

Korean ECM Constructions and Cyclic Linearization

DONGWOO PARK

University of Maryland, College Park

1 Introduction

One of the peculiar properties of the Korean Exceptional Case Marking (ECM) constructions is that the embedded subject can occur with either a nominative marker or an accusative marker. Another peculiarity comes from the fact that the embedded sentence is a finite CP headed by a complementizer ‘*la/ta-ko*’. These points are illustrated in (1).

- (1) *Salamtul-i tolkolay-ka/lul ttokttokha-ta-ko mit-nun-ta.*
people-NOM dolphin-NOM/ACC clever-D-C believe-PRES-D
‘People believe dolphins to be clever.’

Following Postal (1974), Kuno (1976) and Lasnik and Saito (1991), researchers have suggested that the embedded subject in ECM construction in Korean and Japanese raises to the matrix clause and gets accusative case in an A-position in the matrix clause (Hong and Lasnik (2010) for Korean and Tanaka (2002) for Japanese, among many others).

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However, this movement approach has some problems. First of all, there is no consensus on where the moved embedded subject lands. In addition, according to phase theory (Chomsky 2000, 2001), the embedded subject must first move to embedded Spec, CP to move out of embedded CP. This causes improper movement, forming an A-A'-A chain.

This paper suggests that, in Korean, there is a semantically vacuous Functional Phrase (FP) between ν P and VP to which the direct object and the accusative marked ECM subject move from the perspective of Fox and Pesetsky's (2005) Cyclic Linearization (CL). In addition, I will propose that accusative marked ECM subjects move from the embedded subject position to the matrix clause without landing in Spec, CP, which is possible under the assumption of CL, rejecting the Phase Impenetrability Condition (PIC).

2 FP between ν P and VP

Even though the existence of Object Shift (OS) in Korean is controversial, the following examples indicate that Korean has OS.

- (2) a. Na-nun Tom-man-ul manna-ci ani-ha-ess-ta.
 I-TOP Tom-only-ACC meet-ci not-do-PAST-D
 'It is only Tom that I did not meet.' (only > not)
 'It is not the case that I met only Tom.' (only < not)
- b. Na-nun sakwa-lul sey-kay mek-ci ani-ha-ess-ta.
 I-TOP apple-ACC three-CL eat-ci not-do-PAST-D
 'It is three apples that I did not eat.' (three > not)
 'It is not the case that I ate three apples.' (three < not)

If it is assumed that the object first merges with the verb, constituting VP, and that the VP combines with the long form negation 'ani (not)', in order to get the first interpretation in each sentence in (2), the object must move higher than the negation.

Chomsky (1995) suggests that any functional phrase which does not have semantic contribution (i.e. interpretable feature) must be rejected. If this suggestion is right, the potential landing site of the shifted object would be either Spec, VP or Spec, ν P. However, I will show that both cannot be appropriate landing sites.

If the object moves to Spec, VP, it causes an empirical problem. I will assume that long form negation 'ani' is a head of NegP, located higher than VP, following Han et al. (2007). Given this assumption, in order for both sentences in (2) to get the first interpretation, the object has to move out of VP and higher than NegP, as well.

If the landing site of the shifted object is Spec, ν P, this causes a non-trivial problem under CL. In (3), the object is located at the sentence initial

position through scrambling, preceded by the OS. I will assume that the Numeral Quantifier (NQ) ‘sey-kay’ is attached to the object after the OS following Bošković’s (2004) generalization that quantifiers cannot be attached to nominals in θ -position, and thus cannot be floated in θ -position.

- (3) Si-lul_j Tom-i t’_j sey-kay [v_P t_j ssu]-ess-ta.
 poem-ACC Tom-NOM three-CL write-PAST-D
 ‘Tom wrote three poems.’

Suppose that the object in (3) first moves to Spec, vP as OS. This can be illustrated as in either (4a) or (4b). In (4a), the external merge of the subject in Spec, vP is followed by the movement of the object. On the other hand, in (4b), the former is preceded by the latter.

- (4) a. [v_P [DP Obj_i NQ_{obj}] [v_P Subj [v_P t_i V] v]]
 b. [v_P Subj [v_P [DP Obj_i NQ_{obj}] [v_P t_i V] v]]

Under CL, the word order of (3) must be determined within vP, when it is assumed that vP is a Spell-out domain in Korean, following Ko (2005b). In order for (3) to be generated from (4a), the subject must move over the shifted object and the object must move over the shifted subject. Meanwhile, the object in (4b) must move to Spec, vP over the subject to get the right word order. However, these movements are not allowed, when I adopt the suggestion by Chomsky (2000, 2001) - a probe can search a goal only in its c-command domain. Suppose that *v* is a probe and triggers movement in (4). The subject and the object in (4a), and the object in (4b) are not in the c-command domain of *v*. Thus, they cannot move to the higher specifier position within vP, so the word order of (3) cannot be generated if the shifted object lands in Spec, vP.

I propose that there is a FP between vP and VP. I will show that the FP is indispensable to capture the right word order under CL, even if it does not have any semantic contribution, contra Chomsky (1995). The existence of FP can generate the word order in (3) as follows.

- (5) a. [v_P Subj [FP [DP Obj_i NQ_{obj}] [v_P t_i V]] v]]
 b. [v_P Obj_i [v_P Subj [FP [DP t’_i NQ_{obj}] [v_P t_i V]] v]]

The object is base-generated as a complement of V and undergoes OS to Spec, FP where the numeral quantifier is attached to the object as in (5a). Then, the object moves further to Spec, vP, stranding its quantifier as in (5b). I will assume that FP is located higher than the NegP if the negation ‘ani’ is

introduced in the derivation. Then, the object moves out of VP and moves to the Spec, FP over the negation. This is illustrated in (6).

(6) [_{VP} Subj [_{FP} [_{DP} Obj_i (NQ_{obj})] [_{NegP} [_{VP} t_i V] *ani*] F] v]

This can explain the scope interpretation where the ‘man (only)’ and ‘sey-kay (three-CL)’ take scope over the negation in (2a) and (2b), respectively. A question that arises here is how the focus marker and the numeral quantifier take scope below the negation. I will follow Lasnik (2001), suggesting that the scope ambiguity can result from optional OS. F has an EPP, which triggers the movement of the embedded subject. The optional OS is reducible to the optional existence of FP. That is, if FP exists, the OS must occur, while it cannot occur if FP does not exist between vP and VP.

There is independent evidence for the existence of FP. The distribution of ‘ppalli (quickly)’ is problematic in the v-VP system under CL.

(7) Tom-i si-lul ppalli sey-kay ssu-ess-ta.
 Tom-NOM poem-ACC quickly three-CL write-PAST-D
 ‘Tom wrote three poems quickly.’

Suppose that ‘ppalli (quickly)’ is left-adjoined to VP, and the object moves to Spec, vP (OS to Spec, VP is impossible, as I showed before). If the numeral quantifier is attached to the shifted object, ‘ppalli (quickly)’ should be preceded by the numeral quantifier as in (8), which cannot capture the word order of (7).

(8) [_{VP} Subj [_{vP} [_{DP} Obj_i NQ_{obj}] [_{VP} *ppalli* [_{VP} t_i V]] v]]

Now, suppose that ‘ppalli (quickly)’ is located within vP as in (9). In order to get the right word order, the object has to move to Spec, vP between the subject and ‘ppalli (quickly)’. However, this movement cannot occur, since the object is not in the c-command domain of the probe v.

(9) [_{VP} Subj *ppalli* [_{vP} [_{DP} Obj_i NQ_{obj}] [_{VP} t_i V] v]]

If FP exists between vP and VP, and if ‘ppalli (quickly)’ is left-adjoined to FP, the the word order of (7) can be explained straightforwardly. As in (10), the movement of the object to Spec, vP is followed by the merge of the subject. Thus, the existence of FP can provide the appropriate position where manner adverbs are generated.

(10) [_{VP} Subj [_{vP} Obj_i [_{FP} *ppalli* [_{FP} [_{DP} t'_i NQ_{obj}] [_{VP} t_i V] F]] v]]

(11a) and (11b) show a scope interpretation contrast. In the case of (11a), the focus marker can take scope either over or below the matrix negation. On the other hand, in (11b), the focus marker takes scope only below the matrix negation. This contrast indicates that the accusative embedded subject can move to the matrix clause, while the nominative embedded subject must remain in the embedded CP.

- (11) a. Tom-i Mary-man_i-ul [_{CP} t_i ttokttokha-ta-ko]
 Tom-NOM Mary-only-ACC clever-D-C
 mit-ci ani-ha-ess-ta.
 believe-ci not-do-PAST-D
 ‘It is only Mary that Tom thought was not clever.’
 ‘Tom believed that it is not the case that only Mary was smart.’
- b. Tom-i [_{CP} Mary-man-i ttokttokha-ta-ko]
 Tom-NOM Mary-only-NOM clever-D-C
 mit-ci ani-ha-ess-ta.
 believe-ci not-do-PAST-D
 *‘It is only Mary that Tom thought was not clever.’
 ‘Tom believed that it is not the case that only Mary was smart.’

The reason the embedded subject in (11a) can move to the matrix clause is that the subject is active in the embedded CP, since its uninterpretable case feature is not deleted before the matrix *v* assigns accusative case to the embedded subject (I will assume that, in this case, the embedded subject cannot receive nominative case from T for some reason). On the other hand, the embedded subject in (11b) is inactive within the embedded CP, because the embedded T assigns nominative case to the subject.

Given that FP exists between *v*P and VP, the following ECM sentence indicates that the accusative case marked ECM subject moves to matrix Spec, FP, to satisfy an EPP on F.

- (12) Ceyca_i-lul Kim-kyoswu-nun twu-myeng
 student-ACC Kim-professor-TOP two-CL
 [_{CP} t_i ttokttokha-ta-ko] mit-ci ani-ha-ess-ta.
 clever-D-C believe-ci not-do-PAST-D
 ‘It is two students who Prof. Kim thought were not clever.’
 ‘Prof. Kim believed that it is not the case that two students were clever.’

The sentence in (12) shows scope ambiguity just like those in (2). In addition, in order to get the right word order where the subject is located

between the object and its numeral quantifier just like (3), the ECM subject must move first to Spec, FP over NegP.

3 ECM Subjects Move Without Landing in Embedded Spec,CP

In the previous section, I proposed that FP exists between vP and VP , and the accusative ECM subject moves to Spec, FP in the matrix clause.

As in (13), the accusative ECM subject which moved to Spec, FP in the matrix clause can move to Spec, TP in a passive sentence.

- (13) a. *Salamtul-i Sam_i-ul [_{CP} t_i ttoktokha-ta-ko] mit-nun-ta.*
 people-NOM Sam-ACC clever-D-C believe-PRES-D
 ‘People believes Sam to be clever.’
 b. *Sam_i-i [_{FP} t’_i ... [_{CP} t_i ttoktokha-ta-ko] mit-e ci-n-ta.*
 Sam-NOM clever-D-C believe-PASS-PRES-D
 ‘Sam is believed to be clever.’

If the ECM subject in (13b) moves from Spec, FP to Spec, TP, then Spec, FP must be an A-position, given the assumption that subjects in passive sentences move to Spec, TP through the A-position.

If the ECM subject which is generated in the embedded clause moves out of embedded CP to matrix Spec, FP via Spec, CP, this is an improper movement. To avoid this problem, Tanaka (2002) suggests that Japanese ECM verbs take CP whose head can license an A-position at its edge. However, I will show that this cannot be applied to Korean.

In order to resolve the improper movement problem, I propose that accusative ECM subjects move to the matrix clause without landing in Spec, CP. If the embedded subjects raise from the embedded subject position to matrix Spec, FP in one fell swoop, this allows further A-movement and the sentence (12b) can be generated. There is an independent motivation for this proposal. I will assume here that the movement of the embedded subject to embedded Spec, CP is scrambling. First of all, according to Abels (2007), there is a movement hierarchy as in (14).

- (14) A-movement \ll scrambling \ll wh-movement \ll topic movement

In this hierarchy, the symbol ‘ \ll ’ stands for precedence of movement. Thus, the preceding movement feeds the following one, but not vice versa. This implies that scrambling cannot precede A-movement. If this is true, the movement of the embedded ECM subject to Spec, CP in the embedded clause followed by that to Spec, FP in the matrix clause is prevented. That is, scrambling cannot precede A-movement. The embedded subject must move to the matrix clause without moving to embedded Spec, CP.

As I proposed, if the ECM subject does not pass through the embedded Spec, CP, this violates Chomsky's (2000) *Phase Impenetrability Condition* (PIC), given that the embedded CP in the Korean ECM construction is a phase. However, this movement is possible with the assumption of CL. This is because the movement does not change the word order that is fixed in the embedded CP Spell-out domain. This is an interesting diverging point between PIC and CL, even though both explain the mechanism of successive cyclic movement. From the perspective of PIC, in order for any element to move out of embedded CP, it must pass through Spec, CP. On the other hand, under CL, it does not have to pass through Spec, CP as long as the order of words fixed in Spec, CP is maintained in the next higher Spell-out domain. The derivation of (15a) can be described as in (15b).

- (15) a. Tom-i John-ul cwuk-ess-ta-ko mit-nun-ta.
 Tom-NOM John-ACC dead-PAST-D-C believe-PRES-D
 ‘Tom believes that John was dead.’
- b. Tom-i [_{VP}... [_{FP} John_i-ul [_{CP} [_{TP} t_i [_{VP} cwuk]-ess]-ta-ko]] mit-nun-ta.
 John < cwuk *John < cwuk* ⇒ *order preservation*

In (15b), when the embedded CP Spell-out domain is completed, and the word order of elements within CP is fixed, ‘John’ precedes ‘cwuk’. Even if the embedded subject ‘John’ moves to the matrix clause without landing in embedded Spec, CP, ‘John’ is followed by ‘cwuk’ at the point where the higher Spell-out domain *vP* is completed, preserving the word order of the two fixed in the embedded CP. Thus, (16a) is ruled in under CL.

If this analysis is on the right track, it can be predicted that when some element is located in embedded Spec, CP, the ECM subject cannot move to the matrix clause. This is because the word order fixed in the embedded CP is not preserved in the higher Spell-out domain. This can be illustrated in (16). When the embedded CP is completed, XP located in Spec, CP is followed by the ECM subject. On the other hand, if the ECM subject moves to the matrix clause without landing in Spec, CP, the ECM subject is followed by XP at the point where the next higher Spell-out domain *vP* is completed. This results in order contradiction, so the derivation is ruled out.

- (16) Subj [_{VP} ... ECM Subj_i [_{CP} XP [_{TP} t_i ...] C] ... v]
 ECM subj < XP XP < ECM Subj_j ⇒ *order contradiction*

This prediction is borne out from the contrast in interpretation between (17) and (18). In (17), the interpretation that ‘why’ modifies the embedded predicate is possible, while the same interpretation is not available in (18). In both sentences, the interpretation that ‘way (why)’ can modify the matrix

predicate is possible. I suggest that two interpretations result from two distinct structures even though they have the same surface string, and the unavailability of certain interpretations is due to structural ill-formedness.

- (17) Salamtul-i John-*i* way michi-ess-ta-ko mit-ess-ni?
 people-NOM John-NOM why crazy-PAST-D-C believe-PAST-Q
 ‘Why_i did people believe [that John was crazy t_i]?’
 ‘Why_i did people believe [that John was crazy] t_i?’
- (18) Salamtul-i John-*ul* way michi-ess-ta-ko mit-ess-ni?
 people-NOM John-ACC why crazy-PAST-D-C believe-PAST-Q
 ‘??*Why_i did people believe [that John was crazy t_i]?’
 ‘Why_i did people believe [that John was crazy] t_i?’

Assuming that ‘way’ is an adverb base-generated in Spec, CP, as proposed by Ko (2005a), (19a) and (19b) describe the structures which correspond to the first interpretation and the second interpretation in (17), respectively.

- (19) a. Salamtul-i [_{vP} ... [_{CP} John-*ik* [_{CP} way [_{TP} t_k michi-ess-ta-ko]]]] ...
 b. [_{CP} Salamtul-*ij* [_{CP} John-*ik* [_{CP} way [_{TP} t_j [_{vP} t_k ... [_{CP} t_k michi-ess-ta-ko]]]]]]]] ...

In (19a), ‘way (why)’ is generated in the embedded CP. The embedded subject moves to Spec, CP in the embedded clause as scrambling. This indicates that, unlike English, Korean does allow multiple specifiers in CP. Since ‘way (why)’ and the embedded predicate are in the same clause, the former can modify the latter. In (19b), ‘way (why)’ is generated in the matrix Spec, CP, and both matrix and embedded subjects move over ‘way (why)’.

Meanwhile, the first interpretation is not available in (18). If Tanaka’s analysis based on PIC were right, and if the accusative case marked subject moves first to embedded Spec, CP over ‘way’ and moves further to matrix clause, there would be no reason for the unavailability of the interpretation.

However, my analysis can explain it straightforwardly. If the embedded subject moves from the embedded clause to matrix clause without landing in the embedded Spec, CP, the derivation can be illustrated as in (20).

- (20) Salamtul-un [_{vP} ... [_{FP} John-*ul*... [_{CP} way [_{TP} t_k michi-ess-ta-ko]]]] ...
John < way *way < John* ⇒ order contradiction

When the embedded CP is completed, ‘John’ follows ‘way’. However, in the higher Spell-out domain, namely matrix vP, the word order between ‘John’ and ‘way’ is reversed, which results in the order contradiction. Consequently, this derivation is ruled out by the assumption of CL.

However, in the case of the second interpretation in (18), ‘way (why)’ is generated in the matrix clause, and the matrix subject and the accusative embedded subject which moved out of CP to matrix Spec, FP moves further to matrix Spec, CP over ‘way (why)’.

4 Concluding Remarks

In this paper, I proposed that there must exist a FP between vP and VP, and FP provides a place for the shifted object, the accusative marked ECM subject, and some manner adverbs. In addition, I suggested that the ECM subject that moves out of embedded CP must not pass through the embedded Spec, CP, which is explained by adopting CL, while rejecting the PIC.

One might ask the difference between FP and AgroP, which is introduced in Chomsky (1991). He proposed that objects covertly move to Spec, AgroP to get accusative case. However, I suggest that the object and the ECM subject move to Spec, FP overtly, and they do not receive case from F, but from v . In the dative subject construction as in (21), the object gets nominative case from T, according to Ura (1999).

- (21) Phen-i Tom-eykey twu-calwu pilyoha-ta.
 pen-NOM Tom-DAT two-CL need-D
 ‘Tom needs two pens.’

This sentence has the same structure as (3) except for case marking. In order to get this word order, FP between vP and VP is needed, as I suggested to explain the word order of the sentence in (3). If F assigns accusative case just like Agro, the theme, namely ‘phen (pen)’ in (21) must not be nominative case marked but accusative case marked. I assume that, in this sentence, v , which subcategorizes VP headed by a special predicate ‘pilyoha (need)’ does not have an ability to assign accusative case, and this is why the theme can get nominative case from T. In this sense, FP is Lasnik’s (1995, 2001) AgroP in that, in his analysis, the object moves to Spec, AgroP due to EPP on Agro, and receives accusative case from V located higher than AgroP, which contrasts with Chomsky’s (1991) AgroP.

In brief, this paper shows that CL provides evidence that FP is necessary between vP and VP, and CL is superior to PIC in explaining the movement of the accusative embedded subject in the Korean ECM construction.

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