

# Non-Clause-Bounded A-Movement: A Cross-Linguistic Study of ECM Constructions\*

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In standard GB theory, it is commonly believed that A-movement is strongly local, being necessarily clause-bounded and the clause-boundedness of A-movement is mandated by various central principles of the theory, such as ECP and Binding Theory. Our goal in this paper is to show that this, in fact, is not the case, i.e., that there are languages which allow non-clause-bounded A-movement, through a cross-linguistic study of the so-called ECM constructions. In this paper, we show that ECM constructions in some languages do involve movement, i.e., raising, and that movement can be non-clause-bounded. Also discussed are various theoretical problems non-clause-bounded A-movement cause in standard GB-theory and how they can be solved.

## 1. Introduction

Contrary to the common belief that A-movement is strongly local, being necessarily clause-bounded, research into a broader range of cross-linguistic data shows that this is not the case and that there are languages which allow non-clause-bounded A-movement. These languages include Korean, Quechua, Kipsigis, Niuean, etc.

The problems that non-clause-bounded A-movement in these languages poses to the standard GB theory are obvious since the clause-boundedness of A-movement is mandated by various central principles of the theory, such as ECP and Binding Theory. Therefore, in order to explain the possibility of non-clause-bounded A-movement in certain languages, we must be able to clear away these theoretical problems.

Our major data in this paper are the so-called ECM constructions which

\* This paper is a shortened and revised version of the chapter 2 of Yoon (1991).

have generated much debate concerning their proper analysis in the GB-theory. In this paper, we will show that ECM constructions in some languages do involve movement, i.e., raising, and that that movement can be non-clause-bounded.<sup>1</sup> We will also discuss various theoretical problems this causes in standard GB-theory and how they can be solved.<sup>2</sup> Crucially, our analysis is based on the idea that although there is no doubt that theta-positions are A-positions, the A/A'-nature of non-theta positions can vary in languages.

The organization of the paper is as follows: In section 2, we briefly review the standard analysis of ECM constructions and their importance in GB-theory. In section 3, we discuss the properties of ECM constructions in certain languages. In section 4, we review some of the previous analyses of these constructions and their problems. In section 5 and 6, we present our analysis and discuss some of the theoretical issues it should be able to deal with. Finally, in section 7, we discuss ECM constructions in French, which we think further support our analysis.

## 2. Standard Analysis of ECM Constructions

The proper analysis of Exceptional Case Marking (ECM) constructions shown in (1) has generated a lot of attention within GB theory, primarily because of the importance of such constructions for the Projection Principle.

- (1) a. John believes [him/\*he to be smart].  
 b. John believes [he/\*him is smart].

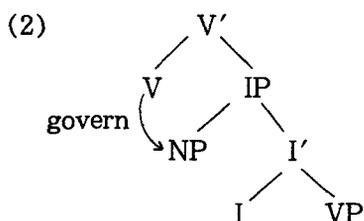
That is, the feasibility of an ECM Analysis, as opposed to a Raising (to object) Analysis, is taken to be evidence for the Projection Principle and the attendant assumption that complement positions are obligatory thematic positions.

Since ECM in English type languages is string-vacuous and restricted to subjects of infinitival clauses without overt complementizers, the analysis of ECM in English is amenable to a node-pruning type analysis without the

<sup>1</sup> We shall continue to use ECM constructions for expository purposes even though we shall argue that some of these actually involve movement/raising.

<sup>2</sup> See Yoon (1991) for more detailed discussion.

need to assume real "Raising."



ECM in English also fits well with Case Theory, specifically, the Case Filter. Since ECM is possible only to the subject of infinitival clauses to which no Case is assigned, ECM in English is motivated for Case-theoretic reasons and thus is obligatory. Unless the higher verb exceptionally Case-marks the subject, the subject will be Caseless and the sentence will be ruled out as a violation of the Case Filter, which requires all lexical NPs to have Case.

However, when we examine a broader range of ECM constructions across languages, a rather different picture emerges and the facts of ECM appear to challenge the central tenets of the theory which the standard analysis of English ECM appears to confirm. As noted in previous research (Massam 1985, Jake & Odden 1979, Cole and Hermon 1981, Jake 1985, Hermon 1985, Lefebvre and Muysken 1982, 1988, Yoon and Yoon 1990, etc.), ECM-like constructions in Korean, a few varieties of Quechua, Kipsigis, and Niuean, exhibit properties that are quite different from the analogous English construction shown in (1).

Let us note here that the constructions in question are indeed similar to the English ECM construction in (1) (cf. Massam 1985 and research in Relational Grammar). Traditionally, these have been analyzed as Subject-to-Object Raising Constructions. The one property that distinguishes these from processes such as Topicalization and Left Dislocation is that the raised/ECMed nominal acts like a matrix direct object. In the following section, we examine the properties of ECM-like constructions in the languages mentioned above.

### 3. Some Properties of ECM

#### 3. 1. Non-String Vacuous ECM

Unlike ECM in English ECM in the languages in question may not be string vacuous.<sup>3</sup> The basic word order of Quechua is SOV and in Quechua, an ECMed NP is most often positioned in front of the matrix verb, separated from the remainder of the embedded clause.

Imbabura Quechua (Cole & Hermon 1981)

- (3) Maria-ca Francisco-ta yacha-n [t<sub>i</sub> cay-pi ca-j-ta].  
 Maria-Top Francisco-Acc know-3 this-in be-Prs.Nml-Acc  
 'Maria knows that Francisco is hee.'

This is also true in Niuean and Kipsigis.

Niuean (Seiter 1980)

- (4) To nakai toak e au [e pusi] [ke kai t<sub>i</sub> e ika].  
 fut not let Erg I Abs cat Suj eat Abs fish  
 'I won't let the cat eat the fish.'

Kipsigis (Jake & Odden 1979)<sup>4</sup>

- (5) a. moce Mu:sa pe:ndo<sub>i</sub> [ko -til Kiplagat t<sub>i</sub>].  
 wants Musa(S) meat 3s. Sub-cut Kiplangst(S)  
 'Musa wants Kiplangat to cut the meat.'

<sup>3</sup>The contrast in the interpretation of a subject-oriented adverb as in the following pair of sentences shows that ECM can be non-string vacuous even in English.

- (i) John believes Bill stupidly to be his friend.  
 (ii) John believes that Bill stupidly is his friend.

In (i), *stupidly* can be associated with the matrix subject in (i) whereas in (ii) it cannot. This contrast can be explained if we assume VP-extraposition for English (James Huang, p.c.). However, the same, i.e., VP-extraposition, does not seem to work for the non-string vacuous ECM in the languages we are focusing on in this chapter. As we will see, the extraposed phrases in these languages cannot be VPs since they include complementizers as well as VPs

<sup>4</sup>For typographical convenience, I have made the following equations for phonetic transcription and have omitted all the accent marks from the Kipsigis data in this paper.

o = ɔ, i = i, g = ŋ

As for glosses, I have ignored the awkwardness of some of the English translations in order to make them reflect the structure of original sentences more closely.

- b. moce pe:ndo<sub>i</sub> Mu:sa [ko -til Kiplagat t<sub>i</sub>].  
 wants meat Musa(S) 3s.Sub-cut Kiplangst(S)  
 'Musa wants Kiplangst to cut the meat.'

The basic word order in Niuean and Kipsigis is VOS. In sentence (4) in Niuean, the ECMed NP *e pusi* appears before the embedded complementizer *ke*. In Kipsigis also (the sentences in (5)), the ECMed object can appear between the verb and the subject in the matrix clause.

### 3.2. ECM into a Finite CP

A salient property of ECM in these languages is that ECM is possible into a finite clause headed by an overt complementizer. In the following ECM construction in Korean, the embedded clause is finite, past tense, and is headed by an overt complementizer, *-ta-ko*.<sup>5</sup>

#### Korean

- (6) Chelswu-nun [Yenghi-lul chencay-i-ess-tako] mitessta.  
 -Top -Acc genius-Cop-Pst-Comp believed  
 'Chelswu believed that Yenghi was a genius.'

The same is true for Quechua. In Quechua, most complement clauses are nominalized by adding nominalizing suffixes to the complement verb. These nominalizing suffixes encode both tense and mood. As an example, in the following sentence from Imbabura Quechua, the affix *-j* attached to the verb is an "indicative present" nominalizer. If the function of a complementizer is to indicate the type of a clause and whether the clause is subordinated or not, nominalizers in Quechua must be analyzed as complementizers. However, ECM is possible.

#### Imbabura Quechua (Cole & Hermon 1981)

- (7) Maria-ca yacha-n Francisco-ta cay-pi ca-j-ta.  
 Maria-Top know-3 Francisco-Acc this-in be-Prs-Nml-Acc  
 'Maria knows that Francisco is here.'

<sup>5</sup> We take *ka-ko* in Korean as a complex complementizer. The difference between *ta-ko*, the two functions of complementizers, namely, the function of indicating the clause type (mood) and the function of indicating whether or not the clause is subordinated (Bhatt & Yoon (1991)), are served separately by each morpheme, whereas in English, a single word serves two functions.

In (7), the subject of the complement clause *Francisco* is marked with Acc Case instead of Nom Case, which would be expected if there were no ECM in (7).

What is worth noting here is that the presence of an overt complementizer in ECM constructions in these languages precludes the possibility of an analysis of ECM that appeals to node-pruning or IP-selection.

### 3.3. Optionality of ECM

ECM in these languages is optional. Sentences with or without ECM are equally well-formed.

#### Korean

- (8) a. Chelswu-nun [Yenghi-lul chencay-i-ess-tako] mitessta.  
           -Top                  -Acc genius-Cop-Pst-Comp believed  
           ‘Chelswu believed that Yenghi was a genius.’
- b. Chelswu-nun [Yenghi-ka chencay-i-ess-tako] mitessta  
           -Top                  -Nom genius-Cop-Pst-Comp believed  
           ‘Chelswu believed that Yenghi was a genius.’

#### Imbabura Quechua (Cole & Hermon 1981)

- (9) a. Maria-ca yacha-n [Francisco-ta cay-pi ca-j -ta]  
           Maria-Top know-3 Francisco-Acc this-in be-Prs.Nml-Acc  
           ‘Maria knows that Francisco is here.’
- b. Maria-ca yacha-n [Francisco- $\phi$  cay-pi ca-j -ta]  
           Maria-Top know-3 Francisco-Nom this-in be-Prs.Nml-Acc  
           ‘Maria knows that Francisco is here.’

#### Niuean (Massam 1985)

- (10) a. To nakai toak e au [e pusi], [ke kai t, e ika]  
           Fut not let Erg I Abs cat subj eat Abs fish  
           ‘I won’t let the cat eat the fish.’
- b. To nakai toak e au [ke kai [he pusi] e ika]  
           Fut not let Erg I sub eat Erg cat Abs fish  
           ‘I won’t let the cat eat the fish.’

In (8) and (9), the subject of the embedded clause can be marked with Nom Case assigned by the embedded INFL, or Acc Case assigned by the matrix verb. Sentence (10), a Niuean example, shows the same point. Since

Niuean has an Ergative Case system, subjects of transitive verbs are marked with Erg Case, whereas subjects of intransitive verbs and objects of transitive verbs are marked with Abs Case. The Abs Case marking on *pusi* 'cat' in (10) a shows that it is ECMed by the matrix verb. However, as we see in (10)b, the same sentence without ECM, i.e., *pusi* with Erg Case marking, is also good.

The optionality of ECM in these languages is expected when we consider the fact that the clauses embedded under ECM verbs are finite. Since the embedded clause is finite, Case is independently available to the subject position, and therefore, Case-theoretic motivations do not make ECM obligatory in these languages.

### 3. 4. ECM of Non-Subjects

ECM in English is possible only to the subject of infinitival clauses. However, languages like Quechua, Niuean, Korean, Kipsigis, etc. allow ECM not only to an embedded subject but also to non-subjects.<sup>6</sup> the following examples illustrate this.

#### Imbabura Quechua (Jake & Odden 1979)

- (11) a. *chai jari-ca crin [yachachij warmi-man wawa-ta*  
           that man-Top believe-3 teacher woman-Dat baby-Acc  
           *car-ju-y-ta].*  
           serve-Prog-Prs-Acc  
           'The man believes the teacher is handing the baby to the  
           woman.'
- b. *chai jari-ca wawa,-ta crin [yachachij warmi-man t,*  
           that man-Top baby-Acc believe-3 teacher woman-Dat  
           *cara-ju-y-ta].*  
           serve-Prog-Prs-Acc

<sup>6</sup> It seems that languages differ with regard to which embedded constituent can be ECMed in addition to the subject. It is reported in the literature that some languages such as Kipsigis and Imbabura Quechua allow ECM to indirect objects, and obliques like Beneficiary and Instrumental NPs as well as to direct objects and some languages like Niuean allow ECM only to direct objects (Jake & Odden 1979, Seiter 1980, Jake 1983). Although this is interesting, in this paper, we do not attempt to explain why languages differ in this respect.

'The man believes the teacher is handing the baby to the woman.'

- c. chai jari-ca warmi<sub>i</sub>-ta crin [yachachij t<sub>i</sub> wawa-ta  
that man-Top woman-Acc believe-3 teacher baby-Acc  
cara-ju-y-ta].  
serve-Prog-Prs-Acc

'The man believes the teacher is handing the baby to the woman.'

Kipsigis (Jake & Odden 1979)

ECM to embedded object

- (12) a. moce Mu:sa [ko -til -an Kiplaga].  
wants Musa(S) 3s.Sub-cut-Is.Obj. Kiplangst(S)  
'Musa wants tiplangat to cut me.'  
b. moc-o:n Mu:sa [ko -til -an Kiplagat].  
want-is:Obj Musa(S) 3s.Sub-cut-Is.Obj Kiplangst(S)  
'Musa wants Kiplangat to cut me.'

ECM to Benefactive NP

- (13) a. moce Mu:sa [ko -til -ci Kiplagat ci:to pe:ndo].  
wants Musa(S) 3s.Sub-cut-Ben Kiplangat(S) man meat  
'Musa wants Kiplangat to cut the meat for the man.'  
b. moce Mu:sa ci:to, [ko til -ci Kiplagat t<sub>i</sub> pe:ndo].  
wants Musa(S) man 3s.Sub-cut-Ben Kiplangat(S) meat  
'Musa wants Kiplangat to cut the meat for the man.'

ECM to embedded object in Niuean (Seiter 1980)

- (14) To nakai toka e au [e ika], [ke kai he pusi t<sub>i</sub>].  
Fut not let Erg I Abs fish Sbj eat Erg cat  
'I won't let the fish be eaten by the cat.'

ECM to embedded object in Korean

- (15) a. Na-nun [Chelswu-ka ton -i /\*-ul manh-tako]  
I-Top Nom money-Nom/Acc much-Comp  
sayngkakha-n-ta.  
think-Prs-Dcl  
'I think that Chelswu has lots of money.'  
b. Na-nun [ton<sub>i</sub>-ul [Chelswu-ka t<sub>i</sub> manh-tako]]  
I-Top money-Acc Nom much-Comp

sayngkakha-n-ta.  
 think-Prs-Dcl  
 'I think that Chelswu has lots of money.'

Sentences (11b) and (11c) show ECM of the embedded object and benefactive NP in Imbabura Quechua; (12) and (13) from Kipsigis show the same point; (14b) from Niuean show that the direct object can be ECMed; Sentence (15b) from Korean shows that the embedded object is ECMed.

The fact that non-subject NPs in the preceding examples are indeed ECMed is shown by various kinds of evidence, such as Case marking, agreement and the possibility of Passivization, etc.

First of all, Case-marking on the ECMed NPs provides us with direct evidence that the NPs in question are really ECMed. The contrast in Case-marking on the benefactive NP before and after ECM in (11) illustrates this point. As we see in (11a), before ECM the benefactive NP is marked with Dat Case. Therefore, Acc Case on the benefactive NP in (11c) clearly shows that that benefactive NP is ECMed by the matrix verb.

(15) from Korean shows the same point. In (15), the embedded predicate is an idiomatic phrase *ton-i manh̃ta*. Since *manh̃ta* is an unaccusative verb and thus does not assign Acc Case to its object, as the sentence (15a) shows, the source of the Acc Case on the fronted object in (15b) cannot be the lower predicate *manh̃ta*, but must be the matrix verb *sayngkakhata* 'think', which can assign Acc Case. Therefore, (15b) clearly shows that objects as well as subjects can be ECMed in Korean.<sup>7</sup>

<sup>7</sup>We admit that many speakers find the sentence (15) unacceptable or very awkward at best. We'd like to clarify the following points concerning this problem. First of all, it seems that the subject of unaccusative predicates in Korean such as *ton-i manh̃ta* are not amenable to movement in general, as the following sentence show.

- (i) 'meli-ka [Chelswu-ka t<sub>i</sub>-nappwu-ta]  
 head-Nom Nom bad-Dcl  
 'Chelswu is stupid.'
- (ii) 'Na-nun [ton-i [Chelswu-ka t<sub>i</sub> manh-tako]  
 I-Top moncy-Nom -Nom much-Comp  
 sayngkakha-n-ta.  
 think-Prs-Dcl  
 'I think that chelswu has a lot of money.'

Although not as direct as Case marking, the fact that non-subject NPs in the preceding examples are really ECMed is evidenced by the fact that they can undergo various syntactic processes which are restricted to objects.<sup>8</sup> In Kipsigis, verbs agree with their objects. As we see in (12b), the ECMed embedded object triggers Object-Verb Agreement in the matrix clause as well as in the embedded clause; in (12b), the matrix verb as well as the embedded verb agrees with the embedded object (a first person pronoun), which shows that the embedded object is indeed ECMed. Moreover, in Niuean, the ECMed object can undergo various processes such as Quantifier Floating and Instrumental Advancement, which are restricted only to subjects and direct objects (Seiter 1980). In Korean and Imbabura Quechua, ECMed non-subjects as well as subjects can undergo further A-movement such as Passivization, as will be discussed shortly.

### 3.5. Non-Clause-Bounded ECM

The ECMed NP in these languages can undergo further A-movement such as Raising (ECM) and Passivization. Sentence (16) from Niuean (Seiter 1980) illustrates that an ECMed NP can be further raised (ECMed).

- (16) a. [<sub>CP1</sub> Kamata [<sub>CP2</sub> ke toka e is [<sub>CP3</sub> ke fakaho  
           begin      Suj let Erg he      Suj drive  
           he au e      motoka haana]]].  
           Erg I Abs car      his  
           ‘He’s beginning to let me drive his car.’

We think that there isn’t much difference in the (un)acceptability of (15b) and its un-ECMed version. If this is the case, the slight unacceptability of (15b) cannot be attributed to the problem with ECM.

Secondly, we think that there is a contrast between (15b) and the following sentence.

- (iii) \*Na-nun [Chelswu-ka ton-ul      manh-take]  
       I-Top          Nom money-Acc much-Comp  
       sayngkakha-n-ta.  
       think-Prs-Del.

Since *ton-ul* is in its original position in (iii), there is no way it can get Acc Case, which is assigned by the matrix verb.

<sup>8</sup>The details of the evidence of this kind are presented in Yoon (1991).

- b. [<sub>CP1</sub> Kamata [<sub>CP2</sub> ke toka e ia a au [<sub>CP3</sub> ke  
begin suj let Erg he Abs I suj  
fakaholo e motoka haana]]].  
drive Abs car his  
'He's beginning to let me drive his car.'
- c. [<sub>CP1</sub> Kamata a au [<sub>CP2</sub> ke toka e ia [<sub>CP3</sub> ke  
begin Abs I Suj let Erg he Suj  
fakaholo e motoka haana]]].  
drive Abs car his  
'He's beginning to let me drive his car.'

In (16), the subject of the most deeply embedded clause CP3, *he au* 'I' can appear not only in the intermediate clause CP2 but also in the matrix clause CP1, by successive cyclic Raising.

The following examples from Korean and Imbabura Quechua show that ECMed NPs, non-subjects as well as subjects, can be passivized.

Korean

Passivization of ECMed Subject

- (17) a. Na-nun [Chelswu-lul ttokttokha-tato] mit-nun-ta.  
I-Top Acc is smart-Comp believe-Prs-Dcl  
'I believe that Chelswu is smart.'
- b. Chelswu<sub>i</sub>-ka (na-uyhay) [t<sub>i</sub> ttokttokha-tako]  
Nom I-by is smart-Comp  
mit-(e)-ci-n-ta.  
believe-(e)-Pass-Dcl  
'Chelswu is believed to be smart.'

Passivization of ECMed Object

- (18) a. Na-nun [ton-ul Onasis-ka manh-tako]  
I-Top money-Acc Nom much-Comp  
sayngkakha-n-ta.  
think-Prs-Dcl  
'I think that Onasis has lots of money.'
- b. ton<sub>i</sub>-i (na-eyuyhay) [t<sub>i</sub> Onasis-ka manh-tako]  
money-Nom I-by Nom much-Comp  
sayngkak-toy-n-ta.  
think -Pass-Prs-Dcl

‘\*Money is thought (by me) that Onasis has a lot of.’

Imbabura Quechua (Jake & Odden 1979, Jake 1985)

Passivization of the ECMed subject

(19) a. chai jari-ca crin [yachachij warmi-man wawa-ta  
that man-Top believe-3 teacher woman-Dat baby-Acc  
carajuyta].

serves

‘The man believes the teacher is handing the baby to the woman.’

b. yachachij-ca jari cri -shca-mi [t<sub>i</sub> warmi-man  
teacher-Top man believe-Pass-Valid woman-Dat  
wawa-ta carajuyta].

baby-Acc serves

‘The teacher is believed by the man to be giving the woman the baby.’

Passivization of the ECMed direct object

c. wawa-ca jari cri -shca-mi [yachachij  
baby-Top man believe-Pass-Valid teacher  
warmi-man t<sub>i</sub> carajuyta].

woman-Dat serves

‘The baby is believed by the man for the teacher to be giving to the woman.’

In (17), the ECMed subject *Chelswu* was passivized and in (18), the ECMed object *ton* was passivized. Similarly, in the Quechua example (19), the embedded subject (b) and object (c), respectively, were passivized.<sup>9</sup>

Up to this point, we have presented the properties of ECM constructions in languages like Korean, Quechua, Niuean, etc., which are contrasted

<sup>9</sup> The fact that the ECMed NP in the languages we are discussing can undergo further A-movement such as Passivization might not seem different from that of the English-type ECM, since an ECMed NP in English can also undergo further A-movement such as Passivization as we see below.

- (i) a. I believe John to be a genius.  
b. John is believed to be a genius.

This last property, however, must be considered in the perspective of other properties of ECM constructions in the languages in question, such as non-string vacu-

with those of the corresponding constructions in English-type languages. In the following section, we review some previous accounts of the ECM constructions we are discussing, clarifying the theoretical problems which a proper analysis of those constructions faces.

#### 4. Previous Accounts

In Relational Grammar, ECM-like constructions in the languages we have seen in the previous section have been analyzed with a Raising rule which turns the subject (or the object, cf. Jake & Odden 1979, Seiter 1980, Jake 1983) of the embedded clause into an object of the matrix clause. But in the current GB theory, an operation like "Raising to object" is in direct conflict with the Projection Principle and is not allowed. Thus, the proper analysis of these "Raising" constructions within the GB framework poses difficulties. Among a few attempts to deal with this impasse is Massam's (1985) analysis of ECM in some Polynesian languages like Fijian and Niuean.<sup>10</sup> Below, we briefly examine the essential component of this analysis.

##### 4.1. ECM Movement

Since ECM in the languages in question is not string vacuous, one cannot simply import the exceptional Casemarking account for English for these languages. Therefore, Massam (1985) acknowledges that movement is involved in "ECM" in these languages.

The problem with positing movement, however, is the potential challenge of any movement analysis of ECM for the Projection Principle. Therefore,

ous ECM, ECM into finite CPs and ECM to non-subjects, which are clearly contrasted with the properties of the ECM constructions in English type languages. See section 7 for the impossibility of passivizing ECMed NPs in French. As for English, we believe that ECM in English differs from that in French in that it does not involve any movement.

<sup>10</sup> Another analysis which posits movement for the derivation of ECM constructions is Lefebvre and Muysken's (1988) analysis of ECM in Cuzco Quechua. Since ECM in Cuzco Quechua shows some of the properties of ECM we discussed, i.e., non-string vacuous ECM, ECM of non-subjects, etc., Lefebvre and Muysken posit movement for the analysis of ECM constructions, specifically, ECM-movement to a "COMP-like Case position" at the S''' level.

ECM “movement” cannot be movement to the direct object position.<sup>11</sup> As an alternative, Massam assumes that the landing site of ECM-movement is some Spec of CP: Massam posits an extra Specifier position above the CPm, which she calls “SPEC2” and hypothesizes that that position has the properties of both A and A’-positions.

In the following section, we first examine why Massam had to create an extra Spec position with ambiguous properties with respect to A/A’ and show why we cannot simply assume that the landing site of ECM-movement is an A’-position in the languages we are discussing. The need for this ambiguous Spec position comes from both empirical and theoretical considerations.

#### 4.2. “Mixed” Properties of ECM Movement

The main motivation for assuming an extra Spec position as the landing site of ECM-movement is that ECM-movement does not behave like typical A’-movement to the Spec of CP.

First of all, an obvious reason that ECM-movement cannot be considered normal A’-movement is the fact that an ECMed NP can undergo further A-movement such as Passivization in the matrix cycle, as we have seen in section 1.1.4 (relevant examples are repeated). This is not expected if ECM-movement is A’-movement, since A-movement of an NP from an A’-position will constitute an Illicit Chain (cf., Chomsky 1986, Deprez 1990).

##### Imbabura Quechua (Jake & Odden 1979)

##### Passivization of ECMed subject

- (20) a. *chai jari-ca yachachij-ta crin [t, warmi-man*  
           that man-Top teacher-Acc believe-3 woman-Dat  
           *wawa-ta carajuyta].*

<sup>11</sup> This, of course, is not a problem if we adopt the clausal structure Chomsky (1991, 1992) proposes, where Spec of Agr<sub>P</sub>, a non-thematic A-position, is available as the landing site of ECM-movement. Bowers (1990, 1993) also proposes a clausal structure which enables an actual raising of subjects to direct object positions. In his system, the position of direct objects, i.e., Spec of VP, is not always a theta position; thus, raising to that position does not create a problem with respect to the Projection Principle.

baby-Acc serves

‘The man believes the teacher is handing the baby to the woman.’

- b. yachachij<sub>i</sub>-ca jari cri -shca-mi [t<sub>i</sub> warmi-man  
teacher-Top man believe-Pass-Valid woman-Dat  
wawa-ta carajuyta].

baby-Acc serves

‘The teacher is believed by the man to be giving the woman the baby.’

#### Passivization of ECMed object

- (21) a. chai jari-ca wawa<sub>i</sub>-ta crin [yachachij  
that man-Top baby-Acc believe-3 teacher  
warmi-man t<sub>i</sub> carajuyta].

woman-Dat serves

‘The man believes the teacher is handing the baby to the woman.’

- b. wawa<sub>i</sub>-ca jari cri -shca-mi [yachachij warmi-man  
baby-Top man believe-Pass-Valid teacher woman-Dat  
t<sub>i</sub> carajuyta].

serves

‘The baby is believed by the man for the teacher to be giving to the woman.’

#### Korean

##### Passivization of ECMed subject

- (22) a. Na-nun [Chelswu-lul ttokttokha-tako] mit-nun-ta.  
I-Top Acc is smart-Comp believe-Prs-Dcl  
‘I think that Chelswu is smart.’

- b. Chelswu<sub>i</sub>-ka (na-uyhay) [t<sub>i</sub> ttokttokha-tako]  
Nom I-by is smart-Comp  
mit-(e)-ci-n-ta.

believe-(e)-Pass-Prs-Dcl

‘Chelswu is believed to be smart.’



- mitessta.  
 believed  
 ‘Chelswu believed that Yenghi was a genius.’
- b. Chelswu–nun [Yenghi–ka chencay–i–ess–tako] mitessta.  
     –Top           –Nom genius–Cop–Pst–Comp believed  
 ‘Chelswu believed that Yenghi was a genius.’

First of all, this shows that ECM-movement is different from normal A-movement, which is obligatorily triggered by the lack of Case. Secondly, the fact that ECM is optional means that the trace of ECM-movement is in a Case-marked position unlike the traces of typical A-movement.

According to the standard view that takes a Case-marked trace to be a variable, the trace left by ECM-movement must be a variable even though it does not behave like a variable in other respects. In fact, the chain formed by ECM-movement is unlike a typical A or A'-chain in the standard chain typology, since both the head and the tail of the chain are Case-marked.<sup>12</sup>

#### 4.3. Against Prolepsis (Base-Generation)

Faced with various problems with the movement analysis of ECM constructions under discussion, a major alternative is the base-generation approach to the derivation of ECM constructions. We call the base-generation to these constructions “Prolepsis”, following Massam (1985) and others. This analysis takes the ECMed NP to be base-generated as a thematic object of the matrix verb and is coindexed with the null pronoun in the embedded clause. Although this approach seems to be consistent with the Projection Principle and has the advantage of explaining the unboundedness of ECM since there is no locality constraint on coindexing, when we carefully consider the properties of the ECM-like constructions we have observed above, it becomes clear that this analysis is inadequate.

<sup>12</sup> If we assume that Case assignment is optional, we might be able to make the trace of ECM-movement fit into either an A or an A'-chain. However, considering the facts that it is government which underlies Case assignment and that government is a configurational notion, optionality of Case assignment becomes problematic. See chapter 4 of Yoon (1991) for arguments against optional Case assignment.

A simple argument against Prolepsis is this: although ECM can not be clause-bounded, it must be successive cyclic. The fact that ECM must be successive cyclic is clearly indicated by Object-Verb Agreement in Kipsigis and Niuean. In these languages, transitive verbs obligatorily agree in number with their direct objects.

Niuean (from Seiter 1980)

- (26) a. Kua hala e ia e la akau.  
 Perf cut Erg he Abs branch tree  
 'He cut down the branch.'
- b. Kua hahala e ia e tau la akau.  
 Perf cut, PI Erg he Abs PI branch tree  
 'He cut down the branches.'

Contrast (26)a, which has a singular object, with (26)b, which has a plural object.

In ECM constructions, the ECMed NP triggers Verb-Object Agreement on the matrix verb as well as on the embedded verb. This, of course, is a piece of evidence for the argumenthood of the ECMed NP, since only direct objects can trigger Object-Verb Agreement. In addition, Object-Verb Agreement provides us with a strong piece of evidence that the ECM constructions in question must involve movement and cannot be explained in terms of base-generation.

To see this, let us re-examine the Object-Verb Agreement pattern shown in the following pair of sentences from Kipsigis.

Kipsigis (Jake & Odden 1979, Massam 1985)

- (27) a. o -moc-i:n [ko-yay-in Kiplagat [ko-til-in  
 ls. want-2s 3s-make-2s Kiplangat(S) 3s-cut-2s  
 Mu:as]].  
 Musa(S)  
 'I want that Kiplangat make that Musa cut you.'
- b. \*o -moc-i:n [ko-yay Kiplagat [ko-til-in Mu:sa]].  
 ls. want-2s 3s-make Kiplangat(s) 3s-cut-2s Musa(S)  
 'I want that Kiplangat make that Musa cut you.'

In (27), if the ECMed object "you" can be base-generated as the object of the matrix verb "want" and is coindexed with the null pronoun in the most

deeply embedded clause, there is no reason why the verb in the intermediate clause should agree with the ECMed NP “you”.<sup>13</sup> In fact, if the Prolepsis analysis is right, we expect sentence (27)b with no agreement on the verb of the intermediate clause to be grammatical.<sup>14</sup> Since (27)b with an unbounded relation between the ECMed NP and the gap in the embedded clause is ungrammatical, we can conclude that ECM-constructions must involve actual movement and cannot be analyzed in terms of base-generation.

A comparable but different kind of base-generation approach to the derivation of ECM constructions is null operator movement analysis as in the following example in English.

(28) I want a book, [Op, [for [Mary to read t<sub>i</sub>]]].

Since this analysis involves movement as well as base-generation of the ECMed NP, the preceding argument against base-generation based on successive cyclicity of ECM-movement does not seem to hold.

However, there is a clear piece of evidence against this analysis, i.e., the Case-stacking data in ECM constructions in Korean and (Cuzco) Quechua.

#### Korean

(29) Na-nun [Chelswu-eykey-lul [ton-i manh-tako]  
 I-Top Dat-Acc money-Nom much-Comp  
 sayngkakha-n-ta].  
 think-Prs-Dcl  
 ‘I think that Chelswu has a lot of money.’

#### Cuzco Quechua (Lefebvre & Muysken 1988)<sup>15</sup>

(30) Mariya Xwancha-q-ta-n, muna-n [ e, platanu  
 Maria Juan -Gen-Acc-Af want-3 banana  
 ranti -nu -na-n-ta].  
 exchange Cis-Nom-3-Acc  
 ‘Maria wants Juan to buy bananas.’

In the preceding examples, the ECMed NP bears the Case assigned in the

<sup>13</sup> We are assuming that coindexing can be unbounded.

<sup>14</sup> This is so, unless coindexing is successive cyclic for some reason.

<sup>15</sup> Cis: cislocative, Af: affirmative

embedded clause before ECM as well as the Acc Case assigned by the matrix verb. In (29) from Korean, the ECMed NP, *Chelswu*, is marked with (inherent) Dat Case assigned by the embedded predicate, *manhta*, and in (30) from Cuzco Quechua, the ECMed NP, *Xwancha*, is marked with Gen Case assigned by the nominalized INFL of the embedded clause and Acc Case assigned by the matrix verb.

This Case-stacking phenomenon in ECM constructions is not expected in the null operator movement analysis. Since the ECMed NP should be base-generated as the thematic object of the matrix verb and is co-indexed with the null operator in the Spec of CP, the ECMed NP can only be marked with Acc assigned by the matrix verb, not the Cases assigned to the null operator in the embedded clause. Therefore, Case-stacking in ECM constructions provides us with a clear piece of evidence against the null operator movement analysis.

## 5. Towards a Solution

### 5.1. Sharpening the Problems

From the discussion in the previous sections, it is clear why Massam (1985) created an extra Spec position which is ambiguous between A and A'-positions. With this extra position as the landing site of ECM-movement, we might be able to explain the problematic properties of ECM we have discussed. However, it appears quite ad hoc to create an extra Spec position above the CP, motivated solely for ECM-movement.

The result that Massam wanted but could not quite succeed in ensuring is this: ECM movement seems to create a Chain with the properties of A-Chain, but given the following theoretical assumptions, such properties appear almost paradoxical:

- (i) A-positions are "potential argument" positions.
- (ii) Spec of CP is an operator/A' position.
- (iii) Traces of movement are subject to Binding principles –A-trace to BT –A and A'-trace to BT-C.
- (iv) "Typical" A-movement is triggered for Case reasons and is obligatory and local.
- (v) A'-positions are not potential Case-positions.

- (vii) Chains, in particular, A-Chains, should have a unique Case at the head of the chain (the Chain Condition of Chomsky 1981, 1986b: Case-marked traces are variables).

## 5.2. Proposal

The problems posed by the mixed properties of ECM-movement are similar to the problems and the theoretical difficulties raised in the analysis of Scrambling, namely the mixed properties of Scrambling with respect to the A/A' distinction that have been noted in recent literature (Webelhuth 1989, Mahajan 1989, 1990, etc.). We think that most of the theoretical difficulties listed above can be eliminated, once we give up a universalist typology of the A/A'-nature of non-theta positions and recognize that the criterial properties of A/A'-movement are empirical generalizations based on a limited set of data from English and similar languages. Crucially, the mixed properties of ECM-movement can be dealt with without creating an extra Spec position if the Spec of CP in the languages in question can be an A-position.

In short, our claim is as follows: ECM-movement is a movement to the Spec of CP, and the properties of ECM-movement can be attributed to the A-status of the Spec of CP in these languages.<sup>16</sup> Regarding the "mixed" properties, we will show that once ECM-movement is brought into consideration in the typology of Chain dependencies and once the criterial well-formedness conditions of Chains (A & A') are re-assessed, they are no

<sup>16</sup> In this paper, we have assumed that ECM-movement is the movement to Spec (CP), which we are claiming to be an A-position in certain languages, and have not posited a further Raising to an object position, due to the problem with the Projection Principle. As has been mentioned in footnote 10, however, we do recognize the fact that we can do away with this problem, if we adopt the clausal structure which posits non-thematic A-positions like Spec(Agr<sub>o</sub>P) (Pollock 1991; Chomsky 1991). Although we do not pursue this line of analysis in this paper, we think that assuming some non-thematic A-position such as Spec(Agr<sub>o</sub>P) and an actual Raising to it does not undermine our claim about the nature of Spec(CP) and that our claim about the nature of Spec(CP) carries over to it. This is because even if the final landing site of the ECM-movement is Spec(Agr<sub>o</sub>P), the movement still has to be via Spec(CP), an escape hatch out of a finite clause. If the Spec(CP) is universally an A'-position, this movement will always induce an illicit chain of A-A'-A configuration. See Yoon (to appear) for a full discussion on the analysis of ECM-movement in the minimalist framework.

longer problematic.

In the next section, we examine various theoretical aspects of our analysis of ECM constructions and show how our analysis can provide an explanation for the “mixed” properties of ECM-movement we have seen in the preceding section and how it can explain the difference between ECM in languages like Korean and ECM in languages like English.<sup>17</sup>

## 6. Various Theoretical Issues

### 6.1. ECM and the A/A'-Nature of Spec of CP

A crucial claim we make for the analysis of “mixed” properties of ECM-movement in languages like Korean, and the different properties of ECM constructions in different languages, is that the A/A'-nature of non-theta positions can vary across languages. In addition, we recognize the fact that criterial properties of each Chain type are empirical generalizations. The theoretical hurdles in (i)-(vii) that restricted Massam (1985) can be cleared, once we recognize that the nature of the Spec of CP position in languages varies. If this is the case, in languages where the Spec of CP is an A-position, the Spec of CP can act as an escape hatch for A-movement.

The way we determine whether a certain position can be an A-position in certain language is inductive and based on language-specific evidence.<sup>18</sup> For Korean and Japanese, it is well-known that they do not possess obligatory syntactic Wh-movement, even though they possess a fully developed complementizer (mood-marking) system. That is, even when a Wh-complementizer is selected, it does not trigger obligatory Wh-movement to its Spec. Moreover, even when Wh-NPs optionally move at S-structure, the movement differs from the normal operator movement in that it does not

<sup>17</sup> Although ECM-movement to the Spec of CP is a crucial component of our analysis of ECM constructions in some languages, we are not claiming that ECM in all languages involves movement. We believe that ECM in English does not involve movement and thus should be explained in terms of the standard IP-selection (or S'-deletion) type analysis. This is made clear when we compare ECM in English with that in French (section 7). See Yoon (1991) for more discussion.

<sup>18</sup> Since the position we are concerned with is the Spec of CP, we will restrict our discussion to this position. However, the same considerations extend to other structural positions.

show weak crossover effects ((26a) below), which are expected of operator movement such as Wh-movement in English (26b).

Korean

- (31) a. Nwukwu<sub>i</sub>-lul [caki<sub>i</sub>-uy emma -ka t<sub>i</sub> salangha-ni]?  
           who -Acc self-Gen mother-Nom love -Q  
           ‘Who does his mother love?’

English

- b. \*Who<sub>i</sub> does his<sub>i</sub> mother love t<sub>i</sub>?

On the basis of this fact, we can conclude that the Spec of CP is not an obligatory operator position, and therefore, not an A' position in these languages. On the other hand, these languages possess other types of constructions that positively indicate the Spec of CP/MP (mood phrase, cf. Whitman 1989) as a possible position for arguments at D-structure.

The construction we have in mind are the base-generate Topic/Focus constructions. Whitman (1989) showed that there is a dependency between C(Comp)/M(Mood) and Topic licensing. Therefore, it is natural to assume that (at least some) Topics occupy the Spec of CP/MP. However, Topics in Korean and Japanese need not be derived by movement. As is well-known, Korean and Japanese possess base-generated topic constructions.

Korean

- (32) kkoch-un cangmi-ka yepputa.  
       flower-Top rose-Nom is pretty  
       ‘As for flowers, roses are pretty.’
- (33) enehak-un Chelswu-ka tongsalon-ul cal anta.  
       linguistics-Top Nom syntax-Acc well know  
       ‘As for linguistics, Chelswu knows syntax well’.

Japanese

- (34) sakana-wa tai-ga oisii.  
       fish-Top red snapper-Nom tasty  
       ‘As for fish, red snapper is tasty.’

Thus, one must recognize the Spec of CP/MP as a possible base position for arguments. Saito (1989) was relying on this intuition when he designated positions adjoined to IP in Japanese and Korean as D-positions, different from the same positions in English.<sup>19</sup> We would like to translate his observa-

tion into the claim that such constructions (base-generated topic constructions), plus the lack of obligatory syntactic operator movement, justify designating the Spec of CP/MP as an A-position.

Ideally, the same kind of positive evidence should be available when one goes about determining the A/A'-nature of the Spec of CP in other languages. However, we do not think that the same set of evidence should be found in all languages where the Spec of CP functions as an A-position. What is crucial to us is that there exists some evidence, direct or indirect, which suggests the A-status of the Spec of CP.<sup>20</sup>

We take the facts of Korean and Japanese to constitute positive evidence that Universal Grammar must allow options of the Spec of CP being an A-position in some languages, but we do not necessarily demand the same sort of diagnostic properties for other languages. However, in the languages we claim have A-Spec(CP)'s, there is always a variety of phenomena which can be dealt with elegantly on the assumption that the Spec of CP is an A-position. In addition, there is no positive evidence in these languages indicating that the Spec of CP cannot be an A-position. We take these facts to be sufficient justification for treating Spec(CP) as an A-position.

To summarize, our claim is that the Spec of CP is not universally an A'-position (or A-position, cf. Deprez 1989, 1990) and that the the A/A'-nature of the Spec of CP in a given language can vary, depending on language-specific properties. Crucially, this claim opens the way for the explanation of A-properties of ECM-movement we have discussed; especially the fact that the ECMed NP can undergo further A-movement. Since the

<sup>19</sup> In Saito (1989), a D-position is defined as a position in which an NP can appear at D-structure and be licensed as a non-operator.

<sup>20</sup> Chomsky (1990) takes the Spec of IP to be [+L-related] and the Spec of CP to be [-t-related]. Although he does not provide any explicit criteria according to which this distinction is made, the intuition seems to be that functional categories that are expressed as intrinsic features of V, which typically translates into their affixal status, are L-related. In this sense, Comp in English is not L-related. As the comp particle is an affix in Korean and Quechua, our definition and Chomsky's converge on Korean and Quechua. However, we are not sure whether L-relatedness based on morphological considerations alone is sufficient. There are languages in our sample, such as Niuean, where Comp is separate from the verb and yet the Spec of CP exhibits A-properties.

landing site of ECM-movement, i.e., the Spec of CP, is an A-position in the languages in question, a further A-movement of the ECMed NP from this position does not induce an Illicit Chain.

## 6.2. ECM-Movement and Binding Theory

Another problem with analyzing ECM-movement as A-movement is the Binding Theory. If traces of movement are subject to the Binding Theory, and if traces of ECM-movement are NP-traces and thus subject to BT-A, the prediction is that ECM-movement should be restricted by the SSC (Specified Subject Condition) and TSC (Tensed-S Condition). Thus, we expect ECM-movement to be clause-bounded and only subjects to be ECMed. This cannot be the case if our preceding discussions are correct.<sup>21</sup> The fundamental question we have to address at this point is this—why should traces be subject to the Binding Principles, which are principles regulating relations of referential dependency between overt lexical NPs?

When we consider the history of the evolution of the binding principles and how these came to be generalized to traces, it becomes clear that there is no intrinsic reason why the distribution of traces should be regulated by the Binding Theory. This is so for the following reasons:

First, the assumption that traces should be governed by the Binding Principles was an empirical generalization. Binding Principles impose a locality condition and an asymmetric c-command condition on the relation between antecedents and anaphors. When it was found that the distribution of NP-traces was largely similar to that of lexical anaphors in English, the proposal was made that one could extend the Binding Principles to traces. The underlying intuition behind this extension is the methodology that Chomsky pursued explicitly in *Lectures on Government and Binding and Some Concepts and Consequences of Theory of Government and Binding*; that the typology of empty nominal categories should mirror those of lexical nominal categories.

The point we would like to make here is that although the binding conditions are taken as one of the criterial well-formedness conditions on traces and other empty nominal categories, they are empirical generalizations based on the data and there is no a priori reason why traces should be in-

<sup>21</sup> Similar problems of a binding theoretic nature arise with certain instances of long-distance A-Scrambling. See Yoon (1991) for further discussion.

trinsically connected to the Binding Principles.

Secondly, even if the Binding Theory is a definitive well-formedness condition on traces, there are no known instances where the Binding Theory alone is responsible for the ill-formedness of a given construction with traces. It has been pointed out repeatedly that the effect of the Binding Theory on traces of movement is mostly redundant with the ECP and moreover, it alone is not sufficient to guarantee the locality of NP-movement, as demonstrated by the well-known case of Super Raising (Chomsky 1986b, Lasnik & Saito (to appear), Rizzi 1990):

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

Note that in this example, it is not the Binding Theory which rules out the sentence. The subject *it* is coindexed with the infinitive clause *t to win*, and is thus not accessible to the NP-trace and therefore the binding domain for the NP-trace is the matrix clause. The fact that it is not a Binding theoretic problem which is involved in (35) is seen more clearly from the following sentence which is minimally different from (35) in that it has a lexical anaphor instead of an NP-trace.

(36) ?The men<sub>i</sub> believe that it is important for each other<sub>i</sub> to succeed.

Lasnik & Saito, therefore, conclude that sentence (35) is ruled out by the ECP.<sup>22</sup> Thus, it seems that as far as an NP-trace is concerned, no harm is done even if we exempt it from the Binding Theory. Although we are not concerned with *wh*-traces here, we think that *wh*-traces can also be exempted from the Binding Theory (Principle C).

### 6.3. ECM-Movement and Subjacency/ECP

If the conclusions we reached in the preceding section are correct, the difficulty of long-distance A-movement with respect to BT-A is no longer a problem. This, however, does not mean that ECM-movement can be unbounded. Our claim is that ECM-movement, although an A-movement, need not be clause-bounded as long as other principles of grammar, such as ECP, Subjacency, and other independent conditions on well-formed chains

<sup>22</sup> See Harbert (1984) for a different account of this difference between the NP-trace and lexical anaphors.

are not violated.

First, the following example from Kipsigis shows that although ECM-movement can be not clause-bounded, it has to be successive cyclic, obeying Subjacency.

Kipsigis (Jake & Odden 1979)

- (37) a. [<sub>CP1</sub> o-moc-i:n [<sub>CP2</sub> ko-yay-in Kiplagat  
1s. want-2s 3s-make-2s Kiplangat(S)  
[<sub>CP3</sub> ko-til-in Mu:sa]]].  
3s-cut-2s Musa(S)  
'I want that Kiplangat make that Musa cut you.'
- b. \*[[<sub>CP1</sub> o-moc-i:n [<sub>CP2</sub> ko-yay Kiplagat [<sub>CP3</sub> ko-til-in  
1s. want-2s 3s-make Kiplangat(S) 3s-cur-2s  
t, Mu:sa]]].  
Musa(S)  
'I want that Kiplangat make that Musa cut you.'

In (37), the object of the most deeply embedded clause (CP3) a second person pronoun, was raised to the matrix clause (CP1), as the Object-Verb Agreement shows. The difference between (37a) and (37b) is that in (37a), the movement was successive cyclic, whereas in (37b), it was not. Since Object-Verb Agreement is obligatory in Kipsigis, the lack of Object-Verb Agreement in (37b) shows that there was long-distance movement of the second person object from the Spec of CP3 to CP1 without passing through CP2. This is because if the object had moved to Spec of CP2, then it would be governed by the verb of CP2, thus obligatorily triggering Object-Verb Agreement on the verb. Therefore, the ungrammaticality of sentence (37b) is explained as a Subjacency violation just like any other long-distance movement.

As far as subjacency is concerned, the grammaticality of sentence (37a) is expected, since the ECM-movement is successive cyclic, as the Object-Verb Agreement indicates, and therefore there is no problem with Subjacency. But what about the ECP? How do the traces of ECM-movement in (37a) (and in general) satisfy the ECP? Here, we entertain a few possible explanations for this question.

Following Chomsky (1986b) and Rizzi (1990), let us assume that traces must be antecedent-governed as well as head-governed.

## (38) ECP

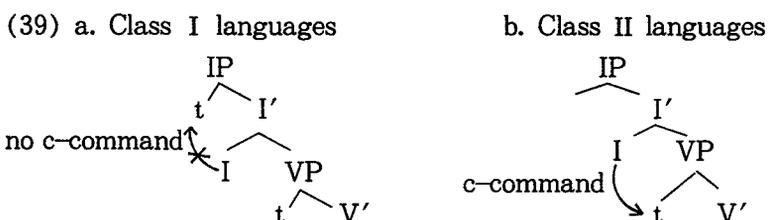
A non-pronominal empty category must be:

- (i) properly head governed (Formal licensing)
- (ii) antecedent governed (Identification)

First, let us consider the head-government condition of the ECP. Since subjects as well as non-subjects can undergo ECM-movement in the languages we are discussing, it must be the case that the head government requirements on subject traces are somehow satisfied.<sup>23</sup> Among the various explanations of the lack of subject/object asymmetry in extraction (Koopman & Sportiche 1988, Rizzi 1990, Huang 1990, etc.), we briefly review two proposals, one by Rizzi (1990) and the other by Huang (1990). Our goal here is not to provide a complete analysis of the subject/object asymmetry but to show that the lack of subject/object asymmetry in ECM-movement can be explained by the various proposals which are available in the current literature.

Rizzi (1990) explains the lack of subject/object asymmetry in extraction by adopting the VP-internal Subject Hypothesis (Kittagawa 1986, Koopman and Sportiche 1988, Diesing 1989, etc.) and requiring a trace to be head-governed "within the immediate projection of the head". In this analysis, the contrast in the extractability of subjects in different languages is explained in terms of the position of the subject at S-structure. In languages where the subject can stay in the VP-internal position (Class II languages in Koopman and Sportiche 1988, such as Korean, Japanese, etc.), the subject trace will be properly head-governed by INFL, since INFL head-governs the subject trace within its immediate projection. On the other hand, in languages where the subject must move to the Spec of IP at S-structure (Class I languages like English), the subject trace will not be properly head-governed, since INFL does not head-govern the trace within its immediate projection.

<sup>23</sup> As far as Korean is concerned, this property of ECM is consistent with the fact that Korean does not show any subject/object asymmetry in movement in general such as *wh*-movement (at LF) and Scrambling. Concerning other languages which allow objects to be ECMed, the prediction is that these languages also will not show subject/object asymmetry in extraction in general, although we could not check the validity of this prediction for each language.



Therefore, if the languages which show ECM constructions with the properties we discussed, such as Korean, Kipsigis, Quechua, etc., are Class II languages, then it is expected that the traces of subject extraction will satisfy the proper head-government condition.<sup>24</sup>

The analysis proposed in Huang (1990) is similar to Rizzi (1990) in that it also assumes the VP-internal Subject Hypothesis. Huang (1990), however, differs from Rizzi (or Koopman & Sportiche 1988) in that he recognizes the fact that the subject can be still extracted in Class II languages, even if the position of the subject at S-structure is the Spec of IP. This contrast between Class I languages and Class II languages is explained in the following way: since Nom Case can be assigned to the Spec of VP in Class II languages, the trace in the Spec of IP is an empty expletive, which does not have any function at LF and thus it can be deleted. Therefore, even if the subject is extracted from the Spec of IP, there is no ECP violation. In Class I languages, however Nom Case has to be assigned to the Spec of IP and therefore the trace in the Spec of IP cannot be deleted. If it is not deleted, the trace in the Spec of IP does not satisfy the head-government condition and therefore extraction of the subject is not possible in Class II languages.<sup>25</sup>

Up to this point, we have shown how the head-government requirement of the ECP can be satisfied for traces of ECM-movement. Now, let us turn to the antecedent government conditions of the ECP. A major problem with the antecedent government for the traces of ECM-movement seems to involve object traces. Specifically, if we adopt the Relativized Minimality Conditions in Rizzi (1990), the object traces left by ECM-movement will not be antecedent governed. This is because since we are assuming that the Spec of CP is an A-position and that ECM-movement is A-movement, ECM-

<sup>24</sup> Again, we admit that we could not check each language, except Korean, to get independent evidence for these languages belonging to Class II.

<sup>25</sup> See Huang (1990) for more detailed discussion.

movement of an object to the Spec of CP will violate the Relativized Minimality Condition; there is a closer antecedent governor, i.e., the subject.

To provide an answer for this problem, let us examine more closely the final formulation of the ECP in Rizzi (1990). As far as Wh-movement is concerned, there is a way the antecedent government requirement can be avoided according to Rizzi, i.e., by “binding”. In Rizzi (1990), for arguments with referential theta roles, the ECP is reduced to the head-government condition. His claim is that for arguments with referential theta roles, the connection between the antecedent and the trace can be made by binding as well as antecedent government, and therefore for the traces of arguments with referential theta roles the antecedent government requirement can be exempted.

Although this approach provides an explanation for long Wh-movement of arguments and the argument/adjunct asymmetry in long Wh-movement ((40a, b), below), as Rizzi notes, it cannot adequately deal with the strict locality of NP-movement, i.e., why NP-movement of arguments behaves differently from wh-movement; NP-movement involves the movement of arguments with a referential theta role, but it does not allow long movement, as we see in (40c) below.<sup>26</sup>

- (40) a. \*Which problem, do you wonder [how, [PRO to solve t, t<sub>i</sub>]]  
 b. \*How, do you wonder [which problem, [PRO to solve t, t<sub>i</sub>]]  
 c. \*The book, seems [that Hemingway wrote t<sub>i</sub>]

Faced with this problem, Rizzi proposes to attribute the strong locality of NP-movement to special properties of the NP-chain, i.e., to the fact that NP-chains, unlike Wh-Chains, involve the transmission of theta roles and Case, with an additional assumption that the transmission of theta roles and Case requires a locality condition, i.e., antecedent government. In this explanation, the strict locality of NP-movement is the result of the specific restriction on Case and theta role transmission involved in NP-chains.

Although it is not completely clear exactly what Rizzi meant by the “transmission of Case and theta roles” in NP-chains, let us examine the NP-chain formed by ECM-movement under this view. Since it seems that the

<sup>26</sup> See Rizzi (1990) for a full discussion on long Wh-movement.

crucial difference between NP-chains and Wh-chains involves the transmission of Case on the part of the NP-chains, let us concentrate on Case. Unlike the traces of A-movement such as Passivization, the traces left by ECM-movement are not Caseless, as we can see from the optionality of ECM-movement. This means that the chain formed by ECM-movement does not involve the transmission of Case. Therefore, if the reason why “long” NP-movement is not allowed is the transmission of Case involved in NP-chains, “long” ECM-movement should be possible, just like long Wh-movement.

A point we would like to make here is that there is a way the Relativized Minimality effects on movement can be avoided within Rizzi’s system; in addition, if the contrast between Wh-movement and NP-movement with respect to “long” movement is to be explained in terms of a special property of NP-chains, i.e., transmission of Case, as in Rizzi, there is a way ECM-movement can avoid the problem with Relativized Minimality.<sup>27</sup>

#### 6.4. Case Theory and A/A’-Chains

As we have already noted, the chain formed by ECM-movement is not consistent with the Chain Condition. First of all, the chain formed by ECM-movement bears multiple Cases, contrary to the Chain Condition, which mandates a unique Case per Chain. The effects of multiple Case on Chains in ECM is clearly reflected in the optionality of ECM-movement. Furthermore, the chain formed by ECM-movement is unlike a typical A-chain or

<sup>27</sup> It seems that there might be another way to solve the lack of relativized minimality effects on ECM-movement if we adopt the the minimalist framework of Chomsky (1992). Chomsky (1992) accounts for the problem of crossing induced by the raising of VP-internal subject to Spec(Agr<sub>s</sub>P) and raising of object to Spec(Agr<sub>o</sub>P) by assuming the expansion of minimal domain induced by the raising of verb to infl, and by sharpening the notion of “shortest movement” as follows:

If  $\alpha$ ,  $\beta$  are in the same minimal domain, they are equidistant from  $\gamma$ . ((15) in Chomsky (1992))

This means that if there is an overt (V-to-C movement, raising of the object in Spec(Agr<sub>o</sub>P) over the subject in Spec(Agr<sub>s</sub>P) does not cause a problem with economy or relativized minimality. A potential problem with this approach is the one similar to the problem mentioned in footnote 20 concerning L-relatedness, i.e., whether the infl in all the languages with long-distance ECM-movement has the affixal status.

A'-chain: in A-chains, it is the head which is Case-marked, and in A'-chains, it is the tail which is Case-marked. In the Chain formed by ECM-movement, however, both the head and the tail of the Chain may be Case-marked.

The need for allowing multiple cases on a single chain and its theoretical consequences are dealt with in Yoon & Yoon (1990) and Yoon (1991). Due to the lack of space, here, we simply mention these problems and assume the following:

1. More than one Case can be assigned to a Chain, contrary to the Chain Condition, as long as each link of a Chain has a unique Case. Crucially, this will be justified on the basis of Case-stacking in languages such Korean and (Cuzco) Quechua.
2. There are some universal or language-specific constraints on Case realization on Chains with multiple Cases.
3. There is no intrinsic dependency relation between Case Theory and Chain types, as is commonly assumed. Case property is not a determining factor in distinguishing Chain-types and an A-movement is not always triggered by Case-theoretic reasons.

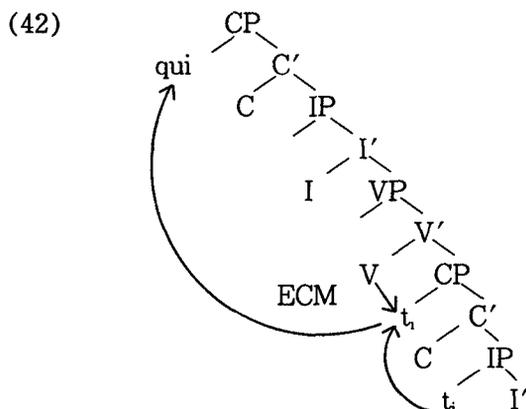
## 7. Further Evidence for the Analysis: ECM in French

In contrast to the ECM in languages we have considered so far which have A-Spec(CP), ECM in French is very restricted; it is possible only to [+wh] NPs of non-finite complement clause.

- (41) a. \*Je crois [Jean être malade.]  
           I believe           be sick  
           'I believe John to be sick.'
- b. Qui crois-tu [t être intelligent?]  
           Who believe-you be intelligent  
           'Who do you believe to be intelligent?'

First of all, the Wh-restriction on ECM in French is expected in our analysis if the Spec of CP in French is a A'-position reserved for operators. If the complement clauses embedded under the ECM verbs are CPs, due to the locality condition on Case assignment, only the elements in Spec of CP can

be ECMed. Thus, if Spec of CP in French is reserved only for +wh-elements, it is predicted that only +wh-elements can be ECMed, since only +wh-elements can move to Spec of CP. This is exactly the case in French as we saw in (41). Thus, following will be the structure for (41b).



Since the Spec of CP is open to any +wh-elements, in principle, we expect that not only +wh-subject but also +wh-objects should also be ECMed in French. This however is not clear since the Case assigned to the object in Spec of CP in the same as the Case assigned by the lower verb.

Concerning this +Wh-restriction, our prediction is that it will hold for all and only the languages which have a A'-Spec of CP. As we have already seen, languages like Korean which we argued have an A-Spec (CP) do not show this restriction. This prediction is also borne out by the same type of Wh-restriction on ECM found in some dialects of British English (Massam 1985). Since English is a language with A'-Spec (CP), it is expected that only +wh NPs can be ECMed if the complement clause is CP.

- (43) a. Whom<sub>i</sub> do you think [<sub>CP</sub> t<sub>i</sub> [<sub>t<sub>i</sub> is honest</sub>]]?  
 b. \*John thinks [<sub>CP</sub> [<sub>IP</sub> him is honest].

Since the complement clause is CP, the only way the subject can be ECMed in (43) is if it is moved to Spec of CP (locality condition on Case assignment). However, since the subject is -wh, it cannot move to Spec of CP and thus it is predicted that it cannot be ECMed by the verb.

Now turning to the impossibility of ECM into finite clauses in French, we attribute this restriction to a language-specific requirement on Operator-variable structures that the Case assigned to the Operator and the variable

must agree, following Massam (1985):

- (44) In an A'-chain: (op, ·· t<sub>n</sub>, t<sub>n-1</sub>, ·· t<sub>i</sub>),  
 The Case realized on Op must match the Case of t<sub>i</sub>:  
 In the unmarked case, i=1

This is because nothing in principle prevents the assignment of Case from the matrix verb to Spec of CP and because even among the languages with A'-Spec(CP) we do find languages like a dialect of British English which allow ECM into finite clauses.

Another prediction of our analysis of French is that ECMed NPs cannot be passivized. Since the Spec of CP in French is an A'-position, once an NP moves to the Spec of CP, it can no longer undergo further A-movement because it will result in an illicit chain of A-A'-A. This prediction is borne out in French. In French, ECMed NP cannot be passivized.

- (45) \*Qui<sub>i</sub> est cru [t<sub>i</sub> [t<sub>i</sub> être malade]]?  
 Who is believed be sick  
 'Who is believed to be sick?'

Note that this is contrasted with the possibility of an ECMed NP in languages like Korean, Quechua, Niuean, etc., which we argued have an A-Spec(CP), providing us with another piece of evidence for our analysis.

## 8. Conclusion

In this paper, we showed that non-clause-bounded A-movements do exist in some languages through the cross-linguistic study of ECM-constructions. Concerning the various theoretical problems these constructions cause in the standard GB-theory, we tried to show how they can be solved by assuming different perspectives on various principles of the theory. Our major claim, among others, was that the A/A'-nature of Spec(CP), which is considered to be universally an A'-position, should be language-specific, i.e., in certain languages, they can be an A-position.

To summarize, the essentials of our analysis of ECM constructions are as follows:

- (i) The A/A'-status of a non-thematic position, specifically the Spec of

CP, can vary across languages. Thus, Spec of CP in some languages is in an A-position.

- (ii) In languages where the Spec of CP is an A-position, ECM constructions show unique properties which are not found in languages where the Spec of CP is an A'-position like English; ECM into a finite CP, non-subject ECM and the optionality of ECM are some of these properties.
- (iii) In languages where the Spec of CP is an A-position, ECM-movement can proceed through the Spec of CP and from this follow the properties of ECM constructions in these languages, which are different from those in languages where the Spec of CP is an A'-position such as English and French.
- (iv) The apparent mixed properties of ECM-movement in those languages are explained as the result of Spec of CP being an A-position and additional but necessary theoretical assumptions such as: Traces of movement are not subject to Binding Theory, and the Chain Condition is not valid.

## Abbreviations

Abs : absolutive	Nml : nominalizer
Acc : accusative	Obj : object
Af : affirmative	Pass : passive
Ben : benefactive	Prs : present
Cis : ciscolative	Pst : past
Cop : copular	2S : second person singular
Comp : complementizer	Sub : subject
Dcl : declarative	Suj : subjunctive
Erg : ergative	Top : topic
Fut : future	Q : question
Gen : genitive	Valid : validator
Nom : nominative	

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