

TOPICS IN KOREAN SYNTAX:
PHRASE STRUCTURE, VARIABLE BINDING AND MOVEMENT

by

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Submitted to the Department of Linguistics and Philosophy
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ABSTRACT

This thesis has two parts: Part 1 considers problems related to the phrase structure of Korean; Part 2 investigates problems related to Korean *enu...na* construction. Part 1 consists of chapters 2 and 3; Part 2 consists of chapters 4 and 5.

In chapter 2, we discuss "VP-focus" constructions and "Long-form" negation constructions in Korean. It will be shown that these Korean constructions utilize the "VP-shell" structure proposed in Larson(1988), with certain extensions. It will also be argued that the element *-ki* in Korean can be a "nominalizer" of a VP. The Korean progressive construction involving *-ko iss-* will be analyzed as another instance of the "VP-shell" structure. The notion "morphological closure," a crucial concept in understanding "agglutinating" languages like Korean, will also be introduced in this chapter.

In chapter 3, what is often called "nominalization" structures in Korean, involving *-ki/ci*, *-l/n kes*, *-l/n ci*, *-l su*, etc., will be investigated. It will be shown that they are not involved in a category-changing process and that they must be viewed as an "NP-shell." It will be argued however that these "NP-shells" must also be viewed as complementizers or simply as syntactic features at D- or S-structure. Hence, the main point of the chapter is that the level of representation at which these elements are analyzed as NP-shells and the level of representation at which these are analyzed as complementizers or as syntactic features must be distinguished. A new level of representation, which is called "Pre-D-structure," will be proposed as a level where these elements are represented as NP-shells. These NP-shells, then, will be functionally determined to be either complementizers or syntactic features during the mapping from the Pre-D-structure to D-Structure.

Chapter 4 will discuss the variable binding problems in the Korean *enu...na* construction, some of which will be identified as a particular

type of donkey sentence and others of which will be identified as "Specifier-Binding" constructions. It will be argued that the Korean data support the "Indirect Binding" approach of Haik(1984).

In the final chapter of this thesis, it will be shown that there are two important constraints in the positions that the NP that *enu* is the specifier of (we will call it "*enu* NP") can occupy within the relative clause: (i) the "Overt Subject Constraint" (OSC) and (ii) the Wh-island Constraint. I will then try to derive these constraints by assuming an LF movement of *enu* NP to a position that can be governed by the element *-na*. It will be argued that the first of these constraints will be derivable with certain assumptions about the specifiers and projections and with a certain revision of the notion of barrier, following an extended version of Fukui & Speas(1986); and that the second of these constraints will be derivable if we adopt the concept "Relativized Minimality," proposed by Rizzi(1987).

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CHAPTER 1

INTRODUCTION

1.1. Introduction

This thesis is conceived within the framework of the principles and parameters' theory of Chomsky(1981, 1982, 1985, 1986a,b) (which is widely called "Government-Binding" theory). The goal of this thesis is to deal with various topics in Korean syntax: A variety of data will be presented, and the problems posed for the theory will be defined as clearly as possible. It will then be shown that the solutions to these problems can be achieved with the adoption and/or extension of some proposals within the framework of the principles and parameters' theory. Or one major innovation in the general framework will be required to account for some aspects of Korean. At various points in our discussion, we will suggest several parametric differences between Korean and English.

We leave the questions of what precise implications these Korean facts have for Universal Grammar(UG), or how UG must be reorganized in view of these Korean facts, for future study. This thesis focusses on particular issues internal to Korean, and it is not intended to provide an overview of all aspects of Korean grammar. We hope that this study will contribute to future work in Korean and in comparative syntax.

In section 1.2., I will briefly state the general goals of our linguistic inquiry. For a more detailed discussion of the basic goals of the

principle and parameters theory, the reader is referred to Chomsky(1981, 1986a). In section 1.3., I will introduce the basic organization of UG as argued by Chomsky(1981) and list several definitions and concepts that are assumed to be part of UG. These definitions and concepts will be constantly referred to and will be revised as necessary, in the following chapters. In the final section of this chapter, a summary of the content of each chapter will be provided. The reader will see that each chapter of this thesis is fairly autonomous.

1.2. Focus of Inquiry

Following Chomsky, we assume that a child is born with a language faculty, as he/she is born with eyes and ears. As the eyes enable him/her to see and the ears enable him/her to hear, the language faculty enables the child to speak. This faculty is called "Universal Grammar," or "UG," and is part of the human biological endowment.

The focus of the inquiry is then to investigate the "architecture" of this language faculty: to develop vocabularies suitable for this architecture, to find out what its "building blocks" are, and to discover how it is structured. A fundamental assumption here is that we can probe this architecture by examining the data that the language faculty produces: language.

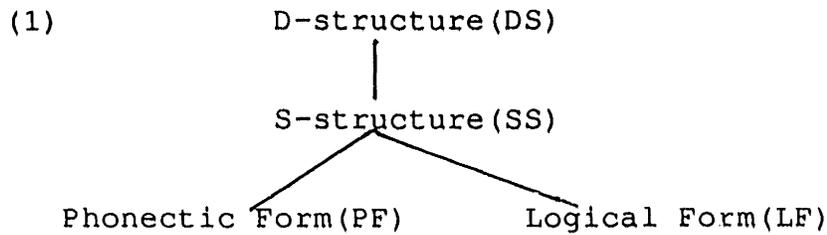
One must however be careful about what is meant by the architecture of the language faculty. There might be various "levels" of

the architecture of the language faculty: At one level, what matters is only the movement of the neurons of the brain, but the architecture of this level is certainly not the focus of our inquiry. Rather, we are interested in a "higher" level of the architecture of the language faculty --- where the principles directly relevant to producing the syntactic structure of the language are represented. That is, we are interested in the portion of the architecture of the language faculty that is accessible from the linguistic data.

One of the major considerations in determining the architecture of the language faculty, or UG, is to account for variation across languages. Given that the language faculty is part of the biological endowment of human beings, the question is how various languages can have such divergent grammars. Chomsky attributes the variability in language to the parameters which are set at different values for different languages, and for different components of a given language. The language faculty then consists of principles and parameters, and to determine the nature of these principles and parameters is to determine the architecture of the relevant level of language faculty.

1.3. Organization of UG and Basic Concepts

According to Chomsky(1981) (first proposed in Chomsky and Lasnik(1977)), UG consists of the following levels of representation:



D-structure(DS) is a level at which the thematic relation between the arguments and their predicates is directly represented. This level is viewed as an interface between syntax and lexicon. Logical Form(LF) is the level that serves as an interface between syntax and the cognitive faculty of the mind; Phonetic Form(PF) is a level of phonological representation, which interfaces with the acoustic/articulatory module of the language faculty.

The mapping between these levels is mediated by a rule "Move α ." This rule maps DS to SS and SS to PF and to LF. One example of Move α occurring between DS to SS is wh-movement in Korean relativization; and we will argue in chapter 5 that the movement of enu NP in Korean *enu...na* construction is an instantiation of Move α that occurs between SS and LF.

According to Chomsky, UG includes a number of principles and concepts/definitions. In this chapter, we introduce only those that are necessary in understanding this thesis. For other principles and concepts/definitions of UG, see Chomsky(1981,1986a), among others.

One guiding principle that regulates the relationship between the various levels is the *Projection Principle*:

(1) *Projection Principle*

Representations at each syntactic level (LF, D-structure, S-structure) are projected from the lexicon, in that they observe the θ -marking properties of lexical items.
(Chomsky(1981))

This principle essentially states that the argument structure of a verb, which is an integral part of a verb's lexical entry, must be preserved at all levels (except, perhaps, at PF).

A θ -role is a thematic role that an argument plays with respect to its predicate. We say that a predicate θ -marks its argument when it assigns a θ -role to it. Concerning this θ -role, there is a principle called the θ -criterion, the shortest version of which is stated as follows:

(2) *θ -criterion*

Each argument bears one and only one θ -role, and each θ -role is assigned to one and only one argument.
(Chomsky(1981))

We now introduce some of the fundamental configurational concepts that are part of UG: *c-command*, *m-command* and *government*.

(3) *c-command*

α *c-commands* β iff α does not dominate β and the first branching node dominating α also dominates β .
(Reinhart(1976,1983))

(4) *m-command*

α *m-commands* β iff α does not dominate β and every γ , γ a maximal projection, that dominates α dominates β .
(Chomsky(1986b, see also Aoun & Sportiche(1983))

(5) *government*

α *governs* β iff α *m-commands* β and every barrier for β dominates α . (Chomsky(1986b))

We also assume the following extended notion of government, following Belletti & Rizzi(1981):

We also assume the following extended notion of government, following Belletti & Rizzi(1981):

- (6)
If α governs β , then α governs the head of β .

Returning to the definition (5), the notion "barrier" is determined as follows, according to Chomsky(1986b): He first define "Blocking Category"(BC):

- (7)
 γ is a BC for β iff γ is not L-marked and γ dominates β .
(Chomsky(1986b))

then the concept of barrier is defined as:

- (8)
 γ is a barrier for β iff (a) or (b):
(a) γ immediately dominates δ , δ a BC for β ;
(b) γ is a BC for β , $\gamma \neq IP$.

Following is the definition of L-marking:

- (9)
 α L-marks β iff α is a lexical category that θ -governs β .

θ -government is a particular type of government, defined below:

- (10)
 α θ -governs β iff α is a zero-level category that θ -marks β , and α , β are sisters.

In chapter 5, we will pursue a slightly different notion of barrier.

Given this notion of barrier, we tentatively assume the following version of ECP:

- (11)ECP
A non-pronominal empty category must be
(i) head-governed, or
(ii) antecedent-governed.

"Head-government" is government by a head, a zero-level category. We also tentatively assume the following definition of antecedent government:

- (12)
- α antecedent-governs β if
 - a. α and β are coindexed;
 - b. α m-commands β
 - c. there is no γ , γ a barrier, such that α c-commands γ and γ dominates β , unless β is the head of γ . (Lasnik & Saito(1984))

Chapter 5 will also provide a revision to these concepts.

The theory of bounding involves a concept called "subjacency." Chomsky(1986b) defines the subjacency as follows:

- (13) *Subjacency Condition*
 If (α_i, α_{i+1}) is a link of a chain, then α_{i+1} is subjacent to α_i .

The notion "subjacent" is determined by the notion *n-subjacent*:

- (14)
 β is *n-subjacent* to α iff there are fewer than $n+1$ barriers for β that exclude α .

Now, the notion "subjacent" is determined to be 1-subjacent.²

¹ The definition of the term "exclude" is:

- (i) α excludes β if no segment of α dominates β .

The "segments" of a category typically occurs when there is an adjunction structure like the following:

- (ii) $[\beta \alpha [\beta \dots]]$

In (ii), the element α is adjoined to the category β . In this case, we say that the category β is composed of two segments, the outer β and the inner β .

² At a later portion of "Barriers," Chomsky suggests that the subjacency may mean 0-subjacency. In this chapter, we ignore this, and we will continue to assume that the subjacency means 1-subjacency.

Finally, there is a concept "Case Filter." We state it as follows:

(15) An overt NP must have Case.

1.4 Summary of Thesis

This thesis has two parts: Chapters 2 and 3 consider problems related to the phrase structure of Korean; Chapters 4 and 5 consider problems related to Korean *enu...na* construction.

In chapter 2, we discuss what I call "VP-focus" constructions and "Long-form" negation constructions in Korean. We will show that these Korean constructions utilize the "VP-shell" structure proposed in Larson(1988). The analysis of Korean leads us to propose certain extensions to his work. We will also argue that the element *-ki* in Korean can function as a "nominalizer" of a VP. It will also be argued that the Korean progressive construction involving *-ko iss-* should be analyzed as another instance of the "VP-shell" structure. The notion of "morphological closure," a crucial concept in understanding the "agglutinating" languages like Korean, will be introduced in this chapter.

In chapter 3, we will investigate what is often called "nominalization" structures in Korean, involving *-ki/ci*, *-l/n kes*, *-l/n ci*, *-l su*, etc. We will show that they are not involved in a category-changing process and that they must be viewed as an "NP-shell." However, it will be argued that these "NP-shells" must also be viewed as complementizers or simply as syntactic features at D- or S-

structure. Hence, it will be argued that the level of representation at which these elements are analyzed as NP-shells and the level of representation in which these are analyzed as complementizers or as syntactic features must be distinguished. We will propose a new level of representation, which is called "Pre-D-structure" where these elements are represented as NP-shells. These NP-shells, then, will be functionally determined to be either complementizers or syntactic features during the mapping from the Pre-D-structure to D-Structure.

Chapter 4 will discuss variable binding problems in the Korean *enu...na* construction, some of which we identify as a particular type of donkey sentence and others of which we identify as what we call "Specifier-Binding" constructions, borrowing the terminology from Reinhart(1987). It will be argued that the analysis of Korean supports the "Indirect Binding" approach of Haïk(1984), with a minor extension. It will be suggested that only the Indirect Binding framework can provide a basis for an interesting comparison between the two types of donkey sentences in Korean and between the Korean and English donkey sentences.

In the final chapter of this thesis, we will show that there are two important constraints in the positions that the NP that *enu* is the specifier of (we will call it "*enu* NP") can occupy within the relative clause: (i) the "Overt Subject Constraint" (OSC) and (ii) the Wh-island Constraint. We will then try to derive these constraints by assuming an LF movement of *enu* NP to a position that can be governed by the

element *-na*. It will be argued that the first of these constraints will be derivable with certain assumptions about the specifiers and projections and with a certain revision of the notion of barrier, following an extended version of Fukui & Speas(1986); and that the second of these constraints will be derivable if we adopt the concept "Relativized Minimality," proposed by Rizzi(1987). During these discussions, we will suggest that movements that are triggered by scopal considerations, such as *wh*-movement, and movements that are triggered by morphological considerations, such as the movement of *enu* NP in Korean, must be distinguished in various aspects, including in the deletability of intermediate traces.

PART 1

PHARSE STRUCTURAL CONCERNS

CHAPTER 2

VP-STRUCTURE

2.1. Introduction

The Korean language has what I call "VP-focus" constructions and "Long-form" negation constructions. These are illustrated by the following examples:

(1) "VP-focus" Constructions

Chelsu-ka ku chaek-ul ilk-ki-nun
NOM the book-ACC read-KI-CON

ha-ess-ta
do-PAST-DEC

'Read the book, Chelsu did...'

(2) "Long-form" Negation

Chelsu-ka pap-ul mek-ci ani ha-ess-ta
NOM meal-ACC eat-CI neg do-PAST-DEC

'Chelsu did not eat the meal.'

In both (1) and (2), all the matrix inflectional elements, e.g. -ess- 'PAST,' and -ta 'Declarative Ending' are affixed to the dummy verb ha- 'do.' This signifies that this dummy verb is syntactically the main verb. On the other hand, the verbs with the real semantic content, ilk- 'read' in (1) and mek- 'eat' in (2) (Let us call these verbs *content verb* below), are followed by the elements -ki or -ci, which can be best viewed as complementizers. For instance, few people would disagree

postulating a kind of noun-complement structure for the embedded sentence.

We will return to the syntactic nature of this element *-ki* below. For the moment, let us only emphasize that, whatever its syntactic category, *-ki* has been widely viewed as an element that introduces another sentence (Recall that N.K. Kim argues that it is a *sentential nominalizer*).

Now, let us return to the "VP-focus" sentence and the "Long-form" negation sentence in (1) and (2). As we have seen, the same element *-ki* is attached to the content verb in (1). In (2), it is the element *-ci* that is attached to the content verb, but it has been well acknowledged in the area of Korean syntax (cf. S.C. Song(1973,1979), H.B. Lee(1970b,1972) among others) that this *-ci* has been traditionally developed from *-ki*. Thus, it is reasonable to view that these two elements are identical in terms of syntax.

Now, given the widely held assumption that *-ki* is a sentence introducer, we are forced to assume that the sentences in (1) and (2) are bi-clausal: The content verb is the verb of the embedded clause and the dummy verb is the matrix verb. This analysis has been proposed by H.B. Lee(1970b,1972), C.K. Oh(1971), S.K. Song(1973,1979), among others.

It is easy to see why this sentential complement approach is prevalent. If we view the second verbs in (1) and (2) as matrix verbs

taking complements, then their complements must be thematically autonomous, in the sense that all the θ -requirements of the embedded verb must be satisfied within the complements. Since this θ -requirement includes the one for "external" argument of the embedded verb, the subject of the verb must be included within the complement --- i.e. the complement must be a clause.

In this chapter, we will attempt to show that the sentences in (1) and (2) are not instances of this sentential complementation. Rather, we claim that they are instances of VP-complementation. This claim of ours will lead us to examine the following two things: (i) What are the exact properties of the "complementizer" *-ki* (or *-ci*)? (ii) How is the VP-complementation structure ever possible?

For the second question, we will try to show that the VP-complementation structure we have in mind is not a new one --- it was in fact predicted by the approach of Larson(1988). Thus, Korean constructions like (1) and (2) will provide a nice confirmation of Larson(1988)'s approach, given certain extensions to it.

2.2, Basic Properties of VP-focus Constructions

2.2.1. Terminology

We have called sentences like (1) "VP-focus" constructions. But this term is not something that can be assumed *a priori*: While we imply, by this term, that what is focussed in (1) is a VP, Whitman(1982) briefly mentioned that what is focussed in a sentence

like (1) (or, rather, in the Japanese analogue of a sentence like (1)) is a V, not a VP. Thus, we must first clarify this issue.

But, before we go on to this discussion, let us take a look at what we call "VP-focus" constructions like (1) more closely. The following are the examples again:¹

(4)
Chelsu-ka ku chaek-ul ilk-ki-nun ha-ess-ta
NOM the book-ACC read-?-CON do-PAST-DEC

'Read the book, Chelsu did...'

(5)
Chelsu-ka ku chaek-ul ilk-ki-to ha-ess-ta
NOM the book-ACC read-?-also do-PAST-DEC

'Read the book, Chelsu did also...'

This type of sentence is in contrast to other non-focussed sentence like the following:

(6)
Chelsu-ka ku chaek-ul ilk-ess-ta
NOM the book-ACC read-PAST-DEC

'Chelsu read the book.'

Note first that, unlike the English gloss, the constituent that is focussed in the actual Korean examples is not preposed. Instead, as can be seen when we compare (4), (5) and (6), the verb of the "focussed" VP in (4) and (5), *ilk-* 'read', is followed by an element *-ki* and the "focussing" particles like *-nun* 'contrastive'² and *-to* 'also.'³

¹ In various aspects, these constructions are quite different from English focus constructions, which are represented by stress. I will nevertheless call these Korean constructions "focus" constructions, due to lack of established nomenclature.

² *-Nun* is used as a topic marker in other cases.

Furthermore, a dummy verb *ha-* 'do' follows these particles. This dummy verb carries all inflectional elements as can be seen in the examples above.

We briefly discussed the property of *-ki* above; as for the element *-nun* or *-to* here, we can best view them as scope markers, indicating the range of focus. Thus, by claiming that the constructions like (4) and (5) are instances of VP-focus constructions, we are essentially claiming that the scope of the focus markers ranges over VP.

Whitman(1982), however, claims that what is focussed in the Japanese construction analogous to these constructions is only V, not the whole VP. That is, the scope of the focus markers ranges over only V in the sentences under discussion here.

It is true that, in these constructions, the verb alone can be focussed without focussing other elements within the VP. For example, the following discourse is perfectly possible:

- (7)
- | | | | | |
|-----------|--------------|----------|-----------|--------------|
| Chelsu-ka | ku | chaek-ul | po-ki-nun | ha-ess-ciman |
| NOM | the | book-ACC | see-?-CON | do-PAST-but |
| sa-ci-nun | anh-ess-ta | | | |
| buy | neg-PAST-DEC | | | |

'Chelsu saw the book, but (he) did not buy (it).'

In (7), it is possible to claim that what is focussed in the first conjunct of (7) is only the V, *po-* 'see', not the whole VP. However, in a stand-

³ There are other particles that may appear in these constructions. For example, *-kkaci* 'even,' *-man* 'only', etc.

alone sentence like the following, in order to focus the verb *ilk-* 'read' only, this verb requires some special stress:

(8)
Chelsu-ka ku chaek-ul ILK-KI-NUN ha-ess-ta
NOM the book-ACC read-?-CON do-PAST-DEC

'READ the book, Chelsu did...'

With this stress, the sentence (8) is now understood as the one where the verb alone is focussed. Furthermore, the focus particle *-nun* or *-to* can be understood to put focus only on an NP within the VP or an adverbial within the VP. Note the following sentences:

(9)
Chelsu-ka KU CHAEK-UL ilk-ki-nun ha-ess-ciman
NOM THE BOOK-ACC read-KI-CON do-PAST-'but'

talun chaek-ul ilk-ci-nun mos.ha-ess-ta
other book-ACC read-CI-CON can't-PAST-DEC

'Read THAT BOOK, Chelsu did, but (he) did not read other books.'

(10)
Chelsu-ka CAL ttui-ci-to mos.ha-ciman
NOM well run-CI-also can't do-'but'

MOS ttui-ci-to anh-nun-ta
not.well run-CI-also neg.do-IMP-DEC

'Run WELL, Chelsu does not, but he is not a poor runner either.'

In (9), the object of the verb, *ku chaek* 'the book', is understood to be emphasized; in (10), the adverbial within the VP, *cal* 'well,' is understood to be focussed. Note that, in both cases, the elements to be focussed must receive some degree of stress. Thus, we detect here a property of the focus particle *-nun* or *-to* that it can "localize" its scope of focus on some element under VP when it contains some

degree of stress. Note, however, that this focus element cannot be used to put the focus on the subject, however the subject is stressed. For instance:

(11)
 *CHELSU-KA ku chaek-ul ilk-ki-nun ha-ess-ciman,
 NOM the book-ACC read-KI-CON do-PAST-`but'
 Yenghi-ka ku chaek-ul ilk-ci-nun anh-ess-ta
 NOM the book-ACC read-CI-CON neg.do-PAST-DEC
 `CHELSU read the book, but Yenghi didn't read the
 book.'

(12)
 *?CHELSU-KA ku chaek-ul ilk-ki-to ha-ess-ko
 NOM the book-ACC read-KI-also do-PAST-`and'
 Yenghi-to kulae-ess-ta
 -also do.so-PAST-DEC
 `Chelsu also read the book and Yenghi did so, too.'

Thus, we conclude that these focus particles can focus any element within the VP, as long as it bears a special stress. That is, its range of focus cannot go beyond a VP.

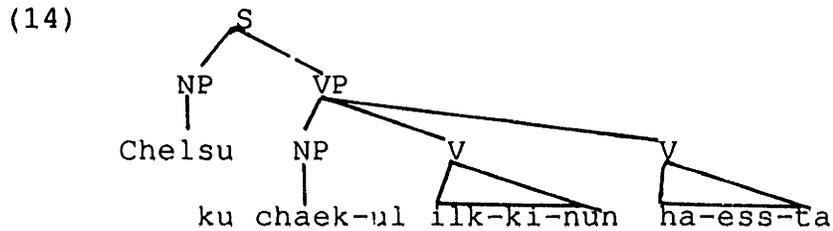
Now, what happens if the VP-focus constructions like (4) or (5) do not have any constituent that bears a special stress? It is crucial to note that, in this case, what is focussed is usually a VP. In the following sentence, what is focussed is obviously a VP:

(13)
 Chelsu-ka ku chaek-ul ilk-ki-nun ha-ess-ciman
 NOM the book-ACC read-COMP-CON do-PAST-but
 ku naeyong-ul ihaeha-ci-nun mos.ha-ess-ta
 the content-ACC understand can't-PAST-DEC
 `Read the book, Chelsu did, but (he) did not
 understand the content.'

The point is the following: It is clearly not true that the focus particles like *-nun* or *-to* put the focus only on V. Rather, they are able to put the focus on any element within the VP, as long as it bears some special degree of stress. Furthermore, in the case where no element bears a special stress, the scope of these focus particles unmarkedly ranges over the VP. Thus, we conclude that, although the scope of these focus particles can sometimes be "localized," its unmarked range of scope is a VP. This conclusion, then, justifies our calling these focus particles "VP-focus" particles.

2.2.2. Particle *-ki* a Nominalizer of a V?

In the section 2.1., we pretended that there is only one predominant analysis of the VP-focus construction, where the morpheme *-ki* is understood to be a sentence introducer and the sentences in (4) and (5), for example, are understood as involving a sentential complementation. However, given the Whitman type analysis, where what we call a VP-focus construction is considered to be a V-focus one, there is actually one other alternative analysis of the morpheme *-ki*. In this approach, the element *-ki* is not something like a complementizer --- actually, it is not a syntactic category at all. Rather, *-ki* is just a lexical nominalizer of the preceding V and the scope element *-nun* is attached to this nominalized verb. Hence, as the argument goes, it is natural that the scope of the focus particle is limited to the verb. This approach then assumes the following type of structure (irrelevant details omitted):



The obvious problem of this approach, of course, is that the scope of the focus particles is not limited to the verb. In the last subsection, we have shown that it can be extended to the VP or any other non-verbal element within the VP. However, despite these difficulties, this approach has some merit that deserves some discussion here: The reason being that the element *-ki* in Korean is a particle that can also be used in nominalizing just a verb in Noun-Verb compounding. The examples are the following:

- (15) (i) pomul chac-ki 'treasure-hunting'
 treasure seek-KI
- (ii) cul num-ki 'rope-jumping'
 rope jump-KI

In these instances of the morpheme *-ki*, it directly nominalized the verb, making it a nominal. So this approach claims that the instance of the morpheme in VP-focus constructions is not a complementizer of some sort, but that it is actually a nominalizer of the verb itself, as it is in the examples of (15).

This claim, however, has at least the following two problems: First, in the cases of (15), the object of the verb cannot be assigned the accusative Case, as the following example shows:

- (16)
 a. ?*uli cul-ul nem-ki-lul ha-ca
 we rope-ACC jump-KI-ASCC do-exhort.

`Let's do rope-jumping.'

b. ?*pomul-ul chac-ki-lul ha-le ka-ca
treasure-ACC seek-KI-ACC do-LE go-exhort.

`Let's go for treasure-hunting.'

But, in the VP-focus constructions like (1), the object *ku chaek* 'the book' of the verb *ilk-* 'read' is assigned the accusative Case. This shows that the verbs in the compounding in (15) have lost at least one of their properties, namely, Case assignment, due to the presence of *-ki*, while in the VP-focus constructions like (16), the verb fully retains its Case-marking capabilities, despite the presence of the same morpheme.

Secondly, in the VP-focus construction, the honorific marker, which we claim to be AGR (cf. H.S. Han(1987) and H.S. Choe(1988)), can precede the morpheme *-ki*. Note the following example:

(17)
sensaengnim-i ku chaek-ul ilk-usi-ki-nun
teacher-NOM the book-ACC read-AGR-?-CON

ha-si-ess-ta
do-AGR-PAST-DEC

'Read the book, the teacher did...'

In (17), the honorific marker, which agrees with the subject, precedes the morpheme *-ki*. However, this is impossible in the case of noun-verb compounding. The following examples are bad:

(18)
*pomul cha-usi-ki `treasure-hunting: honorific'
treasure seek-AGR-KI

*cul nem-usi-ki `rope-jumping: honorific'
rope jump-AGR-KI

I think this is sufficient evidence against the claim that the morpheme *-ki* in (1) nominalizes just the preceding verb. This morpheme allows the preceding verb to assign Case; and allows the insertion of the AGR between it and the preceding verb.

2.3. Bi-clausal Analysis

2.3.1. Introduction

In the previous section, we have shown that, in the examples under consideration, the element *-ki* cannot be viewed as a nominalizer of the verb. Let us consider in this section the other alternative, which we discussed in section 2.1., in which the morpheme *-ki* in VP-focus constructions is considered to be a complementizer or any kind of a sentence introducer (like a sentential nominalizer). As we remarked earlier, this approach is predominant in literature, and was specifically advocated by H.B. Lee(1970b, 1972), C.K. Oh(1971), S.K. Song(1973,1979), among others.

Recapitulating: In this approach, the dummy verb *ha-* in (1) is a matrix verb, which bears all matrix inflectional elements, taking the NP *Chelsu* as subject and a sentential complement, of which the content verb *ilk-* 'read' is the main verb; The morpheme *-ki* is either a complementizer or a sentential nominalizer. The embedded sentence of (1) then contains a *pro* subject, and thus the structure would roughly be as follows:

(19)
 Chelsu-ka [pro ku chaek-ul ilk-ki]-nun
 NOM the book-ACC read-COMP-CON

ha-ess-ta
 do-PAST-DEC

'Read the book, Chelsu did...'

There is no *a priori* reason to believe this is incorrect. Actually, the fact we noticed in the previous section, i.e. that the AGR can precede the morpheme *-ki*, seems to support this analysis. This is because, of course, in our theoretical framework, the AGR and COMP are neighbors, and assuming the morpheme *-ki* to be a sentential COMP accords naturally with this assumption.

Despite this merit, I will show, in section 2.3.3., that there are reasons to believe that the bi-clausal hypothesis is not defensible for the VP-focus construction. Before proceeding to that discussion, it is necessary to discuss the Korean "Long-form" negation construction that is identical in its structure to the VP-focus construction.

2.3.2. Negation in Korean.

It is well-known that Korean has two types of negative sentences. One is preverbal negation, which has been sometimes called "Short-form" or "type A" negation by various authors (cf. H.S.Han(1987), H.B.Lee(1970b,1972), S.J.Song(1973), C.K.Oh(1971) among others); the other is what is called "Long-form" negation or "type B" negation. The first type of negation has the form in which the main verb is

immediately preceded by the negative morpheme *ani*. The example is the following:

- (20)
Chelsu-ka pap-ul ani mek-ess-ta
NOM meal-ACC neg eat-PAST-DEC
`Chelsu did not have the meal.'

In this thesis, I don't have much to say about this type of negation.

The second type of negation, the "Long-form" negation, has basically the format of the VP-focus construction, except that there is a negative morpheme preceding the dummy verb *ha-*. An example is the following:

- (21)
Chelsu-ka pap-ul mek-ci ani ha-ess-ta
NOM meal-ACC eat-? neg do-PAST-DEC
`Chelsu did not eat the meal.'

Some dissimilarities of (21) from the VP-focus construction: First, the "focussing" particle is missing; Second, the functional element that follows the content verb is *-ci*, not *-ki*; and third, there is a negative morpheme preceding the dummy verb *ha-* in (21). Given the long observed fact that the functional element *-ci* is an element that was historically derived from *-ki* (S.J.Song(1973), H.B.Lee(1970b,1972) among others), we note that, apart from some minor differences, the negation sentence is in exactly the same syntactic format as the VP-focus construction is.

One thing that is of interest to us is that the functional element *-ci* in the negative sentences can be followed by a Case particle. The most

frequent Case particle that appears here is the accusative marker *-lul*. Note the following example:

- (22)
Chelsu-ka pap-ul mek-ci-lul ani ha-ess-ta
NOM meal-ACC eat-?-ACC neg do-PAST-DEC
`Chelsu did not eat the meal.'

This fact might be taken to be an argument for the bi-clausal hypothesis we mentioned in the last subsection, since, as we have seen in section 2.1, Korean sentential complements are generally followed by the accusative Case particle. But in section 2.3.3.2., we will show that a certain interesting fact about this Case assignment actually argues against the bi-clausal analysis.

2.3.3. Arguments Against Bi-clausal Analysis

2.3.3.1 Aspect Co-occurrence

In Korean, it is well-known that the tense/aspect marker *-n-* cannot occur with adjectives. An example is as follows:

- (23) *Yenghi-ka yepp-n-ta
NOM pretty-N-DEC
`Yenghi is pretty.'

Although it is still somewhat controversial whether this marker *-n-* is a present (or nonpast) tense marker or imperfect aspect marker (cf. K.S.Nam(1978), T.W. Han(1984), among others), it seems quite clear that this morpheme can best be viewed as an imperfect aspect marker, since, if it were a present (or non-past) tense marker, there

is no clear reason why the adjectives are incompatible with the present tense. The present tense of the adjectives can be expressed without the marker *-n-* as follows:

- (24) Yenghi-ka yeppu-ta
 NOM pretty-DEC
 `Yenghi is pretty.'

Further, the Korean adjectives can occur with the past tense marker *-ess-*:

- (25) Yenghi-ka yeppu-ess-ta
 NOM pretty-PAST-DEC
 `Yenghi was pretty.'

If the *-n-* is a present tense marker and the *-ess-* is a past tense marker, it is unclear why there is this asymmetry between the present tense and past tense forms of adjectives. Note also that Korean adjectives are, in general, incompatible with the aspectual expressions, as in many languages. For instance, the progressive form cannot occur with adjectives:⁴

- (26) *Yenghi-ka yeppu-ko iss-ta
 NOM pretty-PROG-DEC
 `Yenghi is being pretty.'

Also, the aspectual auxiliaries like *peli-* 'perfective,' or *ssah-* 'iterative,' cannot co-occur with the adjectives:

⁴ In English, while most adjectives cannot occur with the progressive, a few adjectives, e.g., stubborn can. But, in Korean, there is no such exception: In Korean, no adjectives can occur with the progressive aspect.

(27)
 *Yenghi-ka yepp-e peli-ess-ta
 NOM pretty-E throw.away(perfective)-PAST-DEC
 `Yenghi was pretty(perfective).`

(28)
 *Yenghi-ka yepp-e ssah-nun-ta
 NOM pretty-E heap(iterative)-PRES-DEC
 `Yenghi was pretty(iterative).`

Given this fact, I will assume that the Korean marker *-n-* indicates the aspect of imperfectivity.

Let us now consider the VP-focus and Negation constructions involving adjectives. The following are examples:

(29) Yenghi-ka yeppu-ki-nun ha-ess-ta
 NOM pretty-KI-CON do-PAST-DEC
 `Pretty, Yenghi was..`

(30) Yenghi-ka yeppu-ci ani ha-ess-ta
 NOM pretty-CI neg do-PAST-DEC
 `Yenghi was not pretty.`

As usual, the content adjective *yeppu-* 'pretty' is followed by the morpheme *-ki* or *-ci* and there is a dummy verb *ha-* 'do' in the matrix. These are just typical VP-focus and negation constructions. Note that the dummy verb *ha-* 'do' bears the inflectional element *-ess-* 'PAST,' and the sentence is grammatical.

Now, it is crucial to note that, if the matrix inflectional element is replaced by the imperfective marker *-n-*, the sentence becomes ungrammatical:

- (31) *Yenghi-ka yeppu-ki-nun ha-n-ta
 NOM pretty-KI-CON do-IMP-DEC
 `Pretty, Yenghi is..`
- (32) *Yenghi-ka yeppu-ci ani ha-n-ta
 NOM pretty-CI neg do-IMP-DEC
 `Yenghi is not pretty.`

This fact of course is correlated with the fact that adjectives cannot occur with the imperfect aspect, as we saw in the sentence (23). This fact effectively suggests that, in VP-focus and Negation constructions, the whole clause is behaving as if it is one clause, whose verbs, the adjective *yeppu-* 'pretty' and the dummy verb *ha-* are behaving as if they are one and the same verb. This is a clear indication that the bi-clausal analysis is not in the right direction.

Still, we may consider what the advocates of bi-clausal analysis could say about this fact. That is, in a theory that maintains the bi-clausal analysis of VP-focus and Negation constructions, how can this correlation be captured?

In such a theory, the sentences like (31) would have the following structure:

- (33)
 Yenghi-ka [pro yeppu-ki]-nun ha-n-ta
 NOM pretty-KI-CON do-IMP-DEC

in which there are two clauses, one of which is embedded within the other. In order to capture the fact in (31) and (32), this theory must claim that two clauses (or two verbs, the matrix dummy verb and the embedded content verb) are somehow aspectually related. Under

certain assumptions, this job can be carried out: Suppose that the aspectual element is within the INFL node, as was commonly assumed. Suppose further that, adapting the ideas of Piccolo(1985), two INFLs may be coindexed under certain conditions. Then we can coindex the embedded INFL and the matrix INFL, and there might be a basis for the correlation between them.

Though it may seem plausible, this approach is not easy to maintain. Note, first, that Piccolo's coindexation of INFLs is motivated by the fact that, when the subjunctive clause is embedded as a complement of the matrix verb in Romance languages, the subject of the matrix verb and the subject of the subjunctive complement show the obviation effect. She explains this fact by assuming that two INFLs (tenses) may be coindexed and that the lower INFL serves as an anaphoric INFL. She suggests that, when the embedded verb is in the subjunctive form, the lower INFL and the matrix INFL form a T-chain and that the binding domain for the subject of the subjunctive clause must be extended to the matrix clause just in this case. Hence, due to the binding condition (B) of Chomsky(1981), the obviation effect occurs.

If we follow this line, we predict that there is an obviation effect in the Korean VP-focus or Negation constructions like (33) between the matrix subject and the embedded *pro*. But, of course, this prediction is not borne out: If there is a *pro* within the "embedded" sentence of (33), it not only may, but must be controlled by the subject.

Of course, one can assume that this empty category is not a *pro*, but a PRO, which, as Piccolo(1985) shows, is immune to this obviation effect. But this assumption is problematic: Since it is assumed in this approach that there is an INFL in the embedded sentential complement, which is co-indexed with the matrix INFL, the subject must be governed and hence it must be *pro*, not PRO, given the widely held assumption that PRO must be ungoverned. Note also that AGR can appear in the INFL of the "sentential" complement, as we have seen above. This approach predicts, then, that the subject, at least in this case, i.e. in the case where AGR appears in the INFL, must show the obviation effect, since, in this case, the subject is governed by AGR, and hence it must be a *pro*. But this prediction is not borne out, either.

But, there is a more important argument against this approach. Tenny(1987) has argued that the aspectual elements should not be considered to be a part of the INFL node at all. She suggests that the tense/modality elements and the aspect elements are fundamentally different objects semantically: For example, the tense/modality elements provide extra-grammatical, contextual information --- in this sense, they are indexical. The aspect (particularly aspectual delimitedness), on the other hand, is grammatically indicated and does not require reference to contextual information in order to be interpreted. She also suggests that the aspectual delimitedness is compositional, having to do with the interaction of a verb and its

internal arguments, but the tense/modality is not. In conclusion, she argues that the aspect has a scope over VP, rather than over S.

If this argument of Tenny's is on the right track, it suggests that it is quite implausible to argue that one independent clause can inherit the aspectual property of the other clause. To argue for this is to argue that the verb of a clause can aspectually depend on the verb of an other independent clause: In Tenny's view, this is almost like one verb inheriting the argument structure of a verb belonging to a different clause --- which is very difficult to argue for.

This is clearly an argument against the bi-clausal analysis of the Korean VP-focus and Negation constructions. There are, then, good motivations to believe that VP-focus/Negation constructions in (1) and (2) are mono-clausal.

2.3.3.2. Case Marking in Negation

The other piece of evidence against the bi-clausal analysis comes from Case marking facts in negation constructions.

Recall the example in (2), where the element *-ci* that is attached to the content verb may optionally be followed by a Case marker. The Case that appears in this construction is usually an accusative Case. We have said that this might be viewed as an argument for the bi-clausal analysis, since the complementizers or nominalizers of the Korean sentential complements are often followed by Case markers.

Now, note that, even though the accusative Case is always available for this Case marking in the negation construction, there are a few instances where the nominative Case can optionally appear in place of accusative Case markers. This happens particularly when the content verb is an adjective or some unaccusative verb. Note:

(34) Adjectives:

Yenghi-ka yeppu-ci-ka ani ha-ta
 NOM pretty-CI-NOM neg do-DEC

'Yenghi is not pretty.'

(35) Some unaccusatives:

kicha-ka o-ci-ka ani ha-n-ta
 train-NOM come-CI-NOM neg do-IMP-DEC

'The train does not come.'

Of course, the following accusative Case marking is also possible for these sentences:

(36) Adjectives:

Yenghi-ka yeppu-ci-lul ani ha-ta
 NOM pretty-CI-ACC neg do-DEC

'Yenghi is not pretty.'

(37) Some unaccusatives:

kicha-ka o-ci-lul ani ha-n-ta
 train-NOM come-CI-ACC neg do-IMP-DEC

'The train does not come.'

Note further that, in the negation constructions where other transitive or unergative verbs are content verbs, such nominative Case marking is impossible:

(38)
 a. *Chelsu-ka chaek-ul ilk-ci-ka ani ha-n-ta
 NOM book-ACC read-CI-NOM neg do-IMP-DEC

‘Chelsu does not read a/the book (books).’

b. Chelsu-ka chaek-ul ilk-ci-lul ani ha-n-ta
 NOM book-ACC read-CI-ACC neg do-IMP-DEC

‘Chelsu does not read a/the book (books).’

(39)
 a. *Chelsu-ka ttyi-ci-ka ani ha-ess-ta
 NOM run-CI-NOM neg do-PAST-DEC

‘Chelsu did not run.’

b. Chelsu-ka ttyi-ci-lul ani ha-ess-ta
 NOM run-CI-ACC neg do-PAST-DEC

‘Chelsu did not run.’

In these examples, the content verbs are either transitive verbs or unergatives and the element *-ci* must be followed by the accusative marker *-lul*.

In order to explain this phenomenon, let us first observe the fact that adjectives or unaccusatives do not have accusative Case marking capability to their complements. Furthermore, it is a Korean general phenomenon that, when an adjective lacks Case-marking capability for its complement, the complement takes the nominative Case. For example, in the following sentence, where the main predicate is a transitive adjective, its complement takes the nominative Case.

Observe:

(40) na-nun Chelsu-ka silh-ta
 I-TOP NOM dislike-DEC

‘I dislike Chelsu.’

The predicate *silh-* 'dislike' is a (transitive) adjectival predicate and *chelsu* is its complement. Note that the complement has the nominative Case.

This fact may be accounted for, if we assume that the nominative Case is actually a default Case, which may be assigned to an element that is assigned a θ -role but lacks Case, to avoid the Case Filter.⁵

⁵ Note that if we assume this default Case strategy, it voids the effect of the Case Filter. I argue that this default Case strategy must be parametrized, to the effect that it is operative in Korean, while it is not in English.

One construction in which the notion Case Filter is crucial is the passive construction: In Chomsky(1981), the movement in the passive construction is argued to be triggered by the fact that the object does not have Case. Thus, in order to avoid the Case Filter, it moves to the spec of IP position where it is assigned nominative Case by INFL.

If Korean has the default Case strategy, it is expected that, in the Korean passive construction, the same object-to-spec-of-IP movement need not occur. However, since the default Case I argued in the text is nominative, it is very difficult in practice to distinguish whether a movement occurred in the Korean passive construction or the nominative Case the "subject" bears in the passive construction is in fact default Case. Note that, if there is no movement of the object to the spec of IP in the Korean passive construction, it is a violation of the Extended Projection Principle, since a clause has no subject. However, we will argue in chapter 5 that we should not adopt this principle in favor of a slightly modified version of Fukui & Speas(1986)'s theory about categorial projections. On this view, even the tensed clauses need not have the spec of IP position, if the subject may remain under the spec of VP position.

Given this assumption, I propose that the nominative Case the "subject" bears in the Korean passive construction is indeed default Case. Thus, there is no movement in this construction; the "subject" remains in situ in the complement position of the passive verb; and the subject position, the spec of IP, is not generated at all, and, following Fukui & Speas(1986) and Fukui(1986), the implicit argument of the passive construction is a PRO subject remaining within the VP.

Finally, I'd like to note that, since this "free" default Case strategy will result in some degree of overgeneration, we need to constrain it. For this goal, I propose the following condition on default Case:

- (1)
An NP may assume default Case only if it is governed by a lexical category.

This condition prohibits the VP-internal subjects from assuming default Case. This constraint is crucial for the discussion in section 2.4.5.

The generalization of the phenomenon in (34) and (35) is then that, when the content verb lacks accusative Case assignment capability, the constituent in which it is embedded --- i.e. the constituent to which the particle *-ci* is attached --- may also lack accusative Case (there is nominative Case in its place). Since it is obvious that the Case (non-)assignment possibility of this constituent is governed by the matrix dummy verb, we see that the Case-marking property (actually non-Case-marking property) of the content verb can be inherited by the matrix dummy verb. Putting off the discussion of how this inheritance is exactly possible to a later section⁶, we may now safely conclude that this phenomenon shows that the content verb and the matrix dummy verb function as a single verb --- this is a clear argument against the bi-clausal analysis.

Finally, in this section, let us briefly consider how the accusative assignment by the dummy verb to the constituent in which the content verb is embedded is ever possible. Let me suggest that the matrix dummy verb, may optionally retain the Case marking capability of its "main verb" use in the following:

(41) Chelsu-ka sukce-lul ha-ess-ta
 NOM homework-ACC do-PAST-DEC

'Chelsu did the homework.'

⁶ We will actually argue in section 2.4.1, that this "inheritance" becomes possible due to the LF movement of the content verb from its S-structure position to the dummy verb position.

in addition to optionally inheriting the Case capability of the content verb.

2.4. VP-complementation

2.4.1. V-movement

We have seen in the last section that, in the VP-focus and negation construction like (1) and (2), repeated here:

(1) "VP-focus" Construction

Chelsu-ka ku chaek-ul ilk-ki-nun ha-ess-ta
NOM the book-ACC read-KI-CON do-PAST-DEC

'Read the book, Chelsu did...'

(2) "Long-form" Negation

Chelsu-ka pap-ul mek-ci ani ha-ess-ta
NOM meal-ACC eat-CI neg do-PAST-DEC

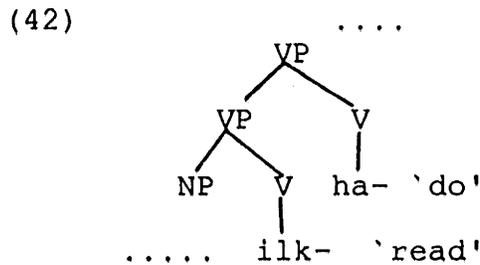
'Chelsu did not eat the meal.'

(i) there are reasons to believe that the "embedded" content verb and the matrix dummy verb belong to the same clause, i.e. these two verbs share the same aspectual features; (ii) the content verb and the dummy verb share the identical Case features.

I will argue in this chapter that these Korean VP-focus and Negation constructions involve VP-complementation.⁷ That is, in syntax, the dummy verb *ha-* 'do' is a matrix verb that takes a VP-complement, of which the content verb is the head. Then, the partial

⁷ As will be discussed below, I do not believe these Korean structures involve a proper sense of VP-complementation. This point will be clarified below.

structure of the VP-focus and Negation constructions is (ignoring the -ki element):



This structure suggests that the content verb and the dummy verb belong to one and the same clause. Clearly, this VP-complementation analysis is one step closer to the adequate analysis of the data shown above than the bi-clausal analysis is. However, simply assuming this VP-complementation structure does not sufficiently explain all the properties of (i) and (ii) above. The question still remains as to how the dummy verb can have the same Case features as the content verb, for example.

In order to provide an explanation for this phenomenon, we will suggest first that this "matrix" dummy verb is actually a "pleonastic" verb, occupying essentially an empty verb position in syntax, and that there is an LF movement of the content verb from its S-structure position to the pleonastic verb position. This, then, is in parallel to the expletive replacement occurring at LF, which Chomsky(1986a) argues for English there or it.

More precisely, we argue that, as in the case of English expletives, the dummy verb will be deleted at LF, and the content verb will

replace it after the movement. Given this movement, the fact that the dummy verb and the content verb share identical Case and aspectual properties can be nicely explained.

There is actually an empirical piece of evidence for this movement analysis: There are some instances of Korean data where it appears that this movement has occurred in syntax. Observe the following data:⁸

(43)
Chelsu-ka ku chaek-ul ilk-ki-nun ilk-ess-ta
NOM the book-ACC read-KI-CON read-PAST-DEC

'Read the book, Chelsu did...'

(44)
Chelsu-ka pap-ul mek-ki-to mek-ess-ta
NOM meal-ACC eat-KI-also eat-PAST-DEC

'(lit.)Also eat the meal, Chelsu did...'

These sentences have basically the same format as the VP-focus construction: There is a complementizer or nominalizer element *-ki* following the "embedded" verb and this *-ki* element is followed by the focus particles like *-nun* 'Contrastive Particle' or *-to* 'also.' The difference between the examples (43) and (44) and the regular VP-focus construction like (1) is the fact that the position that was occupied by the dummy verb in the VP-focus construction is not occupied by the dummy verb *ha-* 'do' in (43) and (44). Instead, its position is occupied by the verb that has the same phonetic shape of the content verb: I.e. the phenomenon of "verb duplication" occurred.

⁸ H.B.Lee(1972) and D.W.Yang(1976b) also noticed this type of example.

I will call these sentences "verb duplication" sentences, which must be understood as a special type of VP-focus construction.

This verb duplication phenomenon is accounted for as follows: At S-structure, the content verb may move to the dummy verb position, leaving a copy of it. Let us call this copy a *resumptive verb*, in the sense of Koopman(1984). That is, this resumptive verb is essentially a spell-out of the trace of the content verb.

This verb duplication structure, then, is a syntactic reflex of our more general LF movement of the content verb from its S-structure position to the dummy verb position. The existence of this verb duplication structure in syntax is the crucial evidence for the movement we proposed at LF.⁹

Note, incidentally, that this verb duplication phenomenon cannot occur across CP-boundaries. The following sentence is clearly a bi-clausal one; and the matrix verb is a dummy verb.

- (45)
- | | | | |
|-----------|--------------------|--------------|-------------|
| Chelsu-ka | [<i>pro</i> cip-e | ka-ss-umyen] | ha-ess-ta |
| NOM | house-LOC | go-PAST-if | do-PAST-DEC |
- 'Chelsu wanted to go home.'
(lit.) Chelsu would like if *pro* go home.'

There is no doubt that this sentence is bi-clausal: The embedded subject can be overt, as in the following sentence:

⁹ For more discussion about the verb duplication construction, see chapter 3, section 3.7.

(46)
 Chelsu-ka [Yenghi-ka ku chaek-ul sass-umyen]
 NOM NOM the book-ACC buy-if

 ha-n-ta
 do-IMP-DEC

 'Chelsu wants Yenghi to buy the book.' or
 (lit.) 'Chelsu would like if Yenghi bought the
 book.'

Note also that, in (45) and (46), the embedded clause has the complementizer element *-myen* 'if,' which is used normally as a complementizer element like *if* in English. For example,

(47)
 naeil nalssi-ka coh-umyen, yehaeng-ul
 tomorrow weather-NOM good-if travel-ACC

 ttena-ke-ss-ta
 leave-will-DEC

 'If the weather is good tomorrow, I will go on a
 travel.'

Notice, now, that the dummy verb *ha-* 'do' in (45) and (46) cannot be replaced by the embedded verb:

(48)
 *Chelsu-ka [pro cip-e ka-ss-umyen] ka-ess-ta
 NOM house-LOC go-PAST-if go-PAST-DEC

 'Chelsu wanted to go home.'
 (lit.) Chelsu would like if *pro* go home.'

(49)
 *Chelsu-ka [Yenghi-ka ku chaek-ul sa-ss-umyen]
 NOM NOM the book-ACC buy-PAST-if

 sa-ss-ta
 buy-PAST-DEC

 'Chelsu wants Yenghi to buy the book.' or
 (lit.) 'Chelsu would like if Yenghi bought the
 book.'

These sentences are crucial evidence that the verb duplication cannot occur across a CP-boundary. If the V-movement like the one shown in the Korean VP-focus construction must be clause-bound, it is further evidence for our assumption that the Korean VP-focus or negation construction involves VP-complementation, rather than a bi-clausal structure.

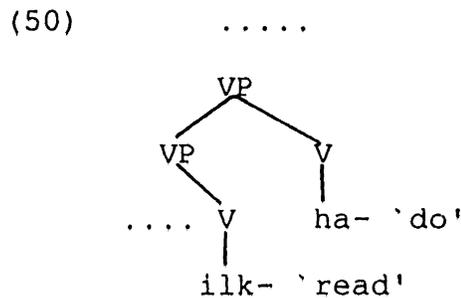
2.4.2. "VP-shell"

In the previous paragraphs, we have argued that the Korean VP-focus and negation structures involve a (i) VP-complementation and (ii) V-movement. But we need be more precise about what we mean by VP-complementation. The notion of complement is a notion defined in terms of the X-bar theory: We call a complement whatever category that occupies the position that is a sister to the X^0 in the X-bar schema. Hence, θ -role assignment of the head to its complement is not always required: For example, the functional category COMP takes an IP as its complement, but it is not said to assign a θ -role to its complement.¹⁰

Nevertheless, in the core case, the notion of complementation has some thematic import. For most lexical heads, which usually have θ -role properties, or θ -*grids*, a complement is assigned a θ -role. This follows from the θ -criterion, as we defined it in chapter 1. For the

¹⁰ The situation may be different in the case of another functional category INFL. Chomsky(1986b) assumes that INFL θ -marks its complement, even though COMP does not.

purpose of exposition, let us call the complementation that involves θ -role assignment *T-complementation*.¹¹ Now recall that we are arguing that the VP-focus/Negation structure involves the following VP-complementation:



Now, can we legitimately argue that the VP-complementation seen in the VP-focus/Negation structure (50) is an instance of T-complementation? In other words, does the dummy verb *ha-* 'do', which we argued takes a VP-complement, assign its θ -role to its VP-complement?

Our answer is definitely negative. Recall that we assume that there is an LF V-movement from the content verb position to the dummy or "pleonastic" verb position and it is the substitution of the dummy verb

¹¹ It is tempting to say that all and only categories that are θ -marked in the T-complementation are called arguments. These are typically NPs or CPs. However, as we noted in fn. 10, Chomsky(1986b) assumes that INFL θ -marks its complement, a VP. So, can we say in this case that the VP is an argument? But, in most theories, VPs are predicates, not arguments. Particularly, in Rothstein(1985)'s theory, a constituent cannot be simultaneously both an argument and a predicate.

In any case, in what sense can we say that INFL θ -marks the VP? Roberts(1985a, b) argues that the distribution of English modals can best be characterized by assuming that the modals are not θ -assigners. If English modals typically occupy the INFL position, then it follows that the INFL elements cannot be θ -assigners.

I would like to conclude, then, that INFL does not θ -mark the VP and maintain that the "T-complements," i.e. the complements that are θ -marked by the head, are all arguments.

by the content verb that results from this movement at LF. That this is indeed a substitution, not adjunction, can be seen from the structures in (43) and (44), where the verb movement occurred in syntax. Now, if the dummy verb can be assumed to assign a θ -role, the V-movement we argued above will obliterate this dummy verb as well as its θ -role properties, resulting in the deletion of a θ -role --- since the movement results in a substitution. This deletion of a θ -role is clearly a violation of the Projection Principle and/or violation of Recoverability of Deletion.

Hence, it seems to be the case that the dummy verb *ha-* 'do' that takes a VP-complement in the Korean VP-focus/Negation constructions must not be a θ -role assigner. In this sense, then, what we call VP-complementation in VP-focus/Negation constructions is not an instance of T-complementation.¹²

In short, we have a structure in which there is a matrix verb which takes a VP-complement but does not assign a θ -role to it. The question is: Is such a structure ever possible in syntactic structure of natural languages? We'd like to argue that it is and that a precedent to this effect is found in Larson(1988). We'd like to argue that these Korean structures involve a "VP-shell," in the sense of Larson(1988). That is, it is a structure of a VP stacking upon another VP. In terms of

¹² Whether VPs can ever involve T-complementation is a separate matter. Recall again that Chomsky(1986b) argues that INFL θ -marks the VP-complement. Even though we do not adopt this argument, it is still an open question whether VPs can involve T-complementation.

the X-bar theory, the lower VP is a complement --- but this complementhood is purely formal, without any thematic import. We will discuss in section 2.4.5, precisely how and when this stacking of VPs is allowed in syntactic structure, elaborating on Larson(1988).

The "VP-shell" structure was originally postulated by Larson(1988) to account for certain important aspects of English double object construction. In postulating the "VP-shell" structure in English, then, he essentially claimed that such structure is a legitimate option in Universal Grammar. We'd like to argue in this chapter that this claim is nicely confirmed in Korean syntax, particularly in the Korean VP-focus/Negation structure, with some modification of his basic views in Larson(1988). In the next section, we will summarize the basic view of Larson(1988) concerning the "VP-shell" structure.

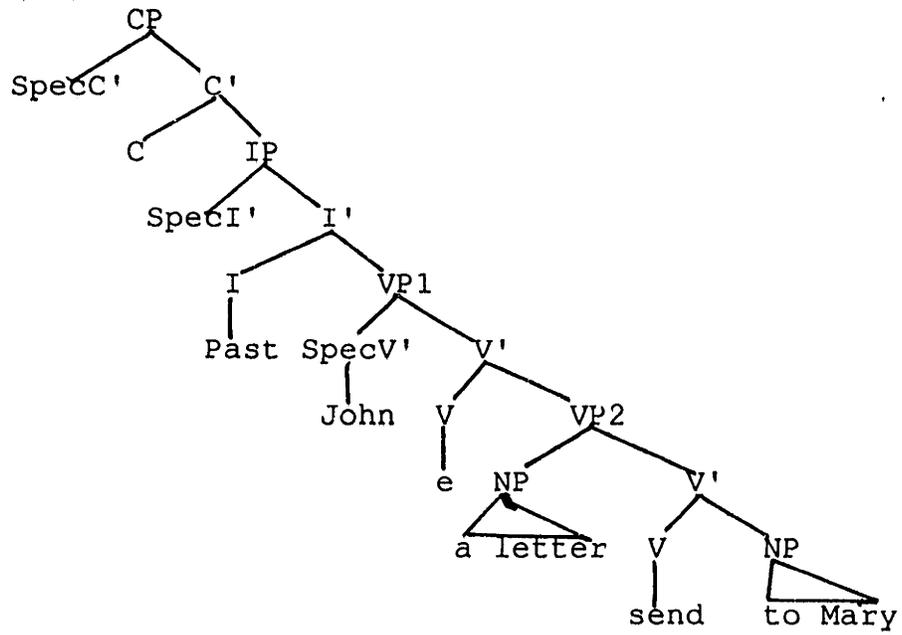
2.4.3. Larson(1988)

According to Larson(1988), the following type of sentences that involve a to -NP with the verb *give*:

(51) John sent a letter to Mary

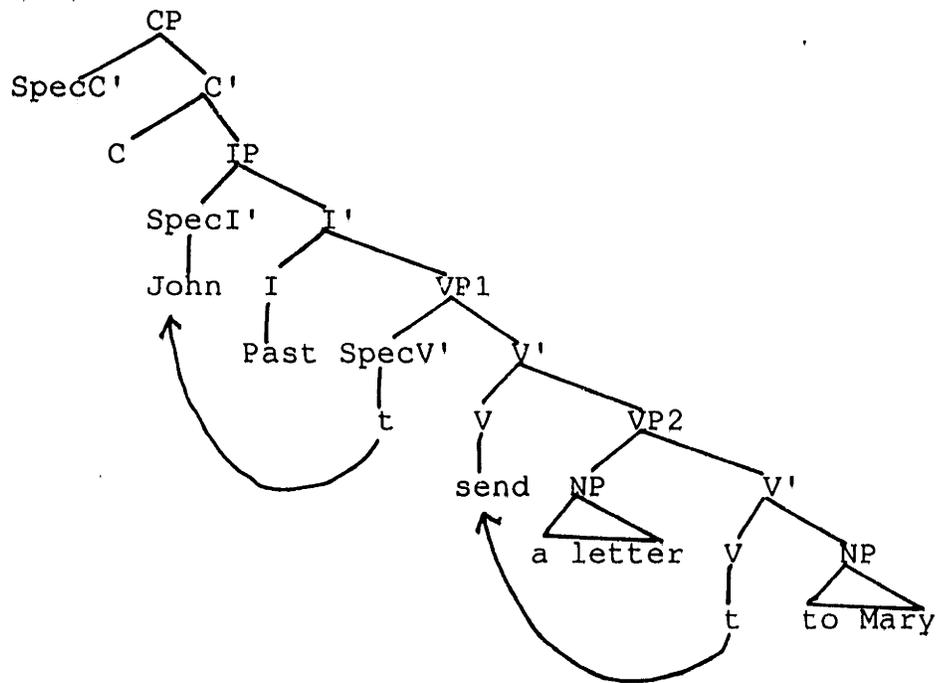
would have the following rough D-structure representation:

(52)



And, in order to have the appropriate S-structure representation, we move (i) the subject to the specifier of the IP and (ii) the verb *send* to the upper empty V position:

(53)



The D-structure representation (52) seems fairly complicated and seems quite divergent from the surface structure of the sentence (51); Also, it seems that only this divergence of the D-structure representation of (52) forces us to posit the movements in (53), which may otherwise be unmotivated.

But, Larson argues that there are conceptual and empirical reasons to believe that the D-structure representation like (52) is a desirable one. Let us consider the conceptual reasons here. For empirical evidence for this kind of structure, see Larson(1988).

Note in (52) that the subject of the verb *give* is represented under the specifier of the VP1. The idea that the subjects must be underlyingly generated within the VP has been around for a while: cf. Kitagawa(1986), Kuroda(forthcoming), Speas & Fukui(1986) and Sportiche(1988). Given this idea, we can neatly state the following principle governing the realization of the arguments of a predicate(as stated by Larson(1988)):

- (53)
If α is a predicate and β is an argument of α , then β must be realized within a projection headed by α .

Note that this idea is conceptually in conflict with Williams(1981)' idea that the subject is an "external" argument, which must occur outside the maximal projection that its predicate heads. It has been observed in natural languages that, if a predicate has an argument that is assigned the so-called "agent" θ -role, it always occur as subject in the nominative-accusative languages. This fact was accounted for,

according to Williams, by lexically distinguishing two types of arguments, external and internal, and by encoding the argument structure as such; and by suggesting that the external arguments always occur outside the maximal projection that the predicate heads.

If all of the arguments of a predicate are projected under the projection of a predicate, as the principle (53) dictates, then the question remains as to why the argument that is assigned the agent θ -role canonically appears in the specifier position within the VP. Larson provides the answer by adopting the following type of thematic hierarchy:¹³

- (54) *Thematic Hierarchy*
AGENT > THEME > GOAL > OBLIQUES (manner, location, time...)

And the following principle:

- (55)
If a verb α determines θ -roles $\theta_1, \theta_2, \dots, \theta_n$, then the lowest role on the Thematic Hierarchy is assigned to the lowest argument in constituent structure, the next lowest role to the next lowest argument, and so on.

This principle requires that the argument that is assigned an agent θ -role will occupy the highest position within the VP, namely the specifier position within the VP. It further suggests that there will be a certain hierarchical ordering for the "internal" arguments also.

In addition to adopting these, Larson reformulates the X-bar theory slightly: Kayne(1984) has pursued the hypothesis that natural

¹³ Larson(1988) attributes this hierarchy to Carrier-Duncan(1985), and, in a slightly different form, to Perlmutter & Postal(1983).

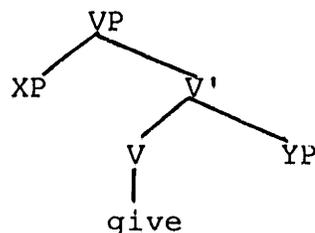
languages employ only the binary branching structure.¹⁴ Adopting this hypothesis,¹⁵ Larson suggests what he calls a "single complement hypothesis," in which the complement must be a single element, as the specifier is. This eliminates the Kleene star in the X-bar formula, so that the X-bar structure now becomes:

- (56)
- a. $XP \rightarrow \text{Spec} X' X'$
 - b. $X' \rightarrow X YP$

In (56), YP is a complement of the head X.

Maintaining that these ideas are plausible hypotheses for natural languages, let us now go back to the dative structure involving the verb *give*. Concentrating on the structure under VP, the X-bar formula in (56) admits the following structure:

(57)



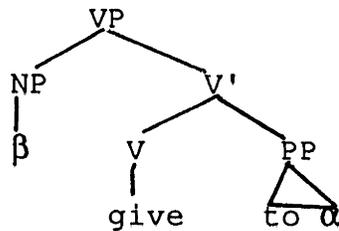
Notice that verbs like *give* take three arguments: two "internal" arguments and one "external" argument. However, the structure in

¹⁴ Hoji(1985) argues that Japanese constituent structure involves only the binary branching.

¹⁵ Larson(p.c.) mentioned that this statement is incorrect. He said that his "single complement hypothesis" rather derives from the ideas of Montague(1974).

(57) has only two A-positions, and according to the thematic hierarchy (54), these two positions must be filled by "internal" arguments, as in:

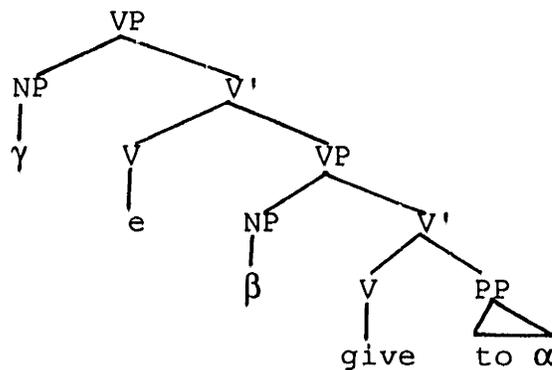
(58)



where α is assigned a Goal role and β is assigned a Theme role. This structure then leaves one argument -- the Agent -- unprojected. Here, we see the conflicting demands of X-bar theory and θ -theory: the simple X-bar schema demands a structure like (57) where the agent argument is left out; θ -theory demands that the agent argument be represented. Furthermore, the principle (53) dictates that this agent argument must be realized within the projection of its predicate.

Larson(1988) resolves this situation by assuming the D-structure representation in (52), whose VP portion is the following:

(59)



Here, the lower VP is a "complement" of a VP shell (i.e. the higher VP) whose head is empty, and whose specifier position γ is the position in which the agent argument will be realized. This structure conforms to the X-bar theory and satisfies the principle (53), given a head movement of the verb *give* to the empty V-position.

2.4.4. Extension of Larson

It is Larson's assumption that the "VP-shell" structure will be generated *only if* the X-bar structure ("Single Complement Hypothesis") cannot accommodate an A-position that is required by θ -theory. In other cases, where there is no conflict between the X-bar theory and the θ -requirement of the verb, this "VP-shell" would not be generated. In short, in Larson's structure, the generation of the "VP-shell" is motivated by the θ -requirement of a particular verb.

It is imaginable, however, that the generation of the "VP-shell" structure may be motivated by other reasons than the θ -requirement of a particular verb. Larson mentions that the structure (59) "constitutes a 'minimal, purely structural elaboration' of (58) that supplies an A-position for the Agent argument γ of *give*." That is, the "VP-shell" structure is a variation of a VP-structure that provides an additional A-position, but that minimally disturbs the original VP-structure which conforms to the X-bar theory. Note now that the "VP-shell" structure not only provides an additional A-position, but also provides an additional V-position. For Larson's structure, the creation of this additional V-position is simply a by-product, and the position

should be occupied by the empty category. But, given this "VP-shell" structure, we can imagine a case where things are reversed: The creation of an additional V-position is the major motivation for the "VP-shell" structure, and the creation of an additional A-position is a by-product. That is, on some occasions, the creation of an additional V-position is required for, say, functional reasons, and we want it to be created while minimally affecting the usual VP-structure. Then, what we get is a "VP-shell" structure that is a "minimal, purely structure elaboration" of the VP structure that supplies *an additional V-position*.

I think that this is what happens in Korean VP-focus/Negation constructions. In slightly different terms, since the VP-shell structure is available as an option of Universal Grammar, and since it provides an additional V-position, nothing prevents the utilization of this additional V-position for Korean VP-focus/Negation constructions.

The question of *why* Korean *has to* utilize this VP-shell structure for its VP-focus/Negation construction is a difficult one. Of course, not all languages utilize this structure for their own VP-focus or Negation constructions. The reason for this Korean peculiarity may be traced back to simple historical haphazardness, or to such grammatical factors as the rigid V-final structure of Korean, the nature of the postnominal "focus" particle *-nun*, the "adverbial" nature of the negative particle *ani*, or the affixal nature of Korean inflectional (Tense, etc) markers. In any case, the fact that Korean uses this VP-shell structure

for functional or other reasons crucially supports that the VP-shell structure, as suggested by Larson(1988), is an universal option.

2.4.5. "Upper Verb"

In the previous section, we have extended Larson's approach to the effect that the creation of the VP-shell structure is triggered by the need to provide an additional V-position. This implies that we are departing slightly from Larson in that we in fact allow an overt verb to occupy this newly created V-position in the VP-shell structure, while Larson allows only an empty category to occupy this position.

Once we embark upon this path, it is incumbent upon us to provide an appropriate constraint on what kind of overt verb can appear in the V-position of the VP-shell, and what kind of verbs cannot.

In the particular VP-focus/Negation structure, the verb that occupies the V-position of the VP-shell was a dummy, or pleonastic verb. Furthermore, we had reasons to believe that there is a V-movement to this dummy verb position at LF. Then, this Korean VP-shell structure is virtually identical to Larson's VP-shell structure involving the English verb *give*. The difference is only that, in English, the upper verb position is occupied by an empty category, while, in Korean, it is occupied by an overt pleonastic verb. But note that a pleonastic verb is like an empty category in that it lacks any semantic content. In both English and Korean, there is a V-movement from the

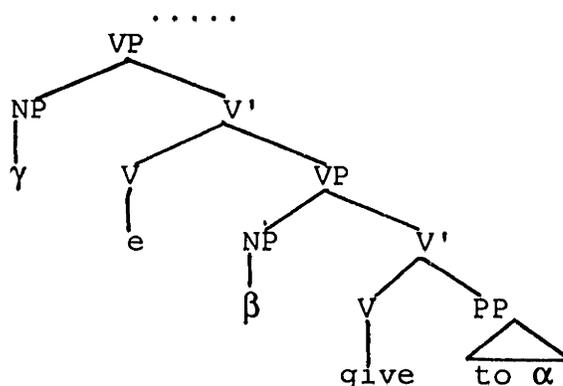
lower verb position to the upper verb position, even though it happens usually in LF in Korean, while in English it must happen in syntax.

Thus far, when we look at Korean VP-focus/Negation constructions and English double object constructions, it looks as if the V-movement from the lower verb position to the V-position in the VP-shell is a defining property of the VP-shell constructions. Note that, if the V-movement is the defining characteristic of the VP-shell structure, it follows that the upper verb position, i.e. the V-position in the VP-shell, must be occupied either by an empty category (as in English) or by a pleonastic verb (as in Korean).

But, I'd like to contend in this chapter that V-movement is not the defining characteristic of the structures involving the "VP-shell." Thus, I wish to contend that verbs other than the empty or pleonastic verb can occupy the V-position in the "VP-shell."

Consider first why Larson assumes V-movement in English double object construction. He provides three different reasons for the Verb movement. First, as we said in section 2.4.3., this verb movement is required in order to fulfill the principle (53). Recall that the partial D-structure for the English sentence involving the verb *give* was the following:

(59)



Note that, if there is no movement of the verb *give* to the upper empty verb position, the agent argument γ would not be within the projection of its predicate: This is a violation of the principle (53), which states that all arguments of a predicate must be within the projection of the predicate. Hence, the verb movement must occur.

The second reason he provides for the verb movement involves a condition on V-visibility due to Roberts(1985b). Roberts had argued, in the spirit of Fabb(1984), that a verb must occur in a governed position in order for it to assign θ -roles.¹⁶ Given this condition, the verb must move to the V-position of the VP-shell in order to be governed by INFL.¹⁷ If the lower verb remains in place, it will not be governed, since the upper verb is empty.

The third reason that the lower verb must move to the upper position is that it must assign Case to the object β in (59). If the verb

¹⁶ Fabb(1984)'s original idea is that the reason why verbs must be governed is because they need Case as nouns do.

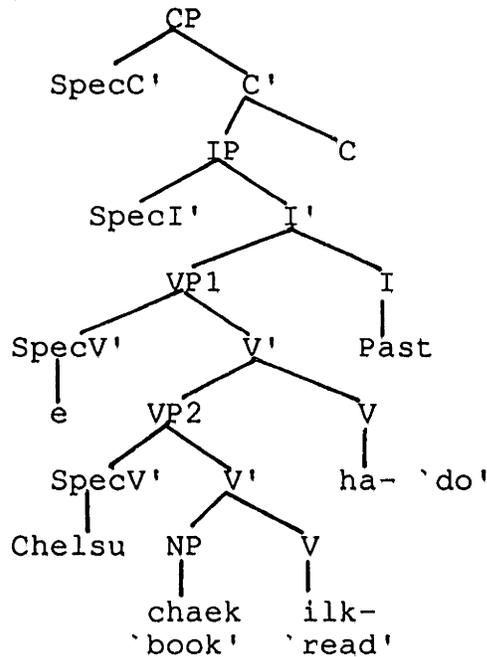
¹⁷ Roberts(1985b) assumes that a head will be governed if its maximal projection is governed. This sense of government is widespread, cf. Belletti & Rizzi(1981), Lasnik & Saito(1984), Chomsky(1986b), among others.

remains in situ, it cannot assign Case to this argument, since, according to Larson(1988), the verb cannot govern it, assuming that the notion of the government is defined in terms of the canonical notion of c-command defined in chapter 1. If government may hold in this case, it can be claimed that the direction of government in English is rightward(cf. Travis(1984), among others), and Case-assignment can still be barred. If the verb moves to the upper V position, it will govern the lower VP and hence its specifier (cf. Chomsky(1986b)) and Case assignment is possible.

Now note that, even for Korean VP-focus/Negation constructions, the movement is compelled by none of these reasons. Adopting the assumption that the subject is generated under VP, we can represent the following VP-focus construction as (60) (ignoring the nominalizer/complementizer *-ki*):

- (1)
 Chelsu-ka ku chaek-ul ilk-ki-nun ha-ess-ta
 NOM the book-ACC read-KI-CON do-PAST-DEC
 'Read the book, Chelsu did...'

(60)



As we can see in (60), we can generate the subject within the lower VP (VP2) here, since the verb *ilk-* 'read' is not a verb that has two internal arguments.¹⁸ Later on, this subject will move first to the spec position under VP1 and then to the surface subject position, presumably either for Case reasons. In any case, the first reason for the V-movement, i.e. that the verb moves in order to fulfill the

¹⁸ If the focus construction involves a verb like *cu-* 'give' that has two internal arguments, as in the sentence like the following:

- (i)
Chelsu-ka Yenghi-eke chaek-ul cu-ki-nun
NOM DAT book-ACC give-KI-CON

ha-ess-ta
do-PAST-DEC

'Gave the book to Yenghi, Chelsu did...'

We can generate another VP-shell for the dummy verb *ha-* 'do' as well as the VP-shell for the empty verb position to which the verb *cu-* 'give' will move. As we will see below in the text, there is no reason why more than one VP-shell is not allowed.

principle (53), can be dispensed with, since in (60), all arguments of the predicate *ilk-* 'read' are within the projection of the predicate.

It is now obvious how the second and third reasons can also be dispensed with: In (60), the lower verb (the content verb) is governed by the dummy verb (hence the government requirement for the verbs is met) and the object of the verb can be assigned the accusative Case directly by the verb -- no argument is stranded here. In conclusion, there is no compelling reason for the V-movement in the VP-focus/Negation constructions.

Then, the question is: why is there a V-movement in the VP-focus/Negation structure? The answer seems to be that, at LF, there is a condition that all pleonastics be eliminated, cf. Chomsky's Full Interpretation(FI)(1986a). As there must be no argument pleonastics like *there* and *it*, at LF, there must be no pleonastic predicates like Korean *ha-* at LF, when the dummy verb *ha-* is a true pleonastic.¹⁹ That is, the pleonastics are not licensed at the LF module of grammar.

If this reasoning is correct, if the V-position of the VP-shell is occupied by an overt verb other than the pleonastic dummy verb, then there will be no V-movement that occurs. I argue that such an instance

¹⁹ Korean verb *ha-* 'do' is not always a pleonastic. It can be used as a regular main verb, as in the following:

- (i) *Chelsu-ka pap-ul ha-ess-ta*
 NOM meal-ACC do-PAST-DEC

'Chelsu did the meal' (Chelsu cooked the meal.)

exists. The example I have in mind is the Korean progressive construction: Superficially, the Korean progressive construction involves an embedding --- but it is not bi-clausal. In the following progressive construction, the "matrix" verb is *iss-* 'exist or have.' (To be glossed as 'exist' for simplicity.) And the embedded verb (the content verb) is followed by a functional category *-ko*:

- (61) *Chelsu-ka pap-ul mek-ko iss-ta*
 NOM meal-ACC eat-KO exist-DEC
 `Chelsu is eating a/the meal.'

Here, the matrix verb *iss-* 'exist' is just an aspectual expression. If it is claimed that this sentence involves a bi-clausal structure, then we have to assume that the matrix verb assigns a propositional θ -role to its sentential complement --- which, I think, is very difficult to maintain. Furthermore, recall that adjectives cannot occur in this progressive construction:

- (62) **Yenghi-ka yeppu-ko iss-ta*
 NOM pretty be-DEC
 `Yenghi is being pretty.'

If this is a bi-clausal structure, the same question we had asked earlier recurs: How can the aspectual property of the embedded verb influence the choice of the matrix verb?

There is one further argument that shows that the construction in (61) is not bi-clausal. In Korean, there is a negative polarity element *amuto* 'no one'. This element must occur with a negative element and,

furthermore, if it occurs in the non-subject position,²⁰ the negative element must occur in the same clause. Hence, the following sentence is bad:

- (63)
 *Chelsu-ka [*pro* amuto manna-ss-ta-ko] malha-ci
 NOM no one meet-PAST-DEC-KO say-CI

 ani ha-ess-ta
 neg.do-PAST-DEC

 (lit.) `Chelsu didn't say that *pro* met noone.'
 `Chelsu didn't say that he met anyone.'

This sentence is bad because the object *amuto* is in the embedded clause, while the negative element is in the matrix clause. The grammatical sentence must be the following:

- (64)
 Chelsu-ka [*pro* amuto manna-ci ani ha-ess-ta-ko]
 NOM no one meet-CI neg do-PAST-DEC-KO

 malha-ess-ta
 say-PAST-DEC

 (lit.) `Chelsu said that *pro* didn't meet noone.'
 `Chelsu said that he didn't meet anyone'

Now note that, in the progressive construction, the polarity element *amuto* can occur in the object position of the embedded content verb and the negative element may follow the matrix verb *iss-* 'exist':

- (65)
 Chelsu-ka ku ttae amuto manna-ko iss-ci
 NOM then no one meet-KO exist-CI

²⁰ H.S.Choe(1988) argues that the negative polarity element *amuto* and the negative element must always occur in the same clause. But, according to my judgement and the judgement of other speakers consulted, when the element *amuto* is in the subject position, the negative element can be within one clause up.

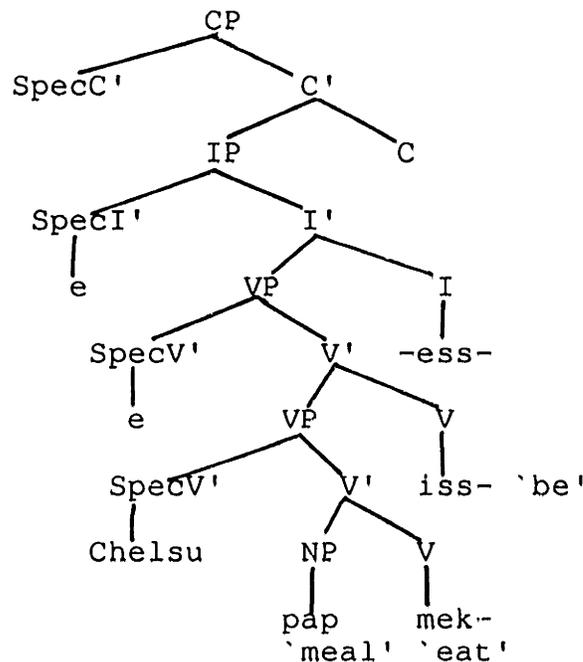
ani ha-ess-ta
 neg do-PAST-DEC

'Chelsu was not meeting anyone then.'

If the progressive construction involves a bi-clausal structure, then this sentence (65) ought to be as bad as (63) --- but the sentence (65) is perfectly grammatical.

Thus, we have many reasons to believe that the Korean progressive construction does not involve a bi-clausal structure. The alternative, of course, is the VP-complementation structure under discussion. Thus, we posit the following D-structure for the progressive construction (ignoring, for the moment, the presence of the complementizer -ko²¹):

(66)



²¹ We will discuss this complementizer in section 2.5.

In this structure, the V-position of the VP-shell is occupied by an overt content verb, not a pleonastic one. Hence, this is an instance of the VP-shell structure without verb-movement. The subject *Chelsu*, which is within the projection of the verb in (66) at D-structure, will move to the surface subject position via the spec position of the "VP-shell." Note again that, even though the embedded content verb is in-situ, no known principle is violated.

Now, let us return to the earlier question: If we allow an overt V to be base-generated in the V-position of the VP-shell, what kind of verb must it be? Obviously, this verb must not be a verb that has an external argument. If it does, there will essentially be two external arguments for a clause, both of which will compete for the subject position where they will be assigned a nominative Case by INFL. Since there is one such subject position, one of these two external arguments is left Caseless.²² Also, it is a plausible assumption that

²² Note that this explanation is possible due to a condition on default Case we assumed in fn. 5, namely that:

- (i)
An NP may assume default Case only if it is governed by a lexical category.

Since the spec of VP position is not governed by a lexical category, NPs occupying this position cannot be assigned default Case.

there must be only one instance of main predication per clause.^{23,24} Hence, if there are two external arguments, both of these arguments would require predication separately, but this is a violation of the principle of one main predication per clause.

As for the question of whether the verb that is base-generated in the V-position of the VP-shell can be a verb that assigns an internal θ -role, the matter is not so clear-cut. It seems that, even though we allow the verb of the VP-shell to assign an internal θ -role to its complement VP, no known principle is violated, as long as we are not forced to assume a movement from the lower verb position to the verb of the VP-shell. So, the question becomes one of whether there is a lexical verb that selects and assigns a q-role to a VP in natural languages. I will leave this question for future study. But, I would like to note that, in the constructions that we have been looking at thus far, there is no evidence that the verb in the VP-shell assigns an internal q-role to its VP-complement. Actually, we have seen that the dummy verb *ha-* 'do' in the VP-focus/Negation constructions must be assumed not to assign a q-role to its complement. Hence I want to

²³ One counterexample for this assumption seems to be that there are double nominative constructions in languages like Korean and Japanese. Even though I do not pursue this matter in this thesis, I do not assume that these double nominative constructions are instances of "double" predication. The matter is quite complex and deserves a detailed study. For an account of some of these constructions, see M.Y. Kang(1987), among others.

²⁴ I am saying that there should be one *main* predication per clause; Secondary predication may occur in a clause, in addition to the main predication.

tentatively argue for the following condition for the base-generated verbs:

(67) *Condition on the VP-shell Verb*

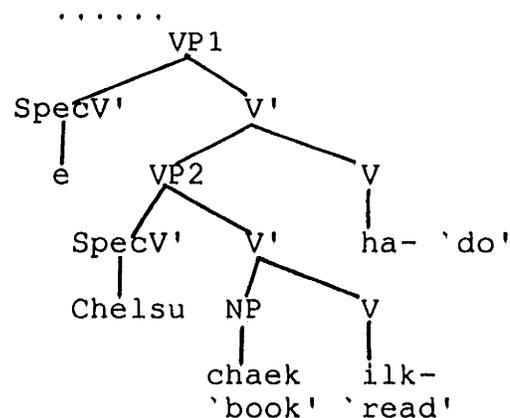
The verb that is base-generated in the V-position of the VP-shell must not be a θ -role assigner (internal or external.)²⁵

2.5. Functional Elements -ki/-ci and -ko

2.5.1. Introduction

We have been arguing that the Korean VP-focus/Negation construction involves the VP-shell structure. That is, we have been assuming the following partial structure for them:

(68)



²⁵ Note that Roberts(1986) assumes the following condition on verb visibility;

- (i) V assigns θ -roles iff V is governed.

This condition requires that, if a verb is governed, it must be a θ -assigner. However, note that the verb in the VP-shell is clearly governed (by INFL.), but is not a θ -assigner. Hence, we argue that the condition (i) must be weakened, requiring only "only if" part. That is, the correct condition seems to be:

- (ii) V assigns θ -roles only if V is governed.

In this structure, we have been deliberately ignoring the presence of the functional element *-ki/-ci*, which serves as nominalizer/complementizer in other cases. Recall that the actual sentences were the following:

(1) "VP-focus" Constructions

Chelsu-ka ku chaek-ul ilk-ki-nun ha-ess-ta
NOM the book-ACC read-KI-CON do-PAST-DEC

'Read the book, Chelsu did...'

(2) "Long-form" Negation

Chelsu-ka pap-ul mek-ci ani ha-ess-ta
NOM meal-ACC eat-CI neg do-PAST-DEC

'Chelsu did not eat the meal.'

I won't have much to say about the presence of the "focus" or contrastive particle *-nun* and the negation particle *ani*. The "focus" particle is attached to the functional element *-ki*; I will regard the negation particle as a modifier for the dummy verb *ha-*. They are there for functional/semantic reasons, signifying the fact that (1) is a "focus" sentence and (2) is a negation sentence.

What I am concerned with now is the fact that the functional element *-ki/-ci* is attached to the lower VP. In section 2.1., we have said that the functional element *-ki* is used as a complementizer/nominalizer in regular sentential complementation structure. Furthermore, we have noted that the *-ci* of the negation structure can be followed by the Case marker, typically *-lul*, the accusative Case marker:

(22)
 Chelsu-ka pap-ul mek-ci-lul ani ha-ess-ta
 NOM meal-ACC eat-CI-ACC neg do-PAST-DEC
 'Chelsu did not eat the meal.'

We noted that these facts served as arguments for the bi-clausal analysis for these constructions. Notice further that, in the progressive construction, which we identified as involving the VP-shell structure, the embedded VP is followed by the functional element *-ko*. The example was the following:

(61) Chelsu-ka pap-ul mek-ko iss-ta
 NOM meal-ACC eat-KO be-DEC
 'Chelsu is eating a/the meal.'

Note now that this functional element *-ko* most often serves as a complementizer in the sentential complementation:

(69)
 Chelsu-ka Yenghi-ka yeppu-ta-ko malha-ess-ta
 NOM NOM pretty-DEC-KO say-PAST-DEC
 'Chelsu said that Yenghi is pretty.'

So the question is: why do these functional categories that are often identified as complementizer occur with VPs?

2.5.2. Nominalizer *-ki*

It is a traditional assumption that the functional element *-ki* is a nominalizer. This fact is transparently seen from the fact that this functional element is used as a nominalizer of the verb in the verb-noun compounding, as we have seen in section 2.2.2. The examples were as follows:

(15) cul nem-ki `rope-jumping'
rope jump-KI

pomul chac-ki `treasure-hunting'
treasure hunt-KI

Extending this use of -ki, it is possible to suggest that, in the following use of -ki, it is actually nominalizing a sentence:

(70)
Chelsu-nun Yenghi-ka cip-e ka-ki-lul
TOP NOM house-LOC go-KI-ACC

pala-n-ta
hope-IMP-DEC

`Chelsu hopes that Yenghi goes home.'

In this case, on the other hand, it is clear that this nominalizing element is also functioning as a complementizer, as the English *that* is. Thus, we might call this instance of the element -ki as a complementizer.

An immediate question arises: As for the notion *complementizer*, it is clearly syntactically defined: It indicates a certain position in the syntax. However, what about the notion *nominalizer*? Is there any way to define it in terms of syntactic representations? In many languages,²⁶ the sentential nominalizers often function as complementizers. However, we of course cannot claim that all complementizers are sentential nominalizers --- in English, the complementizer *that* is obviously not a nominalizer of the sentence. (In English, the nominalizer of verbs or VPs is -ing, not *that*.) On the

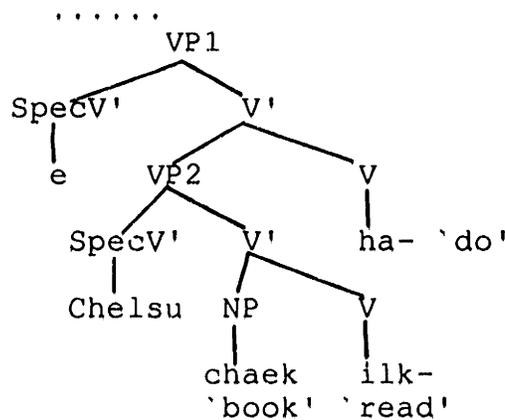
²⁶ One example is Turkish, cf. Underhill(1976).

other hand, the reverse direction is not true, either: It is not true that all nominalizers are complementizers in natural languages, cf. English *-ing* is not a complementizer. The only generalization we can get in this matter is that in some languages, some instances of the nominalizers can *function* as complementizer.

I will leave for chapter 3 the problem of determining the exact syntactic status of the notion nominalizer and its relation to the notion complementizer. For the moment, let me continue to use the notion nominalizer intuitively, in a vague way.

I want to claim that the presence of *-ki* at the lower VP in the VP-shell structure is an instance of a nominalizer that is not a complementizer. And I argue that this nominalizer must be present at the lower VP because the dummy verb *ha-* at the VP-shell is a Case assigner and this Case feature must be assigned to some category. Recall that the VP-focus/Negation structure has the following structure:

(68)



In (68), the subject under VP will move to the spec of IP, for Case reasons. That is, it must receive the nominative Case from INFL. Now, the dummy verb *ha-* of the VP-shell has a Case to assign, but it cannot assign it to the subject under VP, assuming that the categories that lack lexical content cannot govern into the maximal projection.²⁷ The dummy verb cannot assign it to the object of the verb *ilk-* 'read,' since it cannot govern that NP due to the minimality condition of Chomsky(1986b). The only remaining option is to assign this Case to the VP. But, the VP as is is not in the visible form for the nominal Case assignment.²⁸ In order for the VP to be a recipient of this nominal Case, it must be in the nominal form. Hence, the

²⁷ For the assumption that the functional categories like COMP and INFL cannot govern into the spec of the maximal projection, see Chomsky(1986b) and Fukui(1986). I assume that the pleonastic verb *ha-* also has this property.

Note that the assumption that the pleonastic verb *ha-* is incapable of "exceptional" government is independently necessary. If we allow this "exceptional" government by *ha-* to occur, it is difficult to block the following sentence, where the subject under VP did not move to the spec of IP:

- (i) *Chelsu-lul chaek-ul ilk-ki-nun ha-n-ta
 ACC book-ACC read-KI-CON do-IMP-DEC

'Read a/the book, Chelsu did...'

In (i), the subject *Chelsu* has accusative Case, which is assigned by the pleonastic verb *ha-*. One might try to block this sentence by Chomsky's Extended Projection Principle, but, as we noted in fn. 5 and will see in chapter 5, there are reasons to believe that we have to abandon this principle.

Also, we cannot explain the ungrammaticality of (i) by assuming that the verb *ha-* has only one accusative Case to assign and that the lower VP lacks Case. This is because, even though the lower VP is not Case-marked by the verb *ha-*, it may assume the default Case, since the lower VP itself is governed by *ha-*. Thus, within our framework, it is necessary to assume that the pleonastic verb *ha-* is like a functional category in that it cannot govern into the spec of the maximal projection.

²⁸ If there is something like a verbal Case, this Case must be distinguished from the nominal Case I am concerned about here. Presumably, the verb or VP need not be in the nominal form to get a verbal Case.

nominalizer *-ki* is required, which will head the VP to turn it into a nominal projection.

This analysis relies on the following condition;^{29,30}

(71) *Condition on Case Assignment*

If a category α has a Case to assign, this Case must be assigned to some category.

Given this condition, we are subjecting Case assignment to a requirement that is similar to the one that applies to θ -role assignment. In both cases, if a category has features (Case or θ -role) to assign, they must be assigned. Note that this condition can solve some problematic cases of Case assignment. In recent work, Case is viewed as a requirement for visibility of θ -marked arguments. But the problem for this approach was that even the pleonastics, which do not need any θ -role, are required to be assigned Case. But, given the condition (71), we can argue that the pleonastics have Case simply because their Case assigner has Case to assign.

Thus far, we have explained why we need the nominalizer *-ki* at the lower VP under the "VP-shell." The same explanation applies to the functional element *-ci*, which is its cognate. Actually, as the

²⁹ Fukui & Spas(1986) also suggest a similar proposal.

³⁰ This condition seems to confront a problem in some cases of regular sentential complementation. The Korean verb *tul-* 'hear' can take the complement headed by a nominal projection *kes* (for further discussion, see chapter 3), as well as the complement headed by *-ko*, which is not nominal. In this case, we have to assume that the matrix verb *tul-* still assigns Case to its complement obligatorily, but that, when the complement is non-nominal (as when there is a *-ko* complementizer), the complement moves to an A-bar position, following Stowell(1981)'s CRP. The Case of the matrix verb will then be assigned to the trace of this moved complement.

examples in (1) and (2) show, it is the negation construction with the functional element *-ci* that manifests overt Case at surface structure. The VP-focus construction, on the other hand, does not show an overt Case at the lower VP.

This latter fact is in no sense abnormal. Note that, in the VP-focus construction, repeated here:

- (1)
 Chelsu-ka ku chaek-ul ilk-ki-nun ha-ess-ta
 NOM the book-ACC read-KI-CON do-PAST-DEC
 'Read the book, Chelsu did...'

the particle *-nun* is attached to the nominalizer *-ki*. It is a general phenomenon in Korean that, when postnominal particles like *-nun* 'TOPIC or CONTRASTIVE,' *-to* 'also' or *-man* 'only,' etc. are attached to the accusative or nominative NPs, the accusative or nominative Case must not be overt.³¹ Note:

- (72)
 a. *Chelsu-ka-to hakkyo-e ka-ess-ta
 NOM 'also' school-LOC go-PAST-DEC
 'Chelsu went to school also.'
 b. Chelsu-to hakkyo-e ka-ess-ta
- (73)
 a. *Chelsu-ka chaek-ul-man ilk-nun-ta
 NOM book-ACC-'only' read-IMP-DEC
 'Chelsu reads only books.'
 b. Chelsu-ka chaek-man ilk-nun-ta

³¹ A similar phenomenon exists in Japanese.

On the other hand, if these postnominal particles are attached to the dative (or other oblique) NPs, the dative Case can be (actually must be) overt. Note:

(74)
 Chelsu-nun Yenghi-eke-man pyenci-lul
 TOP DAT-'only' letter-ACC

ponae-ess-ta
 send-PAST-DEC

'Chelsu sent a letter only to Yenghi.'

Since the dummy verb *ha-* in the VP-shell can assign only accusative Case,³² there would be no instance where the Case of the VP can be overt in the VP-focus construction. On the other hand, in the negation construction, where there is no postnominal particle that is attached to the lower VP, this Case can be overt, as can be seen in the example (22), repeated here:

(22)
 Chelsu-ka pap-ul mek-ci-lul ani ha-ess-ta
 NOM meal-ACC eat-CI-ACC neg do-PAST-DEC

'Chelsu did not eat the meal.'

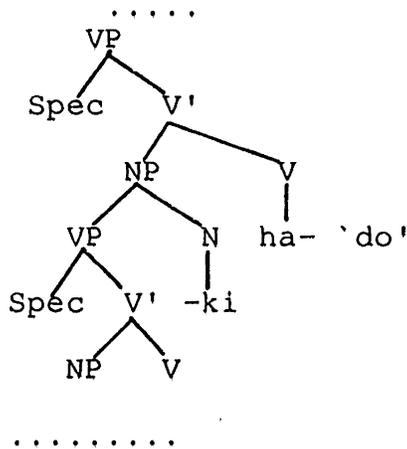
Even in the negation construction, the overt realization of Case is not required, as can be seen in the example (2). However, I suggest that in both the VP-focus and Negation constructions, the Case of the lower

³² As we noted earlier in section 2.3.3.2., this Case feature may be said to be disabled by the LF movement of the content verb to the dummy verb position. In this case, the lower VP will assume the nominative Case, but this Case cannot also be overt when the postnominal particle *--nun* is attached to the VP.

VP is always required, in the form of abstract Case, but what is optional is only its overt phonetic realization.

One final question about *-ki/-ci* is how this nominalizer element is introduced into the syntax. We have suggested that this element must head a nominal projection, in order for the dummy verb of the VP-shell to assign Case to the lower VP. Then, we are proposing the following structure for the VP-focus/Negation structure:

(75)



The structure (75) suggests that there is another "NP-shell" that covers the lower VP. We will see in chapter 3 that this kind of "NP-shell" is a commonplace phenomenon in Korean syntax. We will argue in chapter 3 that a representation like (75) is necessary at a certain level of representation, but that it is not an S-structure representation. We postpone to chapter 3 the problems related to the representation (75).

2.5.3. Functional Element -ko

Recall that we argued that the Korean progressive construction like (61), repeated here:

(61) Chelsu-ka pap-ul mek-ko iss-ta
NOM meal-ACC eat-KO be-DEC

'Chelsu is eating a/the meal.'

is an instance of the VP-shell structure. Here we have the functional element -ko being attached to the lower VP. Note again that this functional element can in other cases function as a complementizer:

(69)
Chelsu-ka Yenghi-ka yeppu-ta-ko malha-ess-ta
NOM NOM pretty-DEC-KO say-PAST-DEC

'Chelsu said that Yenghi is pretty.'

However, it is important to note that the functional element -ko does not always function as a complementizer. It may signify a verbal conjunction in the lexicon, as in:

(76) ssa-ko tol- 'shield, protect (around)'
wrap-KO turn

In (76), two verbs, ssa- 'wrap' and tol- 'turn' are conjoined by -ko to produce an unexpected meaning "shield, protect." This conjoining process must be viewed as a lexical one. On the other hand, this functional element -ko can signify a sentential or VP conjunction, functioning roughly like English and:

(77) hae-ka ci-ko, tal-i ttu-ess-ta
sun-NOM fall-KO moon-NOM rise-PAST-DEC

'The sun set and the moon rose up.'

These facts show that the functional element *-ko* is not a complementizer by its category, but it is a category of some other sort, which *may* function as a complementizer.

Returning to our main question: Why is this functional category necessary for the lower VP in the VP-shell structure? And why is it not *-ki*, but *-ko*?

Let us first note that the verb of the VP-shell in the progressive construction, i.e. the verb *iss-* 'exist, have,' is not a Case assigner to its complement. The Korean verb *iss-*, even though we have been glossing it as 'exist,' is at least two ways ambiguous. It may mean 'be' or 'exist,' but it also means 'have.' In this latter sense, it is transitive. Now recall that it is a general fact in Korean that, when the Korean verb/adjective lacks a Case for its complement, the complement shows up with the nominative Case. This was illustrated in section 2.3.3.2. with adjectives, as in:

- (40) *na-nun Chelsu-ka silh-ta*
 I-TOP NOM dislike-DEC
 'I dislike Chelsu.'

Now, the verb *iss-* also appears with the same Case frame:

- (78) *Chelsu-ka chaek-i iss-ta*
 NOM book-NOM have-DEC
 'Chelsu has a/the book.'

Thus, the verb *iss-* in the Korean progressive construction is a verb that lacks the Case feature for its complement. This explains the

absence of *-ki* at the lower VP under the VP-shell of the progressive construction: Since there is no Case to assign, the lower VP need not be "covered" by a nominal projection.

This of course leads us to the following question: Why do we need a functional category here at all?

In order to answer this question, let us consider another general fact about Korean. In Korean, there is a set of functional elements that are often called "Final Suffixes" in the traditional literature (cf. S.W. Lee(1973), for example). At the surface, these functional elements are attached to the verb-final position and play various functional and grammatical roles.

Traditionally, three types of these "final suffixes" were recognized (e.g. cf. Hyun Bae Choi(1929)): (i) Matrix-Final Suffixes (ii) Connectives and (iii) Parts-of-speech-changing suffixes. The "Matrix-Final" suffixes typically indicate the type of the sentence the verb is in, i.e. whether the sentence is declarative, interrogative, imperative or exhortative, or the type of the speech level that the sentence has, i.e. whether the sentence is used in a formal or informal conversation, or whether it is spoken to a person who the speaker must show some respect to or not, and so on. The "Connectives" are various suffixes that basically mean 'and,' 'because,' 'even though,' 'if,' etc. in English. The "Parts-of-speech-changing suffixes" include the nominalizers like *-ki* and *-in*

and the pre-nominal endings³³ like -n or what Choi called the "adverbial" suffixes like -ko or -e.

We are not concerned with the exact syntactic import of the traditional classification of these endings here. Nor is it our current concern to characterize these suffixes in functional or grammatical terms. We will return in chapter 3 to some discussion related to these suffixes. For now, let us just note that it is mandatory that these suffixes are attached at the verb-final position, in order for those verbal stems involved to stand as an independent word in a sentence.³⁴ Then, the question is: Why is it mandatory?

Take the "Matrix-Final" suffixes. As we mentioned, these suffixes mark the speech levels and/or types of the sentences the verb is in. Even though each language would have some means of expressing these discursal notions in a certain way, there is surely no necessary reason why Korean *has to* express it by marking the verbs by verb-final suffixes. Take also the "Connective" endings. In many languages, the

³³ By the prenominal ending (which will be glossed as PNE), I mean the ending that the verb takes when the verb precedes the nominals. This happens typically in relative clauses. For example:

(i) Chelsu-ka po-n salam
NOM see-PNE person

'The person that Chelsu saw.'

In (i), the functional element -n is a prenominal ending.

³⁴ By a word, I mean a separate independent unit within the sentence. In this sense, a word consists of the verb and all its suffixes or of a noun and all of its particles. This sense of the word is different from that of grammatical formatives.

connectives are separate words, and not a part of the verbal suffixes. Korean also has several connectives which are separate words. In other words, there is no necessary reason why the role of the connectives *must* be played by the verbal suffixes in Korean.

I want to argue that the presence of these verb-final suffixes in Korean cannot be accounted for by reasons other than morphological one. I propose that what differentiates the so-called "agglutinating" languages like Korean from languages like English or Chinese is the fact that Korean verbs are bound morphemes. And Korean verbs, being bound morphemes, are subject to the following morphological principle:

(79) *Morphological Closure*

Bound predicates must be "closed" by a set of suffixes belonging to the category C.

The category C consists of the verb-final suffixes in Korean.³⁵ Note, incidentally, that this category C does not include the aspectual/tense/AGR/modal suffixes in Korean. These latter suffixes are not able to end a verb. Thus, it appears that this set of morphemes of the category C cannot be specified positively: We must say that non-aspectual/tense/AGR/modal suffixes are potential verb-final suffixes belonging to the category C. Presumably, the members of the set must be learned one by one, even though the principle (79) is expected by the language learner, if that language has the verb that are bound morphemes.

³⁵ Some of the elements belonging to this set are: -ta 'Declarative,' -ca 'Exhortative,' -la 'Imperative,' -e 'Serial,' -ko, -ki, etc.

This principle of "Morphological Closure" applies only to the languages whose predicates are bound morphemes.³⁶ Given this principle, every predicate of this language requires a verb-final suffix, which may encode various functional roles.

Now let us return to our main question: Why do we need the functional category at the lower VP in the VP-shell of the Korean progressive construction (61)? This is now answered as follows: The dummy verb *na-* in the VP-shell is not a suffix and belongs to a separate word from the one that the verb *mek-* 'eat' within the lower VP belongs to. Hence, the verb *mek-* within the lower VP must end with a functional category of the category C, given the principle (79). This explains the presence of the functional category in (61). The question of course remains as to why it is this particular functional category *-ko*, not something else, that appears in this progressive construction. The reason I think is that, of non-nominal functional categories, *-ko* and *-e* are most unmarked ones, i.e. ones that are devoid of particular functional roles, and that the functional category *-ko* is "selected" by the verb *iss-* of the VP-shell. By "selection," I mean in a somewhat narrower sense than the one that is currently employed in the literature. We will discuss this in chapter 3. For now, we leave the sense of "selection" as is used in current literature. Let us just indicate that the selection can occur without assigning a θ -role to the selected category. In most theories(cf., e.g.

³⁶ The question of what other languages have bound predicates needs future research.

Rothstein(1985), among others), the following resultative secondary predicate is said to be selected by the verb, but θ -role is not assigned to it:

(80) John painted the house red.

So, even though the verb *iss-* in the VP-shell of the progressive construction does not assign a θ -role to the lower VP, it is legitimate to say that it selects this VP.

2.6. AGR Element *-si*

In section 2.2.2., we noted that the lower VP under the VP-shell of the VP-focus construction can contain an additional AGR. The example was the following:

(17)
sensaengnim-i ku chaek-ul ilk-usi-ki-nun
teacher-NOM the book-ACC read-AGR-KI-CON

ha-si-ess-ta
do-AGR-PAST-DEC

'Read the book, the teacher did...'

Additional examples can be provided. Note the following Negation/Progressive constructions:

(81) Negation:

sensaengnim-i ku chaek-ul ilk-usi-ci-nun
teacher-NOM the book-ACC read-AGR-CI-CON

ani ha-si-ess-ta
neg do-AGR-PAST-DEC

'The teacher did not read the book.'

(82) Progressive Construction:

sensaengnim-i ku chaek-ul ilk-usi-ko
teacher-NOM the book-ACC read-AGR-KO

kye-si-ess-ta³⁷
exist-AGR-PAST-DEC

'The teacher is reading the book'

The presence of the AGR element within the lower VP is somewhat problematic, since we do not want to generate the AGR position within the lower VP. The AGR is a part of the INFL; Even though we said that the lower VP under the VP-shell may be covered with an NP-shell, we surely do not want another "INFL-shell" to cover this VP. Actually, the tense element cannot occur within the lower VP. Note:

(83) VP-focus:

*sensaengnim-i ku chaek-ul ilk-ess-ki-nun
teacher-NOM the book-ACC read-PAST-KI-CON

ha-si-ess-ta
do-AGR-PAST-DEC

'Read the book, the teacher did...'

(84) Negation:

*sersaengnim-i ku chaek-ul ilk-ess-ci-nun
teacher-NOM the book-ACC read-PAST-CI-CON

ani ha-si-ess-ta
neg do-AGR-PAST-DEC

'The teacher did not read the book.'

(85) Progressive Construction:

*sensaengnim-i ku chaek-ul ilk-ess-ko
teacher-NOM the book-ACC read-PAST-KO

³⁷ The verb form kye-si- is an honorific form of iss- 'exist, have.'

kye-si-ess-ta
be-AGR-PAST-DEC

'The teacher is reading the book'

Thus, it is not correct to say that an INFL node is generated within the lower VP.

I think that this phenomenon can best be viewed as a *morphological doubling*. Note that this AGR element *-si* within the lower VP is not required for honorification. The following sentences, where the lower VP lacks the AGR *-si*, are all grammatical and fully honorific:

(86) VP-focus:

sensaengnim-i ku chaek-ul ilk-ki-nun
teacher-NOM the book-ACC read-KI-CON

ha-si-ess-ta
do-AGR-PAST-DEC

'Read the book, the teacher did...'

(87) Negation:

sensaengnim-i ku chaek-ul ilk-ci-nun
teacher-NOM the book-ACC read-CI-CON

ani ha-si-ess-ta
neg do-AGR-PAST-DEC

'The teacher did not read the book.'

(88) Progressive Construction:

sensaengnim-i ku chaek-ul ilk-ko
teacher-NOM the book-ACC read-KO

kye-si-ess-ta
exist-AGR-PAST-DEC

'The teacher is reading the book'

By 'morphological doubling.' I mean that the matrix AGR can be interpreted to be a morphological feature of the matrix verb and that this feature is copied to the verb within the lower VP, without creating an AGR or INFL node.

CHAPTER 3

"NP-SHELL"

3.1. Introduction

In chapter 2, we identified the elements *-ki/ci* in the VP-focus/Negation constructions as nominalizers. In this chapter, we will consider how these and other nominalizer elements in Korean must be represented in syntax.

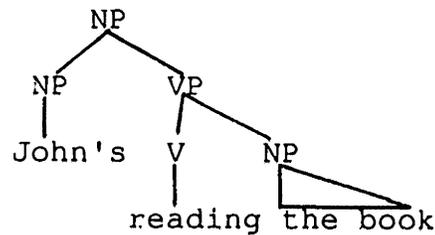
3.2. The suffix *-ki* and "NP-shell"

Even though we mentioned in the last chapter that the suffix *-ki* (and *-ci*) is often identified as a nominalizer, we were not very clear about what the term 'nominalizer' precisely means. Intuitively, this term seems to imply some category changing process: A nominalizer turns some category into a nominal category. Thus, I would like to raise the following question: Is the Korean suffix a nominalizer in the sense that it changes the category it is affixed to? I will show below that it is not.

To see why it is not, let us compare English gerund *-ing* and Korean *-ki*. In traditional generative grammar, English gerund, at least in the case of what is called "poss-ing" structure, is introduced via a transformation that, in effect, turns a sentence into an NP (cf. Lees(1960)). Chomsky(1970) also assumed the poss-ing structure to

be derived by the "gerundive nominalization," even though he does not assume the gerundive element *-ing* to be introduced by a transformation, but argue that this element be represented in the D-structure under AUX (INFL) node. On the other hand, Chomsky(1981) suggests that the gerundive structures do not involve any nominalization process, but should be phrase-structurally generated under NP node. He suggests the following type of structure for gerunds:

(1)



As Baker(1985a) and Abney(1986, 1987), among others, have pointed out, one problem with this structure is that it is not in accordance with the X' schema. Hence, Baker argues for an approach similar to the approach suggested by Chomsky(1970), namely that the gerundive element *-ing* is generated under INFL at D-structure and that it undergoes a syntactic affixation, to the effect that it attaches to the verb at S-structure. He further argues that, once the *-ing* is attached to the verb, it induces a category-change and the whole projection of V (he includes S in this projection) becomes a projection of N. Abney(1986), on the other hand, argues that the gerundive element -

ing is actually a category D and it is a head of the DP.¹ According to him, the DP is what is traditionally acknowledged as NP.

In all these approaches, it is implicit that the gerundive nominal -ing in poss-ing involves some category changing: it turns a category of S into a category of N. This fact seems to be confirmed by the following observation. As noted by Chomsky(1970), English -ing cannot occur with AGR or Tense. That is, *ranning or *voweding, *runsing or *runnings. Assuming that one property of a noun that distinguishes it from the sentence is the fact that it lacks tense, the fact that the gerundive nominal cannot occur with tense supports the view that -ing is involved in a category changing of an S into an N. The fact that the subject in the gerundive nominal is in genitive Case also supports such an analysis. Of course, the level at which the category changing occurs is at the S-level and not at the VP- or V-level. The verb in the poss-ing construction can assign the accusative Case to its object and the poss-ing construction is required to have a subject, as the following ungrammatical construction shows:²

(2) *The reading books is fun.

Summarizing, the predominant analysis is that the English gerundive nominal is an S internally, and is an NP externally.

¹ Abney(1987) pursues a slightly different approach. He abandons the idea that the -ing is a D and argues that it is just a syntactic affix.

² For the gerundive construction like (i), we assume an empty subject PRO for the verb:

(i) PRO reading the book is fun.

Let us now see whether the Korean constructions involved with *-ki* can be analyzed in the same way as the English *poss-ing* is treated. Note (i) that the suffix *-ki* is not only able to nominalize an S, but also a VP, which English *-ing* is incapable of. The example of the sentence nominalization is (3):

- (3)
 Chelsu-nun Yenghi-ka ttena-ki-lul pala-n-ta.
 TOP NOM leave-KI-ACC hope-IMP-DEC
 'Chelsu hopes that Yenghi leaves.'

The example of VP-nominalization was observed in the VP-focus/Negation constructions in the last chapter:

- (4)
 Chelsu-ka ku chaek-ul ilk-ki-nun ha-ess-ta
 NOM the book-ACC read-KI-CON do-PAST-DEC
 'Read the book, Chelsu did...'

Also, note (ii) that the Korean *-ki*, when it occurs as a sentence nominalizer, can occur with tense, while English *-ing* cannot.³

Observe the following example:

- (5)
 Chelsu-nun [Yenghi-ka sihem-ul cal po-ess-ki-ul]
 TOP NOM exam-ACC well see-PAST-KI-ACC
 pala-ess-ta
 hope-PAST-DEC
 'Chelsu hoped that Yenghi took the exam well.'

In (5), the sentential nominalizer *-ki* occurs with the embedded tense. Also, the element *-ki* can co-occur with the AGR element *-si*:

³ Of course, when the suffix *-ki* nominalize just a VP, it cannot co-occur with tense.

(6)
 Chelsu-nun [sensaengmi-kkese sihem-ul cal
 TOP teacher-NOM exam-ACC well

 po-si-ess-ki-ul] pala-ess-ta
 see-AGR-PAST-KI-ACC hope-PAST-DEC

'Chelsu hoped that the teacher took the exam well.'

Finally observe (iii) that, in Korean, the subject of the sentence that is nominalized by *-ki* is in the nominative, as seen in the examples (3), (5) and (6). The following sentence shows that it cannot be in genitive Case:⁴

(7)
 *Chelsu-nun [Yenghi-uy sihem-ul cal
 TOP GEM exam-ACC well

 po-ess-ki-ul] pala-ess-ta
 see-PAST-KI-ACC hope-PAST-DEC

'Chelsu hoped that Yenghi took the exam well.'

Let us try to see what these differences between English *-ing* and Korean *-ki* amount to. The fact that, in English, only the category S can be nominalized by *-ing* may be correlated to the fact that both the category S and NP are units for a proposition or an event.⁵ On this view, nominalizing an S may mean an effort to encapsulate the propositional or eventive content of an S within the category NP. Since

⁴ In the case of another nominalizer *-m*, the subject of the sentence can be in genitive Case. This kind of phenomenon was often observed in Middle Korean. In contemporary Korean, the use of the nominalizer *-m* for sentential nominalization is rare and is almost obsolete, except in some highly formal style of writing.

⁵ We are here disregarding the use of *-ing* as a nominalizer of a verb. This process may well be an instance of derivational morphology and occur in the lexicon.

Both the categories NP and S are able to contain a propositional or eventive content,⁶ this process is perfectly legitimate.

Now take a look at the Korean case, that of *-ki*. We said that the *-ki* can nominalize a VP, in the VP-focus/Negation construction. If we mean the nominalization to be a category-changing into an NP, then there may be a slight problem. Since, presumably, a VP is not a unit of proposition or event,⁷ its nominalization won't also contain the propositional or eventive content. This may be incompatible with the inherent nature of the semantic content of the NP.

The point that I want to argue for is the following: Even though we mentioned that the suffix *-ki* is a nominalizer, it seems that it cannot be viewed as a category-changing suffix, as far as its syntactic use is concerned. Thus, Korean *-ki* can be viewed as a slightly weaker sense of a nominalizer: It just provides an "NP-shell" to some categories like VP or S, for which the syntactic processes like nominal Case assignment can't be applied without this shell. It doesn't really change the categorical status of the category it is attached to.

⁶ Note that Grimshaw's notion of Canonical Structural Realization(CSR) states that NP and CP are canonical realizations of the propositional content. See also Chomsky(1986a) who adopts this idea.

⁷ Note that we are assuming that the subject originates with the VP. Given this assumption, can we say that even a VP is a "unit" that may contain a propositional or eventive content? I think it is not. I speculate that the notion "predication" plays an important role in forming a propositional or eventive content. And I would like to assume that, only when the external argument occupies the position of the spec of IP, it can stand in a predication relation with the VP. Hence, on this view, a VP is just a predicate and the propositional content arises in its relation to the subject which occupies the spec of the IP. For discussion about predication, see Rothstein(1985), Williams(1980), among others.

The fact (ii), i.e. that the nominalizer *-ki* can occur with Tense and AGR when it nominalizes a sentence, points in the same direction. Recall our assumption that, even though NPs and CPs can be realizations of proposition or event, one property that distinguishes NPs from CPs is that NPs lack tense. As remarked earlier, the English gerundive nominals indeed lack tense. The fact that Korean sentences "nominalized" by *-ki* retain the tense indicates that the category changing didn't really occur --- here *-ki* is just an "NP-shell."

Incidentally, recall that Baker(1985a) and Chomsky(1970) argued that the English *-ing* must be generated under the INFL node. This was possible because, in English, Tense/AGR and *-ing* are in complementary distribution. In the case of Korean *-ki*, however, it is reasonable to view that it is *not* generated under INFL, since the INFL is already occupied by the Tense/AGR element. The discussion of this involves the question of how to represent the *-ki* in syntax. We will return to this question later.

The fact (iii) is, by now, well predicted. The nominalizer *-ki* didn't change the categorial status of the sentence, and there is no reason that the subject of the sentence is in genitive. It is as nominative as the subject of the regular sentence is.

3.3. Representations of "NP-shell" (I)

Thus far, we have indicated that the suffix *-ki* does not affect the internal or external status of the category it is attached to. It is just

there to project its nominal feature *over* the category it is attached to, such that that category is liable, for example, for the Case assignment from outside.

The question now is: How do we represent this NP-shell more precisely in syntax?

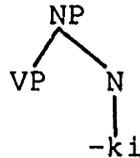
Considering this question, there is one thing that we must keep in mind. It is now a familiar fact that the Korean suffix *-ki* can "nominalize" both VP and S. Thus, if we want an optimal theory, it is our natural wish that that theory represents both instances of *-ki* in a similar fashion. Note that both instances of this *-ki* are involved in a syntactic process: It is not the case, for example, that one instance of *-ki* belongs to the derivational morphology while the other belongs to a syntactic process. Thus, we will attempt to provide a unified way for representing both instances of *-ki*.

Returning to our question above, there are various options for representing the NP-shell structure. In the last section, we have excluded the possibility that the *-ki* is generated under INFL. We excluded it because, in the Korean sentential nominalization structure, the INFL is occupied by the tense/AGR element. Furthermore, it would be very difficult to extend such an approach to the case of the "nominalization" of the VP, since we do not want to generate another

INFL covering the lower VP under the VP-shell in Korean VP-focus/Negation construction.⁸

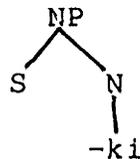
One other approach we suggested in the chapter 2 was to generate "NP-shells" literally, such that the VP with the NP-shell becomes:

(8)



and the "NP-shell" for the sentence roughly becomes:

(9)



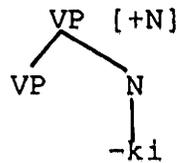
Although these structures are very straightforward and do not violate the X'-theory, they do not seem to be optimal syntactic structures, for reasons to be discussed in section 3.6.

The other alternative is to regard the suffix *-ki* as a syntactic affix and to let it adjoin to the category it is attached to.⁹ At this adjoined position, it may project its nominal feature to the immediately dominating node:

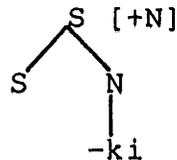
⁸ Rochette(1988) suggests something similar to this. She argues that Romance reanalysis constructions involve a VP-complementation, and that the VP-complement can have an additional INFL node.

⁹ This approach is in the spirit of Fabb(1984) and Abney(1987).

(10)



(11)



There are other options as well. We might take this "NP-shell" to be just syntactic features. An approach along this line is found in Hale & Platero(1985) in which they pursue a feature system conceptually different from Chomsky(1974). They suggest that nominalizations should be accommodated in the feature system and suggest, for example, that the nominalized sentences are maximal phrases of the following feature composition:

(12) $\begin{bmatrix} +S \\ +N \end{bmatrix}$

In this feature system, [+V, -S, +N] represents the nominalized VP at the phrasal level.¹⁰ Hence, if we adopt this feature system, we can

¹⁰ According to Chomsky, the features [+/-N, +/-V] determine the composition of lexical categories. For example, the feature complex [-N, +V] is the category V and the feature complex [-N, -V], the category P. In this notation, the "N" or "V" within the feature system must be distinguished from the actual categories N or V. Muysken & Riemsdijk(1985), for example, suggest that the [+/-N] and [+/-V] features be considered to be [+/-substantive] and [+/-predicative] respectively. Reuland(1986) tries to construe these features to be 'being an argument' and 'taking an argument' respectively. He represented these features as [A, F], and further suggests that each feature is three-valued, not two. In Hale & Platero's system, the features [+/-S, +/-V, +/-N] must be interpreted as something closer to the actual categories S, V, N themselves. This interpretation is clear in the representation of (12), where the feature is said to mean a nominalized sentence. Furthermore, Hale & Platero suggests that, given the features [A, B], the second feature designates the subclass of the first. For example, [+A, +B] and [+A,

represent the nominalizer *-ki* as an element that contributes to the feature specification of a syntactic category. Note that this feature system does not change a category by adding another second feature. For example, adding the feature [+N] to the feature [+S] should not be viewed as changing the original categorial status of S into NP. Note that an NP is represented as [-V, +N] in their system.

3.4. Representations of NP-shell (II)

In section 3.2., we emphasized the purely "formal" nature of *-ki*: It is a kind of nominalizer, but we have shown that, unlike English *-ing* of the *poss-ing* construction, it is not involved in category-changing. We suggested that it heads an "NP-shell." In other words, the presence of the NP-shell *-ki* is not motivated by the need for a change of the categories that it is attached to. Rather, it is motivated by the need that the VPs or Ss must be "covered" by some nominal projection, so that they can be assigned Case. Take, again, the case of the *-ki* as the sentential NP-shell. The relevant example was the following:

- (13)
- | | | | |
|------------|-----------|--------------|--------------|
| Chelsu-nun | Yenghi-ka | ttena-ki-lul | pala-n-ta. |
| TOP | NOM | leave-KI-ACC | hope-IMP-DEC |
- 'Chelsu hopes that Yenghi leaves.'

-B] are subclasses of the category [+A]. Hence, in the feature complex (12), the first feature designates this category as a sentence, and the second feature specifies its subclass, namely a nominalized one. In order for this subclassification to be possible, the features in Hale & Platero's system must not be combinatorial -- each of its features must be closely related to the actual categories.

Here, the main motivation of the presence of *-ki* is clearly to provide an NP-shell for the embedded sentence, so that it can get the accusative Case from the matrix verb.

Note, incidentally, that there is in fact one further motivation for the presence of *-ki*: This suffix is necessary to provide the morphological closure for the embedded verb *ttena-* 'leave.' (See chapter 2 for the notion *morphological closure*.) Of course, any other suffix belonging to the set C will do for this process, but the suffix *-ki* was chosen to provide the NP-shell as well.

Is this all we can say about the suffix *-ki*? I contend not. I would like to draw attention to the fact that there is another, somewhat "functional" aspect of this suffix *-ki*. Note that, although we have determined the *-ki* to be formally an NP-shell, the instance of *-ki* as a sentential NP-shell as in (13) is *functionally equivalent* to that of a canonical complementizer. In (13), for example, the suffix *-ki* marks the presence of an embedded sentence. In fact, there are several authors (e.g. cf. H.B. Lee(1970), J.D. Kim(1988), etc) who identify this instance of *-ki* as the syntactic category complementizer.

Anticipating my conclusion, I want to argue that, although, at some level of generalization, the suffix *-ki* is just an NP-shell and it is there for Case reasons, it is actually a syntactic category complementizer at some other level of generalization.

To make this point clear, an analogy is useful. We have suggested that the sole motivation for the presence of the suffix *-ko* in the progressive construction like (14) is to provide the morphological closure to the lower verb *mek-* 'eat':

(14) Chelsu-ka pap-ul mek-ko iss-ta
 NOM meal-ACC eat-KO be-DEC

'Chelsu is eating a/the meal.'

Note, on the other hand, that the same suffix appears in a sentential conjunction like the following:

(15) hae-ka ci-ko, tal-i ttu-ess-ta
 sun-NOM fall-KO moon-NOM rise-PAST-DEC

'The sun set and the moon rose up.'

It is clear that the suffix *-ko* is necessary here also for the morphological closure of the verb *ci-* 'fall.' But *-ko* here serves another function: It is a sentential connective. If we assume a syntactic category "connective" in syntax, which the English words like *and*, *but*, etc will belong to, the *-ko* here will belong to this category. Note that the same element in the progressive construction does not serve the function of connective. Its sole function is to morphologically close off the verb. Hence, we cannot call the suffix simply a connective, although we may call both of them "morphological closer" of the verbs. However, in the latter case, we miss some generalization that it also is a connective in some cases.

I argue that the observation that the suffix *-ko* is an element that morphologically closes off the verbs and the observation that the same

suffix may be a connective are two different generalizations that belong to different levels. At one level, most *-ko*'s are treated simply as "morphological closers."¹¹ Whether it will function as a connective at some other level is not of concern at this level. On the other hand, at some other level, the *-ko* in (15) will be analyzed as belonging to the category connective. At this level, the *-ko* in the progressive construction (14) is simply inert and is not even analyzable.

The same argument applies to the nominalizer *-ki*. I want to argue that, at one level of representation, the suffix *-ki* is just an NP-shell, whether it is attached to a VP or it is attached to a sentence. However, at some other level of representation, some instances of *-ki*, i.e. when it is a sentential NP-shell, are analyzed as the syntactic category complementizer. At this level, the instance of the *-ki* that is attached to a VP is just inert and is not analyzable.

Note that, in this way, we capture both instances of *-ki*, i.e. *-ki* at the VP and *-ki* at the sentence, in a unified way: They are NP-shells at one relevant level of generalization. Thus, our earlier wish for a uniform treatment of both of these instances of *-ki* is fulfilled. But we can also go beyond this: We also capture the fact that the *-ki* at the sentence serves another function, namely as a complementizer, while the *-ki* at the VP just remains as an NP-shell. Recall that H.B. Lee(1970) and J.D. Kim(1988) argue that the *-ki* must be analyzed as

¹¹ There are some instances of *-ko* that cannot be viewed as a "morphological closer" of the verb. We will return to this discussion.

a complementizer. On this view, we must assume at least two different types of $-ki$, one of which is the syntactic category complementizer and the other of which is just an NP-shell (i.e. when it occurs at the VP). This is necessary because the instance of $-ki$ at the VP is clearly not that of a complementizer. Now, we can nicely avoid this conclusion, given our claim above.

To maintain this claim, however, there are several things that must be proved.

(i) We are saying that the instance of $-ki$ at the sentence is actually the syntactic category complementizer at the relevant level of generalization. Since we want this relevant level to be syntactic, this presupposes that there is a syntactic category complementizer in Korean syntax. But this presupposition is not something we can take for granted. It is perfectly possible to argue that Korean lacks the syntactic category complementizer at all and that the fact that the $-ki$ in this case behaves like a complementizer is a truly functional matter, which must be dealt with outside the formal syntax. That is, in this claim, the fact that the $-ki$ functions like a complementizer need not be captured within the syntactic generalization at all.

(ii) Suppose that we can somehow succeed in showing that, for independent reasons, there should be the category complementizer in Korean syntax. Although, in this case, it is quite reasonable to hold that the $-ki$ at the sentence belongs to this category, it may still be argued that this $-ki$ should not be analyzed to belong to this category.

Thus, we have to show some gains we can get when we analyze this -*ki* at the sentence as a complementizer.

We will discuss these matters in the following sections.

3.5. Existence of Complementizer in Korean Syntax

Concerning the point (i) in the last section, Fukui(1986)¹² in fact proposed that the languages like Japanese lack the functional categories INFL and COMP. Setting aside the category INFL, if Korean also lacks the syntactic category COMP, our claim that Korean -*ki* may belong to the category complementizer cannot be maintained.

So, the question is: Is it true that there is no category complementizer in Korean? Below, I will argue that there *are* elements in Korean that cannot be viewed as other than complementizers.

Recall we argued that the suffix -*ko* appeared in the Korean progressive construction to fulfill the requirement that the verb within the lower VP under the VP-shell must be morphologically closed off. And we said that we can't find any other motivation than this for the presence of this element. We also noted that this suffix -*ko* in other times appears as a connective. Now we note that there is a third type of appearance of this suffix -*ko*, i.e. in a position in which it can best

¹² Whitman(1982, 1984) also has the same view. His basic view is quite similar to Fukui's. He suggests that the parametric variation between English and Japanese involves the fact that, in English, the functional category INFL is the head of S, while in Japanese, the head of S is a V.

be viewed as a complementizer. We have in fact discussed this instance of *-ko* in chapter 2. The following sentence illustrates this instance of *-ko*:

- (16)
 Chelsu-ka Yenghi-ka yeppu-ta-ko malha-ess-ta
 NOM NOM pretty-DEC-KO say-PAST-DEC
 'Chelsu said that Yenghi is pretty.'

In considering this appearance of *-ko*, our logic is the following: We have been trying to determine the category of *-ki* in a somewhat functional terms in the last section. Since the suffix *-ki* has other "formal" function, namely as an NP-shell, we can always dismiss the functional explanation we provided above, saying that it is outside the realm of the linguistic generalization. Thus, if we can show that there is some "formal" motivation for the presence of *-ko* in (16) other than its "functional" one, then we can, here too, ignore the fact that the suffix functions as a complementizer. However, I will try to show that it is not possible to reduce this instance of *-ko* to anything other than the actual complementizer.

Note that the element *-ko* here clearly is not required to fulfill the principle of morphological closure. As the following example shows, the embedded predicate *yeppu-* 'pretty' is already properly closed off by the suffix *-ta* 'DECLARATIVE':

- (17) Yenghi-ka yeppu-ta
 NOM pretty-DEC
 'Yenghi is pretty.'

Hence, this instance of *-ko* must be licensed by reasons other than morphological closure.

Furthermore, it is clearly not a nominalizer or an NP-shell: It cannot be followed by a Case marker. Note:

- (18)
- | | | |
|--------------|-----------|-------------------|
| *Chelsu-ka | Yenghi-ka | yeppu-ta-ko-lul |
| NOM | NOM | pretty-DEC-KO-ACC |
| malha-ess-ta | | |
| say-PAST-DEC | | |
- 'Chelsu said that Yenghi is pretty.'

It thus seems that there is no other "formal" explanation for the presence of this element *-ko* in (18): There seems to be only a "functional" motivation for this suffix, namely, to "set off" the embedded clause from the matrix clause. But, in fact, we are not forced to say this, if, of course, Korean syntax has a syntactic category complementizer. That is, the motivation for the presence of *-ko* is purely formal, namely that it is a complementizer, whose canonical function is to "set off"¹³ the embedded clause from the matrix clause.

A similar explanation can be given to the element *-nun* in the following sentence:

- (19)
- | | | | |
|-----------|------------|------------------|----------|
| Chelsu-ka | Yenghi-lul | coaha-n-ta-nun | sasil... |
| NOM | ACC | like-IMP-DEC-NUN | fact |
- 'The fact that Chelsu likes Yenghi...'

¹³ For this term, see Ransom(1986). J.D. Kim(1988) also uses this term.

This structure is the (non-reduced) noun-complement structure and the element *-nun* is attached to the sentential "complement." This element *-nun* is very close in its shape to the prenominal ending *-n*, which appears in the relative clauses, as in:

(20) Chelsu-ka sa-n chaek
 NOM buy-PNE book

'The book Chelsu bought.'

It is a fact in Korean that, if a verb is directly string adjacent to a nominal, it must be inflected to have the prenominal suffixes *-n* or *-l*. Sticking to the "formal explanation" above, we can license this suffix in part by saying that this suffix is required to fulfill the morphological closure.¹⁴ However, this explanation again does not apply to the sentence (19). In (19), the verb within the complement is properly closed by *-ta*, the declarative ending. Hence, the presence of *-nun* is motivated by other than the reason of morphological closure.

Note also that this element *-nun* is not a nominalizer or NP-shell in any sense. The Case marker cannot follow it:

(21)
 *Chelsu-ka Yenghi-lul coaha-n-ta-nun-lul
 NOM ACC like-IMP-DEC-NUN-ACC

sasil...
 fact

'The fact that Chelsu likes Yenghi...'

¹⁴ Of course, there must be something more to be said --- we must capture the fact that the particular prenominal ending is required here. We will return to this problem in a later section.

Hence, I conclude that this instance of *-nun* is of the syntactic category complementizer.

It appears, however, that the conclusion we have drawn above may not be necessary. Fukui(1986) also considers the categorial nature of the element like *-ko* in (16) and concludes that it is like a postposition, not a complementizer.¹⁵

The Japanese analogue of Korean *-ko* is *-to*, as in the following Japanese sentence(cited from Fukui(1986)):

- (22)
John-wa [Bill-ga Mary-o nagutta-to] sutteiru
TOP NOM ACC hit-PAST-TO know
`John knows that Bill hit Mary.'

One peculiar fact about Japanese is that this morpheme *-to* is also a postposition, meaning `with.' The following sentence illustrates this.

- (23) John-wa Mary-to kaimono-ni itta
TOP with shopping-`to' went
`John went shopping with Mary.'

This is an initial observation that motivates the analysis in which what we call the complementizer *-to* (and the similar element *-ko* in Korean) is in fact a postposition. His other argument to the same effect goes as follows: He observes that the topic/contrastive marker *-wa* can attach to only PP or NP in Japanese. Now, he notes that this marker *-wa* can be attached to the element *-to* in (24):

¹⁵ For the same conclusion, see Emonds(1985).

(24)
 John-wa [Bill-ga Mary-o nagutta-to]-wa
 TOP NOM ACC hit-PAST-TO-WA

sitteiru
 know

'John knows that Bill hit Mary.'

From this, he concludes that the *-to*-phrase, i.e. the sentential complement plus *-to*, is to be analyzed as either an NP or a PP. He goes on to argue that, since the *-to*-phrase here is not an NP, as the following sentence, where the Case marking to the *-to* phrase is impossible, shows:

(25)
 *John-wa [Bill-ga Mary-o nagutta-to]-ga/o
 TOP NOM ACC hit-PAST-TO-NOM/ACC

sitteiru
 know

'John knows that Bill hit Mary.'

it must be a postpositional phrase.

As far as Korean is concerned, this kind of argument does not go through. In Korean, the cognate of Japanese *-wa* is *-nun*.¹⁶ This element *-nun* can also be attached to *-ko* in the sentence (16) in Korean:

(26)
 Chelsu-ka Yenghi-ka yeppu-ta-ko-nun malha
 NOM NOM pretty-DEC-KO-NUN say
 -ess-ta
 -PAST-DEC

¹⁶ This topic/contrastive marker *-nun* must be completely distinguished from the other *-nun*, which we argued to be a complementizer in (19). As we remarked earlier in the text, this latter *-nun* may be seen to be closer to the prenominal suffix *-n*. There is no basis upon which the topic/contrastive marker *-nun* and what we called a complementizer *-nun* can be compared.

`Chelsu said that Yenghi is pretty, but...'

But it does not attach only to NP or PP. It can attach to adverbials without a postposition:

(27) Chelsu-ka kongpu-lul cal-un ha-n-ta
NOM study-ACC well-NUN do-PRES-DEC

`Chelsu studies well, but...'

It also appears with a VP, as the following example shows:

(28) Chelsu-ka kongpu-lul ha-ko-nun iss-ta
NOM study-ACC do-KO-NUN exist-DEC

`Chelsu is studying, but...'

The sentence (28) is the progressive construction, the by now familiar VP-shell structure. The element *-nun* can attach to the lower VP under the VP-shell,¹⁷ i.e. it can attach to the VP. Hence, Fukui's argument does not carry over to Korean: The attachability of *-nun* cannot determine the type of the category it is attached to.

Now let us return to the initial motivation for analyzing the *-to* at the sentential complement in (22) as a postposition. The initial motivation was that the element *-to* in Japanese can be used as a postposition. But it is clear that this cannot serve any argument for the claim that the element *-to* in (22) is a postposition. Note first that these two instances of *-to* do not have any common meaning. One means 'with' and the other indicates the presence of the embedded

¹⁷ As we have been arguing all along, the suffix *-ko* at lower VP in (28) is an element that morphologically closes off the verb. There is no sense in which it can be argued to be a postposition. As we will discuss below in the text, a postposition is, by definition, a postnominal element. But *-ko* in (28) is attached to the verbal element.

clause. Note further that the postposition is, by definition, a category that is attached to a nominal category (or its complement is always a noun). However, the clause the element *-to* is attached to in (22) is not a nominal. This can be seen from the fact that the Case markers cannot be attached to it:

(29)
 *[John-ga Mary-o nagutta]-ga odorokida
 NOM ACC hit -NOM surprising
 'It is surprising that John hit Mary.'

(30)
 *John-wa [Bill-ga Mary-o nagutta]-o sitteiru
 TOP NOM ACC hit -ACC know
 'John knows that Bill hit Mary.'

Hence, we have a postposition that is by definition an element that is attached to nominals, but that is actually attached to a non-nominal clause.¹⁸ Do we still have to call this element in (22) a postposition?

It is useful to compare this situation with that of English: The English *that* is a determiner or a demonstrative. But the same *that* can be used as a complementizer. From this fact, should we conclude

¹⁸ It may be argued that the English preposition *after* may also be an element of this type. The preposition *after* occurs at the PP *after the movie* or at the sentence *after John left*. In view of the logic of our current discussion, we have to categorize the second instance of *after* as a complementizer.

But, note also that there is a difference between Japanese *-to* and English *after*. In the case of English *after*, it preserves the same meaning both when it is used with a noun and when it is used with a clause. However, in the case of Japanese *-to*, its meaning as a postposition is not preserved when it is used with a clause. As we will discuss immediately below, this latter phenomenon also occurs in the case of English preposition *for*: The preposition may occur with a nominal and with a clause, but its meaning as a preposition is not preserved when it appears at the clause. We do not call the instance of *for* with a clause a preposition; Rather, it is a complementizer.

that English lacks the category complementizer, but that it is actually a demonstrative or determiner? Similarly, in English, *for* is a preposition. But, the same element *for* in the following sentence is analyzed as a complementizer in English:

(31) For John to be sick is unfortunate.

Of course, it is not unthinkable to claim that English, too, lacks the category complementizer and that all English complementizers are actually demonstratives or prepositions. But, then, of course, the main claim of Fukui, namely, that whether there are functional categories like INFL and COMP in syntax is a parametric difference between English and Japanese, is lost.

Note, incidentally, that if the embedded clauses in (29) and (30) are "nominalized", the alleged postposition *-to* cannot be attached. In Japanese, the most common NP-shell element is *koto* 'thing'. The following are examples:

(32)
 [John-ga Mary-o nagutta] koto-ga odorokida
 NOM ACC hit NOM surprising

'It is surprising that John hit Mary.'

(33)
 John-wa [Bill-ga Mary-o nagutta]-koto-o sitteiru
 TOP NOM ACC hit -ACC know

'John knows that Bill hit Mary.'

Note that Case markers can be attached to embedded sentences with an NP-shell. Now observe that in these cases, the alleged postposition *-to* cannot be attached:

(34)
 * [John-ga Mary-o nagutta] koto-to odorokida
 NOM ACC hit surprising

'It is surprising that John hit Mary.'

(35)
 * John-wa [Bill-ga Mary-o nagutta]-koto-to
 TOP NOM ACC hit

sitteiru
 know

'John knows that Bill hit Mary.'

Clearly, if *-to* in the examples (22), (34) and (35) is a postposition, it is a very peculiar one: It can be attached to a non-nominal category, i.e. the embedded clause without an NP-shell, but it can't be attached to a "nominalized" category, i.e. the embedded clause with an NP-shell.

Thus, I conclude that the Japanese *-to* in the example (22) is not a postposition. In any case, it is to be noted that, as for the Korean *-ko*, there is no other instance of it that is used as a postposition.

Thus far, we have seen that (i) the presence of *-ko* in (16) is not for a morphological closure of the preceding verb; that (ii) it is not a nominalizer or NP-shell; and that (iii) this instance of *-ko* cannot be analyzed as a postposition. Thus, we conclude that it is a full-fledged complementizer,¹⁹ with the canonical function that it "sets off" the embedded clause from the matrix clause.²⁰

¹⁹ Recall that other instances of the element *-ko* cannot be viewed as a complementizer. For example, in the Korean progressive construction, *-ko* is used there purely for the purpose of morphological closure. But, as noted above, the element *-ko* in (22) is not used for this purpose. Hence, we claim that there are at least two types of *-ko*, one which is exclusively a complementizer and the other of which is an element that closes off verbs. But, in this latter case, it can be sometimes analyzed as some other category, e.g. as connective, as we discussed earlier in the text.

Now, let us return to point (ii) of page 98. The point (ii) there was: Even though we can show that Korean syntax has a category complementizer, is there any reason that we want *-ki* to be a complementizer at some level of generalization? I think there is.

It is well known (cf. Chomsky(1965), Bresnan(1970) and Grimshaw(1979), among others) that certain complementizers may be subcategorized for by the verb. For instance, the English verb *wonder* always requires a WH-comp in the embedded clause. The same requirement exists in Korean. The verb *kungkumha-* 'wonder' requires the complementizer of the embedded clause to be *(-l/n) ci*:^{21,22}

- (36)
 a. Chelsu-nun [Yenghi-ka cip-e ka-ess-nun ci]
 TOP NOM home-LOC go-PAST-PNE CI

 kungkumha-ess-ta
 wonder-PAST-DEC

 'Chelsu wondered whether Yenghi went home.'

²⁰ If there is a syntactic category COMP in Korean syntax, there is no reason why there is no syntactic category INFL in Korean. There are a rich set of the elements that indicate Tense and Agreement in Korean and I argue that they must be projected into the INFL node. Thus, Fukui's claim that Japanese lack functional categories cannot be extended to Korean syntax.

²¹ This element *ci* is somewhat similar to the *-ci* that appeared in the negation constructions discussed in chapter 2. However, these two elements must be distinguished. True, the *ci* in (36) that we identify as a wh-complementizer also forms an NP-shell, but in a slightly different way than the elements *-ki* or *-ci* does. *-ki* and *-ci* are affixes and are directly attached to verbal complex. However, the *ci* in (36) must be preceded by a prenominal suffix *-l/n* of the verb, as can be seen in (36). This indicates that *ci* is not a bound morpheme, but an independent nominal, even though it is a degenerate, or "incomplete" noun, in the sense that it is not referential. The use of degenerate noun for the formation of the NP-shell will be discussed in section 3.6.

²² For some discussion about other issues concerning this WH-complement, see S.S. Hong(1985).

b. *Chelsu-nun [Yenghi-ka cip-e ka-ess-nun kes]
TOP NOM home-LOC go-PAST-PNE KES

kungkumha-ess-ta
wonder-PAST-DEC

'Chelsu wondered whether Yenghi went home.'

c. *Chelsu-nun [Yenghi-ka cip-e ka-ess-nya-ko]
TOP NOM home-LOC go-PAST-QUES-KO

kungkumha-ess-ta
wonder-PAST-DEC

'Chelsu wondered whether Yenghi went home.'

d. *Chelsu-nun [Yenghi-ka cip-e ka-ess-ki]
TOP NOM home-LOC go-PAST-KI

kungkumha-ess-ta
wonder-PAST-DEC

'Chelsu wondered whether Yenghi went home.'

These sentences show that the presence of the wh-complementizer (-l/n) ci is necessary for the matrix verb like kungkumha-. Other elements like (-l/n) kes, -ko, or -ki are not legitimate complementizers that the matrix verb is subcategorized for.²³

Note, incidentally, that what we said to be a complementizer (-l/n) ci in (36a) is actually an NP-shell. As noted in the fn. 21, the

²³ Note also that, even when the embedded clause is a wh-question, this element (-l/n) ci is required:

(i) na-nun [Chelsu-ka mues-ul ha-n-un ci]
I-TOP NOM what-ACC do-IMP-PNE CI

kungkumha-ta
wonder-DEC

'I wonder what Chelsu does.'

suffix $-l/n$ of $(-l/n)$ ci is a prenominal suffix and ci is a degenerate or, in the traditional terminology, an "incomplete" noun. Thus, this type of NP-shell, i.e. prenominal ending + degenerate noun, is another type of NP-shell, in addition to the NP-shell formed by $-ki$, which is a suffix and which is not preceded by the prenominal ending $-l/n$. We will return to the discussion of this type of NP-shell in section 3.6. In any case, we identify the NP-shell $(-l/n)$ ci as a complementizer.

Similar selection process of the complementizer by the matrix verb applies for the embedded clause that has the NP-shell $-ki$. In earlier sections, we have emphasized only the fact that the NP-shell $-ki$ is required at the embedded clauses in order to make Case assignment by the matrix verb to the sentential complement possible. From this fact alone, we predict that the NP-shell $-ki$ can appear at any embedded clause, as far as the matrix verb assigns Case to it.

However, this is not the case. The NP-shell $-ki$ can occur at the embedded clause only under certain matrix verbs, whose type can be semantically characterizable. As J.D. Kim(1988) noted, the matrix verbs that select the element $-ki$ as the embedded "complementizer" are what he calls "expectative verbs." (For further discussion of the semantic type of these verbs, see H. B. Im(1974), among others) This class of verbs includes the verbs like $kitaeha-$ 'expect,' $pala-$ 'hope', $wenha-$ 'want' and $hyimangha-$ 'hope.'

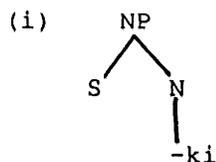
Given the universal fact that the complementizers are selected by the matrix verbs, the existence of this selection process between the

matrix verb and the NP-shell *-ki* suggests that the *-ki* as an NP-shell for the embedded sentence can best be viewed as a complementizer. Reuland(1983), discussing *acc-ing* structures in English, had suggested that this selection process may exist between the matrix verb and the embedded INFL, when the complementizer is empty. However, we had argued in section 3.2. that Korean *-ki* cannot be generated under INFL.

Note that, if the NP-shell is represented as a syntactic feature or as a nominal element adjoined to the category it is attached to, as we suggested in section 3.3., it is unclear how this selection process ever becomes possible.²⁴ This seems to support our claim that the *-ki* at the sentential complement is an NP-shell at some level of generalization, but it is a complementizer at some other level of generalization.

Note, finally, that the selection process that is under discussion must be distinguished from the *morphological selection* (and also *idiomatic selection*) we discussed briefly in chapter 2 and we will discuss in the final section of this chapter. The selection process we are discussing in this section is governed by the semantic type of the

²⁴ The situation does not improve even if we assume the "literal" projection N as in the following:

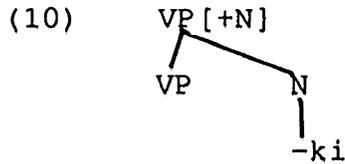


verb, while the morphological selection I will discuss in later sections concern only the type of syntactic category that is involved. One example of this morphological selection consists in the fact that when a verb is string-adjacent to a nominal, it must be inflected with the prenominal suffix. We will discuss this in detail in section 3.8.

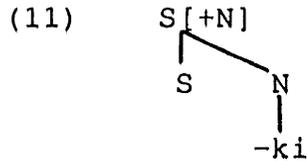
3.6. Representation of NP-shell (IV)

Thus far, we have argued that the suffix *-ki* at the VP and the sentence is an NP-shell at some level of representation, but that it must be analyzed as a complementizer, when it is an NP-shell for a sentence, at some other level of representation. Postponing the discussion of what these "levels of representation" precisely are, let us consider, again, how we can represent the notion of NP-shell at the relevant level of representation. It must again be emphasized that, at this level, the fact that some of these NP-shells may be analyzed as complementizer is of no concern.

If the suffix *-ki* is the only type of NP-shell existing in the Korean language, we may adopt one of the following two modes of representation for it, as we outlined in section 3.3.: (i) *-ki* is adjoined to the category it is attached to and projects its nominal feature to the immediately dominating node without changing the actual category of the host to which it is adjoined. In terms of tree structure, it had roughly the following form:



or,



(ii) *-ki* can be represented as just a syntactic feature, as Hale & Platero(1985) had suggested.

However, there is another type of NP-shell in Korean, for which the analysis (i) or (ii) seems implausible. We have seen in the last section that Korean WH-complementizer (*-l/n*) *ci* is actually an NP-shell. Let us take a look at this structure more carefully. We have cited in (36) an example where the WH-complementizer functions like the English *whether*. Here, we will cite an example where the embedded indirect question is a WH-question whose questioned element is *nuku* 'who.' As we noted in the fn. 23, the same WH-complementizer appears in this Korean construction, unlike English:

- (37)
- | | | | | |
|----------------------------|------------|----------|-------------------|-----|
| na-nun | [Chelsu-ka | nuku-lul | ttaeli-ess-un | ci] |
| I-TOP | NOM | who | -ACC hit-PAST-PNE | CI |
| kungkumha-ta | | | | |
| wonder-DEC | | | | |
| `I wonder who Chelsu hit.' | | | | |

Note that the wh-element within the indirect question *i* in situ, as is well known.²⁵ That what we take to be a complementizer *ci* is actually a (degenerate) noun can be seen from the fact that it must be preceded by the prenominal suffix *-(u)n*, which we glossed as PNE.²⁶ As we have mentioned several times, the Korean verbal complex must end with the prenominal suffix *-l* or *-n*, when it is string adjacent to a nominal.

That the *ci* above indeed forms an NP-shell can be verified by the fact that the complement in (37) can be followed by the Case marker:

(38)
na-nun [Chelsu-ka nuku-lul ttaeli-ess-nun ci]-ka
I-TOP NOM who-ACC hit-PAST-PNE CI-NOM
kungkumha-ta
wonder-DEC
'I wonder who Chelsu hit.'

²⁵ The fact that Korean (Japanese and Chinese, for that matter) wh-elements like *nuku* do not undergo syntactic movement while English wh-elements do is a favorite topic in recent generative grammar. Huang(1982), for example, argued for Chinese that Chinese wh-elements undergo LF-movement, even though they are in-situ in syntax; He also discovered that the LF movement of wh-adjuncts is subject to a more rigid syntactic constraint than that of wh-arguments. Lasnik & Saito (1984) elaborated on this latter fact. Fukui(1986) tried to capture the asymmetry between English and Japanese concerning the presence and lack of syntactic wh-movement in terms of parametric variation regarding categorial projections of these languages. These are just a few among studies about this phenomenon.

²⁶ As we noted earlier, this *ci* must be distinguished from the *-ci* that appeared in the negation construction. Even though both of these elements form an NP-shell, the former is a degenerate noun, but the latter is just a nominalizing suffix, a cognate of *-ki*. This is why we represent the former *ci* as *ci* without the preceding dash, indicating that this is an independent word, while the latter *-ci* is represented with a preceding dash, indicating that it is a bound element. Note, incidentally, that the verbal suffix *-ci* must also be a member of the set C, i.e. it is an element that closes off the verb, but that the degenerate noun *ci* is just an element that forms the NP-shell and is not a verbal suffix at all.

In (38), the nominative Case is attached to the complement. This fact is by now not unusual: This can be explained by our earlier assumption that, when the matrix verb has no Case to assign to its complement, the complement assumes a default Case. And I argued that the default Case in Korean is nominative.

Incidentally, it raises an interesting question: If the verb *kungkumha-* 'wonder' does not have Case to assign to its complement, and if the motivation for the NP-shell is just for the VP or S to be "visible" for the Case assignment, why do we need the NP-shell here at all? We have seen in the last chapter that, in the Korean progressive construction, the NP-shell is not required at the VP under the VP-shell because the verb of the VP-shell *iss-* 'be, exist, have' does not have Case to assign. In the construction under discussion, however, the presence of this NP-shell with *ci* is required, as we discussed in the last section.

Note that, although the generation of an NP-shell is certainly not required here, it is not prohibited either, thanks to the default Case strategy existing in Korean grammar.²⁷ That is, it is harmless to generate an NP-shell as far as it can assume the default Case, i.e. nominative. The emerging generalization, then, is that, when the matrix verb has Case to assign, the NP-shell is required, but that,

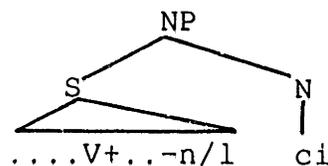
²⁷ As we mentioned in chapter 2, this default Case strategy must be parametrized. In English, for instance, this strategy does not seem to be operative.

when the matrix verb has no Case to assign, the generation of NP-shell is optional. We will confirm this fact in section 3.7.

Then, why is the NP-shell obligatory in (38)? The reason, I argue, is that this NP-shell must be analyzed as a complementizer at a certain level of representation, and that this particular complementizer at this level of representation must be selected by the matrix verb *kunkumha-* 'wonder.' If this reasoning is correct, it supports our main idea that some NP-shells must be analyzed as complementizers at some level of representation.

Returning to the main discussion, the NP-shell under discussion has the following form: Verb ...+ -l/n N. The embedded verb ends with the pronominal ending -l or -n and this suffix is followed by the degenerate noun. When this degenerate noun occurs as the head of the NP-shell for the sentence, this can be represented as the following structure:

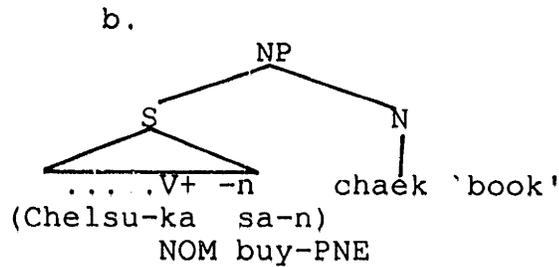
(39)



This structure is superficially identical to the relative clause structure:

(40) a. [[Chelsu-ka t sa-n] chaek]
 NOM buy-PNE book

'The book that Chelsu bought.'



except that, in the relative clause structure, the S contains a trace, while, in (38), there is none. Also, in the relative clause structure, the head noun is not a degenerate one. In fact, the NP-shell structure under discussion is rather closer to a certain type of noun-complement structure (I will call this type of noun-complement structure a "reduced noun-complement structure"; an example of the non-reduced noun-complement structure was already cited in section 3.5. of this chapter²⁸), than to the relative clause structure. Observe the following reduced noun-complement structure:

- (41)
- a. [[Chelsu-ka tampae-lul piu-n-un] sasil]
 NOM cigarette-ACC smoke-IMP-PNE fact
- 'The fact that Chelsu smokes'

²⁸ An additional example of the non-reduced noun-complement structure is the following:

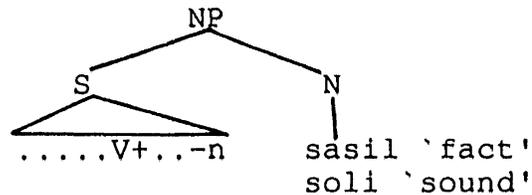
- (i) Chelsu-ka cuk-ess-ta-nun somun
 NOM die-PAST-DEC-COMP rumor
- 'The rumor that Chelsu died'

This structure differs from the reduced one in that there is a declarative ending within the complement. And as we discussed in section 3.5., the element -nun is clearly a complementizer.

b. [(kangmul-i hulu-n-un] soli]
 river-NOM flow-IMP-PNE sound

'The sound of the river flowing'
 (lit.) 'The sound that the river is flowing'

c.



The difference between this reduced noun-complement structure and the NP-shell is only that, in the reduced noun-complement structure, the head noun is not a degenerate N.

For these structures, it must be kept in mind that the prenominal suffix is attached to the embedded verb. It initially performs the following two functions: (i) it morphologically closes the verb; (ii) it signals that the verb precedes a noun. However, in the case of the relative clause, it may also be viewed as a complementizer or INFL, or actually as both. We will return to this point later.

In any case, the fact that some NP-shells must be represented by the structure (41c) suggests that NP-shells cannot always be represented as an adjunction like (10) or (11) or as a syntactic feature, as Hale and Platero(1985) suggested. It must rather be the structures like (8) and (9) in section 3.3., in which N nodes are literally projected.

One other most common NP-shell of this type is (-l/n) kes. This NP-shell is often used as an NP-shell for sentences. One example is the following:

(42)
 Chelsu-ka [[Yenghi-ka maekcu-ul masi-n-un]
 NOM NOM beer-ACC drink-IMP-PNE
 kes]-ul po-ess-ta
 KES-ACC see-PAST-DEC
 `Chelsu saw Yenghi drink beer.'

Here, the morpheme kes is the most common degenerate noun, meaning 'thing' sometimes. The complement in (42), then, has the same structure as in (39): The embedded verb ends with the prenominal ending -n, which is followed by the degenerate noun.

There is much controversy concerning the categorial status of this instance of (-n) kes. M.S. Lee(1967), H.B. Lee(1970), I.S. Yang(1972) and J.D. Kim(1988), among others, argue that it is a complementizer; N.K. Kim(1984) argues that it is a nominalizer; And D.W. Yang(1976b) identifies it as just a noun standing in a kind of noun-complement structure. As would have become clear to the reader, we will argue that it is a complementizer at some level of representation and that it is a "nominalizer," i.e. an NP-shell, at another level of representation. Hence, we are defending both of the first two positions above. Furthermore, we would like to represent the NP-shell structure as a kind of noun-complement structure at some level, as in (39). Thus, my stance in this chapter is compatible with all the arguments above.

I will argue, however, that, even if I represent the NP-shell structures as in (39),²⁹ this NP-shell structure must be distinguished from the *true* reduced or non-reduced noun-complement structures. And I will also show below that the representation of NP-shells in the manner as in (39) is not that of either D-structure or S-structure, but that of some other level that I will propose.

It is well-known that the extraction of arguments out of the noun-complement structure is relatively free. Note the following English sentence:

(43) What did John announce a plan to fix t?

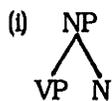
For most English speakers, this sentence is well-formed. From this fact, Chomsky(1986b) argues that the head noun in the noun-complement structure assigns a θ -role to its complement. Let us see why it must be the case.

In the Barriers framework of Chomsky(1986b), the movement of what in (43) will roughly take the following path:

(44)

What did John [_{VP} t³ announce [_{NP} a plan [_{CP} t² to [_{VP} t¹ fix t]]]]

²⁹ As I noted in the last chapter, the NP-shells at the VPs will be represented:



Since it is a movement of an argument, the ECP is not much of a problem.³⁰ However, given Chomsky's assumption that NPs and CPs are not adjunction sites, the movement from the position t^2 to t^3 may violate subjacency, since it crosses two barriers: CP and NP.³¹ This NP, even though it is L-marked, will inherit barrierhood from CP.³²

This problem can be avoided, if we assume that the head noun assigns a θ -role to its complement. Given this assumption, neither CP nor NP will be a barrier, since both of these categories are L-marked; NP, L-marked by the verb and CP, L-marked by the head noun. Hence, the movement from the t^2 position to the t^3 position will cross no barriers³³ and we predict the well-formedness of the sentence (43).

Henceforth, I would like to assume that the θ -marking of the complement by the head noun is one of the defining properties of the noun-complement structure. Note that this θ -marking is possible due to the fact that the head noun of the noun-complement structure has lexical content.

³⁰ That is, the ECP will be always satisfied for the original trace t by the trace t^1 that results from the first step of movement. Also, the argument position is always lexically governed by the head. Other traces may be deleted if necessary. For details, see Lasnik & Saito(1984) and Chomsky(1986b).

³¹ For definition of subjacency, see chapter 1, and Chomsky (1986b).

³² For definitions of L-marking and barriers, see chapter 1, or Chomsky(1986b).

³³ In fact, as we will discuss below, it is necessary to assume that there is one barrier intervening between the positions t^2 and t^3 . Thus, we would actually like to say that the relevant movement crosses one barrier.

Now return to the Korean reduced noun-complement structure. Clearly, there is no reason not to believe that the head-noun here θ -marks its complement. The head noun of the Korean reduced noun complement structure is fully lexical, as can be seen from the examples in (41).

Now consider the NP-shell structure. Is it right to say that, here too, the sentence that precedes the *kes* is θ -marked by this degenerate noun? I contend that it is not. The "head noun" *kes* is not a noun that has lexical content. Hence it cannot θ -mark its complement. If this assumption is correct, the NP-shell is characteristically different from other noun-complement structures.

If this assumption is made, we can discover more interesting facts. To see this, let us first see some facts about Korean relativization. In Korean, adjuncts, or adjunct PPs, can be relativized in the following way:

(45) [[Yenghi-ka t maekcu-lul masi-n] sulcip]
 NOM beer-ACC drink-PNE bar

(lit.) `The bar that Yenghi drank beer'
 `The bar where Yenghi drank beer'

In the relativization of PPs, there is no pied-piping; nor is there any "wh-pronoun" like *where* or *which*. The head noun is just an N, which is preceded by the prenominal suffix *-n* as usual, but this N must be understood as related to the adjunct trace inside the relative clause.

There is some controversy whether Korean relativization involves syntactic movement³⁴, but, I will assume in this chapter that it is an instance of wh-movement occurring between D- and S-structure.^{35,36} Even though there are a handful of constructions where the relativization is not subject to island constraints, M.Y. Kang(forthcoming) provide many other data that show that the relativization (of arguments and adjuncts alike) is indeed subject to island constraints, i.e. it observes the subjacency (and the ECP). The reader is referred to M.Y. Kang(forthcoming) for a detailed discussion to this effect.

For the purpose of current discussion, let us just note that, as the following ungrammatical example shows, the adjunct PPs cannot be extracted out of the relative clause:³⁷

(46)
 *[[Chelsu-ka [[Yenghi-ka t_i t_j ttaeli-n] salam_j-ul]
 NOM NOM hit-PNE person-ACC
 manna-n] sulcip_i]
 meet-PNE bar

³⁴ For relevant discussions, see Saito(1985), S.S. Hong(1985) and M.Y. Kang (forthcoming), among others, and the references therein.

³⁵ See S.S. Hong(1985), who also argues for the movement analysis of Korean relative constructions.

³⁶ As for the question of "what moves?," I will tentatively assume that it is the empty operator that moves, as is widely suggested. M.Y. Kang(forthcoming), however, suggests that what moves in Korean relativization is the head noun itself. In any case, this does not bear on the current discussion.

³⁷ Saito(1985) also argues that the movement of PPs is obligatory in the Topic and Relative constructions.

(lit.) 'The bar_i that Chelsu met the person_j that
 Yenghi hit t_j t_i.'

'The bar_i in which Chelsu met the person_j that
 Yenghi hit t_j t_i.'

The sentence (46) is supposed to mean that: 'Chelsu met the person that Yenghi hit and the place in which Yenghi hit the person is the bar.' The degree of the ungrammaticality of the Korean sentence (46) is very strong, which signifies that it is a violation of ECP, as well as subjacency. Without further discussion, I will henceforth assume that the relativization of Korean adjuncts is an instance of a syntactic (not LF) wh-movement.

Now observe that the relativization of PP adjuncts out of the reduced noun-complement structure is also ungrammatical, even though it is slightly better than the relative clause examples. Note:

(47)

*?[[Chelsu-ka [[Yenghi-ka t_i maekcu-lul masi-n]
 NOM NOM beer-ACC drink-PNE
 sasil]-ul al-ko iss-n-un] sulcip_i]
 fact-ACC know-PROG-PNE bar

'The bar_i that Chelsu knows the fact that Yenghi
 drank beer t_i.'

This fact is parallel to the English fact that the movement of the adjunct out of the noun-complement structure is not possible. Chomsky(1986b) accounts for this fact by saying that, in the structure (47), the CP must actually be a barrier, though it is so weak that the NP above it cannot inherit its barrierhood. Chomsky further assumes that the reason that the CP is a barrier is because the head noun

assigns an oblique Case to its complement. If this assumption is made, in the following representation of (47) (irrelevant details aside):

(48)

| | | | | |
|---------------|---------------|-----------------|----------|--------------------|
| [[Chelsu-ka | [[[[Yenghi-ka | [t ₁ | [t | maekcu-lul |
| NOM | NOM | | | beer-ACC |
| masi]VP]-n]CP | sasil]NP]-ul | al-ko | iss-n]VP | t ₂]VP |
| drink -PNE | fact -ACC | know-PROG | | |
| -un] | sulcip] | | | |
| -PNE | bar | | | |

there is a barrier, namely CP, between the trace t₁ (which is adjoined to the VP inside the complement of the head noun) and the trace t₂, which is adjoined to the matrix VP. Hence the trace t₁ is not antecedent governed and this is a violation of the ECP. Note, however, that this structure does not induce a violation of subjacency.³⁹

Now recall that the movement of the adjunct out of the relative clause induces a violation of Subjacency, as well as of the ECP. This was because, even though the relative clause-head noun structure and the noun-complement structure are similar in form, in the case of the relative clause-head noun structure, the head noun does not θ -mark the relative clause. Hence, in the case of the relative clause-head noun structure like (46), there would be two barriers between the original trace and the trace adjoined to the matrix verb⁴⁰ --- this is a violation

³⁸ In fact, there must a trace right after the verb al-ko 'know,' since we argue that the progressive construction is a VP-shell structure. We ignore this fact here.

³⁹ That is, assuming that subjacency means 1-subjacency.

⁴⁰ There might be a slight problem in this analysis, given a certain assumption about why the CP and NP cannot be adjoined to. We will discuss this problem in section 3.7.

of subadjacency. This is in addition to the ECP violation and, therefore, the degree of ungrammaticality in (46) is more severe.

Now let us go back to the NP-shell structure. We argued that the NP-shell structure and the noun-complement structure are similar in form, but the difference is that, in the NP-shell structure, the degenerate noun does not θ -mark its complement. If this is the case, then we would predict that extraction out of the NP-shell must be worse than extraction out of the noun-complement structure. This is because, in terms of the θ -marking property, the relative clause-head noun structure and the NP-shell structure are exactly parallel.

But it is crucial to note that this prediction is not borne out. Actually, the judgement is just the opposite. The following example is an instance of the adjunct extraction out of the NP-shell:

- (49)
- | | | | | |
|-------------|---------------|-----------|-----------------------|-----------|
| [[Chelsu-ka | [[Yenghi-ka | t_i | maekcu-lul | masi-n] |
| NOM | NOM | | beer-ACC | drink-PNE |
| kes]-ul | al-ko | iss-n-un] | sulcip _i] | |
| KES-ACC | know-PROG-PNE | | bar | |
- 'The bar_i that Chelsu knows that Yenghi drank beer t_i '

The judgement is that this sentence is not only far better than (46), but also much better than (47), which is an instance of the extraction out of the noun-complement structure. This sentence is actually well-formed.

This fact suggests that the NP-shell structures like (49) are characteristically different from either the relative clause structure or the noun-complement structure. We said above that one of the defining properties of the noun-complement structure is that the head noun assigns a θ -role to its complement. In this sense, then, the NP-shell is not a proper noun-complement structure. The extraction fact, namely that extraction out of the NP-shell is freer than that out of the noun-complement structure, bolsters this analysis. Furthermore, as far as the θ -marking by the head noun is concerned, the NP-shell structure must be likened to the relative clause structure. However, the fact that extraction out of the relative clause is utterly ungrammatical, while the extraction out of the NP-shell is perfectly well-formed, suggests that this analogy cannot be made.

In short, we had the following hierarchy of judgements for the relative clause, noun-complement structure and the NP-shell structure:

| (50) Construction type | Extraction out of it |
|------------------------|-----------------------------|
| (i) Relative Clause | Totally Ungrammatical (**) |
| (ii) Noun-complement | Ungrammatical/Marginal (*?) |
| (iii) NP-shell | Well-formed |

Given this fact, how must we analyze the NP-shell at the relevant level of structure where the extraction occurs? Clearly, when the complement of the matrix is just a clause with the complementizer

that in English, extraction of the adjunct out of this complement is perfectly possible. Note:

(51) How did you say that John fixed the car t?

Thus, the NP-shell is "as weak as" a complementizer at the level of the structure at which extraction occurs. Thus, we conclude that it *is* none other than a complementizer at the relevant level.

Summarizing, the NP-shell is represented as a kind of reduced noun-complement structure at some level of representation; However, at some other level, where the extraction facts are relevant, it must be analyzed as a complementizer. This is the gist of the idea we wish to defend in this chapter, which we already laid out in section 3.4. Incidentally, it must be noted that, in the case of the "true" reduced or non-reduced noun-complement structure, the head noun cannot be reanalyzed as (a part of) a complementizer, since it has a θ -role to assign. If we reanalyze it as a complementizer, this will presumably result in a deletion of a θ -role and this will be a violation of the Projection Principle and/or Recoverability of Deletion. Thus, within our framework, the reduced noun-complement structure and NP-shell structure have basically the same form at some level of representation; However, at an other level, they are radically different in form.

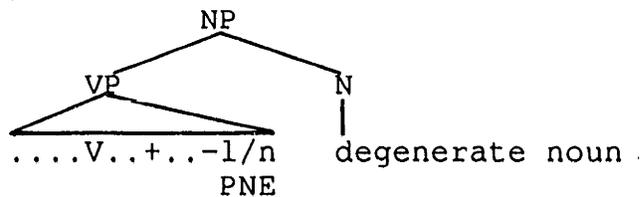
3.7. The case of the NP-shell for VP

Thus far, we have been mostly discussing the case where the NP-shell at some level is "reanalyzed" as a complementizer at some other level. This case was limited to the NP-shells for sentences. In this

section, we will consider the NP-shell for VPs and see how they must be analyzed at this other level.

In section 3.2., we have seen that the NP-shell *-ki* can appear at a VP in the VP-focus/Negation construction. In section 3.3., we mentioned that this can be represented as an adjunction to the category it is attached to or as a syntactic feature. This sort of representation was possible, mostly due to the fact that the NP-shell *-ki* is a bound morpheme, a suffix. In this section, we will see that the type of NP-shell we discussed in the last section, namely the NP-shell of the form $V...+ ..-n/l N$, also exists as an NP-shell for the VP. Thus, at least for this type of VP-shell, we must adopt the following representation:

(52)



Note that this type of structure can no longer be likened to a noun-complement structure, since the "complement" of the degenerate noun is a VP, not an S.

Below, I will try to show that this type of structure, even though we must assume it to exist at some level of representation, is not the proper representation at the level where, for example, syntactic extraction occurs. Since syntactic extractions occur between D-

structure and S-structure, I will in fact argue that the structure (52) is not a representation at either D-structure or S-structure.

The argument I have in mind involves an example which is a somewhat idiomatic expression including the meaning of the English auxiliary *can*. Observe the following sentence:

(53)
Chelsu-ka hakkyo-e ka-l su-ka iss-ta
NOM school-LOC go-PNE DN-NOM exist/have-DEC
`Chelsu can go to school.'

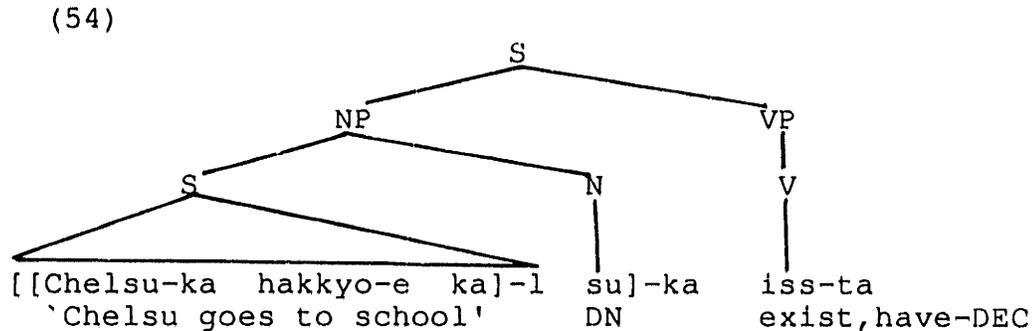
In (53), (-l) *su* is an NP-shell. The morpheme *su* is a degenerate noun (glossed as DN), which means something like 'way, means,' if it means anything at all. This degenerate noun appears uniquely in this kind of construction --- it does not show up in any other sentences. In this sense, the construction in (53) is idiomatic, i.e. it must be learned. However, of course, the idiomatic expressions must always be "housed" in a well-formed syntactic structure that can be generated, given the universal principles and given some parameters/rules within the particular grammar of the language.

That this morpheme is a noun is seen by the fact that it is preceded by the prenominal verbal suffix $-l^{41}$; Also it can be seen

⁴¹ As our earlier examples made clear, this suffix $-l$ is one of two prenominal suffixes in Korean. The other prenominal suffix is $-n$. But these two suffixes are not freely exchangeable. In some instances, only $-l$ may occur (This is the case of our example in (53)); in other instances, only $-n$ may occur. But there are additional instances where both of these may occur. In the last case, the presence of either $-l$ or $-n$ triggers different tense interpretations. This is the reason why we may consider this element to be INFL sometimes. But there is some sense in which this element may be considered to be a COMP. Hence we can view it as a CONFL (borrowing the terminology from Platzack(1983)), which indicates a category in which the COMP and INFL are merged.

from the fact that this morpheme is followed by the nominative Case -ka.

If we are too much impressed with the presence of the nominative Case at the NP-shell here, we may analyze the sentence (53) as having the following structure (irrelevant detailed omitted):



The structure in (54) suggests that the verb *iss-* is a main verb and its subject is a clause with the NP-shell (-1) *su*. In other words, the NP-shell here is the one for the sentence and, further, this sentence with the NP-shell is a sentential subject.

However, there are some reasons to believe that this analysis is not correct. First, recall that the NP-shell (-1) *su* and the verb *iss-* co-occur as a kind of an idiomatic expression. If we assume that the NP-shell (-1) *su* is a part of the sentential subject, we are essentially allowing part of the subject and the verb to form an idiomatic expression. This is incompatible with the observation offered by

Of course, there are instances of this pronominal morpheme that cannot be viewed as CONFL. In this case, we simply assume that this is a pronominal suffix.

Marantz(1984) that there are no subject-verb idioms.⁴² This fact is correlated with Chomsky(1981)'s argument that the subject θ -role is assigned compositionally by VP. Given Marantz's observation, we have a initial reason to believe that the analysis (54) is dubious.⁴³

But a stronger argument can be given against the analysis in (54) for the sentence under discussion. By as early as Ross(1967), it has been observed that extraction out of the sentential subject is banned.⁴⁴

⁴² It has been argued that there are some subject-verb idioms. One example was the following:

(i) The shit hit the fan.

However, it has been argued by Marantz that this is actually a *sentential* idiom. Note that the following sentences are bad:

(ii) The shit hit John.

(iii) The shit hit the air conditioner.

That is, the object cannot be chosen freely for this idiom. This shows that this is not an instance of subject-verb idiom, but is that of a sentential idiom.

It is clear that the Korean sentence in (54) is not a sentential idiom; This -l su-ka iss- construction does not force any particular choice of the subject or VP.

⁴³ In fact, there is one instance of Korean construction in which it may be argued that it is a subject-predicate idiom. An example is the following:

(i) Chelsu-ka pae-ka aphu-ta
 NOM stomach-NOM sick-DEC

'Chelsu has a stomach-ache.'

This sentence is one instance of what is sometimes called "Double Nominative Construction." This sentence may mean 'Chelsu is jealous,' in which instance the Korean word pae 'stomach' and the adjective aphu- 'sick' form an idiomatic expression. Note that the word pae 'stomach' is in the nominative. Hence, it can be claimed that there is a subject-verb idiom in Korean.

The question is then; Is the second nominative NP pae 'stomach' a subject in its proper sense of the term? I have argued in (1987) that it is not. For details, see M.Y. Kang(1987). See also J. H.S. Yoon(1987) for the same conclusion.

⁴⁴ In general, extraction out of any subject, whether sentential or not, is banned. This is sometimes called the "Subject Condition." Huang(1982) reformulates it as a principle

This was termed a "Sentential Subject Condition." One example in English to this effect is the following:

(55) *Who does [that John met t] bother you?

The same fact can be observed in Korean. The relevant example can be given with the relative construction, where I argued that there is a syntactic movement.

(56) *[[[[[Chelsu-ka t_i manna-n] kes-i] Yenghi-lul
 NOM _i meet-PNE DN-NOM ACC
 koylophi-n-un] salam,_i]
 bother-IMP-PNE person_i
 `The person_i that [that Chelsu met t_i] bothers
 Yenghi ']

Note that here too, the sentential subject is with the NP-shell (-n) kes, which is a by now familiar NP-shell. Within the Barrier's framework, this ungrammaticality is accounted for by the subjacency, since the movement from inside the sentential subject will cross two barriers, namely the CP of the sentential subject and the IP of the matrix, which inherits the barrierhood from the CP of the sentential subject.

To be sure, the ungrammaticality of (56) is not due to the fact that the matrix VP has an object. The ungrammaticality of the following sentence shows this:

called "Condition on Extraction Domain(CED)," incorporating the observation that extraction out of adjuncts are also impossible (Adjunct Condition). Chomsky(1986b) accounts for these conditions within Barrier's framework.

(57) *[[[[Chelsu-ka t_i manna-n] kes-i]
 NOM meet-PNE DN-NOM

 sasil-i-n-un] salam_i]
 fact-COP-IMP-PNE person_i]

'The person_i that [that Chelsu met t_i] is true'

Observe now that extraction out of the "sentential subject" of the construction like (53) is perfectly possible (assuming, for the sake of argument, that the construction like (53) involves the sentential subject):

(58) [[[[Chelsu-ka t_i manna-l] su-ka]
 NOM meet-PNE DN-NOM

 iss-n-un] salam_i]
 exist,have-IMP-PNE person_i]

'The person_i that Chelsu can meet t_i'

(59) [[[[Chelsu-ka t_i ka-l] su-ka]
 NOM go-PNE DN-NOM

 iss-n-un] hakkyo_i]
 exist,have-IMP-PNE school_i]

'The school that Chelsu can go (to).'

These sentences are simply perfect, as perfect as the English glosses above. Just for completeness, let me cite the following example, where a pure adjunct PP is extracted. This sentence is also perfectly grammatical.

(60)
 [[[[Chelsu-ka t_i Yenghi-lul manna-l] su-ka]
 NOM ACC meet-PNE DN-NOM

 iss-n-un] sulcip_i]
 exist,have-IMP-PNE bar

(lit.) 'The bar_i that Chelsu can meet Yenghi t_i'

The perfectness of these examples suggest that the structure indicated above is not correct: This (-1) *su-ka iss-* structure does not involve a sentential subject.

In fact, there is one other alternative to this analysis: One might pursue the possibility that the NP-shell in these examples is still an NP-shell for a sentence and that this clause is actually a sentential complement of the verb *iss-* 'exist, have.' This is not implausible, given the fact that, when this matrix verb *iss-* means 'have,' it can take a nominal complement, as we discussed in the last chapter, and that, in this case, the complement assumes nominative Case. Note, again, the following example:

- (61) *Chelsu-ka chaek-i iss-ta*
 NOM book-NOM have-DEC
 `Chelsu has a/the book.'

Given this fact, there is nothing wrong with the fact that a complement assumes nominative Case (cf. the default Case strategy in Korean).

In this analysis, then, the structure for the sentence (53) is as follows:

- (62)
 Chelsu-ka [[*pro* *hakkyo-e* *ka-l*] *su-ka*]
 NOM school-LOC go-PNE DN-NOM

 iss-ta
 have-DEC

 `Chelsu can go to school.'

We can give the following evidence against this kind of representation. In the last chapter, we noted that, when the negative polarity item *amuto* appears in the object position, the negation marker must be within the same clause. This is the general fact in Korean, and we used it to show that the Korean progressive construction is not bi-clausal. The same test can be applied to the construction under discussion. Note the following sentence:

(63)
 Chelsu-nun [[pro amuto manna-l] su-ka]
 TOP no one meet-PNE DN-NOM

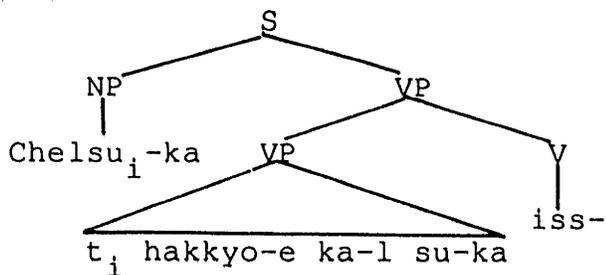
 eps-ta
 not.have-DEC

 `Chelsu cannot meet anybody.'

In (63), the matrix verb *eps-* 'not have' is a suppletive form for negation of the verb *iss-*. If the structure is as indicated in (62), the negative polarity item *amuto* is within the embedded clause and what is negated is the matrix verb *iss-*. Given the condition that the *amuto* in the object position requires the negation marker to be within the same clause, it is predicted that this sentence is ungrammatical. However, this sentence is perfectly grammatical. This, then, shows that the structure indicated in (62) is not the correct one.

We will argue that the construction under discussion involves the VP-shell we discussed in the last chapter. Thus, we will roughly assume the following structure:

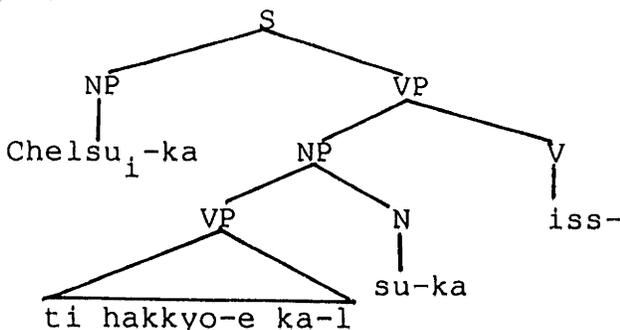
(64)



If this assumption is made, there would be no problem for extraction from within the lower VP; And the fact about the negative polarity item *amuto* can be explained, since the "matrix" verb *iss-* and *amuto* will belong to the same clause.

Of course, the more precise structure for (64) is the one where the lower VP is "covered" by the NP-shell. That is, the following structure:

(65)



This is an instance of the NP-shell of the type $V + \dots -l/n N$ that appears at the VP. As we have assumed thus far, we want this kind of literal projection of NP-shells to be represented at a certain level. Otherwise, we are not correctly projecting all the necessary syntactic categories in syntax.

Though the representation like (65) is certainly necessary for the NP-shell for the VPs, it does not seem to be the desirable structure for

the levels D-structure and S-structure. In the remainder of this section, I will show why.

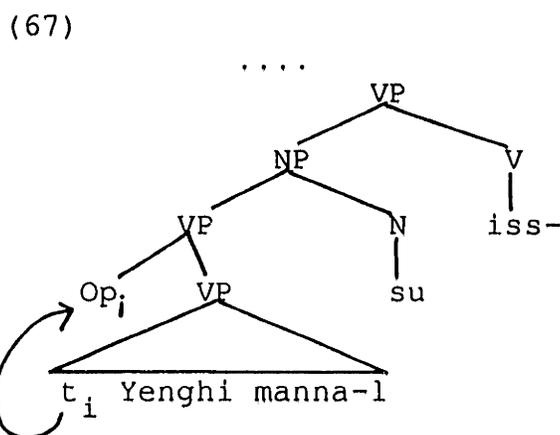
First, with the structure (65), there may still be some problem in extraction. Recall that the following extraction of the adjunct PP was perfectly possible in this structure:

(66)

| | | |
|---------------------------|--|-----------------------|
| [[Chelsu _j -ka | [[[t _j t _i Yenghi-lul manna-l], _{VP} | |
| | NOM | ACC meet-PNE |
| su-ka] _{NP} | iss-n] _{VP} -un] | sulcip _i] |
| DN-NOM ^{NP} | exist, have-IMP-PNE | bar |

(lit.) 'The bar_i that Chelsu can meet Yenghi t_i'

Recall Lasnik & Saito(1984) and Chomsky(1986b)'s assumption that each intermediate trace of the adjunct must be properly governed. Let us now follow the trajectory of the movement of the adjunct (or its empty operator), starting from its original position, given the structure (65). At the first step, the adjunct (or its empty operator) will adjoin to the lower VP:



This does not create any problem. The question is the next step: Note that the verb of the VP-shell is not a verb that θ -marks its

complement, as we discussed in chapter 2. Hence, the NP of the NP-shell is not θ -marked. Therefore, it is not L-marked, either, and is a barrier. Thus, the only way to avoid the ECP violation is to adjoin the empty operator to the NP. However, the category NP is not a category that can be adjoined to, as assumed in Chomsky(1986b).

This problem can be avoided, if we assume, as Chomsky (who attributes this observation to Kyle Johnson) does, that the stipulation that the NP and CP can't be adjoined to is derivable from the assumption that, if some element adjoins to the NP or CP, the NP and CP become "invisible" for θ -assignment from outside. If we adopt this assumption, the NP of the NP-shell can be adjoined to, since it does not receive a θ -role.

However, this solution involves a well-known problem. It seems that the stipulation that the NP and CP can't be adjoined to cannot totally be derived from the assumption concerning θ -marking from outside. Recall our discussion about extraction out of relative clause. We can illustrate this with the following English sentence:

(68)
 ?*Who_i did John [t₂ [meet [the woman [who_j [t_j
 [t₁ [loves t]]]]]]]?

This sentence is judged to be very marginal or ungrammatical. This ungrammaticality is attributed to the subjacency violation, since the movement of *who* from the position of t_1 to the position of t_2 crosses two barriers, namely the CP of the relative clause and the NP above it, which inherits the barrierhood from the CP. But, this analysis

crucially relies on the assumption that the CP of the relative clause cannot be adjoined to. But note that this assumption is not valid if we adopt Kyle Johnson's suggestion. That is, we have seen earlier that the difference between the relative clause and the noun-complement structure is that, in the relative clause, the CP is not assigned a θ -role. Hence, the CP of the relative clause in (68) should be freely adjoinable, voiding the subjacency violation.⁴⁵

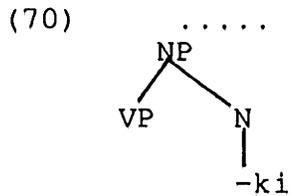
One way to avoid this consequence is to simply stipulate that NP and CP cannot be adjoined to. I will advocate this solution for the purpose of this chapter. Returning to the problem concerning the structure (67), if this solution is adopted, the empty operator cannot adjoin to the NP-shell. If so, this will yield an ECP violation --- even though, in reality, the extraction in (66) is perfectly possible as the perfect grammaticality of the sentence shows. I take this to be an argument against representing the NP-shell structure as is in (65) as a representation of the D- or S-structure.

There is one further fact that suggests the undesirability of NP-shell structure as a D- or S-structure representation. We have seen in chapter 2 that, in the VP-focus construction, there can be an overt movement of the verb from within the lower VP to the verb position of the VP-shell. The example was as follows:

⁴⁵ As Chomsky discusses in *Barriers*, a similar problem exists concerning the adjoinability to the adjunct PPs.

- (69)
 Chelsu-ka ku chaek-ul ilk-ki-nun ilk-ess-ta
 NOM the book-ACC read-KI-CON read-PAST-DEC
 'Read the book, Chelsu did...'

If we represent the NP-shell structure for *-ki* as in the following, which we want to do, maintaining the uniformity among the NP-shells:



and if this is the representation of the D- or S-structure, there will be a violation of the Head Movement Constraint(HMC) (cf. M. Baker(1985b)) when the verb within the lower VP moves to the verb position of the VP-shell. This is because there is a closer head *-ki* intervening between the verb position of the VP-shell and the verb position within the VP. This intervening head will prevent the moved verb at the VP-shell from governing into its original position, due to minimality.

One could argue, following Koopman(1984), that we can dispense with this problem by assuming that the presence of the resumptive verb in the original position can void the HMC effect, or ECP. But there is some reason to believe that this approach is incorrect.

It must be observed that, in some VP-focus constructions, this movement is impossible. The following VP-focus constructions where the V-movement did not occur are all grammatical:

(71) a. Chelsu-ka pap-ul mek-ki-kkaci ha-n-ta
 NOM meal-ACC eat-KI-even do-IMP-DEC

'Chelsu even eats the meal.'

b. Chelsu-ka pap-ul mek-ki-man ha-n-ta
 NOM meal-ACC eat-KI-only do-IMP-DEC

'Chelsu only eats the meal.'

These are clearly variants of the VP-focus construction. These have identical syntactic format as the "standard" VP-focus constructions we have seen in the last chapter. The difference between these sentences and VP-focus constructions we have seen so far is that the focus particles here are -kkaci 'even' and -man 'only', not -nun.

Now, in this type of VP-focus construction, V-movement is impossible:⁴⁶

(72) a. *Chelsu-ka pap-ul mek-ki-kkaci mek-n-ta
 NOM meal-ACC eat-KI-even eat-IMP-DEC

'Chelsu even eats the meal.'

b. *Chelsu-ka pap-ul mek-ki-man mek-n-ta
 NOM meal-ACC eat-KI-only eat-IMP-DEC

'Chelsu only eats the meal.'

This fact can be explained in the following way: In (72), the focus particles -kkaci 'even' and -man 'only' act as intervening heads, preventing the moved verbs at the VP-shell from governing into their original positions. Then, why was such movement possible in the case of the VP-focus construction involving the focus particle -nun? I'd like

⁴⁶ The following examples were also observed by D.W. Yang (1976a).

to argue that the difference between the focus particles *-kkaci* 'even' and *-man* 'only' on the one hand and the focus particle *-nun* on the other is that the former has clear semantic content while the latter does not. That is, *-nun* is syntactically inert.

The examples in (72), then, suggests that we must maintain the HMC that the moved verb in the VP-shell must govern into its original position, despite the fact that it is occupied by the resumptive verb. This suggests that, in order for the V-movement ever to be possible in the "standard" VP-focus construction, the NP-shell *-ki* must not behave as an independent head. This is another piece of argument for the position that the NP-shell structure (70) is not the representation that is visible at either D- or S-structure.

Summarizing, I wish to argue that the NP-shell for VPs must not be present at the level D- or S-structure, even though they are present at some other level of representation. I wish to argue that they remain in D- or S-structure just as syntactic features, much like Case markers in Korean. Assuming Chomsky(1981) where Case markers are understood to be syntactic features,⁴⁷ overt Case markers in Korean are syntactically significant elements, but do not have any categorial status. The NP-shells for VPs are entities like these in D- and S-structure representation.

⁴⁷ See, however, Lumsden(1987), who assumes that a Case marker is a functional category heading its own projection.

This state of affairs of the NP-shell for VPs is in contrast to that of the NP-shell for sentences, which, as I argued in the last section and before, involves reanalysis of the shell as complementizer at the D- and S-structure representation.

3.8. The Prenominal Ending -l/n

Thus far, we have been concentrating on the NP-shell. In this section, we will offer some discussion concerning the prenominal ending -l/n. We will see below that the facts involving this suffix provide a nice confirmation to the thesis we want to maintain in this chapter.

As we mentioned earlier, the common property of all the instances of this suffix is that (i) It is one of the suffixes that morphologically closes off the verb; (ii) It must occur at the end of the verbal complex when it is string-adjacent to the following noun.

Within the syntactic structure, this suffix occurs in the following types of constructions:

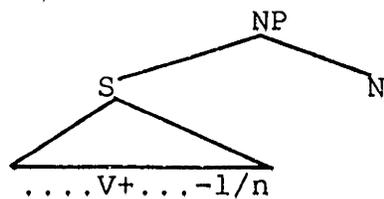
- (73) (i) Relative Clause-Head Noun structure
- (ii) Reduced Noun-complement Structure
- (iii) NP-shell for the sentence
- (iv) NP-shell for the VP

In each of these constructions, a noun is involved. Since the Korean language is head-final, the noun always follows the relative clause, the complement clause of the noun-complement structure, the sentence the N is the NP-shell of, or the VP that it is the NP-shell of. Note that

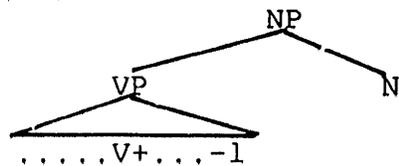
the fact that the N of the NP-shell follows the sentence or VP that it is the NP-shell of suggests that, at some level of representation it is a head. Furthermore, within each sentence or VP that precedes the nominal in (73), the verb complex will occur at the end, since, again, Korean is head-final. What may be considered to be INFL or COMP is affixed to this verb. The prenominal suffix is, then, at the final position of the verb complex, immediately preceding the nominal in (73).

Schematically, then, the constructions in (i,ii,iii) of (73) involve the structure (74) and the construction (iv) involves the structure (75), as is familiar by now:

(74)



(75)



Let us now consider the categorial status of this prenominal ending in the syntax. First consider the relative clause and reduced noun-complement structure (irrelevant details omitted):

(76) a. Relative Clause:

[[Chelsu-ka sal-ess-te-n] cip]
NOM live-PAST-PAST-PNE house

'The house that Chelsu lived'

b. Reduced Noun-Complement Structure

[[Chelsu-ka pap-ul mek-ess-te-un] sasil]
NOM meal-ACC eat-PAST-PAST-PNE fact

'The fact that Chelsu ate the meal'

In this instance of the prenominal ending (PNE), it can be regarded as a complementizer. Note that the INFL within the verb complex precedes this prenominal suffix. One indirect piece of evidence for this comes from the following fact. As we discussed in section 3.5., the element *-nun* of the following non-reduced noun-complement structure must be viewed as a full-fledged complementizer and nothing else:

(77) [[Chelsu-ka cuk-ess-ta-nun] somun]
NOM die-PAST-DEC-COMP rumor

'The rumor that Chelsu died.'

The element *-nun* here, which is closely related in phonetic form to the prenominal ending *-n*, is not part of the verbal complex. That is, it does not serve to morphologically close off the verb. This latter requirement is fulfilled by the declarative ending *-ta*. However, the function of *-nun* is fairly close to the prenominal ending; it must occur when a full clause precedes a noun. (Actually this situation occurs only in non-reduced noun-complement structure.) We might call this

element *-nun* a "prenominal complementizer."⁴⁸ The presence of this type of complementizer provides some ground that the prenominal suffixes may be analyzed as complementizers at some level.

As a matter of fact, this prenominal ending may be viewed as INFL, also. As noted above in (74), there are two prenominal suffixes, namely *-l* and *-n*.⁴⁹ The choice between these suffixes triggers differing tense interpretations. Note:

- (78) a. [[Chelsu-ka sa-n] chaek]
 NOM buy-PNE book
 `The book that Chelsu bought`
- b. [[Chelsu-ka sa-l] cheak]
 NOM buy-PNE book
 `The book that Chelsu will buy`

These two relative clauses are exactly identical in form, except that in (a), the prenominal suffix is *-n*, while in (b), it is *-l*. This difference produced the difference in tense interpretations, as the glosses indicate.

Thus, it is possible to analyze the prenominal endings as CONFL, which means a category in which the COMP and INFL are merged. This terminology is due to Platzack(1983).

⁴⁸ D.W. Yang(1976b) called it an "appositive complementizer."

⁴⁹ Note that there is no "prenominal complementizer" that is similar in phonetic form to the prenominal suffix *-l*. The "prenominal complementizer" is always *-nun*. This confirms our view that the element *-nun* is an independent complementizer, not a complementizer-like prenominal suffix.

Now, let us consider the occurrence of the prenominal suffix in the NP-shell structure for sentences. The following was a typical example:

- (79)
- | | | | | |
|--------|-------------|-------|--------------|---------|
| na-nun | [[Yenghi-ka | nolae | pulu-n-un] | kes-ul] |
| I-TOP | NOM | song | sing-IMP-PNE | DN-ACC |
- tul-ess-ta
hear-PAST-DEC
- 'I heard Yenghi sing a song.'

We have shown that the NP-shell *kes* here must be analyzed as a complementizer, at the relevant level of representation (i.e. D- and S-structure). Then, what is the status of the prenominal suffix at the same level of representation? There are several possible analyses: We may assume that it is simply inert and has no status, except that it is just a syntactic feature; Or we may assume it to be part of the complementizer; Thirdly, we may assume it to be an INFL.

I will assume the third option, since, as the following contrast shows, the prenominal endings at the NP-shell also contribute to the tense interpretation of the embedded sentence.

- (80)
- | | | | | | |
|----|--------|-------------|----------|---------|---------|
| a. | na-nun | [[Chelsu-ka | chaek-ul | sa-n] | kes-ul] |
| | I-TOP | NOM | book-ACC | buy-PNE | DN-ACC |
- al-ko iss-ta
know-KO exist,have-DEC
- 'I know that Chelsu bought a/the book.'
- | | | | | | |
|----|--------|-------------|----------|---------|---------|
| b. | na-nun | [[Chelsu-ka | chaek-ul | sa-l] | kes-ul] |
| | I-TOP | NOM | book-ACC | buy-PNE | DN-ACC |
- al-ko iss-ta
know-KO exist,have-DEC

'I know that Chelsu will buy a/the book.'

The two sentences above are point-to-point identical, except that in (a), the pronominal suffix within the NP-shell is *-n*, while it is *-l* in (b). This difference contributes to the tense interpretation of the embedded clauses, as the glosses suggest. Hence, I will assume that the pronominal ending within the NP-shell for sentences will exclusively be analyzed as INFL at the relevant level.

Now, let us examine the instance of the pronominal ending in the NP-shell for the VP. The example was the following:

(81)
Chelsu-ka [[hakkyo-e ka-l] su-ka]
 NOM school-LOC go-PNE DN-NOM

iss-ta
exist, have-DEC

'Chelsu can go to school.'

We have suggested in the last section that the NP-shell here has no independent syntactic status as a category. It is simply inert, functioning as a syntactic feature. Then, the pronominal suffix, too, must be inert, having no syntactic categorial status. Note that the pronominal suffix here is always *-l*, disallowing the occurrence of the other pronominal suffix *-n*. This suffix has no contribution to the tense interpretation in this sentence. Hence, our claim is well justified.

Summarizing, we have seen in this section that the pronominal suffix can be analyzed as COMP or CONFL, or as INFL, or can simply be

inert. However, at some other level of representation, the fact that this suffix precedes the nominal must be captured. This state of affairs, then, is parallel to the NP-shell structures: They are all NP-shells at some level of representation, but they may be analyzed as complementizers or may be inert, at some other level of representation.

Then, there are two remaining major questions: (i) What are the levels of representations involved? (ii) How is the mapping from one level to the other done? I will try to answer these questions in the next section.

3.9. A Speculation: Existence of Pre-D-structure

As the discussion above made clear, I assume that the level at which the NP-shells are analyzed as either complementizer or a syntactic feature and at which the prenominal suffix is analyzed as either CONFL or INFL or a syntactic feature is the level at which syntactic extraction occurs. This level is, obviously, the D-structure (More precisely, the extraction occurs between D- and S-structure). Then, what is the level at which the NP-shell is just an NP-shell and the prenominal suffix is uniformly a verbal suffix that occurs when the nominal follows it?

I would like to conjecture that it is a level that I will call "Pre-D-structure." I will further speculate that, at this level, only the lexical categories, i.e. N, V, A, P, are projected, in accordance with the X'-

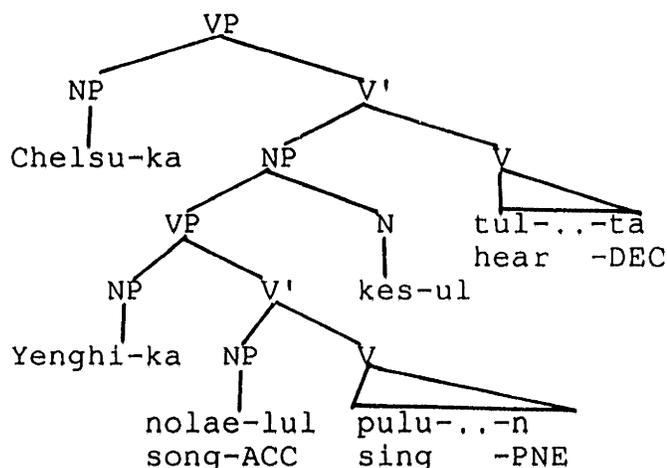
theory. Assuming, as we have, that subjects are generated within VP, all the necessary arguments will be projected at this level. What is absent at this level of representation are the functional categories like COMP and INFL.

For English, the existence of this level has minimal consequence. In English, the structure that is represented at this level is the structure that is like the D-structure, except that all the true functional categories are stripped off.

For Korean, however, the structure represented at this level may be significantly different from the one that is represented at the D-structure. At this level, all the NP-shells are literally projected, in the following manner: The sentence that has a sentential complement with the NP-shell will look like the following:

- (82)
- a. Chelsu-ka [[Yenghi-ka nolae-lul pulu-n-un]
 NOM NOM song-ACC sing-IMP-PNE
 kes-ul] tul-ess-ta
 DN-ACC hear-PAST-DEC

b.



A sentence that has the NP-shell for the VP will look like the following:

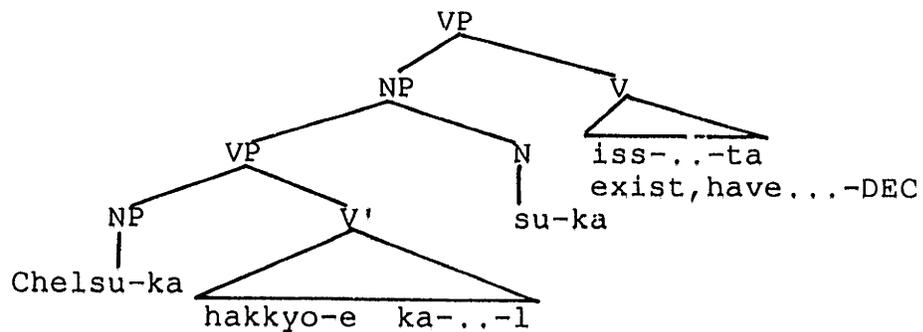
(83)

a. Chelsu-ka [[hakkyo-e ka-l] su-ka]
 NOM school-LOC go-PNE DN-NOM

iss-ta
 exist, have-DEC

'Chelsu can go to school.'

b.



I will assume not only that the N projections are literally projected at this level, but also that the morphological closers must be represented at this level. That is, at this level, syntactic word boundaries are all defined. However, some affixes that are true functional categories like INFL may not be projected here, and hence, there might be some empty "slots" within the word (which are represented as dots above), which are to be filled during the mapping from this level to the D-structure. Thus, I will assume that the following principle, which we cited in chapter 2, is operative at this level:

(84) *Morphological Closure*

Bound predicates must be "closed off" by a set of suffixes belonging to the category C.

I will further assume that Case-marking (or assumption of the default Case) occurs at this level, too. This is necessary because, if this is not assumed, Case marking of some NP-shells cannot be guaranteed, since at D- or S-structure, they may not be visible for Case-marking.

I will further speculate that a concept that may be called *morphological selection* may be available at this level. A category α is said to *morphologically select* a category β iff_{def} α selects the *morphological property* of β . The *morphological property* of a category α is defined to be the property that is shown by the "morphological closer" of the category α . And the selection itself is mediated by the notion *government* as defined in chapter 1. According to this definition, if α governs β , it will also govern the head of α . By this morphological selection, the NP-shells will correctly select the prenominal suffix of the verb it governs. Without this notion of the morphological selection available at this level, the prenominal suffixes of some NP-shells cannot be guaranteed to be present, since some NP-shell will lose their nominal status at the D- or S-structure.

Note that this morphological selection must be viewed as a selection on the categorial basis only. For example, a noun may morphologically select a verb and thereby make sure that the verb has the correct prenominal suffix. In this selection process, only the categorial status of the "selecter" and the "selectee" matter. In this sense, it must be distinguished from the semantic selection occurring in syntax.

Furthermore, I will assume a notion *idiomatic selection*, which is related to morphological selection, but is different from it. In this process, a category requires a certain morphological shape of the category that it governs. These two categories, then, form a *morphological idiomatic expression* in this way. This type of selection is required in order to guarantee the correct choice of the "morphological closer" of the verb it governs. For example, as we saw in chapter 2, the verb *iss-* 'exist, have' must select the suffix *-ko* for the verb within the lower VP under the VP-shell. The process like this, I think, is different from the syntactic, or semantic selection.

To summarize, there may be other concepts available at this level, but, as far as this chapter is concerned, the following concepts must be available at this level:

- (85)
- (i) X'-theory
 - (ii) Case theory
 - (iii) Morphological Closure
 - (iv) Morphological Selection
 - (v) Idiomatic Selection
 - (vi) Government

I will leave it for future study the further characterization of the level.

Now we ask the final question: What is the principle underlying the mapping from this "Pre-D-structure" to the D-structure? I would like to speculate that this mapping is accomplished via functional considerations. That is, there is no real "formal" connection between this level and the D-structure of the sort that exists between, say, the D-structure and S-structure. Thus, during this mapping, some NP-

shells are functionally determined to be a complementizer and others are functionally determined to be just a syntactic feature. Similarly, the prenominal suffixes are functionally determined to be a CONFL, or an INFL or a syntactic feature.

This does not mean, of course, that the Pre-D-structure is a level that is not linguistic and that the representations at that level are not formally constructed. As we have seen above, this level conforms to various principles that are operative at other levels of the grammar.

Furthermore, even though the mapping from the Pre-D-structure to D-structure is guided by functional considerations, one leading principle for mapping between levels must be observed: the Projection Principle. Note that the functional determination of the NP-shells as other categories like COMP or as syntactic features does not affect this principle, since the NP-shells are not θ -assigners, even though they are lexical categories. Note, further, that the Projection Principle guarantees that the head noun of the reduced noun-complement structure does not experience the fate of the NP-shells, since the head noun of the noun-complement structure assigns a θ -role, and this θ -role cannot be deleted.

PART 2

PROBLEMS OF ENUNDA CONSTRUCTION

CHAPTER 4

"SPECIFIER-BINDING" AND DONKEY ANAPHORA

4.1. Introduction

In this first chapter of Part 2, we turn our focus of inquiry to the Korean construction involving two discontinuous elements *enu...na*. This chapter will discuss variable binding fact involved in this construction. We will see below that this construction corresponds to what is often called "donkey" sentence and what I will call "Specifier-Binding" construction. We will argue that this Korean construction supports Haik's "Indirect Binding" framework, a framework developed to account for variable binding in donkey sentences.

This chapter is organized as follows: In 4.2., we will discuss basic problems involved in variable binding; in 4.3., a partial review of the proposals concerning "Specifier-Binding" and donkey anaphora phenomena will be offered; section 4.4. will introduce basic properties of the Korean *enu...na* construction; in the final section, section 4.4., we conclude that the Korean data supports the Indirect Binding framework, with some extensions to it.

4.2. Variable Binding

It is a well-accepted assumption that pronouns related to quantified NPs in certain structural configuration may be interpreted as bound variables. When a pronoun functions as a bound variable, its semantic value is determined by the quantifier it is related to. A typical sentence that contains a pronoun that functions this way is the following:¹

(1) *Everyone* loves *his* mother.

In (1), the italicized *everyone* is a quantifier and the pronoun *his*, also italicized, is a bound variable. Note first that, even though the quantifiers like *everyone* or *someone* are semantically quite distinct from names or definite descriptions like *John* or *the woman*, natural languages apparently did not develop a cross-referencing device specialized only for quantifiers. That is, the pronoun *his* in (1), which is referentially dependent on a quantifier, is a pronoun that is also used to cross-refer to names or definite descriptions like *John* or *the man* in English,² for example, as in the sentence (2):

(2) *John* loves *his* mother.

To my knowledge, this is true cross-linguistically.

¹ In this chapter, italics in examples will be used for coreference of two expressions, as long as no confusion results.

² Reinhart(1983a) argues that pronouns, even when they cross-refer to referential expressions, can be viewed as bound variables, when their antecedent c-commands them. One might view that the Korean anaphor *caki* is like a pronominal and, furthermore, that it behaves like a bound variable in many cases. This view deserves a more detailed discussion, but I do not pursue it here.

This does not mean, however, that the distribution of the pronouns functioning as bound variables and the distribution of the pronouns referring to the names or definite descriptions exactly overlap. One important constraint for the pronoun functioning as a bound variable is that it must be linked to a c-commanding³ quantified expression it is a bound variable of (cf. Reinhart(1976), Chomsky(1975b), Higginbotham(1980a,b), among others).^{4, 5} The following sentences illustrate this point:

- (3)
- a. *The girl who kissed *every boy* liked *him*.
 - b. *Everyone* loves *his* mother.
 - c. **Everyone* went to the party, and he had a good time.

In (3a), the pronoun *him* is not c-commanded by its quantifier antecedent *every boy* and, consequently, its bound variable construal is blocked. The pronoun in (3a) cannot be used co-referentially either, since the quantifier has no referential force. Hence, it must refer to some person outside the sentence. However, in (3b), the pronoun is properly c-commanded by the quantified expression

³ For the notion of *c-command*, see chapter 1.

⁴ Outside the REST framework, this assumption was sometimes denied, Cf. Bach & Partee(1980), among others.

⁵ Some other languages may have other restrictions on the bound variable construal. For example, it has been reported by Hoji(1985) and Saito & Hoji(1983) that the Japanese pronoun *kare* cannot function as a bound variable in any context. Also, Montalbetti(1984) argues that, in Spanish, an overt pronoun cannot be directly linked to a quantifier, even though it can be indirectly linked to it via an empty pronoun.

S.S.Hong(1985) and H.S.Choe(1988) argue that Korean pronoun *ku* also cannot function as a bound pronoun, as in Japanese. But, as I will discuss shortly, the judgement of the author and other Korean native speakers consulted differs from S.S.Hong and H.S.Choe.

everyone, and it may function as a bound variable. In (3c), the quantifier and the pronoun are in different clauses. Since the c-command relationship does not hold, the bound variable reading is blocked.

Thus, we'd like to defend the following restriction on the bound variable construal of the pronouns:

- (4)
A pronoun must be c-commanded by its binder in order to be interpreted as a bound variable.

As we can see in the examples in (3), we have been tacitly assuming that this condition holds at a level that is close to the surface structure --- say, at S-structure.

There are, however, several typical examples that threaten the validity of the restriction in (4). Note the following examples:⁶

- (5) *Every boy's mother loves him.*
(6) *Every man who owns a donkey beats it.*⁷

⁶ I deliberately left out the "inverse-linking" structures of May(1977,1985) like the following:

- (i) *Someone in every city hates it.*

The reason is that, in Korean, this kind of structure does not exist and is assimilated to the "Specifier-Binding" structure like (5) in the text.

⁷ The following type of sentences had also been called donkey sentences:

- (i) *If a man owns a donkey, he beats it.*
(ii) *If someone is in Athens, he is not in Rhodes.*

However, Korean data do not present any interesting facts about this type of sentence. It is my view, to be defended in the text, that this type of sentence is quite different in nature from the donkey sentences involving relative clauses, even though the interpretations of both of these types of donkey sentences are parallel in some respects. Thus, when I say donkey sentences without qualification in the text, it will refer to the

In both cases, the pronouns seem to be able to behave like bound variables. In (5), there is an interpretation where the reference of *him* co-varies with the choice of *every* (Let us call this type of sentences with this interpretation "Specifier-Binding" constructions, for lack of terminology (this term due to Reinhart(1987))); The sentence (6) has an interpretation in which the indefinite *a donkey* is within the scope of *every man* and the choice of *a donkey* varies with the choice of *every man*. In this reading, the choice of *it* co-varies with the choice of *a donkey* and thus it behaves like a bound variable.

The problem of the examples in (5) and (6) is that, even though the pronouns there behave like bound variables, they are not c-commanded⁸ by their quantifier antecedents. Thus this is a challenge to the restriction on bound variables in (4) we wished to defend.

One widely assumed solution for the problem posed in (5) is to argue that the condition (4) applies after Quantifier Raising (QR). QR, as proposed by May(1977,1985), is a rule that occurs at LF and that moves the quantifiers from their in-situ positions to the position adjoined to the maximal projection S. (Or NP or VP, according to May(1985)). The major merit of QR is that, given this rule, we are able to define the scope of quantifiers in configurational terms.⁹

donkey sentences of the relative variety. For a good review of both of these kinds of donkey sentences, readers are referred to Heim(1982,1987).

⁸ We mean the original definition of c-command, as we defined in the chapter 1.

Whether or not QR is justified in grammar is not our concern here. If we had QR, it will raise every or every boy in (5) to the adjunction position to S. Since it will c-command the pronoun from this position, we can still maintain the condition (4) for the sentence (5), assuming that this condition applies after QR.

Even though we granted that QR exists for independent reasons, the assumption that the condition (4) applies after QR, however, has certain undesirable consequences, as discussed in Reinhart(1987) and Haik(1984). To avoid these consequences, there had been attempts to solve this problem while still assuming that the condition (4) applies at S-structure: cf. Reinhart(1987).¹⁰ We will discuss these problems in a later section.

Let us now turn to the donkey sentences like (6). Note that the problem posed by (6) cannot simply be solved by adopting QR. To see this, let us first assume that the indefinite a donkey in (6) is a quantifier and is subject to QR. But, the QR of the indefinite a donkey does not lead the indefinite to a position that c-commands the pronoun in (6), since QR is assumed to be clause-bound and the indefinite a donkey is embedded within the relative clause.¹¹ Note

⁹ QR is not assumed by all theories. One noted critic of the QR is Edwin Williams, cf. Williams(1986) and Riemsdijk & Williams(1981). In this thesis, we will not present any argument for or against the existence of QR.

¹⁰ The approach of Higginbotham(1980a,b) is also very close to this attempt.

¹¹ In fact, the problems involved in donkey sentences are not limited to this scope problem. The major problem of donkey sentences is that the indefinite a donkey may be interpreted as having universal force. That is, the sentence (6) has a reading in

that the assumption of the clause-boundedness of QR predicts correctly in (3a), where the bound variable reading is blocked. Hence, we must search for alternative solutions.

There are several types of solutions to this donkey problem. Since the indefinite antecedent cannot bind the pronoun in the sentence (6), researchers came to re-examine either the properties of the indefinites or the properties of pronouns or both. In this line of research, some researchers concluded that what we have to give up is the assumption that the pronoun in (6) is a bound variable. Parsons(1978), Cooper(1979), Evans(1980) and Heim(1987), among others, argue that the pronoun here is an E-type and must be understood as a definite description, rather than a bound variable; and that the antecedentship of this pronoun should be determined in pragmatic terms. On the other hand, Hornstein(1984) argues that the indefinite *a donkey* in donkey sentences may have a quasi-generic sense, allowing the pronoun in the sentence to be a plain instance of referential use.

According to another approach, the pronoun in donkey sentences is a bound variable. In a nutshell, what this approach maintains is that there is some binder for the pronoun --- though that binder is not actually coindexed with it. Due to this binder, the pronoun can remain as a bound variable; and this binder is said to bind the pronoun *for* the

which, if a man owns several donkeys, he beats all of them. We will return to this discussion later.

indefinite a donkey (Indirect Binding) or it unselectively binds both the indefinite and the pronoun (Unselective Binding). Cf. Haik(1984), Heim(1982) and Reinhart(1987). We will discuss these in detail below.¹²

Now, let us return to the examples (5) and (6). As readers would have noticed, the type of solutions suggested for these two examples are quite different from each other. No one, except for Reinhart(1987) and perhaps May(1985),¹³ as yet had tried seriously to

¹² There are other solutions that maintain that the pronoun in donkey sentences is a variable. But these solutions involve heavy transformations of surface structure into logical formula, and manipulation on these formula. They further assume that the quantifiers may bind variables across sentences. Cf. Egli(1979) and Smaby(1979). We will not discuss these solutions here.

¹³ May(1985) established a parallelism between the inverse linking constructions (which we view are analogous to the sentence like (5) ("Specifier-Binding") in the text) and a certain type of donkey sentences. His parallelism is based upon the following type of donkey sentences:

- (i) Every owner of a donkey beats it.

He assumes that the indefinite a donkey may adjoin to the subject NP by QR. The same movement occurs to the inverse linking constructions like (ii):

- (ii) Someone in every city hates it.

The only difference, he says, between (i) and (ii) is the fact that, in (i), every owner has wide scope, whereas, in (ii), every city has wide scope. This observation is very close to mine in accounting for Korean donkey sentences. However, note that this approach of May cannot be extended to the full-fledged donkey sentences in the text. The reason is, of course, that the QR is clause-bound and the indefinite a donkey in (6) in the text cannot adjoin to the subject. For related discussion, see fn. 23.

Also, Reinhart(1987) argues that "Specifier-Binding" applies in both of the sentences under discussion. However, she simply assumes Specifier Binding in (5) and applies it to the donkey sentences. The more important question, however, is how "Specifier-Binding" in (5) is possible in the first place. We will return to the discussion of Reinhart's position in a later section.

Finally, we need to mention that Bach & Partee(1980) suggested that the "Specifier-Binding" constructions in the text is an instance of donkey anaphora. Even though Bach & Partee(1980) do not discuss how they view donkey anaphora, Partee(1978) adopts Cooper(1979) who views donkey anaphora as an instance of definite

put both of these sentences in the same dimension. The partial reason for this is that, in English, the quantifier in question in "Specifier-Binding" constructions is a universal one, whereas it is an indefinite in the case of donkey sentences. As we will see below, in the Korean corresponding sentences, this difference is mysteriously obliterated. Thus, from the perspective of Korean data, these two types of sentences become very close to each other; hence, Korean data provides some motivation to view these two types of sentences in one and the same mold.

In this chapter, it will be argued that, when we view Korean "Specifier-Binding" constructions like English (5) and a certain type of Korean donkey constructions, there are reasons to believe that these two types of constructions require the same type of explanations, at least in Korean. But, it will also be argued that this argument can be carried over to English cases. And it is also my hope to show that the parallelism between "Specifier-Binding" and donkey constructions can best be pursued within the framework of Haik(1984)'s "Indirect Binding." In addition, it will be suggested that the comparisons between two different types of donkey sentences in Korean and those between English and Korean donkey sentences can only be made within the framework of Indirect Binding. As became obvious, my

descriptions, whose reference is determined pragmatically. We may understand, then, that Bach & Partee(1980) tried to take the pronoun in the "Specifier-Binding" as a pragmatic pronoun. There are reasons to believe that this is an incorrect approach. We will return to this point later in the text.

approach is predominantly syntactic. These enterprises cannot be accomplished, as far as I can see, in purely semantic terms.

Before we pursue these matters, it is important to review several theories about these "Specifier-Binding" and donkey sentences in more detail. Our review, however, will not be exhaustive and is highly selective. It is not my intention to introduce all theories about these constructions and to introduce all pros and cons about these theories. My sole purpose of this review is to put the problem of Korean "Specifier-Binding" constructions and donkey constructions in an appropriate perspective.

4.3. Partial Review

4.3.1. Theories about "Specifier-Binding" Constructions

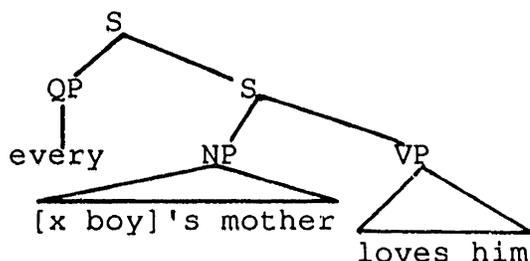
As we noted earlier, the "Specifier-Binding" sentence in (5), repeated here:

(5) *Every boy's mother loves him.*

seems to support the position that the condition (4) applies after QR. Well-known supporters of this position are Weinberg & Hornstein(1986) and May(1977,1985).

For Weinberg & Hornstein, the quantifier in the specifier position can freely move to the S-adjunction position without the pied-piping of its dominating NP. Thus, for the sentence (5), we have the following LF structure:

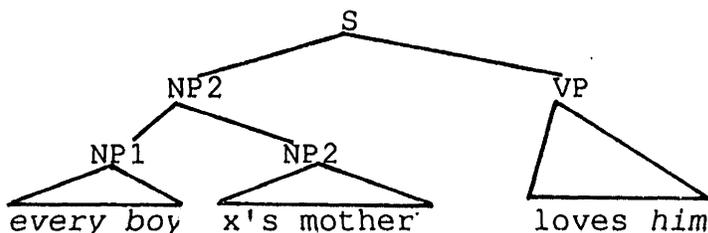
(7)



In (7), the specifier quantifier *every* is adjoined to S. From this position, it can c-command the pronoun, with the usual notion of the c-command.

May(1985), while assuming also that the condition in (4) applies after QR, has a slightly different assumption about QR. He argues that, in the sentences like (5) and (6), the italicized quantifier moves and adjoins to its dominating NP, not to S. That is, the structure after the QR would look like the following:

(8)



In (8), the quantifier NP1, *every boy*, is adjoined to the subject NP, NP2. May assumes that the raised quantifier can c-command the pronoun from this NP adjunction position. Note that according to the usual notion of c-command we have assumed in chapter 1, the adjoined quantifier in (8) cannot c-command the pronoun. Thus, in order to make the quantifier to c-command the pronoun, May had to

assume his c-command to be what Chomsky(1986b) later called "m-command." Thus his definition of c-command is the following:

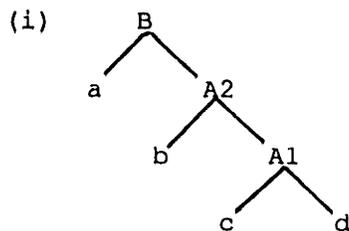
- (9)
 α c-commands β iff every maximal projection dominating α dominates β , and α does not dominate β .¹⁴

With this notion of c-command, both Weinberg & Hornstein(1986) and May(1985) do not have much trouble in getting the c-command of the pronoun by the quantifier in the examples of (5), assuming that the condition (4) applies after QR.

The main reason we do not pursue this approach is that it fails to establish a parallelism between the "Specifier-Binding" and donkey constructions. As we noted in the last section, QR is widely assumed to be clause-bound. For example, in the following sentences:

- (10)
 a. Someone believes that everyone will leave.

¹⁴ In order for this definition to work for the examples at hand, May needed further assumptions about the nodes and projections. Specifically, he assumes that, when some element is adjoined to a maximal projection, it creates only a segment of that maximal projection, not a full-fledged maximal projection. Thus, in the following structure, where the element *b* is adjoined to the maximal projection *A*:



the newly created node *A2* is not a maximal projection, but only its segment. In this assumption, the notion of "dominate" is roughly defined as follows: In order for an element to be dominated by a maximal projection, it must be dominated by all the segments of the maximal projection. Thus, in the example (i), the elements *c* and *d* are dominated by the maximal projection *A*, but the element *b* is not. Thus, the c-command domain of *b* in this case is not limited to the *A*-projection, but it includes all elements within the *B*-projection.

b. Someone believes that John will hit everyone.
there is no reading of these sentences in which the embedded quantifier *everyone* has wide scope over the matrix quantifier *someone*. If we do not restrict the QR to be clause-bound, there is no way to block this unwanted reading.

If QR is clause-bound, it prohibits the indefinite *a donkey* in the sentence (6) from moving out of the relative clause and having in its scope the pronoun in the matrix clause.

In addition, Reinhart(1982,1987) argued that the LF positions of quantifiers do not determine the distribution of bound variables and that it is the S-structure position of the quantifiers that is crucial for the variable binding. It is worthwhile to cite some text from Reinhart(1987):

For instance, anaphora is not possible in sentences like (5a) and (6).

- (5) a. **His* friends voted for every candidate
b. $\forall x(\text{candidate}(x))$ (*x*'s friends voted for *x*)
- (6) *We voted for each candidate since the chairman recommended *him* (although the chairman objected to *him*)
- (7) Someone voted for every candidate
- (8) We voted for every candidate since someone recommended it

It is crucial to observe here that the syntactic problem of binding is independent of the semantic problem....It is generally believed that in structures of the type (5) and (6), the quantified antecedent may have scope over the sentence. For instance, in sentences (7) and (8), with the same structure, *someone* may be interpreted as

being in the scope of *every candidate*. Nevertheless, a pronoun in the same position cannot be bound by *every candidate*. In other words, an LF representation like (5b) cannot be blocked for (5a) by scope considerations. For this reason, it is essential that the syntactic restrictions be met at S-structure independently of (or prior to) the assignment of scope. (pp.131-132).

If this argument is on the right track,¹⁵ it further undermines May and Weinberg & Hornstein's argument for the assumption that the variable binding occurs after QR.

Now, the question is: If we do not adopt the "variable-binding-after QR" solution for the problem posed by sentence (5), then what is the alternative? To this question, Reinhart answers by simply saying that, in the example (5), the specifier quantifier actually binds the pronoun at S-structure. In order to permit this, then, she allows the specifier of an NP to bind out of its dominating NP. She accomplishes this by changing the definition of binding, rather than the definition of c-command. She assumes the following definition of binding:

- (11)
A node α binds a node β iff α and β share an index and α either c-commands β or is the specifier of a node that c-commands β .

She also proposes that each specifier receives a specifier index, which is identical to the index of the constituent whose specifier it is. This specifier index is marked with a slash, to distinguish it from a referential index.

¹⁵ Reinhart's sentence (5) in the quotation is sometimes called as an instance of "weak crossover." She argues then that the instance of weak crossover at LF must be subsumed under the constraint that the pronouns must be c-commanded by the antecedent at S-structure.

Given this notation and the definition (11), the following simple sentence:

(12) Every man thinks he is a genius.

will be indexed in the following way:

(13) [Every/₁ man]₁ thinks he₁ is a genius.

And she suggests that what actually binds the pronoun in (13) in syntax is the specifier *every* with the slash index /1, this binding being allowed by the definition (11).

If we understand this definition (11) recursively,¹⁶ and assuming the specifier index notation, the specifier *every* in the sentence (5), which is now enriched with the specifier binding notation, will bind the pronoun in syntax.

(5) *Every boy's mother loves him.*

(5') [[Every/_{1/2} boy]_{1/2}'s mother]₂ loves him₁.

She argues that this "Specifier-Binding" is crucial also in accounting for donkey sentences. We will return to this discussion in the next section.

¹⁶ Note that the definition in (11) is not a recursive definition as is. This definition does not allow the specifier *every* in the example (5) in the text to bind out of the subject NP. The reason is that the quantifier *every* in (5) is the specifier of the NP *every boy*, but this NP, being another specifier, does not c-command the pronoun. Thus, the correct recursive definition that works for the example in (5) in the text is the following:

(1)

A node *A* binds a node *B* iff *A* and *B* share an index and *A* either c-commands *B* or is the specifier of a node that *binds B*.

This definition differs from the original definition of (11) in the text in that the c-command requirement in the second clause of the definition is replaced by the binding requirement. This definition is recursive and works for the data in (5) and others.

Even though we agree with Reinhart's argument that the variable binding is a S-structure phenomenon, it seems, in light of Korean data, that the specifier indexing as suggested by Reinhart is not the right process. We will return to this discussion in section 4.4.3.

Before we go on, we need to mention that Reinhart's definition of binding in (11) overgenerates slightly: Reinhart(1983a,b) has argued that pronouns can in some cases be interpreted as bound variables even if they are bound by referential expressions. This phenomenon is observed, as Reinhart argues, in the VP deletion constructions where the phenomenon of what is often called "sloppy identity" occurs. For example, the following sentence:

(14) John loves his mother and Bill does too.

The second conjunct of this sentence, i.e. ...and Bill does too, is ambiguous between at least two readings: the one in which Bill loves his own mother; and the other in which Bill loves John's mother.¹⁷ Now, the reason we have the former reading, i.e. the sloppy identity reading, as Reinhart argues, is because in this case, the pronoun in the first conjunct of the sentence (14) is interpreted as a bound variable. That is, the sloppy identity reading arises due to the bound variable interpretation of the pronouns, whether or not their antecedent is a referential expression or a quantifier.

¹⁷ Of course, there is a third reading in which the pronoun *his* in the first conjunct is understood as somebody else than John and this reference is copied into the elliptic "does" in the second conjunct.

Now, if specifiers can bind out of their dominating NP, as the definition (11) stipulates, we predict that the referential NP at the specifier position would bind a pronoun out of its dominating NP and thus that there must occur a "sloppy identity" phenomenon. However, this prediction is not borne out, as the following sentences show.¹⁸ These sentences are from Reinhart(1983a,b) herself and Weinberg & Hornstein(1986).

(15)
John's mother loves him and Bill's mother does too.

(16)
Kennedy's aide volunteered to support him but
D'amato's has not.

In (15), the second conjunct cannot be understood as meaning 'Bill's mother loves Bill, too.'; Similarly, in (16), the second conjunct cannot mean 'D'amato's aide has not volunteered to support D'amato.'¹⁹ Note that when the specifier is a quantifier, the "sloppy reading" is possible:²⁰

(17) Every senator's aide will support him and every
congressman's will too.

Note that this asymmetry between the examples like (17), where the quantifier is a specifier, and the examples like (15) and (16), where the specifier is a referential expression, cannot be captured by the

¹⁸ The same phenomenon is presented in Lasnik(1976).

¹⁹ These are judgements of Weinberg & Hornstein(1986).

²⁰ The following sentence is from Weinberg & Hornstein(1986). Based on this sentence, they argue, as we mentioned earlier in the text, that the variable binding must occur at LF, after QR.

definition of binding in (11), which does not distinguish the two cases. The way out, of course, is either to restrict the specifier-binding to apply only to quantifiers²¹ or to assume that the "sloppy identity" phenomenon does not result from variable binding by the referential expressions. In either approach, it is either *ad hoc* or we lose an important generalization. Thus, the specifier binding approach of Reinhart contains some problems.

Finally, let us point out an approach of Higginbotham (1980a,1983)'s. Even though Higginbotham assumes that variable binding is an LF phenomenon, he is very close to Reinhart in that the trace of the quantifier is the determinant of the variable binding. That is, he argues that the pronoun is interpreted as a variable only if it is bound by the trace of the quantifier after QR. Since the position of the trace of the quantifier is the same as its in-situ position at S-structure, Higginbotham's and Reinhart's positions have the same empirical coverage.

For the sentences like (5) under discussion, Higginbotham(1980a,1983)'s essential view is that the pronoun can be interpreted as bound variable if the *container* of the trace of the quantifier c-commands the pronoun. For instance, in the following LF representation of the sentence (5):

(18) [Every boy_i] [t_i's mother] loves him.

²¹ In this case, she must stipulate that the specifier-binding is restricted to the operators that carry slash indices. However, it is obvious that this approach is *ad hoc*.

the NP [t_1 's mother] is the container of the trace t_1 ; and this container NP c-commands the pronoun. Hence, the pronoun can be interpreted as a bound variable for the quantifier.²²

As we will see in later sections, this view is very close to ours. Now let us proceed to the discussion of donkey sentences.

4.3.2. Theories about donkey anaphora

As discussed in the section 4.2., the problem posed by the so-called donkey sentences like (6), repeated here:

(6) Every man who owns a donkey beats *it*.

cannot be resolved by simply assuming a QR of the indefinite a donkey.²³ But, note that the reason that we tried to resolve this problem by QR is because we assumed (i) that the indefinite here is an

²² In (1983), Higginbotham expressed this view using the notion *accessibility*.

²³ Of course, we could dismiss the assumption that the QR is clause-bound and move the indefinite a donkey out of the relative clause and adjoin it to the matrix S. However, this creates the unwanted reading where the indefinite has the wider scope over the universal quantifier every. We may remedy this problem by adopting May's proposal that the quantifiers may adjoin to NP and that the quantifiers may have ambiguous scope when they govern each other. For related discussion, see fn 13. In this approach, then, we move the indefinite a donkey out of the relative clause and make it adjoin to the subject NP (which includes the relative clause). From this position, the indefinite a donkey will c-command (or m-command) the pronoun, as May assumes. Since in this position the indefinite a donkey can be within the scope of the universal quantifier every, we have the correct reading.

Earlier in the text, we have suggested that the assumption that QR is not clause-bound will overgenerate immensely. For example, in this approach, it is unclear why the pronoun in the following sentence cannot be a bound variable:

(i) *A person who owns every donkey beats *it*.

In (i), we may move the universal quantifier every donkey out of the relative clause and adjoin it to the subject NP. In this position, the universal quantifier binds the pronoun, but this is impossible as the ungrammaticality of (i) suggests.

existential quantifier and (ii) that the pronoun here is a bound variable. So we might now question either of these assumptions or both.

Let us first consider an approach in which we question the assumption (Russellian) that the indefinite *a donkey* in the donkey sentences is a quantifier that lacks reference. Note that this kind of approach is conceivable because the supposed binder of the pronoun in donkey sentences is an indefinite NP, *a donkey*. This kind of approach is not open for the "Specifier-Binding" sentences like (6), where the supposed binder is a universal quantifier *every*, which contains no reference.²⁴

It was Strawson(1952) who first suggested that the indefinites can actually be ambiguous and either be referential or quantificational. But there are other theories that are less strong, and that argue that, even though the indefinites are still quantificational expressions, they can be *used* to refer. This idea is due to Grice, Kripke(1977) and Lewis(1979).

For example, according to Kripke, indefinites may contain "speaker's reference," while they lack "semantic reference." In a sentence like the following:

(19) *A dog* came in. *It* lay down under the table.

even though the indefinite NP *a dog* does not have semantic reference, the speaker may have a particular dog that satisfies the

²⁴ That is, if it is not understood to have a group reading.

predicate $\text{dog}(x)$ in mind and wishes to convey that that thing satisfies the predicate of the first sentence, *came in*. In somewhat different terms, when we utter an indefinite NP, it is understood in the conversation that there is a particular NP that is responsible for the truth of what we say --- the indefinite NP that we utter raises the salience of *the cat* that made us say it.²⁵ Thus, the pronoun in the second sentence can refer to this "speaker's reference" of the NP or the reference of the NP that became salient in the context of conversation.

We might try to apply this approach to donkey sentences. In this approach, then, the pronoun in donkey sentences is an instance of plain coreference. There are various reasons to believe, however, that this approach cannot be applied to donkey sentences.

First of all, it is very difficult to say that there is any "speaker's reference," or the reference made salient, for the indefinite *a donkey* in the donkey sentences. Note that, in the donkey sentence (6), the indefinite *a donkey* is within the scope of the universal quantifier *every*. This means that there may be different donkeys for each person in the universe --- i.e. there are actually a group of donkeys, whose reference cannot be determined in any way.

There is one further reason that Grice-Kripke-Lewis's (or Strawson's) approach cannot be extended to donkey sentences. The

²⁵ This is Lewis's explanation.

donkey sentences were problematic in the theory of quantification and anaphora mainly because of the fact that the indefinite *a donkey* in the donkey sentences is interpreted to contain universal force. That is, the sentence (6) is interpreted to mean that, if an individual owns more than one donkey, he beats *all* of them. Thus, it is the usual practice to express the meaning of the sentence (6) by the following formula:

(20) for all x , for all y ((x is a man & y is a donkey & x owns y) (x beats y))

It seems impossible for the Strawson-Grice-Kripke-Lewis approach to account for this "exhaustive" reading of the donkeys possessed.

Finally, let us recall that Hornstein(1986) argued that the indefinite *a donkey* in donkey sentences is a quasi-generic NP.²⁶ Hornstein holds that generic NPs do not move by QR, even though they are quantifiers. Thus, there is some aspect of similarity between the Strawson-Grice-Kripke-Lewis approach and that of Hornstein. Hornstein also seems to suggest that the pronoun in the donkey sentences is simply a coreferential pronoun. One advantage of this approach, Hornstein argues, is that, since the indefinite *a donkey* is assumed to be generic, a universal reading may follow.

But Heim(1982) provides some arguments that the indefinite *a donkey* in the donkey sentences is not a generic NP. Also, more

²⁶ Actually, he argues that this indefinite NP is involved in two separate representations, one in which it is an existential quantifier and the other in which it is a quasi-generic NP.

important, the Korean data that we will cite in section 4.4. make it clear that this approach of Hornstein's cannot be extended to Korean donkey sentences we will consider.

Now, let us proceed to the discussion of the approach that reconsiders the nature of the pronoun in the donkey sentences. We have already seen that, in the Strawson-Grice-Kripke-Lewis-Hornstein approach, the pronoun ceases to be a bound variable. It is rather a plain coreferential pronoun here. On the other hand, there is another approach that denies that the pronoun under discussion is a bound variable, even though it still maintains the Russelian position that the indefinites are existential quantifiers. In this approach, the pronoun of course cannot be a coreferential pronoun, since the indefinite *a donkey* is assumed to be a quantifier, without referential force.

This approach claims that the pronoun in donkey sentences is a kind of Russelian definite description. This approach was advocated by Cooper(1979), Parsons(1978), Partee(1978) and Heim(1987),²⁷ among others. A similar approach was advocated by Evans(1980) who calls this pronoun as an E-type pronoun.

This approach, arguing that the pronoun in donkey sentences is a definite description, basically claims that the link between the indefinite *a donkey* and the pronoun that refers to it is a pragmatic one. For Heim(1987), this pragmatic process is accomplished in the

²⁷ This reference of Heim's must not be confused with Heim(1982). The major intention of Heim(1987) is to refute Heim(1982).

following way: She first assumes a contextually salient function f from the individuals who own donkeys to the set of donkeys each individual owns, which is pragmatically established. Then she continues:²⁸

We assume that this particular function f will be salient at the time when the listener of (5) processes the pronoun *it*, for reasons having to do with her immediately preceding processing of the earlier part of the sentence. In a nutshell, the listener has just been told to contemplate a set of men who each own exactly one donkey [See fn. 28 MYK]. Each man in this set is, per definition of the set, associated with a unique donkey he owns; in other words, the way this set has been defined draws immediate attention to the function which associates each of its elements with the unique donkey it owns. Therefore this function is a natural candidate for the reference of the upcoming pronoun. (p.3)

As is clear from this quotation, the link between the pronoun and the indefinite *a donkey* is established via a pragmatically salient function from the people to the donkeys.

As far as I can see, in this approach, then, the pronouns in the following two sentences are interpreted essentially in the same way:²⁹

- (19) A *dog* came in. *It* lay down under the table.
(6) Every man who owns a *donkey* beats *it*.

²⁸ The quotation from Heim that follows in the text is based on the example like the following one:

- (i) Every man that owns exactly one donkey beats *it*.

Of course, this sentence has different truth conditions from those of our donkey sentence under discussion. However, as far as the question of how the pronoun in the donkey sentence gets reference, what Heim discusses about the sentence (i) is exactly carried over to our normal donkey sentences.

²⁹ But we must note that, as for Cooper(1979) himself, these two types of anaphoric relations are differentiated. He assumes that the pronoun in (19) is an instance of a free variable, while the pronoun in the donkey sentence in (6) is a definite description. But this distinction is not really a necessary one. As we discuss in the text, Evans(1980) assumes that the pronoun *it* in (19) is understood as a definite description *the dog that came in*. On this view, the difference between these two types of anaphoric relations is minimal.

For example, the function f that is pragmatically salient in the first sentence of (19) may be said to have the dog that came in as its value, much as the same function has the donkey that x owns as its value in (6).

One objection to this approach may come from the following Haik(1984)'s examples. She observes that, in the donkey sentences involving a relative clause, there is a condition that the subject that contains the relative clause must c-command the pronoun. She notes that the pronouns in the following examples cannot refer to the indefinite *a donkey*:³⁰

- (21)
- a. *Shouting at [some people who owned a donkey] frightened *it*.
 - b. *Mary kissed [two men who had bought a donkey] because she found *it* cute.

Given the E-type approach to the pronoun above, it is unclear why the pronoun cannot refer to the indefinite *a donkey* in the sentences of (21). It seems that there is not much reason why we cannot construct the salient pragmatic function f from people to donkeys here.

One other well-known problem for this kind of E-type approach, as Heim(1987) extensively discussed, is that, arguing for the pronoun in the donkey sentences being a Russellian definite description, one must be committed to the uniqueness presupposition the Russellian definite description contains. Recall that the indefinite *a donkey* in donkey

³⁰ That is, when it is within the scope of the wide scope quantifier. The examples in (21) are bad in this reading.

sentences is understood to have some universal force. That is, the sentence (6) implies that, if a man owns several donkeys, he is supposed to beat all of his donkeys. This "exhaustiveness" reading of a donkey is not easily captured in a theory that considers the pronoun in donkey sentences to be a disguised Russellian definite description. We will not discuss the possible solutions to this problem here. Let us simply note that Heim(1987) (adopting an observation of Kadmon(1987)) provides an interesting solution to this problem within the E-type approach.

The more important objection I want to raise in this chapter is that this E-type approach fails to establish a parallelism between the "Specifier-Binding" constructions and the donkey sentences. As we will discuss in the next section, Korean "Specifier-Binding" constructions and a certain type of Korean donkey sentences are parallel in a significant aspect. Of course, we can explore, as Bach & Partee(1980) suggested, the possibility that the pronoun in the "Specifier-Binding" constructions is also an E-type pronoun. In order to maintain this approach, however, we must discount certain important facts about Korean "Specifier-Binding" constructions, we will discuss below. Thus, we do not consider this possibility here.

Thus far, we have considered the approaches that try to deny that the pronoun in the donkey sentences is a bound variable. They tried to argue that the pronoun in donkey sentences is either a plain

coreferential pronoun or an E-type, a disguised Russellian definite description.

On the other hand, there are other approaches that still maintain that the pronoun in the donkey sentences is a bound variable. These are approaches of Heim(1982), Haik(1984) and Reinhart(1987). We will discuss Haik(1984)'s approaches in section 4.4.4.

Heim(1982) argues that the indefinite NPs can be viewed as having no intrinsic quantificational force and that they can function as free variables, whose quantificational force is determined by context. She further suggests that what provides the quantificational force to the indefinites is often the "adverbs of quantification," (a term coined by Lewis(1975)) which function as "unselective binders."

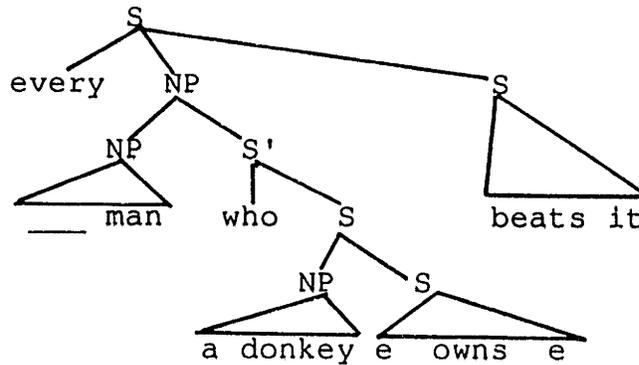
For the typical donkey sentences like (6) in the section 4.2., repeated here:

(6) Every man who owns a donkey beats *it*.

Heim assumes that the specifier *every* of *every man* of (6) is the unselective binder and the indefinite *a donkey* is semantically a variable. The specifier *every* not only binds the pronoun in (6), but it also binds the indefinite *a donkey*. This approach, then, seems to predict the universal reading of the indefinite *a donkey*: It is a variable bound by the universal quantifier. This view actually predicts an incorrect reading of donkey sentences, but we will postpone this discussion to section 4.4.3.

What is of interest, at this point, is how the "unselective binder" can bind the pronoun in Heim's framework. She assumes a LF movement of the quantifier *every* to the S-adjoined position:

(22)



After the LF movement, this *every*, serving as an unselective binder, binds both *man* and *donkey*, as well as the pronoun *it* in the matrix clause.

Reinhart(1987) shares many assumptions with Heim(1982). The main difference is that the quantifier specifier *every* binds the pronoun in in-situ position, via specifier binding we discussed in section 4.3.1. In order to accomplish this, she assumes an index copying process that copies the index of the indefinite *a donkey* to the specifier of the dominating NP, *every*. Then, the specifier will acquire the specifier index, which is identical to that of the indefinite *a donkey*, and the specifier binding relationship between the quantifier specifier and the pronoun will be established. In her framework, then, the following indexing represents the donkey constructions:

(23) [*every*_{1/2} *man who owns a donkey*₂]₁ *beats it*₂.

With her extended definition of binding, the specifier *every* will bind the pronoun in (23).

In both of these approaches, the pronoun in donkey sentences is bound by the specifier of the NP that dominates the relative clause. As we will try to demonstrate below, Korean data seems to suggest that it is not the specifier of the NP that dominates the relative clause, but the NP itself that dominates the relative clause that seems to bind the pronoun. Even though Reinhart succeeded in unifying the donkey sentences and "Specifier-Binding" constructions, her assumptions about the direction of the index transmission seems to be the reverse of what actually occurs. In the next section, we will introduce Korean data that point us to certain directions for a solution of donkey and "Specifier-Binding" constructions.

4.4. Korean Data and Indirect binding

In this section, we will discover some Korean data that are analogous to English "Specifier-Binding" constructions and that are similar to donkey sentences.³¹

³¹ As noted in fn. 6, Korean lacks the "inverse-linking" constructions (Hungarian also lacks "inverse linking constructions, according to Kiss(1986)) and the meaning of the sentences like the following:

- (i) *Someone in every city hates it.*

can only be expressed by the "Specifier-Binding" constructions or donkey sentences. But, as expected, the meaning is slightly different, as will be discussed later. In any case, as far as Korean is concerned, the problem of the sentences like (i) is assimilated to those of "Specifier-Binding" or donkey sentences.

As we will see shortly, Korean quantifying expression analogous to English *everyone* or *anyone*³² are composed of two parts. And these two parts can sometimes be discontinuous. What is interesting is the fact that this discontinuity between two parts of a quantifying expression appears in the "Specifier-Binding" constructions as well as a certain type of donkey sentences. Based on this fact, I will try to argue that the most natural framework that explains Korean "Specifier-Binding" and donkey constructions is that of what Haik(1984) called "Indirect binding."

4.4.1. Morphology of Korean Quantifying Expressions

In Korean, as in Japanese,³³ the indefinite expressions like *some* are indistinguishable from *wh* expressions. Thus, the expression *nuku* can be used both for the *wh*-expression and the indefinite expression. The example in (24), therefore, is ambiguous between a *wh*-question and a yes/no question. In (25), which is not a question, it must be an indefinite expression:

(24) Chelsu-ka nuku-lul ttaeli-ess-ni?
 NOM NUKU-ACC hit-PAST-Q

'Who does Chelsu hit?'
 'Does Chelsu hit someone?'

(25) Chelsu-ka nuku-lul ttaeli-ess-e
 NOM NUKU-ACC hit-PAST-DEC

³² Korean universal quantifying element, represented as *enu* and *nuku* plus *-na*, has two readings in which they are either like *every* or like 'free choice' *any* in English.

³³ For discussion of Japanese indefinite and quantifier expression, see Nishigauchi(1986) and Hoji(1985), among others.

'Chelsu hit someone.'

Note that the two readings of the sentence (24) are distinguished by the position of the stress. If the indefinite/wh-element *nuku* gets a heavy stress, the sentence must be understood as a wh-question; if this element lacks such a stress, it is understood as an indefinite expression. Note further that the interrogative sentence (24) and the declarative sentence (25) are distinguished by the sentence enders, glossed as Q or DEC(larative), (and the intonation). In (24), the sentence ender is a question element, *-ni*, whereas in (25), it is *-e*, one of the declarative enders.

Now, in order to obtain a universal quantifying expression like English *everyone*, we attach a morpheme *-na* at the end of the indefinite/wh-expression *nuku*. For example:

- (26) *nuku-na o-ess-ta*
 NUKU-NA come-PAST-DEC
 'Everyone came.'³⁴

³⁴ In this example, *nuku-na* is understood as a quantifying expression like *everyone*. But, as noted in the fn. 32, it may be understood as a free choice any in other context, particularly if a modal element accompanies it. Note:

- (i) *nuku-na o-e-to toe-n-ta*
 NUKU-NA come-E-'also' become-IMP-DEC
 'Anyone can come.'

In (i), this quantifying element, *nuku-na*, is best understood as a free-choice any.

Thus, we view that this element *-na* provides a universal force to the indefinite/wh-expression or it functions as a "distributor" for the indefinite/wh-expression.

Thus far, we have discussed only expressions like *who*, *someone* and *everyone*. But Korean has a separate specifier quantifying expression: *enu*. When this morpheme precedes an N', the whole NP becomes either a wh-expression like *which N'* or an indefinite like *some N'*. Notice the following examples:

(27) *enu ae-ka hakkyo-e ka-ss-ni?*
ENU child-NOM school-LOC go-PAST-Q

'Which child went to school?'
'Did some child go to school?'

(28) *enu ae-ka hakkyo-e ka-ss-e*
ENU child-NOM school-LOC go-PAST-DEC

'Some child went to school.'

Again, the sentence (27) is ambiguous between the two readings indicated; and both of these sentences are distinguished by the sentence enders (and the stress).

As in the case of the quantifying expression *nuku*, the morpheme *-na* turns these expressions with *enu* as a specifier into a universal QP. For example:

(29) *enu ae-na hakkyo-e ka-ss-ta*
ENU child-NA school-LOC go-PAST-DEC

'Every child went to school.'

Note that, in (29), the nominative Case marker for the subject NP, *enu* *ae*, disappeared³⁵ and the particle *-na* appeared in its place. It is important to note that this particle is not directly attached to the specifier quantifying element *enu*, but it is attached to the NP dominating it.

Now let us consider the data of "Specifier-Binding" and donkey sentences in Korean. Following are examples:³⁶

(30) Specifier-binding:

[[*enu pihaengki-uy*] *thapsungkaek*]-*ina* [*kukes-i*
 ENU airplane-GEN passenger-NA it-NOM

³⁵ The Case marker also drops when this particle *-na* is attached to an accusative NP, Note:

(i) *Chelsu-ka enu haksang-ina ttaeli-ess-ta*
 NOM ENU student-NA hit-PAST-DEC

'Chelsu hit every student.'

It is always the case that, when this marker is attached to a nominative or an accusative NP, the Case marker drops.

However, when this particle is attached to a dative NP or to any postposition, the dative marker or postposition cannot drop and the particle must follow the dative marker or postposition,

(ii)
Chelsu-ka enu ae-eke-na chaek-ul cu-ess-ta
 NOM ENU child-DAT-NA book-ACC give-PAST-DEC

'Chelsu gave a book to every child.'

In this respect, this particle *-na* behaves exactly like other postnominal particles in Korean, such as *-nun* 'topic marker', *-to* 'also', *-man* 'only', *-kkaci* 'even' etc.

³⁶ The reason I didn't cite the word-to-word Korean analogue of English sentences like *Everyone's mother likes him* is because, for some reason, such sentences do not sound natural in Korean. The reason for this, however, is not due to the quantifiers involved here, but due to the nature of Korean pronominals. We will discuss this briefly in the next subsection. The same explanation holds for Korean donkey sentences.

ancenhake nal-e ka-ki]-lul pala-n-ta
safely fly go-COMP-ACC hope-IMPERF-DEC

'Every airplane's passenger hopes that it flies safely.'

Note that the -na element that gives the universal force to the indefinites does not immediately follow the enu pihaengki 'ENU airplane,' but is attached to the NP that it is a specifier of.

Similar thing happens in the relative clause environment. Note the following example:

(31)
[[enu concacephum-ul sa-nun] salam]-ina
ENU elec. equip.-ACC buy-PNE person-NA
[kukes-i olae ka-ki]-lul huimangha-n-ta
it-NOM long last-COMP-ACC hope-IMPERF-DEC

'(Close English paraphrase) Every person who buys an electronic device hopes that it lasts a long time.'

The English donkey sentences with the relative head everyone can be expressed in Korean by using this structure:³⁷

³⁷ It must be noted that there are also English-type donkey sentences in Korean. For example:

(i)
[[t tangnakui-lul kaci-n] enu salam]-ina
donkey-ACC own-PNE ENU person-NA
[kukes-i cal cala-ki]-lul huimangha-n-ta
it-NOM well grow.up-COMP-ACC hope-IMP-DEC

'Every person who owns a donkey hopes that it grows well.'

As will be seen, the existence of these examples does not weaken our point in the text. We will return to these examples later.

(32)

[[t enu tangnakui-lul kaci-n] salam]-ina
ENU donkey-ACC own-PNE person-NA

[kukes-i cal cala-ki]-lul huimangha-n-ta
it-NOM well grow.up-COMP-ACC hope-IMPERF-DEC

'(Close English paraphrase) Every person who owns
a donkey hopes that it grows well.'

Note that the -na element appears attached to the NP that contains the relative clause, while the enu element is embedded within the relative clause.

Before we discuss this phenomenon in detail, we need to discuss some facts about Korean pronouns. This is the subject of the next subsection.

4.4.2. Korean Pronominal Binding

In the examples of 4.4.1., we have been using the pronominal element kukes 'it' in referring back to the quantifier element. Thus, we have assumed that Korean pronominal element can function as bound variables.

However, it has been suggested by Japanese linguists (e.g. Hoji(1985) and Saito and Hoji(1983)) that the Japanese pronoun kare cannot be bound by the quantifiers. The same observation was offered by S.S.Hong(1985) and H.S.Choe(1988) for the Korean pronominal ku 'he.'

Hence, some comment about Korean pronominal binding is necessary before continuing our discussion.

To put the conclusion first: Even though it seems true that the use of Korean pronominal *ku* 'he'(or *kukes* 'it') as bound variable is sometimes less preferred by many speakers, it seems also true that we cannot categorically rule out the bound variable usage of Korean pronominal *ku* (or *kukes*). Note that, first of all, the use of Korean pronominal *ku* in colloquial Korean, whether as a bound variable or as a correferential pronoun, is generally less preferred. According to the native speakers consulted, I found a few cases where the bound variable usage of pronominal *ku* is slightly more marginal than its referential usage, but I found many other cases where the bound variable usage of *ku* is as acceptable as its referential usage of *ku*. And the distribution of these cases seems, at this point, to be governed by some unknown pragmatic factors.

Saito and Hoji cited the following type of example and concluded that Japanese pronominal *kare* cannot be a bound variable:

(33) ??*Nuku-na* [*ku-ka hyunmyungha-ta-ko*]
everyone he-NOM wise-DEC-COMP

saengkakha-n-ta
think-IMPERF-DEC

'Everyone thinks that he is wise.'

In this particular example, the bound variable reading of *ku* 'he' is very marginal,³⁸ according to many speakers. However, most speakers

³⁸ This is in contrast to the case where a name, say *John*, replaces *nuku-na* in (33) --- in this case, the sentence sounds acceptable.

accept the following sentences where the pronominal *ku* is also used as a bound variable:

(34)
 Chelsu-ka nuku-eke [ku-ka mengcheni-la-ko]
 NOM who-DAT he-NOM fool-COP-COMP

malhae-ss-ni?
 say-PAST-Q

'To whom did Chelsu say that he is a fool?'

(35)
 Chelsu-nun nuku-eke-na [Yenghi-ka ku-lul
 TOP everyone-DAT NOM he-ACC

ttaeli-l kes-ila-ko] malha-ess-ta
 hit-will-COMP say-PAST-DEC

'Chelsu said to everyone that Yenghi would hit him.'

A legitimate question is, of course, why sentence (33) is marginal while sentences (34) and (35) are acceptable. There are several possible answers. One might say that Korean variable binding is subject to some anti-locality condition, as Aoun & Hornstein(1987) argue for Chinese. Such an account seems plausible in view of the fact that, when the pronominal is more deeply embedded, the bound variable reading seems more acceptable in Korean, as the following sentence shows:

(36) nukuna [ku-lul ccocha-o-nun salam-ul]
 everyone he-ACC chase-come-PNE person-ACC

silh-e ha-n-ta
 hate-IMPERF-DEC

'Everyone hates the person who chases him.'

Most people accept the bound variable reading in (36). But this anti-locality view is already falsified by the comparison of the examples of (33) and (34). Comparing these two examples, it is easy to see how difficult it is to define a domain in which the anti-locality holds. Furthermore, the following sentence is also accepted by most speakers, even though Aoun & Hornstein report that the equivalent Chinese sentence is ungrammatical:

- (37) *nukuna ku-uy emeni-lul coaha-n-ta*
 everyone he-GEN mother-ACC like-IMPERF-DEC
 'Everyone likes his mother.'

One other account which seems plausible when we view only the examples in (34) and (35) is that, when Korean reflexive *caki*, which is subject-oriented, cannot be used as a cross-referring device, the pronominal *ku* can be used instead as such a device for quantifiers. In the examples of (34) and (35), the quantifier is the non-subject dative NP, so that the reflexive, since it is subject-oriented, cannot be used as a cross-referring device for it. So in this case, the pronominal can take its place. This functional explanation, of course, fails, when we consider the examples like (36) and (37), where the quantifier is a subject and the use of the reflexive is legitimate, but still the pronominal *ku* can be used as a bound variable.

The purpose of this chapter is not to figure out the exact distribution of Korean bound variables. I just want to indicate that there are many cases in which the bound variable reading of Korean pronominal *ku* is acceptable, some exceptions being, I suspect,

controlled by possibly pragmatic factors that are poorly understood at this point. Finally, I need again mention that the use of Korean pronominal *ku*, whether bound variable or referential, creates some marginality in colloquial speech, and is avoided in general. This is presumably because the independent use of Korean pronominal *ku* is a fairly recent development in Korean language, dating back to 1920s, even though the *ku* as a specifier (as in *ku + N'*) has a long history in Korean. Due to this historical fact, Korean speakers are in general less accustomed to the usage of the pronoun in colloquial speech, so that the language learners in their early stage are not frequently exposed to the usage of the pronoun *ku*.

4.4.3. Particle *-na*

Now let us return to our main topic. Recall that the Korean analogue of English sentence (5) is (38):

(5) *Every boy loves his mother.*

(38) [*enu ae-na*] [*ku-uy emeni-lul*] *coaha-n-ta*
 ENU boy-NA he-GEN mother-ACC like-IMP-DEC

'Every boy loves his mother.'

As we noted earlier, the particle *-na* in the subject NP 'every boy' of the Korean sentence did not get attached to the indefinite element *enu*, but it is attached to the NP dominating it. Note that the "universal" sense of the particle *-na* cannot be expressed without the co-occurring *enu* (or *nuku*, as we noted before). In the following

phrase, which lacks *enu*, the particle *-na* must mean either something like the disjunctive 'or' in English or 'in addition to...'

(39) *ku salam-ina.....*
the man-NA

Recall again that the specifier *enu* is just a wh/indefinite element, and it is *-na* that creates the universal force. But the particle *-na* does not independently mean something like 'all.' It must co-occur with *enu* in order for its "universal" force to be manifested.

So, it is clear that *enu/nuku* and *-na* are discontinuously dependent elements. Together, they have the force of universal quantification. Viewing them separately, we may intuitively think that the elements *enu/nuku* mark the position to be quantified and the particle *-na* marks its position of scope. That is, the particle *-na* seems to mark the constituent whose c-command domain is the scope of the actual quantifier *enu* or *nuku*. This becomes clear when we consider the "Specifier-Binding" constructions in Korean.

The following is one instance of Korean "Specifier-Binding" constructions:

(40)
nuku-uy emeni-na ku-uy silpae-lul anthakkawaha-
NUKU-GEN mother-NA he-GEN failure-ACC be-distressed

ess-ta
PAST-DEC

'Everyone's mother was distressed at his failure.'

In (40), the particle *-na* is attached to the NP that dominates the quantifier *nuku* 'who, someone', which is a specifier of that NP. As we said, we argue that the particle *-na* is attached to the constituent whose c-command domain is the scope of the quantifier, *nuku* in this instance. Thus, it is now natural that the pronoun can be interpreted as a bound variable, since it is within the c-command domain of the subject to which *-na* is attached, and, as we said, this c-command domain *is* the scope of the quantifier *nuku*. Note incidentally that the N *emeni* 'mother' in (40) is always understood to co-vary with the quantifier *nuku*, i.e. this N is understood to be within the scope of *nuku*. So there is actually a group of mothers here, each of whom is the mother of *nuku*.

Now observe that it is possible to attach the particle *-na* directly to the quantifier *nuku*. In this case we have the following subject phrase:³⁹

- (41) *nuku-na-uy emeni-ka....*
 NUKU-NA-GEN mother-NOM

This phrase must mean something like 'the mother of everyone' in English. That is, it means that there is one mother, such that she is the mother of everyone. Now, as can be expected, when this phrase in

³⁹ A similar sentence to (41) using *enu* N'-*na* cannot be constructed, since, for some reason, *enu* N'-*na* cannot occur as a specifier. The following is ungrammatical:

- (i) **enu ae-na-uy emeni-ka/lul....*
 ENU boy-NA-GEN mother-NOM/ACC

(41) appears as the subject of the sentence like (42), the pronoun in it cannot function as a bound variable.

- (42) **nuku-na-uy emeni-ka ku-uy silpae-lul*
NUKU-NA-GEN mother-NOM he-GEN failure-ACC

anthakkawaha-ess-ta
be-distressed-PAST-DEC

'The mother of everyone was distressed at his failure.'

This shows that the position of the particle *-na* is crucial for variable binding: it determines the scope of the quantifier *nuku*. We also see that the position of *-na* determines the interpretation of the N *ememi* 'mother.'

Recall Weinberg & Hornstein(1986) and Reinhart(1987) approaches to these quantification constructions. Weinberg & Hornstein(1986) argues that, in the simple sentences like (5), it's only the specifier that moves to a S-adjoined position; Reinhart(1987) also argue that, in the same sentence (5), it is the specifier with the slash index that binds the pronoun by the "Specifier Binding." These arguments also applied to the more complex sentences like (40).

It seems to me that the Korean data discussed above can be viewed as the data that falsify these arguments, since, at least in Korean, it is the whole NP whose specifier is the quantifier that determines the scope for the quantifier. In other words, the quantifier binding of the specifier is always "mediated" by the NP that it is the specifier of. Thus, it seems that if there exists an index transmission between the

quantifier specifier and the dominating NP it is the specifier of, as argued by Reinhart, the direction must be reverse to what Reinhart supposed it to be: The index must be transmitted *from* the specifier quantifier *to* the NP it is the specifier of, rather than vice versa. We will adopt this index transmission in a later section.

Now, let's take a look at the Korean donkey sentences:

- (32)
- | | | | | |
|----------|------|------------------|-----------------|------------|
| [[t | enu | tangnakui-lul | kaci-n] | salam]-ina |
| | ENU | donkey-ACC | own-PNE | person-NA |
| [kukes-i | cal | cala-ki]-lul | huimangha-n-ta | |
| it-NOM | well | grow.up-COMP-ACC | hope-IMPERF-DEC | |
- ' (Close English paraphrase) Every person who owns a donkey hopes that it grows well.'

As we have noted earlier, the same *enu* ... *na* construction is used in this type of donkey sentences. Given the parallelism of this donkey construction and "Specifier-Binding" constructions we have seen above, it is clear what we would say about the discontinuous elements *enu* ... *na* in (32): (i) Together, they have the force of universal quantification; (ii) Viewing them separately, the element *enu* N' marks the position to be quantified and the particle *-na* marks the position of the scope for this quantifier. So, we conclude that, if we view the pronoun in the "Specifier-Binding" construction as a bound variable, we must also view the pronoun in the donkey sentences like (32) in the same way. And the variable binding of this pronoun by the quantifier phrase *enu tangnakui* in the relative clause of (32) is "mediated" by the subject NP that contains the relative clause, i.e. the NP that is marked by the particle *-na*.

Note that when the particle *-na* is not attached to the NP that contains the relative clause and is attached more closely to the quantifier *enu* 'N', variable binding is impossible:

- (43)
 *[[t *enu tangnakui-na kaci-n] salam]-i*
 ENU donkey-NA own-PNE person-NOM

[kukes-i cal cala-ki]-lul huimangha-n-ta
 it-NOM well grow.up-COMP-ACC hope-IMPERF-DEC

 'A person who owns every donkey hopes that it
 grows well.'

It again shows the crucial role the particle *-na* plays in the variable binding: This is a parallel case to the "Specifier-Binding" construction in (42).

Recall that Heim(1982) and Reinhart(1987) argue that it is the specifier *every* that binds the pronoun in the following English donkey sentence:

- (6) Every man who owns a donkey beats *it*.'

However, as we have seen, in the Korean donkey sentence like (32), it is the whole subject NP, which is marked by the particle *-na*, that seems to bind the pronoun. Note that there are some differences between the Korean donkey sentences like (32) and English donkey sentences like (6): In Korean, the position of the universal quantifier is at the N *tangnakui* 'donkey' within the relative clause, whereas, in English, it is at the relative head *man*. We will see shortly that this difference entails a certain slight difference in meaning between English and Korean donkey sentences. In any case, since there is no quantifier at the specifier position of the relative head in Korean

donkey sentences like (32), it is impossible to apply Heim and Reinhart's approach to Korean donkey sentences like (32).

We have been continuously arguing that the variable binding of the pronoun in "Specifier-Binding" and donkey sentences in Korean is mediated by the "container" NP; the NP that contains the quantifier as a specifier, in the case of "specifier binding," and the NP that contains the relative clause, in the case of donkey sentences. As we will see below, this phenomenon is aptly captured within Haik's Indirect Binding framework. It seems to us that the Indirect Binding framework is the only one that is capable of establishing a parallelism between the "Specifier-Binding" and donkey sentences in Korean. We will also see that it is only the Indirect Binding framework that enables us to make a certain interesting comparison between different types of donkey sentences in Korean, as well as the comparison between English and Korean donkey sentences. In the next section, we will first discuss Haik's framework. In section 4.5., we will show that this framework applies remarkably well for the data at hand.

Before proceeding to these discussions, it is important to comment on certain aspects of semantic properties of Korean donkey sentences like (32). First of all, recall that, in English donkey sentence (6), there was an "exhaustive" donkey reading. That is, the sentence (6), repeated here:

(6) Every man who owns a donkey beats *it*.

implies that, if a person owns several donkeys, he is supposed to beat *all* of the donkeys. Thus, this reading is represented by the following expression:

(44)
for all x, for all y ((x is a person & y is a donkey & x owns y)(x beats y))

which is identical to:

(45)
for all x, y ((x is a person & y is a donkey & x owns y)(x beats y)).

Note now that, in Korean donkey constructions like (32), repeated here:

(32)
[[t enu tangnakui-lul kaci-n] salam]-ina
 ENU donkey-ACC own-PNE person-NA

[kukes-i cal cala-ki]-lul huimangha-n-ta
it-NOM well grow.up-COMP-ACC hope-IMPERF-DEC

'(Close English paraphrase) Every person who owns a donkey hopes that it grows well.'

it is the N' tangnakui 'donkey' that is universally quantified, not the relative head N' salam 'person' as in English. However, the meaning of this Korean sentence is very close to that of English because there is also an "exhaustive" implication of salam 'person' in the Korean sentence. Thus, the sentence (32) implies that, if a donkey is owned by 6 people, then all of them must hope that it grows well.

Thus, we might try to represent the meaning of this sentence by the following expression:⁴⁰

(46)
for all y, for all x ((x is a person & y is a
donkey & x owns y)(x hopes that y grows well))

However, it is logically equivalent to (47)(which is identical to (45) except for the matrix predicate):

(47)
for all x, y ((x is a person & y is a donkey
& x owns y)(x hopes that y grows well)).

In this representation, the fact that the universal quantifier is at the N' *tangnakui* 'donkey' within the relative clause in Korean donkey sentences has no consequence in semantics. It has the same logical representation as in English donkey sentences.

Note, incidentally, that the "Specifier-Binding" constructions have a similar interpretation to that of donkey sentences. For example, in the following "Specifier-Binding" sentence (30), repeated here:

(30)
[[*enu pihaengki-uy*] *thapsungkaek*]-*ina* [*kukes-i*
ENU airplane-GEN passenger-NA it-NOM

ancenhake nal-e ka-ki]-*lul* *pala-n-ta*
safely fly go-COMP-ACC hope-IMPERF-DEC

'Every airplane's passenger hopes that it flies
safely.'

⁴⁰ In "real" logical formulae, the order of 'for all x' and 'for all y' does not affect the interpretation. Here, for the sake of exposition, we are trying to make some difference out of this ordering. We will see shortly that this effort is futile.

this sentence implies that, if an airplane has 290 passengers, *all* of the 290 passengers of the airplane hope that the airplane flies safely.⁴¹ This reading is predicted by our analysis, in which we have been arguing that the donkey and "Specifier-Binding" constructions are basically in the same format.

As Lasnik (p.c.) and Reinhart(1987) suggested, this reading is also implied in the analogous English sentence. For example, in the following sentence:

- (48)
 Every commuter's vehicle must be inspected every
 3 months.

⁴¹ Note also that, if the enu quantifier is followed by several N's, all of these successive N's are understood to be exhaustive. Observe the following sentence:

- (i)
 Hankook-e-nun [[enu toshi]-uy koncang-uy]
 Korea-LOC-TOP ENU city-GEN factory-gen
 pyek]-ina ppalkahke chilha-e ci-e iss-ta
 wall-NA red be-painted
 'In Korea, every city's factory's wall is painted
 red.'

This sentence implies that every wall of every factory of each city is painted red. Its meaning can be represented as follows:

- (i)
 (For all x, x a city,) (for all y, y x's factory)
 and (for all z, z y's wall), z is painted red,

this sentence implies that, if a commuter has 3 vehicles, all of them must be inspected every 3 months.⁴² That is, this sentence has the reading:

(49)
(For all x, x a commuter,) (for all y, y
x's vehicle,) y must be inspected every 3 months.

Now, let us return to the semantics of the donkey sentences like (6) and (32) above. We have represented the meaning of the donkey sentence like (6) as (45):

(6) Every person who owns a donkey beats *it*.

(45)
for all x, y ((x is a man & y is a donkey
& x owns y)(x beats y)).

But it seems that the representation in (45) is not the correct representation of the meaning of (6). What (45) says is that for all person-donkey pairs, if the former owns the latter, the former beats the latter. But the sentence (6) is not the statement about the person-donkey pairs, but the statement about the donkey-owning people. This distinction is slight, and in the sentence like (6) which involves the universal quantification, this distinction cannot be made in truth-conditional terms. However, as Heim(1987) discusses extensively, this distinction becomes truth-conditionally significant in the following type of the sentences:

(50) Most farmers who own a donkey are rich.

⁴² Bach & Partee(1980) suggest that these NP's with possessives are definite and hence have a uniqueness condition or presupposition. Judging from the meaning of the sentence in (48), their observation seems to be incorrect.

Now, suppose that there are 100 farmers in the universe and that 99 of them own exactly one donkey and are poor, while one of them owns 200 donkeys and is rich. If the sentence (50) is about the farmer-donkey pairs, this sentence is supposed to be true, since there are 299 farmer-donkey pairs in the universe and 200 of such pairs involve the rich farmer. However, the sentence (50) is clearly false in this situation.⁴³ Rather, what (50) means is that most of the donkey-owning farmers are rich.

As Heim(1987) briefly indicated, this fact may be a problem for the semantic theories that represent the meaning of (6) as (45), but it is not a problem when we consider the surface scope relations between the quantifier *every man* and the indefinite *a donkey*. In English donkey sentence (6), the quantifier *every farmer* has a scope over the indefinite *a donkey*. Hence, the correct 'asymmetric' reading is predicted. We now see that for the correct interpretation of the sentences like (6) or (32), the syntactic scope relations are important.⁴⁴

⁴³ This problem is called "farmer-donkey asymmetries" or the "proportion problem." This problem was extensively discussed in Heim(1987), who notes that Rooth(1986), Kadmon(1987) and Roberts(1987), among others, also discussed this problem.

⁴⁴ There is of course a question of how we represent these scope relations in semantics. This question, however, is beyond the scope of this thesis. Thus, leaving it for future work, we will remain vague as to the precise semantic representation of these scope relations, just stressing that these scope relations are important.

This fact was also illustrated by Rooth(1986)(who was cited by Heim(1987). He suggested that the following two sentences are not judged to be fully equivalent:

- (6) Every man who owns a donkey beats it.
 (51) Every donkey which is owned by a man is beaten by him.

Presented with a situation where one man owns 10 donkeys and beats 9 of them while every other man beats every donkey he owns, informants often hesitate to judge (6) false, but they readily reject (51) under such interpretation. This state of affairs can be viewed as natural when we consider the scope relations between the quantifiers: In (6), the quantifier every man has wide scope; but in (51), the quantifier every donkey has wide scope.⁴⁵

Now let us turn to the Korean donkey sentence (32), repeated below:

- (32)
 [[t enu tangnakui-lul kaci-n] salam]-ina
 ENU donkey-ACC own-PNE person-NA
 [kukes-i cal cala-ki]-lul huimangha-n-ta
 it-NOM well grow.up-COMP-ACC hope-IMPERF-DEC

'(Close English paraphrase) Every person who owns a donkey hopes that it grows well.'

Note again that it is the N' tangnakui 'donkey' that is universally quantified in Korean, not the relative head N' salam 'person' as in English. We also suggested that the meaning of this Korean sentence

⁴⁵ Rooth(1986) also provides a theory in which the semantic distinction between (6) and (51) can be represented. But he suggests that what distinguishes between (6) and (51) is that, in (6), the head noun is man, while it is donkey in (51). This then has nothing to do with the scope relations between man and donkey, as we had argued.

is very close to that of English because there is also an "exhaustive" implication of *salam* 'person' in the Korean sentence. Thus, we said that it is possible to represent the meaning of (32) as (47):

(47)
for all x, y ((x is a person & y is a donkey & x
owns y)(x hopes that y grows well)).

However, in light of the discussion above, the representation of (47) does not fully represent the correct meaning of the sentence. In particular, the Korean sentence (32) is the statement about the donkeys owned by people, rather than the donkey-person pairs. In other words, in (32), the quantifier element *enu tangnakui* 'ENU donkey' has a scope over the N' *salam* 'person.' The interpretation is closer to the English passive donkey sentence (51).

This interpretation is in some sense natural; In Korean, the universal quantification is at the N' *tangnakui* 'donkey' and it can have wider scope; while in English the universal quantification is at the N' *person*, hence it has wider scope. But, it is now unclear how the quantifier *enu tangnakui* 'ENU donkey' which is embedded within the relative clause can have scope over the relative head *salam* 'person' which is located outside of the relative clause. Note that, in English, the following sentence is not good:

(52) *A/Every person who owns every donkey beats it.

The reason that English (52) is bad while Korean (32) is good can be attributed to the presence of *-na* at the NP that contains the relative clause. Recall that, if *-na* was inside the relative clause, the variable binding was impossible. Note the sentence (43), repeated here:

- (43)
 *[[t enu tangnakui-na kaci-n] salam]-i
 ENU donkey-NA own-PNE person-NOM
 [kukes-i cal cala-ki]-lul huimangha-n-ta
 it-NOM well grow.up-COMP-ACC hope-IMP-DEC
 'A person who owns every donkey hopes that it
 grows well.'

As its gloss suggests, the interpretation of this sentence exactly parallels the English (52) (modulo the difference in matrix predicate.)

It seems that what the particle *-na* does is that it makes the NP it is attached to or its N(') to be put under the scope of the quantifier marked by *enu* or *nuku*. Recall that in the "Specifier-Binding" constructions like (30), repeated here:

- (30)
 [[enu pihaengki-uy] thapsungkaek]-ina [kukes-i
 ENU airplane-GEN passenger-NA it-NOM
 ancenhake nal-e ka-ki]-lul pala-n-ta
 safely fly go-COMP-ACC hope-IMPERF-DEC
 'Every airplane's passenger hopes that it flies
 safely.'

the N' *thapsungkaek* 'passenger' is obligatorily understood to co-vary with the quantifier *enu pihaengki* 'ENU airplane.' This covariance reading is precisely the reading that occurs when the indefinites are under the scope of other quantifiers.

The fact that the particle *-na* signals that the NP that it is attached to or its N(') is under the scope of the quantifier marked by its other dependent element *enu* may be correlated with its other function that it marks the scope of the *enu* quantifier. It is possible that it is a question of semantics. However, this question may be attacked in

terms of syntax, and we will show that, in syntactic terms, there is a unifying solution available, given certain assumptions. We will basically solve this problem by assuming that the quantifier polarity elements enu ... na are coindexed in a certain way --- clearly a natural assumption. In order to appreciate this solution, we must introduce Haik(1984)'s framework of Indirect Binding. This is the topic of the next section.

4.4.4. Haik(1984)'s Indirect Binding

Haik's major concern is to spell out the exact *syntactic* condition on donkey sentences that involve the relative clause,⁴⁶ This differentiates Haik from other researchers like Heim(1987), among others, who consider the donkey sentences of the relative variety as just one special instance of a more general donkey phenomenon, which is seen in the sentences like the following:

(53) If a man owns a *donkey*, he always beats *it*.

(54) John thinks that he will catch a *fish*, and he hopes I will grill *it* tonight.

This assumption led these researchers to consider the semantic solution to the donkey sentences involving the relative clause. Haik, however, concentrates on the donkey sentences of the relative clause variety and seems to suggest that the donkey sentences with relative clause variety deserves some special treatment.

⁴⁶ However, her concern is not limited to donkey sentences. She argues that her Indirect Binding can be extended to Crossing Coreference sentences, etc.

Incidentally, we must note that Korean sentences like (53) and (54) do not show any special property that appeared in *enu...na* structure. Following are Korean analogues of English (53) and (54):

(55)

enu salam-i tangnakui-lul kaci-myun, ku-nun
 ENU person-NOM donkey-ACC own-if he-TOP

encena kukes-ul ttaeli-n-ta
 always it-ACC hit-IMP-DEC

'If some person owns a donkey, he always beats it.'

(56)

Chelsu-nun pro koki-lul cap-ul kes-ila
 TOP fish-ACC catch-FUT

saengkakhako-iss-ko, pro nae-ka onul cenyek-e
 think-PRDG-and I-NOM tonight-LOC

pul-e kukes-ul kup-ul kes-ul pala-n-ta
 fire-LOC it-ACC grill-FUT hope-IMP-DEC

'Chelsu thinks that he(pro) will catch a fish, and he(pro) hopes I will grill it tonight.'

In (55), *enu* is used to mean an indefinite *some*. In both of these sentences, most of the indefinites are in the form of simply bare N, as is the case of many indefinites in Korean. What is absent here is the *enu...na* type of constructions. Thus, we agree fully with Haik in considering the donkey sentences with relative clause to be something special which needs some special treatment.

In order to solve the problems involving the donkey sentences of the relative variety, Haik first introduced a mechanism called "Scope Indexing." This notion is based on her assumption that the pronouns must be c-commanded by the quantifier at S-structure in order for them to be interpreted as bound variables (except for the case of

indirect binding, as we will discuss later). By "Scope Indexing," rather than by QR, she tried to capture the scope relations between quantifiers.⁴⁷ In particular, she proposes that, when a quantifier α is in the scope of another quantifier β , both of the quantifiers α and β are marked in certain ways that indicate this scope relation. Particularly, she argues that when a quantifier α is within the scope of another quantifier β , the quantifier α with the narrow scope will be marked by the index of the quantifier β with the slash (/)--- i.e. the quantifier with narrow scope will be marked by the slash index, whose number is identical to the wide scope quantifier. On the other hand, the wide scope quantifier will also be marked by the "parenthesis" index, whose number is identical to the narrow scope quantifier. She states the following conventions:

(57) *Scope Indexing*

a. *Slash Indexing*

If NP_i is to be interpreted as in the scope of NP_j , then append /j to the index of NP_i ; that is, a structure containing $NP_{i/j}$ is unambiguously interpreted with NP_i as in the scope of NP_j . i/j is a referential index.

b. *"Parenthesis" Indexing*

$NP_i \dashrightarrow NP_{i(j)}$ iff NP_i has scope over NP_j

According to these conventions, the following sentence:

(58) Two men love a woman.

⁴⁷ The approach here is basically to try to represent the scope relations by marking the NPs involved, rather than by moving these NPs to certain positions. Similar approaches have been taken by Lasnik(1972), Kroch(1974) and Williams(1986)

will have the following indexing, if the indefinite *a woman* is understood to be within the scope of *two men*:

(59) Two men_{*i*(*j*)} love a woman_{*j*/*i*}.

In (59), the first index of *two men*, i.e. *i*, is the inherent index of the NP *two men*; its second index, i.e. the parenthesis index (*j*), is the scope index, which marks the fact that some NP with the index *j* is within its scope. Similarly, the indefinite NP *a woman* has two indices: the first index *j* is its inherent index; the second index, i.e. the slash index */i*, marks the fact that this NP is within the scope of the NP with the index of *i*.

Given these conventions, let us return to the donkey sentences. As we have discussed, Haik notes that there is a condition in the donkey sentences of the relative clause type that the NP that contains the indefinite *a donkey*, i.e. the NP whose head is *everyone* in English, must c-command the pronoun, even though this NP is not the direct binder of the pronoun. Note that the following sentences (repeated here from (21)) are all ungrammatical:

- (60)
- a. *Everyone who owns a donkey came, and Mary bought *it*.
 - b. *Shouting at [some people who owned a donkey] frightened *it*.
 - c. *Mary kissed [two men who had bought a donkey] because she found *it* cute.

These sentences are ungrammatical because the NP that contains the indefinite *a donkey* phrase (i.e. *Everyone who owns a donkey* in (a), *some people who owned a donkey* in (b) and *two men who had bought a donkey* in (c)) does not c-command the pronoun *it* at S-structure in

each sentence. From this fact, she argues that there must be some binding relationship between the NP that contains the relative clause (in which the indefinite *a donkey* is embedded) and the pronoun.

Note that this binding relationship cannot be binding in its normal sense, since the subject NPs in the donkey sentences do not share an index with the pronoun. The pronoun is rather co-indexed with the indefinite *a donkey* which is embedded within the relative clause, which is, in turn, contained by the subject NP.

As is clear now, this binding relationship *can* be established if we assume the scope indexing conventions we discussed above, even though this binding may not be a "direct" one.

Given the scope indexing conventions, the donkey sentences with the relative clause will be represented as follows:

(61) [_{NP1(2)} everyone [who [_S t₁₍₂₎ owns
[_{NP_{2/1}} a donkey]]]] likes it_{2/1}.

Thus, the idea is that, if we allow a certain type of scopally marked indices, i.e. parenthesis indices in particular, to bind the pronouns, we can establish a binding relationship between the subject NP in (61) and the pronoun. She calls such a binding relationship Indirect Binding. In order to allow this Indirect Binding, she reformulates the condition on variables, such that:

(62) *Condition on Variables*

a. Pro_i must be c-commanded by NP_i, if NP_i is an inherent quantifier.

b. $\text{Pro}_{i/j}$ must be c-commanded either by $\text{NP}_{i/j}$ or by $\text{NP}_{j(i)}$ (Indirect Binding).

This is the gist of Haik's Indirect Binding.

The following two comments on Haik's original Indirect Binding framework are in order:

Note, first, that, as the condition (b) of (62) dictates, she allows only the wide scope NP, i.e. the NP that has the parenthesis index of the narrow scope NP, to indirectly bind the pronoun for the narrow scope NP.⁴⁸ In the next subsection, we will generalize her approach, such that the narrow scope NP, i.e. the NP that has the slash index of the wide scope NP, can indirectly bind the pronoun for the wide scope NP.

A second point, which is related to the first one, is that Haik(1984) did not extend this Indirect Binding approach to what I am calling "Specifier-Binding" constructions. The reason is that, in English, the universal quantifier is at the specifier position of the "Specifier-Binding" constructions and the indirect binding does not apply to the universal quantifiers, since the universal quantifiers are assumed to be inherent quantifiers (see the (a) of the condition on variables above).

We will see below that, when we generalize her approach slightly, we can elegantly account for Korean "Specifier-Binding" constructions

⁴⁸ The reader must not be confused by her statement in (b) that " $\text{Pro}_{i/j}$ must be c-commanded either by $\text{NP}_{i/j}$..." This does not mean that the narrow scope NP can indirectly bind the pronoun for the wide scope NP. This simply means that the narrow scope NP can *directly* bind the pronoun.

and donkey sentences. Also, we can make elegant comparisons between English and Korean donkey sentences on the one hand, and two different types of Korean donkey sentences on the other. We will also suggest that English "Specifier-Binding" constructions can also be viewed as an instance of indirect binding.

4.5. Korean Donkey/"Specifier-Binding" Sentences and Generalized Indirect Binding.

4.5.1. *enu/nuku... na* and Generalized Indirect Binding

As was mentioned in subsections 4.4.1 and 4.4.3., *enu/nuku... na* are discontinuously dependent elements: They, as a whole, signify the universal quantification and, in this reading, neither of them is dispensable.

I would like to assume that these two elements are inherently co-indexed --- which, I believe, is a natural assumption for this type of polarity elements. But, in view of the fact that the *na*-marked NP or its N' is obligatorily understood as being under the scope of the NP that is marked by *enu* or *nuku*, I will suggest that *-na* signals the slash co-index, rather than simple co-index, in the sense of Haik's slash index.

More precisely, suppose that there is an NP that is marked with *-na* and that it dominates either the NP *nuku* or the NP whose specifier contains *enu* or *nuku*. In this situation, let us call the NP that is marked with *-na* a *container NP*; And call the NP that is marked by

nuku or enu an *Enu/nuku* NP. Now, we assume the following convention:

(63) *Enu/nuku...na Indexing Convention*⁴⁹

If *i* is the index of the container NP and *j* is the index of the *Enu/nuku* NP, then append */j* to the index of the container NP.

By this convention, the container NP will have the index *i/j* and it is obligatorily understood as being under the scope of the *Enu/nuku* NP.

To see how this convention works, let us cite the following simple example:

(64)
enu haksæng-ina ku-uy sukce-lul kkuthnae-ss-ta
 ENU student-NA he-GEN homework-ACC finish-PAST-DEC

'Every student finished his homework.'

In (64), the container NP is also the *Enu/nuku* NP. Thus the subject NP is indexed as $[\text{enu haksæng}]_{-ina_{1/1}}$, and this is equivalent to the simple index *I*.

In the "Specifier-Binding" construction, the subject NP will be indexed as follows by the convention in (63):

(65)
 $[[\text{enu pihaengki-uy}]_1 \text{ thapsungkaek}]_{-ina_{2/1}} [\text{kukes}_1 -i]$
 ENU airplane-GEN passenger-NA it-NOM

ancenhake nal-e ka-ki]-lul pala-n-ta
 safely fly go-COMP-ACC hope-IMPERF-DEC

'Every airplane's passenger hopes that it flies safely.'

⁴⁹ We might also consider the possibility of marking the *Enu/nuku* NP with the parenthesis index of the container NP. But I don't pursue it here. It may be that this marking is optional --- i.e., mark it if necessary.

Given this indexing, it is clear how we can make the subject NP with the slash index of the quantifier *enu pihaengki* 'ENU airplane' to indirectly bind the pronoun *kukes* 'it.' Recall that Haik allows only the parenthesis scope index to indirectly bind the pronoun. Consequently, in Haik's framework as is, it is not possible to have an indirect binding relationship in (65). Thus, we generalize her approach slightly, to the effect that the slash scope index can also (indirectly) bind the pronoun. This revision does not cost anything, and does not impose any change in the discussion of Haik(1984). Rather, it acquires more generality, since we are now claiming that *any* scopal index, not just a parenthesis index, can indirectly bind the pronoun. This, as far as I can see, is an improvement of the overall Indirect Binding framework.

Before we state this generalized version of the Indirect Binding, there is one thing that needs to be mentioned in this connection.

Recall that, in (62), Haik seems to require that, in order for a pronoun to be indirectly bound, it must also be slash indexed. But, this is actually not a requirement of any kind. The reason that she marked the pronoun with the slash index is simply because, in English, the indefinite *a donkey* is within the scope of the wide scope quantifier *every man* and the pronoun just copied the index of the indefinite *a donkey*. In order to accommodate Korean data, then, we must leave the second index of the pronoun unspecified: This,

however, would not necessitate any change in her arguments in the paper.

Given these revision, we restate the conditions on variable in (62) as follows:

(66) *Condition on Variables (Generalized Version)*

- a. Pro_i must be c-commanded by NP_i , if NP_i is an inherent quantifier.
- b. $Pro_{i,*}$ must be c-commanded either by $NP_{i,*}$ or by any scopally co-indexed NP (i.e. either $NP_{j(i)}$ or $NP_{j/i}$) (Indirect Binding).

The star (*) in the index of the pronoun and the NP indicates that the second index of the pronoun, if it is present at all, is unspecified.

Given this generalized condition on variables, we can now include the "Specifier-Binding" constructions in (65) as an instance of indirect binding.

4.5.2. Donkey Sentences.

Given our Indexing convention in (63), the following Korean donkey sentence:

(32)
 [[t enu tangnakui-lul kaci-n] salam]-ina
 ENU donkey-ACC own-PNE person-NA
 [kukes-i cal cala-ki]-lul huimangha-n-ta
 it-NOM well grow.up-COMP-ACC hope-IMP-DEC

'(Close English paraphrase) Every person who owns a donkey hopes that it grows well.'

will have the following annotation of indices;

(67)
 [[t enu tangnakui₁-lul kaci-n] salam]-ina_{2/1}
 ENU donkey-ACC own-PNE person-NA

[kukes₁-i cal cala-ki]-lul huimangha-n-ta
 it-NOM well grow,up-COMP-ACC hope-IMP-DEC

' (Close English paraphrase) Every person who owns a donkey hopes that it grows well.'

Applying the generalized condition on variables, this donkey sentence shows a clear instance of indirect binding.

In 4.4.3., we noted that the Korean donkey sentence (32) has a reading in which it is a statement about the donkeys owned by people --- neither about the person-donkey pairs nor about the donkey-owning people. This intuition is correctly captured in (67), where the slash index on the subject NP signifies that the quantifier *enu tangnakui* 'ENU donkey' that has a universal force due to the presence of the particle *-na* has scope over the N *salam* 'person.'

This state of affairs in Korean is in contrast to the English donkey sentence (6):

(6) Every man who owns a donkey beats *it*.

where *it* is a statement about donkey-owning people. This interpretation is predicted by our analysis, since the English donkey sentence (6) will have the following annotation of indexing:⁵⁰

⁵⁰ Of course, English donkey sentence may have the following indexing:

(i)
 [Every man who owns [a donkey]_i] _{j/i} beats *it*_i.

But, in this case, it means that there is one communally owned donkey that is beaten by everyone. This is due to the fact that English has the universal quantifier at the relative head, *man*.

(68)
 [Every person who $t_{2(1)}$ owns [a donkey] $_1$] $_2(1)$ beats
 it $_1$.

In this way, we can make an elegant comparison between English donkey sentences like (6) and Korean donkey sentences like (32); Both are instances of indirect binding, but, in English, it involves the parenthesis scope index, while, in Korean, it involves the slash scope index. This sort of comparison is never possible, within the more semantic frameworks we discussed in section 4.3. Such comparison is also impossible in Heim(1982) or Reinhart(1987)'s frameworks.

We have been neglecting to discuss the fact that Korean has another type of donkey sentences, which are exactly like English donkey sentences. The example is the following:

(69)
 [[t tangnakui-lul kaci-n] enu salam]-ina
 donkey-ACC own-PNE ENU person-NA

 [kukes-i cal cala-ki]-lul huimangha-n-ta
 it-NOM well grow.up-COMP-ACC hope-IMP-DEC

 'Every person who owns a donkey hopes that it grows
 well.'

In (69), the NP tangnakui 'donkey' is bare, which can be interpreted as an indefinite expression. The quantifier element enu is the specifier of the relative head salam 'person.' The particle -na is still attached to the subject NP. Assuming that the wide scope NP can acquire a (parenthesis) scope index from the narrow scope NP within its scope in Korean, this sentence will have the following scope index:

(70)
 [[t tangnakui₁-lul kaci-n] enu salam]-ina_{2/2}(1)
 donkey-ACC own-PNE ENU person-NA
 [kukes₁-i cal cala-ki]-lul huimangha-n-ta
 it-NOM well grow.up-COMP-ACC hope-IMP-DEC
 'Every person who owns a donkey hopes that it grows well.'

This representation is exactly the same as that of English donkey sentences. Hence, given the extended version of Haik's Indirect Binding, we can capture the variations of Korean donkey sentences elegantly.

Before concluding this chapter, we'd like to discuss the following two points. (i) We have mentioned that the indefinites in the donkey sentences typically have an "exhaustive" reading. Can we explore some possible explanation for this fact? (ii) We argued that the "Specifier-Binding" is an instance of Indirect Binding. In Korean, this fact is very obviously seen. However, can we maintain the same for the English "Specifier-Binding" constructions?

As for (i), we will speculate the following solution, in the spirit of Heim(1982) and Nishigauchi(1986): We have noted in section 4.4.3. that, in the donkey and the "Specifier-Binding" sentences, repeated here:

(32)
 [[t enu tangnakui-lul kaci-n] salam]-ina
 ENU donkey-ACC own-PNE person-NA
 [kukes-i cal cala-ki]-lul huimangha-n-ta
 it-NOM well grow.up-COMP-ACC hope-IMP-DEC
 '(Close English paraphrase) Every person who owns a donkey hopes that it grows well.'

(71)

Hankook-e-nun [[enu toshi]-uy konchang-uy]
Korea-LOC-TOP ENU city-GEN factory-gen

pyek]-ina ppalkahke chilha-e ci-e iss-ta
wall-NA red be-painted

'In Korea, every city's factory's wall is painted
red.'

the enu N' is a wh element or an element like some N' and the particle -na can be thought of as a provider of the universal force to the enu N'. But, we might speculate that this particle -na, functioning as a kind of unselective binder in the sense of Heim(1982), may also provide the universal force to other indefinite elements within the NP, in a similar manner in which it provides the universal force to the enu N'. In some sense, then, the indefinite NPs other the enu N' may acquire the universal force *parasitically* from the particle -na. We may speculate this, even though we do not adopt the Heim and Nishigauchi's assumption that the enu N' and other indefinites that acquire parasitic universal force are actually variables bound by the unselective binder. This latter approach would force us to assume that the pronoun in donkey sentences is also bound by the unselective binder --- but, as we have argued at length above, we do not adopt this assumption.

As for (ii), we would like to suggest that the indirect binding in English "Specifier-Binding" constructions is facilitated by the fact that there is an agreement between the spec and head, which is universally available. Thus, in the following English sentence:

(5) Everyone's mother loves him.

the specifier *everyone* and the head *mother* may be co-indexed and, since the head is understood to be within the scope of *everyone*, this index may be translated as a slash index. This slash index percolates up to the dominating NP, so that we have the following annotation of indices:

(72) [[*Everyone*]₁'s *mother*]_{2/1} loves *him*₁.

This is an instance of generalized indirect binding. Note that, in the following sentence, where the universal quantifier is embedded within the relative clause:

(52)
*A/*Every person* who owns *every donkey* beats *it*.

There is no analogous process of spec-head agreement between the universal quantifier *every donkey* and the relative head *a/every person*. Hence, in English, which lacks a scope element like *-na*, indirect binding is impossible in this structure.

CHAPTER 5

ENU . . . NA CONSTRUCTION AND MOVEMENT

5.1. Introduction

In chapter 4, we discussed the variable binding properties of a particular type of Korean donkey sentence (and "Specifier Binding" sentence). There, we saw that these Korean constructions involve two discontinuously dependent elements, *enu . . . na*.¹ In this chapter, concentrating on the relative clauses that involve these two elements, we will investigate more closely the syntactic relationship between the NP that *enu* is the specifier of (henceforth, I will call it "*enu* NP") and the element *-na*.

We have argued in the last chapter that there is a process of the index transmission between *enu* NP and the NP that *-na* is attached to. This index transmission was, of course, possible due to the presence of the element *-na*, which is discontinuously dependent upon the *enu*.

This chapter will show that there is a stronger relationship between *-na* and *enu* NP than that of the index transmission. As will

¹ The element *nuku* can also occur in the position of *enu* NP. Since our argument in this chapter will equally apply to the *nuku . . . na* construction, we will not specifically mention the construction that involves *nuku*.

become clear later on, there are certain restrictions as to what positions *enu* NP can occupy within the relative clause, when the element *-na* is attached to the head of the relative clause. We will show that these restrictions follow if we first assume that, at LF, there is a configurational relationship that must be maintained between *enu* NP and *-na*. We will then argue that, in order for this configurational requirement between *enu* NP and *-na* to be met, there will occur a movement of *enu* NP² from its S-structure position to some position immediately dominated by the outmost relative clause. This movement, then, will account for the restrictions imposed upon the positions of *enu* NP within the relative clause, with certain assumptions about the categorial projections of the functional categories and the notion of barriers.

5.2. Restrictions on the Position of *enu* NP within the Relative Clause

5.2.1. Unbounded Dependency

Note first that *enu* NP can be separated from the head noun by more than one clause:³

² It is also possible to argue that the element that moves in this movement is only the specifier *enu*, not *enu* NP as a whole. However, we prefer the movement of *enu* NP as a whole to that of the specifier *enu* only, since we want to make this movement parallel to the movement of *nuku* in the *nuku...na* construction. It is clear that, in the *nuku...na* construction, it is *nuku* as a whole that moves. *Nuku* occurs in argument positions; Similarly *enu* NP as a whole occupies the argument position,

³ In the following examples of the text, the matrix VP will not contain a pronoun coreferential to the *enu tangnakui* 'ENU donkey.' Thus, variable binding of the donkey anaphora sort is irrelevant to the discussion in this chapter.

(1)
 [[t_i [pro_i enu tangnakui-lul kaci-ess-ta-ko]
 ENU donkey-ACC own-PAST-DEC-COMP

malha-n] salam_i]-ina keki-e ka-ess-ta
 say-CONFL person-NA there go-PAST-DEC

'(Close English Paraphrase) Every person_i who t_i
 said that pro_i owns a donkey went there.'

(2)
 [[t_i [enu tangnakui-ka mul-e ppaci-ess
 ENU donkey-NOM water-LOC fall.into-PAST

-ta-ko] malha-n] salam_i]-ina keki-e ka-ess-ta
 -DEC-COMP say-CONFL person-NA there go-PAST-DEC

'(Close English Paraphrase) Every person_i who t_i
 said that a donkey fell into the water_i went
 there.'

(3)
 [[t_i [pro_i [pro_i enu tangnakui-lul ttaeli-ess
 ENU donkey-ACC hit-PAST

-ta-ko] malha-ess-ta-ko] cucangha-n] salam_i]-ina
 -DEC-COMP say-PAST-DEC-COMP claim-CONFL person-NA

keki-e ka-ess-ta
 there go-PAST-DEC

'(Close English Paraphrase) Every person_i who t_i
 claimed that pro_i said that pro_i hit a donkey_i went
 there.'

In example (1), enu NP occupies the object position in a clause that is embedded within the relative clause, and the sentence is grammatical.⁴ In example (2), enu NP is separated by two clauses from the outmost relative clause. The sentence is still grammatical. Furthermore, enu NP can be within a noun-complement structure: The following sentence is good:

⁴ As we will discuss below, the grammaticality of this example has nothing to do with the variable binding by enu NP.

- (4)
- [[t_i [[enu tangnagui-ka cuk-ess-ta-nun]
 ENU donkey-NOM die-PAST-DEC-COMP
- somun]-ul tulu-n] salam_i]-ina keki-e ka-ess-ta
 rumor-ACC hear-CONFL person-NA there go-PAST-DEC
- (Close English Paraphrase) Every person_i who t_i
 heard the rumor that a donkey died went there.¹

These facts suggest that the relationship that exists at S-structure between enu NP and -na is that of the unbounded dependency. This then means either that this relationship has nothing to do with the movement at all or that, if this relationship is to be captured by movement, as we suggested in the introduction of this chapter, it must be a wh-type movement that occurs at LF.

5.2.2. Locality

That the relationship between enu NP and -na is not that of a simple unbounded dependency without involving movement but that it is closer to that of the English wh-element and its original position is shown by the fact that enu NP cannot be embedded within wh-islands.⁵ The following examples show that enu NP cannot be within an embedded question:⁶

⁵ The wh-island constraints in transformations were first introduced by Chomsky(1973) (A precursor of this constraint is found in Chomsky(1964)).

⁶ Some readers may find these examples to sound acceptable. However, this is merely an illusion: At the first superficial reading of these sentences, the sentences sound O.K. because enu NP and -na co-occur without the intervening overt NP (To this point, we will return later). However, upon a closer look at the sentences, the reader will realize that, in (5) - (8) of the text, enu NP must be associated with the embedded Q-complementizer, i.e. enu NP there is a wh-element, which is a part of the indirect question, and not a quantificational element that is related to -na. Thus, -na has no

(5)
 *[[t_i [enu tangnakui-ka nuku-lul chac
 ENU donkey-NOM who-ACC kick

 -nun ci] kungkumhaeha-n] salam_i]-ina keki-e
 -INFL-QCOMP wonder-CONFL person-NA there

 ka-ess-ta
 go-PAST-DEC

'(Close English Paraphrase) Every person who
 wonders who_i a donkey kicked t_i went there.'

(6)
 *[[t_i [pro_i enu tangnakui-lul ence chac
 ENU donkey-NOM when kick

 -nun ci] kungkumhaeha-n] salam_i]-ina keki-e
 -INFL-QCOMP wonder-CONFL person-NA there

quantificational element to be associated with and the sentence turns out to be odd. (See chapter 4 for discussion indicating that the element -na if it does not meaning something like 'or,' must be associated with the quantificational enu NP or nuku.) In other words, if the sentence (8) of the text, for example, means anything, it must mean that 'Every person who wonders which donkey he kicked went there,' but it cannot precisely mean this, since -na there alone cannot mean 'every' or 'all.' This produces the oddity of the sentences (5)-(8), which I think must be judged to be ungrammaticality.

The meaning that 'Every person who wonders which donkey he kicked went there' can be expressed by the following sentence:

(i)
 [[t_i [pro_i enu tangnakui-lul chac-nun ci]
 ENU donkey-ACC kick-IMP-INFL-QCOMP

 kungkumhaeha-n] enu salam_i]-ina keki-e ka-ess
 wonder-CONFL ENU person-NA there go-PAST

 -ta
 -DEC

'(Close English Paraphrase) Every person_i who t_i
 wonders which donkey_j pro_i kicked t_j went there.'

In (i), there is again a -na attached to the head noun (or more precisely, to the subject NP that contains the relative clause), but this -na is associated with the specifier enu of the head noun, salam 'person.' Here, the enu tangnakui 'ENU donkey' within the embedded indirect question is just a wh-element that is associated with the Q-complementizer (nun) ci, as the English gloss suggests. This sentence, of course, is good.

ka-ess-ta
go-PAST-DEC

'(Close English Paraphrase) Every person_i who t_i
wonders when_j pro_i kicked a donkey t_j went
there.'

(7)
*[[t_i [enu tangnakui-ka Chelsu-lul chac
 ENJ donkey-NOM -ACC kick
-nun ci] kungkumhaeha-n] salam,]-ina keki-e
-INFL-QCOMP wonder-CONFL person-NA there

ka-ess-ta
go-PAST-DEC

'(Close English Paraphrase) Every person_i who t_i
wonders whether a donkey kicked Chelsu_i went
there.'

(8)
*[[t_i [pro_i enu tangnakui-lul chac-nun ci]
 ENU donkey-ACC kick-IMP-INFL-QCOMP
kur.gkumhaeha-n] salam,]-ina keki-e ka-ess-ta
wonder-CONFL person-NA there go-PAST-DEC

'(Close English Paraphrase) Every person_i who t_i
wonders whether pro_i kicked a donkey went there.'

Incidentally, it is to noted that the position of enu NP within the
embedded indirect question does not matter.⁷ In (5) and (7), it

⁷ This shows that the canonical notion of the ECP is irrelevant here. (In fact, it is a well-known observation that the subject-object asymmetry in the wh-movement (that occurs at LF) or in the relativization (that occurs in syntax) does not exist in Korean or Chinese(as noted by Huang(1982)).

Also, the observation of Haik(1984) that the indefinite a donkey in the "donkey" sentences cannot occupy the subject position has nothing to do with the data at hand. Incidentally, let us note that enu tangnakui 'ENU donkey' can occupy the subject position freely and can indirectly bind the pronoun in the matrix clause in the sentence like the following:

(i) [[enu tangankui_i-ka t_i cha-n] salam,]-ina
 ENU donkey-NOM kick-CONFL person-NA
kukes_i-ul silh-e ha-ko iss-ess-ta
it-ACC hate -PROG-PAST-DEC

occupies the subject position; in (6) and (8), it occupies the object position. In all of these instances, the sentences containing them are ungrammatical.⁸

The ungrammaticality of these examples suggest that, if *enu* NP is embedded within an indirect question, which is signified by the presence of the Q-complementizer (*nun*) *ci* at the end of the embedded clause, it cannot be interpreted to be associated with *-na*. Thus, the sentences in (5) - (8) cannot mean what the English glosses there are intended to mean --- i.e. the reading in which 'donkey' and 'person' (or the *enu tangnakui* 'ENU donkey' and *salam-ina* 'person-NA' in Korean) are correlated. Now, since *enu* NP is also a wh-expression (as we have seen in the last chapter), it is then forced to be interpreted as a wh-expression within the indirect question. In this case, *-na* that is attached to the head noun (or the subject NP that contains the relative clause) is left unassociated with a quantificational element and the sentence becomes ungrammatical.

Note that the indirect question with the Q-complementizer (*nun*) *ci* does not require a wh-NP to be present within it. As we noted in chapter 2, when the Q-complementizer occurs without any wh-NP

' (Close English Paraphrase) Every person who
a donkey kicked has been hating it.'

⁸ The reader would no doubt have noticed in the examples above that, when *enu* NP occupies the object position, the subject is *pro*, coindexed with the matrix subject, the trace of the head noun of the relative clause. This is intentional. As we will discuss below, if the subject position within the indirect question is occupied by an overt NP, the sentence becomes ungrammatical for independent reasons.

within it, the Q-complementizer alone can function as English 'whether.' Note:

- (9) Chelsu-ka [Yenghi-ka hakkyo-e ka-ess
 NOM NOM school-LOC go-PAST
 -nun ci] kungkumha-ta
 -INFL-QCOMP wonder-DEC
 'Chelsu wonders whether Yenghi went to
 school.'

In (9), there is no wh-NP within the indirect question, whose complementizer is (nun) ci. The indirect question in (9) is understood to be a 'whether'-question as its gloss suggests. Thus, the Q-complementizer (nun) ci does not itself force enu NP to be interpreted within the embedded question. Furthermore, as the examples (5) and (6) suggest, despite the presence of wh-elements like nuku 'who' or ence 'when' within the embedded question, enu NPs there must be interpreted to be additional wh-NPs within the embedded question. Hence, each of the sentences in (5) and (6) must be understood as having an indirect question that has two different wh-elements, i.e. as an embedded multiple question.

Since we would like to capture the fact that enu NP is associated with -na by the syntactic configurational relation, we can say that the syntactic relationship between enu NP and -na is constrained by the wh-island effect.⁹ And considering the fact that the wh-island effect is

⁹ Nishigauchi(1986) discussed somewhat similar facts concerning Japanese *dono NP/dare mo* construction. However, as we noted in the last chapter, *dono NP/dare mo* construction in Japanese differs from Korean *enu NP/nuku . . . na* construction in its semantics, as well as in its syntax, as the fact in fn. 10 indicates,

a canonical property of wh-movement, it is reasonable to hypothesize that the syntactic relationship between *enu* NP and *-na* can be captured by a kind of wh-movement.

Note also that *enu* NP cannot be embedded within another relative clause:

- (10)
- *[[t_i [[*enu tangnakui-ka cha-n*] *yein*]-ul
 ENU donkey-NOM kick-COMP woman-ACC
 mann-n] *salam_i*]-*ina* *keki-e ka-ess-ta*
 meet-CONFL person-NA there go-PAST-DEC
- '(Close English Paraphrase) Every person who met the woman who_i a donkey kicked t_i .'
- b. *[[t_i [[*enu tangnakui-ka cha-n*] *yein*]-*eke*
 ENU donkey-NOM kick-COMP woman-DAT
 ppang-ul *cu-n*] *salam_i*]-*ina* *keki-e ka-ess*
 bread-ACC give-CONFL person-NA there go-PAST
 -*ta*
 -DEC
- '(Close English Paraphrase) Every person who gave bread to the woman who_i a donkey kicked t_i went there.'

This confirms the fact that *enu* NP cannot be associated with *-na* when it is embedded within a wh-island.¹⁰

Finally in this subsection, it must be emphasized that the ungrammatical examples in this subsection have nothing to do with variable binding. The examples that lack the pronominal element within the matrix clause precisely show this point. The sentences in

¹⁰ According to Naoki Fukui(p,c), Japanese constructions corresponding to (10a,b), which use the *dono NP . . . mo*, are acceptable.

ka-ess-ta
go-PAST-DEC

' (Close English Paraphrase) Every person who t_i
said that Chelsu_j owned a donkey went there.†

b. *[[t_i [[Chelsu_j-ka enu tangnakui-lul
NOM ENU donkey-ACC

haktaeha-n-ta-nun] somun]-ul tul-un]
treat.cruelly-IMP-DEC-COMP rumor-ACC hear-CONFL

salam_i]-ina keki-e ka-ess-ta
person-NA there go-PAST-DEC

' (Close English Paraphrase) Every persons who t_i
heard the rumor that Chelsu_j treated a donkey
cruelly went there.'

Note further that the fact that enu NP occupies subject position does not guarantee the well-formedness of the construction. Note the following ungrammatical sentences:

(12)

a.*[t_i [Chelsu_j-ka [enu tangnakui-ka cuk-ess
NOM ENU donkey-NOM die-PAST

-ta-ko] malha-n kes]-ul tul-un] salam_i]-ina
-DEC-COMP say-COMP-ACC hear-CONFL person-NA

keki-e ka-ess-ta
there go-PAST-DEC

' (Close English Paraphrase) Every person who
heard that Chelsu said that a donkey died went
there.'

b.*[t_i [Chelsu_j-ka [[enu tangnakui-ka cuk-ess
NOM ENU donkey-NOM die-PAST

-ta-nun] somun]-ul phettuli-n-ta-ko]
-DEC-COMP rumor-ACC spread-IMP-DEC-COMP

cucangha-te-n salam_i]-ina keki-e ka-ess-ta
claim-PAST-CONFL person-NA there go-PAST-DEC

' (Close English Paraphrase) Every person who claim that Chelsu spread the rumor that a donkey died went there.'

In the two sentences above, *enu* NP is in the subject position, but the sentence is ungrammatical. This is because there is another subject c-commanding it that is non-empty.

In order to achieve the right generalization, let us suppose, for the sake of exposition, that we postulate a path from the position of *enu* NP to a certain position within the matrix clause of the outmost relative clause, say, the position of the trace of the head noun.¹¹ Then, the difference between the examples (1) - (3) on the one hand and the examples (11) - (12) on the other seems to be that, in the grammatical examples of (1) - (3), this path is not intervened by any overt subject, but an overt subject intervenes it in the ungrammatical examples of (11) - (12),

Let us call this constraint in *enu...na* constructions the "Overt Subject Constraint(henceforth, OSC)." The existence of this constraint, then, differentiates this *enu...na* construction from the English wh-movement construction.¹²

Before proceeding to an account of this OSC effect, we must determine that this is the right generalization. One could claim that

¹¹ Recall our discussion in chapter 3, in which we assumed that Korean relativization is an instance of a syntactic movement. See also M.Y. Kang(forthcoming).

¹² The existence of this constraint also distinguishes the Korean construction in question from Japanese *dono NP /dare...mo* construction, which, according to Nishigauchi (1986), involves the normal wh-movement.

the right generalization concerning the data (1)-(3) and (11)-(12) is that of a kind of "Same Subject Constraint," not that of the OSC. According to this claim, what distinguishes these two types of data is whether there are any subjects c-commanding *enu* NP that are *not coindexed with each other*. That is, in the sentences of (11) - (12), there are two subjects that c-command *enu* NP, namely the trace of the head noun and the Chelsu, but they are not coindexed with each other and hence they are ungrammatical. In the sentences of (1) - (3), all the subjects c-commanding *enu* NP, i.e. the trace and other *pro* subject(s), are coindexed --- hence they are good. Thus, in this claim, whether or not the subject(s) intervening in the path from the trace and *enu* NP are non-overt does not matter: As far as they are coindexed with the trace, the sentence should be good.

The test cases that distinguish this claim and our OSC can be easily constructed: We can construct a sentence that has an overt pronominal/anaphoric subject that is coindexed with the trace of the head noun and that intervenes in the path in question. The "Same Subject Constraint" predicts that the sentence should still be good; The OSC predicts that the sentence should be bad.

Before we construct such sentences, let us first take a look at a relative clause that has a pronominal subject within the embedded clause, but that does not involve *enu...na*. This sentence is somewhat marginal, but acceptable:

Now, let us consider the case of the *enu...na* construction under discussion that involves an overt pronominal subject. As the following shows, such a sentence is unacceptable:¹⁴

- (14)
 *[[t_i [ku_i-ka enu tangnakui-lul kaci-ess
 he_i-NOM ENU donkey-ACC own-PAST

 -ta-ko] malha-n] salam_i]-ina keki-e ka-ess-ta
 -DEC-COMP say-CONFL person-NA there go-PAST-DEC

 (Close English Paraphrase) Every person_i who t_i
 said that he_i owns a donkey went there.¹

The ungrammaticality of this sentence then shows that our constraint, the OSC, not the "Same Subject Constraint," is the right one.

However, this is not the end of the story: When the relevant subject is not a pronominal, but an anaphor *caki* 'self,' coindexed with the trace, the sentence seems very much improved. Note the following sentence:

- (15)
 ?[[t_i [caki_i-ka enu tangnakui-lul kaci-ess
 self_i-NOM ENU donkey-ACC own-PAST

 -ta-ko] malha-n] salam_i]-ina keki-e ka-ess-ta
 -DEC-COMP say-CONFL person-NA there go-PAST-DEC

¹⁴ This sentence, of course, is not bad because the pronominal there is singular. The following sentence, where the plural pronoun is used, is also bad.

- (i)
 *[[t_i [kutul_i-i enu tangnakui-lul kaci-ess
 he-pl_i-NOM ENU donkey-ACC own-PAST

 -ta-ko] malha-n] salam_i]-ina keki-e ka-ess-ta
 -DEC-COMP say-CONFL person-NA there go-PAST-DEC

 (Close English Paraphrase) Every person_i who t_i
 said that they_i owns a donkey went there.¹

(Close English Paraphrase) Every person_i who t_i
 said that self_i owns a donkey went there.'

The grammaticality of this sentence, then, might appear to militate against our OSC. This is only an appearance, however. It must be noted that the nominative *caki* 'self' must sometimes be viewed as a kind of an adverbial when it is used for the purpose of emphasis.¹⁵

Observe the following examples:

(16) Chelsu-ka caki-ka ku il-ul ha-ess-ta
 NOM self-NOM the work-ACC do-PAST-DEC

'Chelsu did the work himself.'

In (16), since the subject position is occupied by *Chelsu*, the nominative *caki* cannot be considered to be an element occupying the argument position. The nominative *caki* in (16), then, must be viewed as a kind of an adjunct, like the English *himself* in the gloss.

Given this fact, we now consider the nominative *caki* in (15) as an adjunct that is used for emphasis, not as an argument. Thus, we assume that the actual structure of (15) is the following:

¹⁵ Note that the non-nominative anaphor *caki* cannot function this way: The following sentences are all bad:

(i) *Chelsu-ka Yenghi-lul caki-lul ttaeli-ess-ta
 NOM ACC self-ACC hit-PAST-DEC

'Chelsu hit Yenghi herself.'

(ii) *Chelsu-ka Yenghi-eke caki-eke pap-ul
 NOM DAT self-DAT meal-ACC

cu-ess-ta
 give-PAST-DEC

'Chelsu gave Yenghi herself the meal.'

(17)
 ?[[t_i [pro_i caki-ka enu tangnakui-lul kaci-ess
 self-NOM ENU donkey-ACC own-PAST

-ta-ko] malha-n] salam_i]-ina keki-e ka-ess-ta
 -DEC-COMP say-CONFL person-NA there go-PAST-DEC

`(Close English Paraphrase) Every person_i who t_i
 said that pro_i owns a donkey went there.'

One might wonder, at this point, whether the nominative anaphor *caki* can ever be used as an emphatic element for the non-overt *pro* in other cases. When the nominative *caki* is used in the embedded clause and the subject is *pro*, it is always impossible to tell whether the nominative *caki* is actually a subject or just an emphatic adjunct. However, there are some cases where the nominative *caki* is used in the matrix environment and behaves as an adjunct for the subject. Observe the following dialogue:

(18) A: Chelsu-ka nuku-lul ponae-ess-na?
 NOM who-ACC send-PAST-Q

'Did Chelsu send someone?'

B: ani, caki-ka cikcep o-ess-e
 no self-NOM in person come-PAST-DEC

'No, he himself came in person.'

According to some researchers (e.g. D.W. Yang, among others), the second sentence in (18) indicates that the Korean anaphor *caki* can be discourse-bound. This is because, in the B sentence of (18), the anaphor *caki* lacks its antecedent within the sentence, but the sentence is grammatical.

But, I think that the sentence B of (18) does not show that the Korean anaphor *caki* can be discourse-bound: Note that, when the

Korean anaphor *caki* occupies the non-subject position, it cannot be discourse-bound. The following sentences are all ungrammatical with the indicated reference:

- (19)
- a. *Chelsu_i-ka caki_j-lul ttaeli-ess-ta
 NOM self_jACC hit-PAST-DEC
 'Chelsu_i hit himself_j.'
- b. *Chelsu_i-ka caki_j-eke chaek-ul cu-ess-ta
 NOM self_jDAT book-ACC give-PAST-DEC
 'Chelsu_i gave himself_j a/the book.'

Thus, if the sentence B of (18) shows the alleged fact that the Korean anaphor *caki* can be discourse-bound, one must be hard pressed to explain why the same discourse-binding does not occur for the non-subject anaphors in (19). But, this asymmetry can be nicely explained, when we acknowledge the fact that the nominative anaphor can be an emphatic adjunct while the non-subject *caki* cannot function as such, as we noted in fn. 15. Thus, assuming that the Korean reflexive cannot be discourse-bound, we represent the B sentence of (18) as follows, where the reflexive is an emphatic adjunct for the *pro* subject:

- (20) ani, pro caki-ka cikcep o-ess-e
 no self-NOM in person come-PAST-DEC

On the other hand, the sentences in (19) cannot have the following representation, since the non-nominative anaphors cannot serve as a emphatic adjunct:

- (21)
- a. *Chelsu_i-ka pro_j caki_j-lul ttaeli-ess-ta
 NOM self_jACC hit-PAST-DEC

- b. *Chelsu_i-ka proj caki_j-eke chaek-ul
 _iNOM self_jDAT book-ACC
 cu-ess-ta
 give-PAST-DEC

Of course, the ungrammaticality of the sentence (21) is not attributable to the fact that their object positions are occupied by a *pro*. It is well-known that the object position in Korean sentences can freely be occupied by a *pro*, as the following grammatical sentences suggest:

- (22)
- a. Chelsu-ka pro ilk-ess-ta
 NOM read-PAST-DEC
 `Chelsu read pro.'
- b. Chelsu-ka pro chaek-ul cu-ess-ta
 NOM book-ACC give-PAST-DEC
 `Chelsu gave pro the book.'

Thus, the asymmetry of anaphor-binding in example (18B) and the examples in (19) can be accounted for if we assume that the nominative anaphors can be an emphatic element, occupying a non-argument position. This fact, then, shows that our claim that the nominative *caki* in (15) is an adjunct for the embedded subject *pro* is not anything unusual in Korean grammar.

Thus far, we have discussed two cases where the overt subject intervenes in the path from enu NP to the matrix clause of the outmost relative clause. We have seen that, when an overt pronominal subject intervenes in the path, the sentence in fact becomes ungrammatical and this supports our OSC. The case of the anaphor *caki* intervening in the path, on the other hand, can be explained away by assuming that

this constraint exists and how it follows from the movement analysis of enu NP at LF.

5.3. Movement of enu NP

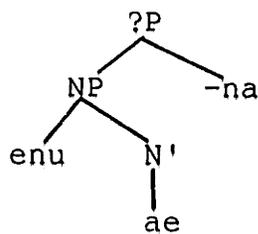
5.3.1. Several Assumptions

I will assume first that -na and enu must stand in a particular configurational relation to one another at LF. Specifically, the former must govern the latter. As we have seen all along, these two elements are discontinuously dependent elements --- i.e. they, even though discontinuous from each other, must occur together in order to perform a particular syntactic function --- and that they often occur close to each other:¹⁶

- (25) a. enu ae-na `every child'
 ENU boy-NA
- b. nuku-na `everyone'
 NUKU-NA

Second, we will assume that -na is a kind of a functional head that takes an NP complement. Thus, the phrase [[enu ae]-na] will have the following structure:

(26)



¹⁶ As we noted in fn. 32 of the last chapter, these enu . . . na or nukuna elements can also be used to indicate something similar to the 'free choice' any in English.

In (26), *-na* heads its own functional phrase ?P, and the NP *enu ae* 'ENU boy' is its complement. Within this NP, *enu* is the specifier and *ae* 'boy' is the head.

Third, we would like to assume that the functional head *-na* is more similar to a lexical element than a pure functional category like COMP is, in that it can govern into the spec of the category it canonically governs. This is necessary because we want *-na* to be able to govern *enu* in the structure (26), where *enu* occupies the specifier position of the NP, the complement of *-na*. Fukui & Speas(1986) argued that functional categories like COMP and INFL cannot govern into the spec of their complements, while lexical categories can. Thus, we must assume that the Korean functional category *-na* has a "stronger" lexical content than do functional categories like COMP and INFL, so that it can govern into the spec of its complement. Presumably, the "strong" lexical content is responsible for such "exceptional" government.

Fourth, we adopt Nishigauchi(1986)'s assumption that the relative clause of the languages like Korean occupies the spec position of the NP, which occurs at the prenominal position at S-structure. This approach is somewhat similar to the one adopted in Chomsky(1965), in which the relative clause is generated along with the determiner in the prenominal position and is postposed to a position following the head noun in English by a transformation.

Finally, there is a question of where the final landing site for *enu* NP would be. In the following typical *enu...na* construction of the type under discussion here, *enu* NP is not in a position that can be governed by *-na* at S-structure:

(27) [[t *enu tangnakui-lul* *kaci-n*] *salam*]-*ina*
 ENU donkey-ACC own-PNE person-NA

keki-e ka-ess-ta
 there go-PAST-DEC

'(Close English paraphrase) Every person who owns
 a donkey went there.'

Hence, it must move up to a position where it can be governed. There are a couple of possibilities for the final landing site for *enu* NP: One might assume that it is actually the spec of the COMP of the relative clause.¹⁷ However, this option seems undesirable for the following two reasons: First, this spec of COMP position within the relative clause is already occupied, since we assume the movement of an empty operator in syntax for Korean relative clauses. Since we also adopt the standard assumption that the final landing site for the empty operator movement is the spec of COMP, we will end up having a doubly filled COMP if we move *enu* NP to the spec of COMP. Second, it may well be the case that the spec of COMP position is reserved for the *wh*-element. It is a possible assumption that, whatever element lands in the spec of COMP position, it must either be interpreted as a *wh*-element or, if the element cannot, by nature, be interpreted as

¹⁷ Nishigauchi(1986) assumes that the *wh*-question element within a relative clause will move at LF to the spec of the COMP of the relative clause. He ignores the fact I will discuss immediately below, namely, that this spec position is already filled by the empty operator of the relative clause.

such, it cannot be interpreted at all. Even though *enu* NP may be interpreted as a *wh*-element in some cases, it should not be interpreted as a *wh*-element in the *enu...na* construction. Hence, if it lands in the spec of COMP position, a misinterpretation will occur.

We cannot, as an alternative, adjoin *enu* NP to the CP, since, as we discussed in chapter 2, the CP and NP are categories that cannot be adjoined to.

It is also important to note that movement of *enu* NP in question should not be viewed as an instance of Quantifier Raising(QR). QR is often assumed to be clause-bound, as we mentioned in the last chapter; the movement of *enu* NP is not. As we mentioned in the last section, movement of *enu* NP cannot be equated to *wh*-movement, either, due to the OSC that must be observed in *enu* NP movement. We will discuss in section 5.3.2.3. how *enu* NP movement differs from *wh*-movement in more precise terms.

The second possibility for the final landing site of *enu* NP movement is adjunction to the functional head C. One problem for this possibility might be that it is against the structure preservation principle (the one pursued by Chomsky(1986b)) that is operative in all movements. That is, since *enu* NP is a maximal projection, the structure preservation principle rules that it must adjoin to another maximal projection¹⁸, if it adjoins to any category at all. However,

¹⁸ More precisely, a category of a certain bar level can only adjoin to the category that has the same bar level, cf. Chomsky(Class Lectures 1987).

Chomsky(Class Lectures 1987) also assumes that this structure preservation principle is *not* operative at the LF level: He suggests that, at LF, the category of any bar level can, in principle, adjoin to any other category that may have a different bar level. One instance of this adjunction that is not structure-preserving, Chomsky argues, occurs in the following English sentence, where a small clause is involved:

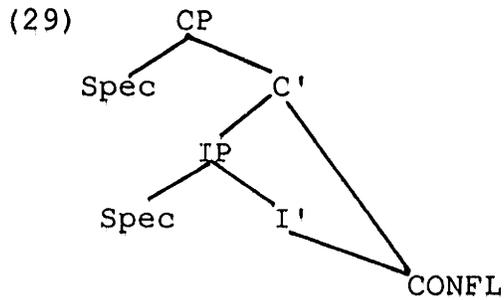
(28) Mary considers John foolish

Chomsky argues, following essentially Stowell(1987), that the AP *foolish* moves to the matrix verb position at LF and adjoins to the verb.¹⁹ Since the maximal projection adjoins to a head in this process, this is an instance of non-structure-preserving movement.

If we adopt this assumption of Chomsky, there would be no known principle that is violated, even though we adjoin *enu* NP to the functional head C. Hence, we will adopt this possibility.

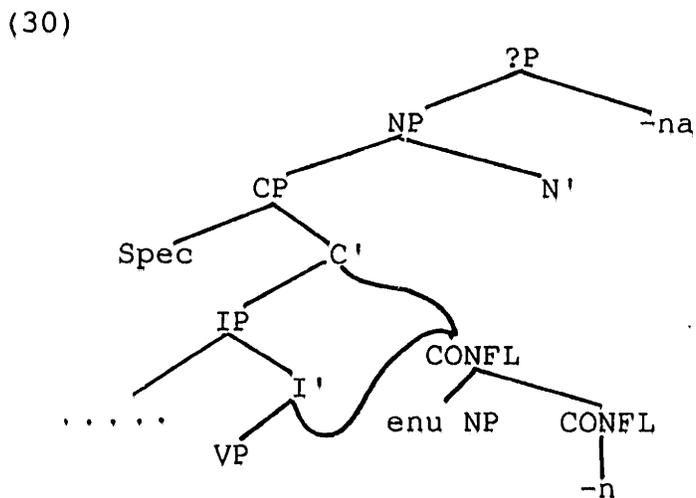
In fact, we will argue that *enu* NP will adjoin to the CONFL. Recall that we analyze the prenominal suffix *-n* as a category that is a merger of INFL and COMP --- following Platzack(1983) we call it a "CONFL." For the purpose for this chapter, we will represent the CONFL node as follows, ignoring X'-theory. For a more precise representation of CONFL, we will wait for future study.

¹⁹ Stowell originally suggested that the head of the AP, again *foolish*, adjoins to the matrix verb. In Stowell's view, then, this is an instance of head movement. However, Chomsky modifies this view and argues for AP movement, as in the text.



In (29), the head of C', C, and the head of I', I are merged to form a CONFL node.

We will further argue that, at this position adjoined to the CONFL, enu NP will be governed by -na (hence, enu will be governed by it); The configuration would be as follows:



To allow for government of enu NP by the element -na in the structure in (30), we propose the following convention on government:

- (31)
 If α is governed by β , then all the categories adjoined to α are governed by β .

Note that, since the NP in (30) is governed by -na, its spec, the relative clause CP, will also be governed by it; And, given the

definition of government we adopted in the chapter 1 (See also Chomsky(1986b)), if α is governed, its head is governed. Hence, since the C of the relative clause will be governed by -na, CONFL is also governed by it. Now, by the convention (31), enu NP that is adjoined to the CONFL will also be governed.²⁰

Concluding, if we allow enu NP to adjoin to the CONFL of the relative clause, no principle will be violated. Further, government of this element by -na will obtain, given the convention (31).

5.3.2. Deriving the OSC

5.3.2.1. Introduction

In the last subsection, we argued that enu NP will land in the CONFL position of the relative clause. In this section, we consider the question of how the movement of enu NP proceeds from its S-structure position to this CONFL position. We will see below that, given certain assumptions about specifiers and projections, this movement will be correctly blocked for the data (11) - (12), while allowing it for the data (1) - (3), deriving the OSC.

5.3.2.2. Specifiers and Projections

Fukui & Speas(1986) pursued the idea that spec positions are not licensed by X'-theory, but are licensed only by the presence of a

²⁰ Of course, if enu NP is governed by -na, its spec enu will also be governed by -na.

certain lexical property of the head of the maximal projection that it is the specifier of. For functional categories like COMP and INFL, specifiers are licensed only if those functional heads have some feature to assign: They call it a "Kase" feature. In this system, then, when the head of the CP contains a WH, its specifier must be generated, since a WH-head has a wh-feature to assign; Similarly, if the INFL contains Tense, its specifier position must be present, in order for this Case (or Kase) feature to be discharged to the subject.

Other points of their system include: (i) They assume that the lexical categories N, V, A, P are projected only to the X' level --- their specifiers are adjunctions to this X'; and (ii) that subjects are originally generated under a V projection and move to the spec of the IP position to receive Case.

In this section, we follow the spirit of Fukui & Speas, with some non-trivial modifications. For the point (i), we did not adopt Fukui & Speas's assumption in chapter 2 and 3, in favor of the more standard analysis where the lexical categories are projected to the X double bar level. As for point (ii), we adopted it in chapter 3, following the original suggestion by Sportiche(1988). The only difference from Fukui & Speas is that, within our assumption, the subjects are base-generated at the *specifier* of the VP.

But, our more significant modification of Fukui & Speas will be the following: Concentrating on the functional projections, we would like to argue that the motivation for the generation of the spec positions

may be for "functional" reasons. Furthermore, we suggest that these reasons may be parametrized across languages.

First, we'd like to argue that, for the generation of the spec of COMP position, its motivation may be both "formal" and "functional," in English as well as in Korean: The spec of COMP is required when the COMP is WH because it will provide the scope position for the wh-element --- as we noted above, wh-elements cannot be interpreted if they are not in scope positions. At the same time, the reason that the spec of WH COMP is the only scope position for the wh-element is because the wh-element must discharge the wh "grid" position that the WH COMP possesses. In this sense, we would like to say that the motivation for the generation of the spec of WH COMP is both "formal" and "functional." Of course, if the COMP is not WH, then there will be no wh "grid" to be discharged, and there will be no "formal" need for creating a scope position.²¹ This state of affairs is identical in English and Korean, except that, in Korean, the "formal" requirement of wh "grid" discharge can be met at LF, while in English it must be met at S-structure.

On the other hand, we will argue, based on the property of expletives (to be discussed below), that the motivation for the generation of the spec of INFL is just "functional" in Korean, while it is "formal" in English. That is, we argue that, in English, the spec of

²¹ But, there may still be a "functional" need for creating this position. We will discuss this later in this section.

INFL will be generated only if the INFL has the Case "grid" to be discharged; while, in Korean, it will be generated only if there is an NP, typically the subject under VP, that needs this position for Case. A slightly different way of putting this is the following: In Korean, the generation of the spec position of the tensed IP is just optional. And if there is an NP that needs this position for Case, this position must always be available for this NP. However, if there is no such NP, we choose the derivation in which this spec position is not generated. This is equivalent to our somewhat "functional" explanation above.

Hence, when the INFL has tense, the movement of the subject from under VP to the spec position of IP is obligatory in English. On the other hand, even if the INFL may have tense, the presence of the spec position of the IP is not required in Korean, if there is no NP that needs this position for Case.

This "functional" explanation may also be correlated with a "formal" one. There is some evidence that, in the languages like Arabic²², for example, the nominative Case assignment by the tensed INFL may be optional: In this language, COMP may assign the accusative Case to the subject position, and this Case assignment to the subject by COMP is possible even when INFL is tensed --- hence, we must assume that the nominative assignment by INFL is optional even when it is tensed. Given this fact, the formal requirement for the presence of spec of IP

²² See Abel-Moneim(1988).

becomes vacuous and this fits well with our "functional" motivation for the generation of the spec of the IP in Korean.

However, we will still maintain that, in English, Case assignment by the tensed INFL is obligatory. As we noted above, we maintain that the non-/optionality of the generation of the spec of INFL must be parametrized across languages. This then accounts nicely for a well-known syntactic variation between English and Korean: a variation concerning expletives.

It is well-known that, in languages like Korean, there are no pleonastic elements like English *it* or *there*. Given the discussion above, this difference between English and Korean can now be explained in the following way: In English, if *I* is tensed, the spec position of the IP must be generated. However, if the verb has no "external" argument, there would be no argument that may move into this spec position of the IP. To fill this vacuum, the pleonastic will be inserted into this position. On the other hand, in Korean, if there is no NP that may fill the spec of IP, the spec of IP may simply be not generated. Hence, pleonastic elements like *it* or *there* are totally unnecessary in Korean. Assuming a principle about licensing in which it is stated that what is unnecessary in both functional and formal

terms should not exist at all in a language,²³ we predict that Korean lacks a pleonastic element like *it* or *there*.²⁴

Now let us consider another case where our assumption about the "functional" generation of the spec of INFL in Korean is at work. In Korean, the non-generation of the spec of the tensed IP may occur when the subject is an empty category, a *pro*. Even though the INFL may be tensed, if the subject under VP is a *pro*, there is no reason to generate the spec of IP position, since *pro*, being an empty category, does not need Case.²⁵ Hence, there will be no raising of this empty category to the spec of IP, and the spec of IP position won't be generated. This assumption is crucial for the discussion in section 5.3.2.3.

According to Fukui & Speas(1986) and Fukui(1986), the phenomenon that the empty category subject does not raise to the spec position of the IP also occurs in English. However, in English, it occurs only if the I is untensed and the empty category in this instance must be a PRO.

At this juncture, one might raise the following question: If both *pro* and PRO do not raise to the spec of IP in Korean, how do we

²³ Howard Lasnik(p.c) called my attention to this principle.

²⁴ As is obvious, this explanation does not extend to the pleonastic verb like *ha-* in Korean, which has at least functional reasons to exist.

²⁵ One exception, of course, is a *wh*-trace which, as is widely held, needs Case. See Chomsky(1981).

distinguish these two types of categories? One answer to this question might be that, indeed, these two categories are not distinguished at all in Korean. But, if these two categories must be distinguished, as we assumed in chapter 2, we may assume the following: Note that the basic distinction between *pro* and PRO is that the former is governed while the latter is not. Thus, we say that, if INFL is tensed, it is strong enough to govern into the spec of the VP, contra Fukui & Speas; while it cannot govern into the spec of VP if it lacks tense. This effect may in fact be derived, if we assume that, when the INFL is tensed, there is a movement of V to I --- then, as Chomsky(1986b) argued, the V-I complex will become "strong" enough to L-mark the VP. Hence, the spec of IP will be governed by the V-I complex. On the other hand, if the INFL is untensed, it is a usual assumption that there will be no such V-I movement. Thus, the VP will not be L-marked, and its spec position cannot be governed from outside.

One final way of answering the above question is to say that the empty category subject will be undifferentiated to be either *pro* or PRO when it remains within the spec of VP. Recall that we allow the spec of IP to be optionally generated when the I is tensed. Now, even though there is a *pro* subject within the VP, we might choose to generate the spec of IP and raise the *pro* to this spec position. Since it is *pro*, which can be governed, no principle is violated in this raising. Let us suggest now that, when an empty category is raised to this spec position of IP, it will be determined to be *pro* --- otherwise, it will be undifferentiated.

5.3.2.3. OSC

In light of the discussions in the several previous subsections, we are now in a position to consider the contrast between the data of (1) - (3) on the one hand and the data of (11) - (12) on the other. Let us first consider the sentence (1), repeated here:

(1)

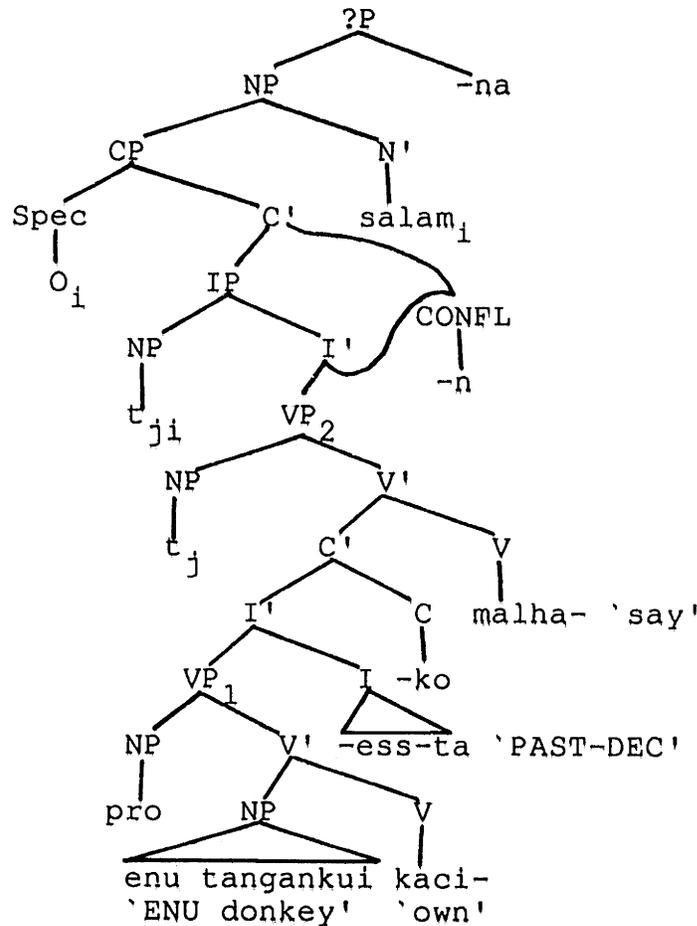
[[t_i [pro_i enu tangnakui-lul kaci-ess-ta-ko]
ENU donkey-ACC own-PAST-DEC-COMP

malha-n] salam_i]-ina keki-e ka-ess-ta
say-CONFL person-NA there go-PAST-DEC

(Close English Paraphrase) Every person_i who t_i
said that pro_i owns a donkey went there.¹

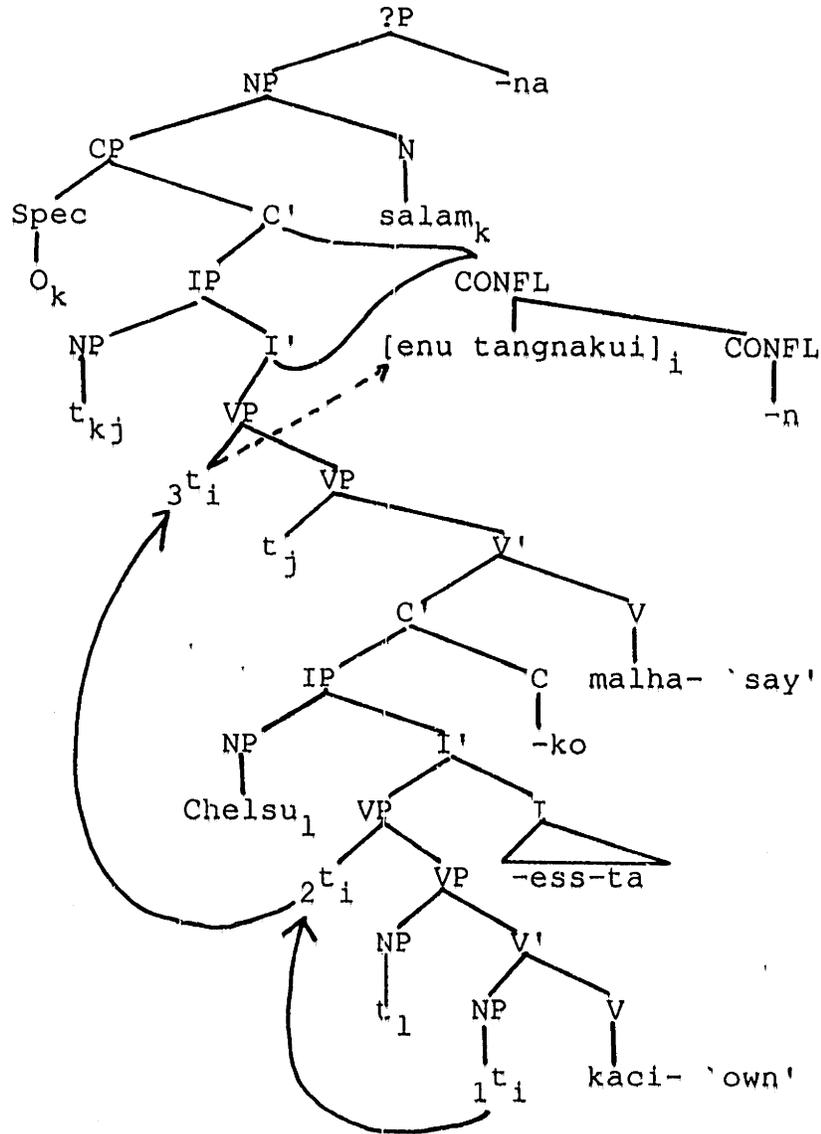
In (1), the subject of the embedded sentence within the relative clause is a *pro*: Hence, we can choose not to generate the spec of the IP of this embedded clause, leaving this empty category within the VP. Furthermore, the COMP of the embedded clause is not WH, so its spec, too, need not be generated. Thus, the relative clause of sentence (1) will have the following S-structure representation:

(32)



In (32), the spec of the CP of the relative clause is occupied by the empty operator, which is coindexed with the head noun *salam* and its own trace, which occupies the spec of the IP. This trace is in turn coindexed with another trace t_j at the spec of the VP_2 , from which the subject empty operator must have moved. This movement is necessary, due to the requirement that the trace of the wh-element or an empty operator must have Case. The verb *malha-* 'say' takes a clausal complement, but this complement is projected up to only the C'-level, since it lacks WH COMP, as we argued above. The I below it is also projected just to the I'-level, since its spec is not necessary.

(35)



Note that, in (35), the spec of IP of the embedded clause is generated due to the presence of the overt subject Chelsu. The movement of enu NP occurred in (35) as follows: It started from the position of $1t_i$ and adjoined to the lowest VP (the position of $2t_i$) and then to the upper VP (the position of $3t_i$) and to the CONFL. Note that among these paths, a maximal projection, namely the IP of the embedded clause, intervenes in the path from the position of $2t_i$ and that of $3t_i$. As for

other paths, either a X'-level category or a segment of a maximal projection intervenes them.

Note that, if we follow Chomsky(1986b) in assuming that the IP is an inert category and cannot be a barrier, all the paths in (35) are legitimate and we cannot account for the ungrammaticality of this example. But, if we assume simply that all maximal projections, including IP, can be barriers when they are not L-marked, following Fukui & Speas(1986), then the IP that lies between the path from $_2t_i$ to $_3t_i$ will be a barrier, since it is not L-marked by any category.

Thus, given Fukui & Speas(1986)'s assumption that all maximal projections are potentially barriers, we can correctly capture the difference in the judgement of sentences (1) and (11a), namely, that sentence (1) is grammatical, while sentence (11a) is not. Thus, we will maintain this assumption of Fukui & Speas's below.

However, there is one further problem to consider: Recall from chapter 1 that the notion of barrier is involved in Subjacency as well as in the ECP. Subjacency applies to all movements; its effect is relatively weak and it stipulates that each chain link of movement must be at most 1-subjacent. That is, in the canonical notion of subjacency(cf. Chomsky(1986b)), one barrier can intervene in each chain link. On the other hand, the ECP is more effective in the case of movement of subjects or adjuncts, whose intermediate traces are required to be present at all levels. The ECP states that all present traces, including intermediate ones, must be properly governed. The canonical

definition of proper government is, as we noted in chapter 1, the following²⁷:

(36) *ECP*

A non-pronominal empty category must be

- (i) head-governed, or
- (ii) antecedent governed.

Since (antecedent) government is blocked if there is at least one barrier between 2 successive links of a chain, the ECP requires that, for subjects and adjuncts, each chain link must be 0-subjacent.

Now, returning to our discussion of the *enu...na* construction, we have argued that the fact that a barrier intervenes in one of the chain links is sufficient to induce the ungrammaticality of example (11a). This suggests that Subjacency is not responsible for this ungrammaticality, since Subjacency basically means "1-subjacent," allowing one barrier between the chain link. Furthermore, the ungrammaticality we observe in sentences like (11a) is quite strong and it seems implausible that it is due to Subjacency, whose effect is relatively weak.

Thus, we would like to attribute the ungrammaticality of sentences like (11a) to the ECP. This would then account for the fact that only one intervening barrier creates the ungrammaticality and for our intuition that the violation here is very strong. But the problem of this

²⁷ According to the recent trend (cf. Chomsky(Class Lectures 1987), the definition of the ECP employs the conjunction of the two clauses (i) and (ii) below in the text, rather than disjunction of them (See also Rizzi(1987)). We in fact will assume this new definition below.

assumption would be that *enu* NPs in the examples we have seen thus far occupied argument positions and there is no subject/object/adjunct asymmetry.

Thus, the question is: why is the movement of *enu* NPs, even though they occupy argument positions, susceptible to adjunct-like ECP effects? There is a simple answer to this question: Let us now first adopt a slightly different definition of the ECP, which we noted in fn. 27:

(37) *ECP*

A non-pronominal empty category must be

- (i) head-governed, *and*
- (ii) antecedent governed.

According to this definition, all traces must be *both* head-governed *and* antecedent-governed. For our purposes, this definition of the ECP requires that the VP-adjoined intermediate traces must also be head-governed. We assume that the INFL will head-govern these VP-adjoined traces. Furthermore, this definition requires that the original position of *enu* NP, even though it is in an argument position, must also be antecedent-governed.

Given this fact, note that the fact that the ECP imposes a stronger requirement on the movement of adjuncts than on that of arguments solely derives from the assumption of Lasnik & Saito(1984) that the intermediate traces of adjuncts cannot be deleted.

Now, recall that the movement of enu NP is motivated by the morphological requirement between the element enu and $-na$, to the effect that the latter must govern the former. Thus, in this sense, it must be distinguished from canonical wh -movement, which is triggered by scopal considerations.

We would like now to suggest the following provision for morphologically triggered movements:

(38) *A Provision for Morphologically Triggered Movement*
 In morphologically triggered movements, intermediate traces cannot be deleted.

If this provision is adopted, all intermediate traces of enu NP movement must be present and must be subject to ECP. In this way, we can successfully account for the fact that one barrier in a chain link of the movement in the sentence (11a) is sufficient to induce the ungrammaticality: It is a violation of the ECP.

There is one further reason that the ungrammaticality we observed in the $enu \dots na$ constructions of (11) - (12) must be due to the ECP, not Subjacency. To appreciate this, let us first consider sentences like (2), repeated here:

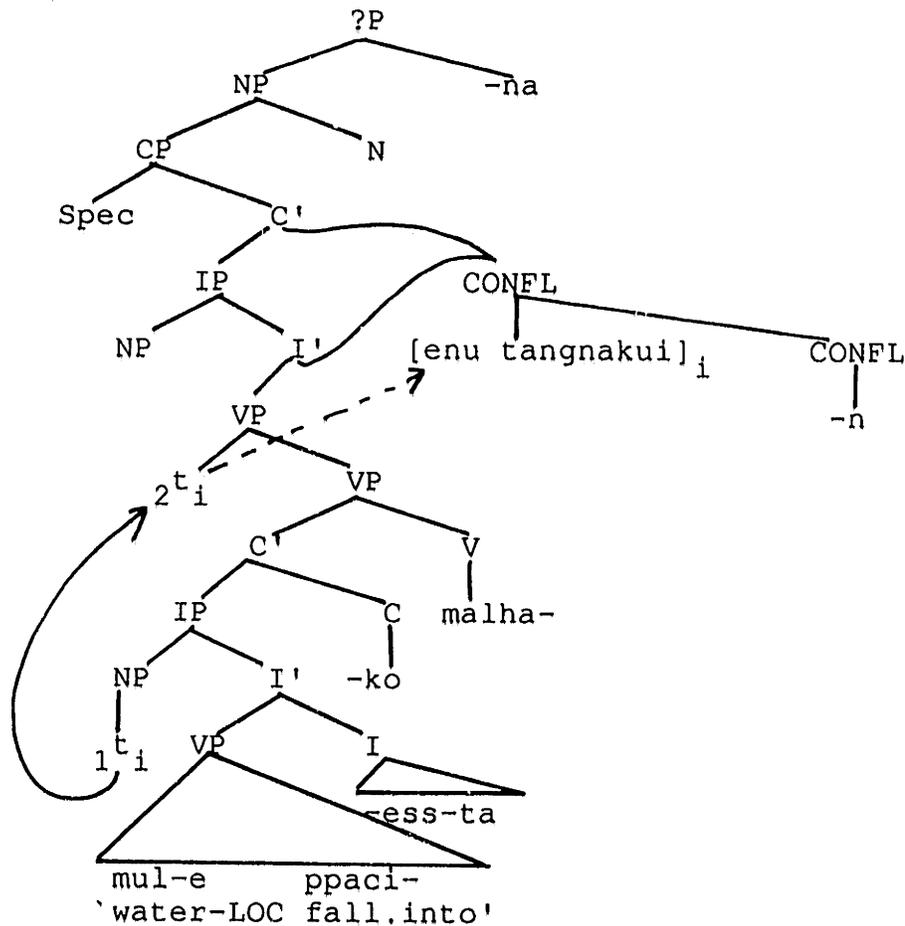
(2)

[[t_i [enu $tangnakui$ -ka mul -e $ppaci$ -ess
 ENU donkey-NOM water-LOC fall.into-PAST
 -ta-ko] $malha$ -n] $salam_i$]- ina $keki$ -e ka -ess-ta
 -DEC-COMP say-CONFL person-NA there go-PAST-DEC

'(Close English Paraphrase) Every person_i who t_i said that a donkey fell into the water_i went there.'

Let us now examine how the movement of enu NP in (2) would proceed. It would have the following trajectory (irrelevant details omitted; the subject traces within the VPs are ignored):

(39)



In (39), enu NP, enu tangnakui, is generated within the lowest VP (the original trace within the VP is omitted in (39)) and moved in syntax up to the spec of IP, i.e., to the position of $1t_i$ in (39), for Case. From this spec position, the LF movement started: It first moved to the position of $2t_i$ and then to the position adjoined to the CONFL. Note now that there seems to be a problem in the movement of (39): In (39), a barrier, namely the IP, intervenes in the chain link $(1t_i, 2t_i)$.

This is a violation of the ECP we defined in (37) --- but the sentence (2) is fully grammatical. Note that, in the ungrammatical example of (11a)(=(35)), the same IP blocks the movement between the positions ${}_2t_i$ and ${}_3t_i$ by the ECP.

The generalization seems to be this: If the movement originates from other than the spec position of IP, the IP will function as a barrier, but, if the movement originates from the spec of the IP itself, the IP will not be a barrier. To make this more precise, let us recall that we have assumed (see Chapter 4) that there is a spec-head agreement process operative in grammars. Thus, we assume that the spec of IP will be coindexed with the I, and, assuming that the IP is also coindexed with its head, we end up having the IP and its spec coindexed.²⁸ We now adopt the following definition of antecedent-government, modifying the definition of Lasnik & Saito(1984, p.248):

- (40) α antecedent-governs β if
- a. α and β are coindexed;
 - b. α m-commands β
 - c. there is no γ , γ a barrier, such that α c-commands γ and γ dominates β , unless β is coindexed with γ .

The main difference between this definition and Lasnik & Saito's is that, in the unless clause of (c), they require that β must be the *head* of γ , while we generalized it slightly, such that β is coindexed with γ . Since we assume that the maximal projection and its head are coindexed, this definition of ours is "upward compatible" with Lasnik & Saito's.

²⁸ Naoki Fukui(p.c) called my attention to this possibility.

Given the coindexation of the IP and its spec, and the definition of antecedent-government in (40), the trace $_1t_i$ will antecedent-govern $_2t_i$ and we correctly predict that the sentence is grammatical.

Note that our proposal for explaining the grammaticality of (2)=(39) crucially depends upon a particular definition of antecedent-government. This kind of solution is impossible, if it is the (non-) violation of Subjacency that is involved in the data under discussion here. This then is a further argument for our approach in which what is involved in these examples is the ECP, not Subjacency.

Finally in this subsection, we consider the example (4), repeated here:

- (4)
 [[t_i [[enu tangnagui-ka cuk-ess-ta-nun]
 ENU donkey-NOM die-PAST-DEC-COMP
 somun]-ul tulu-n] salam]-ina keki-e ka-ess-ta
 rumor-ACC hear-CONFL person-NA there go-PAST-DEC
 (Close English Paraphrase) Every person_i who t_i
 heard the rumor that a donkey died went there_i']

In this sentence, enu NP is embedded within a noun-complement structure. This sentence is judged to be grammatical.

In our approach, the grammaticality of this example is predicted. Sentence (4) will have the following representation, after the movement of enu NP at LF (the irrelevant details are omitted; the subject traces within the VP are ignored):

Saito(1984), among others. The following sentence is a typical example:

(42) *How_i do you believe the claim that John fixed
theⁱ car t_i?

As we have noted in chapter 3, according to Chomsky, the ungrammaticality of this example is due to the ECP, assuming that the complement of the noun *claim*, a CP in Chomsky's framework, forms a barrier.³⁰ In Chomsky's framework, the movement of the adjunct *how* will have the following path:

(43)
How C, [do IP [you VP [t₄ VP [believe NP [the claim
CP [t₃ that IP [John VP [t₂ [fix the car t₁]]]]]]]]]

Chomsky(1986) assumes that the spec of CP and IP are always projected and that the IP is a defective BC, in that it cannot incur a barrierhood by itself. In the trajectory of the movement in (43), a barrier, namely the CP, intervenes in the path between the position of *t₄* and *t₃*.³¹ Hence the *t₃* becomes the offending trace, inducing ungrammaticality of this example.

Now, consider the following example. As the reader would verify it, this sentence will be correctly blocked by the ECP within Chomsky's framework, but not within ours.

³⁰ As we discussed in chapter 3, this is due to the oblique Case assignment of the noun *claim* to its complement.

³¹ As discussed in chapter 2, the barrierhood of the CP relevant here is weak, so that the NP above it won't inherit this barrierhood. So there is only one barrier here.

(44) *How_i do you witness the attempt to steal the
car t_i?

Within our system, the movement of the adjunct in (44) will take the following path:

(45)
How C' [do IP [you VP [t₃ VP [witness NP [the attempt
C' [I' [to VP [t₂ [PRO steal the car t₁]]]]]]]]

Note that at each step of movement, no barrier is crossed.

Thus, it seems that there is some incompatibility of our framework with Chomsky's: If our account is extended to the movement of the English wh-adjunct, we incorrectly predict that the English sentence (44) is grammatical. However, we'd like argue that this is not a genuine incompatibility of these two systems, but that this difference between English wh-adjuncts and Korean enu NP should be reduced to the difference in the type of movements they are involved in.

Within our system, we will first argue that the movement that is triggered by scopal considerations must observe the following condition:

(46)
In movement that is triggered by scopal considerations, the movement must pass through all the local scope positions of clauses as it proceeds from its S-/D-structure position to its final position of scope.

For wh-elements, their canonical scope position is the spec of COMP. Hence, condition (46) states that once the wh-movement started, it must pass through all the local scope positions, i.e. the spec positions of local COMPs, until it reaches its final scope position. In other words, a wh-movement, once its movement started, must pass

through all the spec of COMP positions c-commanding it, whether they are +WH or -WH.

Recall now that we argued that the generation of the spec positions for the functional categories is, at least partly, governed by "functional" considerations. For example, we suggested that the generation of the spec position of the IP is always optional and that this position may be used if necessary, otherwise we choose not to generate it. On the other hand, we suggested that the generation of the spec of a WH COMP is also dictated by the "formal" reasons: The wh "grid" inherent in the WH COMP must be discharged to the element that occupies its spec position. Then what about the spec of the -WH COMPs? As can be expected, we assume the following: It can be generated optionally, and if this position is necessary for some independent reason, it will be utilized. Otherwise, we choose the derivation that does not generate this position.

Now, given the condition in (46), when there is a wh-element that undergoes movement, the clause containing it must always have this spec position available at its COMP, even though this COMP itself is not WH. This then serves as a sufficient motivation for generating the spec of COMP positions for all clauses dominating the wh-element.

Thus, the extraction of the wh-adjunct out of the noun-complement will take the paths in (47) within our framework and the sentence becomes ungrammatical, due to the ECP, since CP below is a barrier.

(47)

How_C [_{do} IP [_{you} VP [_{t₄} VP [_{witness} NP [_{the attempt}
CP [_{t₃} C [_I [_{to} VP [_{t₂} [PRO steal the car t₁]]]]]]]]]]

On the other hand, the movement triggered by morphological considerations need not observe this condition. Hence, the movement of enu NP is immune to (46). We then predict that the sentence (4)(=41) is grammatical.

In this way, we reduce the difference of the grammaticality judgement of the Korean (4) and the English (44) to the difference in the two different types of movement. Summarizing the differences that the two types of movements discussed above --- i.e. the scopally triggered wh-movement and the morphologically triggered enu NP movement --- have, we have the following table:

(48)

| | Wh-movement | Movement of enu NP |
|------------------------|---|--------------------------|
| a. Intermediate traces | Arg: Can be deleted Adj: Cannot be deleted | Cannot be deleted at all |
| b. Condition (46) | Must be observed | Inapplicable |

Finally in this subsection, let us note that, even though condition (46) looks somewhat *ad hoc*, there is some fact that suggests that it is in the right direction. In the Fukui & Speas' framework, as well as ours, the grammaticality of the following sentence, where a wh-adjunct is extracted, may be problematic:

(49) How_i did John think Mary fixed the car t_i?

Assuming that the spec of the COMP of the embedded sentence is not generated, we will have the following derivation:

(50) How C' , [did IP[John VP[t₂ VP[think C'[IP[Mary
VP[t₁ VP[fix the car t]]]]]]]]

In this derivation, a barrier, namely the lower IP, intervenes in the chain link (t₂, t₁). Hence, the trace t₁ becomes the offending trace and the sentence is incorrectly ruled out. One obvious way to save this situation is to generate the spec of the COMP position, even though it is a -WH COMP, and let the wh-element pass through it. Then, we will have the following derivation:

(51) How C' , [did IP[John VP[t₃ VP[think CP[t₂
 C' , [IP[Mary VP[t₁ VP[fix the car t]]]]]]]]]]

In this derivation, the lower IP ceases to be a barrier, due to Fukui & Speas' following definition of the BC:

- (52) α is a BC for β iff
- (i) α dominates β ;
 - (ii) $\alpha = X''$
 - (iii) α is not L-marked and
 - (iv) α does not m-command the antecedent of β .

The clause (iv) of this definition states that a maximal projection, even though not L-marked, would not serve as a BC for α if it m-commands the antecedent of β . In (51), what would otherwise be a barrier for the trace t₁, the lower IP, m-commands the antecedent of the trace t₁, namely the t₂ in the spec of the COMP. Hence it is not a BC and a barrier. Thus, by generating the spec of -WH COMP of the embedded clause and by making the wh-movement to pass through it, we

correctly rule in sentence (49). This fact seems to suggest that we are in the right direction.

5.3.3. Deriving the Wh-island Constraint

In the last section, we derived the OSC by partially adopting Fukui & Speas' proposal concerning the specifiers and projections, and we discussed various problems related to it. In this section, we will derive the wh-island effect that we observed in section 5.2.2.

Within Chomsky's framework, all the wh-island violations are subsumed under Subjacency or the ECP. Since both Subjacency and the ECP involve the notion "barrier," crossing one or more barriers is the determinant factor in inducing wh-island violations. For example, consider the following sentence, where extraction of the object out of the wh-island occurred;

(53) ?? Which problem do you wonder how John could
 solve t t?

What is violated is Subjacency, the ECP being easily satisfied at the first step of the movement.

On the other hand, in the following instance of the wh-island violation, where the wh-adjunct is extracted, a violation of the ECP occurred;

(54) *How do you wonder which problem John could
 solve t t?

The movement of how in (54) will have the following derivation:

(55) How_C ido_{IP} [you_{VP} [t₃ VP [wonder_{CP} [which
 problem_i IP [John could_{VP} [t₂ VP [solve t_i t₁
]]]]]]]]

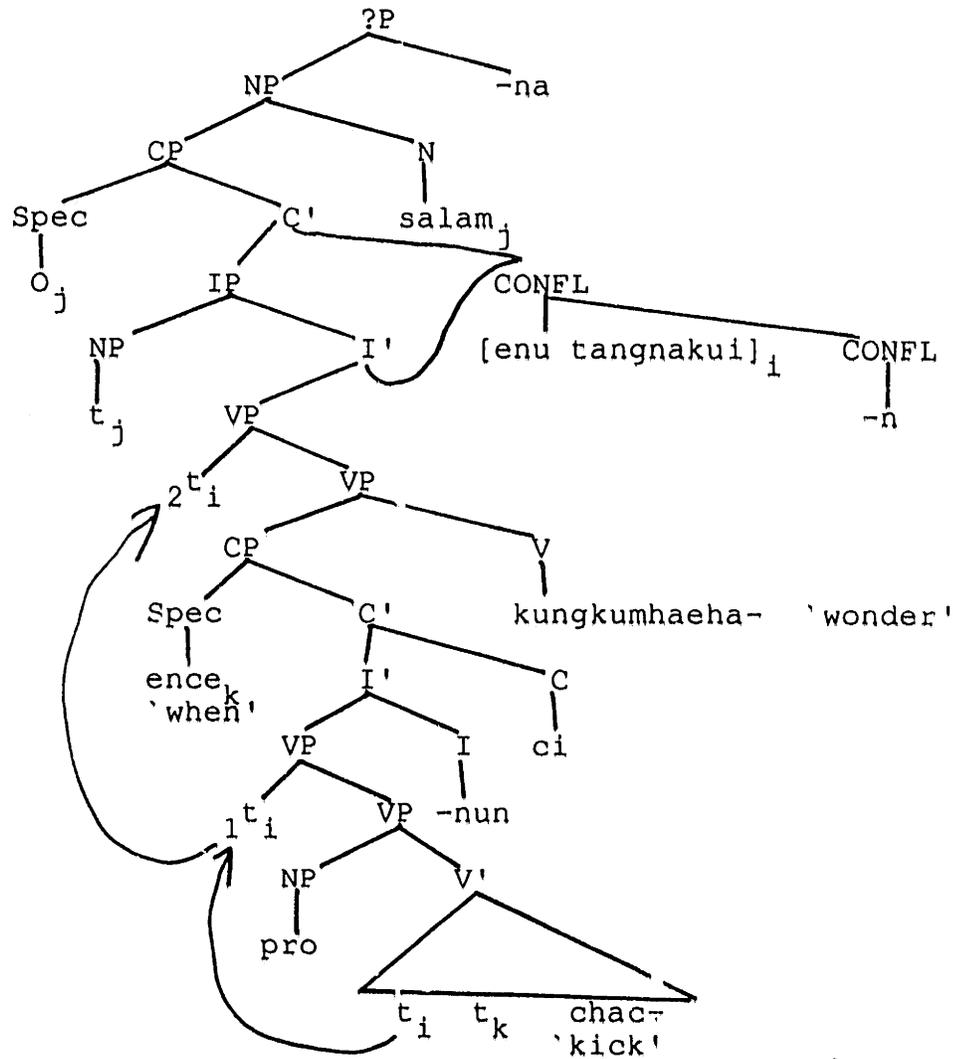
Here, two barriers intervene in the chain link (t₃, t₂). This is a violation of the ECP as well as Subjacency, since the intermediate traces cannot be deleted for adjuncts.

Thus, in Chomsky's account of wh-island violations, the notion of barrier plays an indispensable role. Note, however, that the wh-island effect in the Korean *enu...na* constructions cannot be accounted for by using the notion of barrier. Take the example (6), repeated here:

(6)
 *[[t_i [pro_i enu tangnakui-lul ence chac
 ENU donkey-NOM when kick
 -nun ci] kungkumhaeha-n] salam_j]-ina keki-e
 -INFL-QCOMP wonder-CONFL person-NA there
 ka-ess-ta
 go-PAST-DEC
 (Close English Paraphrase) Every person_i who t_i
 wonders when_j pro_i kicked a donkey t_j went
 there.'

Assuming that the wh-movement within the embedded indirect question had occurred before the movement of *enu* NP started, and maintaining the mode of the projection of specifiers as we have been arguing thus far, the extraction of *enu* NP out of the indirect question would have the following derivation (irrelevant details omitted; the subject trace within VP not represented):

(56)



In (56), the traces of enu NP, enu tangnakui 'ENU donkey,' are indexed with *t*. Tracing its movement, we note that it first moved to the position adjoined to the lower VP, i.e. the position of ${}_1t_i$, and then moved to the position adjoined to the upper VP, i.e. the position of ${}_2t_i$, and to the position adjoined to the CONFL. At each link of the chain, no barrier is crossed: At the chain link (${}_2t_i$, ${}_1t_i$), the CP is not a barrier since it is L-marked.

Thus, the wh-island violation effect of the sentence (6) cannot be accounted for either by Subjacency or by the ECP. In order to account for the ungrammaticality of the sentence (6), then, we need to find a way to capture the island effect without involving the notion of barriers.

Happily, there is a way: Rizzi(1987) pursued the idea of "Relativized Minimality." According to Rizzi, relativized minimality captures the wh-island effect for adjuncts. Since the movement of enu NP is similar to that of adjuncts in several aspects, we expect that relativized minimality will give us the desired result,

Simply put, the basic idea behind the notion of minimality is that, in the following configuration:

(57) ... α ... γ ... β ...

α cannot govern β if there is a closer (potential) governor γ for β . In Chomsky's sense of the minimality principle, this idea is implemented in an asymmetric way with respect to the kinds of government: As we have noticed in the definition of the ECP, there are two types of government: head government and antecedent government. In Chomsky's formulation of the minimality principle, if γ in (57) is a head-governor, α can neither head govern nor antecedent govern β , while, if γ is an antecedent-governor for β , both kinds of government are still possible from α .

Rizzi, noting this asymmetry, proposes a symmetric approach to minimality and calls it "Relativized Minimality." This principle of

Rizzi's makes the blocking effect of an intervening governor relative to the nature of the government relation involved: In (57), if γ is a potential governor of some kind for β , it will only block government of the *same* kind from α .

More precisely, Rizzi defines relativized minimality as follows:

(58) *Relativized Minimality*

X α -governs Y only if there is no Z such that:

- (i) Z is a potential α -governor for Y, and
- (ii) Z c-commands Y and does not c-command X.

Here, α -government ranges over three types of government: head-government, antecedent-government in A chains, and antecedent-government in A' chains. This principle then states that, in the configuration (57), if γ = head, it blocks the head-government from α ; if γ = potential antecedent governor in A position, it will block the antecedent-government from α in an A-position; and if γ = potential antecedent governor in A' position, it will block the antecedent-government from α in an A'-position.

Now, returning to the *enu...na* construction, it is clear that the movement of *enu* NP is an A'-movement: The final landing site of *enu* NP is the position adjoined to the CONFL, which is obviously an A' position. This in fact made possible successive adjunctions to the VPs -- if it were A-movement, the adjunction to VP would have been prohibited.

Applying, then, the relativized minimality to the derivation of the sentence (6), we now see that the intermediate trace $_1t_i$ is not antecedent-governed by the trace $_2t_i$, since the potential antecedent-governor in A' position, namely the wh-element *ence* 'when,' intervenes between them. This is a typical case of the relativized minimality.³²

The major merit of the relativized minimality approach is that the wh-island effect for the extraction of adjuncts can be accounted for without resort to the notion of barrier. We have seen that the extraction of *enu* NP out of the wh-island is ungrammatical, even though this movement does not cross any barrier. This fact then forced us to adopt the relativized minimality approach of Rizzi's. This in turn serves as an argument for the relativized minimality approach.

Finally, let us briefly note that, in the following instance of the extraction of *enu* NP out of the wh-island, no barrier will intervene the path, either. Hence, here also, relativized minimality must be resorted to:

(5)
 *[[t_i [*enu tangnakui-ka nuku-lul chac*
 ENU donkey-NOM who-ACC kick

 -nun ci] kungkumhaeha-n] salam_i]-ina keki-e
 -INFL-QCOMP wonder-CONFL person-NA there

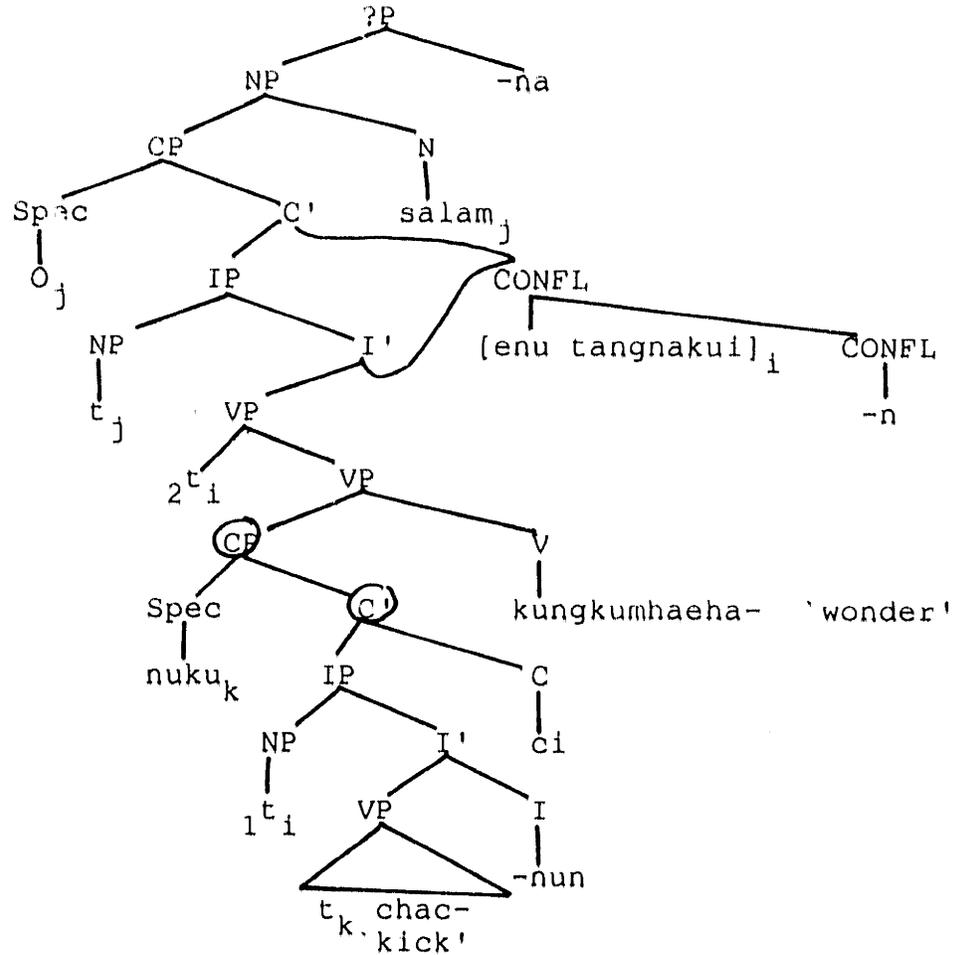
 ka-ess-ta
 go-PAST-DEC

³² In the case of the indirect question with English 'whether' or Korean indirect question with (nun) *ci* without a wh-element inside, we have to assume that its spec of COMP is filled by an empty wh-element.

' (Close English Paraphrase) Every person who wonders who₁ a donkey kicked t₁ went there.'

After the movement of enu NP, the following structure will result:

(59)



Note that, in (59), the lower CP (circled) is L-marked, and hence the trace 2^t_i can govern IP below it (also circled). Then it can govern into the spec of IP, given the definition of antecedent-government in (40). Hence, without the assumption of relativized minimality, we could not attribute the ill-formedness of (6)(=(59)) to the ECP.

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