

Head Movement in Overt Syntax: Its Interaction with Object Shift and PF Requirements

Shigeki Taguchi

University of Connecticut

1. Introduction

Since Pollock (1989), it has been taken for granted that English is different from French in that it does not involve head movement of V to T, as shown in (1) and (2):

- (1) a. *John kisses often Mary.
b. John often kisses Mary.
- (2) a. Jean embrasse souvent Marie.
John kisses often Mary
b. *Jean souvent embrasse Marie.
John often kisses Mary
'John often kisses Mary.'

However, it has later been observed by Postal (1974), Lasnik and Saito (1991), Koizumi (1993, 1995), Bošković (1997, 2007a, 2007b), and Lasnik (1999a, b), among others, that English Exceptional Case-marking (ECM) involves overt object shift to SpecAgrOP/SpecvP. Condition A satisfaction in (3), Weak Crossover mitigation in (4), Negative Polarity Item licensing in (5), and Condition C violation in (6), respectively, show that the object is in a higher position than that of the adjunct clause:

- (3) a. The DA proved two men_i [*t*_i to have been at the scene of the crime] during each other's_i trials.
b. ?*The DA proved [that two men_i were at the scene of the crime] during each other's_i trials.
- (4) a. The DA proved no suspect_i [*t*_i to have been at the scene of the crime] during his_i trials.
b. ?*The DA proved [that no suspect_i was at the scene of the crime] during his_i trials.
- (5) a. The DA proved no one [*t*_i to have been at the scene of the crime] during any of the trials.
b. ?*The DA proved [that no one was guilty] during any of the trials.
- (6) a. *Joan believes him_i [*t*_i to be a genius] even more fervently than Bob_i does.
b. Joan believes [he_i is a genius] even more fervently than Bob_i does.

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Given this claim and the word order facts, it must be concluded that the ECM verb in these examples undergoes head movement to a position higher than AgrO/v.

On the other hand, Chomsky (1995, 2001) and Boeckx and Stjepanović (2001) claim that head movement is a purely PF phenomenon, and does not apply in overt syntax. In this paper, I reconsider their claim, examining the interaction between PF-requirements and overt object shift. More specifically, I demonstrate that head movement may be in fact applicable in overt syntax, as proposed by Travis (1984), Baker (1988), Pollock (1989), Bobaljik (1995), Pesetsky and Torrego (2001), den Dikken (2006a, b, to appear), and others, but the resultant configurations are required to satisfy PF-requirements.

2. Head Movement as a PF-Phenomenon

Boeckx and Stjepanović (2001), on the basis of Lasnik's (1999a, b) analysis, point out that in pseudogapping it is necessary that object shift applies and V-raising does not, as shown in (7), whereas in standard cases without ellipsis both object shift and V-raising must apply, as shown in (8), hence the verb must precede the object:¹

- (7) a. Debbie ate the chocolate, and Kazuko did the cookies [_{VP} eat t_{OBJ}].
 b. *Debbie got chocolate, and Kazuko got [_{VP} t_V chocolate] too.
- (8) a. Debbie ate the chocolate, and Kazuko drank milk [_{VP} t_V t_{OBJ}].
 b. *Debbie ate the chocolate, and Kazuko milk [_{VP} drank t_{OBJ}].

Given these data, Boeckx and Stjepanović arrive at the following three conclusions: first, object shift applies in overt syntax; second, ellipsis and head movement are PF operations, which compete with each other giving rise to either (7)a or (8)a, respectively; and finally, (8)b is ruled out by post-Spell-Out (i.e. morphological and/or prosodic) requirements for triggering head movement.

3. Head Movement in Overt Syntax: Evidence from Japanese and Korean ECM

The question I would like to raise is whether head movement is entirely disallowed in overt syntax. The examples in (9), whose derivations are illustrated in (10) (for both syntactic and PF head movement), appear to suggest that the answer is positive:

- (9) a. I believed him to be honest.
 b. Believe him to be honest, I did.
 c. *Him to be honest, I believed.
- (10) a. *Object Shift* (= "legitimate" derivation of (9)a):
 [_{TP} I T [_{XP} X [_{VP} him v [_{VP} believe [_{CP} C_{null} [_{TP} t_{OBJ} to be honest]]]]]].
- b. *Object Shift + Syntactic Head Movement* (= "illegitimate" derivation of (9)a):
 * [_{TP} I believed+v+X+T [_{XP} t_V+t_v+t_X [_{VP} him t_V+t_v [_{VP} t_V [_{CP} C_{null} [_{TP} t_{OBJ} to be honest]]]]]].
- c. *Object Shift + XP-Dislocation* ⇒_{SPELL-OUT} *PF Head Movement* (= (9)b):
 [_{XP} X [_{VP} him v [_{VP} believe [_{CP} C_{null} [_{TP} t_{OBJ} to be honest]]]]] [_{TP} I T t_{XP}].
- d. *Object Shift + Syntactic Head Movement + XP-Dislocation* (= (9)c):
 * [_{XP} t_V+t_v+t_X [_{VP} him t_V+t_v [_{VP} t_V [_{CP} C_{null} [_{TP} t_{OBJ} to be honest]]]]] [_{TP} I believed+v+X+T t_{XP}].

To begin with, let us make two assumptions to see why this is the case. One is that an Exceptional Case-marking

¹ For ease of exposition, I assume that V-raising relevant here is V-to-T head movement.

(ECM) subject undergoes overt object shift to the matrix SpecvP in English (e.g. Lasnik 1999a, b, Bošković 2007b), as shown in (10)a. The other is that what is dislocated in (9)b and (9)c is an XP projected above the matrix vP, as shown by the word order in (9)b, where the matrix verb precedes the ECM subject in the matrix SpecvP. Boeckx and Stjepanović may maintain that (9)a is well-formed as long as head movement of V does not apply in overt syntax (cf. (10)a and (10)b). (9)b is fine, since the matrix V may remain in VP at the point where the XP is dislocated in overt syntax, and raise to X via v in PF, as illustrated in (10)c. In (9)c, on the other hand, V-raising to T applies before XP is dislocated in overt syntax, resulting in ill-formedness, as (10)d illustrates.

Crucially, however, the data of Japanese ECM show that the same kind of head movement is allowed to apply in overt syntax. More specifically, the Japanese equivalents of (9) are all well-formed. Let us consider (11):

- (11) a. Watasi-wa kare-o syooziki-da to omotta.
 I-top him honest-is that thought
 ‘I believed him to be honest.’
 b. Kare-o syooziki-da to omotta, watasi-wa.
 him honest-is that thought I-top
 ‘Believe him to be honest, I did.’
 c. Kare-o syooziki-da to watasi-wa omotta.
 him honest-is that I-top thought
 (lit.) ‘Him to be honest, I believed.’

Let us assume that (11) is derived in parallel with (9), based on Tanaka’s (2002) claim that ECM subjects in Japanese also undergo overt object shift to the matrix SpecvP, and the relevant movement is A-movement out of CP. Kuno (1976) and Tanaka (2002) provide plenty of evidence for this. First, the relative position between the matrix adverb and the ECM subject shows that object shift has applied in (12)a, but not in (12)b:

- (12) a. Taroo-wa Hanako-o_i orokanimo [t_i tensai da to] omotteiru.
 Taroo-top Hanako-acc stupidly genius is that is thinking
 (lit.) ‘Stupidly, Taroo is believing Hanako to be a genius.’
 b. *Taroo-wa [Hanako-ga orokanimo tensai da to] omotteiru.
 Taroo-top Hanako-nom stupidly genius is that is thinking
 (lit.) ‘Stupidly, Taroo is believing that Hanako is a genius.’

Second, the following data regarding scrambling support the object shift analysis. The ECM subject in (13)a can, but the embedded nominative subject in (13)b cannot, undergo long-distance scrambling. This is evidence that only the former has undergone object shift. Since Saito (1985), it has been standardly assumed that subjects cannot undergo long-distance scrambling (but see Ko 2007 for an opposing view). The well-formedness of (13)b suggests that the ECM subject is raised to the object position first, and subsequently undergoes short-distance scrambling to the sentence initial position.

- (13) a. Hanako-o_i Taroo-ga t_i [t_i tensai da to] omotteiru.
 Hanako-acc Taroo-nom genius is that is thinking
 (lit.) ‘Taroo is believing Hanako to be a genius.’
 b. *Hanako-ga_i Taroo-ga [t_i tensai da to] omotteiru.
 Hanako-nom Taroo-nom genius is that is thinking
 (lit.) ‘Taroo is believing that Hanako is a genius.’

The data in (14) also show that the ECM subject undergoes short-scrambling from the matrix domain. Mahajan (1990) and Saito (1992) maintain that short-distance scrambling is either A- or A'-movement, in contrast to long-distance scrambling, which is unambiguously A'-movement. Given the widely held view that only

A-movement changes binding possibilities, it follows that the ECM subject in (14)a undergoes object shift before short-distance A-scrambling.

- (14) a. ??Otagai-no_i sensee-ga karera-o_i [t_i tensai da to] omotteiru.
 each other-gen teacher-nom they-acc genius is that is thinking.
 b. Karera-o_i otagai-no_i sensee-ga t_i [t_i tensai da to] omotteiru.
 they-acc each other-gen teacher-nom genius is that is thinking
 (lit.) ‘Each other’s teacher is believing them to be geniuses.’

Further evidence that scrambling of the ECM subject into a matrix position is short-distance is given in (15). Simply put, the *why-who-who* sequence in (15)a is prohibited in Japanese, but can be saved by short-distance scrambling of one of the *who*’s (cf. Saito 1994). The amelioration effect in (15)b shows that the relevant scrambling is short-distance:

- (15) a. ?*Naze dare-ga dare-o_i [t_i tensai da to] omotteiru no?
 why who-nom who-acc genius is that is thinking Q
 b. Dare-o_i naze dare-ga t_i [t_i tensai da to] omotteiru no?
 who-acc why who-nom genius is that is thinking Q
 (lit.) ‘Who is believing whom to be a genius why?’

Third, the applicability of Quantifier Raising (QR) diagnoses the structural position of embedded subjects in (16). Assuming that QR is clause-bound, the scope ambiguity in (16)a, as opposed to (16)b, naturally follows if the ECM subject is in the matrix clause:

- (16) a. Dareka-ga minna-o_i [t_i tensai da to] omotteiru.
 someone-nom everyone-acc genius is that is thinking
 (lit.) ‘Someone is believing everyone to be a genius.’ ($\exists > \forall, \forall > \exists$)
 b. Dareka-ga [minna-ga tensai da to] omotteiru.
 someone-nom everyone-nom genius is that is thinking
 (lit.) ‘Someone is believing that everyone is a genius.’ ($\exists > \forall, * \forall > \exists$)

Fourth, Condition B straightforwardly excludes (17)a, where the ECM subject appears as a pronoun bound by the matrix subject, implying that they are in the same binding domain. On the other hand, (17)b, though slightly degraded, is fine because each subject belongs to a different binding domain, in accordance with Condition B:

- (17) a. *Taroo-ga_i kare-o_i [t_i tensai da to] omotteiru.
 Taroo-nom he-acc genius is that is thinking.
 (lit.) ‘Taroo is believing him to be a genius.’
 b. ?Taroo-ga_i [kare-ga_i tensai da to] omotteiru.
 Taroo-nom he-nom genius is that is thinking.
 (lit.) ‘Taroo is believing that he is a genius.’

Fifth, (18)b, derived from (18)a through CP-scrambling, is ruled out as a violation of the Proper Binding Condition (PBC), which requires traces to be bound (Saito 1992). This is because the trace left behind by object shift (i.e. *t_i*) cannot be properly bound in the CP-scrambled position. As pointed out by Bošković (2006 UConn class lectures), the ungrammaticality of (18)b cannot be explained under the alternative analysis, on which the ECM subject is base-generated in the matrix clause and is coindexed with *pro* in the embedded clause (cf. Saito 1982, 1983, 1985, Takano 2003, etc.).

- (18) a. Taroo-ga Hanako-o_i [t_i tensai da to] omotteiru.
 Taroo-nom Hanako-acc genius is that is thinking
 b. *[t_i tensai da to]_j Taroo-ga Hanako-o_i t_j omotteiru.
 genius is that Taroo-nom Hanako-acc is thinking.
 (lit.) ‘Taroo is believing Hanako to be a genius.’

Finally, the data of cleft constructions lend support for the object shift analysis. More specifically, Japanese cleft constructions allow only clause mates to stand as multiple foci. The well-formedness of (19)b constitute evidence that the ECM subject belongs to the same clause as that of the matrix subject:

- (19) a. Dare-ga dare-o_i [t_i tensai da to] omotteiru no.
 who-nom who-acc genius is that is thinking Q
 b. t_j t_i [t_i tensai da to] omotteiru no-wa [dare-ga_j dare-o_i] na no?
 genius is that is thinking NM-top who-nom who-acc is Q
 (lit.) ‘Who is believing whom to be a genius.’

On the basis of the data given above, I assume that the examples in (11), repeated below as (20), involve overt object shift, as illustrated in (21)a.

- (20) a. Watasi-wa kare-o syooziki-da to omotta.
 I-top him honest-is that thought
 ‘I believed him to be honest.’
 b. Kare-o syooziki-da to omotta, watasi-wa.
 him honest-is that thought I-top
 ‘Believe him to be honest, I did.’
 c. Kare-o syooziki-da to watasi-wa omotta.
 him honest-is that I-top thought
 (lit.) ‘Him to be honest, I believed.’

In (20)b, the matrix V may remain in VP at the point where the XP is dislocated in overt syntax, and the sentence is fine, as shown in (21)c. This is exactly like the case in (9)b. In (20)c, on the other hand, V-raising applies before the XP is dislocated in overt syntax, as illustrated in (21)d. The crucial difference is that (20)c is fine as opposed to (9)c.

- (21) a. *Object Shift (=one derivation of (11)a):*
 $[_{TP} \text{ watasi-wa } [_{XP} [_{VP} \text{ kare-o } [_{VP} [_{CP} [_{TP} t_{OBJ} \text{ syooziki-da }] \text{ to }] \text{ omotta }] \nu] \text{ X }] \text{ T }]$.
 b. *Object Shift + Syntactic Head Movement (=another derivation of (11)a):*
 $[_{TP} \text{ watasi-wa } [_{XP} [_{VP} \text{ kare-o } [_{VP} [_{CP} [_{TP} t_{OBJ} \text{ syooziki-da }] \text{ to }] t_{\nu}] t_{\nu}+t_{\nu}] t_{\nu}+t_{\nu}+t_X] \text{ omotta}+\nu+\text{X}+\text{T }]$.
 c. *Object Shift + XP-Dislocation $\Rightarrow_{SPELL-OUT}$ PF Head Movement (= (11)b):*
 $[_{XP} [_{VP} \text{ kare-o } [_{VP} [_{CP} [_{TP} t_{OBJ} \text{ syooziki-da }] \text{ to }] \text{ omotta }] \nu] \text{ X }] [_{TP} \text{ watasi-wa } t_{XP} \text{ T }]$.
 d. *Object Shift + Syntactic Head Movement + XP-Dislocation (= (11)c):*
 $[_{XP} [_{VP} \text{ kare-o } [_{VP} [_{CP} [_{TP} t_{OBJ} \text{ syooziki-da }] \text{ to }] t_{\nu}] t_{\nu}+t_{\nu}] t_{\nu}+t_{\nu}+t_X] [_{TP} \text{ watasi-wa } t_{XP} \text{ omotta}+\nu+\text{X}+\text{T }]$.

4. Proposal

Given the well-formedness of (20)c, I propose that head movement may be in principle applicable in overt syntax, and account for the ill-formedness of (7)b, (8)b, and (9)c, repeated below as (22)a, (22)b, and (22)c.

- (22) a. *Debbie got chocolate, and Kazuko got $t_{VP} t_V$ ~~chocolate~~ too.
 b. *Debbie ate the chocolate, and Kazuko milk $[_{VP} \text{ drank } t_{OBJ}]$.
 c. *Him to be honest, I believed.

First, I take pseudogapping as a variant of VP-ellipsis, following Jayaseelan (1990) and Lasnik (1999a, b). (22)a is ruled out because the EPP-feature on the matrix v is not checked due to the failure of object shift as a result of pseudogapping, as shown in (23).²

- (23) *Debbie got chocolate, and $[_{TP} \text{ Kazuko got } +v_{[EPP]} + T_{[EPP]} [_{VP} t_V + t_V \text{ } t_{VP} t_V \text{ } \text{chocolate}]]$] too.

For (22)b, I assume that it is ill-formed because head movement, which must apply in either overt syntax or PF to satisfy post-Spell-Out requirements (cf. Boeckx and Stjepanović 2001), does not apply in either component.

Finally, I adopt the CP analysis of ECM infinitives, and assume that object shift of an ECM subject is A-movement out of CP (e.g. Ormazabal 1995, McCloskey 2000, Bošković 2007b). The ill-formedness of (22)c is thus attributed to a violation of Bošković and Lasnik's (2003) condition on null complementizers (24), which is exemplified in (25) and (26):

- (24) A null complementizer is a PF affix that must be licensed by the adjacent matrix verb/noun in PF.

- (25) John **believed** (*at that time) $[_{CP} C_{null} \text{ Mary read this book }]$.

- (26) a. The **child** $[_{CP} C_{null} \text{ Alexis was waiting for }]$ was lost.
 b. *The **child** was lost $[_{CP} C_{null} \text{ Alexis was waiting for }]$.

In (9)b, repeated as (27) below, the PF adjacency condition is met in PF before V-raising applies, as shown in (28). However, in (22)c, the condition is not met, because V has already raised to T in overt syntax, hence is not adjacent to C at any point in PF, as shown in (29).

- (27) Believe him to be honest, I did.

- (28) *Object Shift + XP-Dislocation* $\Rightarrow_{SPELL-OUT}$ *PF Head Movement (= (27))* :
 $[_{XP} X [_{VP} \text{ him } v [_{VP} \text{ believe } [_{CP} C_{null} [_{TP} t_{OBJ} \text{ to be honest }]]]]]] [_{TP} I T t_{XP}]$.

- (29) *Object Shift + Syntactic Head Movement + XP-Dislocation (= (22)c)* :
 $*[_{XP} t_V + t_V + t_X [_{VP} \text{ him } t_V + t_V [_{VP} t_V [_{CP} C_{null} [_{TP} t_{OBJ} \text{ to be honest }]]]]]] [_{TP} I \text{ believed} + v + X + T t_{XP}]$.

5. Null Complementizers in Japanese and Korean

The proposed analysis is supported by the data of ECM in Western Japanese dialects and Korean, which are known to allow a null complementizer to head a complement clause. The contrast between (11)c and (30)c/(32)c shows that head movement is applicable in overt syntax only if the complementizer is overt, or the null complementizer satisfies the PF adjacency condition. In (30)b/(32)b, the matrix V remains in VP in overt syntax, and is adjacent to C in PF before V-raising applies, as shown in (31)c/(33)c. In (30)c, on the other hand, the matrix

² Under the EPP-free system for movement such as Bošković (2007a, b), the ill-formedness of (22)a may be due to the failure in checking the uninterpretable Case feature on v , because the matching uninterpretable Case feature on the NP *chocolate* has been deleted as a result of ellipsis. In that case, it follows that the uninterpretable Case feature on v is checked only after the NP with the matching feature is moved to a position c-commanding v (see Bošković's 2007b for details).

V has already raised to T in overt syntax and is not adjacent to C in PF, as shown in (31)d/(33)d. I take the contrast between (11)c and (30)c/(32)c to provide evidence that what is relevant in (9)c is the licensing conditions on null C. I will thus interpret this as providing additional evidence for the CP analysis of ECM infinitives in English.

- (30) a. Watasi-wa kare-o syooziki-ya (to) omoota.
 I-top him honest-is (that) thought
 ‘I believed him to be honest.’
 b. Kare-o syooziki-ya (to) omoota, watasi-wa.
 him honest-is (that) thought I-top
 ‘Believe him to be honest, I did.’
 c. Kare-o syooziki-ya *(to) watasi-wa omoota.
 him honest-is *(that) I-top thought
 (lit.) ‘Him to be honest, I believed.’

(31) a. *Object Shift* (= (30)a)

[_{TP} watasi-wa [_{XP} [_{VP} kare-o [_{VP} [_{CP} [_{TP} *t*_{OBJ} syooziki-ya] **C**_{null}] omoota] *v*] X] T].

b. *Object Shift + Syntactic Head Movement*

*[_{TP} watasi-wa [_{XP} [_{VP} kare-o [_{VP} [_{CP} [_{TP} *t*_{OBJ} syooziki-ya] **C**_{null}] *t*_V] *t*_V+*t*_V] *t*_V+*t*_V+*t*_X] omoota+*v*+X+T].

c. *Object Shift + XP-Dislocation* ⇒_{SPELL-OUT} *PF Head Movement* (= (30)b):

[_{XP} [_{VP} kare-o [_{VP} [_{CP} [_{TP} *t*_{OBJ} syooziki-ya] **C**_{null}] omoota] *v*] X] [_{TP} watasi-wa *t*_{XP} T].

d. *Object Shift + Syntactic Head Movement + XP-Dislocation* (= (30)c):

*[_{XP} [_{VP} kare-o [_{VP} [_{CP} [_{TP} *t*_{OBJ} syooziki-ya] **C**_{null}] *t*_V] *t*_V+*t*_V] *t*_V+*t*_V+*t*_X] [_{TP} watasi-wa *t*_{XP} omoota+*v*+X+T].

- (32) a. Na-nun ku-lul cengcikha-ta (ko) sayngkakhanta.
 I-top him honest-is (that) thought
 ‘I believed him to be honest.’
 b. Ku-lul cengcikha-ta ?(ko) sayngkakhanta, na-nun.
 him honest-is ?(that) thought I-top
 ‘Believe him to be honest, I did.’
 c. Ku-lul cengcikha-ta ?*(ko) na-nun sayngkakhanta.
 him honest-is ?*(that) I-top thought
 (lit.) ‘Him to be honest, I believed.’

(33) a. *Object Shift* (= (32)a):

[_{TP} na-nun [_{XP} [_{VP} ku-lul [_{VP} [_{CP} [_{TP} *t*_{OBJ} cengcikha-ta] **C**_{null}] sayngkakhanta] *v*] X] T]

b. *Object Shift + Syntactic Head Movement*:

*[_{TP} na-nun [_{XP} [_{VP} ku-lul [_{VP} [_{CP} [_{TP} *t*_{OBJ} cengcikha-ta] **C**_{null}] *t*_V] *t*_V+*t*_V] *t*_V+*t*_V+*t*_X] sayngkakhanta+*v*+X+T].

c. *Object Shift + XP-Dislocation* ⇒_{SPELL-OUT} *PF Head Movement* (= (32)b):

?[_{XP} [_{VP} ku-lul [_{VP} [_{CP} [_{TP} *t*_{OBJ} cengcikha-ta] **C**_{null}] sayngkakhanta] *v*] X] [_{TP} na-nun *t*_{XP} T].

d. *Object Shift + Syntactic Head Movement + XP-Dislocation* (= (32)c):

*[_{XP} [_{VP} ku-lul [_{VP} [_{CP} [_{TP} *t*_{OBJ} cengcikha-ta] **C**_{null}] *t*_V] *t*_V+*t*_V] *t*_V+*t*_V+*t*_X] [_{TP} na-nun *t*_{XP} sayngkakhanta+*v*+X+T].

6. Conclusion and Further Remarks

In this paper, I reconsidered Chomsky’s (1995, 2001) and Boeckx and Stjepanović’s (2001) claim that head movement is a purely PF phenomenon. Providing the data of Japanese and Korean ECM, I argued for the presence of head movement in overt syntax. However, I also showed that the applicability of head movement in overt syntax crucially relies on the satisfaction of PF-requirements.

Before concluding, I would like to mention the issue of a situation where the ECM subject in Japanese and Korean is base-generated. In fact, there are data showing that the ECM subject in these languages starts out from a higher position than Tanaka (2002) assumes (cf. Taguchi to appear, Yoon 2007, and so on.). For instance, I claim in Taguchi (to appear) that the ECM subject is base-generated in the embedded SpecCP, just like an embedded topic is, on the basis of the observation that both of them do not show reconstruction effects (cf. Hoji 1985). As an illustration, (34) does not allow the interpretation where *pro* is a variable bound by *daremo-ga* ‘everyone’:

- (34)*Watasi-wa [[*pro*_i kaita ronbun]-o daremo-ga_i suki da to] omotteiru.
 I-top wrote article -acc everyone-nom like is that is thinking
 (lit.) ‘I believe that the article s/he wrote, everyone likes.’

If this is the case, however, one may wonder how the ill-formedness of (18)b, repeated as (35), is accounted for. Recall that I argued in Section 3 that what appears to be CP-scrambling is actually scrambling of XP projected above *v*P. Given that the ECM subject is base-generated in the embedded SpecCP and what is dislocated is the XP, it is not clear why the embedded clause in (35) contains the trace of the ECM subject, and the example is ruled out due to a violation of PBC:

- (35)*[*t*_i tensai da to]_j Taroo-ga Hanako-o_i *t*_j omotteiru.
 genius is that Taroo-nom Hanako-acc is thinking.
 (lit.) ‘Taroo is believing Hanako to be a genius.’

I analyze (35) as an instance where the ECM subject has undergone scrambling out of the XP, which is subsequently scrambled. Note that the configuration that results from these operations is also ruled out as a PBC violation, as maintained by Tanaka (2002).

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Department of Linguistics, U-1145
 University of Connecticut
 337 Mansfield Road
 Storrs, CT 06269-1145
 USA

shigeki.taguchi@uconn.edu