A Discontinuous A-Chain: A Case from Super-Equi Constructions*

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Lee, Jeong-Shik. (2015). A Discontinuous A-Chain: A Case from Super-Equi Constructions. The Linguistic Association of Korea Journal 23(3), 1-15. This paper develops discussions that suggest an apparent discontinuous A-chain of the form, namely, X_i [it t_i ], in cases of long distance control in Super-Equi constructions in English. This chain is implemented under a particular analysis of PRO in control constructions as a reflexive clitic that moves toward its antecedent (Lee 2009). It is shown that Hornstein's (1999) A-movement approach and Landau's (2001) PRO-based Agree approach cannot realize this chain. Thus the current reflexive clitic movement approach offers a uniform movement analysis of control phenomena, local or non-local, reducing the control module to the theory of binding.

Key Words: PRO, control, binding, Agree, Super-Equi, discontinuous A-chain

1. Introduction

There have been lots of debates on how to deal with control in recent generative grammar (since Chomsky 1981). One of the main concerns has been about whether the control module should independently exist (e.g., Agree-based approach in Landau 2001, 2003) or reduce to another module such as movement (e.g., Raising approach in Hornstein 1999; Boeckx and Hornstein

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2004, among others). Different analyses (to be introduced in the next section) were proposed, which were motivated from the short distance, or local, control phenomenon found in the configuration, typically, [... NP ... V ... [PRO]], in which a matrix NP locally controls the PRO subject in its complement clause:

(1) John tried [PRO to win the game].

Those analyses, however, have problems with their own, as discussed in Lee (2009), who advances an analysis of control as anaphor movement (to be introduced in the next section). This paper adopts the analysis of control proposed by Lee (2009) and attempts to extend this analysis in dealing with long distance, or non-lcal, control observed in Super-Equi constructions from English. The following example serves as one particular case in point:

(2) Eric_i insisted that it would be ridiculous [PRO_i to call for help].

Under the analysis of control as anaphor movement, the long distance control fact in (2) will be analyzed as involving a discontinuous A-chain that is apparently separated by an expletive element *it*:

(3)
$$X_i$$
 [it t_i ]

Theoretical and empirical pieces of evidence will be provided in favor of the existence of this chain. I will show that existing analyses, e.g., Landau's Agree-based approach and Hornstein's Raising approach, cannot realize the long distance control facts properly.

Consequently, it will be shown that unlike previous studies, this paper offers a uniform movement analysis of control phenomena, local or non-local, and that the control module is reduced to binding.

This paper is organized as follows. In section 2, previous attempts to reduce control, here short distance control, are introduced, with their merits and demerits mentioned. In section 3, long distance control found in Super-Equi constructions from English is introduced, and problems with the previous

analyses are uncovered. In section 4, it will be shown that the advocated analysis of control as anaphor movement offers a viable solution to the problems. Particularly, the existence of an apparent discontinuous A-chain is argued for. Finally, section 5 summarizes the paper.

2. Reducing Control

It has been a recalcitrant problem whether the control module can be reduced to some other principle, e.g., movement or binding, in generative grammar. Traditionally, typical control constructions are represented as in (1), repeated below, where the understood subject in the embedded infinitive clause appears as PRO, which is locally controlled by the matrix subject:

(1) John tried [PRO to win the game].

In the Government and Binding theory (Chomsky 1981), PRO is a pronominal as well as an anaphor and thus it needs to satisfy Condition A and B of the binding theory, inevitably leading to the PRO theorem, according to which PRO in (1) is assumed to be ungoverned by the matrix verb try, with CP boundary between them. As the notion 'government' was abandoned in the recent minimalist program (since Chomsky 1993), however, the validity of the PRO theorem was lost accordingly.

In an attempt to eliminate the control module, Hornstein (1999, and others) developed some arguments in favor of the NP-movement approach to control, as represented in (4).

(4) John_i tried [t_i to win the game].

Above, John undergoes NP-movement, and its trace, an NP-trace, is treated as an anaphor. But the success of this analysis is obtained at the cost of the standard theta-theory in that movement into a theta-position must be allowed. (As for Hornstein vs. Landau debate with regard to movement into a theta-position, see Boeckx and Hornstein 2004 and Landau 2003.)

Landau (2001), maintaining the existence of PRO, suggests a very articulated Agree-based approach to the control phenomena under the theory of Agree (Chomsky 1998). This approach assumes that in the sample example given in (1), Agree relations are established as follows:

According to Landau (2001: 141), Agree₁ occurs between the Ø-features of anaphoric Agr in T and PRO in the embedded clause, followed by raising of the latter to [Spec, TP]; next, T-Agr raises to the embedded C. Control is implemented as Agree₂. The third Agree₃ is established between the matrix T-Agr in C and *John*, valuing the Ø-features of this T-Agr, and by transitivity, those of the embedded T-Agr and PRO. Eventually, PRO gets coindexed with the matrix controller, which is obtained in a quite complicated manner as seen above. From a syntactic point of view, this coindexation is reflected by identity of Ø-features.

The success of Landau's analysis is dependent on the CP status of the embedded infinitive clause in OC constructions like (1). However, the CP status in question is not clear since it has also been argued that the categorial status of the embedded infinitive clause in question is to be TP rather than CP (e.g., Boskovic 1997).

As an alternative analysis, Lee (2009) proposes that for OC examples like (1), PRO is a reflexive clitic and moves to T (or INFL) toward its antecedent for relevant feature checking in a Spec-head relation:¹⁾

Thus, anaphora in English is treated in the manner of reflexivization in the Romance languages in terms of the reflexive clitic *se* movement.

¹⁾ Chomsky (1986: 175) suggests that anaphors undergo LF-movement to the INFL position, leaving a trace:

⁽i) a. They told us about each other/themselves. (his (238)) b. They α_i -INFL [$_{VP}$ told us about t_i]. (α is anaphor) (his (239))

(6) John [T PROi] tried [ti to win the game].

As observed in Lee (2009, (12)), an overt anaphor can also appear in a parallel position, as follows.

(7) John himself tried to win the game. (Cf. *John tried himself to win the game.)

This fact appears to support the analysis in (6) and suggests that PRO in OC constructions can be regarded as a null form of pro-self. (Throughout the paper PRO will be used, though.) Thus I assume the following condition proposed by Lee (2009, (16)):

(8) Reflexive Clitic Condition:

A reflexive clitic must be in a Spec-head relationship with its antecedent in syntax.

Consequently, this analysis can maintain the standard theta-theory as it is and still capture the movement properties of control while eliminating the control module.

In what follows, I will discuss long distance control found in the Super-Equi constructions from English and show that other approaches cannot account for the facts in section 3, but the advocated anaphor movement approach can in section 4.

3. Super-Equi: Long Distance Control

Control is locally processed in examples like (1); it is also non-locally processed, as seen in examples like those from English given below, as known as Super-Equi constructions:

- (9) a. Mary knew that it disturbed John [PRO to perjure himself/*herself].
 - b. Mary knew that it damaged John [PRO to perjure himself/herself].

- c. Mary knew that [PRO perjuring himself/herself] disturbed John.
- d. Mary knew that [PRO perjuring himself/herself] damaged John.

The contrast between (9a) and (9b) appears intriguing. In these examples, the non-finite clause with the PRO subject is extraposed, with the expletive subject *it* inserted in the intermediate subject position. When the psychological verb *disturb* is used in the embedded clause, as in (9a), long distance binding between the matrix subject *Mary* and *herself* is not permitted, thereby indicating that long distance control between the matrix subject *Mary* and PRO is not possible, either. When another type of verb like *damage* is used in the embedded clause, as in (9b), however, long distance binding between the matrix subject *Mary* and *herself* downstairs is permitted, thus indicating that long distance control between the matrix subject *Mary* and PRO is possible, also. If the non-finite clause with the PRO subject is intraposed to the embedded subject position, as in (9c) and (9d), on the other hand, such asymmetry disappears.

Landau (2001) offers a generalization such that obligatory control (hereafter, OC) obtains when PRO finds its controller in an *in situ* non-finite clause within VP, a complement or a specifier, whereas non-obligatory control (hereafter, NOC) obtains with a displaced non-finite clause, intraposed or extraposed.

The above and the following discussion adopt the following argument structure offered in Landau (2001).

(10) a. Experiencer > Causerb. Causer > Goal/Theme

Thus, when the psychological verb *disturb* is used in the embedded clause, the CAUSER argument, namely, the non-finite clause with PRO, occurs below the Exp(eriencer) *John* within VP in the base, as shown below (Landau 2001):

(11) Mary knew that Δ [VP disturbed-V [VP John_{Exp}> disturbed [PRO ... perjure himself/herself]_{CAUSER}>]]

Above, the non-finite clause with PRO may be intraposed to the intermediate

subject position marked as Δ to derive (9c) or extraposed to derive (9a) (by adjunction to VP in which case the expletive it is inserted in the Δ position).²⁾

When another verb like *damage* is used in the embedded clause, the CAUSER argument, namely, the non-finite clause with PRO, occurs above the Theme John in Spec, vP in the base, as shown below (Landau 2001):

(12) ... [
$$vP$$
 [s PRO]< $CAUSER> v$ [VP damaged John< $Theme>$]]

Above, the non-finite clause with PRO may be intraposed to the intermediate subject position to derive (9d) or extraposed to derive (9b) by vP-adjunction (in which case the expletive it is inserted in the intermediate subject position), as represented below.

(13) ...
$$[vP \ [vP \ [S \ PRO_i \] < CAUSER> v \ [VP \ damaged \ John_i < Theme>]]$$

$$[S \ PRO_i \ to \] < CAUSER>[Extraposed]]$$

Under Landau's analysis, in (11) extraposition of the non-finite clause with PRO must not be allowed via adjunction to VP, as represented in (14) below, to avoid the long distance control by the matrix subject Mary, with the expletive subject it inserted, as seen in (9a) (see Landau 2001, (17a,b)):

(14) Mary knew that it
$$[VP]$$
 $[VP]$ disturbed-V $[VP]$ John disturbed]] [PRO to perjure himself/*herself]]

Thus, to block the extraposition in question, Landau (2001: 122) assumes that VP-internal clauses as in (11) must be peripheral at PF. Since the in situ non-finite clause here is already VP-peripheral, he considers this extraposition unmotivated in light of economy. Then the long distance control under concern

²⁾ Here, when the non-finite clause is intraposed, the verb appears in an -ing form, e.g., perjuring, as seen in (9c,d); when the non-finite clause is extraposed, the verb appears in an infinitive form, e.g., to perjure, as seen in (9a,b). It seems that the alternation in question is determined by the position of the non-finite clause: when the non-finite clause appears in Spec, TP, the verb appears in an -ing form; when it appears in the complement within VP or in the extraposed position, the verb appears in an infinitive form.

will not be permitted.

As Landau (2001) points out, some existing theories block long distance control not only in (9a) but also in (9b) (e.g., Lebeaux 1984); other theories allow long distance control not only in (9b-d) but also in (9a) (e.g., Hornstein 1999). Especially, for Hornstein (1999), PRO is an anaphor in OC but a pronoun in NOC. Thus, existing analyses are too restrictive or too permissive. Local control in examples like (9d) also poses a problem for Hornstein (1999), since the controller *John* has to lower down to the object position from the PRO position, which is not allowed in syntactic theorizing in general. Another problematic example with his analysis is given in (15).

(15) It is crucial [for [John_i's success] [t_i to teach himself English]].

Here the controller *John* is not likely to A-move into X's position inside [X's NP] from the PRO position in that it does not extend the structure, setting aside the apparent lack of c-command relation between the two.

Landau (2001) takes a different approach to Super-Equi cases of long distance control in English: in the examples in (9b,c,d), the long distance controlled PRO is not syntactically licensed but non-syntactically licensed as a logophor by discourse factors. The long distance control in (9a) is excluded for a different reason; that is, extraposition with a psychological verb like *disturb* is not allowed by economy, as discussed above.

Landau's analysis leaves one quandary: in an example like (9b) with its relevant structure repeated from (13) below, where the non-finite clause in Spec, *v*P has been extraposed by *v*P-adjunction, the controller *John* cannot c-command PRO:

(13) ... [
$$_{vP}$$
 [$_{vP}$ [$_{vP}$ PRO_i] v [$_{VP}$ damaged John, $_{i]] [s PRO_i to][Extraposed]]$

So Landau (2001, fn. 17) admits that the controller and PRO in OC do not obey strict c-command, as opposed to binders and reflexives; instead, he suggests that the Probe for Subject control is T and that for Object control is v. Thus, in (13) v agrees with John, and T agrees with PRO, with v raised to T, thus

allowing Agree between John and PRO. For (9a), its representation out of (11) would be as follows, with v heading the upper VP-shell:

(16) Mary knew that it T v_P John v_{VP} disturbed [PRO to perjure himself/*herself]]]

Now in (16) v agrees with PRO, and T agrees with John, with v raised to T, thus allowing Agree between John and PRO in a quite complicated manner.

I think the reason for postulating logophoric anaphors for NOC is that there is no syntactic means available for this case within Landau's approach. Also, considering that his analysis relies on Agree operation, it remains to be seen whether it can be maintained in view of the recent trend that Agree can be replaced by Move (Hornstein 2001).

4. Proposal: Reflexive Clitic Movement

This section shows that the advocated anaphor movement approach represented in (6), repeated below, can be extended to the examples in (9) involving long distance control with no serious difficulty, adopting the structures Landau suggested in the previous section.

(6) John [T PRO_i] tried [t_i to win the game].

For the derivation of (9a), the representation in (16), repeated below, was considered in the previous section.

- (9) a. Mary knew that it disturbed John [PRO to perjure himself/*herself].
- (16)Mary knew that it T [v] John v [v] disturbed [PRO to perjure himself/*herself]]]

Under the current analysis, the clitic anaphor PRO moves to v to yield the local control relation with John, as represented below:

(17) Mary knew that it T [vP John [v PROi] [vP disturbed [ti to perjure himself/*herself]]]

Further raising of the clitic anaphor is not allowed for locality reasons. Next, consider (9b), repeated below.

(9) b. Mary knew that it damaged John [PRO to perjure himself/herself].

For the local control between *John* and PRO, assume the base structure (12), repeated below, in which the non-finite clause is in Spec, *v*P and *John* remains *in situ*:

(12) ... [
$$vP$$
 [s PRO ...] v [vP damaged John]]

Here, *John* may move to a higher Spec FP headed by a functional head F, and this head hosts the reflexive clitic PRO to produce the control relation with *John*, followed by verb raising to another higher functional head unidentified here, as represented below:

(18) [damaged [FP John [F PRO_i] [$_{vP}$ [s $_{t_i}$ to]causer v [$_{VP}$ damaged John,John,<a href">John,John,<a href">John,<a hre

The long distance control between *Mary* and PRO obtains as follows: in (12), the non-finite clause with PRO moves to Spec, TP, and the clitic anaphor PRO moves to the matrix T to create a long distance control relation with the matrix subject *Mary*, as represented below.

(19) Mary_i [T PRO_i] knew that [t_i perjuring himself/herself] damaged John.

Hence, the long distance binding between *Mary* and *herself* is also obtained through the medium PRO.

The long distance control, now reduced to binding, in (19) is empirically attested in a similar configuration with an overt reflexive anaphor as well:

(20) John; believes that [pictures of himself;] Bill will never sell.

The reflexive *himself* in the embedded clause can have a matrix antecedent.

To get the surface order (9b), the non-finite clause is further extraposed via vP-adjunction (see (13)), with the expletive it inserted in the intermediate subject position, as seen below.

(21) Mary_i [T PRO_i] knew that it damaged John [t_i to perjure himself/herself].

Similarly, control in (9c), repeated below, can be accounted for.

(9) c. Mary knew that [PRO perjuring himself/herself] disturbed John.

The surface in (9c) is derived from the base structure in (11), repeated below, by intraposing the non-finite clause to the intermediate subject position marked as Δ , as represented in (22).

- (11) Mary knew that Δ [VP] disturbed-V [VP] John_{Exp}> disturbed [PRO to perjure himself/herself]<CAUSER>]]
- (22) Mary knew that [PRO perjuring himself/herself|kcauser>] [VP disturbed-V [VP John<Exp> disturbed]

Local control between John and PRO holds in (11) before the non-finite clause moves to the embedded Spec, TP as in (22), and thus, binding between John and himself obtains through PRO as well. Long distance control between Mary and PRO is established from (22) in the same fashion as that given in (19), and thus, binding between Mary and herself obtains through PRO as well.

Finally, control in (9d), repeated below, can be handled basically in the same way.

(9) d. Mary knew that [PRO perjuring himself/herself] damaged John.

Assume the relevant base structure (12), repeated below, in which the non-finite

clause is in Spec, vP and John remains in situ:

(12) ... [
$$vP$$
 [s PRO] v [vP damaged John]]

Before the non-finite clause in Spec vP moves to the embedded Spec TP, as already suggested, *John* may move to a higher Spec FP headed by a functional head F, and this head hosts the reflexive clitic PRO to produce a local control relation with *John*, with subsequent verb raising applied, as represented in (18), repeated below.

(18) [damaged [FP John [F PRO_i] [
$$vP$$
 [S t_i to]
CAUSER> v [VP damaged John,
John,<

As for the long distance control, the non-finite clause containing the anaphor PRO in (12) may raise to the embedded Spec TP, and there the clitic anaphor PRO may move to the matrix T to create a long distance control relation with the matrix subject *Mary*, as represented in (19), repeated below.

(19) Mary_i [T PRO_i] knew that [t_i perjuring himself/herself] damaged John.

Hence, the long distance binding between *Mary* and *herself* is also obtained through the medium PRO.

Now the current anaphor movement approach can provide a plausible analysis to examples like (2) (and (9a-b)), repeated below, while other approaches cannot.

(2) Eric_i insisted that it would be ridiculous [PRO_i to call for help].

Under the current approach, PRO as a reflexive clitic can undergo long distance movement ultimately toward the matrix subject for its relevant feature checking over the intermediate subject *it*, as represented below (see also (21), cf. also (20)).

(23) Eric_i [$_T$ PRO_i] insisted that it [$_T$ t_i] would be ridiculous [t_i to call for help].

Now what is noted in (23) is that an apparent discontinuous A-chain emerges, as depicted in (3), repeated below.

(3)
$$X_i$$
 [it t_i ]

Landau's Agree-based approach can only entertain a non-syntactic approach: PRO is a logophoric anaphora. Hornstein's A-movement approach can only result in illicit super-raising given that the long distance controlled PRO cannot simply be a pro.

It was also pointed out before that Hornstein's A-movement approach wrongly forces the controller John to move from the PRO position to a non-c-commanding position, as seen in (15), repeated below.

(15) It is crucial [for [John_i's success] [t_i to teach himself English]].

The current anaphor movement approach has a way to deal with the fact. As represented in (24) below,

(24) It is crucial [for [TP [John's success] [T PROi [ti to teach himself English]]]].

The index of [John's_i success] could be simply i since success does not introduce a new individual into the discourse, so that John and the clitic ananphor PRO can have a successful control relation under the Spec-head configuration.³⁾

In short, the advocated anaphor movement analysis successfully realizes the empirical fact observed in (2), while other approaches are limited. As a result, it is shown that the current analysis offers a uniform movement analysis to both local and non-local control phenomena, unlike other approaches.

³⁾ On the other hand, [John's friend]; will have a different index, say, j, since friend introduces a new individual into the discourse. Thus, John will not be able to c-command out of its containing NP (see Landau 2001 for relevant discussion).

5. Summary

This paper applied a movement analysis to long distance control phenomena by treating PRO as a reflexive clitic that moves toward its antecedent under the Reflexive Clitic Condition: A reflexive clitic must be in a Spec-head relationship with its antecedent in syntax (Lee 2009). It is shown that Hornstein's (1999) A-movement approach and Landau's (2001) PRO-based Agree approach are not free from problems, theoretical or empirical. Especially, an apparent discontinuous A-chain, i.e., X_i [it t_i ], is obtained through reflexive clitic movement, which correctly realizes cases of long distance control from English Super-Equi constructions. This kind of chain cannot be available under both Landau's and Hornstein's analysis.

Consequently, this paper offers a uniform movement analysis of control phenomena, local or non-local, and the current analysis reduces the control module to the theory of binding, keeping the standard theta-theory intact.

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