

**Verb Raising and A/A-bar Distinction:  
Evidence from Exceptional Case Marking**

by

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Submitted to the Department of Linguistics and Philosophy  
in Partial Fulfillment of the Requirements  
for the Degree of

**Doctor of Philosophy**  
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## **ABSTRACT**

This thesis investigates the nature of A-movement on the basis of the facts regarding ECM constructions across languages. More specifically, this thesis deals with two types of illicit A-chains found in ECM constructions in Korean: A-movement out of CP/finite clauses.

To account for the impossibility of A-movement out of CP in the theory of grammar, a Locality Condition on Chain (=LCC) is proposed. The intuition behind the LCC is that A-chain is truly local in its nature in the sense that it needs to go through every intervening specifier whether actual feature checking takes place or not. In contrast, A'-chain only goes through the position that is required for feature checking.

A reconsideration and a new formulation of the notion of A/A'-distinction has also been made in this thesis, which depends on the property of the category that occupies the head of the specifier. A specifier of a head that contains a lexical category (=N, V, A, P) or a trace of a lexical category counts as an A-position, while specifiers of a functional head counts as an A'-position. A significant consequence of this reformulation of A/A'-distinction is that verb raising crucially hinges on the A-status of a specifier of the functional category that the verb raises and adjoins to.

A crosslinguistic study of A-movement in this thesis also shows that a generalization can be established that a language that allows A-movement out of a finite clause lacks in overt infinitival constructions. I propose that in languages that do not have overt infinitivals a finite T serves a dual function of both finite and infinitival T in the sense that a finite T has a strong nominative case feature that can be checked against DP with undeleted case feature regardless of its case property. The strong nominative case feature of T will attract the closest DP into its specifier position in the overt syntax. A crucial consequence of this claim follows that a case feature can also enter into a multiple checking relation due to feature mismatch. ECM is exceptional in these languages in the sense that it involves multiple feature checking of the accusative case.

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*This thesis is dedicated  
with love  
to the memory of my mother  
Kyung-Hee Yook*

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# ABBREVIATIONS

The following abbreviations are used in this thesis:

|             |                             |
|-------------|-----------------------------|
| 1,2,3       | first, second, third person |
| Abs         | absolutive                  |
| Acc         | accusative                  |
| art         | article                     |
| asp         | aspect marker               |
| CL          | classifier                  |
| comp        | complementizer              |
| Dat         | dative                      |
| decl        | declarative                 |
| det         | determiner                  |
| Erg         | ergative                    |
| F           | female                      |
| Gen         | genitive                    |
| M           | male                        |
| NEG         | negation                    |
| Nom         | Nominative                  |
| Noml        | nominalizer                 |
| Pass        | passive                     |
| past        | past tense                  |
| pres        | present tense               |
| prog        | progressive                 |
| pl          | plural                      |
| Q           | interrogative marker        |
| rel         | relative marker             |
| sub         | subjunctive                 |
| Top         | topic marker                |
| <i>OBJ</i>  | logical, underlying object  |
| <i>SUBJ</i> | logical, underlying subject |

**Part I**

***Theoretical Backgrounds  
and Issues***

## Chapter 1

# INTRODUCTION

### 1.1 Exceptional Case Marking in the Minimalist Theory

In the recent minimalist framework of generative grammar outlined in Chomsky (1993; 1995), a theory of grammar consists of three essential components: a lexicon, an interface with the mechanisms of production and perception (PF), and an interface with the interpretation system of semantics (LF). These three components (PF, LF, lexicon) are assumed to be related through a derivation that takes items from the lexicon and combines them in a certain way regulated by various constraints.

Among these constraints is the economy condition on movement outlined in Chomsky (1991) that requires that a derivation be minimal. If a derivation is shorter than the other, the shorter derivation will block the longer that will result in an unacceptable PF/LF representation. One of the economy conditions is spelled out as *Greed* in Chomsky (1993; 1994:14).

- (1) Move- $\alpha$  raises to a position  $\beta$  only if morphological properties of  $\alpha$  itself would not otherwise be satisfied in the derivation.

The intuition behind this constraint is that a constituent undergoes movement only if a syntactic operation can be done to the constituent itself as the result of movement. This insight entails a controversy centered on the problem of how to analyze structures such as (2), where a DP seems to undergo raising without any of its features being checked as a result of the movement: the so-called ECM constructions. Given below is an example from Korean, which is assumed to involve ECM.

- (2) a. na-nun [TP John-**ul**]<sub>i</sub> [VP t<sub>i</sub> erisek-ess]-ta]-ko mitnun-ta  
 I-Top John-Acc be stupid-past-decl-comp believe  
 "I believe John to be stupid."
- b. \*John-**ul** erisek-ess-ta  
 John-Nom be stupid-past-decl  
 "John was stupid."

The structure in (2a) from Korean is known as ECM, since accusative case marking<sup>1</sup> appears on the embedded subject *John*, which must be associated with the case assigning property of the matrix predicate, as we can see from the unacceptability of (2b); an accusative subject can never occur in a root clause.

Suppose ECM in Korean<sup>2</sup> involves raising of the accusative subject into the specifier of the embedded Tense, as assumed in the analysis of ECM in English in Chomsky (1995) and Collins (1997).<sup>3</sup> This analysis entails a problem for (2), which has been also noted for ECM in English: the derivation would be a violation of *Greed*, since no feature of the

---

1. The accusative case marker in Korean has two allomorphs *-ul* and *-lul*. when the host noun ends in a consonant, *-ul* is used, while *-lul* is attached to a host noun ending in a vowel.

2. I will show in chapter 2 that ECM in Korean is overt raising of the embedded accusative subject into the specifier of the matrix Tr via the specifier of the embedded T.

3. Detailed analysis of ECM in English including review of Chomsky (1995) and Collins (1997) will appear in chapter 3.

embedded subject would be checked as a result of the movement, although the EPP feature of the embedded Tense might be checked by the D-feature of the raised ECMed DP. Furthermore, the *nominative* case feature of the finite Tense in the embedded clause in (2a) cannot be checked as a result of the movement of the *accusative* subject into its specifier due to feature mismatch. The unchecked case feature of the embedded Tense would render the resulting derivation to crash.

Given that the structure in (2a) is fully acceptable in Korean, let us tentatively assume that the embedded accusative subject somehow checks the nominative case assigning feature of the embedded finite Tense<sup>4</sup> as well as its EPP feature. Then the structure in (2a) is no longer problematic if we adopt the modified version of *Greed* in Chomsky & Lasnik (1993: 564): "Turning now to the last resort principle, its intuitive content was that operations should be permissible only if they form legitimate LF objects. We now relax the requirements, taking an operation to be permissible if it is a prerequisite to the formation of a legitimate LF object." Under this weakened version of *Greed*, raising of the accusative subject into the specifier of the embedded Tense is considered to be a legitimate step; if *John-ul* in (2a) does not move into the embedded Spec T before Spell-Out, both the EPP and the case feature are not satisfied for the embedded T and the derivation will crash at LF.

(3) ..... \*[TP \_\_\_ [VP John-ul erisek]-essta]-ko .....

However even if the derivation leading to (3) crashes, it should not force the overt movement of *John-ul* into the specifier of the embedded T. This would require that a grammar should look ahead all the possible derivations and evaluate whether movement at some point of derivation is required to ensure a convergent derivation. This is an undesirable move since it will render the economy conditions global rather than local.

---

4. Checking of nominative case feature on finite T by an accusative DP will be dealt with in chapter 6.

Collins (1997) addresses this problem and proposes a local economy condition *Last Resort*, which he claims to replace *Greed* in Chomsky & Lasnik (1993).

- (4) Move raises  $\alpha$  to the checking domain of a head H with a feature F only if the feature F of H enters into a checking relation with a feature F of  $\alpha$

Under this definition, raising of *John-ul* into the embedded Spec T in (2a) takes place to satisfy a morphological requirement on the embedded T, whether it is the nominative case assigning feature or the EPP feature. In other words, the movement of *John-ul* into the specifier of the embedded T does not violate *Last Resort*, since the movement establishes a checking relation between the moved element *John-ul* and a head in the target position, which results in the checking of the EPP feature and the case feature of the embedded Tense. After checking, the EPP feature and the nominative case feature of the embedded T delete since they are uninterpretable features<sup>5</sup>.

- (4) ..... [TP **John-ul**<sub>i</sub> [VP t<sub>i</sub> erisek]-essta]-ko .....

Let us now look at the derivation in (4) in terms of checking of the formal features on the embedded accusative subject *John-ul*. Suppose the embedded accusative subject *John-ul* raises further up into the matrix object position<sup>6</sup> via the specifier of the embedded finite Tense, as has been assumed in the analysis of ECM in English (Chomsky 1993; Collins 1997). This assumption poses problems on the theory of movement.

---

5. For distinction between interpretable and uninterpretable features, see Chomsky (1995).

6. I assume in this thesis following Collins (1997) that the case checking position for the direct object is one of the multiple specifiers of a functional head called Tr(ansitivity), whose specifier is the base position of the subject. Details of the clause structure in Korean will appear in chapter 1.2.

First, the structure in (2a) seems to be an instance of A-movement out of finite clauses<sup>7</sup>; an apparent violation of the Chain Condition, which requires that a chain have one and only one case position (cf. Chomsky 1986; Chomsky & Lasnik 1993). If the case assigning features of both the embedded and the matrix Tense are checked against the ECMed accusative DP as a result of the movement through the specifier of the embedded T into the matrix object position, the resulting chain of *John-ul* in (2a) would contain two case positions: the embedded Spec T, where the nominative case assigning feature of the embedded finite T should be checked; and the case-checking position for the matrix object, where the accusative case is checked.

This is quite a surprising fact if ECM in Korean can be analyzed as an instance of A-movement since A-movement is assumed to be strictly local and clause-bound. To maintain the intuition behind the Chain Condition that an A-chain is actually a single entity with one theta-role and one Case occupying more than a single position in a representation, it seems

---

7. Notice that ECM out of a tensed clause cannot be attributed to an idiosyncratic property of Korean, since there are quite a few languages that share this property with Korean. Hungarian, Imbabura Quechua, and Fijian are among the languages that are reported to allow ECM out of a finite embedded clause.

- (i) Hungarian ECM  
 Kiket<sub>i</sub> mondtad hogy szeretnél t<sub>j</sub> [ha eljönnek t<sub>j</sub>]  
 who-acc you-said that you-would-like[-def] if came  
 "Who did you say you would like it if they came?" (Kiss, 1984)
- (ii) Imbabura Quechua ECM  
 chai jari-ca yachachij-taj crin [ t<sub>j</sub> warmi-man wawa-ta  
 that man-top teacher-acc believes woman-dat baby-acc  
 cara-ju-y-taj  
 serve-Prog-Pres-acc  
 "The man believes the teacher is handing the baby to the woman." (Jake & Odden 1979)
- (iii) Fijian ECM  
 au gadreva [na koro levu]<sub>i</sub> [ ni ko a lako kinaj]  
 1s wish art big town Sub 2s Past go to-it  
 "I wish you had gone to the city." (Gordon, 1980)

According to Gordon (1980), Fijian allows ECM to non-subject elements such as direct and indirect object, oblique and possessor. The example in (iii) shows an instance of ECM to indirect object.

necessary to explore the nature of the embedded finite T in Korean with regard to its case checking property.

Second, if the ECMed DP *John-ul* in (2) raises into the case checking position for the matrix object, the result would be an instance of case-driven movement out of the embedded clause headed by an overt complementizer *-ci*. In other words, Korean seems to allow A-movement out of CP, which is in general assumed to be illicit in many languages.

Consider the following ECM constructions from French and Italian.

(5) French ECM

- a. Je crois PRO avoir fait une erreur.  
"I believe PRO to have made a mistake."
- b. \*Je crois Jean être le plus intelligent de tous.  
"I believe John to be the most intelligent of all." (Kayne 1983: Chapter 5)

(6) Italian ECM

- a. Ritengo di PRO avere sempre fatto il mio dovere.  
"I believe PRO to have always done my duty"
- b. \*?Possiamo ritenere queste persone avere sempre fatto il loro dovere.  
"We can believe these persons to have always done their duties."  
(Rizzi 1982: Chapter III)

As has been pointed out by Kayne (1983), French does not allow ECM constructions with an overt lexical DP as a subject of the embedded infinitival complement <sup>8</sup>CP(=5b). Rizzi

---

8. Although the embedded clause in the ECM construction in French (=5b) is not headed by an overt complementizer, the PRO theorem would require a complement of an ECM verb in French be a CP. A Bare IP would allow government of PRO by the matrix ECM predicate.

(i) PRO theorem  
PRO must be ungoverned



(1982) reports that Italian constructions corresponding to the English ECM cases with a lexical subject in the complement CP are also unacceptable (=6b).

We cannot however simply conclude that French and Italian do not have ECM constructions. Both French and Italian allow ECM constructions if the subject of the embedded infinitival complement has been extracted.

- (7) a. [Quel garçon]<sub>i</sub> crois-tu [ t<sub>i</sub> être le plus intelligent de tous]  
"Which boy do you believe to be intelligent of all?"  
(Kayne 1983: Chapter 5)
- b. [Quante di queste persone]<sub>i</sub> possiamo ritenere [ t<sub>i</sub> aver sempre fatto il loro doveres]  
"How many of these persons can we believe to have always done their duties?"  
(Rizzi 1982: Chapter 3)

The situation becomes more intricate when we consider the fact that the ECM constructions in French and Italian cannot be "rescued" by raising the subject of the embedded infinitival into the matrix subject position by passivization<sup>9</sup>.

- (8) a. \*L'âme<sub>i</sub> a été [ t<sub>i</sub> démontrée être immortelle]  
"The soul has been demonstrated to be immortal." (Kayne 1983)

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9. Kayne (1983) claims that the acceptability of passivizing the ECM construction in French varies depending on the ECM verb involved. As a matter of fact, Massam (1985) reports that the following French example derived by applying passivization to otherwise ungrammatical ECM structure(=i)a) is fully acceptable.

- (i) a. \*Je suppose Farida être algérienne.  
b. Farida<sub>i</sub> est supposée t<sub>i</sub> être algérienne.

Rizzi (1981) reports that the same effect holds of Italian ECM constructions; the grammaticality of passivizing ECM constructions varies with the choice of the ECM verb. However, both Kayne (1983) and Rizzi (1981) claim that there is a clear contrast between wh-extraction and passivization of the ECMed subject. Only wh-movement of the ECMed subject results in perfect well-formedness in both languages.

- b. \*[Questa donna]<sub>i</sub> era temuta [ t<sub>i</sub> aver tradito la nostra causa]  
 "This woman was feared to have betrayed our cause." (Rizzi 1981)

The contrast between (7) and (8) from French and Italian indicates that A-movement is impossible out of CP, since the sentence is acceptable only when the embedded subject is extracted by A'-movement. This fact is in sharp contrast with ECM in Korean, which apparently allows A-movement out of CP, as noted earlier.

Turning to theoretical issues, it is not clear what prevents A-movement out of CP in the Minimalist framework, given that locality constraints on A-movement have been ensured via the notion of barriers and the ECP and in the *Barriers* framework, which are no more available in the recent linguistic theory.

- (9) a. Government  
 $\alpha$  theta-governs  $\beta$  iff  $\alpha$  c-commands  $\beta$ , and there is no  $\chi$ ,  $\chi$  a barrier for  $\beta$  such that  $\chi$  excludes  $\alpha$ .
- b. C-command  
 $\alpha$  c-commands  $\beta$  iff  $\alpha$  does not dominate  $\beta$  and every  $\chi$  that dominates  $\alpha$  dominates  $\beta$ ,  $\chi$  a maximal projection.
- c. Barrier  
 $\chi$  is a barrier for  $\beta$  iff (i) or (ii):  
 (i)  $\chi$  immediately dominates  $\delta$ ,  $\delta$  a BC for  $\beta$   
 (ii)  $\chi$  is a BC for  $\beta$ ,  $\chi \neq \text{IP}$ .
- d. B(locking) C(ategory)  
 $\chi$  is a BC for  $\beta$  iff  $\chi$  is not L-marked and  $\chi$  dominates  $\beta$ .
- e. L-marking  
 $\alpha$  L-marks  $\beta$  iff  $\alpha$  is a lexical category that theta-governs  $\beta$ .

f. Theta-govern

$\alpha$  theta-governs  $\beta$  iff  $\alpha$  is a zero level category that theta-marks  $\beta$ , and  $\alpha$ ,  $\beta$  are sisters.

(Chomsky 1986)

(10) a. E(mpty) C(ategory) P(rinciple)

An empty category must be properly governed.

(Chomsky 1981)

b. Proper Government

$\alpha$  properly governs  $\beta$  iff  $\alpha$  theta-governs or antecedent-governs  $\beta$ .

(Chomsky 1986)

Under the above definition of barriers, A-movement across a CP boundary is assumed to be illicit. If a constituent is raised out of CP by A-movement, it should cross IP and CP in a single link. This movement will make the CP a barrier for the proper government of the trace, which in turn results in a violation of the ECP. Notice that under the current theory, minimality alone cannot prevent A-movement out of CP. If minimality requires that an A-element go through every intervening A-position, the presence of CP should not pose any problem for A-movement, the specifier of CP being an A'-position. If Spec C counts as an A-position, A-element can move through the position, satisfying the minimality.

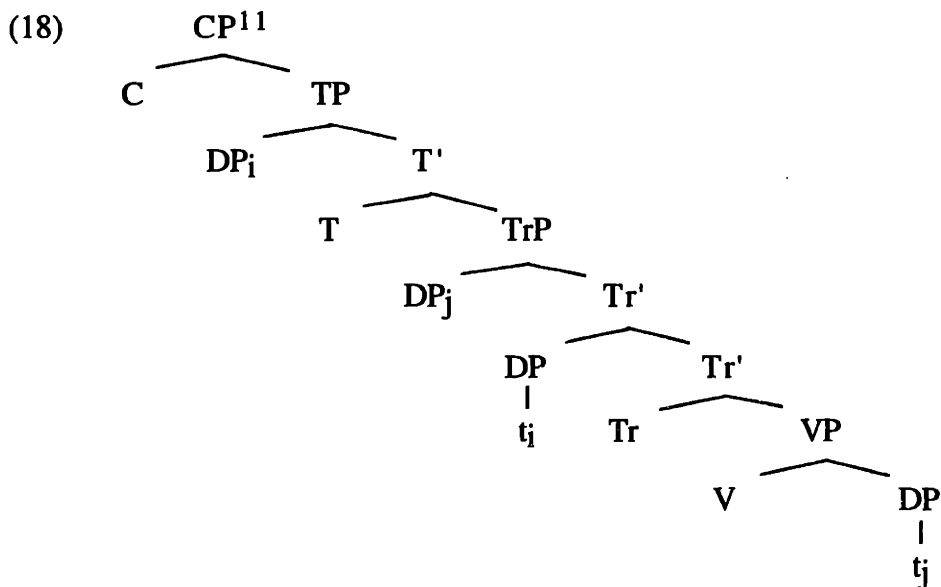
Summing up, Korean ECM constructions provide two kinds of puzzles to be explored, which would be the major tasks of this thesis: (a) what makes it possible for A-movement to take place across a CP boundary in Korean, while it is considered illegitimate in other languages, as evidenced from the impossibility of ECM with a lexical subject in French/Italian; and (b) why a subject of a finite embedded clause can be extracted in Korean in spite of an apparent violation of the Chain Condition. Any plausible answer to these puzzles would first require that we provide an account why A-movement across CP and NP-movement out of a finite clause are unacceptable in the theory of grammar.

## 1.2 Basic Assumptions and Clause Structure

The discussion in this study mostly takes place within the context of the Minimalist framework adapted from Chomsky (1995) and Collins (1997). I will present in this section some of the essential notions that are required for further discussion of the ECM constructions. Most of these definitions and formulations will be assumed without much argument or discussion.<sup>10</sup>

### 1.2.1 Clause Structure

Following Collins (1997), I will assume the structure of the clause as shown in (18) below.



10. For detailed discussion, see Chomsky (1995), Collins (1997), and references therein.

11. The structure illustrated here is for a head-initial language such as English, French and Italian. For head-final languages like Korean, simply switch the linear order between the head and its complement. All the hierarchical relation remains the same.

As Collins (1997) claims, this structure assumes that the external argument is generated as the specifier of a head called Tr(ansitivity), which is against the VP-internal Subject Hypothesis that generates the external argument under the VP with the direct object. For transitive verbs, this Tr head checks accusative case and assigns the external theta-role to the subject. For unaccusative verbs, Tr is still assumed to be present, but it does not check accusative case and assigns no external theta-role. As for the V-feature of Tr, it is supposed to be universally strong triggering obligatory movement of V to adjoin to Tr in the overt syntax. The Tr head also has a D-feature that triggers object shift into its outer specifier position.

Although this structure does not assume any Agr projection, the AgrO theory and the theory that assumes multiple specifiers of Tr (henceforth, multiple-specifier theory) have some aspects in common. Both theories depend on the notion of equidistance to ensure that the object is raised into its proper case position. However, the two approaches differ in the way they render two relevant positions equidistant. The AgrO theory renders the base position of the subject and the target position of object shift equidistant via head chain formed by verb raising. Chomsky (1993) argues that if the verb moves to AgrO, the derived chain (V,  $t_V$ ) renders the specifier of AgrO and the specifier of VP equidistant, making it possible for the object to move across the base position of the subject. In the AgrO theory, object shift therefore crucially relies on the availability of verb raising. This relation is lost in the multiple-specifier theory, since the two specifier positions of Tr are always equidistant by virtue of being in the same minimal domain, i.e., the minimal domain of Tr.

Another difference between the two approaches is that the subject is generated under a separate projection from the one that contains the direct object in the multiple-specifier theory. The subject is generated in the specifier position of Tr in the multiple-specifier

theory, while it is generated under the VP that has the direct object in its complement position in the AgrO Theory. I will provide in Chapter 3 some evidence from Korean in favor of the multiple-specifier theory that assumes that the position of the shifted object is higher than the theta-position of the subject.<sup>12</sup>

### ***1.2.2 Last Resort, Minimality, and Asymmetric Feature Checking***

Collins (1997) claims that local economy can be reduced to two constraints on movement: Last Resort and Minimality.

#### **(19) Last Resort**

Move raises  $\alpha$  to the checking domain of a head H with a feature F only if the feature F of H enters into a checking relation with a feature F of  $\alpha$ .

(Collins 1997: 19)

The insight behind this definition is that movement will take place only if the movement itself results in some syntactic work being done. This definition of Last Resort presupposes the definition of checking domain and checking relation.

#### **(20) Checking Domain**

Let H be a functional head dominating a feature F. The checking domain of F consists of

- a. X adjoined to H and any feature dominated by X
- b. any XP in Spec H, and any feature dominated by X.

(Collins 1997: 20)

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12. Collins (1997) also provides some argument in favor of the multiple-specifier theory from the Icelandic object shift construction.

(21) Checking Relation

F1 and F2 enter into a checking relation iff F2 is in the checking domain of F1 and F1 is deleted. (F2 may also be deleted.)<sup>13</sup>

The definition of Last Resort and checking relation as outlined above incorporates the notion of asymmetric feature checking, whereby two features enter into a checking relation and only one of the two features deletes. Chomsky (1995) proposes that some features are interpretable and needed for interpretation at LF while others are uninterpretable and must be deleted for convergence at LF. Interpretable features include categorial features ( $\pm V$ ,  $\pm N$ , D, T, etc.), the  $\phi$ -features of N (person, number, gender) and the [+wh] feature of a wh-phrase. The uninterpretable features are the Case feature of a N, the  $\phi$ -features and Case features of V and T, any strong feature, and any other feature not listed in the interpretable features.

Given these assumptions, let us consider how symmetric and asymmetric checking take place in the following example illustrated in Collins (1997).

(22) John rolled down the hill.

In (22), the external argument *John* moves into the specifier of T and the EPP feature of T and the D feature of *John* enter into a checking relation. This is an instance of asymmetric feature checking since the strong, hence uninterpretable, EPP feature deletes while the interpretable D feature of DP does not delete. At the same time the case feature of *John* enters into a checking relation with the nominative case-assigning feature of T. Both features are uninterpretable and delete in this checking relation. This is a case of symmetric feature checking. At LF, the verb raises to T and its  $\phi$ -features enter into a checking relation

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13. Since the term "checking" has established usage, I will use the expression "F1 checks F2" with the same meaning that F1 and F2 have entered into a checking relation and F2 deletes.

with those of DP. Again, the  $\phi$ -features of T delete but the interpretable  $\phi$ -features of DP cannot delete, resulting in an asymmetric checking relation.

Another crucial economy condition on movement is Minimality, formulated in Collins (1997) as shown below in (23).

(23) Minimality

$\alpha$  can raise to a target K only if there is no operation (satisfying Last Resort) Move  $\beta$  targeting K, where  $\beta$  is closer to K. (Collins 1997: 22)

(24) If  $\beta$  c-commands  $\alpha$ , and  $\tau$  is the target of movement, then  $\beta$  is *closer* to  $\tau$  than  $\alpha$  unless  $\beta$  is in the same minimal domain as (i) $\tau$  or (ii) $\alpha$ .

The definition of Minimality given above incorporates the notion of equidistance. Consider the structure given in (25).



Move  $\alpha$  targeting  $\tau$  will not be blocked by the intervening constituent  $\beta$  either (a) if  $\alpha$  and  $\beta$  are in the same minimal domain of a head or (b) if  $\tau$  and  $\beta$  are in the same minimal domain of a head. Applied to the object raising in English, movement of object past the base position of subject in the specifier of Tr into the outer specifier of Tr does not violate Minimality, since the target (outer Spec Tr) and the intervening position (inner Spec Tr) are equidistant from the object by being in the same minimal domain of Tr. That is, both the target of object raising and the base position of the subject are equidistant from the object since they are multiple specifiers of the same head.



## 1.3 Proposal

In this section I will provide a brief overview of the final result of this thesis. First, some modifications to the Relativized Minimality and a new locality condition on derivation will be presented, which will be discussed in detail on the basis of ECM constructions in French and Italian. Next, I will consider a dual function of finite Tense in languages without overt infinitival constructions. Motivations and evidence for this claim will be found mostly in Korean ECM construction. Finally, a derivational notion of A/A'-distinction depending on the availability of verb raising will follow.

### *1.3.1 Minimality and Locality Condition on Chain*

In the sense of Relativized Minimality proposed in Rizzi (1990), minimality effects are exclusively triggered by potential governors of the different kinds filling base-generated positions: A-specifiers in A-chains, A'-specifiers in A'-chains and heads in X<sup>0</sup>-chains respectively. The guiding intuition of this approach is that different kinds of government do not interfere with one another. Of our interest here is that intervening A'-specifiers should never interfere with antecedent government in an A-chain under this approach. However there are cases where A-movement out of CP is unacceptable, which can be seen from the impossibility of regular ECM in French and Italian.

If the specifier of CP in those languages counts as an A'-position, A-movement should skip the position; otherwise the resulting chain will be an illegitimate chain with an A-A'-A configuration. This should not pose any problem under Relativized Minimality, since the intervening specifier, which is the specifier of CP, is an A'-specifier and never has any blocking power in an A-chain. On the other hand, if the specifier of CP in French and

Italian is an A-position, A-movement out of CP can go through the specifier of CP if it is not filled. In either case, NP-movement out of CP should not be problematic under Relativized Minimality.

To cope with this problem, I propose in this thesis a Locality Constraint on Chains that does not differentiate between A- and A'-specifiers and hence dispenses with Relativized Minimality.

(26) Locality Condition on Chains (=LCC)

A chain ( $\alpha_i, \dots, t_j$ ) is legitimate if every link of the chain is local

- (27) (i) A link in an A-chain is local if there is no shorter link satisfying the uniformity condition on chain.
- (ii) A link in an A'-chain is local if there is no shorter link satisfying Last Resort.

The notion of "locality" is defined in the context of the uniformity condition on chain proposed in Chomsky (1995) and Last Resort proposed in Collins (1997).

(28) A chain is uniform with regard to phrase structure status<sup>14</sup> (Chomsky 1995)

(29) Last Resort

Move raises  $\alpha$  to the checking domain of a head H with a feature F only if the feature F of H enters into a checking relation with a feature F of  $\alpha$ .

(Collins 1997: 19)

---

14. Chomsky (1995) mentions that the "phrase structure status" of an element is its (relational) property of maximal, minimal, or neither.

The intuition behind LCC is that A-chain is truly local in its nature in the sense that it needs to go through every intervening specifier whether actual feature checking takes place or not. In contrast, A'-chain only goes through the position that is required for feature checking.<sup>15</sup>

Consider the following configuration and see how LCC would work to ensure the locality of A-chain.



If  $\alpha$  raises to  $\tau_2$  skipping an intervening specifier position  $\tau_1$ , it would be a violation of LCC, since there is a smaller link satisfying the uniformity condition on chain, which is to raise  $\alpha$  to  $\tau_1$ . In the context of A-movement out of CP, the specifier of CP counts as an intervening specifier position, which will induce a violation of the LCC. The ECM constructions in French and Italian that will be explored in subsequent chapters will give us support for this analysis.

### ***1.3.2 Verb Raising and Derivational A/A'-distinction***

The notion of A/A'-distinction, which has been playing a crucial role in the theory of grammar, is based on theta-marking or case checking. A potential theta-position or case-position counts as an A-position, while a position where theta-marking or case checking can never take place is considered an A'-position. For instance, the specifier of INFL counts as an A-position since it is a position where nominative case checking has been assumed to take place although it is not a theta-position any more under the VP-internal

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15. LCC casts doubt on the existence of successive cyclic wh-movement. It is not clear at this point if this true.

subject hypothesis. Under the traditional definition of A/A'-distinction based on theta-marking or case checking, the specifier of CP can never count as an A-position.

I propose in this thesis a new distinction of A/A'-position on the basis of the property of the category that occupies the head of the specifier.<sup>16</sup> In other words, a specifier of a head that contains a lexical category (=N, V, A, P) or a trace of a lexical category counts as an A-position, while specifiers of a functional head counts as an A'-position. Notice that under this definition of A/A'-distinction, verb raising crucially hinges on the A-status of a specifier of the functional category that the verb raises and adjoins to. If verb raises to Tense in L1, both the specifier of the verb and the specifier of T count as A-positions in L1. If verb raises up to C in L2, the specifier of C becomes an A-position as well as the specifier of T.

A supporting piece of evidence for this claim comes from the subject-verb inversion construction found in literary Italian, which has been reported in Rizzi (1982).

- (31)       Suppongo [CP [non esser]<sub>i</sub> la situazione t<sub>j</sub> suscettibile di ulteriori miglioramenti]  
              "I suppose not-to-be the situation susceptible of further improvements."

Rizzi (1982) reports that verb-fronting "rescues" otherwise unacceptable ECM construction in Italian. According to the distinction of A/A'-position that I propose, verb raising to C will render the specifier of CP an A-position, which in turn provides an escape hatch for the embedded subject to move through into a proper case checking position at LF without violating the LCC proposed in section 1.3.1. Further discussion and consequences of this proposal will appear in chapter 5.

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16. This notion has been originally put forth in Diesing (1990) on the basis of subject movement in Yiddish.

### ***1.3.3 Dual Function of Finite T***

A crosslinguistic study of A-movement in this thesis shows that a generalization can be established that a language without overt infinitival structures allows A-movement out of a finite clause. This is problematic since A-movement out of a finite clause would be a violation of the Chain Condition since the resulting chain has two case positions; the specifier of the embedded finite Tense and the target position where case checking of the moved element takes place.

To resolve this situation, I propose that in languages that do not have overt infinitivals a finite T serves a dual function of both finite and infinitival T in the sense that a finite T has a strong nominative case feature that can be checked against D-feature of DP<sup>17</sup> regardless of its case feature. This strong nominative case feature of T will attract the closest DP into its specifier position in the overt syntax.

Suppose in a language with the above-mentioned property an embedded subject DP enters into a checking relation with the embedded finite T. The nominative feature of the embedded T deletes after the checking whether the DP has nominative or accusative case feature, since case feature of T is assumed to be an uninterpretable feature. The D-feature of the subject DP on the other hand should not delete since it is an interpretable feature needed at LF for convergence. Crucially, the deletion of the case feature of DP depends on the property of the case feature. If it is nominative case feature, it deletes after the checking since it is a "free rider."

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17. In the following chapter that deals with the English ECM, I will argue that in languages that distinguish between finite and infinitival structures an infinitival T has null case that can be checked against D-feature of DP, while a finite T has nominative case that enters into a checking relation with a DP with nominative case.

Although the raising of the embedded subject into the specifier of the embedded T is not driven by the nominative case feature of DP, the resulting checking relation makes it possible for the nominative case feature of DP checked by the nominative feature of the embedded finite T. If the embedded subject is in the accusative case as in an ECM environment, the case feature does not enter into a checking relation with the embedded T which does not have the matching feature<sup>18</sup>. Hence further movement of the embedded accusative subject driven by the undeleted case feature is inevitable. We will see the effect of this assumption on the ECM constructions in Korean in chapter 6.

## 1.4 Organization

The rest of this thesis is organized as follows. Chapter 2 introduces the issues that will be dealt with in the thesis: A-movement out of CP and A-movement out of finite clauses, which are problematic cases of movement in the minimalist theory. Since both types of movement are found in ECM constructions in Korean, I will provide a detailed discussion of ECM in Korean to validate the aforementioned issues by establishing that ECM in Korean involves A-movement in the overt syntax. Some arguments for the status of ECMed DP in Korean as a matrix object in the overt syntax will be presented first, followed by the evidence that an ECMed DP functions as an embedded subject at D-structure. I will also consider and reject the base-generation analysis of ECM in Korean. An appendix appear at the end of chapter 2, which is on the basic clause structure of Korean and assumed throughout chapter 2 without much argument or discussion.

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18. Chomsky (1995) claims that features cannot be checked under feature mismatch even if they are in a configuration for feature checking. Whether features that do not match can enter into a checking relation but cannot be checked or they do not even allowed to enter into a checking relation is not clear at this point. Of relevance here is the claim that in either case mismatched features cannot be checked.

Chapter 3 deals with NP-movement across TP including ECM constructions in English and raising construction in English and French. One of the primary task of this chapter is to provide an analysis of ECM in English, which is consistent with the definition of asymmetric feature checking in the context of distinction between interpretable and uninterpretable features. This in turn leads us to reformulate checking of the EPP feature of T and the property of the null case that is assumed to be present in an infinitival T.

Chapter 4 explores French and Italian ECM constructions, which seem to indicate that NP-movement is not permissible out of CP. To explain what makes A-movement across a CP boundary unacceptable, the definition of Relativized Minimality (Rizzi 1990) and Minimal Link Condition (1995) will be first reviewed and a new condition on chain formation, which I will call Locality Condition on Chains (=LCC), will be presented. It will be shown that this revision has the consequence of resolving the difference between English and French/Italian ECM; the complementary distribution between a lexical DP and an NP-trace on one hand and a wh-trace on the other, which is found in French and Italian ECM constructions, but does not exist in English ECM. We will also speculate on the existence of successive-cyclic wh-movement in the context of LCC.

Chapter 5 reconsiders the traditional distinction of A/A'-position and argues for a reformulation of the notion based on the Korean data presented in chapter 2 that A-movement seems to be possible across a CP boundary in ECM constructions in Korean unlike French and Italian examples discussed in chapter 4. Some empirical support for the claim will be given by showing how the new formulation of A/A'-distinction that is determined by derivation in the overt syntax rather than by representation would work for the case checking of wh-trace and its interaction with A-movement in various languages. Following is an appendix on the verb raising in Korean, which bears on the derivational A/A'-distinction for the specifier of C.

Chapter 6 deals with the other task of the thesis; an account for an apparent instance of A-movement out of a finite clause, which should be considered to be illegitimate due to a violation of the Chain Condition but is acceptable in ECM constructions in Korean. I will claim that a finite T in languages like Korean serves a dual function by allowing nominative case on T to enter into a checking relation with any undeleted case feature of a DP. Following the claim, some supporting piece of evidence is provided from ECM constructions in Moroccan Arabic and Fijian with the generalization that a language without an overt infinitival construction allows A-movement out of a finite clause. Finally, summary and concluding remarks appear in chapter 7.



## Chapter 2

# TWO TYPES OF ILLICIT A-CHAINS: ECM IN KOREAN

### 2.1 Issues: A-movement out of CP/Finite Clause

ECM constructions in Korean provides us with two kinds of puzzles with regard to the nature of A-chain, as we had already noticed in chapter 1. Consider the following ECM construction from Korean.

- (1)      John-un      [Mary-lul      erisek-ess-ta-ko]      mitnunta  
         John-Top      Mary-Acc      be stupid-past-decl-comp      believe  
         "John believes Mary to have been stupid."

The structure in (1) is considered to involve ECM, since accusative case marking<sup>1</sup> appears on the embedded subject *Mary*. As we can see from the presence of an overt complementizer *-ko* in (1), ECM predicates in Korean seem to take a CP as its complement like French and Italian ECM verbs. If an ECM predicate in Korean selects CP as its complement, the first problem we have to cope with arises; what makes it possible in Korean to have a lexical subject in the complement CP of an ECM verb, which is not

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1. The accusative case marker in Korean has two allomorphs *-ul* and *-lul*. When the host noun ends in a consonant, *-ul* is used, while *-lul* is attached to a host noun ending in a vowel.

acceptable in French and Italian? As noted earlier, a lexical subject is not allowed in the infinitival CP selected by ECM predicates in French and Italian. Notice that this problem has doubled our task regarding the existence of A-movement out of CP: we have to first account for the unacceptability of A-movement out of CP in the current framework to provide an analysis of French and Italian ECM; then we will be still left with a puzzle why Korean allows the supposedly illicit A-movement out of CP.

The second problem arises from the presence of the past tense marker *-(e)ss* in the embedded clause in (1). If ECM in Korean involves raising of the embedded accusative subject for case reasons, we have to conclude that A-movement is possible out of a finite clause, which has been assumed to be illegitimate due to a violation of the Chain Condition. The Chain Condition requires that an A-chain has one and only one case position, which would be violated if an NP is extracted out of a finite clause that has T with a nominative case assigning feature. Translated into the current feature-checking theory, ECM in Korean should result in a crash due to an unchecked case feature of the embedded finite T; even if the embedded accusative subject enters into a checking relation with the embedded finite T for EPP reasons, the nominative case feature of the embedded T cannot be checked off against the accusative case feature of the embedded subject due to feature mismatch.

To validate the issues that ECM in Korean raises aforementioned questions on the formation of A-chains; (i) *A-movement across CP* and (ii) *A-movement out of a finite clause*, I will show in this chapter that ECM in Korean does involve overt raising of the embedded accusative subject into the specifier of the matrix  $T_r$  for case reasons. For discussion of ECM in Korean, I will first present some relevant Korean ECM data that show interesting properties that cannot be found in the corresponding structures in other languages such as English, French and Italian, which will be dealt with in the later part of this thesis. In the following sections some supporting pieces of evidence for the raising

analysis of ECM in Korean will be presented; the ECMed DP functions as an embedded subject at D-structure and as a matrix object at S-structure. I will also consider and reject the base-generation analysis of ECM in Korean. Finally an appendix appears, which is a diversion into the basic clause structure of Korean with regard to the overt object shift, overt verb raising and double object construction. Most of the claims that appear in the appendix will be assumed without argument throughout this chapter for discussion of ECM in Korean.

## 2.2 Some Properties of ECM in Korean

### 2.2.1 ECM Verbs Select CP

As we can see from the following unacceptable example given in (2), ECM verbs in English select TP as its complement and hence no overt complementizer is allowed in the embedded clause in ECM constructions in English.

(2) John believes [(**\*that**) Mary to be stupid]

The complement clause in the ECM constructions in Korean however must contain an overt complementizer *-ko* "that," suggesting that the ECM verbs in Korean take a CP as its complement.

(3) John-un [Mary-lul erisek-ta-\*(ke)] mitnun-ta  
 John-Top Mary-Acc be stupid-decl-comp believe  
 "John believes Mary to be stupid."

Notice that the status of *-ko* as a complementizer can be seen from its complementary distribution with a question marker, which is known as an element occupying C. We can also claim that *-ko* is not a nominalizer, since it cannot be followed by a case marker, which can appear after a nominalized element.

- (4) a. John-un [Mary-ka wass-na/\*ko] mwulessta  
 John-Top Mary-Nom came-Q/that asked  
 "John asked if Mary came."
- b. John-un [Mary-ka o-ki/\*ko]-lul wenhayssta  
 John-Top Mary-Nom come-nml/that-Acc hoped  
 "John hoped that Mary would come."

### 2.2.2 ECM out of a Finite Clause

Moreover, the accusative case marking on the embedded subject in an ECM construction in Korean can occur in a finite clause that contains an overt tense marking such as the past tense marker *-(e)ss*.

- (5) John-un [Mary-lul erisek-ess-ta-ko ] mitnunnta  
 John-Top Mary-Acc be stupid-past-decl-comp believe  
 "John believes Mary to have been stupid."

The acceptability of (5) indicates that Korean allows A-movement out of a finite clause despite an apparent violation of the Chain Condition, since the finite T in the embedded clause should check its nominative case against the ECMed embedded subject. We will return to this problem in chapter 6.

### 2.2.3 Optionality of ECM

It has been claimed in the literature (Choe 1991; Yoon 1993) that ECM of the lower subject in Korean is optional in the sense that the accusative case marking on the ECMed DP alternates with the nominative case marking.

- (6) a. John believes **her/\*she** to be smart  
b. John-un    Mary-**lul/ka**    ttokttokha-ta-ko    mitnun-ta  
   John-Top   Mary-Acc/Nom   be smart-decl-comp   believe  
   "John believes Mary to be smart."

Contra this traditional assumption, I will show in section 2.3 that the accusative case marked NP and the nominative case marked DP in (6b) are in different positions in the overt syntax; the ECMed DP is in the matrix sentence at S-structure, while the nominative embedded subject stays in the overt syntax. It will be claimed that the accusative case marking appears if and only if the embedded subject is raised into the matrix clause and that ECM in Korean is thus obligatory as in English.

- (7) a. John-un    [Mary-**ka/\*lul**    ttokttokha-ta-ko]    mitnun-ta  
   John-Top    Mary-Nom        be smart-decl-comp    believe  
   "John believes that Mary is smart."  
b. John-un    Mary-**lul/\*ka**    [  $\zeta_i$  ttokttokha-ta-ko]    mitnun-ta  
   John-Top    Mary-Acc            be smart-decl-comp    believe  
   "John believes Mary to be smart."

## 2.2.4 ECM of Non-Subjects

As Yoon (1993) claimed, it seems that the ECMed DP in Korean need not be the subject of the embedded clause, whereas only subjects can be ECMed in English. It can be any constituent including embedded non-accusative objects, topics or adverbial elements, provided that it is the leftmost element in the embedded clause. The following sentences are slightly modified from the examples given in Yoon (1993) and Choe (1991).

### (7) ECM of embedded non-accusative object

- a. John-i        ton-i/\*ul        manhta  
John-Nom    money-Nom/Acc    be much

"John has much money."

- b. \*na-nun    John-i        ton-ul        manhtha-ko        mitnuntha  
I-Top        John-Nom    money-Acc    be much-comp    believe

"I believe John to have much money."

- c. na-nun        [ton-ul]i        John-i        ɰi        manhtha-ko        mitnuntha  
I-Top        money-Acc    John-Nom        be much-comp    believe

"I believe John to have much money."

### (8) ECM of embedded topic

- a. ecey-nun/\*lul        nalssi-ka        chwuessta  
yesterday-Top/Acc    weather-Nom    was cold

"As for yesterday, the weather was cold."

- b. \*na-nun    ecey-ka        nalssi-lul        chwuessta-ko        mitnuntha  
I-Top        yesterday-Nom    weather-Acc    was cold-comp    believe

"I believe yesterday to be cold."

- c. na-nun [nalssi-lul]i ecey-ka t<sub>i</sub> chwuessta-ko mitnunta  
 I-Top weather-Acc yesterday-Nom was cold-comp believe  
 "I believe yesterday to be cold."

(9) ECM of adverbial elements

- a. LA-ey/\*lul hankwuk salam-i manhi santa  
 LA-in/Acc Korean people-Nom many live  
 "Many Korean people live in LA."

- b. na-nun LA-lul hankwuk salam-i manhi santa-ko mitnunta  
 I-Top LA-Acc Korean people-Nom many live-comp believe  
 "I believe LA to have the largest Korean population."

The accusative case marking on the embedded object *ton'money'* in (7c) must be from the matrix ECM predicate, since the embedded predicate *manh'be much'* is an unaccusative verb and cannot license an accusative argument as can be seen from (7a). When the embedded object does not occupy the leftmost position in the embedded clause as in (7b), it cannot bear the accusative case marker. This might imply that the ECMed DP should occur in a position that is at least higher than the specifier position of Tense Phrase, if we assume that the subject is raised into the specifier of Tense at S-structure. The same seems to be true for ECM of the embedded topic in (8) and of the embedded locative adverbial in (9). The accusative case marking on the sentence-initial element in a clause, which is not possible in a root clause, becomes legitimate when it is embedded into a clause with an ECM predicate.

As Choe (1991) points out, there seems to be another restriction for the DP that can be ECMed. In all the examples given above, the ECMed non-subject DP can become some sort of "derived" subject in the sense that it can occupy the sentence-initial position with the nominative marker attached to it.

- (10) a. ton-i                    John-i                    manhta  
           money-Nom            John-Nom                be much  
           "John has much money."
- b. ecey-nun/ka                nalssi-ka                chwuessta  
           yesterday-Top/Nom      weather-Nom            was cold  
           "As for yesterday, the weather was cold."
- c. LA-ey/ka            hankwuk salam-i            manhi            santa  
           LA-in/Nom            Korean people-Nom        many            live  
           "As for LA, Many Korean lives (there)."

It will be shown in section 2.3 that the sentences given above are actually the D-structure representation of the embedded clause of the ECM constructions given in (7) - (9). I will further argue that ECM in Korean as well as in English and French/Italian is A-movement that is subject to minimality. That is, ECM can take place only to an element in an A-position and cannot apply across an intervening A-position.

### 2.2.5 *No Multiple ECM*

Even though Korean allows multiple subject constructions, it is not possible to create a multiple ECM construction from an embedded multiple subject construction.

- (11) a. John-i            apeci-ka            pwucaita  
           John-Nom            father-Nom            is rich  
           "John's father is rich."



|    |        |          |                |  |              |          |
|----|--------|----------|----------------|--|--------------|----------|
| b. | na-nun | John-ul  | apeci-ka/*lul  |  | pwucaila-ko  | mitnunta |
|    | I-Top  | John-Acc | father-Nom/Acc |  | is rich-comp | believe  |

"I believe John's father to be rich."

|    |         |                          |              |                |              |          |
|----|---------|--------------------------|--------------|----------------|--------------|----------|
| c. | *na-nun | [apeci-lul] <sub>i</sub> | John-i/ul    | ʔ <sub>i</sub> | pwucaila-ko  | mitnunta |
|    | I-Top   | father-Acc               | John-Nom/Acc |                | is rich-comp | believe  |

"I believe John's father to be rich."

When a multiple subject construction is embedded under an ECM predicate, only the first nominative DP can be ECMed, as we can see in (11c). The second nominative DP *apeci* "father" in (11a), which is the true subject of the embedded predicate in (11 b-c) in the sense that it is assigned a theta-role from the embedded predicate, cannot be ECMed even though it occupies the leftmost position in the embedded clause at D-structure as shown in (11c).

The impossibility of multiple ECM seems to suggest that there is only one slot available in the matrix clause that can host the ECMed DP that is raised out of the embedded clause. We can also say that ECM in Korean is subject to some kind of locality condition on movement that prevents the second DP in the embedded clause from moving and raising across the first DP in the same clause.

### 2.2.6 *ECM and Specificity*

When an indefinite DP occurs as an embedded subject in an ECM environment, it disambiguates the sentence allowing only the specific reading.

- (12) a. na-nun etten salam-i pwucala-ko mitnunta  
 I-Top someone-Nom be rich-comp believe  
 "I believe that there must be someone who is rich." (existential) or  
 "I believe that someone that I know of is rich." (specific)
- b. na-nun etten salam-ul pwucala-ko mitnunta  
 I-Top someone-Acc be rich-comp believe  
 "I believe that someone that I know of is rich." (specific)

If the indefinite DP in the embedded subject position bears the nominative case marker as in (12a), the sentence is ambiguous between the existential and the specific reading. For instance, the sentence (12a) can be used in a situation when the speaker found a very expensive fur coat left in a room where lots of people had been hanging out. The speaker can infer from the situation that the person who left the coat must be rich, although he does not know who that person is. It can be also used in a situation when there is a name tag on the coat and the speaker knows to whom belongs the coat. Interestingly, the ECMed indefinite NP can only have the specific reading; (12b) can describe only the second situation where the speaker knows who that "someone" is.

If the indefinite DP has to move into a position higher than its D-structure position to get a specific reading and lowering is impossible at LF, the unavailability of existential reading for the ECMed indefinite DP might follow from the assumption that it raises into a matrix clause in the overt syntax and cannot be reconstructed and lowered at LF to get the existential reading.

### 2.2.7 ECM of Idiom Chunks

When an idiom chunk undergoes movement in Korean, the idiomatic meaning is no longer available in many cases.

- (13) a. John-i        son-i        kuta  
      John-Nom    hand-Nom    is big  
      "John has big hands." (literal) or  
      "John is very generous." (idiomatic)

- b. [son-i]<sub>i</sub>        John-i        t<sub>i</sub>        kuta  
      hand-Nom    John-Nom        is big  
      "John has big hands." (literal only)

- (14) a. John-un        [i-lul        captusi]        ku cip-ul        twuycyessta  
      John-Top    flea-Acc    catch-to        that house-Acc    searched  
      "John searched the house very thoroughly."

- b. #John-un        [i-ka        caphitusi]        ku cip-ul        twuycyessta  
      John-Top    flea-Nom    be caught-to    that house-Acc    searched  
      "John searched the house very thoroughly."

When an idiom chunk is scrambled, perhaps by A'-movement, to a sentence-initial position in (13b), the idiomatic meaning is lost and only the literal reading is available. The awkwardness of (14b) shows that the idiomatic reading becomes also impossible when an idiom chunk undergoes A-movement such as passivization.

- (15) a. na-nun [cakun kochwu-ka maypta-ko] mitnun-ta  
 I-Top small pepper-Nom is hot-comp believe

"I believe that small peppers are hot." (literal) or  
 "I believe that small people are stronger." (idiomatic)

- b. na-nun [cakun kochwu-lul maypta-ko] mitnun-ta  
 I-Top small pepper-Acc is hot-comp believe

"I believe that small peppers are hot." (literal only)

When an idiom chunk DP is ECMed as in (15b), the idiomatic reading becomes unavailable, suggesting that the ECMed idiom chunk must have undergone some sort of movement, given that idiom chunks in general are not subject to movement in Korean as we have seen in (13) - (14).

### 2.3 ECM as Movement

I will show in this section that ECM in Korean involves overt raising of the embedded subject into the specifier of the matrix Tr via the specifier of the embedded T by showing that the ECMed subject in (16b) is a constituent of the matrix clause in the overt syntax, while the nominative subject in (16a) stays in-situ as a constituent of the embedded clause.

- (16) a. John-un [Mary-ka ttokttokhata-ko] mitnun-ta  
 John-Top Mary-Nom be smart-comp believe

"John believes that Mary is smart."

- b. John-un [Mary-lul]<sub>i</sub> [t<sub>i</sub> ttokttokhata-ko] mitnun-ta  
 John-Top Mary-Acc be smart-comp believe

"John believes Mary to be smart."

### 2.3.1 ECM as Overt Movement

#### 2.3.1.1 Reflexivization

In Korean, reflexivization is obligatory between the subject and the object in the same clause, but is optional between the subject of the matrix clause and the subject of the embedded clause<sup>2</sup>. Thus we get the anaphor *caki* 'self' in the object position when it refers to the subject in the same clause as in (17a) below, but a pronoun *ku* 'he' can appear as well as the anaphor *caki* 'self' when it occupies the embedded subject position and refers to the matrix subject as in (17a-b).

(17) a. Johnj-un    **caki**j-lul    pinanhayssta  
         John-Top   self-Acc    criticized  
         'John criticized himself.'

         b. \*Johnj-un    **ku**j-lul    pinanhayssta  
                 John-Top   him-Acc    criticized  
                 'Johnj criticized himj.'

(18) a. Johnj-un    [**caki**j-ka    pinanpatnunta-ko]    pwulphyenghayssta  
         John-Top   self-Nom    was-criticized-comp    complained  
         'Johnj complained that hej was criticized.'

         b. Johnj-un    [**ku**j-ka    pinanpatnunta-ko]    pwulphyenghayssta  
                 John-Top   he-Nom    was-criticized-comp    complained  
                 'Johnj complained that hej was criticized.'

---

2. The test for clausemates on the basis of the facts from reflexivization and adverb placement adopted in this section and the following section is originally put forth in Kuno (1973).

When the subject of a matrix ECM verb and its embedded subject are coreferential, the pronoun *ku* 'he' can be used when the embedded subject is in the nominative case, but it is obligatory to use the anaphor *caki*'self' when the embedded subject is in the accusative case.

- (19) a. John<sub>i</sub>-un [caki<sub>j</sub>-ka ttokttokhata-ko] mitnun<sub>ta</sub>  
 John-Top self-Nom be smart-comp believe

'John<sub>i</sub> believes that self<sub>j</sub> is smart.'

- b. John<sub>i</sub>-un [ku<sub>j</sub>-ka ttokttokhata-ko] mitnun<sub>ta</sub>  
 John-Top he-Nom be smart-comp believe

'John<sub>i</sub> believes that he<sub>j</sub> is smart.'

- (20) a. John<sub>i</sub>-un [caki<sub>j</sub>-lul ttokttokhata-ko] mitnun<sub>ta</sub>  
 John-Top self-Acc be smart-comp believe

'John<sub>i</sub> believes himself<sub>j</sub> to be smart.'

- b. \*John<sub>i</sub>-un [ku<sub>j</sub>-lul ttokttokhata-ko] mitnun<sub>ta</sub>  
 John-Top he-Acc be smart-comp believe

'John<sub>i</sub> believes he<sub>j</sub> to be smart.'

Again, the contrast between (19b) and (20b) can be naturally explained if we assume that *caki/ku-ka* in (19) is a constituent of the embedded clause in the overt syntax while *caki/ku-lul* is a constituent of the matrix clause. The S-structure representations for (19b) and (20b) are thus like the following:

- (21) a. John<sub>i</sub>-un [ku<sub>j</sub>-ka ttokttokhata-ko] mitnun<sub>ta</sub>  
 John-Top he-Nom be smart-comp believe (=19b)

- b. \*John<sub>i</sub>-un kuj-lul [ɕi ttokttokhata-ko] mitnun<sub>ta</sub>  
 John-Top he-Acc be smart-comp believe (=20b)

### 2.3.1.2 Adverb Placement

Adverbs in Korean can be in general placed anywhere in the sentence except the sentence-final position, which is strictly reserved for the verb.

- (22) a. **erisekkeyto** John-un kuykes-ul mollassta  
 stupidly John-Top it-Acc knew-not  
 "Stupidly, John did not know it."
- b. John-un **erisekkeyto** kuykes-ul mollassta  
 John-Top stupidly it-Acc knew-not
- c. John-un kuykes-ul **erisekkeyto** mollassta  
 John-Top it-Acc stupidly knew-not

However, a matrix adverb cannot be placed inside an embedded clause and still modify the matrix clause. The following is ungrammatical in the intended reading.

- (23) \*John-un [Bill-i **erisekkeyto** chencay-la-nun kes-ul] mollassta  
 John-Top Bill-Nom stupidly genius-be-Rel fact-Acc knew-not  
 "Stupidly, John did not know that Bill was a genius."

Let us examine how the matrix adverb behaves when the predicate of the matrix clause is an ECM verb and the embedded subject is marked with nominative.

- (24) a. **erisekkeyto** John-un [Bill-i chencayla-ko] mitessta  
 stupidly John-Top Bill-Nom genius-be-comp believed  
 "Stupidly, John believed that Bill was a genius."
- b. John-un **erisekkeyto** [Bill-i chencayla-ko] mitessta  
 John-Top stupidly Bill-Nom genius-be-comp believed
- c. John-un [Bill-i chencay-la-ko] **erisekkeyto** mitessta  
 John-Top Bill-Nom genius-be-Comp stupidly believed
- d. \*John-un [Bill-i **erisekkeyto** chencayla-ko] mitessta  
 John-Top Bill-Nom stupidly genius-be-comp believed

The ungrammaticality of (24d) shows that the nominative ECM subject is placed inside the embedded clause. Contrast the preceding with the following sentences that have exactly the same structure except that the embedded subject is now marked with accusative.

- (25) a. **erisekkeyto** John-un [Bill-ul chencayla-ko] mitessta  
 stupidly John-Top Bill-Acc genius-be-comp believed  
 "Stupidly, John believed that Bill was a genius."
- b. John-un **erisekkeyto** [Bill-ul chencayla-ko] mitessta  
 John-Top stupidly Bill-Acc genius-be-comp believed
- c. John-un [Bill-ul chencayla-ko] **erisekkeyto** mitessta  
 John-Top Bill-Acc genius-be-comp stupidly believed
- d. John-un [Bill-ul **erisekkeyto** chencayla-ko] mitessta  
 John-Top Bill-Acc stupidly genius-be-comp believed

The grammaticality of (25d) shows that the embedded accusative ECM subject is in the matrix clause in the overt syntax. The S-structure representation of (25d) would be like (26b) given below, while the ungrammatical example (24d) has (26a) as its S-structure representation.



- (26) a. \*John-un [Bill-i erisekkeyto chencayla-ko] mitessta  
 John-Top Bill-Nom stupidly genius-be-comp believed  
 "Stupidly, John believed that Bill was a genius."
- b. John-un Bill<sub>i</sub>-ul erisekkeyto [<sub>i</sub> chencayla-ko] mitessta  
 John-Top Bill-Acc stupidly genius-be-comp believed

The following pairs all exhibit the same pattern; a matrix adverb can follow the ECMed DP subject but not the nominative embedded subject.

- (27) a. \*John-un [Bill-i erisekkeyto peminila-ko] tancengciessta  
 John-Top Bill-Nom stupidly culprit-be-comp determined  
 "Stupidly, John determined that Bill was the culprit."
- b. John-un Bill<sub>i</sub>-ul erisekkeyto [<sub>i</sub> peminila-ko] tancengciessta  
 John-Top Bill-Acc stupidly culprit-be-comp determined
- (28) a. \*John-un [Bill-i kukey peminila-ko] malhayssta  
 John-Top Bill-Nom loudly culprit-be-comp said  
 "John said loudly that Bill was the culprit."
- b. John-un Bill<sub>i</sub>-ul kukey [<sub>i</sub> peminila-ko] malhayss-ta  
 John-Top Bill-Acc loudly culprit-be-comp said

When an adverb can be interpreted as modifying either the matrix or the embedded clause, ambiguity arises when the embedded subject is ECMed but the same sentence is unambiguous when the embedded subject is in the nominative.

- (29) a. John-un [Bill-i cuksi natanassta-ko] pokohayssta  
 John-Top Bill-Nom immediately showed-up-comp reported  
 (i) \*"John immediately reported that Bill showed up."  
 (ii) "John reported that Bill immediately showed up."

- b. John-un Bill<sub>i</sub>-ul **cuksi** [<sub>t<sub>j</sub></sub> natanassta-ko] tpokohayss-ta  
 John-Top Bill-Acc immediately showed-up-comp reported
- (i) "John immediately reported that Bill showed up."  
 (ii) "John reported that Bill immediately showed up."

### 2.3.1.3 Negation and Focus

When a universal quantifier and negation appear in the same clause at S-structure in Korean<sup>3</sup>, the universal quantifier always takes scope over the negation. One can get the narrow scope reading of the universal quantifier with regard to the negation only when the so-called delimiter *-nun* is added to the main verb . This reading is often referred to as "partial" negation in the traditional grammar in the sense that only a part of a clause is in the scope of negation.

- (30) a. John-i motun salam-ul salanghaci **anhnun**ta  
 John-Nom everyone-Acc love NEG  
 "John loves no one."
- b. John-i motun salam-ul salanghaci-**nun** **anhnun**ta  
 John-Nom everyone-Acc love-del NEG  
 (i) "It is not John that loves everyone."  
 (ii) "It is not everyone that John loves."

---

3. I assume that negation is raised to Tense in the overt syntax in Korean due to overt verb raising, which will result in the mutual c-command between the subject in the specifier position of Tense and the negation in Tense head in the overt syntax. Some arguments for the overt verb raising in Korean will be presented in the appendix at the end of this chapter.

When the delimiter *-nun* is added to a transitive verb, the sentence becomes ambiguous; either the subject or the object can be in the scope of negation as we can see from the two possible readings in (30b). However, it is required that the delimiter *-nun* and its argument that is in the scope of negation be in the same clause in the overt syntax.

- (31) a. na-nun [John-i motun salam-ul salanghaci-nun anhnunta-ko]  
 I-Top John-Nom everyone-Acc love-del NEG-comp  
 sayngkakhanta  
 think  
 (i) "I think that it is not John that loves everyone."  
 (ii) "I think that it is not everyone that John loves."

- b. [motun salam-ul]<sub>i</sub> na-nun [ John-i *t<sub>i</sub>* salanghaci-nun  
 everyone-Acc I-Top John-Nom love-del  
 anhnunta-ko ] sayngkakhanta  
 NEG-comp think  
 "I think that it is not John that loves everyone."

Due to the above-mentioned clausemate condition on the delimiter and its argument under the scope of negation, when an object of the embedded ditransitive verb is scrambled out of the embedded clause to the sentence-initial position across the clause boundary, the sentence becomes unambiguous. Only the embedded subject that is the clausemate to the delimiter in the overt syntax can be under the scope of negation.

Interestingly, when a partial negation clause is embedded under an ECM predicate, the embedded subject NP should be in the nominative case marking if there is no embedded object.

- (32) a. na-nun Tom-eykey [motun salam-i/\*ul chakhaci-nun anhta-ko]  
 I-Top Tom-Dat everyone-Nom/Acc is good-del NEG-comp  
 malhayssta  
 said

"I told Tom that it was not the case that everyone was good."

- b. \*na-nun [motun salam-i/ul]<sub>i</sub> Tom-eykey [<sub>i</sub> chakhaci-nun  
 I-Top everyone-Nom/Acc Tom-dat is good-del  
 anhta-ko] malhayssta  
 NEG-comp said

"I told Tom that it was not the case that everyone was good."

It is not surprising that (32a) with an ECMed embedded subject is ungrammatical if we assume that the embedded accusative subject stays in-situ in the embedded clause and thus cannot be licensed its accusative case feature.

What is of interest here is that the sentence does not improve with raising of the ECMed DP to the left of the matrix dative as in (32b). No ECM construction is possible out of the partial negation clause without an object. If the ECMed subject DP stays downstairs in-situ as in (32a), the sentence is ruled out due to the failure of proper checking of case features; and if it is raised into the matrix clause, there would be no argument left in the scope of negation in the overt syntax, resulting in vacuous negation.

If the embedded verb is transitive, there arises ambiguity if the embedded subject is marked with the nominative case marker; while the sentence is unambiguous if the embedded subject is ECMed.

- (33) a. na-nun [John-i motun salam-ul salanghaci-nun anhnunta-ko ]  
 I-Top John-Nom everyone-Nom love-del NEG-comp

malhayssta

said

(i) "I told Tom that it was not John that loved everyone."

(ii) "I told Tom that it was not everyone that John loved."

- b. na-nun [John-ul]<sub>i</sub> [ t<sub>i</sub> motun slam-ul salanghaci-nun  
 I-Top John-Acc everyone-Acc love-del

anhnunta-ko] malhayssta

NEG-comp said

"I told Tom that it was not everyone that John loved."

There are two readings available for (33a); either the embedded subject or the embedded object can be in the scope of negation since both of them are in the same clause with the delimiter in the overt syntax. On the other hand, the unambiguity of (33b) with the ECMed embedded subject can follow from the assumption that the ECMed DP is in the matrix clause in the overt syntax; there is only one argument that is clausemate to the delimiter *-nun* in the overt syntax, the embedded object. Hence, no ambiguity arises in the ECM construction in (33b).

#### 2.3.1.4 Matrix Dative

When there is a dative argument in the matrix clause of an ECM predicate, the accusative case marking on the ECMed NP does not freely alternate with the nominative case marker.

- (34) a. John-un Tom-eykey [Mary-ka/?lul ttoktokhata-ko] malhayssta  
 John-Top Tom-Dat Mary-Nom/Acc be smart-comp said  
 "John told Tom that Mary was smart."
- b. John-un [Mary-\*ka/lul]<sub>i</sub> Tom-eykey [<sub>t</sub><sub>i</sub> ttoktokhata-ko] malhayssta  
 John-Top Mary-Nom/Acc Tom-Dat be smart said  
 "John told Tom that Mary was smart."

When the matrix dative DP precedes the embedded subject of an ECM predicate as in (34a), the embedded subject can bear either the nominative or the accusative case marking. In contrast, the embedded subject must be in the accusative case if it occurs left to the matrix dative as in (34b).

The contrast in the possibility of alternative case markings on the embedded subject depending on its position with regard to the matrix dative argument suggests that the ECMed DP must be in the matrix clause in the overt syntax. The ungrammaticality of the nominative embedded subject preceding the matrix dative in (34b) crucially suggests that the ECMed DP is in a case-position in the overt syntax that checks only the accusative case feature just like the case-position for the direct object.

In contrast, it is not clear whether the embedded subject *Mary* is in the embedded clause or in the matrix clause if it is preceded by the matrix dative argument as in (34a). The case alternation on the embedded subject in (34a) thus can be accounted for if we assume that the ECMed DP after the matrix dative is in the matrix clause and its accusative case feature can be licensed by the matrix ECM predicate; while the nominative embedded subject is in the embedded clause and its case feature is licensed by the embedded intransitive predicate.

### 2.3.1.5 ECM out of Passive Sentence

Another piece of evidence for the matrix object status of an ECMed DP shows up when a passive sentence is embedded in an ECM environment.

- (35) a. John-i        Mary-lul        salhayhay-ss-ta  
         John-Nom    Mary-Acc        kill-past-decl

"John killed Mary."

- b. Mary-ka/\*lul (John-ey uyhay)    salhay-toy-ess-ta  
         Mary-Nom    (John-by)            kill-passive-past-decl

"Mary was killed (by John)."

- (36) a. na-nun [Mary-ka (John-ey uyhay) salhaytoyessta-ko]    mitnunta  
         I-Top    Mary-Nom    (John-by)            was killed-comp        believe

"I believe that Mary was killed (by John)."

- b. na-nun [Mary-lul]<sub>i</sub> [t<sub>i</sub> (John-ey uyhay) salhaytoeyessta-ko]    mitnuntz  
         I-Top    Mary-Acc            (John-by)            was killed-comp        believe

"I believe Mary to have been killed (by John)."

The accusative case marking on the embedded passivized subject *Mary* in (36b) indicates that it occupies the matrix object position in the overt syntax; otherwise the accusative case feature cannot be licensed since the embedded predicate is passivized and cannot license any accusative case.

### 2.3.2 ECM as A-movement

There is at least a piece of evidence suggesting that ECM movement in Korean is an instance of A-movement if we follow the assumption that movement from an A- to an A'- and then to an A-position counts as illicit. An ECMed DP can undergo further A-movement such as passivization (Choe 1991; Yoon 1993).

- (37) a. John-un [Mary-lul]<sub>i</sub> [ *t*<sub>i</sub> ttokttokhata-ko] mit-nun-ta  
 John-Top Mary-Acc be smart-comp believe-pres-decl  
 "John believes Mary to be smart."
- b. [Mary-ka]<sub>i</sub> *t*<sub>i</sub> [*t*<sub>i</sub> ttokttokhata-ko ] (John-ey uyhay) mit-eci-n-ta  
 Mary-Nom be smart-comp John-by believe-pass-pres-decl  
 "Mary is believed to be smart (by John)."

If ECM counts as A'-movement in Korean, passivization of an ECMed DP (=37b) should be ruled out as illicit movement. One may argue that (37b) is not derived by applying passivization to the ECMed DP but the whole embedded clause itself is passivized as below.

- (38) a. It is believed [ that Mary is smart ]
- b. [ Mary-ka ttokttokhata-ko ] mit-eci-n-ta  
 Mary-Nom be smart-comp believe-pass-pres-decl  
 "That Mary is smart is believed."

However, there is some evidence indicating that the passive sentence in (37b) is derived by applying passivization to the ECMed DP. First, the *by*-phrase can occur to the right of the subject of a passivized ECM predicate.



- (39) [Mary-ka]<sub>i</sub> John-ey uyhay [t<sub>i</sub> ttokttokhata-ko ] mit-eci-n-ta  
 Mary-Nom John-by be smart-comp believe-pass-pres-decl  
 "Mary is believed to be smart by John."

Given that a matrix adverb cannot be placed inside the embedded clause (§2.3.1.2), the subject and the embedded predicate in (39), with the *by*-phrase intervening between them, cannot belong to the same clause. The subject must have been moved out of the embedded clause and raised into the matrix clause to precede the matrix prepositional phrase. This suggests that at least in (39) passivization is applied to the ECMed DP in the matrix object position, not to the embedded clause as a whole.

Another piece of evidence for the passivization applying to an ECMed DP can be found when the matrix predicate is one of the so-called non-bridge verbs.

- (40) a. John-un [ Mary-ka ttokttokhata-ko ] solichy-ess-ta  
 John-Top Mary-Nom be smart-comp shout-past-decl  
 "John shouted that Mary was smart."
- b. \*John-un [Mary-lul]<sub>i</sub> [ t<sub>i</sub> ttokttokhata-ko ] solichy-ess-ta  
 John-Top Mary-Acc be smart-comp shout-past-decl  
 "John shouted Mary ro be smart."
- c. \*[Mary-ka]<sub>i</sub> (John-ey uyhay) [t<sub>i</sub> ttokttokhata-ko ] solichy-ecy-ess-ta  
 Mary-Nom John-by be smart-comp shout-pass-past-decl  
 "Mary was shouted to be smart (by John)."

As the contrast between (40a) and (40b) shows, non-bridge verbs in Korean do not allow ECM constructions. Interestingly, no passivization is allowed when the matrix predicate is

one of these non-bridge verbs (=40c). This again indicates that passivization should apply to an argument in the matrix object position.

Summing up, the possibility of creating a passive sentence from an ECM construction suggests that (a) ECM in Korean is A-movement; and that (b) the ECMed DP is in the matrix object position in the overt syntax.

## **2.4. Against ECM as Base-generation**

I have shown in the previous section that the accusative DP in an ECM environment is a constituent of the matrix clause at S-structure based on the facts from reflexivization (§2.3.1.1), adverb placement (§2.3.1.2), negation and focus (§2.3.1.3). More specifically, I have argued that the ECMed NP occupies the direct object position of the matrix clause considering the interaction between the ECMed NP and the matrix dative (§2.3.1.4) and the possibility of ECM out of passive clause (§2.3.1.5).

However, it is still not clear whether the ECMed DP appears in the matrix object position at S-structure as a result of movement or it is base-generated as a matrix object and linked to the embedded subject position via subject-to-object control.<sup>4</sup> In this section, I will present several pieces of evidence that the ECMed DP is in the embedded subject position at D-structure and cannot be base-generated in the matrix object position.

Paired with the claim made in the previous section that the ECMed DP is a constituent of the matrix clause in the overt syntax, it will lead us to conclude that ECM in Korean

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4. Thanks to David Pesetsky for suggesting this possibility of base-generating an ECMed NP in the matrix object position.

involves movement from the embedded subject position to the matrix object position across the CP boundary.

### 2.4.1 ECM and Scope Ambiguity

Korean exhibits so-called scope rigidity, as noted in Japanese by Kuroda (1971), Huang (1982) and others; scope interpretation in Korean as well as in Japanese reflects the surface c-command relationship between two quantifiers. Ambiguity arises only when the universal quantifier is moved across and c-commands the existential quantifier in the overt syntax.

(41) a. nwukwunka-ka      motun salam-ul      salanghanta  
           someone-Nom      everyone-Acc      love  
           "someone loves everyone."      (unambiguous)

b. [**motun salam-ul**]<sub>i</sub>    nwukwunka-ka    *t*<sub>i</sub>      salanghanta  
           everyone-Acc      someone-Nom      love  
           "someone loves everyone."      (ambiguous)

(42) a. John-un    nwukwunka-lul      motun salam-eykey      sokayhayssta  
           John-Top    someone-Acc      everyone-Dat      introduced.  
           "John introduced someone to Everyone."      (unambiguous)

b. John-un    [**motun salam-eykey**]<sub>i</sub>    nwukwunka-lul    *t*<sub>i</sub>      sokayhayssta  
           John-Top    everyone-Dat      someone-Acc      introduced  
           "John introduced someone to everyone."      (ambiguous)

When the existential quantifier 'someone' c-commands the universal quantifier 'everyone' in the overt syntax, there is no scope ambiguity as we can see in (41a) and (42a). However, ambiguity arises when the universal quantifier in the object position is moved across the existential quantifier in the subject position (=41b); or when the universal quantifier in the dative phrase is scrambled over the existential quantifier in the direct object position (=42b).

Likewise, a sentence with the existential quantifier in the matrix dative position and the universal quantifier in the embedded subject position is unambiguous when the universal quantifier is in nominative case marking; while the sentence becomes ambiguous if the embedded universal quantifier is ECMed.

- (43) a. John-un nwunkwunka-eykey [ motun salam-i chakhata-ko ] malhayssta  
 John-Top somone-Dat everyone-Nom be good-comp said  
 "John told someone that everyone was good." (unambiguous)
- b. John-un [motun salam-ul]<sub>i</sub> nwukwunka-eykey  
 John-Top everyone-Acc someone-Dat  
 [ t<sub>i</sub> chakhata-ko ] malhayssta  
 be good-comp said  
 "John told someone that everyone was smart." (ambiguous)

As in the double object construction in (42a), (43a) does not exhibit ambiguity since the existential quantifier in the matrix clause c-commands the nominative universal quantifier that is in the embedded subject position. Interestingly, ambiguity arises when the embedded universal quantifier is ECMed and precedes the existential quantifier in the matrix dative position. The ambiguity found in (43b) thus indicates that the ECMed embedded subject is moved across the existential quantifier in the matrix dative position. This in turn suggests

that ECM in Korean involves movement, not control between the base-generated ECMed DP and the embedded subject position.

### 2.4.2 Chain Condition

Korean seems to obey the Chain Condition, which prevents an anaphor from locally c-commanding a trace of its antecedent.

(44) a. [John-kwa Mary]j-ka seloj-lul poassta  
 John-and Mary-Nom each other-Acc saw  
 "John and Mary saw each other."

b. \***[John-kwa Mary]-lul**j seloj-ka t<sub>i</sub> poassta  
 John-and Mary-Acc each other-Acc saw  
 "John and Mary, each other saw."

An accusative case marked Theme phrase in Korean can function as an antecedent of a dative case marked Goal phrase, indicating that a Theme phrase asymmetrically c-commands a Goal phrase at D-structure. Otherwise, the following would be ungrammatical due to the chain condition violation.

(45) na-nun [**John-kwa Mary**]j-lul seloj-eykey (\*t<sub>i</sub>) sokayhayssta  
 I-Top John-and Mary-Acc each other-Dat introduced  
 "I introduced John and Mary to each other."

Suppose the accusative argument asymmetrically c-commands the dative argument at D-structure in Korean<sup>5</sup>. The following ECM construction that has an ECMed accusative subject as the antecedent of the matrix dative argument (=46) then should be grammatical if the ECMed DP is base-generated in the matrix object position that c-commands the matrix dative position.

- (46)      \*?na-nun [John-kwa Mary]<sub>i</sub>-lul seloj-eykey [<sub>i</sub> chakhata-ko ]  
           I-Top    John-and    Mary-Acc    each other-Acc    be good-comp  
                                  malhayssta  
                                  said

"I told each other that John and Mary were good."

The awkwardness of (46) seems to be due to the violation of Chain Condition. The sentence clearly improves if the anaphor in the matrix dative position is embedded under another DP. The anaphor *selo*'each other' in the matrix dative position does not induce the Chain Condition violation in (47), since it fails to c-command the trace of its antecedent left in the embedded subject position.

- (47)      na-nun [John-kwa Mary]<sub>i</sub>-lul [seloj-uy            chinkwu]-eykey  
           I-Top    John-and    Mary-Acc            each other-Gen    friend-Dat  
                                  [ <sub>i</sub> chakhata-ko ]    malhayssta  
                                  be good-comp    said

"I told each other's friends that John and Mary were good."

Again the ungrammaticality of (47) due to the violation of Chain Condition cannot be accounted for under the base-generation analysis of ECM. There is simply no trace of the

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5. Some arguments for the asymmetric c-command of dative by accusative argument in the double object construction in Korean will appear in the appendix to this chapter.

ECMed antecedent that is base-generated in the matrix object position that asymmetrically c-commands the matrix dative position. Hence, Chain Condition should be irrelevant in ECM constructions in Korean, which is not the case as we have already seen from the contrast between (46) and (47).

Under the raising analysis of ECM, the ungrammaticality of (46) is considered to be due to the trace of the ECMed antecedent that is left in the embedded subject position as a result of ECM movement. The anaphor in the matrix dative position then locally c-commands the trace, inducing the Chain Condition violation.

### 2.4.3 ECM vs. Control

If an ECMed DP is base-generated in the matrix object position and linked to the embedded subject position via object-to-subject control, ECM constructions in Korean must exhibit the same properties with the control structures. A control predicate in Korean such as 'persuade' typically requires that the controller be animate, but an ECM predicate does not.

- (48) a. na-nun John<sub>i</sub>-eykey [ PRO<sub>i</sub> sewul-ey ka-key ] seltukhayssta  
 I-Top John-Dat Seoul-to go-to persuaded

"I persuaded John to go to Seoul."

- b. \*na-nun kichaj-eykey [ PRO<sub>i</sub> sewul-ey ka-key ] seltukhayssta  
 I-Top train-Dat Seoul-to go-to persuaded

"I persuaded the train to go to Seoul."

(49) a. na-nun **John-ul**<sub>i</sub> [ *t*<sub>i</sub> sewul-ey kassta-ko ] malhayssta  
 I-Top John-Acc Seoul-to went-comp said  
 "I told that John went to Seoul."

b. na-nun **kiha-lul**<sub>i</sub> [ *t*<sub>i</sub> sewul-ey kassta-ko ] malhayssta  
 I-Top train-Acc Seoul-to went-comp said  
 "I told that the train went to Seoul."

As we can see from the contrast between (48b) and (49b), the (in)animateness of the DP in the matrix object position does not bear on the grammaticality of the ECM constructions. If the controller in the object-to-subject control constructions such as (48b) must be animate since it is selected by the control predicate in the main clause that assigns a theta-role to it, the grammaticality of (49b) indicates that the ECMed DP in the matrix object position gets its theta-role from the embedded predicate independent of the matrix ECM predicate. This would follow if the ECMed DP is generated in the embedded subject position at D-structure, which determines the theta-relation between a predicate and its argument(s).

Note that under the base-generation analysis of ECM there would be a PRO (or pro) in the embedded subject position in ECM constructions as well as in control constructions. It would be then very difficult to account for the independence of the ECMed DP of its ECM predicate in terms of theta-selection unlike in the control constructions. Again the raising analysis of ECM correctly predicts that the ECMed DP is in the embedded subject position and theta-selected and assigned a theta-role by the embedded predicate at D-structure.



## 2.4.4 NPI Licensing

### 2.4.4.1 Some properties of Korean NPI

The so-called Negative Polarity Items (henceforth, NPI) in Korean show some properties that are not found in English.

- (50) a. **amwuto** John-ul manna-ci **anh**-ass-ta  
anyone John-Acc meet-? NEG-past-decl  
"No one met John."
- b. \***amwuto** John-ul manna-ss-ta  
anyone John-Acc meet-past-decl  
"Anyone met John."
- (51) a. na-nun [**amwuto** John-ul manna-ci **anh**-ass-ta-ko] malhayssta  
I-Top anyone John-Acc meet-? NEG-past-decl-comp said  
"I said that no one met John."
- b. \*na-nun [**amwuto** John-ul mannassta-ko] malha-ci **anh**-ass-ta  
I-Top anyone John-Acc came-comp say-? NEG-past-decl  
"I didn't say that anyone met John."
- c. **amwutoj** na-nun [t<sub>i</sub> John-ul mannassta-ko] malha-ci **anh**-ass-ta  
anyone I-Top John-Acc met-comp say-? NEG-past-decl  
"I didn't say that anyone hit John."
- (52) a. **amwutoj** na-nun [t<sub>i</sub> John-ul manna-ci **anhassta**-ko] malhayssta  
anyone I-Top John-Acc meet-? NEG did-comp said  
"I said that no one hit John."

- b. \**na-nun amwu-eykeyto*<sub>i</sub> [ *PRO*<sub>i</sub> John-ul manna-ci anh-key ]  
 I-Top anyone-Dat John-Acc meet-? NEG-to  
*kangyohayssta*  
 forced

"I forced anyone not to meet John."

Korean allows subject NPI's (=50a); but the NPI and the negation must be clausemates (=51a); the NPI licensing takes place at S-structure (=51c); and the NPI can be licensed through a chain (=52a) but not through control (=52b). Crucially, the NPI should occur at some point of derivation in the clause that contains the negation. The NPI controller in (52b) cannot be licensed since it is not a clausemate to the negation at any level of representation; the negation is in the embedded clause and the NPI is in the matrix clause both at D-structure and at S-structure.

Based on these facts about NPI licensing in Korean, a test for the D-structure position of the NPI can be developed. The NPI and negation should be in the same clause at some point of derivation, either at D-structure or at S-structure. If the NPI and negation are thus not in the same clause at S-structure, the NPI must have been base-generated at D-structure in the clause containing negation.

#### 2.4.4.2 ECM of NPI

The NPI licensing in Korean cannot be directly related to the ECM facts since the NPI *amwuto*'anyone' does not bear any overt case marking. However, some indirect evidence for the embedded NPI subject as an ECMed NP can come from the fact that non-bridge

verbs such as 'shout, scream, whisper, murmur' that are not ECM predicates in Korean do not allow embedded NPI subject that is not a clausemate to the negation.

- (53) a. na-nun [John-i ttokttokhata-ko] solichyessta  
 I-Top John-Nom is smart-comp shouted

"I shouted that John was smart."

- b. \*na-nun [John-ul]<sub>i</sub> [ t<sub>i</sub> ttokttokhata-ko] solichyessta  
 I-Top John-Acc is smart-comp shouted

"I shouted John to be smart."

- (54) a. \*na-nun [amwuto ttokttokhata-ko] solichi-ci anh-ass-ta  
 I-Top anyone is smart-comp shout-? NEG-past-decl

"I didn't shout that anyone was smart."

- b. \*na-nun amwuto<sub>i</sub> [ t<sub>i</sub> ttokttokhata-ko] solichi-ci anh-ass-ta  
 I-Top anyone is smart-comp shout-? NEG-past-decl

"I didn't shout anyone to be smart."

- c. na-nun [amwuto ttokttokha-ci anh-ta-ko] solichyessta  
 I-Top anyone is smart-? NEG-comp shouted

"I should that no one is smart."

Given that the NPI licensing is clause-bound, the ungrammaticality of (53a) can be accounted for as a failure of satisfying the clausemate condition at S-structure; the embedded NPI subject can be seen as bearing nominative case and thus stays in the embedded clause. Raising the embedded NPI subject into the matrix clause does not

improve the grammaticality as we can see in (53b), since the matrix predicate does not allow ECM constructions. Raising itself counts as illicit movement in this case although the NPI can be successfully licensed by the matrix negation at S-structure after the raising.

Let us now consider how the embedded subject NPI in an ECM environment behaves with regard to the position of negation.

- (54) a. na-nun [amwuto ttoktokha-ci anh-ta-ko] mitnunta  
 I-Top anyone is smart-? NEG-decl-comp believe  
 "I believe that no one is smart."
- b. na-nun amwuto<sub>i</sub> [ t<sub>i</sub> ttoktohata-ko] mit-ci anhnunta  
 I-Top anyone be smart-comp believe-? NEG  
 "I don't believe anyone to be smart."
- c. \*na-nun [CP [IP amwuto chakhata]-nun kes-ul ] mit-ci anhnunta  
 I-Top anyone is good-Rel fact-Acc believe-? NEG  
 "I don't believe the fact that anyone is smart."

The grammaticality of (54b) indicates that the embedded NPI subject is in the matrix clause at S-structure; otherwise, it cannot be licensed by the matrix negation without satisfying the clausemate condition. Therefore, when the NPI subject is embedded in a complex NP clause, out of which no extraction is possible due to the island constraints as in (54c), the sentence is ungrammatical if the NPI is not a clausemate to the negation. These facts, paired with the observation so far that a nominative embedded subject cannot be raised into the matrix clause, suggest that the embedded subject NPI in (54b) is ECMed although it does not bear overt accusative case marking.

### 2.4.4.3 NPI and matrix adverb placement

A matrix adverb can be placed to the right of the embedded subject NPI, indicating that the NPI is a constituent of the matrix clause at S-structure. Note that we have already seen in the section 2.3.1.2 that a matrix adverb cannot be placed inside an embedded clause.

(55) a. \*na-nun pepceng-eyse [**amwuto** salhaytoyessta-ko] cungenha-ci **anhassta**  
I-Top court-in anyone was killed-comp testify-? NEG  
"I didn't testify in the court that anyone was killed."

b. na-nun **amwuto**; pepceng-eyse [ *t*<sub>i</sub> salhaytoyessta-ko] cungenha-ci  
I-Top anyone court-in was killed-comp testify-?  
**anhassta**  
NEG  
"I didn't testify in the court that anyone was killed."

The ungrammaticality of (55a) follows from the failure of NPI licensing in the embedded clause; the position of the matrix adverb indicates that the NPI is in the embedded clause at S-structure<sup>6</sup>. When an embedded subject NPI precedes a matrix adverb as in (55b), it clearly is a constituent of the matrix clause as we have already seen in section 2.3.1.2, and the NPI licensing can now take place satisfying the clausemate condition.

Crucially when the negation is inside the embedded clause, the embedded subject NPI can still precede the matrix adverb, suggesting that the ECMed NPI is base-generated in the embedded clause at D-structure.

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6. This argument depends on the assumption that no string vacuous scrambling is allowed in Korean.

(56) a. na-nun pepceng-eyse [**amwuto** salhaytoy-ci **anhassta-ko**] cungenhayssta  
 I-Top court-in anyone be killed-? NEG-comp testified  
 "I testified in the court that no one was killed."

b. na-nun **amwutoj** pepceng-eyse [ *t*<sub>i</sub> salhaytoy-ci **anhassta-ko**]  
 I-Top anyone court-in be killed-? NEG-comp  
 cungenhayssta  
 testified  
 "I testified in the court that no one was killed."

The grammaticality of (56b) indicates that (a) the embedded subject NPI is in the matrix clause and must be ECMed since the matrix ECM predicate should assign its accusative case feature; and (b) the NPI must have been base-generated in the embedded subject position and is licensed through the chain formed by the ECM movement.

Note that the base-generation analysis of ECM cannot account for the grammaticality of (52b), since the NPI cannot be licensed through control as we have already seen in the section 2.4.4.1. The base-generation analysis would predict that there is PRO in the embedded subject position controlled by the NPI in the matrix object position. The NPI then cannot be licensed since the negation is not a clausemate to the NPI at any level of representation.

I have shown in this section that the ECMed DP should be base-generated in the embedded subject position at D-structure in Korean based on the facts regarding scope ambiguity (§2.4.1), the Chain Condition (§2.4.2), control predicates (§2.4.3) and NPI licensing (§2.4.4). These facts, paired with the claim made in the previous section that the ECMed NP is a constituent of the matrix clause in the overt syntax, suggest that the ECM in Korean

involves A-movement of the embedded subject into the matrix object position across the CP boundary in the overt syntax.

## 2.4 A Note on ECM vs. Scrambling

Although I have shown so far that the ECMed DP in Korean is a constituent of the embedded clause at D-structure and raises into a case checking position in the matrix clause in the overt syntax, it is hard to exclude the possibility that it is an instance of scrambling into a case position<sup>7</sup>. Since the discussion of this issue will be crucially depends on the nature of scrambling in Korean, which is beyond the task of this thesis, I will not investigate the difference between ECM and scrambling in much detail. However, there seems to be at least a piece of evidence that distinguishes ECM as case-driven A-movement from scrambling in Korean.

Consider the following structures with the so-called "non-bridge" verb as its matrix predicate.

- (57) a. na-nun [ John-i totwuk-ul capassta-ko ] oychyessta  
I-Top John-Nom thief-Acc caught-comp shouted

"I shouted that John caught the thief."

- b. totwuk-ul<sub>i</sub> na-nun [ John-i t<sub>j</sub> capassta-ko ] oychyessta  
thief-Acc I-Top John-Nom caught-comp shouted

"The thief<sub>i</sub>, I shouted that John caught t<sub>j</sub>."

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7. For case-driven obligatory scrambling into an A-position, see Miyagawa (1997).

- c. \*na-nun John-ul<sub>i</sub> [ t<sub>j</sub> totwuk-ul capassta-ko ] oychyessta  
 I-Top John-Acc theif-Acc caught-comp shouted  
 "I shouted John to have caught the thief."

As the contrast between (57 b-c) shows, scrambling is possible out of a complement clause of a non-bridge verb, while ECM is impossible. It is not that non-bridge verbs lack case features to license the ECMed accusative subject raised into the matrix clause, since a non-bridge verb can take a direct object.

- (58) na-nun ku sosik-ul khukey oychyessta  
 I-Top that news-Acc loudly shouted  
 "I shouted that news loudly."

Although we cannot make the strongest claim that ECM is a completely separate process from scrambling, we have found out at least one instance where ECM and scrambling seem to behave independently.

## 2.5 Summary

I have claimed in this chapter that ECM in Korean poses some questions on the nature of A-chain formation by apparently allowing two types of illicit A-movement: A-movement out of CP and A-movement out of a finite clause. I have shown that Korean ECM is an instance of *A-movement out of CP* on the basis of the facts that (a) ECM predicates in Korean select CP complement; (b) the ECMed DP is a constituent of the matrix clause in the overt syntax; and (c) the ECMed DP is a constituent of the embedded complement clause at D-structure. We have also noticed that Korean allows *A-movement out of a finite*



*clause*; ECM verbs can take a finite clause as its complement, out of which the embedded accusative subject should be extracted for case reasons.

Before considering further and providing an answer to the problems that Korean ECM raises, I will review in the subsequent chapter ECM constructions in English, which can be seen as an instance of legitimate A-chain formation: A-movement out of TP.

## Appendix to Chapter 2

# ON OBJECT IN KOREAN

Some of the arguments made in chapter 2 that ECM in Korean involves overt A-movement crucially depends on the assumptions about object shift and the structure of double object construction in Korean. In the following sections I will show that object raising is overt and the theme asymmetrically c-commands the goal at D-structure in Korean.

### A.1 Negation and Overt Object Raising <sup>1</sup>

Since Korean is an SOV language with the head-final parameter, it is hard to find some evidence in favor of or against the overt object raising; raising of the object into the specifier of Tr would be always string-vacuous movement. One indirect evidence however can come from the interaction of negation and object placement, given that negation is assumed to appear between TrP and VP at D-structure; if the object precedes negation, it indicates that the object has moved out of VP and raised across the negation in the overt syntax. In this section, I will deal with the acquisition of the so-called short-form negation in Korean, which shows the surface form of *Subj Obj<sub>i</sub> NEG [t<sub>i</sub> V]*. Specifically, an error found in

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1. An earlier version of this section was presented at the Seoul International Conference on Linguistics in 1995.

children's utterance of placing the negation in front of an object will be examined, which seems to indicate that these children do not have object raising in their grammar.

### A.1.1 Two Forms of Negation in Korean

There are two kinds of negation constructions in adult Korean: (a) the pre-verbal or short-form negation and (b) the post-verbal or long-form negation. The pre-verbal negation involves the NEG morpheme *an* or *mos* immediately preceding a verb, while in the post-verbal negation, a verb is followed by a complementizer *-ci*, which in turn is followed by the NEG element *anh*.<sup>2</sup>

- (1) a. nae-ka (hakkyo-e) **an** ka-n-ta  
 I-Nom (school-to) NEG go-Pres-Decl

'I do not go (to school).'

- b. nae-ka kyelan-ul **an** mek-nun-ta  
 I-Nom egg-Acc NEG eat-Pres-Decl

'I do not eat an egg.'

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2. The NEG element *anh-* seems to be a verbal head derived from the complex of *an+ha* 'do', which never surfaces without the deletion of the vowel /a/ in *ha*. Instead, we find another long-form negation with the negative adverb *ani* followed by the light verb *ha*, which does appear on the surface without vowel deletion and never occurs as *\*anh*.

- (i) a. nae-ka kyelan-ul mek-ci **anh-nun-ta**  
 I-Nom egg-Acc eat-Comp NEG-Pres-Decl 'I do not eat an egg'
- b. \*nae-ka kyelan-ul mek-ci **an-ha-n-ta**  
 I-Nom egg-Acc eat-Comp NEG-do-Pres-Decl 'I do not eat an egg'
- (ii) a. \*nae-ka kyelan-ul mek-ci **anh-nun-ta**  
 I-Nom egg-Acc eat-Comp NEG-Pres-Decl 'I do not eat an egg'
- b. nae-ka kyelan-ul mek-ci **ani ha-n-ta**  
 I-Nom egg-Acc eat-Comp NEG do-Pres-Decl "I do not eat an egg"

(2) a. *nae-ka (hakkyo-e) ka-ci anh-nun-ta*  
 I-Nom (school-to) go-? NEG-Pres-Decl

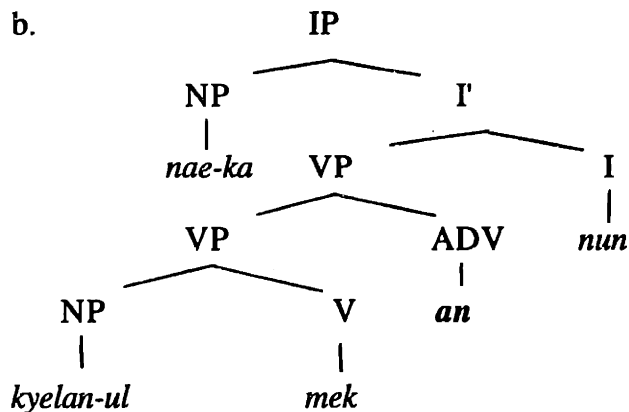
'I do not go (to school)'

b. *nae-ka kyelan-ul mek-ci anh-nun-ta*  
 I-Nom egg-Acc eat-? NEG-Pres-Decl

'I do not eat an egg.'

There have been two syntactic views concerning the placement of the NEG morphemes in the pre-verbal negations<sup>3</sup> in Korean. One view assumes that the Korean pre-verbal NEG morpheme *an* is an adverb which is right-adjoined to VP (Park 1990). Basically after his proposal, Kim (1992) suggested the following simplified structure as a D-structure representation of the Korean pre-verbal negation construction.

(3) a. *nae-ka kyelan-ul an mek-nun-ta*



<sup>3</sup>. As the data this section deals with come from the children between 2;0 and 3;0, who cannot yet produce the post-verbal negation, I will not address the issue of the syntactic nature of post-verbal negation here.

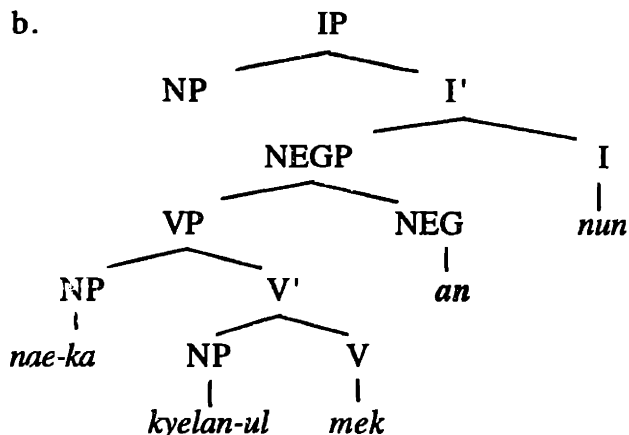
between the object and the main verb. More precisely, it is placed between the trace of the raised verb and the amalgam of the verb and the inflections formed by the head movement of the verb.

An alternative view is based on the idea proposed in Kayne (1989), who claims that there are two kinds of NEG elements in English; (a) the "non-emphatic (or regular)" *not* and (b) the "emphatic" *not*. The "non-emphatic" *not* is a bound morpheme that needs lexical items to attach to and is the head of a functional phrase NEGP. Its affixal nature is satisfied by obeying the requirement that it should be adjacent to an auxiliary on the surface. The "emphatic" *not*, on the other hand, carries stress, conveys contrastive or emphatic meaning, and need not satisfy the surface adjacency requirement.

- (4) a. John was probably NOT/\*not talking to Bill. (Kayne 1989)  
b. When he was nervous, he can't NOT smoke. (Zwicky & Pullum 1983)

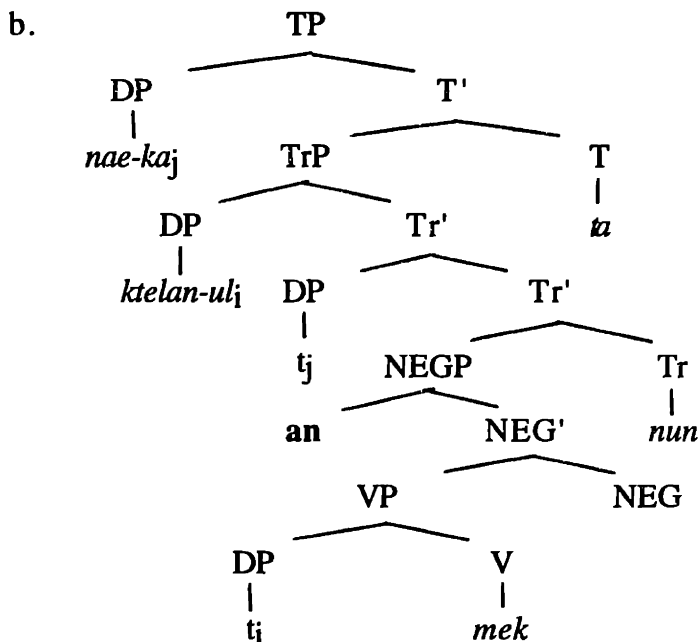
Ahn (1990) proposes a parallel analysis that there are two kinds of NEG morpheme *an* in Korean; (a) the non-emphatic *an*, which is an affixal head of NEGP and (b) the emphatic *an*, which is an adverb. Since the NEG morpheme *an* in Ahn (1990)'s analysis occurs to the right of the verb, the verb should undergo head-movement and adjoin to higher inflectional head as in Park (1990)'s analysis to result in the surface word order of OBJ an Verb. The crucial difference between these two alternative views is that the NEG morpheme *an* in pre-verbal negation is an adverb, which does not block the head-movement of the main verb in Park (1990), while it is an affixal head of NEGP in Ahn (1990), which does count as an intervening head-governor for the trace of the raised verb in the sense of Rizzi (1990) and therefore should be assumed to be somehow transparent to the head-movement of the main verb.

(5) a. *nae-ka kyelan-ul an mek-nun-ta*



Given (a) that Park (1990)'s analysis of *an* as an adverb right-adjoined to a verb seems stipulative, since adjunction is always to the left in Korean; and (b) that Ahn (1990)'s analysis needs some ad hoc to make the affixal head of *an* invisible to the head-movement of the main verb, I propose that the NEG morpheme *an* in the pre-verbal negation occupies the specifier position of NEGP like *ne* in French and that the head of NEGP is an empty verb that the main verb should raise and adjoin to in the course of its raising to Tense.

(6) a. *nae-ka kyelan-ul an mek-nun-ta*





### A.1.2 NEG Placement Errors: NEG Obj V

It has been observed that Korean-speaking children can produce the pre-verbal negation constructions as early as 1;7, but do not produce the post-verbal negation constructions until much later (around 3;3) in the course of acquisition (Kim 1992). The late emergence of the post-verbal negation seems to be quite plausible, given that post-verbal negation constructions are not only 'long' in its surface structures but seems to involve a complementizer (*-ci*) which may not be present in children's grammar until they acquire the syntax of embedding.

As we have already seen in the previous section, the NEG morpheme *an* or *mos* is placed immediately before the verb and thus follows an object or an adverb (if any) in adult's grammar. Children, however, sometimes produce utterances in which the NEG morpheme precedes both the object (or the adverb) and the verb.

|                  |   |      |      |  |
|------------------|---|------|------|--|
| (7) <sup>5</sup> |   | Age  | MLU  |  |
|                  | H | 2;4  | 1.58 |  |
|                  | J | 2;2  | 2.23 |  |
|                  | M | 2;6  | 3.65 |  |
|                  | S | 3;10 | 5.53 |  |

|     |    |           |           |             |                            |
|-----|----|-----------|-----------|-------------|----------------------------|
| (8) | a. | hyengcuni | <b>an</b> | ca          |                            |
|     |    |           | NEG       | sleep       | 'Hyengcun does not sleep'  |
|     | b. | na        | <b>an</b> | ttaylye     |                            |
|     |    | I         | NEG       | hit         | 'I do not hit (him)'       |
|     | c. | nwun      | <b>an</b> | poye        |                            |
|     |    | eye       | NEG       | see-Passive | 'The eyes are not visible' |

---

5. The data is from Cho & Hong (1988) and Kim (1990). The age and the Mean Length of Utterance for each subject in the experiment in Cho & Hong (1988) is given below. Cho & Hong (1988) report that 2-year-old subjects predominantly placed *an* in front of VP compared with the 3-year-old subject.



- d. **ike an thulecye**  
 this NEG turn-on-Passive 'This cannot be turned on'
- e. **acwumma mos poye**  
 aunt NEG see-Passive 'Aunt is not visible'
- f. **Rubin-un an nappun ayki-ya**  
 Rubin-Top NEG bad baby-be 'Rubin is not a bad baby'
- (9) a. **na an pap mek-e**  
 I NEG rice eat-Decl 'I do not eat rice'
- b. **kkoch-i an nolay pwulle**  
 flower-Nom NEG song sing 'The flowers do not sing a song'
- c. **Hoyeni-nun an son takk-ko siphkuna**  
 Hoyeni-Top NEG hand wash want-to  
 'Hoyen does not want to wash hands'
- d. **an mamma mantul-e**  
 NEG meal make-Decl '(I) do not make meals'
- e. **an phikul coa-hay**  
 NEG pickle like-Decl '(I) do not like pickles'
- f. **an chong sswa-ss-e**  
 NEG gun fire-Past-Decl '(I) did not fire the gun'
- g. **an wuywu ssot-ass-e**  
 NEG milk spill-Past-Decl '(I) did not spill milk'
- (10) a. **an cal hay**  
 NEG well do '(I) do not do well'
- b. **an manhi kuly-ess-e**  
 NEG many draw-Past-Decl '(I) did not draw many pictures'
- c. **mos cal tha**  
 NEG well ride '(I) do not ride (a horse) well'
- d. **an mak ul-e**  
 NEG much cry-Decl '(I) do not cry much'

e. na an cal hay  
 I NEG well do 'I do not do well'

- (11) a. an Gemco ka  
 NEG go '(I) do not go to Gemco'
- b. an yekise hay  
 NEG here do '(I) do not do (that) here'

The structures in (8) represent a case where the NEG morpheme *an* is placed between the subject and the verb as it should be in adult's grammar. Cho & Hong (1988) report that children always place *an* after the subject, if there is one, both in active and passive sentences. The examples in (9) show cases in which the NEG morpheme *an* is placed before an object, which should precede *an* in adult's grammar. The utterances shown in (10) and (11) illustrate the placement of *an* in relation to verbal adverbials such as manner or place adverbs.

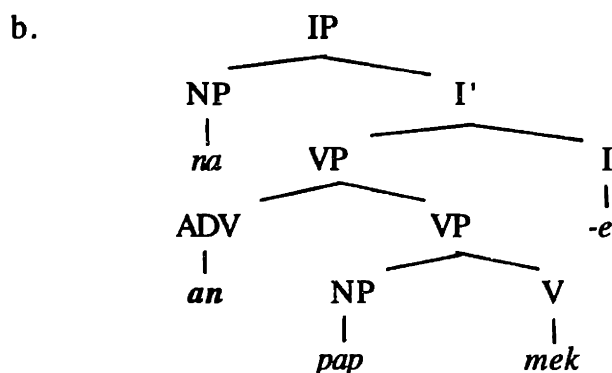
Based on the fact that the NEG morpheme is placed always after the subject, but before the elements that are conventionally regarded as a part of VP, Cho & Hong (1988) argue that Korean is a configurational language, which has VP as one of the syntactic constituents and that the rule for the negation in children's grammar is to simply put the NEG morpheme in front of a whole VP.

Kim (1990) provides more elaborate analysis of children's errors of the NEG placement, following the proposal of Park (1990). Assuming that the NEG morpheme *an* or *mos* is an adverb adjoined to the right of VP in adult's grammar, Kim (1990) proposes that the NEG morpheme may be adjoined either to the right or to the left of VP in children's grammar. This assumption can explain why children sometimes make the error of placing *an* in front of the object (or the adverb) but sometimes can make the correct utterance where *an* comes

between the object (or the adverb) and the verb as in adult's grammar, since the direction of adjunction is not set in children's grammar and the left-adjunction and the right-adjunction is seen as a free variation.

- (12) a. *na an pap mek-e*  
 I NEG rice eat-Decl

'I do not eat rice.'



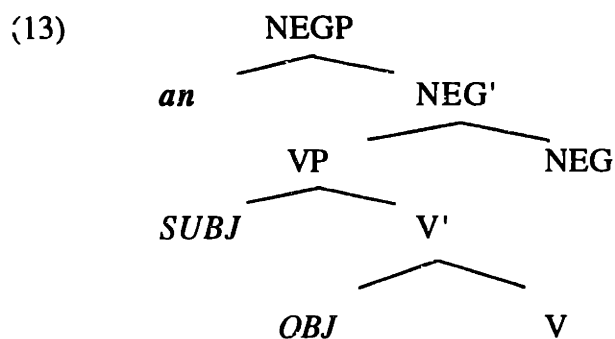
Kim (1990)'s analysis of children's error of misplacing the NEG morpheme *an* in front of VP as a free variation between right adjunction and left adjunction of the NEG adverb seems quite plausible in terms of syntactic consideration, since the error comes from missetting of one parameter, the parameter for direction of adjunction.

It seems however somewhat problematic in terms of grammatical development from the point of view of language learners. The question is how come a child can ever reset the parameter so that left adjunction for the NEG morpheme is not allowed, given that there is no negative evidence for the left adjunction of *an*. According to Wexler (1995), the learner considers changing one parameter value at a time only when an input sentence cannot be syntactically processed. Given this Greediness Constraint, there is no reason for a child to adopt the left adjunction only parameter, since he/she can process negative sentences without adopting a new value for the adjunction direction parameter.

### A.1.3 No Object Shift: Lack of A-Movement

In this section, I will first review the analysis of the acquisition of negation put forth in Baek (1995) and propose a new analysis that is in line with Chomsky (1995) and the multiple-specifiers theory.

Under the analysis proposed in Baek (1995), which is based on Chomsky (1993) and the VP-internal subject hypothesis, the NEG morpheme *an* is in the specifier position of NEGP and thus occurs left to VP at D-structure. One explanation for the children's error of placing *an* in front of an object under this analysis would be that children at this age do not have object shift in their grammar yet.



Korean is strictly head-final in the sense that the verb always occupies the sentence-final position and thus a verb always follows its object that is in the complement position of VP. In Baek (1995), I proposed that the object overtly raises into the specifier position of  $AGP_0$  to check its accusative case feature against the strong [+N] feature in  $AGR_0$  in adult's grammar. If a child does not have object shift in his/her grammar, the object then would stay in-situ, i.e., within the VP, and the surface word order would be *an* preceding both the object and the verb, which is exactly what we found in 2-year-old children's utterance of negative sentences.

One supporting piece of evidence for this claim comes from negative sentences that have an unaccusative verb in it. Under the assumption that the surface subject of an unaccusative verb originates from the underlying complement position of the VP, the lack of object shift predicts that the surface subject of an unaccusative verb would stay within the VP, and hence comes after the NEG morpheme *an* which precedes the VP as a whole. We do often find children's utterance where the subject of an unaccusative verb is preceded by *an*.

- (14)<sup>6</sup>
- |    |           |          |                 |                           |
|----|-----------|----------|-----------------|---------------------------|
| a. | <b>an</b> | ippal    | ssek-e          |                           |
|    | NEG       | teeth    | rot-Decl        | '(I) won't have a cavity' |
| b. | <b>an</b> | kol      | na-ss-e?        |                           |
|    | NEG       | anger    | occur-Past-Decl | 'Aren't (you) angry?'     |
| c. | <b>an</b> | him      | tul-e           |                           |
|    | NEG       | strength | cost-Decl       | '(It) isn't strenuous'    |

Interestingly, children never produce utterances in which *an* precedes an agentive subject. For example, Kim (1992) reported that she never found such a kind of error illustrated below.

- (15)
- |    |            |        |       |                               |
|----|------------|--------|-------|-------------------------------|
| a. | <b>*an</b> | emma   | ca    |                               |
|    | NEG        | mommy  | sleep | 'Mommy does not sleep'        |
| b. | <b>*an</b> | thokki | pap   | mek-e                         |
|    | NEG        | rabbit | rice  | eat-Decl                      |
|    |            |        |       | 'The rabbit doesn't eat rice' |

However, the fact that children place *an* in front of the subject of an unaccusative verb but not in front of the subject of an unergative or an accusative verb seems to pose a problem on the analysis of the lack of object shift in children's grammar, if we follow the VP-internal Subject Hypothesis and the theory of feature-driven movement in the sense of

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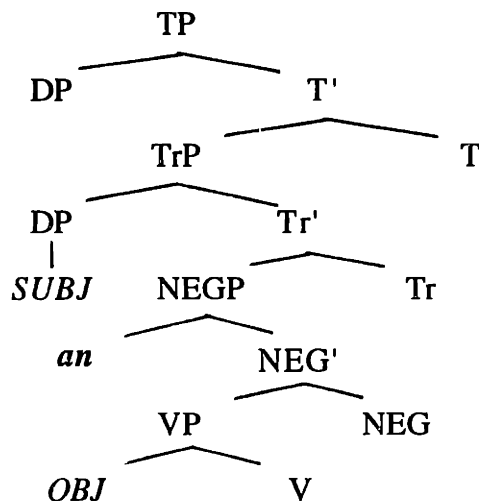
6. The data is from: Hahn (1981), Cho & Hong (1989) and Kim (1992). These three examples are the only ones where *an* precedes the subject in Kim (1992)'s paper.

Chomsky (1993). If children never put the NEG morpheme in front of the agentive subject, it must be the case that the subject is raised out of VP to a position higher than the specifier of the NEGP. This seems to suggest that children at this age have already acquired the subject raising into the specifier of AGR<sub>S</sub>P, although they do not have the object shift into the specifier of AGR<sub>O</sub>.

The question then might arise how children can draw a distinction between subject raising and object shift, given that both subject and object movement are A-movement driven by case feature checking against the [+N] feature in AGR heads. If children have subject raising in their grammar, there is no reason why they do not have object shift yet, since the nature of both movements are exactly the same, which is driven by the need of case feature checking.

One possible solution to this puzzle can come from the multiple-specifiers theory adopted in chapter 1 with the assumption that the subject is generated in a specifier position of a functional projection that occurs higher than both NEGP and VP.

(16)





## A.2 Double Object Construction

### A.2.1 Goal Asymmetrically C-commands Theme

The double object construction in English has been claimed to show various properties that indicate an asymmetrical c-command relation between Theme and Goal. Larson (1988) claims that the first NP asymmetrically c-commands the second NP at S-structure in the V-NP-NP construction in English, on the basis of the facts from anaphor binding, quantifier-pronoun binding, Weak Crossover effects, superiority effects, *each ... the other* construction on its reciprocal reading, and negative polarity items. The following examples are all from Larson (1988).

- (1) a. I showed Mary herself .  
b. \*I showed herself Mary.
- (2) a. I gave every worker<sub>i</sub> his<sub>i</sub> paycheck.  
b. \*I gave its<sub>i</sub> owner every paycheck<sub>i</sub>.
- (3) a. Which man<sub>i</sub> did you send his<sub>i</sub> paycheck?  
b. Whose<sub>i</sub> pay did you send his<sub>i</sub> mother?
- (4) a. Who did you give which paycheck?  
b. \*Which paycheck did you give who?
- (5) a. I showed each man the other's socks.  
b. \*I shows the other's friend each man.



- (6) a. I showed no one anything.  
b. \*I showed anyone nothing.

As Larson (1988) points out, if these phenomena do involve c-command, then (1)-(6) all leads us to the same point: the Goal phrase asymmetrically c-commands the Theme phrase in the double object construction in English.

Pesetsky (1995) argues that the Goal phrase uniformly c-commands the Theme phrase at D-structure in English without regard to their S-structure positions. Interestingly, applying the various tests that he used to show the asymmetrical c-command of Theme by Goal in English leads us to speculate that the opposite is true in Korean. On the basis of these facts, I will argue in this section that an accusative argument asymmetrically c-commands a dative argument at D-structure in Korean.

### ***A.2.2 Theme Asymmetrically C-commands Goal***

The double object construction in Korean seems to be different from those in English in the sense that there is no dative shift involved in Korean. The Theme phrase is always realized as an accusative argument and the Goal phrase as a dative argument. The surface order between the two arguments can be freely interchanged without changing case marking or a postposition on the Goal phrase.

- (7) a. I gave Mary a book  
b. I gave a book [to Mary]

- (8) a. na-nun    Mary-eykey    chayk-ul    cwuessta  
       I-Top     Mary-Dat     book-Acc    gave  
       "I gave Mary a book."
- b. na-nun    chayk-ul    Mary-eykey    cwuessta  
       I-Top     book-Acc    Mary-Dat     gave  
       "I gave a book to Mary."

The question that will be dealt with in this section is: whether both (8a) and (8b) are the legitimate D-structure representations; or one of them is derived from the other. If it turns out to be the case that one of the structures in (8) is derived from the other, then the following question would be which one of the two possible structures is the D-structure representation for the structures in (8); the Goal-Theme order or the Theme-Goal order

#### **A.2.2.1 Backwards Binding**

Binding theory requires that an anaphor be c-commanded by its antecedent. In most cases, this requirement on c-command entails that the anaphor is preceded by its antecedent at S-structure. However, there are some instances that allow an anaphor to precede its antecedent at S-structure and be still bound by it. This is called backwards binding in the sense that the antecedent preceded by the anaphor at S-structure appears to bind the anaphor from backwards. Backwards binding can be a test for determining the D-structure positions of the anaphor and its antecedent, since the antecedent should c-command the coindexed anaphor at some level of representation, either at D-structure or at Lf after reconstruction.

As has been noted by Burzio (1986), Pesetsky (1995) points out that backwards binding of the Goal into the Theme is possible in English; but backwards binding of the Theme into the Goal is not.

- (9) a. Sue showed John and Mary to each other's friends.  
 b. ?Sue showed each other's friends to John and Mary.  
 c. Sue showed John and Mary each other's friends.  
 d. \*Sue showed each other's friends John and Mary. (Pesetsky 1995)
- 

He argues that the impossibility of backwards binding of the Goal into the Theme in (9d) indicates that the Goal uniformly c-commands the Theme at D-structure in English. That is, there is a trace of *each other's friends* c-commanded by *John and Mary* in (9b=10a); but (9d=10b) has no such trace that can be c-commanded by *John and Mary*.

- (10) a. ?Sue showed [each other's friends]<sub>i</sub> to John and Mary <sub>t<sub>i</sub></sub>.  
 b. \*Sue showed [each other's friends] John and Mary.

Let us consider the counterparts of (9) in Korean with regard to the backwards binding effects.

- (11) a. Sue-nun [John-kwa Mary]-lul [selo-uy chinkwu]-eykey poyecwuessta  
 Sue-Top John and Mary-Acc each other's friends-Dat showed  
 "Sue showed John and Mary to each other's friends."
- b. \*Sue-nun [selo-uy chinkwu]-lul [John-kwa Mary]-eykey poyecwuessta  
 Sue-Top each other's friends-Acc John and Mary-Dat showed  
 "Sue showed each other's friends to John and Mary."
- c. Sue-nun [John-kwa Mary]-eykey [selo-uy chinkwu]-lul poyecwuessta  
 Sue-Top John and Mary-Dat each other's friends-Acc showed  
 "Sue showed John and Mary each other's friends."

- d. Sue-nun [selo-uy chinkwu]-eykey [John-kwa Mary]-lul poyecwuessta  
 Sue-Top each other's friends-Dat John and Mary-Acc showed

"Sue showed each other's friends John and Mary."

Interestingly, we see the reverse result with regard to the possibility of backwards binding. It is possible to get backwards binding of the Theme into the Goal, but not of the Goal into the Theme. The ungrammaticality of (11b) indicates that the Theme is base-generated in its S-structure position that can c-command the Goal. On the other hand, the possibility of backwards binding in (11d) suggests that at some level of representation the Theme phrase containing *selo*'each other' is c-commanded by the Goal phrase, its antecedent.

- (12) a. \*Sue-nun [selo-uy chinkwu]-lul [John-kwa Mary]-eykey poyecwuessta  
 Sue-Top each other's friends-Acc John and Mary-Dat showed
- b. Sue-nun [selo-uy chinkwu-eykey]<sub>i</sub> [John-kwa Mary]-lul <sub>t<sub>i</sub></sub> poyecwuessta  
 Sue-Top each other's friends-Dat John and Mary-Acc showed

#### A.2.2.2 Quantifier Scope

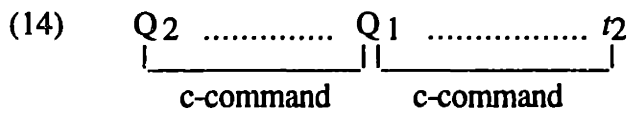
Pesetsky (1995) presents the following set of data cited from Aoun and Li (1989) as still another piece of evidence for the existence of a trace of the Theme c-commanded by the Goal. As he points out, structures with the Theme followed by the Goal allow for a scope ambiguity that cannot be found in the structures with the Goal followed by the Theme.

- (13) *Unambiguous* ( Aoun and Li (1989) )
- a. Sue gave every child some problem.
- b. Sue gave some child every problem.

*Ambiguous* ( Aoun and Li (1989) )

- c. Sue gave some problem to every child.
- d. Sue gave every problem to some child.

It has been assumed that ambiguity arises in the structures with more than one quantifier when a quantifier Q<sub>1</sub> c-commands a part of the chain of another quantifier Q<sub>2</sub> that c-commands Q<sub>1</sub> at S-structure.



Under this traditional assumption, the ambiguity found in (13c-d), where the Theme phrase precedes the Goal phrase, indicates that there is a trace of the Theme phrase c-commanded by the Goal phrase. On the other hand, the unambiguous sentences in (13a-b) have the Goal followed by the Theme, showing that the Goal-Theme order is base-generated. This contrast suggests that the Goal phrase uniformly c-commands the Theme phrase in English.

- (15) a. Sue gave **some problem<sub>i</sub>** to every child t<sub>i</sub>
- b. Sue gave **every problem<sub>i</sub>** to some child t<sub>i</sub>

Again the opposite situation is found in the Korean counterparts of the English examples in (13). Before we go further and present the examples, we need to mention that there is one peculiar aspect in the quantifier scope interaction in Korean: so-called scope rigidity.

(16) *Ambiguous*

- a. **motun salam-ul<sub>i</sub>**      nwukwunka-ka      t<sub>i</sub>      cohahanta
- everyone-Acc      someone-Nom      like
- "Everyone, someone likes."

*Unambiguous*

- b. **nwukwunka-lul<sub>i</sub>**      motun salam-i      t<sub>i</sub>      cohahanta  
someone-Acc      everyone-Nom           like

"Someone, everyone likes."

The unambiguity of (16b) follows from the so-called scope rigidity effect in Korean. Whenever an existential quantifier appears to the left of a universal quantifier, the trace of the existential quantifier does not participate in the interpretation of quantifiers. That is, an existential quantifier in a superior position at S-structure always takes scope over a universal quantifier regardless of their D-structure positions. The unambiguity in (16b) thus follows from the scope-rigidity effect that simply does not count the trace of *nwukwunka-lul*'someone' in the object position.

With this scope-rigidity effect in mind, let us take a look at the double object constructions with more than one quantifier in Korean. The relevant data are now reduced to two sentences, where a universal quantifier precedes an existential quantifier at S-structure. Remember that an existential quantifier preceding a universal quantifier simply does not allow for a scope ambiguity regardless of their D-structure positions.

(17) *Ambiguous*

- a. Sue-nun      **motun ai-eykey<sub>i</sub>**      etten mwuncey-lul      cwuessta  
Sue-Top      every child-Dat      some problem-Acc      gave

"Sue gave every child some problem."

*Unambiguous*

- b. Sue-nun      motun mwuncey-lul      etten ai-eykey      cwuessta  
Sue-Top      every problem-Acc      some child-Dat      gave

"Sue gave every problem to some child."

When a quantifier with the Dative case marking appears to the left of a quantifier with the Accusative case marking, ambiguity arises as in (17a). On the other hand, the Accusative-Dative construction (17b) does not allow for a scope ambiguity. This phenomenon points out to the same conclusion found in the backwards binding effects: the Theme asymmetrically c-commands the Goal at D-structure in Korean. There is a trace of the Goal phrase left in its D-structure position that can induce the scope ambiguity in the Theme-Goal construction.

- (18) a. Sue-nun      **motun ai-eykey<sub>i</sub>**      etten mwuncey-lul      **t<sub>i</sub>**      cwuessta  
          Sue-Top      every child-Dat      some problem-Acc      gave
- b. Sue-nun      rnotun mwuncey-lul      etten ai-eykey      cwuessta  
          Sue-Top      every problem-Acc      some child-Dat      gave

### A.2.2.3 Weak Crossover Effect

Larson (1988) points out that the double object construction shows asymmetries with regard to the so-called weak crossover effect.

- (19) a. [**Which man**]<sub>i</sub> did you send **t<sub>i</sub>** his<sub>i</sub> paycheck?  
          b. \***[Whose<sub>i</sub> pay]**<sub>j</sub> did you send his<sub>i</sub> mother **t<sub>j</sub>**?

A *wh*-phrase c-commanded at D-structure by an NP containing a pronoun cannot be moved across that NP if the *wh*-phrase and the pronoun are coreferential. The Goal *wh*-phrase that is coreferential with a pronoun contained in the Theme phrase can be moved (=19a); but the Theme *wh*-phrase that is coreferential with a part of the Goal phrase cannot be moved

(=19b). This asymmetry also suggests that the Goal asymmetrically c-commands the Theme at D-structure in English.

If the Theme asymmetrically c-commands the Goal at D-structure in Korean, we expect to get the opposite result with regard to the weak crossover effects. Indeed, the asymmetry is the opposite of the above in English.

(20) a. \*ne-nun [etten salamj-eykey]j [kuj-uy wolkup]-ul tj ponayss-ni?  
 you-Top which man-Dat his paycheck-Acc sent-Q?

"Which man did you send his paycheck?"

b. ne-nun [nwukwu;uy wolkup-ul] [kuj-uy emma]-eykey ponayss-ni?  
 you-Top whose paycheck-Acc his mother-Dat sent-Q

"Whose paycheck did you send his mother?"

Although Korean does not have overt *wh*-movement, we can still get the weak cross over effect. Interestingly, when a *wh*-phrase precedes an NP containing a pronoun that is coreferential with the *wh*-phrase, the sentence is ungrammatical only in the Goal-Theme construction, not in the Theme-Goal construction. This asymmetry is expected under the assumption that the Theme-Goal construction is the only base-generated order for the double object construction in Korean. In the Theme-Goal construction such as (20b), the *wh*-phrase is never moved over the Goal NP containing a pronoun coindexed with the *wh*-phrase. The *wh*-phrase in the Theme position c-commands the NP in the Goal position at D-structure as well as at S-structure.



#### A.2.2.4 Chain Condition

As we have already observed in §1.4.2, Korean observes the Chain Condition, which prevents an anaphor from locally c-commanding a trace of its antecedent. The relevant examples are repeated below for convenience.

(21) a. [John-kwa Mary]<sub>i</sub>-ka seloj-lul poassta  
John-and Mary-Nom each other-Acc saw  
"John and Mary saw each other."

b. \*[John-kwa Mary]<sub>i</sub>-lul seloj-ka t<sub>i</sub> poassta  
John-and Mary-Acc each other-Acc saw  
"John and Mary, each other saw."

Consider now the following double object constructions in Korean with regard to the Chain Condition.

(22) a. \*?na-nun [haksayngtul]<sub>i</sub>-eykey seloj-lul \*t<sub>i</sub> sokayhayssta  
I-Top students-Dat each other-Acc introduced  
"I introduced the students each other."

b. na-nun [haksayngtul]<sub>i</sub>-ul seloj-eykey sokayhayssta  
I-Top students-Acc each other-Dat introduced  
"I introduced the students to each other."

Again the asymmetry is found that indicates the c-command of the Goal by the Theme at D-structure in Korean. When the antecedent in the Goal phrase precedes the anaphor in the Theme phrase, the sentence(=22a) is ungrammatical due to the violation of the Chain Condition. The trace of the antecedent Goal phrase left in its D-structure position is c-

commanded by the coindexed anaphor in the Theme phrase. Thus the sentence(=22a) improves if the anaphor in the Theme phrase is embedded into another NP and fails to c-command the trace of its antecedent, the Goal phrase.

- (23) na-nun [haksayngtul]i-eykey [selo-i-uy chinkwu]-lul t<sub>i</sub> sokayhayssta  
 I-Top students-Dat each other's friends-Acc introduced  
 "I introduced the students each other's friends."

Summing up, I have argued in this section that the Theme asymmetrically c-commands the Goal at D-structure regardless of their S-structure positions, based on the facts from backwards binding, quantifier scope, weak crossover effects and the Chain Condition. Since the Theme is always realized as an accusative argument and the Goal as a dative argument, it seems to be the case that the accusative argument c-commands the dative argument at D-structure in Korean.

### A.2.3 *ECMed DP as a Theme*

As a piece of evidence for the ECM movement of the accusative embedded subject into the matrix object position, the Chain Condition effect was considered in section 2.4.2. The crucial assumption was that the accusative argument is base-generated in a position that c-commands the dative argument. Consider now the following contrast.

- (24) a. na-nun [John-kwa Mary]i-lul selo-i-eykey sokayhayssta  
 I-Top John and Mary-Acc each other-Dat introduced  
 "I introduced John and Mary to each other."

- b. \*?na-nun [**John-kwa Mary**]<sub>i</sub>-lul selo<sub>j</sub>-eykey [<sub>i</sub> chakhata-ko ] malhayssta  
I-Top John-and Mary-Acc each other-Acc be good-comp said  
"I told each other that John and Mary were good."

In both of the above examples, the accusative argument precedes the dative argument at S-structure. The only difference is that there is an embedded clause in (24b), while (24a) is a simple clause. The assumption that the accusative occupies a position superior to the dative argument can account for the above contrast. There is no violation of the Chain Condition in (24a), since there is no movement of the accusative over the dative. In contrast, the ECM movement of the embedded accusative subject should cross over the matrix dative to properly raise into the matrix object position in (24b).

**Part II**

***Towards a Solution***

## Chapter 3

# A-MOVEMENT OUT OF TP

### 3.1 ECM Construction in English

Since Chomsky (1981), the complementary distribution between PRO and a lexical DP has been regulated through the PRO theorem that requires PRO be ungoverned.

(1) PRO theorem

PRO must be ungoverned.

The PRO theorem, paired with the assumption that a lexical DP requires case, can account for the contrast between the following examples from English.

(2) a. John tried [CP [IP PRO to win]]

b. \*John tried [CP [IP Mary to win]]

(3) a. \*John believed [IP PRO to have won the race]]

b. John believed [IP Mary to have won the race]]

In (2), the control verb *tried* cannot govern into TP due to the intervening barrier CP and allows PRO in the embedded subject position. However, a lexical DP cannot appear in the embedded subject position since case assignment is supposed to be under government in Chomsky (1981). In contrast, the ECM verb *believed* in (3) cannot have PRO in its embedded subject position, which can be filled by a lexical DP. Thus, it seems that the ECM verb in English takes TP as its complement while a control verb selects a CP complement.

### ***3.1.1 Overt Object Raising: Speculation***

We have seen in the previous chapter that the embedded subject in the ECM construction in Korean raises up to the matrix object position, that is, the specifier of the matrix Tr in the overt syntax. The question here is whether the same is true of ECM constructions in English; whether the subject of the infinitival complement clause of ECM verbs in English raises to the matrix object position in the overt syntax.

Postal (1974) claims that the embedded subject of ECM verbs in English raises to the matrix object position at Surface Structure. Following Postal (1974), Ura (1993) suggests that it is some idiosyncratic lexical property of English ECM verbs that requires the subject of their infinitival complement clause to raise up to the specifier of the matrix AgrO in the overt syntax. Under the clause structure assumed in this thesis, the only difference would be that it is the outer specifier of Tr that the subject in the infinitival complement clause of ECM verbs moves to in the overt syntax.

If the subject of the infinitival complement clause in ECM constructions moves up to the specifier of Tr, we would get the inverse word order between the ECM verb and its embedded subject as in the case of the overt object shift in Scandinavian languages.<sup>1</sup>

(4) \*John [TrP Mary<sub>i</sub> [VP believed [TP t<sub>i</sub> to have [VP t<sub>i</sub> kissed Bill]]]]

To resolve the problem, Ura (1993) proposes that English ECM verb raises to a functional head called  $\mu^2$ , which immediately selects AgrOP and is immediately selected by TP.

(5) John [ $\mu$ P [believed-Agr]<sub>v</sub>- $\mu$  [AgrOP Mary<sub>i</sub> t<sub>v</sub> [VP t<sub>v</sub> [TP t<sub>i</sub> to have [VP t<sub>i</sub> kissed Bill]]]]]]

Ura (1993) then provides the following examples as supporting piece of evidence for his claim that the ECM verbs raise to  $\mu$  in the overt syntax.

- (6) a. I've believed John for a long time now to be a liar. (Kayne 1985)  
 b. I can prove Bob easily to have outweighed Martha's goat. (Postal 1974)

Since the matrix PP *for a long time* in (6a) or the matrix adverb *easily* in (6b) is supposed to be adjoined to VP, the grammaticality of both examples indicates that the ECM verb as well as its embedded subject raises into the matrix clause in the overt syntax. Under the clause structure assumed in this thesis, it would suffice to say that the idiosyncratic lexical property of English ECM verbs require that they raise and adjoin to T in the overt syntax.

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1. See Holmberg (1984) among others.

2. The existence of  $\mu$ P has been claimed in Pesetsky (1989) and Johnson (1991).

- (7) ... [TP [believed-Tr]<sub>v</sub>-Tr [TrP John<sub>i</sub> t<sub>v</sub> [VP [PP for a long time now ]  
t<sub>v</sub> [TP t<sub>i</sub> to be [VP t<sub>i</sub> a liar]]]]]

Another supporting piece of evidence in favor of Ura (1993)'s speculation comes from the following example from Kayne (1985).

- (8) \*I've believed there for a long time now to be no solution to this problem

Given that expletive *there* appears only in the position required to be filled by the EPP feature, *there* cannot raise any further than the specifier of the infinitival T. Hence the VP-peripheral PP *for a long time now* cannot be attached to VP in (8), resulting in unacceptability.

Since raising of the embedded subject further than up to the specifier of the infinitival T in ECM constructions is not a major task in this thesis, I will leave the issue of the overt raising of ECM verbs and the overt object shift of embedded subject into the matrix clause as a speculation.

### 3.1.2 Analysis of ECM

I will discuss in this section whether the movement of the embedded subject in an ECM construction in English goes through the specifier of the infinitival T. I will also discuss whether raising to the specifier of infinitival T in ECM is driven by the need of feature checking between the ECMed DP and the infinitival T or serves as a step to satisfy principle of economy on derivation.



Previous analyses of ECM in English including Chomsky (1994, 1995) and Collins (1997) will be first reviewed. More specifically, I will compare the analysis of ECM as driven by the Extended Projection Principle to the null case hypothesis of ECM. With some empirical evidence from expletive constructions and locative inversion, I will decide in favor of the null case hypothesis of ECM with slight modification.

### 3.1.2.1 The Extended Projection Principle

According to Chomsky (1994), the Extended Projection Principle holds of an infinitival T as well as a finite T. Therefore, if the specifier of an infinitival T in an ECM construction is not overtly filled the derivation will crash. This analysis suggests that the ECM movement that raises the embedded subject into the specifier of the infinitival T in a structure like (9) be driven by the strong EPP feature of T.<sup>3</sup>

(9) I believe John to be smart.

At some point of derivation, the strong EPP feature of the infinitival T forces movement of *John* into its specifier. At LF, *John* raises into the specifier of the matrix AgrO to have its case and  $\phi$ -features checked, forming the following structure.<sup>4</sup>

(10) [TP I [ T' believe<sub>v</sub> [AgrOP John<sub>i</sub> AgrO [ VP t<sub>v</sub> [TP t<sub>i</sub> [T' to be[SC t<sub>i</sub> smart]]]]]

---

3. For simplicity, I will adopt the AgrO version of clause structure for (1), which is assumed in Chomsky (1994).

4. I leave out some traces in the representation such as the trace of the matrix subject *I*, since what is of our concern in the derivation (2) is the A-chain of (*John*<sub>*i*</sub>, t<sub>*i*</sub>, t<sub>*i*</sub>).

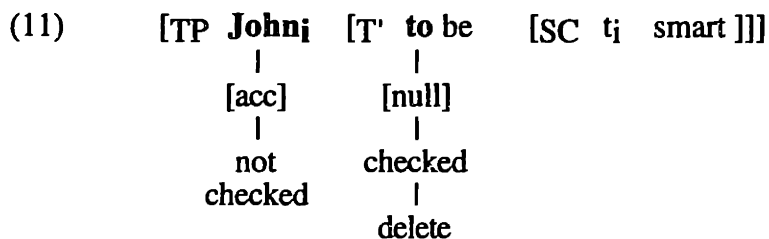
As has been noted in chapter 1, the movement of *John* into the specifier of the embedded T poses a problem for *Greed* in the sense of Chomsky (1994), since no feature of *John* is checked by the result of the movement although the strong EPP feature of the infinitival T is checked and deleted. Chomsky (1995) addresses this problem based on the notion of asymmetric feature checking in the context of the distinction between interpretable and uninterpretable features.

Since only interpretable features enter into interpretation at LF, uninterpretable features must delete for convergence at LF. An additional assumption that Chomsky proposed is that a checked feature is deleted whenever possible, i.e., up to recoverability. These assumptions entail that interpretable features are not deletable while uninterpretable features should be eliminated when checked. This has the consequence that asymmetric feature checking results when an uninterpretable feature enters into a checking relation with an interpretable feature. The uninterpretable feature deletes after checking but the interpretable feature does not for interpretation at LF.

Together with the replacement of *Greed* by *Last Resort*, which allows movement to take place if the movement results in a checking relation between the moved element and the head of the checking domain, the movement of *John* into the specifier of the embedded T is now considered legitimate without violating economy conditions on movement. The strong EPP feature of the infinitival T is checked by the D-feature of *John* and deletes, since the EPP feature is uninterpretable. On the other hand, the D-feature of *John* cannot and does not delete, since it is needed for interpretation at LF.

Collins (1997) tentatively provides a different analysis of ECM, where the null case of an infinitival T forces the movement of *John* in (7) into its specifier. His analysis is in accordance with the spirit of Chomsky (1995) in that ECM involves an asymmetric

checking relation between the embedded subject and the infinitival T. However, the asymmetric feature checking in Collins (1997) no more relies on the distinction between interpretable and uninterpretable features.



This movement does not violate *Last Resort*, since it results in a checking relation between the moved element *John* and the head of the checking domain *to*. Further movement of *John* into the specifier of the matrix AgrO does not violate *Last Resort* either, since the accusative case feature of *John* is crucially not checked by the ECM movement into the specifier of the infinitival T in (11). Summing up, *John* first raises into the specifier of *to* due to the strong EPP feature of the infinitival T and at LF it moves into the specifier of the matrix AgrO due to its accusative case feature.

It seems that Chomsky's analysis of ECM is superior to the one sketched above, as Collins himself has mentioned in his book (Collins 1997: chapter 5). The analysis in Collins (1997) of the English ECM as driven by the null case of an infinitival T has to assume still another kind of asymmetric feature checking that is not derived from the distinction between interpretable and uninterpretable features with regard to the possibility of deletion after checking. He assumes that the infinitival T in English has null case that can be checked off by any undeleted structural case feature, e.g., nominative or accusative case feature.

If a DP with accusative case feature in an ECM construction enters into a checking relation with the null case of an infinitival T, the null case gets deleted after checking, since a case feature is an uninterpretable feature. Crucially, the accusative case feature of the DP does not delete not that it is an interpretable feature but it does not properly checked yet. The assumption here is that the infinitival T is defective compared to a finite T in the sense that it cannot check any kind of overt structural case feature of a DP.

Therefore, we find still another kind of asymmetric feature checking in this case, which is a checking relation between a feature that is checked and deleted and a feature that is not yet checked by the movement and hence cannot delete. Recall that the asymmetric checking relation in Chomsky (1995) is between features that are both checked by the movement, one of them an interpretable feature and the other an uninterpretable feature. In a word, the asymmetric feature checking in Chomsky (1995) depends on the interpretability of features that enter into checking relation, while the second kind of asymmetric checking proposed in Collins (1997) depends on the checking capability of features involved in the checking relation.

Since it is not a desirable move to postulate an additional checking relation, especially if the grammar can dispense with it, Collins (1997) abandons the null case analysis of ECM and adopts the analysis of ECM proposed in Chomsky (1995) that the EPP feature of the embedded T drives the ECM movement. Once we adopt this analysis, we can maintain that the asymmetric feature checking relies solely on the interpretability of the features involved in the checking relation.

### 3.1.2.2 The Null Case Hypothesis

There seems to be at least one piece of evidence in favor of the null case analysis of ECM, which relies on the case property of the infinitival T rather than the EPP feature of T. Collins (1997) discusses examples of expletive constructions and locative inversion in English and concludes that the EPP feature of T and the case feature of T can be independently satisfied.

- (12) a. [TP [a man]<sub>i</sub> [T' arrives<sub>v</sub> [TrP t<sub>i</sub> [VP t<sub>v</sub> [PP at the party]]]]]  
b. [TP there [T' arrives<sub>v</sub> [TrP a man [VP t<sub>v</sub> [PP at the party]]]]]
- (13) a. [TP John<sub>i</sub> [T' rolled<sub>v</sub> [TrP t<sub>i</sub> [VP t<sub>v</sub> [PP down the hill]]]]]  
b. [TP [PP down the hill]<sub>i</sub> [T' rolled<sub>v</sub> [TrP John [VP t<sub>v</sub> t<sub>i</sub>]]]]]

Suppose the expletive *there* in (12b) satisfies the EPP feature of T and checks the nominative case feature of T at the same time. Then T would not have any case feature to check against the DP *a man*. The derivation would crash since *a man* has unchecked and undeleted nominative case feature that cannot be interpreted at LF. Furthermore, the expletive *there* cannot check the  $\phi$ -features of T and V either, since the agreement takes place between the verb and the post-verbal DP. These facts led Collins (1997) to conclude that *there* does not have any case feature<sup>5</sup> and it only satisfies the EPP feature of T.

Similarly, in the locative inversion construction in (13b) the fronted PP seems to satisfy the EPP feature of T, while the case feature of T is checked against the post-verbal DP *John*.<sup>6</sup> One additional assumption is that the PP enters into a checking relation with the EPP

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5. See Chomsky (1995: Chapter 4) for more arguments that *there* lacks case features.

6. See Branigan (1993) for the mechanism of nominative case checking in locative inversion constructions.

feature of T, which is against the analysis in Chomsky (1995) that it is the D-feature of DP that enters into a checking relation with the EPP feature of T.<sup>7</sup> It is obvious however that the EPP feature of T is satisfied by any constituent that occupies its specifier position.

Keeping that in mind, consider the following ECM constructions from English.

- (14) a. I believed [TP John<sub>i</sub> [T' to have [SC t<sub>i</sub> rolled [PP down the hill]]]]  
 b. \*I believed [TP [PP down the hill]<sub>i</sub> [T' to have [TrP [Tr' rolled [SC John t<sub>i</sub> ]]]]]

If the movement of the embedded subject into the specifier of the infinitival T is driven by the strong EPP feature of the embedded T, the structure in (14b) should be legitimate since we have seen in the normal locative inversion structures that a fronted PP can check the EPP feature of T. The ungrammaticality of (14b) shows us that it is not the EPP feature that forces the embedded subject to raise overtly into the specifier of the infinitival T in the ECM constructions.

It seems that the fronted PP both in the locative inversion structure in (13b) and in the locative inversion in the complement clause of an ECM verb in (14b) satisfies the EPP for the T. The difference between the two cases rather involves case feature checking. In (13b), the nominative case feature of T can be checked against the DP *John* at LF. Collins (1997) assumes that the formal features of *John* raise and adjoin to T at LF. The case feature of *John* enters into a checking relation with T and both features get deleted. In (14b), the accusative case feature of *John* raises into the specifier of the matrix AgrO at LF

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7. Collins (1997) explores two possibilities to ensure that PP enters into a checking relation with the EPP feature of T. First, it is the DP *the hill* that is inside the PP that checks the EPP feature of T just as wh-movement can pied-pipe a PP.

(i) Under which bed did Betty hide the candy?

A second possibility is to allow any categorial feature to enter into a checking relation with the EPP feature of T. Hence the P-feature of the PP checks and deletes the EPP feature of T. I will leave this issue open since what is of concern here is that a constituent other than DP can raise to satisfy the EPP feature.

and have its case feature checked. However, the null case feature of the embedded T is not checked, since the null case is checked only against a DP with undeleted case feature not by a PP. Notice that raising and adjoining *John* to the embedded T at LF will not result in the checking of the null case feature since it is a strong feature that needs to be checked and deleted in the overt syntax.<sup>8</sup> Hence the derivation crashes due to the unchecked null case feature of T. The impossibility of locative inversion in the context of ECM thus strongly suggests that it is the null case feature of the infinitival T that drives the overt raising of the embedded subject.

If we adopt the analysis of ECM as driven by the null case feature of the infinitival T, we go back to the problem of postulating the second type of asymmetric checking that relies upon the checking capability of features that enter into the checking relation rather than upon the distinction between interpretable and uninterpretable features. However, there seems to be a way out of this dilemma. Consider the following ECM construction.

(15) I believe there to be no solution to this problem.

In (15) an expletive *there* appears in the specifier position of the infinitival T and hence must check the null case feature of *to*. This is inconsistent with the assumption on the null case checking proposed in Collins (1997), since we have seen from (12) that *there* has no case feature to be checked. Recall that null case is assumed to be checked only by a DP with an undeleted case feature.

If the movement of *there* to the specifier of the infinitival T is required for the checking of the null case of an infinitival T, it seems quite obvious that it is not some kind of case

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8. The null case feature of an infinitival T in the ECM construction in English must be strong to drive the overt movement of the embedded subject into its specifier position.

feature that enters into a checking relation with the null case of T. Suppose instead that it is the D-feature of DP that checks the null case of T. This modification of the null case hypothesis gives us two advantages: one empirical and the other theoretical.

The analysis just sketched above is consistent with the fact that a caseless DP can appear in the subject position of an infinitival T in an ECM construction with an expletive (=15) but a PP cannot as we have noticed in the ECM with locative inversion in (13b). Both *there* and a fronted PP lack a case feature. The difference between a caseless DP and a PP is the presence of a D-feature. A DP without a case feature can check the null case of an infinitival T, since the DP has a D-feature, while a PP without a D-feature cannot check the null case.<sup>9</sup>

Turning to a theoretical issue, the modification of the null case hypothesis makes it possible for the grammar to dispense with the second kind of asymmetric feature checking due to an unchecked feature. Given that it is the D-feature of a DP that enters into a checking relation with the null case of an infinitival T, the D-feature cannot delete after checking since it is an interpretable feature needed at LF for convergence.

Summing up, I have presented in this section that the movement of the embedded subject into the specifier of the infinitival T in an ECM environment is driven by the null case of the infinitival T that requires to be overtly checked against the D-feature of DP. This results in an asymmetric checking relation between the embedded subject and the infinitival T. The strong EPP feature can be also satisfied by this movement but crucially it is not the driving force of ECM, since a constituent without a D-feature cannot appear in the embedded

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9. We cannot assume that a D-feature of DP inside a PP enters into a checking relation with the null case of T, since it has the consequence of allowing locative inversion in an ECM construction, where a PP occupies the embedded subject position. This in turn leads us to decide in favor of the possibility that any categorial feature can license the EPP feature of T, which was mentioned in footnote 4. Hence we rule out the possibility of checking between features that are not in a direct spec-head configuration.



subject position of the complement clause of an ECM verb. Note again that any constituent in the specifier of the embedded T would suffice for checking of the EPP feature, since it can be licensed by any categorial feature.

### 3.2 Raising Construction in English and French

Another case of A-movement across TP is found in raising constructions in English and French.

- (16) a. *John*<sub>i</sub> seems [ TP *t*<sub>i</sub> to be [SC *t*<sub>i</sub> in the room]]  
b. *Ils*<sub>i</sub> semblent [TP *t*<sub>i</sub> [SC *t*<sub>i</sub> parler Anglais]]  
"They seem to speak English."

These sentences involve so-called successive cyclic A-movement as in the case of ECM. The movement of *John* to the specifier of the embedded T in (16a) satisfies Last Resort, since the D-feature of *John* enters into a checking relation with the EPP feature of the infinitival T. The EPP feature of the infinitival T deletes since it is uninterpretable. The D-feature of *John* is not deleted since it is needed for interpretation at LF. After this step, *John* raises into the specifier of the matrix T, satisfying Last Resort. The D-feature of *John* again enters into a checking relation with the EPP feature of the matrix T.<sup>10</sup> The French example in (16b) undergoes the same derivation.

Now consider the following unacceptable examples.

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10. For the claim that the  $\phi$ -features of a DP may enter into several agreement relations while the case features of a DP cannot enter into a several checking relation, see Chomsky (1995) and Collins (1997).

- (17) a. \*John<sub>i</sub> seems that t<sub>j</sub> is in the room  
b. \*Ils<sub>i</sub> semblent que t<sub>j</sub> parlent Anglais  
"They seem that *e* speak English."

Although the movement of *John* to the specifier of the embedded T in (17a) satisfies Last Resort by establishing checking relation between the D-feature of *John* and the EPP feature of the embedded T, further raising of *John* causes the sentence to crash due to the undeleted case feature of the matrix T. The case feature of *John* must have been checked and deleted as a result of the checking relation established between *John* and the embedded finite T for checking of the EPP feature of the embedded T. Notice that case cannot enter into multiple checking relations, since case counts as an uninterpretable feature, which must delete after checking. After the nominative case feature of *John* is checked by the embedded T and deletes, raising *John* to the specifier of the matrix T does not result in checking of the nominative case feature of the matrix T. This step still satisfies Last Resort, since the movement is driven by the EPP feature of the matrix T, which can be checked by the undeleted D-feature of *John*. Again, the corresponding example in French given in (17b) illustrates the same point.

### 3.3 Summary

I have so far considered instances of legitimate A-movement by examining ECM construction in English and raising constructions in English and French, which involve two feature checking relations. One is for checking of the strong EPP feature of the embedded T and the other is for checking of the case feature on the moved element itself. Both in ECM constructions in English and raising constructions in English and French, the embedded subject moves into the specifier of the infinitival T to establish a checking relation between

the D-feature of moved element and the null case feature of the infinitival T. After checking the null case of the infinitival T, the null case deletes due to uninterpretability, but the D-feature on the moved element does not delete since it is an interpretable feature. In ECM constructions in English, the moved element, that is, the ECMed DP has accusative case feature and raises into the specifier of the matrix T<sub>r</sub> for accusative case checking. In raising constructions, the moved element has nominative case feature and raises into the specifier of the matrix T for nominative case checking.

In the following chapter, I will discuss ECM constructions in French and Italian, which seems to be a prerequisite to provide an answer to one of the questions raised in chapter 2; what renders A-movement out of CP illicit in the theory of grammar?

## Chapter 4

# LOCALITY CONDITION ON CHAINS

### 4.1 ECM Construction in French and Italian

Kayne (1983) reports that French does not have so-called ECM constructions in the sense that an infinitival complement clause cannot take a lexical subject. Rizzi (1982) discusses corresponding constructions in Italian, which does not allow an embedded infinitival clause with a lexical subject either. In contrast to English ECM, however, both French and Italian allow PRO as a subject of an infinitival clause.

(1) French ECM

a. Je crois [PRO avoir fait une erreur]

"I believe PRO to have made a mistake."

b. \*Je crois [Jean être le plus intelligent de tous]

"I believe John to be the most intelligent of all."

(Kayne 1983)

(2) Italian ECM

a. Ritengo [di PRO avere sempre fatto il mio dovere]

"I believe PRO to have always done my duty."

- b. \*?Possiamo ritenere [queste persone avere sempre fatto il loro dovere]  
 "We can believe these persons to have always done my duty." (Rizzi 1982)

The distribution of PRO and a lexical subject in (1) and (2) suggests that the verbs like *croire*"believe" or *ritenere*"believe" take CP as its complement, since the PRO theorem requires that a clause containing PRO in its subject position be a CP. If the embedded clause in the above examples from French and Italian is a bare CP, PRO cannot appear in its subject position since the matrix verb would govern PRO.

#### 4.1.1 A'-chain Rescues ECM

Kayne (1983) also observes that unacceptable ECM constructions in French such as (1b) is rescued if the subject of the infinitival complement clause has been extracted. Rizzi (1982) reports that Italian behaves like French and thus allows a lexical subject in the infinitival complement clause if it undergoes A'-movement.

#### (3) French ECM

- a. Quel garçon crois-tu [ t être le plus intelligent de tous]  
 "Which boy do you believe to be intelligent of all?" (Kayne 1983)

- b. Le garçon que je crois [ t être malade]  
 "The boy who I believed to be sick" (Massam 1985)

#### (4) Italian ECM

- a. Quante di queste persone possiamo ritenere [ t aver sempre fatto il loro doveres]  
 "How many of these persons can we believe to have always done their duties?"  
 (Rizzi 1982)

- b. L'uomo che Gianni riteneva [ t essere una brava persona]  
 "The man who Gianni believed to be a nice guy"

As we can see from the above structures, a *wh*-trace can appear in the subject position of an infinitival complement clause in French and Italian. Hence, PRO and a *wh*-trace are grouped together, being in complementary distribution with a lexical subject. This poses a problem on the Case theory that a lexical NP and a variable should behave in the same way with regard to the Case Filter; both of them need case. Recall that in English an infinitival complement of an ECM verb can take either a lexical subject or a *wh*-trace.

Kayne (1983) and Rizzi (1982) account for these facts by assuming that the matrix verb assigns case to COMP, which makes it possible for a *wh*-trace in COMP to satisfy the Case Filter. Since COMP is not considered a path for *wh*-movement in the Minimalist framework, we need to come up with a new analysis for these contrasts between French/Italian and English regarding the distribution of PRO, a *wh*-trace, and a lexical subject.

#### **4.1.2 Locality of A-chain: Speculation**

Before we further explore the aforementioned problem in French/Italian ECM, take a look at the following examples.

- (5) a. \*L'âme<sub>i</sub> a été [ t<sub>j</sub> démontrée être immortelle]  
 "The soul has been demonstrated to be immortal." (Kayne 1983)
- b. \*[Questa donna]<sub>i</sub> era temuta [ t<sub>j</sub> aver tradito la nostra causa]  
 "This woman was feared to have betrayed our cause." (Rizzi 1981)

The ill-formedness of the above examples from French and Italian indicates that an NP-trace is not allowed in the subject position of an infinitival clause either. Passivization, which counts as A-movement, does not rescue otherwise unacceptable ECM constructions in French and Italian. It is only a wh-trace that is permissible as a subject of an infinitival complement. This fact is again in contrast with English, which allows passivization out of ECM constructions as well as wh-movement.

- (6) a. John<sub>i</sub> is believed [ t<sub>i</sub> to be smart ]  
 b. Who<sub>i</sub> is believed [ t<sub>i</sub> to be smart ]

Given below is a summary of what is allowed in the subject position of an embedded infinitival clause in English and French/ Italian.

(7) Subject of an infinitival complement clause

|                | lexical NP | NP-trace | wh-trace | PRO |
|----------------|------------|----------|----------|-----|
| English        | yes        | yes      | yes      | *   |
| French/Italian | *          | *        | yes      | yes |

In English, the PRO theorem, paired with the assumption that ECM verbs in English take an IP complement, can easily explain why PRO is not allowed as a subject in the complement clause of an ECM verb; PRO would be governed in that position by the matrix verb. Any constituent other than PRO is permissible in English as the subject of an infinitival complement clause under the assumption that any categorial feature can check the null case feature of an infinitival T.

If the null case hypothesis also holds of French and Italian, there is no reason a lexical NP and an NP-trace are ruled out while a wh-trace and PRO are allowed in the specifier position of the infinitival T. We need to find out what is the property that groups a lexical NP and an NP-trace together while excluding a wh-trace and PRO. The answer seems to lie in the property of chain that is formed from the specifier position of an infinitival T.

A lexical subject in the specifier of an infinitival T should undergo further A-movement to have its case feature properly checked. Likewise, an NP-trace indicates that it has raised into an A-position from the specifier of the embedded T. In contrast, neither a wh-trace nor PRO needs to undergo A-movement from the subject position in an embedded infinitival clause. PRO need not move from its base position since it does not require an overt structural case, which forces A-movement.

This distinction is however not enough to account for the contrast between French/Italian and English, since the same distinction must hold of English as well as French and Italian. It seems that the most simple solution to this problem can be found by relating the different clausal status of the complement of ECM verbs in two types of languages with the above-mentioned property of chain. Recall that one of the major differences between English and French/Italian ECM is that English ECM verbs take IP complements while French/Italian ECM verbs take CP as their complements.

In English, both A-movement and wh-movement out of an infinitival complement clause of ECM verbs are allowed, which indicates that both A- and A'-chain can be formed across a TP boundary. On the other hand, French and Italian allow wh-extraction but not NP-extraction from a CP complement of ECM verbs. This contrast seems to implicate that A-movement cannot take place across CP although wh-movement can. Under this assumption, the distribution of PRO in the subject position of an embedded infinitival



clause in French and Italian is no problem since PRO does not need to undergo any kind of movement.

We might then ask why A-movement out of a CP complement should be considered illegitimate. What is the difference between A-movement and A'-movement with regard to extraction out of CP? One major difference is: A'-movement out of a CP complement can and must go through the specifier of the embedded CP, which is considered to be an A'-position, while A-movement cannot and need not go through the specifier of the embedded CP, since it does not count as a closer position under the Relativized minimality. However, the intuition here is that it is the specifier of CP crossed in a link of an A-chain that renders A-movement out of CP illicit. Actually we can find a similar situation in English: so-called *allege*-type verbs, which were first discussed in Postal (1974) and Pesetsky (1991).

- (8) a. \*He alleged [Melvin to be a pimp]  
b. Who did they allege [ t to be a pimp] (Postal 1974)

The contrast in (8a-b) shows that the verb *allege* behaves just like French and Italian ECM verbs; wh-extraction of the subject in an infinitival complement clause rescues otherwise offending construction. Given that this type of situation is found across languages, it is worthwhile to consider in following sections how to formulate a locality condition on A-chain in the minimalist framework and what would be its consequences on the theory of grammar in general.

## 4.2 Locality Condition on Chains and Minimality

### 4.2.1 Relativized Minimality (Rizzi 1990)

Rizzi (1990) proposed Relativized Minimality as a locality condition on government. to reduce ambiguity in government relations. Since antecedent government as well as head government is assumed to respect Relativized Minimality, it has some consequences on the theory of movement by imposing constraints on the notion of government.

#### (9) Relativized Minimality (Rizzi 1990)

X  $\alpha$ -governs Y only if there is no Z such that

- (i) Z is a typical potential  $\alpha$ -governor for Y,
  - (ii) Z c-commands Y and does not c-command X.
- (10) (i) Z is a typical potential antecedent governor for Y, Y in an A-chain  
= Z is an A-specifier c-commanding Y.
- (ii) Z is a typical potential antecedent governor for Y, Y in an A'-chain  
= Z is an A'-specifier c-commanding Y.
- (iii) Z is a typical potential antecedent governor for Y, Y in an X<sup>0</sup>-chain  
= Z is a head c-commanding Y.

Since antecedent government is assumed to be a property of chains, Relativized Minimality distinguishes three subcases as given in (10), depending on whether Y is a member in an A-chain, A'-chain or head-chain. In other words, minimality effects are triggered by potential governor of the different kinds for the chains of different properties. As for A-chains, Relativized Minimality can account for impossibility of the so-called Super Raising.

(11) \*John<sub>i</sub> seems that it is likely [ t<sub>i</sub> to win]

(Rizzi 1990)



- (13)  $\alpha$  can raise to target  $K$  only if there is no legitimate operation Move- $\beta$  targeting  $K$ , where  $\beta$  is closer to  $K$
- (14) A legitimate operation is one satisfying Last Resort
- (15) Last Resort  
 Move-F raises F to target  $K$  only if F enters into a checking relation with a sublabel of  $K$

Consider how MLC would rule out a wh-island violation in the following example.

- (16) \*How<sub>i</sub> do you wonder [ which problem<sub>j</sub> [ PRO to solve t<sub>j</sub> t<sub>i</sub> ] ]

Since there exists a legitimate operation that raises *which problem* to the specifier of the matrix CP, where *which problem* is closer to the target than the moved wh-phrase *how*, (16) crashes due to a violation of MLC. Notice that raising of *which problem* to the specifier of the matrix CP satisfies Last Resort, since the movement would establish a checking relation of the moved wh-phrase and [+wh] feature of C.

Now take a look at the case of Super Raising structure given below in (17).

- (17) \*John<sub>i</sub> seems [ that [TP<sub>2</sub> it is likely [TP<sub>1</sub> t<sub>j</sub> to win ]]] ]

Raising of *John* to the specifier of the matrix TP violates MLC, since the intervening specifier *it* may raise to the same position and satisfies Last Resort. However, raising of *it* to the specifier of the matrix TP does not rescue the construction either, since the case

feature of *it* has been checked and deleted in the specifier of TP2. Hence, the structure still crashes due to the unchecked case feature of the matrix T in (17).

However, MLC still cannot account for the impossibility of A-movement out of CP. Raising of the ECMed DP across the specifier of the embedded CP does not violate MLC, since C has no feature to attract the ECMed DP. That is, raising of the ECMed DP to the specifier of the embedded CP does not satisfy Last Resort and cannot be a legitimate operation for MLC.

#### 4.2.3 *Locality Condition on Chains*

We have speculated in section 4.1.2 that the following ECM structures in French and Italian are unacceptable since the embedded subject should be extracted out of CP at LF to check the case feature on the ECMed DP, which counts as illicit A-movement. Hence wh-extraction of the embedded subject rescues otherwise offending ECM structures.

- (18) a. \*Je crois [CP Jean être le plus intelligent de tous]  
 "I believe John to be the most intelligent of all." (Kayne 1983)
- b. \*?Possiamo ritenere [CP queste persone avere sempre fatto il loro dovere]  
 "We can believe these persons to have always done my duty." (Rizzi 1982)

- (19)  $DP_i$  [CP [TP  $t_j$  .....]  
 |-----X-----|

To provide an account for the impossibility of A-movement out of CP, I propose the following locality condition on chain formation.

(20) Locality Condition on Chains(=LCC)

A chain ( $\alpha_j, \dots t_j$ ) is legitimate if every link of the chain is local.

(21) (i) A link in an A-chain is local if there is no shorter link satisfying the uniformity condition on chain.

(ii) A link in an A'-chain is local if there is no shorter link satisfying Last Resort.

The notion of "locality" is defined in the context of c-command, the uniformity condition on chain proposed in Chomsky (1995), and Last Resort formulated in Collins (1997).

(22) Uniformity Condition on Chains

A chain is uniform with regard to phrase structure status (Chomsky 1995)

(23) Last Resort

Move raises  $\alpha$  to the checking domain of a head H with a feature F only if the feature of H enters into a checking relation with a feature F of  $\alpha$ .

(Collins 1997)

The uniformity condition on chain ensures that LCC maintains the distinction between XP-movement and head movement. notice that LCC still distinguishes between A- and A'-movement by defining the notion of locality in the context of Last Resort for A'-movement.

Let us see how LCC would work to account for instances of illegitimate chains that used to be ruled out due to a violation of Relativized Minimality. Consider the following structure, which involves extraction of adjuncts from a wh-island.

(24) \*How<sub>i</sub> do you wonder [ which problem<sub>j</sub> [ PRO to solve t<sub>j</sub> t<sub>i</sub> ] ]

In (24), the chain formed by wh-movement of *how* is not legitimate since the link between  $t_j$  and *how* is not local. A shorter link satisfying Last Resort exists, which is raising of *how* to the specifier of the embedded CP with a wh-feature that can enter into a checking relation with *how*. Since it is not a possible operation due to the wh-phrase *which problem* occupying the specifier of the embedded CP, the structure crashes due to a violation of the LCC.

Now consider the following unacceptable structure with Super Raising.

(25) \* $John_j$  seems [ that [TP<sub>2</sub> it is likely [TP<sub>1</sub>  $t_j$  to win ]]]

Raising of *John* to the specifier of the matrix TP across *it* induces a violation of LCC; the link formed by the movement is not local due to the intervening specifier *it*.

Finally, let us see how LCC would rule out A-movement out of CP and account for the impossibility of ECM in French and Italian. Consider the following structure.

(26)  $DP_i$  [CP [TP  $t_j$  .....  
 |-----X-----|

Movement of the ECMed DP from the specifier of the embedded infinitival T across the specifier of the embedded CP violates LCC. The link formed by the movement is not local since there is a shorter link satisfying the uniformity condition on chain, which is to raise the ECMed DP into the specifier of the embedded CP. Recall that for A-chains, a legitimate link is one satisfying uniformity condition on chain, not Last Resort.

Note that movement of the ECMed DP to the specifier of the embedded CP will satisfy LCC, but the derivation would still crash; further movement of the ECMed DP from the specifier of the embedded CP to the specifier of the matrix Tr for case checking will yield an illicit chain of A-A'-A configuration.

LCC can also provide an explanation why A'-movement, but not additional A-movement, rescues otherwise offending ECM construction in French and Italian. The ECMed wh-phrase in these languages first raises to the specifier of the infinitival T to satisfy the nominal EPP feature of the infinitival T. Crucially, wh-phrase needs not raise to the specifier of the embedded CP, since no checking relation can be established as a result of the movement. The shortest legitimate link satisfying Last Resort from the specifier of the embedded CP would result from the raising of the wh-phrase into the specifier of the matrix Tr; the movement establishes a checking relation between the accusative case feature of the raised wh-phrase and the case feature of Tr. Finally, the wh-phrase raises into the specifier of the matrix CP for [+wh] feature checking, satisfying LCC.

Can LCC also account for the impossibility of applying passivization to ECM constructions? Since passivization forms an A-chain as a result of the movement driven by nominative case feature checking, LCC requires that the passive chain go through every intervening specifier position. Again, the specifier of the embedded CP induces a violation of LCC if the ECMed DP undergoing passivization skips the specifier of the embedded CP. If the passive chain goes through the specifier of CP to satisfy LCC, the structure is still deviant since the resulting chain has the illicit configuration of A-A'-A.



### 4.3 Summary

I have discussed in this chapter ECM constructions in French and Italian and proposed Locality Condition on Chains to account for some problematic behavior found in French and Italian ECM. The basic ideas incorporated in the formulation of LCC is that A-chain has a very local nature; it is required that every link in an A-chain should not skip a single specifier position. This has a consequence on the theory of movement and economy; there exists movement which does not satisfy Last Resort, such as raising of the ECMed DP to the specifier of the embedded DP.

Another consequence of LCC on the theory of movement is that wh-movement needs not be always successive-cyclic. If the embedded C does not have [+wh] feature to enter into a checking relation with the moved wh-phrase, LCC does not require that the A'-chain goes through the specifier of the embedded specifier of CP. According to the spirit of economy on derivation, unnecessary operation should not take place and wh-movement out of CP, whose head does not contain [+wh] feature should not be successive-cyclic.

## **Chapter 5**

# **A/A'-DISTINCTION REVISITED**

### **5.1 Problem: A-movement out of CP**

The ECM constructions in Korean examined in chapter 2 have still left us with a puzzle; what makes it possible for A-movement to take place out of CP despite an apparent violation of Locality Condition on Chains proposed in chapter 4. The answer to this problem will have a consequence of resolving the difference between ECM constructions in Korean on one hand and French and Italian on the other. That is, why Korean allows a lexical subject in the CP complement of ECM predicates, while a lexical subject is not permissible in regular ECM constructions in French and Italian.

To provide an answer to the aforementioned question, I will propose and discuss in this chapter a theoretical assumption that the specifier of CP can count as an A-position in Korean depending on the availability of verb raising. This assumption will account for the difference between the ECM constructions in Korean and French/Italian with regard to the possibility of a lexical subject in the embedded clause, which was noticed in chapter 1.

## 5.2 ECM out of CP: Spec CP as an A-position

As in French and Italian ECM constructions, Korean ECM predicates take CP as its complement. The status of the embedded clause of an ECM predicate as a CP in Korean has been already claimed in section 2.2.1.

- (1)      John-un [CP Mary-lul            erisek-ess-ta-ko ]            mitnun-ta  
           John-Top     Mary-Acc            be stupid- past-decl-comp    believe  
           "John believes Mary to have been stupid."

The presence of the past tense marker and an overt complementizer in (1) indicate that the embedded clause must be a CP in Korean, not TP as in English. A question then might arise what makes it possible for the ECMed NP in Korean to move out of a CP. If an embedded subject moves across the CP boundary, it will result in the violation of the Locality Condition on Chains, which basically prevents A-movement out of CP. The link crossing the specifier of C is an offending link since it skips an intervening specifier position. There exists a shorter legitimate link satisfying the uniformity condition on chain, that is, raising of the ECMed DP to the specifier of the embedded CP. However, this movement would result in an illicit chain of A-A'-A configuration, as noted in the case of French and Italian ECM constructions.

Following the spirit of Yoon (1993), I propose here that the specifier of CP in ECM environment counts as an A-position in Korean that provides an escape hatch for the ECMed NP to move out of a CP complement.

- (2)                    [CP            [TP Subj-**ul**    V ] Comp ] V<sub>ECM</sub>  
                           |                    |

The need for the A'-status of the specifier of CP in languages such as English, French, or Italian mainly comes from overt *wh*-movement, since an operator cannot be in an A-position. However, as is well-known, Korean does not employ overt *wh*-movement, and there is no strong empirical evidence that the specifier of CP should count as an A'-position. In fact, there is some evidence in favor of the specifier of CP as an A-position in Korean.

For instance, Whitman (1989) claims that the base-generated topic in Korean occupies an A-position that is higher than the specifier of IP: the specifier of CP.

- (3) a. [CP yelum kwail-un [IP swupak-i masissta ]]  
 summer fruit-Top water melon-Nom is delicious

"As for summer fruits, water melon is delicious."

- b. [CP kikyekwa-nun [IP MIT-ka hankuk haksayng-ul manhi ppopnunta ]]  
 mech. eng.-Top MIT-Nom Korean students-Acc many admit

"As for mechanical engineering, MIT gives admission to lots of Korean students."

Note that these constructions with a base-generated topic do not allow the nominative subject to be ECMed.

- (4) a. \*na-nun [swupak-ul]<sub>i</sub> [CP yelum kwail-un [IP t<sub>i</sub> masissta ]-ko]  
 I-Top water melon-Acc summer fruit-Top be delicious-comp

mitnunta

believe

"I believe water melon, as for summer fruit, to be delicious."

- b. \*na-nun [MIT- lul]<sub>i</sub> [CP kikyekwa-nun [IP  $\epsilon$ <sub>i</sub> hankuk haksayng-ul  
 I-Top MIT-Acc mech. eng.-Top Korean students-Acc  
 manhi ppopnunta ]-ko] sayngkakhanta  
 many admit-comp think

"I think MIT, as for mechanical engineering, to give admisiion to lots of Korean students."

This would follow from the two assumptions that (a) the specifier of CP is an A-position that can host a base-generated topic and that (b) ECM out of CP is possible only when the specifier of CP can function as an escape hatch. ECM thus becomes impossible when the specifier of CP is filled at S-structure with an overt element such as a base-generated topic in (4); the structure crashes since it violates LCC due to the intervening topic in the specifier of the embedded CP that prevents the ECMed DP in the specifier of the embedded TP from forming a shorter legitimate chain, which is raising to the specifier of the embedded CP.

Returning to the acceptable ECM construction in Korean, we can easily solve the puzzle why ECM in Korean allows an appraent violation of LCC if we assume that the specifier of C in Korean counts as an A-position in an ECM environment. If the specifier of the embedded CP in an ECM cosntruction functions as an A-position, the ECMed DP moves from the specifier of the embedded T to the specifier of the embedded C and satisfies LCC, forming a legitimate chain of A-A-A configuration.

With the assumption that the specifier of CP can count as an A-position in Korean, it is possible to provide a plausible account why Korean allows ECM out of CP, while obeying LCC. It is however not clear at this point what renders the specifier of CP an A-position in Korean, while it functions as an A'-position in other languages such as French and Italian. In the following section, I will provide a new notion of A/A'-distinction, which crucially relies on the derivation in the overt syntax, especially, on the availability of verb raising.

### 5.3 Derivational A/A'-Distinction

The distinction of A/A'-position, which has been playing a crucial role in the theory of movement, is based on the X-bar theoretical assumption that the property of each specifier position is determined by the nature of its head. If a head has a theta-role or a case feature to assign, its specifier counts as an A-position, since it is a "potential" theta- or case position. For instance, the specifier of IP under the VP-internal subject hypothesis is no longer an A-position if we take only theta-positions as A-positions. The external theta-role of the verb is assigned to the specifier of VP, which is the base position of the subject. However, the specifier of IP still counts as an A-position even under the VP-internal Subject Hypothesis, since it is a case position where nominative case checking takes place against the raised subject. Under this traditional definition of A/A'-distinction, the specifier of CP can never become an A-position, since no theta-marking or case marking is done between C and its specifier.

Following the spirit of Diesing (1990), who suggests the possibility of a single specifier functioning as either A- or A'-position on the basis of the facts from the subject movement in Yiddish, I will put forth a new definition of A/A'-distinction, which depends on the derivation in the overt syntax.

- (5) a. A specifier of a head that contains a lexical category (=N,V,A,P) or a trace of a lexical category in the overt syntax counts as an A-position
- b. All other specifiers count as A'-positions

This definition yields a dramatic consequence when combined with the overt verb raising. Suppose a language L1 has overt V-to-T raising. This movement will render the specifier of T an A-position, since it is a specifier of the head that contains a lexical category V,

which is raised and adjoined to T. The specifier of VP still remains as an A-position; the V head now contains its trace, which is a trace of a lexical category. Hence, as a result of V-to-T raising, both the specifier of V and T become A-positions in L1. If L2 allows V-to-C raising in the overt syntax, we get the result that the specifier of C in L2 counts as an A-position as well as the specifier of T and V, which contain a trace of V.

Suppose Korean is L2; V-to-C raising takes place in the overt syntax in Korean. This movement will render the specifier of C an A-position, which in turn provides an escape hatch for A-movement to take place from CP without violating LCC.<sup>1</sup> A supporting piece of evidence for the derivational distinction of A/A'-position comes from the subject-verb inversion construction in Italian reported in Rizzi (1982).

- (6) Suppongo [CP [non esser]<sub>i</sub> la situazione t<sub>j</sub> suscettibile di ulteriori miglioramenti]  
"I suppose not-to-be the situation susceptible of further improvements."

If verb raises to C and precedes an embedded subject in the complement clause of an ECM predicate in Italian, ECM out of CP becomes possible. That is, the infinitival complement of an ECM verb can have a lexical subject when subject-verb inversion takes place in the embedded clause. This phenomenon is not at all surprising under the derivational definition of A/A'-distinction. The V-to-C raising in the embedded clause renders the specifier of the embedded C an A-position, since C contains a lexical category V after the verb raising. Now Italian ECM can proceed just like ECM in Korean; the ECMed DP can go through the A-specifier of the embedded CP and satisfies LCC. In other words, subject-verb inversion in Italian "rescues" otherwise offending ECM with a lexical embedded subject by turning the specifier of the embedded C into a A-position through V-to-C raising.

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1. Some arguments for the overt V-to-C raising in Korean will appear in the appendix at the end of this chapter. See also Kim (1997) for overt V-to-T raising in Korean.

## 5.4 Interaction of ECM and Wh-movement

### 5.4.1 ECM out of Embedded Question

With the assumption that the specifier of CP can count as an A-position in Korean, we could provide a plausible account why Korean allows ECM out of CP despite an apparent violation of LCC. I will consider in this section some consequences of this claim on wh-movement, which is assumed to be closely related to the property of C and its specifier.

Take a look at the following unacceptable ECM structures from Korean.

- (7) a. John-un [ Mary-ka/\*lul wassnun-ci ] kwungkumhayssta  
John-Top Mary-Nom/Acc came-whether wondered

"John wondered whether Mary came."

- b. John-un [ Mary-ka/\*lul erisekun-ci ] alkosipessta  
John-Top Mary-Nom-Acc was stupid-whether wanted-to-know

"John wanted to know whether Mary was stupid."

As the unacceptability of the above examples shows, it is impossible to create an ECM construction from an embedded question marked with the complementizer *-ci* 'whether' in Korean. The same is true when the embedded question contains a *wh*-phrase.

- (8) a. na-nun [ nu-ka/\*nwukwu-lul wassnun-ci ] kwungkumhata  
I-Top who-Nom/who-Acc came-whether wonder

"I wonder who came."



b. na-nun [ mwues-i/\*ul mwunceyin-ci ] alkosipta  
 I-Top what-Nom/Acc be problem-whether want-to-know

"I want to know what is a problem."

The impossibility of alternative case marking on the embedded DP subject or *wh*-phrase in (7)-(8) shows that a predicate that selects as its complement a question headed by the complementizer *-ci*'whether' does not allow ECM constructions. Suppose the nature of a specifier being an A/A'-position is determined in the overt syntax. It seems then quite plausible that embedded questions do not allow ECM. Remember that ECM as A-movement across a CP boundary is possible only when the specifier of CP provides an escape hatch as an A-position so that the resulting chain would not violate LCC.

Then the ill-formedness of (7)-(8) with ECM out of indirect question seems to be rather due to the unchecked [+Q] or [+wh] feature. After V-to-C raising takes place in the embedded clause in (7)-(8) in the overt syntax, the specifier of C becomes an A-position. At LF, the [+Q] feature in yes-no indirect question or [+wh] feature in *wh*-indirect question should move into an operator position for feature checking and proper interpretation. However, the only operator position available, which is the specifier of the embedded C, has become an A-position and cannot attract [+Q] or [+wh] feature. Hence, the derivation crashes due to the unchecked [+Q] or [+wh] feature.

(9) A [CP A [IP DP-Acc ... \*[+Q]/\*[+wh].....] -ci ] Verb  
 |\_\_\_\_\_||\_\_\_\_\_|

### 5.4.2 ECM and Matrix Wh-question

Let us now consider whether wh-movement is allowed out of a CP complement in ECM constructions in Korean

- (10) a. ne-nun [CP Mary-ka wey erisekessta-ko ] sayngkakha-ni  
You-Top Mary-Nom why was stupid-comp think-Q

"Why do you think Mary was being stupid?"

- b. ne-nun [Mary-lul]; [CP ti wey erisekessta-ko ] sayngkakha-ni?  
You-Top Mary-Acc why was stupid-comp think-Q

"When do you think Mary to have been being stupid?"

The possibility of wh-movement out of ECM structure in (10) indicates that wh-movement need not be successive cyclic, as has been predicted by LCC. Recall that under the formulation of LCC for A'-chains, which requires an A'-chain to go through only the positions necessary for feature checking, wh-phrase need not and cannot go through the specifier of the embedded CP if the wh-phrase takes scope over the matrix clause, that is, [+wh] feature checking takes place in the specifier of the matrix C. No feature checking can be done as a result of raising of the embedded wh-phrase into the specifier of the embedded C. Hence, the movement is not required by LCC and principle of economy would rule out such an unnecessary operation.

Now consider the following wh-question out of ECM construction, where the ECMed wh-phrase has been extracted.

(11) a. ne-nun [CP **nwu-ka** erisekessta-ko ] sayngkakha-ni  
 You-Top who-Nom was stupid-comp think-Q  
 "Who do you think that t was stupid?"

b. ne-nun [**nwukwu-lul**]<sub>i</sub> [CP **t<sub>i</sub>** erisekessta-ko ] sayngkakha-ni?  
 You-Top who-Acc was stupid-comp think-Q  
 "Who do you think to have been stupid?"

This is again the same with the *wh*-question out of ECM in French and Italian. In ECM constructions in Korean as well as in French and Italian, LCC requires that the ECMed *wh*-phrase need not and cannot go through the specifier of the embedded C, since no feature checking can take place by the movement into the position. The only difference is the nature of the skipped specifier of the embedded C; it is an A-position in Korean, but an A'-position in French and Italian. The legitimate link from the specifier of the embedded T is formed by raising of the ECMed DP into the specifier of the matrix Tr, satisfying Last Resort and LCC.

#### 5.4 Summary

I have proposed in this chapter a new definition of A/A'-distinction on the basis of the facts from ECM in Korean and Italian. The basic idea behind the derivational distinction of A/A'-position is that the nature of a specifier is determined by the property of its head, probably via some sort of Spec-head agreement. This formulation has some consequences on the theory of movement: (i) overt verb raising determines the nature of the specifier of T or C with regard to A/A'-status; and (ii) A-movement is always successive-cyclic, but A'-

movement is not, since LCC requires that A'-chain need not go through any other position than required by Last Resort for feature checking.

## Chapter 6

# DUAL FUNCTION OF FINITE T IN LANGUAGES WITHOUT INFINITIVALS

We are now left with the final task of this thesis: to account for the apparent violation of the Chain Condition (Chomsky 1993) that requires an A-chain have one and only one case position. The relevant data are evidenced in ECM out of finite clause in Korean, which has been discussed in much detail in chapter 2. In other words, if the subject in an finite complement clause is extracted from its clause into a case position, the derivation should crash; either the case feature of the embedded T or of the matrix T remains unchecked since a case feature of a DP should delete after checking, being an uninterpretable feature.

### 6.1 ECM out of Finite Clause: Property of T

Consider the following ECM structure from Korean, where ECM takes place out of a finite complement clause, as we can see from the presence of the past tense marker *-ess*.

- (1)      John-un      [Mary-lul      erisek-ess-ta-ko ]      mitnun-ta  
         John-Top      Mary-Acc      be stupid-past-decl-comp      believe

"John believes Mary to have been stupid."

As noted earlier, A-movement out of a finite clause should be deviant since a case feature is not allowed to enter into multiple checking relations in Chomsky (1995), while  $\phi$ -features<sup>1</sup> can. Since a case feature of DP is [-Interpretable], once checking relation is established between a DP with an unchecked case feature and T with a case assigning feature, the case feature of the DP should delete and can never enter into another checking relation. If the case feature of the ECMed DP deletes after moving into the specifier of the embedded T, the case feature on the matrix T<sub>r</sub> cannot get its accusative case feature checked and will cause the derivation to crash.

To resolve this situation, I propose that in languages such as Korean, which do not have overt infinitival structures, a finite T serves a dual function as both finite and infinitival T. A finite T has a strong nominative case feature that can be checked against any undeleted case feature of DP. This strong nominative case feature of T will attract the closest DP into its specifier position in the overt syntax and its nominative case feature will delete after checking. In contrast, I have argued in chapter 3 that in languages like English, which distinguish between finite and infinitival structures, an infinitival T has nominal null case that can be checked against the D-feature of DP, while a finite T has nominative case that enters into a checking relation with a DP with nominative case.

Suppose in a language that has finite T with the above-mentioned dual function, an embedded subject DP enters into a checking relation with the embedded finite T. The nominative feature of the embedded T deletes after the checking whether the DP has nominative or accusative case feature, since case feature of T is assumed to be an

---

1. For difference between case feature and  $\phi$ -feature with regard to the possibility of multiple feature checking, see Chomsky (1995) and Ura (1996).

uninterpretable feature. The D-feature of the subject DP on the other hand should not delete since it is an interpretable feature needed at LF for convergence.

Crucially, the deletion of the case feature of DP depends on the property of its case feature. If it is nominative case feature, it deletes after checking since it matches the nominative case assigning feature of the embedded T. Although raising of the embedded subject into the specifier of the embedded T is not driven by the nominative case feature of DP, the resulting checking relation makes it possible for the nominative case feature of DP checked by the nominative feature of the embedded finite T.

If the embedded subject has an accusative case feature, for example, as in ECM constructions, the case feature of the ECMed DP cannot be checked by the embedded T, since it does not have the matching feature. Chomsky (1995) claims that features cannot be checked under feature mismatch even if they are in a configuration for feature checking. Whether features that do not match can enter into a checking relation but cannot be checked or they do not even allowed to enter into a checking relation is not clear at this point. Of relevance here is the claim that in either case mismatched features cannot be checked. Hence, multiple feature checking of case feature is found in Korean, whereby the accusative case feature of the ECMed DP enters into a checking relation twice: checking of the nominative case feature of the embedded T and checking of the accusative case feature of the matrix T<sub>r</sub>.

## **6.2 More Data on A-movement out of Finite Clause**

A generalization seems to hold across languages that a language L does not have overt infinitival constructions if L allows A-movement out of finite clause. That is, languages

without overt infinitivals have the option of using finite T as infinitival in the sense that any DP can license its case feature just as any DP can check the nominal EPP feature of infinitival T in English. Infinitival T in both types of languages share a property that it suffices for the (finite T functioning as) infinitival T to fill its specifier with a DP regardless of the nature of or the accessibility to the case feature of DP. To show that the dual function of finite T is not an idiosyncratic property of T in Korean, I will provide more data that show A-movement out of finite clause in this section.

Consider the following example from Standard Arabic, which exhibits ECM out of finite clause. The example is from Ura (1996), citing Ouhalla (1994).

- (2)      dhanan-tu      l-taalib-a<sub>k</sub> [ ?anna-hu<sub>k</sub>      qaabal-a      l-mu?allim-a ]  
           believed-1SG    the student-Acc comp-he      met-3SG      the teacher-Acc  
           "I believed the student<sub>k</sub> that he<sub>k</sub> met the teacher."

Ura (1996) claims that in Standard Arabic the operation Move inserts a pronominal copy in the base position as a result of a language-particular rule. Apart from the pronominal occupying the specifier of the embedded T in (2), the structure is exactly like ECM in Korean. The embedded accusative subject has been extracted out of a finite clause. Again, the assumption that the finite T has nominative case feature that can be checked by any undeleted case feature of a DP, multiple feature checking of accusative case feature of the ECMed DP *l-taalib-a* in (2) accounts for the acceptability of ECM out of a finite clause.

Given below is examples from across languages that illustrate the same point: ECM out of CP is possible in many languages, which are reported to have no infinitival constructions.



- (3) Kiket<sub>i</sub> mondtad hogy szeretnél t<sub>i</sub> [ha eljönnének t<sub>i</sub>]  
 who-acc you-said that you-would-like[-def] if came  
 "Who did you say you would like it if they came?" (Kiss, 1984)
- (4) chai jari-ca yachachij-taj crin [ t<sub>i</sub> warmi-man wawa-ta  
 that man-top teacher-acc believes woman-dat baby-acc  
 cara-ju-y-ta]  
 serve-Prog-Pres-acc  
 "The man believes the teacher is handing the baby to the woman."  
 (Jake & Odden 1979)
- (5) au gadreva [na koro levu]<sub>i</sub> [ ni ko a lako kinaj]  
 1s wish art big town Sub 2s Past go to-it  
 "I wish you had gone to the city." (Gordon, 1980)

### 6.3 Summary

I have proposed in this chapter a possibility of multiple feature checking for case features on the basis of the fact from across languages that ECM is possible out of a finite clause. Case feature can enter into a multiple checking relation due to the impossibility of proper checking under feature mismatch and the distinction of interpretable and uninterpretable features.

ECM out of a finite clause can be seen as composed of two links: raising of the ECMed DP to the embedded specifier of T establishes a checking relation between the nominative case feature of the finite T and the undeleted case feature of the ECMed DP; and further raising

of the ECMed DP in the specifier of the matrix Tr establishes a checking relation between the case feature of Tr and the accusative case feature of the ECMed DP.



c. na-nun      [[ cemsim-ul      hakkyo-eysey t<sub>v</sub> ]      kuliko      [ cenyek-ul  
 I-Top            lunch-Acc      school-loc                              and            dinner-Acc  
                   cip-eysey]]      mekesstav<sub>v</sub>  
                   home-loc            ate

"I had lunch at school and dinner at home."

Under the traditional analysis that the verb stays in-situ within the VP in the overt syntax, the coordinated structures in (1) are problematic since they all violate the Coordinate Structure Constraints, which prevents movement out of one conjunct unless movement also occurs out of the other conjunct.<sup>2</sup> If the verb does not raise out of VP in the overt syntax, all the structures given above in (1) violate the CSC; only one of the two conjuncts contains a trace of the verb.

Suppose the verb in Korean raises and adjoins to Tense in the overt syntax. Then the structures in (1) can be seen as TrP coordination with the trace of V contained in it. In (1a), the direct object generated in the complement position of V raises into the outer specifier Tr and the subject in the inner specifier of Tr moves into the specifier of Tense. After raising of both the subject and the object, TrP is left with the direct object in its outer specifier position, the trace of subject in its inner specifier position, the indirect object in the specifier of PP that c-commands VP with the trace of V. Hence, coordination of the direct object and the indirect object can be analyzed as TrP coordination after the overt verb raising in Korean. Each of the coordinates in (1a) contains a trace of the subject, the direct and indirect object, a trace of the direct object and a trace of the verb and (1a) would have the following representation.

---

2. See Ross (1967) and Williams (1977; 1978) for the Coordinate Structure Constraints and movement out of conjuncts in a coordinate structure.

- (2) John-ij [[TrP t<sub>i</sub> chayk-ulj Mary-eykey [VP t<sub>j</sub> t<sub>v</sub>]] kuliko  
 John-Nom book-Acc Mary-Dat and  
 [[TrP t<sub>i</sub> kkoch-ulj Mary-eykey [VP t<sub>j</sub> t<sub>v</sub>]] cwuessta  
 flowers-Acc Mary-Dat gave  
 "John gave a book to Mary and flowers to Sue."

The structure given in (1b) is also hard to account for without assuming the overt verb raising in Korean. Suppose numeral quantifiers in Korean are generated in the one of the multiple specifier positions that hosts its associate DP. The so-called floating quantifiers<sup>3</sup> are due to movement of the associate DP rather than movement of the numeral quantifier itself. That is, a subject-oriented numeral quantifier identifies the base position of the subject (the inner specifier of Tr), while the one associated with the direct object identifies the base position of the object (the inner specifier of V).

Then, (1b) has the same structure as (1a) in the sense that it is a case of TrP coordination after the subject raises into the specifier of Tense, the object moves into the outer specifier of Tr and the verb raises and adjoins to Tense. Notice again that prior to overt V-to-T raising, only one of the conjuncts in (1b) contains a trace of the verb. The coordinated structure in (1c) also shows us that the verb has raised out of VP in the overt syntax. given below are the S-structure representations of (1b) and (1c) respectively.

- (3) a. haksayngtul-ij [[TrP t<sub>i</sub> sey-myeng-ij chayk-ulj [VP t<sub>j</sub> t<sub>v</sub>]] kuliko  
 students-Nom three-CL-Nom book-Acc and  
 [[TrP t<sub>i</sub> twu-myeng-ij kkoch-ulj [VP t<sub>j</sub> t<sub>v</sub>]] sassta  
 two-CL-Nom book-Acc bought (=1b)

---

3. For the analysis of floating quantifiers in Korean, see Park & Sohn (1993).

|                        |                                 |             |                                      |          |
|------------------------|---------------------------------|-------------|--------------------------------------|----------|
| b. na-nun <sub>i</sub> | [[TrP t <sub>i</sub> cemsim-ulj | hakkyo-eyse | [VP t <sub>j</sub> t <sub>v</sub> ]] | kuliko   |
| I-Top                  | lunch-Acc                       | home-Loc    |                                      | and      |
|                        | [[TrP t <sub>i</sub> cenyek-ulj | cip-eyse    | [VP t <sub>j</sub> t <sub>v</sub> ]] | mekessta |
|                        | dinner-Acc                      | hom-Loc     |                                      | ate      |
|                        |                                 |             |                                      | (=1c)    |

## Chapter 7

# SUMMARY AND CONCLUDING REMARKS

In this thesis I have discussed the locality of A-chain and a new formulation of A/A'-distinction on the basis of two types of illicit A-chains found in ECM constructions across languages. The guiding intuition on the locality of A-chain starts from Relativized Minimality indicating that different kinds of government do not interfere with one another; for example, intervening A'-specifiers should never interfere with antecedent government in an A-chain under this approach. However there are cases where A-movement out of CP is unacceptable, which is evidenced from the impossibility of regular ECM in French and Italian. To provide an account for this problem, I proposed Locality Constraint on Chains in the context of Last Resort and uniformity condition on chain.

(1) Locality Condition on Chains (=LCC)

A chain  $(\alpha_j, \dots, t_j)$  is legitimate if every link of the chain is local

- (2) (i) A link in an A-chain is local if there is no shorter link satisfying the uniformity condition on chain.
- (ii) A link in an A'-chain is local if there is no shorter link satisfying Last Resort.

- (3) A chain is uniform with regard to phrase structure status<sup>1</sup> (Chomsky 1995)

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1. Chomsky (1995) mentions that the "phrase structure status" of an element is its (relational) property of maximal, minimal, or neither.

(4) Last Resort

Move raises  $\alpha$  to the checking domain of a head H with a feature F only if the feature F of H enters into a checking relation with a feature F of  $\alpha$ .

(Collins 1997: 19)

The intuition behind LCC is that A-chain is truly local in its nature in the sense that it needs to go through every intervening specifier whether actual feature checking takes place or not. In contrast, A'-chain only goes through the position that is required for feature checking.

A reconsideration of the notion of A/A'-distinction has also been made in this thesis and a new distinction of A/A'-position has been formulated on the basis of the property of the category that occupies the head of the specifier. A specifier of a head that contains a lexical category (=N, V, A, P) or a trace of a lexical category counts as an A-position, while specifiers of a functional head counts as an A'-position. A significant consequence of this reformulation of A/A'-distinction is that verb raising crucially hinges on the A-status of a specifier of the functional category that the verb raises and adjoins to. If verb raises to Tense in L1, both the specifier of the verb and the specifier of T count as A-positions in L1. If verb raises up to C in L2, the specifier of C becomes an A-position as well as the specifier of T.

A crosslinguistic study of A-movement in this thesis also shows that a generalization can be established that a language that allows A-movement out of a finite clause does not have overt infinitival structures. This is problematic since A-movement out of a finite clause would be a violation of the Chain Condition with the resulting chain having two case positions; the specifier of the embedded finite Tense and the target position where case checking of the moved element takes place.



To resolve this situation, I propose that in languages that do not have overt infinitivals a finite T serves a dual function of both finite and infinitival T in the sense that a finite T has a strong nominative case feature that can be checked against any DP with undeleted case feature regardless of its case feature. This strong nominative case feature of T will attract the closest DP into its specifier position in the overt syntax. A crucial consequence of this claim follows that case feature can also enter into multiple checking relations.

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