrival scene-PL

'the scenes of the guests' arrival'

(5-12)*한 손님의 도착광경들

han sonnim-uy tochakkwangkeyng-tul

one guest-GEN arrival scene-PL

'the scenes of one guest's arrival'

[41] 님 *nim* '-HON' is an honorific marker for a noun phrase and 시 *si* '-HON' is an honorific marker for a predicate.

[42] The examples in (5-11) ~ (5-14) are adapted from Kim (1997) and Yoon (1990).

(5-13) 선생님의 어머님

sensyang-nim-uy eme-nim

teacher-HON-GEN mother-HON

'teacher's mother'

(5-14)*하인의 어머님

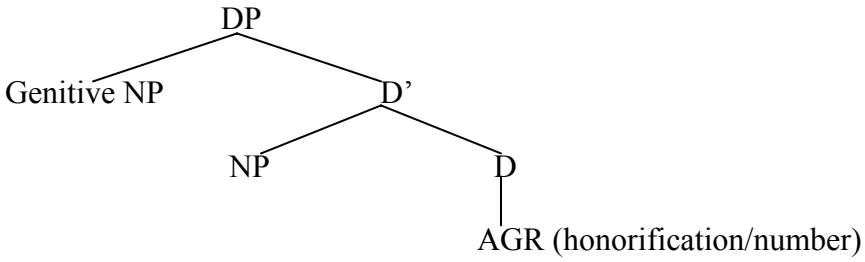
hain-uy eme-nim

servant-GEN mother-HON

'servant's mother'

In (5-11) ~ (5-12), there is number agreement in noun phrases in the same manner as in clauses. In (5-11), both the genitive NP and its head NP are marked for plural. However, in (5-12), the genitive NP is singular and the head noun contains the plural marker, hence violating number agreement. In (5-13) ~ (5-14), there is honorific agreement in noun phrases. In (5-13), the social position of the genitive NP 선생님 *sensyang-nim* 'teacher-HON' is pragmatically superior to that of the speaker and both the genitive NP and its head NP contains the honorific marker 님 *nim* '-HON'. However, in (5-14), the social position of the genitive NP 하인 *hain* 'servant' is pragmatically inferior to that of the speaker and the genitive NP does not match its head NP in terms of honorific. The tree in (5-15) illustrates the honorification/number agreement in noun phrases.

(5-15)



The delimiters 만 *man* 'only', 조차 *cocha* 'even', and 까지 *kkaci* 'up to' can be attached to the noun phrases in (5-11) and (5-14) as illustrated in (5-16) ~ (5-19). Yoon (1990) uses this evidence to support his claim that delimiters head a functional category DelP. The order of the AGR morpheme and the delimiter in noun phrases give us, Yoon argues, evidence of the hierarchical organization of DP and DelP.

(5-16) 손님들의 도착광경들-만

sonnim-tul-uy tochakkwangkeyng-tul-man

guest-PL-GEN arrival scene-PL-only

'the scenes of the guests' arrival only'

(5-17) 손님들의 도착광경들-조차/까지

sonnim-tul-uy tochakkwangkeyng-tul-cocha/kkaci

guest-PL-GEN arrival scene-PL-even/up to

'*even/up to the scenes of the guests' arrival'*

(5-18) 선생님의 어머님-만

sensyang-nim-uy eme-nim-man

teacher-HON-GEN mother-HON-only

'teacher's mother only'

(5-19) 선생님의 어머님-조차/까지

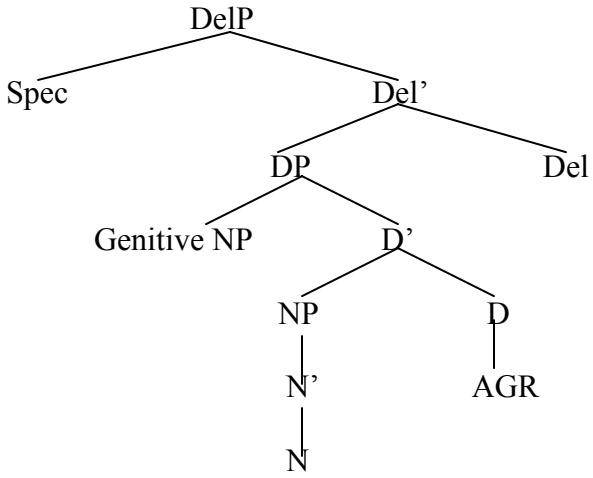
sensyang-nim-uy eme-nim-cocha/kkaci

teacher-HON-GEN mother-HON-even/up to

'even/up to teacher's mother'

As can be seen in (5-16) ~ (5-19) above, the delimiters are attached outside the AGR morpheme. In (5-16) ~ (5-19), the AGR morpheme and the delimiter morpheme are affixed to the noun. We could attribute this morphological complex to a process of to N-to-AGR-to-Del raising. On this view we might assume that the N to AGR and N-AGR to Del raising involves syntactic adjunction to the left of a head. Alternatively the N-AGR-Del complex could be lexically formed with its component features checked either in the overt syntax by head to head raising or covertly at LF by feature raising. For the sake of explicitness the relative order of AGR and Del leads us to assume that the DelP is in a higher position than D, as illustrated in (5-20).

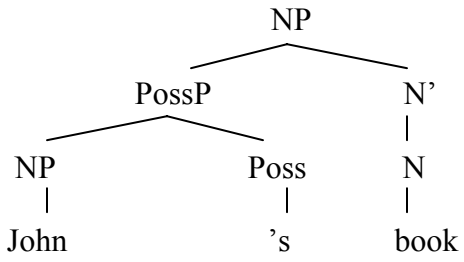
(5-20)



5.2.3 THE POSITION OF DEMONSTRATIVES, POSSESSIVE PHRASES, AND ADJECTIVE PHRASES

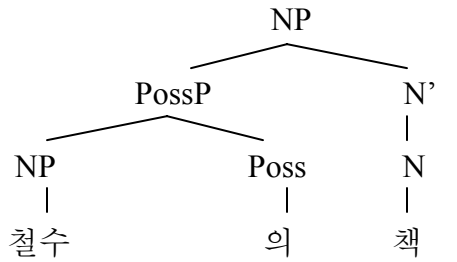
Anderson (1984) distinguishes possessor NPs from other genitive NPs in English. Anderson claims that when occurring before nouns which do not assign a Θ-role to the specifier noun phrase, the genitive *'s* represents a lexical morpheme, the possessive. The lexical morpheme possessive *'s* which heads PossP is assumed to be inserted in the base. Anderson proposes that possessor NPs are generated under PossP. The possessor NP is assigned not only Case but also a Θ-role by the lexical possessive *'s*. The structure in (5-21) is Anderson's (1984) structure for possessor NPs.

(5-21)



Building on Anderson (1984), Yoon (1991) suggests that the possessor NP in Korean noun phrases is also base generated under PossP. The possessor NP is assigned case and Θ-role by Poss 의 *uy* 's'. He assumes that the PossP is located in the Spec of noun parallel to Anderson's (5-21). The structure in (5-22) is what Yoon (1991) suggests for Korean Possessor NPs.

(5-22)



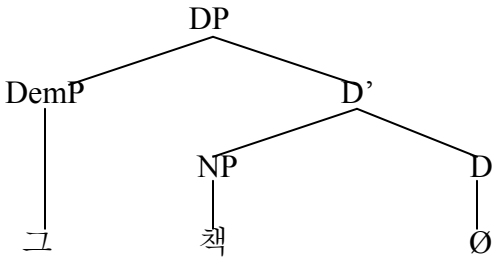
Chelswu uy chyak

Chelswu 's book

'Chelswu's book'

As to the position of demonstratives, Suh (2005) and Jo (2000) argue that demonstratives in Korean are maximal projections occupying the specifier position of DPs. They posited that the DP consists of a phonologically null head carrying [DEM], [DEFINITE] or [SPECIFIC] features. In order to be checked, these features would require the phrase containing the demonstrative to merge into the specifier position of DP, as illustrated in (5-23).

(5-23)



ku chyak [DEM, SPECIFIC, DEFINITE]

that book

The representation in (5-23) entails that, unlike demonstratives in English, demonstratives are not determiners in Korean. This claim is supported by the evidence that, unlike demonstratives in English, Korean demonstratives cannot act as pronouns, which are considered to be determiners in English. Rather, the Korean demonstratives must modify dummy nouns such as 것 *keos* 'thing' and 쪽 *c'ok* 'direction', as illustrated in (5-24) and (5-25) below.[43]

(5-24)*이가 좋다

i-ka coh-ta

this-NOM good-DCL

'I like this.'

[43] The examples in (5-24) and (5-25) are adapted from Suh (2005).

(5-25) 이것이 좋다

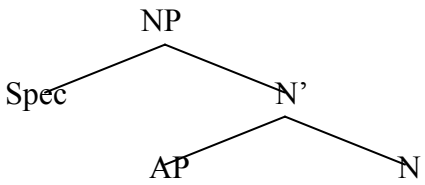
i-kes-i coh-ta

this-thing-NOM good-DCL

'I like this.'

With respect to the location of Adjective Phrases (AP), we follow the natural assumption that AP is adjoined to N', as illustrated in (5-26).

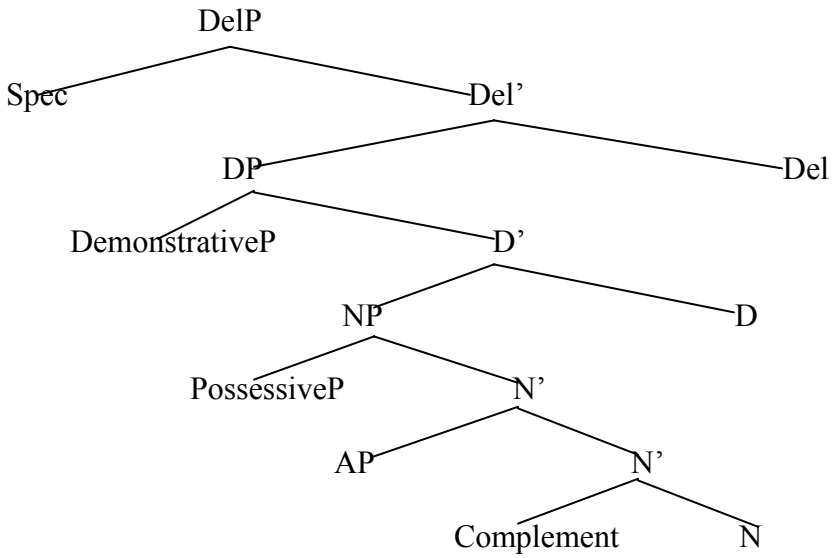
(5-26)



5.2.4 THE CONFIGURATIONAL STRUCTURE OF KOREAN NOUN PHRASES

Collecting the strands of research represented by Abney (1987)'s DP-hypothesis, Yoon (1990)'s DelP-analysis, Anderson's (1984) PossP approach to possessor NPs, and Suh (2005) about the internal structure of noun phrases, we can assume that Korean nominals have the following syntactic organization.

(5-27)



In (5-27), Del heads DelP. DP is a complement of Del and NP is in turn a complement of D.

5.3 SCRAMBLING IN NOUN PHRASES

As we noted in section 5.1, Korean scrambles pre-nominal modifiers in a way that resembles scrambling in clauses. With an idea of the structure of nominals in (5-27) we are in a position to investigate this word order variation more carefully. Specifically, we need to answer the following questions. First, what specifier position in (5-27) does the "scrambled" constituent occupy? Second, is that movement driven by an EPP? Third, what prevents the head noun in (5-27) from scrambling?

5.3.1 SCRAMBLING IN NOUN PHRASES BETWEEN DEMONSTRATIVES AND GENITIVE PHRASES

In Korean, there is no fixed order between demonstratives and genitive noun phrases. Consider (5-1) and (5-2), repeated as (5-28) and (5-29).

(5-28) 철수의 그 차

Chelswu-uy ku cha

Chelswu-GEN that car

'that car of Chelswu's'

(5-29) 그 철수의 차

ku Chelswu-uy cha

that Chelswu-GEN car

'that car of Chelswu's'

In (5-28) and (5-29), a demonstrative 그 *ku* 'that' can be either preceded or followed by a possessor noun phrase 철수의 *Chelswu-uy* 'Chelswu-GEN', respectively. The different word orders do not result in a meaning change.

However, not all constituents in noun phrases can scramble in this fashion. There is a restriction that the Noun must be final in the phrase. In our example, the noun 차 *cha* 'car' cannot scramble, as shown in (5-3) and (5-4), repeated as (5-30) and (5-31) for the readers' convenience.

(5-30)*차 철수의 그

cha Chelswu-uy ku

car Chelswu-GEN that

'*that car of Chelswu's*'

(5-31)*철수의 차 그

Chelswu-uy cha ku

Chelswu-GEN car that

'*that car of Chelswu's*'

As mentioned at the outset of this chapter, this behavior of the noun in (5-30) ~ (5-31) resembles that of the verb which also appeared phrase finally in the last chapter.

5.3.2 SCRAMBLING IN NOUN PHRASES BETWEEN DEMONSTRATIVES AND COMPLEMENT NOUNS

The scrambling in noun phrases among demonstratives and genitive noun phrases is not an isolated example. We can also find scrambling between demonstratives and complement nouns. Consider (5-32) ~ (5-33) and their structure in (5-34).

(5-32) 아기의 그 예쁜 사진

aki-uy ku yeyppun sacin

baby-GEN that pretty picture

'*that pretty picture of the baby*'

(5-33) 그 예쁜 아기의 사진

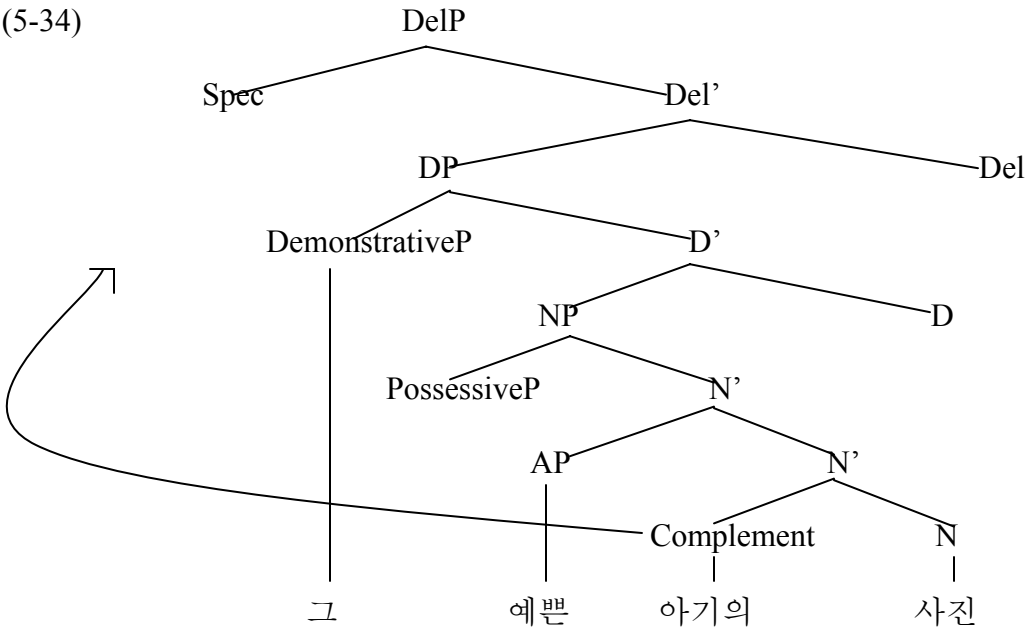
ku yeyppun aki-uy sacin

that pretty baby-GEN picture

‘*that pretty picture of the baby’*

‘*that picture of the pretty baby’*

(5-34)



‘*that pretty picture of the baby’*

In (5-32) ~ (5-33), 아기의 *aki-uy* ‘baby-GEN’ is the internal argument of the head noun 사진 *sacin* ‘picture’. In (5-32) ~ (5-33), a demonstrative 그 *ku* ‘that’ can be either preceded or followed by a complement noun phrase 아기의 *aki-uy* ‘baby-GEN’, respectively. Again,

scrambling does not change meaning, as demonstrated in the truth conditional equivalency of (5-35) and (5-36).

(5-35) 내가 아기의 그 예쁜 사진을 보았다

nya-ka aki-uy ku yeyppun sacin-ul po-ass-ta

I-NOM baby-GEN that pretty picture-ACC see-PST-DECL

'I saw that pretty picture of the baby.'

(5-36) 내가 그 예쁜 아기의 사진을 보았다

nya-ka ku yeyppun aki-uy sacin-ul po-ass-ta

I-NOM that pretty baby-GEN picture-ACC see-PST-DCL

'I saw that pretty picture of the baby.'

However, not all constituents in noun phrases can scramble freely. Once again there is the restriction that the Noun must be final in the phrase. In our example, the noun 사진 *sacin* 'picture' cannot scramble, as shown in (5-37) ~ (5-38) below.

(5-37)*사진 아기의 그 예쁜

sacin aki-uy ku yeyppun

picture baby-GEN that pretty

'that pretty picture of the baby'

(5-38)*아기의 사진 그 예쁜

aki-uy sacin ku yeyppun

baby-GEN picture that pretty

‘*that pretty picture of the baby’*

Clearly, the restriction on scrambling in noun phrases in the previous sub-section applies to this case as well.

Before we proceed to the next section, let us consider briefly the contrast in (5-39) and (5-40). Although in (5-32) and (5-33) scrambling between a demonstrative specifier and a complement noun is illustrated, we can also consider the scrambling possibilities of the adjective adjunct 예쁜 *yeyppun* ‘pretty’ as well. As suggested by the second interpretation of (5-33), the adjective 예쁜 *yeyppun* ‘pretty’ can be adjoined either to the head noun 사진 *sacin* ‘picture’ or to the complement noun 아기의 *aki-uy* ‘baby-GEN’. In the first case, where 아기의 aki-uy ‘baby-GEN’ is the complement noun of the head noun 사진 *sacin* ‘picture’, scrambling of 예쁜 *yeyppun* ‘pretty’ is acceptable, yielding (5-39). However, in the second case, where 예쁜 아기의 *yeyppun aki-uy* ‘pretty baby-GEN’ is the complement noun of the head noun 사진 *sacin* ‘picture’, scrambling of 예쁜 *yeyppun* ‘pretty’ is not acceptable, as shown by (5-40). This asymmetry is part of a larger generalization about scrambling in the Korean noun phrases that scrambling of an adjunct out of an embedded NP is prohibited. This generalization is part of the same generalization that prevents adjuncts from long distance scrambling between clauses.

(5-39) 예쁜 그 아기의 사진

yeyppun ku aki-uy sacin

pretty that baby-GEN picture

'that pretty picture of the baby'

(5-40)*예쁜 그 아기의 사진

yeyppun ku aki-uy sacin

pretty that baby-GEN picture

'that picture of the pretty baby'

5.3.3 SCRAMBLING IN NOUN PHRASES BETWEEN ADJECTIVE PHRASES AND COMPLEMENT PHRASES

In (5-41) and (5-42), a complement noun phrase can either precede or follow an adjective phrase, respectively.

(5-41) 호랑이의 그 작은 그림

holangi-uy ku cakun kulim

tiger-GEN that small picture

'that small picture of the tiger'

(5-42) 그 작은 호랑이의 그림

ku cakun holangi-uy kulim

that small tiger-GEN picture

‘*that small picture of the tiger’*

‘*that picture of the small tiger’*

Once again, this word order flexibility does not extend to every subconstituents of the phrase. The head noun 그림 *kulim* ‘picture’ must be final in the phrase. The noun 그림 *kulim* ‘picture’ cannot scramble, as shown in (5-43) ~ (5-44) below.

(5-43)*그림 작은 호랑이의

kulim cakun holangi-uy

picture small tiger-GEN

‘the small picture of the tiger’

(5-44)*작은 그림 호랑이의

cakun kulim holangi-uy

small picture tiger-GEN

‘*the small picture of the tiger’*

5.4 EXPLANATION FOR SCRAMBLING IN NOUN PHRASES

The limits on scrambling in clauses discussed in chapter 3 were attributed to the movement approach advocated in chapter 2. Following Miyagawa's (2001, 2005) claim that A-movement scrambling is triggered by the EPP-feature on T, I argue that there is a correlation between the lack of predicate scrambling and the lack of reconstruction of scrambled constituents. In EPP-driven A-scrambling, the scrambled constituent moves to [Spec, TP] and does not show reconstruction effects. Following the semantic restriction that requires arguments of a semantic function to c-command that function (or that requires an argument with a given Θ-role to c-command the head assigning that Θ–role), scrambling of predicates to [Spec, TP] is prohibited. This is because the scrambled predicate's arguments (or Θ-roles) cannot be saturated. In A-bar scrambling, on the other hand, the scrambled constituent moves to above TP. Since movement to A-bar positions show reconstruction effects, the predicate's Θ-roles can be bound by their nominal arguments if it is A-bar scrambled. These two claims force V to remain final in clauses even under scrambling.

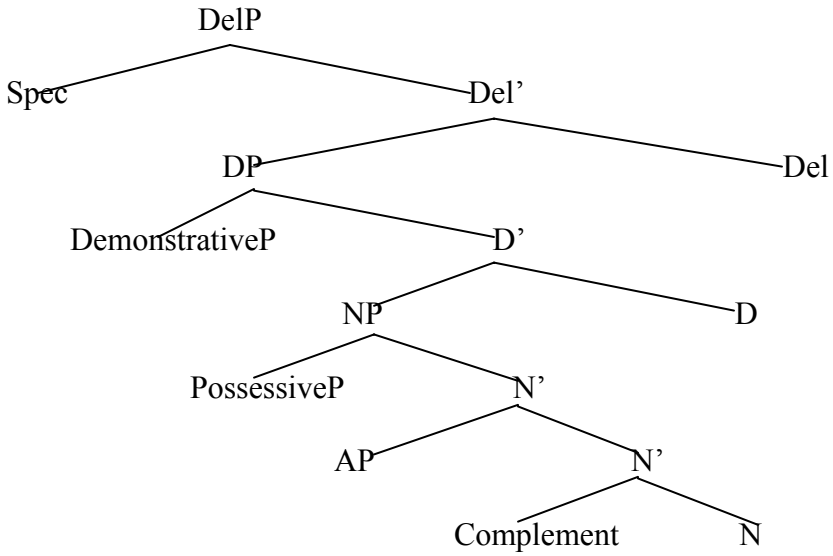
The analysis of scrambling within clauses does not extend to scrambling within the noun phrases. Noun phrases do not express function-argument relations. Furthermore, although scrambling within clauses is triggered by an EPP-feature, noun phrases lack such an EPP-feature. If there were an EPP-feature in Korean noun phrase (DelP), its specifier would be obligatorily filled, which is not the case. Chapter 4 argued that scrambling driven by the EPP is A-scrambling and lacks reconstruction effects, in contrast to long distance scrambling that is not EPP-driven and that does show reconstruction effects. Since the Korean noun phrase does not have an EPP-like requirement, my analysis predicts that scrambling in the

Korean noun phrase should pattern like A-bar scrambling and should show reconstruction effects. In the following subsections, we will find corroboration for this view.

5.4.1 SCRAMBLING TO THE SPEC OF DELP

In section 5.2, we assumed that Korean noun phrases are headed by the delimiter Del^0, and that the configurational structure of noun phrases is like (5-27), repeated as (5-45).[44]

(5-45)



In the previous section, we have seen that scrambling is permissible among demonstratives, genitive noun phrases, and complement noun phrases in noun phrases. We need to identify its landing site. Given the deep hierarchical organization of (5-45) and the numerous specifier/adjunct positions that could potentially be the the landing site of a scrambled

[44] In the system of Kayne (1994) there is at most one specifier/adjunct in each phrase projection. This would require treating the AP in (5-45) as the specifier/adjunct of a distinct phrase than the possessive P. Similarly the complement of N would originate from its right and move leftward to another specifier/adjunct position. Since nothing in my argument depends on this claim I have represented (5-27) and (5-45) in the more conservative format used by earlier researchers.

constituent, it is worth asking whether we can find any reason to narrow down the landing site of a scrambled constituent.

Consider the contrast between (5-46) and (5-47).[45]

(5-46) 그 철수의 호랑이의 그림

ku Chelswu-uy holangi-uy kulim

that Chelswu-GEN tiger-GEN picture

'that picture of the tiger owned by Chelswu'

'**the picture of that tiger owned by Chelswu'*

(5-47) 그 호랑이의 철수의 그림

ku holangi-uy Chelswu-uy kulim

that tiger-GEN Chelswu-GEN picture

'the picture of that tiger owned by Chelswu'

'**that picture of the tiger owned by Chelswu'*

In (5-46), 철수 *Chelswu* is the possessor of *'that picture of the tiger'*. It does not mean that 철수 *Chelswu* 'Chelswu' is the possessor of *'the picture of that tiger'*. However, in (5-47), where 호랑이의 *holangi-uy* 'tiger-GEN' is located between the demonstrative and the genitive noun phrase, the demonstrative 그 *ku* 'that' cannot specify the noun 그림 *kulim* 'picture'. That is to say, we cannot get the interpretation *'that picture of the tiger owned by Choolsoo'*. This suggests that (5-47) is not derived from (5-46) but should be derived from

[45] The contrast in (5-46) and (5-47) is adapted from Yoon (1990).

(5-48) by moving the internal argument 그 호랑이의 *ku holangi-uy* 'that tiger-GEN' to the linearly preceding position.

(5-48) 철수의 그 호랑이의 그림

Chelswu-uy ku holangi-uy kulim

Chelswu-GEN that tiger-GEN picture

'the picture of that tiger owned by Chelswu'

There is no meaning difference between (5-47) and (5-48). For this reason (5-49) and (5-50) are conditionally equivalent.

(5-49) 내가 그 호랑이의 철수의 그림을 보았다

nae- ka ku holangi-uy Chelswu-uy kulim-ul po-ass-ta

I-NOM that tiger-GEN Chelswu-GEN picture-ACC see-PST-DCL

'I saw the picture of that tiger owned by Chelswu.'

(5-50) 내가 철수의 그 호랑이의 그림을 보았다

nya-ka Chelswu-uy ku holangi-uy kulim-ul po-ass-ta

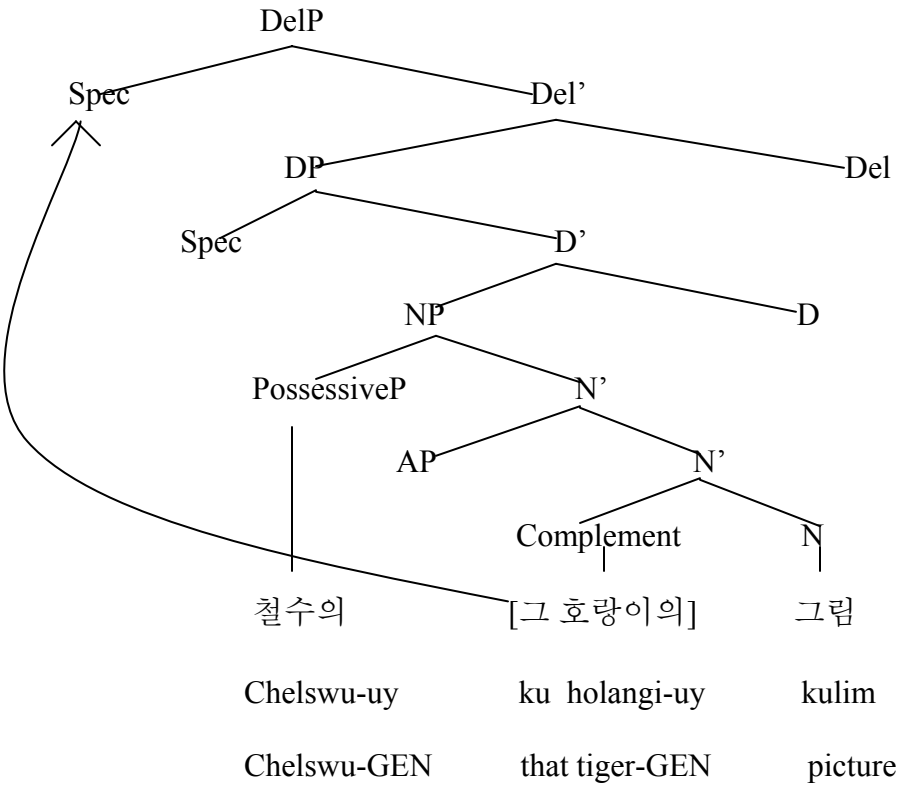
I-NOM Chelswu-GEN that tiger-GEN picture-ACC see-PST-DCL

'I saw the picture of that tiger owned by Chelswu.'

If (5-47) is derived from (5-48), the position of 그 호랑이의 *ku holangi-uy* 'that tiger-GEN' in (5-47) is a pre-Spec of D position, since 철수의 Chelswu-uy 'Chelswu-GEN',

an external argument noun phrase, must be placed in the Spec of D.[46] This fact supports strongly that the landing site of the scrambled element in (5-47) is the Spec of DelP in (5-45), as illustrated in (5-51).

(5-51)



In section 5.3.1, we looked at the scrambling of demonstratives and genitive noun phrases. Consider (5-28) and (5-29), repeated here as (5-52) and (5-53).

[46] Adopting Abney's (1987) genitive Case assignment mechanism, we can assume that in Korean noun phrases AGR in D assigns genitive Case to the specifier position of D, as AGR in T assigns nominative Case to the Spec of TP, the subject.

(5-52) 철수의 그 차

Chelswu-uy ku cha

Chelswu-GEN that car

'that car of Chelswu's'

(5-53) 그 철수의 차

ku Chelswu-uy cha

that Chelswu-GEN car

'that car of Chelswu's'

In (5-52), the scrambled element, the possessor noun phrase 철수의 *Chelswu-uy* 'Chelswu-GEN', is located in a position to the left of Spec of D position. Spec of DelP is the only position that satisfies this requirement.

The same analysis extends to the scrambling of demonstratives and nominal complements as discussed in section 5.3.2. Consider (5-32) and (5-33), repeated as (5-54) and (5-55) for the readers' convenience.

(5-54) 아기의 그 예쁜 사진

aki-uy ku yeyppun sacin

baby-GEN that pretty picture

'that pretty picture of the baby'

(5-55) 그 예쁜 아기의 사진

ku yeyppun aki-uy sacin

that pretty baby-GEN picture

‘*that pretty picture of the baby*’

‘*that picture of the pretty baby*’

In (5-54), the scrambled element, internal argument 아기의 *aki-uy* ‘baby-GEN’, is located in the pre-Spec of D position, which is the Spec of DelP.[47]

In section 5.3.3, we took a look at the scrambling of adjective phrases and nominal complements. We are now in a position to explain those facts in a manner parallel to our treatment of (5-55). Consider (5-41) and (5-42), repeated as (5-56) and (5-57) for the readers’ convenience.

(5-56) 호랑이의 그 작은 그림

holangi-uy ku cakun kulim

tiger-GEN that small picture

‘*that small picture of the tiger*’

[47] (5-54) is not the only scrambled version of (5-55). We can have two constituents scrambled in front of 그 *ku* ‘that’, as in (i). To explain how two constituents scramble, we must either assume Chomsky’s (1995) multiple specifier hypothesis or allow 아기의 *aki-uy* ‘baby-GEN’ to occupy the specifier of 예쁜 *yeppun* ‘pretty’. For the sake of explicitness 아기의 *aki-uy* ‘baby-GEN’ and 예쁜 *yeyppun* ‘pretty’ in (i) are located in the Specs of DelP, respectively.

(i) 아기의 예쁜 그 사진

aki-uy yeyppun ku sacin

baby-GEN pretty that picture

‘*that pretty picture of the baby*’

(5-57) 그 작은 호랑이의 그림

ku cakun holangi-uy kulim

that small tiger-GEN picture

‘*that small picture of the tiger’*

‘*that picture of the small tiger’*

In (5-56), the scrambled element, the internal argument 호랑이의 holangi-uy ‘tiger-GEN’, is located in the pre-Spec of D position, which is the Spec of DelP under the analysis offered in this chapter.

To summarize, we have found converging evidence suggesting that the landing site of the scrambled element in noun phrases is the Spec of DelP in Korean.

5.4.2 SCRAMBLING IN NOUN PHRASES AS A-BAR SCRAMBLING

The next question we need to ask is whether scrambling in noun phrases is A-scrambling or A-bar scrambling. To decide which kind of scrambling occurs in noun phrases, we test the interaction of scrambling with reconstruction effects in this domain. Recall that A-scrambling does not show reconstruction effects, while A-bar scrambling is correlated with such reconstruction effects. In the case of scrambling in clauses, A-scrambling is EPP-driven and does not show reconstruction effects, whereas A-bar scrambling is not EPP-driven and does show reconstruction effects. The absence of any EPP-like requirement in the Korean noun phrase (DelP) leads us to predict that scrambling in noun phrases is A-bar scrambling. (5-58) and (5-59) show that this prediction is born out.

(5-58) 그 학생들의 서로의 그림의 구입

ku haksyang-tul-uy selo-uy kulim-uy kwuip

that student-PL-GEN each other-GEN picture-GEN purchase

'*that students' purchase of pictures of each other*'

(5-59) 서로의 그림의 그 학생들의 구입

selo-uy kulim-uy ku haksyang-tul-uy kwuip

each other-GEN picture-GEN that student-PL-GEN purchase

'*that students' purchase of pictures of each other*'

(5-58) is a derived noun phrase with another derived noun phrase as its argument. In (5-58), the possessive noun phrase 서로의 그림의 *selo-uy kulim-uy* 'each other-GEN picture-GEN' is the complement of another noun phrase 구입 *kwuip* 'purchase'. In (5-59), we have the scrambling of 서로의 그림의 *selo-uy kulim-uy* 'each other-GEN picture-GEN'. Furthermore, (5-59) has the same interpretation as (5-58). The grammaticality of (5-59) exhibits the reconstruction effect making it parallel to (5-58). This fact supports the claim that scrambling in noun phrases is A-bar scrambling.[48]

One may think that (5-60) falsifies the analysis just outlined. The problem is that 서로의 *selo-uy* 'each other-GEN' scrambles in (5-60) and the resulting structure is ungrammatical, unlike the case of (5-59).

[48] Proposals that base generate scrambled word orders will have difficulty in explaining why scrambling in the clause shows no reconstruction effects while scrambling within DelP does. This asymmetry is an important reason for rejecting the proposal of Fanselow (2001) discussed in 2.2.3.

(5-60)*서로의 그 학생들의 그림의 구입

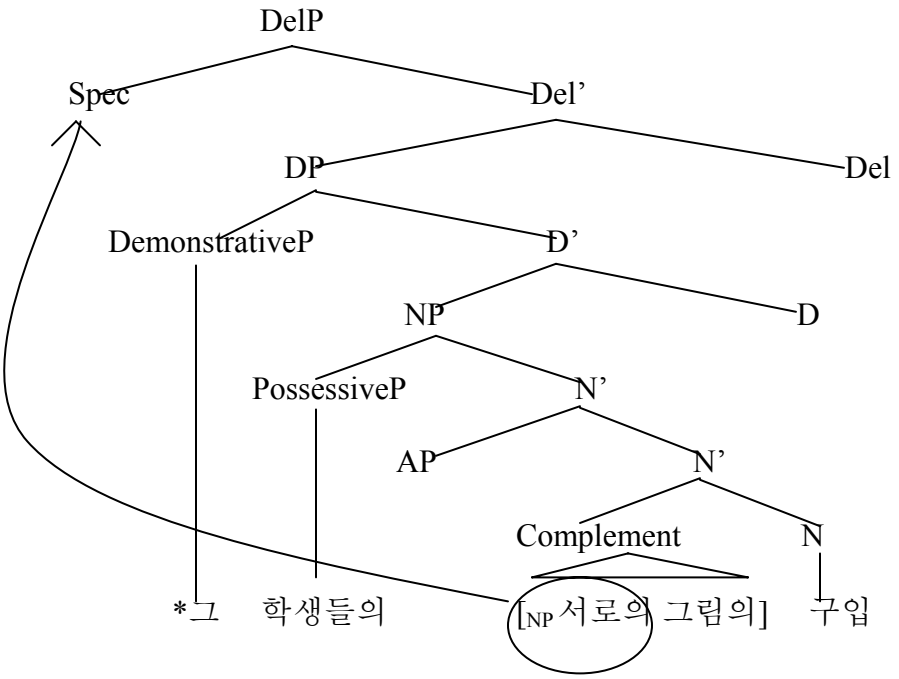
selo-uy ku haksyang-tul-uy kulim-uy kwuip

each other-GEN that student-PL-GEN picture-GEN purchase

'that students' purchase of pictures of each other'

Example (5-60) is ungrammatical because it involves scrambling out of an embedded possessive nominal. To see this point, examine (5-61), the structure of (5-60).

(5-61)



ku haksyang-tul-uy [NP selo-uy kulim-uy] kwuip

that student-PL-GEN each other-GEN picture-GEN purchase

'that students' purchase of pictures of each other'

The ungrammaticality of (5-60) can be explained by the generalization about scrambling in the Korean noun phrases. In (5-60), 서로의 selo-uy 'each other-GEN' scrambles out of the

possessive noun phrase 서로의 그림의 *selo-uy kulim-uy* 'each other-GEN picture-GEN'. The possessive is specifier in (5-61) and specifiers are generally islands. Extraction out of specifier is forbidden by Huang's (1982) CED, Chomsky's (1986a) barriers, and Rizzi's (1990) relativized minimality.[49]

We do not discuss the case in which the nouns, 그림의 *kulim-uy* 'picture-GEN' and 구입 *kwuip* 'purchase', scramble. These nouns have to be final in their own projections, as pointed out in section 5.3. See the following section 5.4.3 for the explanation of the ban on the scrambling of the head noun in noun phrases.

5.4.3 THE BAN ON THE SCRAMBLING OF THE NOUN IN NOUN PHRASES

Although Korean shows scrambling within noun phrases (DelP), not all constituents in noun phrases can scramble freely. As noted in section 5.3, there is a strong requirement that the Noun has to be final in the noun phrase.

Alternatively the restriction that head noun fails to scramble could be attributed to the character of the formal features on N. To see this alternative lets us examine a recent treatment of the parametric variation of N in Korean and Spanish.

In Korean and Spanish, there is a parametric variation of N movement. Korean has a pre-nominal possessive and adjective, as illustrated in (5-62) ~ (5-63) and (5-64) ~ (5-65), respectively. A post-nominal possessive and adjective are not allowed as in (5-63) and (5-65).

[49] If one adopts Kayne's (1994) analysis of X-bar theory, where the specifier/adjunct distinction is neutralized the same generalization follows.

(5-62) 나의 책들

na-uy chyak-tul

I-GEN book-PL

‘*my books’*

(5-63)*책들 나의

chyak-tul nay-uy

book-tul I-GEN

‘*my books’*

(5-64) 하얀 집

haayn cip

white house

‘*the white house’*

(5-65)*집 하얀

cip haayn

house white

‘*the white house’*

Spanish, other hand, has the post-nominal possessive and adjective, as illustrated in (5-66) ~ (5-67) and (5-68) ~ (5-69).[50]

(5-66) los libros mios
the book-PL 1a-GEN
'*the books of mine*'

(5-67)*los mis libros
the my books
'*my books*'

(5-68) la casa blanca
the house white
'*the white house*'

(5-69)*la blanca casa
the white house
'*the white house*'

Chang (2003) argues that this cross-linguistic difference regarding the position of possessives and adjectives in NP is attributed to the parametric variation of N movement. Following Cinque's (1999), Chang assumes that each of the different classes of adjectives is

[50] The examples in (5-66) ~ (5-69) are adapted from Chang (2003). As for Spanish possessive, not only the post-nominal possessive (e.g. *los libros mios* 'the books of mine') but also the pre-nominal possessive (e.g. *mis libros* 'my books') is allowed.

universally base-generated in the specifier position of a functional projection. With this assumption, Chang explains the parametric variation of N movement in Korean and Spanish in terms of Kayne's (1994) antisymmetry of syntax claim where all languages are spec-head-complement underlyingly. The movement of N to the head of a functional projection which is higher than the FP where the adjective is base-generated derives the post-nominal adjective is Spanish, whereas the pre-nominal adjective in Korean is due to the absence of this movement before Spell-Out.

In other words, Spanish has the strong feature on the head noun, and thus the noun moves to the head of a functional projection X before Spell-Out in (5-70). On the other hand, Korean has the weak feature on the head noun, and thus the noun moves to the head of a functional projection X after Spell-Out in (5-70).[51]

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[51] The honorification agreement in (i) ~ (iv) could be taken to support the claim that the features on N are weak in Korean. In Korean, the word which means a 'meal' has two different forms with respect to the honorific status. 진지 *cinci* 'meal' is a honorific one and 밥 *pap* 'meal' is a plain one. So, as in (i) ~ (iv), 선생님 *sensyangnim* 'teacher-HON' agrees with 진지 *cinci* 'meal' while 하인 hain 'servant' agrees with 밥 *pap* 'meal'. The features on 진지 *cinci* 'meal' and 밥 *pap* 'meal' are weak and thus does not need to moves to the head of a functional projection X (in this case, HONP) before Spell-Out.

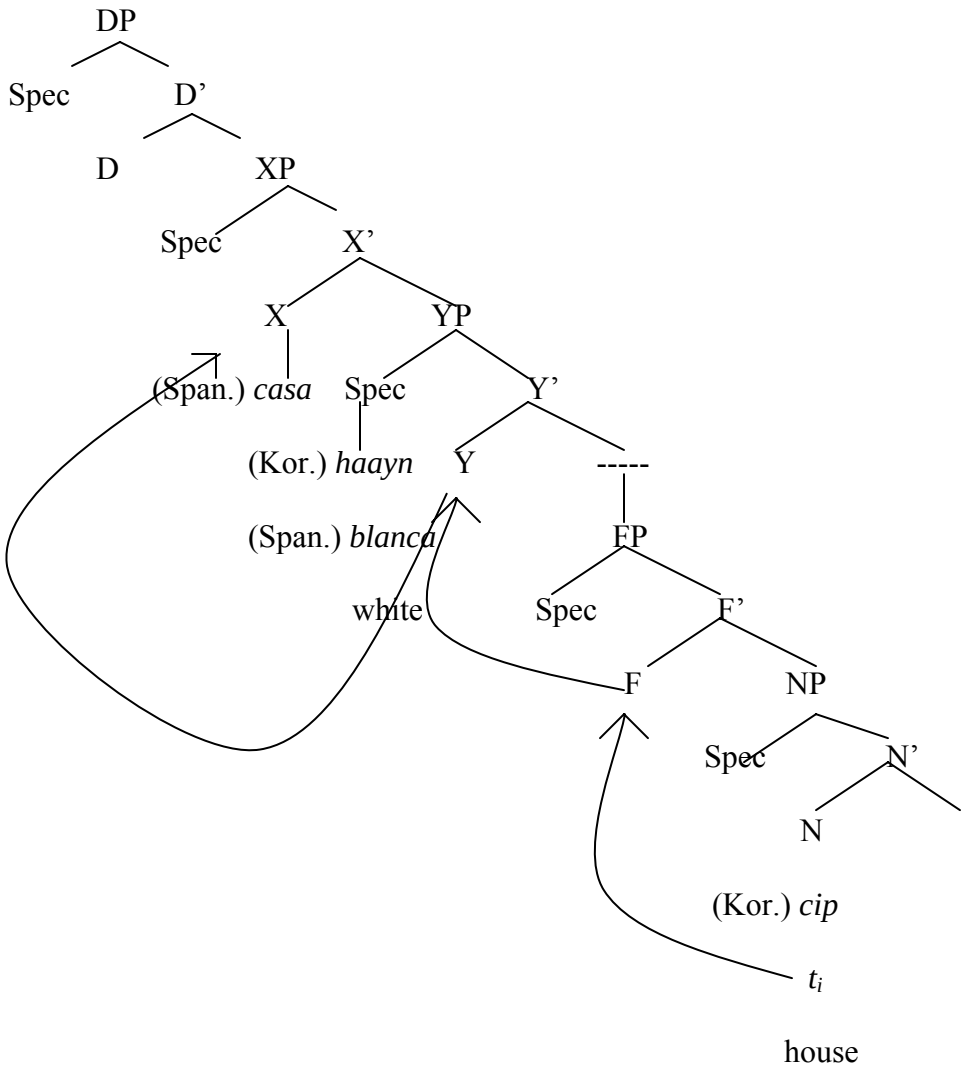
(i) 선생님의 진지
sensyang-nim-uy cinci
teacher-HON-GEN meal
'teacher's meal'

(ii)*선생님의 밥
sensyang-nim-uy pap
teacher-HON-GEN meal
'teacher's meal'

(iii) 하인의 밥
hain-uy pap
servant-GEN meal
'servant's meal'

(iv)*하인의 진지
hain-uy cinci
servant-GEN meal
'servant's meal'

(5-70)



If we were to adopt Chang's (2003) analysis, we could account for why 집 *cip* 'house' cannot scramble to the specifier of DP in (5-70), or the specifier of DelP in our earlier discussion. We could stipulate that all the features of 집 *cip* 'house' are weak and cannot overtly move to check a strong feature. Thus the noun 집 *cip* 'house' would remain at the final position of its phrase.

The limitation of this account, which attributes the lack of scrambling of the N to the character of its formal features, is that it correlates with little else empirically. For example,

we could have attributed the apparent head final character of verbs to the weakness of their formal features in the same way. But doing so would have prevented any larger generalization about the scrambling of nominal small clauses or the lack of reconstruction effects in clausal scrambling that we established in chapter 3 and 4. If we think about why attributing weak features to N would prevent it from scrambling, it is precisely because the principle of the economy of derivations prevents weak features from being checked in the overt syntax. An approach that appeals directly to the principle of the economy of derivations by saying that there is no formal, semantic, or pragmatic motive for N to scramble seems preferable to one that says, like Chang (2003), that there is no formal motive for a Korean N to move overtly.

5.5 SUMMARY

Korean has variable ordering within its noun phrases. A pre-nominal demonstrative, a genitive and an adjective may easily be commuted. However, the noun must always be final in its phrase. This behavior of the noun resembles that of the verb which also appeares phrase-finally. The generalization that predicates must not scramble does not extend to scrambling in noun phrases. This is because while that analysis of scrambling in clauses uses an EPP-/Focus feature as a motivation for scrambling, the noun phrases do not have the EPP-feature.

An investigation of the structure of Korean noun phrases shows that scrambling within noun phrases is the movement to the specifier of Del, the functional category heading nominals in Korean. Empirical evidence shows that scrambling of pre-nominal modifiers to this position is an A-bar scrambling in that it shows reconstruction effects.

The A-bar scrambling approach does not account for the ban on scrambling of a head noun in noun phrases, however. I have argued that the principle of economy of derivations prevents N from scrambling because there is no formal, semantic or pragmatic function that it serves. In other words there is no potential trigger for the movement. Thus the head noun should remain in the final position of noun phrases.

CHAPTER 6. RESULTS AND CONCLUSION

Korean is often characterized as a free word order language. "Free word order", and the "scrambling" of syntactic constituents that might derive it, are not well understood. It is open to debate how free word order languages are to be best analyzed and to what extent free word order is subject to parametric variation cross-linguistically. This study aims to contribute to our understanding of the free word order phenomenon by exploring the properties of scrambling in Korean from a syntactic point of view that is broadly consistent with the minimalist movement within the Principles and Parameters tradition. My strategy has been to assume that there is no special scrambling rule that permutes syntactic constituents but to assume instead that any syntactic element might in principle be susceptible to scrambling and then to constrain that process by a simple interface condition with the interpretative semantic component. Minimalist theories make autonomous syntactic stipulations like the headedness parameter (Chomsky 1981) suspicious and seem to favor theories like Kayne's (1994) antisymmetry of syntax that relate hierarchical order to linearization at PF (cf. Chomsky 1995). From this perspective the rigorous head final property of Korean even under scrambling deserves deeper explanation.

Korean scrambling has several restrictions: scrambling of the constituent in a sentence is permissible as long as the verb occurs sentence-finally; scrambling of a noun phrase over another noun phrase is prohibited when they are assigned the same morphological Case; scrambling within a small clause is not permissible. These restrictions

have been previously noted in traditional grammars but they have remained as a heterogeneous disjunctive set.

In order to provide a unified approach to these properties of scrambling in Korean, I framed two competing hypotheses. One ties scrambling to theta-role assignment. It contends that scrambling is permissible if and only if the scrambled phrase is assigned a theta-role. If a scrambled phrase lacks a theta-role, then scrambling is not acceptable. The other hypothesis is based on the distinction between semantic completeness and semantic incompleteness. In formal semantics, expressions are divided into two types: semantically complete expressions and semantically incomplete expressions that are rendered complete by function application. On the second hypothesis, scrambling is permissible if and only if the scrambled phrase is semantically complete.

The two conceptualizations diverge with regard to phrases that are semantically complete but have no obvious Θ–role. If only Θ–marked phrases scramble, such phrases should be frozen in place. If semantically complete expressions are available for scrambling, the constituent should be mobile. Significant empirical evidence involving the scrambling of adjuncts leads us to choose the second hypothesis that only semantically complete constituents scramble.

The generalization that only semantically complete constituents scramble follows from a deeper semantic restriction that requires arguments of a semantic function to c-command that function. This semantic restriction, when wedded to Miyagawa's (2001) minimalist analysis of scrambling in Japanese and Korean, is able to derive the generalization that predicates fail to scramble in Korean. Miyagawa treats Korean scrambling as A-movement to [Spec, TP] triggered by an EPP feature on T. On this score, Korean

scrambling contrasts with scrambling in Turkish, which is movement to an A-bar position. Following the EPP-analysis of scrambling in Miyagawa (2001), I argued that there is a correlation between the lack of predicate scrambling and the lack of reconstruction in scrambled constituents (characteristic of A-movement). In EPP-driven A-scrambling, scrambling can create new binding relations, a property associated with A-movement. The scrambled constituent moves to [Spec, TP] and does not show reconstruction effects. Of course, not all movement behaves like A-movement. In A-bar scrambling, a scrambled constituent moves out of TP. Since the constituents landing in such A-bar position show reconstruction effects, a predicate scrambled to such an A-bar position can satisfy the semantic restriction that arguments c-command their predicates. As a result, in this kind of scrambling, predicates are allowed to scramble. The generalization about scrambling that emerges is that predicates do not scramble to A-positions. This was held to explain the variation in scrambling in Korean and Turkish. Turkish scrambling is to an A-bar position. As a result it exhibits both reconstruction effects and predicate (sub)scrambling.[52]

Finally I investigated scrambling within noun phrases in Korean. The ordering of constituents within the noun phrases is variable; for example, a pre-nominal demonstrative, a genitive and an adjective may all be commuted. However, despite this variability, the noun must be final in its phrase. The behavior of the noun mimics that of the verb, which also appears phrase-finally. However, this restriction on scrambling of noun within noun phrases cannot be explained by the restriction against scrambling semantically incomplete expressions. It does follow from the standard minimalist notion that movement is economical in the sense that movement of a constituent requires a trigger. That trigger may

[52] The semantic restriction that I have hypothesized constrains scrambling brings minimalist syntax closer to syntactic theories based on, or sympathetic to, categorical grammars that provide a simple syntax for formal semantics to operate on.

be a formal syntactic property that must be resolved or "checked" in the terminology of Chomsky (1995) because it is uninterpretable at LF or it should make available an added semantic or pragmatic property associated with the added derivational work (cf. Fox 2000). From this perspective, we expect scrambling within the noun phrase to pattern differently from its counterpart in the clause.

Our investigation of the structure of Korean noun phrases shows that scrambling within noun phrases is the movement to the specifier of DelP, a function projection introducing noun phrases in Korean. The weight of the evidence also shows that scrambling of pre-nominal modifiers to this position is A-bar scrambling in that it shows reconstruction effects and in this regard is quite different from scrambling at the clausal level.

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