May 16, 2020

An anti-locality account of reconstruction effects for binding

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1 Introduction

Moved elements exhibit *reconstruction* effects[1], the phenomenon that the displaced constituent is interpreted in a position lower than their surface position. Chomsky (1993, 1995) argues that the operation of reconstruction can be eliminated by adopting the Copy Theory of movement. Under the Copy Theory of Movement, movement creates (multiple) copies in the positions which the moved element goes through and all copies are accessible to the semantic interfaces to choose which copy of the moved constituent is to be interpreted.

It is well known that Condition A in movement dependencies can be satisfied throughout the derivation, in the base position, or in any position which is created by intermediate movement steps (Barss 1986, 2001; Belletti and Rizzi 1988; Lebeaux 1994; Saito 2003):

(1) a. [Which of each other$_{i/j}$'s friends]$_k$ did John$_i$ say t$_k$ Bill$_j$ likes t$_k$? (Barss 1986)

b. [Each other$_i$'s houses]$_k$ appear/seem to the women$_i$ [t$_k$ to be overdecorated]. (Barss 2001)

In (1), the anaphor appears to be bound in its surface position, but it is interpreted in its pre-movement position. The sentences still remain grammatical, suggesting that Condition A may be met at any stage of derivation. As we can see above, reconstruction for the purpose of anaphor binding can be observed in both A- and A-bar movement constructions.

The interesting case is that not all kinds of movement types exhibit the reconstruction effects for principle A:

[1]For simplicity, although there is no reconstruction operation per se once it is reduced to copy interpretation (at LF), I will descriptively refer to the phenomenon as a reconstruction effect.

(2) a. *Sora-ka [**selo**$_i$-uy emma-lul] [Suzi-wa Bora]$_i$-eykey ____ sokayhayssta.
Sora-NOM each.other-GEN mother-ACC Suzi-and Bora-DAT introduced
'Sora introduced Suzi and Bora to each other's mothers .'

b. Sora-ka [**selo**$_i$-uy emma-lul] kongyun-ul wihay [Suzi-wa
Sora-NOM each.other-GEN mother-ACC performance-ACC for Suzi-and
Bora]$_i$-eykey ____ sokayhayssta.
Bora-DAT introduced
'Sora introduced Suzi and Bora to each other's mothers for the sake of the performance'

c. ?[**Selo**$_i$-uy emma-lul] Sora-ka [Suzi-wa Bora]$_i$-eykey ____ sokayhayssta.
each.other-GEN mother-ACC Sora-NOM Suzi-and Bora-DAT introduced
'Sora introduced Suzi and Bora to each other's mothers .'

The scrambled constituent which contains a reciprocal in (2a) appears not to have reconstruction effects and thus violates Condition A, because the reciprocal pronoun is not c-commanded by its antecedent in its surface position. In contrast, the reciprocals in (2b) and (2c) can be interpreted to be bound in its base position. The ungrammaticality disappears when the constituent undergoes movement across the benefactive argument or the subject.

In this paper, I will show that this asymmetric distribution of reconstruction effects cannot be straightforwardly explained with Condition A. Rather, I claim that the asymmetries follow from an Anti-locality (Bošković 1997; Abels 2003; Grohmann 2003; Pesetsky 2017; Erlewine 2016; Deal 2019) constraint on movement dependency of referentially dependent constituents (i.e., those containing anaphors or bound variable pronouns bound from outside the XP). A central feature of the analysis is that when a constituent which contains referentially dependent items undergoes movement, it is sensitive to Anti-locality constraint, resulting in an illusion of the absence of reconstruction effects. I will motivate with the evidence from the different projections that the displaced items have crossed.

This paper is structured as follows: In section 2, I will show that the asymmetric pattern of reconstruction effects for Condition A of the binding theory depending on the movement dependencies. Section 3 presents and evaluate several proposals to derive the reconstruction effects and show that standard analyses encounter a locality problem especially in a phase-based apporach. In section 4, I argue that reconstruction effects for Condition A are themselves to be explained in an alternative way: the Anti-locality constraint. Section 5 concludes.

2 Reconstruction effects

In this section, I explore the reconstruction effects for anaphor and variable binding involved in scrambling in Korean. I show that so-called short scrambling does not reconstruct for binding. I demonstrate that reconstruction effects for anaphor and pronominal binding are not associated

to any movement types, which indicates that any account of reconstruction which has recourse to A versus A-bar distinction is not adequate on emprical grounds.

It has been studied that scrambling in Korean is divided into three types with respect to the length of dependency (Yoon 1991; Lee 1993, 1994; Cho 1994; Kim 1994; Jung 2002; Lee and Cho 2003; Lee 2006; Ko 2018).[2] For ease of reference, I refer to scrambling of the direct object over the indirect object as *short* scrambling in (3b) and the movement over the subject within the same clause as *intermediate* scrambling in (3c). I call the movement across the finite clause boundary in (3d) as *long-distance* scrambling.

(3) a. Sora-ka Bora-eykey chayk-ul cwuessta.
Sora-NOM Bora-DAT book-ACC gave
Sora gave a book to Bora *base order*

b. Sora-ka **chayk**-ul Bora-eykey _____ cwuessta.
Sora-NOM book-ACC Bora-DAT gave
Sora gave a book to Bora *short*

c. **Chayk**-ul Sora-ka Bora-eykey _____ cwuessta.
book-ACC Sora-NOM Bora-DAT gave
Sora gave a book to Bora *Intermediate*

d. **Chayk**-ul Minswu-ka [Sora-ka Bora-eykey _____ cwuessta-ko] saynkakhanta.
book-ACC Minswu-NOM Sora-NOM Bora-DAT gave-COMP think
Minswu thinks that Sora gave a book to Bora *long-distance*

Both short and intermediate scrambling creates new binding possibilities for reciprocal binding.[3] The direct object cannot bind a reciprocal inside the indirect object when it follows it, but can do so when the direct object undergoes scrambling over the indirect object, as shown in (5)[4]:

(5) a. *Sora-ka [selo$_i$-uy emma-eykey] [**Suzi-wa Bora**]$_i$-lul sokayhayssta.
Sora-NOM each.other-GEN mother-DAT Suzi-and Bora-ACC introduced
Intended:'Sora introduced each other's mother to Suzi and Bora .' *base order*

[2]Such literature points out that scrambling in Korean does not exhibit uniform profile with respect to standard dignostics of the A- versus A-bar distinction.

[3]In Korean, some of reflexive pronouns (e.g. *caki*, *casin*) can be used as a long-distance anaphor, while others (e.g. complex anaphors *caki-casin* and *ku casin*) are locally bound (cf. see Kim and Yoon (2009) for *caki-casin* as a logophor):

(4) John$_i$-un [Mary$_j$ka caki$_{i>j}$/casin$_{i<j}$/caki-casin$_{*i/j}$/ku casin$_{*i/j}$-ul coahan-ta]-ko sayngkakhan-ta.
John-TOP Mary-NOM self-ACC like-DECL-COMP think-DECL
'John thinks that Mary likes self.' modified from (Ahn 2015: 6)

In what follows, the reciprocal pronoun *selo* 'each other' is mainly used in testing binding possibilities and reconsruction effects. Yet, various suggestions have been made for the reciprocal *selo* (e.g. see Yang (1983) as a local anaphor and Lee (2001) as a bound variable).

[4](5a) is adapted and modified from (Cho 1994: 268).

b. Sora-ka [**Suzi-wa Bora**]$_i$-lul [selo$_i$-uy emma-eykey] _____ sokayhayssta.
Sora-NOM Suzi-and Bora-ACC each.other-GEN mother-DAT introduced
'Sora introduced each other's mothers to Suzi and Bora .' *short*

c. [**Suzi-wa Bora**]$_i$-lul Sora-ka [selo$_i$-uy emma-eykey] _____ sokayhayssta.
Suzi-and Bora-ACC Sora-NOM each.other-GEN mother-DAT introduced
'Sora introduced each other's mothers to Suzi and Bora .' *Inter.*

Intermediate scrambling does not disrupt binding dependencies established between the indirect object and the direct object as shown in (5c).

We can use this reciprocal to demonstrate the reconstruction effects. We can observe that there is an asymmetry between short and intermediate scrambling:

(6) a. *Sora-ka [**selo**$_i$-uy emma-lul] [Suzi-wa Bora]$_i$-eykey _____ sokayhayssta.
Sora-NOM each.other-GEN mother-ACC Suzi-and Bora-DAT introduced
Intended:'Sora introduced Suzi and Bora to each other's mothers .'

b. ??[**Selo**$_i$-uy emma-lul] Sora-ka [Suzi-wa Bora]$_i$-eykey _____ sokayhayssta.
each.other-GEN mother-ACC Sora-NOM Suzi-and Bora-DAT introduced

As the example in (6a) illustrates for short scrambling, it does not allow reconstructed interpretation in the base position.[5] This contrasts with the reciprocal pronoun which undergoes intermediate scrambling in (6b), which can be interpreted to be bound in its pre-movement position.

When the direct object including the reciprocals undergoes short scrambling over the additional argument, this asymmetry disappears:

(9) a. Sora-ka [**selo**$_i$-uy emma-lul] kongyun-ul wihay [Suzi-wa
Sora-NOM each.other-GEN mother-ACC performance-ACC for Suzi-and
Bora]$_i$-eykey _____ sokayhayssta.
Bora-DAT introduced
'Sora introduced Suzi and Bora to each other's mothers for the sake of the performance'

[5]Cho (1994) argues that short scrambling (VP-internal scrambling in his terminology) shows uniformly A-movement properties concerning the lack of reconstruction effects:

(7) *Nay-ka [**caki**$_i$-uy sensayngnim-ul] ku$_i$-eykey _____ sokayhayssta. (Cho 1994: 269)
I-NOM self-GEN teacher-ACC he-DAT introduced
Intended: 'I introduced self$_i$'s teacher to him$_i$.'

(7) is, however, independently ruled out, as the reflexive pronoun *caki* is subject-oriented and it cannot be bound by the indirect object. Intermediate scrambling does not bring out the reconstructed reading, either:

(8) *[**Caki**$_j$-uy sensayngnim-ul] nay-ka ku$_i$-eykey _____ sokayhayssta.
self-GEN teacher-ACC I-NOM he-DAT introduced
Intended: 'I introduced self$_i$'s teacher to him$_i$.'

b. Sora-ka [**selo**$_i$-uy emma-lul] ecey [Suzi-wa Bora]$_i$-eykey _____
Sora-NOM each.other-GEN mother-ACC yesterday Suzi-and Bora-DAT
sokayhayssta.
introduced
'Sora introduced Suzi and Bora to each other's mother yesterday.'

In (9a), we see that the benefactive argument causes the scrambled constituents to have the reconstruction effect. When the direct object scrambles over the vP-external adverbs like temporal adverbs *ecey* 'yesterday', it can also be interpreted to be bound in the base position.

When it comes to different movement types, which presumably have different landing sites, it can also recover the reconstruction effect. In (10), the passivized constituent can also be interpreted in its base position:

(10) [**Selo**$_i$-uy emma-ka] [Suzi-wa Bora]$_i$-eykey _____ sokay-toy-ess-ta.
each.other-GEN mother-NOM Suzi-and Bora-DAT introduce-PASS-PST-DECL
'To Suzi and Bora, each other's mothers were introduced.'

The pattern observed in variable binding also indicates that the length of dependency gives rise to the asymmetry of reconstruction effects. Short and intermediate scrambling may create a new antecedent for pronominal binding, hinted by the weak crossover obviation, as illustrated in (11) - (12):

(11) *Short Scrambling*

a. *Suzi-ka [ku$_i$-uy emma]-eykey **motwu-lul**$_i$ sokayhayssta.
Suzi-NOM he-GEN mom-DAT everyone-ACC introduced
'Suzi introduced everybody to his mother .'

b. Suzi-ka **motwu-lul**$_i$ [ku$_i$-uy emma]-eykey _____ sokayhayssta.
Suzi-NOM everyone-ACC he-GEN mom-DAT introduced
'Suzi introduced everybody to his mother.'

(12) *Intermediate Scrambling*

a. *[Ku$_i$ emma]-ka Suzi-eykey [**motun salam**$_i$-ul] sokayhayssta.
he-GEN mother-NOM Suzi-DAT every person-ACC introduced
'His$_i$ mother introduced everybody$_i$ to Suzi.'

b. [**Motun salam**$_i$-ul] [ku$_i$ emma]-ka Suzi-eykey _____ sokayhayssta.
every person-ACC he-GEN mother-NOM Suzi-DAT introduced
'His$_i$ mother introduced everybody$_i$ to Suzi.'

We can observe that the reconstructed reading for variable binding cannot be obtained with short scrambling:

(13) a. Suzi-ka [motun salam$_i$-eykey] [**ku**$_i$-uy koyangi]-lul sokayhayssta.
Suzi-NOM every person-DAT he-GEN cat-ACC introduced
'Suzi introduced his$_i$ cats to everyone$_i$.'

b. *? Suzi-ka [**ku**$_i$-uy koyangi]-lul [motun salam$_i$-eykey] _____ sokayhayssta.
Suzi-NOM he-GEN cat-ACC every person-DAT introduced
'Suzi introduced his$_i$ cats to everyone$_i$.'

c. [**Ku**$_i$-uy koyangi]-lul Suzi-ka [motun salam$_i$-eykey] _____ sokayhayssta.
he-GEN cat-ACC Suzi-NOM every person-DAT introduced
'Suzi introduced his$_i$ cats to everyone$_i$.'

When the phrase that contains the bound variable undergoes short scrambling, it cannot reconstruct to its base position, as shown in (13b). If the exact element undergoes intermediate scrambling, then we can see that the variable pronoun can have reconstucted interpretation in its pre-movement position, in (13c).

So far, we have seen the scrambling of the direct object. When the dative argument which is bound by a wh-subject scrambles over its antecedent, the reconstructed interpretation is obtained:

(14) Reconstruction for the bound variable

a. [Etten cwuin-i$_i$] [**ku**-uy$_i$ kangaci-eykey$_i$] pap-ul cwu-ess-ni?
which owner-NOM he-GEN puppy-DAT meal-ACC give-PST-Q
'Which owner gave a meal to his puppy?' *baseline*

b. ?[**Ku**-uy$_i$ kangaci-eykey$_i$] [etten cwuin-i$_i$] ___ pap-ul cwu-ess-ni?
he-GEN puppy-DAT which owner-NOM meal-ACC give-PST-Q
'Which owner gave a meal to his puppy?'

This asymmetric pattern of reconstruction effects for Condition A is replicated in other languages. For example, in Japanese, we can observe that the short-scrambled direct object in (15b) does not reconstruct for Principle A, whereas movements across a subject or a subject binder in (15c) do.

(15) *Japanese* (Nakamura, Takanobu p.c.)

a. Karera$_i$-ga [Mari-to Hanako]$_j$-ni [**otagai**$_{i/j}$-no sensei]-o syookaista
they-NOM Mari-and Hanako-DAT each.other-GEN teacher-ACC introduced
'They introduced each other's teacher to Mari and Hanako.' *baseline*

b. Karera$_i$-ga [**otagai**$_{i/*j}$-no sensei]-o [Mari-to Hanako]$_j$-ni _____ syookaista
they-NOM each.other-GEN teacher-ACC Mari-and Hanako-DAT introduced
'They introduced each other's teacher to Mari and Hanako.'

c. [**Otagai**$_{i/??}$-no sensei]-o karera$_i$-ga [Mari-to Hanako]$_j$-ni ____ syookaista
each.other-GEN teacher-ACC they-NOM Mari-and Hanako-DAT introduced
'They introduced each other's teacher to Mari and Hanako.'

It is in fact possible for the accusative object to exhibit reconstruction effects when the accusative object scrambles over an adverb and its antecedent, as illustrated in (16b)[6]:

(16) *Japanese* (Miyagawa 1997: 4,8)

a.???John-ga [**otagai**$_{i/j}$-no tomodati]-o [Hanako-to Mary]$_j$-ni ____ syookaista
they-NOM each.other-GEN friends-ACC Hanako-and Mari-DAT introduced
'John introduced each other's friends to Hanako and Mary.'

b.(?)John-ga [**otagai**$_{i/j}$-no tomodati]-o isoide [Hanako-to Mary]$_j$-ni ____
they-NOM each.other-GEN friends-ACC quickly Hanako-and Mari-DAT
syookaista
introduced
'John introduced each other's friends to Hanako and Mary quickly.'

Similarly, in Hindi, short scrambling does not reconstruct for the purposes of anaphor binding, whereas intermediate scrambling allows the interpretation of the moved items to be bound in its base position:

(17) *Hindi* (Bhatt and Anagnostopoulou 1996: 15)

a. unhõne$_i$ laRkiyõ-ko$_j$ [**ek-duusre**$_{i/j}$ kii kitaabẽ] dĩ-ĩ.
they girls-DAT each-other GEN books give-PFV
'They$_i$ gave the girls$_j$ each other$_{i/k}$'s books.'

b. unhõne$_i$ [**ek-duusre**$_{i/*j}$ kii kitaabẽ] laRkiyõ-ko$_j$ ____ dĩ-ĩ.
they each-other GEN books girls-DAT give-PFV
'They$_i$ gave the girls$_j$ each other$_{i/*j}$'s books.'

c. [**ek-duusre**$_{i/*j}$ kii kitaabẽ] unhõne$_i$ laRkiyõ-ko$_j$ ____ dĩ-ĩ.
each-other GEN books they girls-DAT give-PFV
'They$_i$ gave the girls$_j$ each other$_{i/*j}$'s books.'

In Dinka, using the reflexives, we see that movement to Spec-CP may reconstruct for anaphor binding to its base and intermediate positions:

(18) *Dinka* (van Urk 2015: 220)

[6]Miyagawa (1997) partially uses this data for the claim on Japanese that the direct object may undergo A'-scrambling (so-called VP-adjunction scrambling) over indirect object.

a. Rɔ̀t-dé$_i$ à-cɛ̣̀$_i$ nhiâar ___.
self-SG.3SG 3S-PRF.3SG love.NF
'Herself/himself, she/he has loved.'

b. Rɔ̀t-dé$_i$ à-yʊ̀ʊ̣̀ tàak ___ [$_{CP}$ ɛ̣̀ cɛ̣̀$_i$ nhiâar ___].
self-SG.3SG 3S-HAB.1PL think.NF C PRF.3SG love.NF
'Herself/himself, we say that she/he has loved.'

c. Rɔ̀t-dé$_i$ à-cɛ̣̀$_i$ tàak ___ [$_{CP}$ ɛ̣̀ cʊ̀ʊ̣̀ʊ̀ nhiâar ___].
self-SG.3SG 3S-PRF.3SG think.NF C PRF.1PL love.NF
'Herself/himself, she/he has thought that we have loved.'

Tha lack of reconstruction effects for bound variables is also reported in German. Consider (19), where the indirect object is the binder and the direct object contains the bound pronoun:

(19) *German* (Lee and Santorini 1994: 262–263)

a. daß Maria jedem$_i$ [**seinen**$_i$ Nachbarn] vorgestellt hat.
that Maria.NOM everyone.DAT his.ACC neighbor.ACC introduced has
'that Maria introduced everyone$_i$ to his$_i$ neighbor.'

b. *daß Maria [**seinen**$_i$ Nachbarn] jedem$_i$ ____ vorgestellt hat.
that Maria.NOM his.ACC neighbor.ACC everyone.DAT introduced has
Intended: 'that Maria introduced everyone$_i$ to his$_i$ neighbor.'

Scrambling the direct object across the indirect object, as illustrated in (19b), gives rise to non-reconstruction effects.[7]

I have shown that the reconstruction effects for anaphor binding and variable binding can arise from the certain movement dependencies.[8] When the direct object which contains bound

[7] In German, an example like (20) (with scrambling of an XP which contains a bound pronoun to a position preceding a subject DP is hardly possible) does not show a contrast concerning reconstruction effects:

(20) *dass [**seinen**$_i$ Nachbarn] Maria jedem$_i$ ____ vorgestellt hat.
that his.ACC neighbor.ACC Maria.NOM everyone.DAT introduced has

I contend, however, that the infelicity in (20) follows from the evaluation of the output structures by information-structural and prosodic constraints. As seen in the contrast between (21b) and (21c), the length of dependency matters for the asymmetry of reconstruction effects:

(21) a. dass keiner den Leuten$_i$ [Bücher über einander$_i$] zeigen wollte
that no.NOM the.DAT people books about each.other show wanted

b. *?dass keiner [Bücher über einander$_i$] den Leuten$_i$ zeigen wollte
that no.NOM books about each.other the.DAT people show wanted

c. ?dass [Bücher über einander] keiner den Leuten zeigen wollte
that books about each.other no.NOM the.DAT people show wanted

Some speakers find example (21c) degraded. Nevertheless, it appears to me that those speakers permit the example (21c) in a context where the moved item (e.g., *Bücher über einander*) is set up as the topic. The speakers I have consulted with have judged (21b) as robustly ungrammatical.

[8] In this paper I am concerned with reconstruction effect for anaphor and variable binding and therefore will not

elements undergoes movement, it is required to move above the benefactive argument or the subject in order for the bound elements to be interpreted to be bound by their antecedents. The reconstruction for Principle A cannot be tied to a property of A- or A-bar movement. We have already seen that both A- and A-bar moved constituents can exhibit reconstruction effects and the asymmetry of reconstruction effect is rather originated from the length of the movement dependencies.

3 Previous work

Since the advent of the Copy Theory of Movement (Chomsky 1993, 1995) the predominant view of reconstruction effects is that they are the consequence of interpreting only the lower copies of moved elements at LF. In the Minimalist program, one of the accounts of reconstruction effects is proposed by Lasnik (1999) (see also Chomsky (1995); Fox (1999); Boeckx (2001)). He attributes the presence or absence of reconstruction effects to whether or not a movement step leaves behind a copy of the moved item, or a simple trace (or nothing).[9] However, if it is not derived from anything and there is nothing more than arbitrary stipulation, why are then some traces copies, and others not? [10]

A recent attempt to derive this asymmetry of reconstruction effects for variable binding is presented in Lechner (2018). He revisits the observation that short scrambling in German lacks reconstruction effects for pronominal binding (Frey 1993; Lechner 1998; Lee and Santorini 1994). To derive this pattern, he modifies the licensing condition on Wholesale Late Merger (WLM) (Takahashi and Hulsey 2009) of the base-generated position of nominal restrictors.[11] This modified

deal with scope reconstruction. It has been proposed that scope reconstruction does not entail binding reconstruction (cf. Lechner (1998); Sportiche (2006); Keine and Poole (2018); see also Kim (2015: 37) for scope ambiguity under short scrambling in Korean):

(22) German (Lechner 1998: 297–298)

a. weil wir$_i$ allen Koellegen$_j$ [einige Freunde von einander$_{i/j}$] vorstellen wollten.
since we all colleagues.DAT some friends.ACC of each.other introduce wanted
'since we wanted to introduce some friends of each.other to every colleague.' ($\exists > \forall$, *$\forall > \exists$)

b. weil wir$_i$ [einige Freunde von einander$_{i/*j}$]$_k$ allen Koellegen$_j$ ____ vorstellen wollten.
since we some friends.ACC of each.other all colleagues.DAT introduce wanted
'since we wanted to introduce some friends of each.other to every colleague.' ($\exists > \forall, \forall > \exists$)

Since the analysis developed here is subject to movement dependencies of referentially dependent items, my account should in principle be compatible with any mechanism to deal with scope reconstruction.

[9] In the Government and Binding tradition the reconstruction effects have been captured in terms of the properties of the position; A-bar traces are assumed to behave as R-expressions, and A traces as anaphors.

[10] Following Lasnik (1999), Manzini and Roussou (2000) takes this intuition that moved expressions only count as being there in their A-bar positions and reformulate this idea derivationally.

[11] Lechner (2018) proposes that WLM is not subject to Case but the requirement that the NP-complement resides within the c-command domain of an abstract head with agreeing ϕ-features:

(23) ϕ-constraint on Restrictor Insertion (Lechner 2018: 21)
A restrictor argument R can be merged with a determiner D at the stage S of a derivation only if R is within the c-command domain of a ϕ-head at S.

It differs from the original licensing condition on WLM. It makes restrictor insertion contingent upon an agreeing higher head bearing ϕ-features, instead of Case features.

condition sets a lower bound for the insertion of a restrictor of a direct object above the VP, ensuring that fronted direct objects acquire their restrictors only once they have passed over the indirect object.[12] However, as the modified condition demands the restictors are inserted only VP externally, it would predict that the direct object can never be bound by the (quantified) indirect object regardless of the criterial step of the movement, contrary to fact. Furthermore, it even cannot explain why the pronoun contained in the direct object can be bound by the quantified indirect object in the base order.

Assuming the relevant syntactic and semantic constraints apply at LF, the syntactic operation for treating this reconstruction effects is termed as *higher-copy neglection* (Sportiche 2006; Keine and Poole 2018). On a higher-copy neglection account, the bound reading in A-bar movement involves neglecting the higher copy and only interpreting the lower copy at LF. However, this cannot give any satisfactory account for why the higest copy induced by short scrambling is not neglected, but the higher copies created by intermediate and long scrambling must be neglected.

Crucially, the account of the A and A-bar distinction cannot give satisfactory explanation, since reconstruction for Condition A is not pertaining to any classic dichotomy of movement types.[13] An approach that is designed to eliminate the notion of A versus A-bar positions in terms of features that trigger Merge is developed in van Urk (2015) (see Kobele (2009)[14] for a timing-based account of the A and A-bar distinction). In this approach, different interpretive effects are tied to different features that trigger Agree relations. Agree for A-bar movement triggers abstraction over choice functions, while Agree for A-movement is accompanied by abstraction over individuals (Sauerland 1998; Ruys 2000). However, it does not restrict any LF to neglect the lower copy to ensure the absence of reconstruction effects for anaphor and variable binding.

In fact, there is a more fundamental problem that the interpretative procedure faces in the recent minimalist syntax. In Phase Theory (Chomsky 2000, 2001), syntactic strutures are built in *phases* and this part of syntactic structure is cyclically transferred to the interfaces. This locality condition is formulated in Phase Impenetrability Condition:

(24) *Phase Impenetrability Condition* (PIC) (Chomsky 2000: 108)
In a phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations.

[12] To be specific the direct object starts out as a bare determiner, and the nominal restrictor is only inserted VP-externally after the direct object undergoes an additional movement step to Scr(amble)P.

[13] Some of the properties distinguishing movement types, such as ability of A movement to create a new antecedent for anaphors or inability of A-bar movement to obviate Weak Crossover can be accounted for in configurational views, and hence are better viewed as an accidental, rather than as an essential property of movement types.

[14] In his account, the distinction between copies and traces is recast in terms of the timing in which the object is present or not in the structure at the time the dependency in question enters. A-dependencies are established before an expression to be bound is first merged into a structure, and A-bar dependencies are built after an expression has been bound. Since the different dependencies are established by the different features encoded in the lexical items, it needs to stipulate the feature sets of the lexical items so that the object can enter the structure in the right timing to build the dependencies.

According to the PIC, only the edge of a phase remains accessible to operations outside of that phase. The movement may be successive-cyclic and targets the edge of every phase to remain accessible to operations outside of that phase.

A problem to be addressed is how to interpret movement dependencies which stretch over the phases, if interpretative procedures are proceeded by phases. The core issue in question is that the grammar should know which copy to interpret and to ignore only if the movement creates a copy high enough (e.g., intermediate scrambling). But a phase complement which contains a lower copy has already undergone spell-out and is not accessible anymore, so there is a *back-tracking problem*.[15] Moreover, if we assume that copies created by A-bar movement should be treated as copies of the moved expression, while copies generated by A-movement should be treated as unstructured objects (Fox 1999; Lasnik 1999), then a *look-ahead problem* may arise

4 An anti-locality account

In this section, I present an alternative view of the reconstruction effects for Condition A of the binding thoery. I adopt the Agree-based analysis for Condition A of the Binding Theory. I argue that the movement dependencies of the referentially dependent items are subject to the Anti-locality constraint.

4.1 Binding relations derived by Agree

Locality of agreement in the Minimalist framework (Chomsky 2000, 2001) is constrained by the phase, which proceeds incrementally. As the derivation reaches each phase-level, the Spell-out domain is transferred to the two interface components. Following approaches of Heinat (2006); Lee-Schoenfeld (2004); Fischer (2006); Hicks (2009), I adopt a derivational approach to binding. Binding for anaphors and variables is subsumed under Agree, which follows from the PIC, where the domain of a phase head is its complement and the edge is its specifier. Phases are assumed to correspond to every CP and vP.

Anaphor binding and variable binding are encoded as an instance of the syntactic operation Agree. I assume that anaphors and bound variable pronouns are featurally-incomplete (e.g. Reuland (2001); Heinat (2006); Kratzer (2009)) as they are parasitic on their binders. I refer the anaphors and bound variable pronouns as *referentially dependent* items. Referentially dependent items enter the derivation bearing an unvalued feature, which in turn trigger variable binding. In contrast, referentially DPs and operators are items which bear a valued version of the feature. I contend that we need to assume that an additional feature [VAR] is involved in an Agree operation

[15] Poole (2017) addresses the locality problem in Phase Theory, focusing on how to interpret a crossclausal movement chain which spans two phases. His solution is implemented in a multidominant syntax (Johnson 2012, 2014) built by parellel merge. When the phase complement is sent to the interfaces, the information of a higher copy, which is necessary to interpret a lower copy is contained in that phase complement.

between an anaphor and its antecedent (cf. see Hicks (2009) for the use of [VAR] feature). [16] [17] The valued [VAR]-feature is responsible for the interpretation of the anaphor as a variable.[18] The feature can only be bound by a matching valued feature of a local c-commanding antecedent.

For the sake of concreteness let me assume that the binding relation correspond to feature valuation relations between the bound element and the binder. The binding dependency between the antecedents and the referentially dependent items are established by instantiating a value of the [VAR]-feature. Anaphors and (bound variable) pronouns start with an unvalued [⋆VAR⋆:□]-feature and referential DPs and quantified DPs bear a valued [VAR: x]-feature. I assume, furthermore, that Agree for both ϕ- and [VAR]-features happens in an upward fashion in these cases: i.e. that the Goal (i.e. antecedent) c-commands the probe (the bound element and the head) (Bjorkman and Zeijlstra 2014; Wurmbrand 2014). If the value of the c-commanding binder DP is copied to a bound element, the binding via Agree is established. [19] [20]

4.2 Generalized Anti-locality

In the previous section, we have seen that the interpretative procedures face a locality problem under a phase-based approach, in which a part of syntactic structure is cyclically transferred to the interfaces. The aim of this section is to provide an alternative explanation of the asymmetry of reconstruction effects for the purpose of anaphor and variable binding. To summarize what we want to derive; when an XP containing anaphors or bound variables undergoes movement, the length of movement dependency should not be too short. Short scrambling step lacks reconstruction effects, otherwise the moved constituent is interpreted in the base position. I argue that a movement dependency of referentially dependent elements is subject to the generalized Anti-

[16] This sort of feature is an ingredient we need to pursue an agreement-based apporach for anaphor and pronominal binding. It remains to be identified as semantic basis.

[17] The use of ϕ-features to encode binding relations is problematic. As an anaphor and its antecedent share the same reference, it could imply that the two elements share the same ϕ-features. Yet, it is not clear how referential properties are also encoded in ϕ-feature. What is at stake in anaphor binding is essentially a referential dependency, not a ϕ-feature dependency. And the ϕ-feature dependency still requires a modification regarding variable binding.

[18] This is reminiscent of the split in the featural specification of DPs that Reinhart and Reuland (1993) propose. Referential DPs bear [+R] based on the ability of DPs to pick out a discourse antecedent, and anaphors and bound pronouns bear [-R] based on their referential dependence. McGinnis (1998) also takes a similar approach by assuming R-feature which encodes referentiality on DPs. She suggests that the R-feature of a referential DP must be copied onto an anaphor in the course of the derivation.

[19] Concerning a potential caveat pertaining to the mechanism of Agree, this sort of probing would be problematic, as it is traditionally assumed that heads, not that phrases can probe. Nevertheless, there have been proposals that the maximal projection may serve as a probe (cf. Clem (2019)).

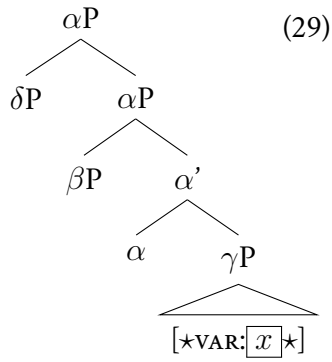
[20] Concerning the possibility in which the target of valuation needs to be c-commanded by the goal, and valuation is hence downward, which is implemented in terms of Upward Agree (Bjorkman and Zeijlstra 2014; Wurmbrand 2014). The configuration for these agreement relations requires the strict spec-head relation. One might pursue an approach by implementing an Agree relation via a head as a controller. Concretely, the antecedent and the bound elements are indirectly involved in Agree operation in the alternative model. The binding relation is mediated by another functional head (in a similar vein, see Kratzer (2009), Heinat (2006) for Value Sharing Agree, Murphy and Meyase (2019) for Mediated Agree.). While the unvalued feature of the nominals is copied on the licensing head, the functional head and the nominal form a link and the value of the feature is shared (Pesetsky and Torrego 2001, 2007). In other words, feature sharing on the head and the nominals functions as a joint probe to get relevant ϕ- and [VAR]-features valued. However, this is orthogonal to the main question.

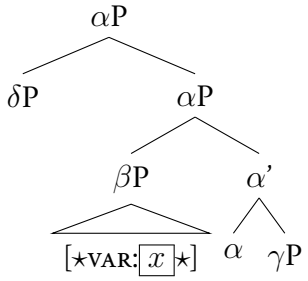
locality requirement, as follows (for other definitions see Abels (2003); Grohmann (2003); Erlewine (2016)):

(25) *Generalized Anti-Locality*:
*[... α_i ... α_{i+1}...] (where α_i, α_{i+1} are adjacent members of a referentially dependent movement dependency) unless there is a Γ such that
a. Γ is the domain of a phrase.
b. α_i c-commands the phrase that Γ is the domain of.
c. α_{i+1} is reflexively included in Γ.

(26) *Referential dependence*:
An XP qualifies as *referentially dependent* if the Minimal Domain[21] of the head X contains a member which bears a valued [⋆VAR⋆ : x] feature.

Given the definition of referential dependence, an XP which contains anaphors or bound pronouns is considered as referentially dependent items (i.e., *Minimal*($Max(\alpha)$)= {βP, γP δP}). As in (29), if the [⋆VAR:□⋆] is not yet valued, the XP does not qualify as referentially dependent even though it is featurally-incomplete.

(28)


(29)


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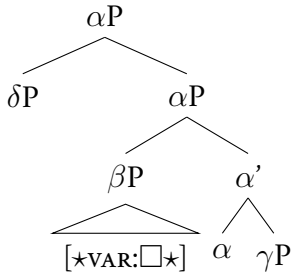


(25) says when the referentially dependent item which has been valued via Agree undergoes movement, this movement dependency must comform to the Anti-locality constraint. To illustrate (25), consider the toy example, where a referentially dependent item α is base-merged in [Comp, ZP] and α moves to [Spec, ZP], as illustrated in (31):

[21] Consider the following version of the Minimal Domain:

(26) *Minimal Domain* (Chomsky 1995: 178)
a. $Max(\alpha)$ = the least full-category irreflexively dominating α.
b. *Domain* of a head α = the set of nodes irreflexively contained in $Max(\alpha)$ that are distinct from α and do not contain α.
c. For any set S of categories, *Minimal Domain*(S) is the smallest subest K of S such that for any $\gamma \in S$, some $\beta \in K$ reflexively dominates γ.

(31) $[_{ZP}\ \alpha_i\ [_{Z'}$ DP Z <α_{i+1}>]] *Comp-to-Spec*

(32) $[_{YP}\ \alpha_i$ DP Y $[_{ZP}$ DP Z <α_{i+1}>]] *Comp-to-Spec*

(33) $[_{YP}\ \alpha_i$ Y $[_{ZP}$ <α_{i+1}> Z DP]] *Spec-to-Spec*

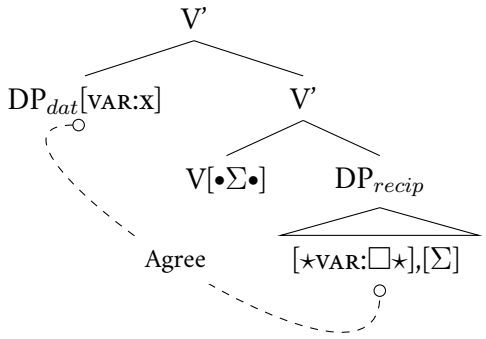
If the referentially dependent object moves and is merged as Z's specifier, this movement step violates too-short movement constraint. If the movement step is sufficiently anti-local, this movement is ruled-in. As schematized in (32) - (33), α_i can c-command ZP, a domain which reflexively contains <α_{i+1}>. This condition functions as a lower-bound restriction requiring a minimum distance of movement of the referentially dependent items.

I start with the central data that short scrambling does not exhibit the reconstrunction effect for Condition A:

(34) *Sora-ka [**selo**$_i$-uy emma-lul] [Suzi-wa Bora]$_i$-eykey ____ sokayhayssta.*short*
Sora-NOM each.other-GEN mother-ACC Suzi-and Bora-DAT introduced
Intended:'Sora introduced Suzi and Bora to each other's mothers .'

The derivation for (34) proceeds bottom-up as follows:

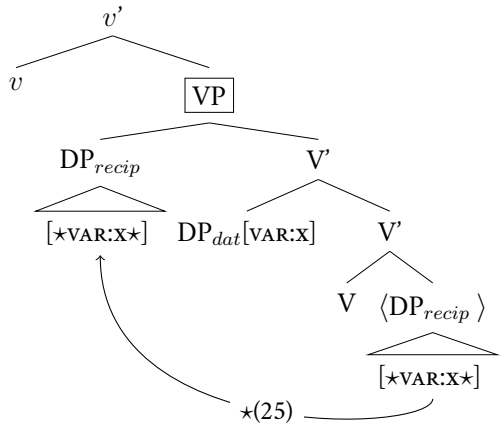
(35)



The direct object which contains an anaphor with an unvalued [VAR]-feature searches its goal with the matching feature in the upward fashion. The antecedent DP values the [VAR]-feature on the probe and the binding relation is established.[22] Scrambling involves a structure-building feature ([•Σ•]) (Grewendorf and Sabel 1999; Heck and Müller 2007) on the attracting head and a movement-related feature ([Σ]) (Kawamura 2004) on the moved item. The tree structure after scrambling before spell out thus looks like this:

[22]As structure-building features [•F•] and probe features [⋆F⋆] are uninterpretable features which cannot be interpreted at the interfaces, they should be discharged during the derivation. Here, I stipulate that [VAR] features are visible after it receives a value from a matching feature on a goal for further syntactic operations and at the interfaces, since this feature is associated with semanticosyntactic interpretation.

(36)



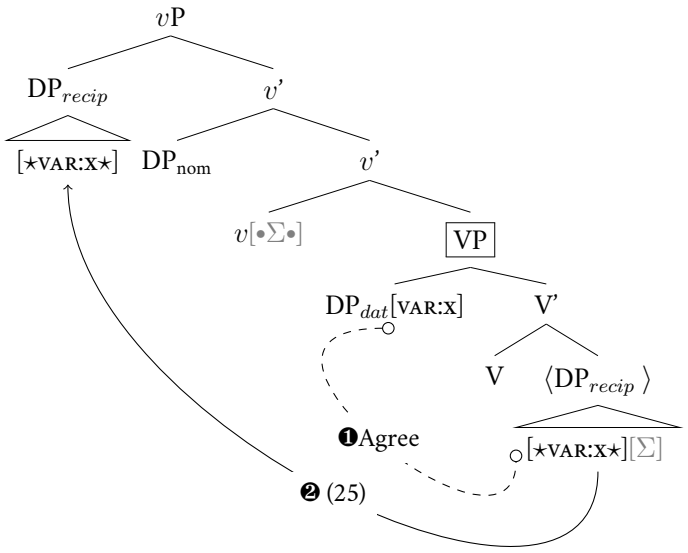
The movement step is too local and the direct object does not escape out of the VP. The movement dependency in (36) violates the Anti-locality in (25).

Contrary to (34), the intermediate scrambling does exhibit the reconstructed interpretation:

(37) [**Suzi-wa Bora**]$_i$-lul Sora-ka [selo$_i$-uy emma-eykey] ____ sokayhayssta.
Suzi-and Bora-ACC Sora-NOM each.other-GEN mother-DAT introduced
'Sora introduced each other's mothers to Suzi and Bora .' *Inter.*

The binding dependency in (37) is established between the referentially dependent XP and its binder via Agree, followed by the subsequent movement, which conforms to Anti-locality constraint:

(38)



Furthermore, the present analysis also predicts that a referentially dependent XP that is bound by a subject and undergoes short scrambling is well-formed, as in (39b):

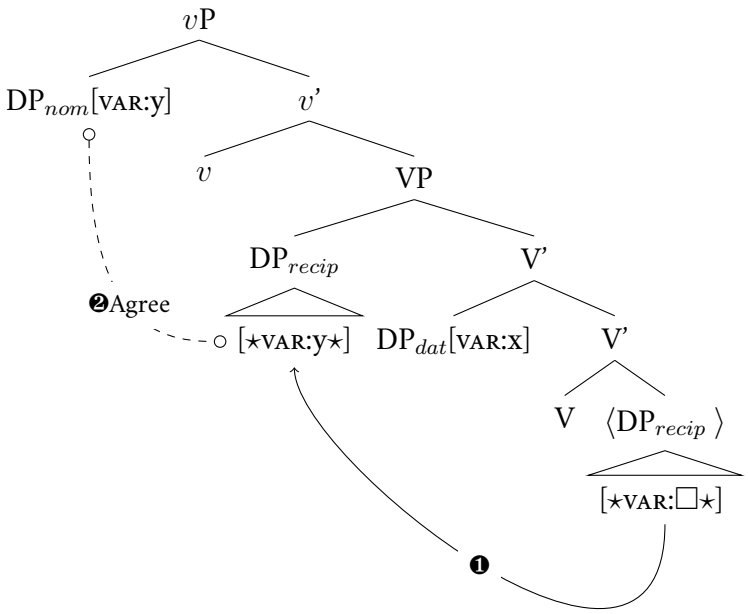
(39) a. [Suzi-wa Bora]$_i$-ka Sora-eykey [**selo**$_i$-uy emma-lul] sokayhayssta.
Suzi-and Bora-NOM Sora-DAT each.other-GEN mother-ACC introduced
'Suzi and Bora introduced each other's mothers to Sora .' *baseline*

b. [Suzi-wa Bora]$_i$-ka [**selo**$_i$-uy emma-lul] Sora-eykey ____ sokayhayssta.
Suzi-and Bora-NOM each.other-GEN mother-ACC Sora-DAT introduced

c. [**Selo**$_i$-uy emma-lul] [Suzi-wa Bora]$_i$-ka Sora-eykey ____ sokayhayssta.
each.other-GEN Suzi-and Bora-NOM mother-ACC Sora-DAT introduced

In (39b), the DP$_{recip}$ moves to a SpecV position and the [⋆VAR:□⋆] feature on the the DP$_{recip}$ gets valued by the subject. Given the notion in (26), the higher copy of the DP$_{recip}$ is referentially dependent, but the lower copy of the DP$_{recip}$ is not. Therefore, the movement step of the DP$_{recip}$ in (40) is not subject to the Anti-locality constraint. In this respect, this approach permits a more fine-grained variation, by capturing the distinction of valued and unvalued features throughout the derivation.

(40)



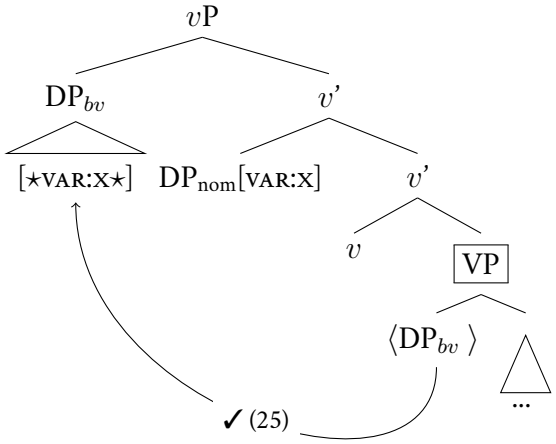
Finally, the movement of dative argument which contains bound variable does not violate Anti-locality in (25), because it starts from Spec VP and targets to Spec vP, as illustrated in (42):

(41) Reconstruction for the bound variable

a. [Etten cwuin-i$_i$] [**ku**-uy$_i$ kangaci-eykey$_i$] pap-ul cwu-ess-ni?
which owner-NOM he-GEN puppy-DAT meal-ACC give-PST-Q
'Which owner gave a meal to his puppy?' *baseline*

b. ?[**Ku**-uy$_i$ kangaci-eykey$_i$] [etten cwuin-i$_i$] ___ pap-ul cwu-ess-ni?
he-GEN puppy-DAT which owner-NOM meal-ACC give-PST-Q
'Which owner gave a meal to his puppy?'

(42)



Under this approach, the non-reconstruction effect for the purpose of anaphor and variable binding in short scrambling follows from the Anti-locality constraint on the referentially dependent elements.

4.3 Predictions

The current approach makes a further prediction about the asymmetric structure for two ditransitive constructions in Korean. In Kim's (2015) proposal, she investigates two ditransitive constructions in Korean; (i) the postpositional dative construction (PDC) (realized as [Dative-Accusative]); (ii) the double object construction (DOC) (realized as [Accusative-Accusative]), as illustrated below:

(43) (Kim 2015: 35)

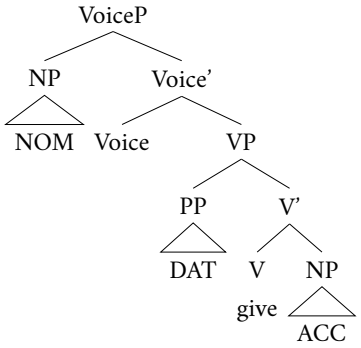
a. Hana-ka Chelswu-eykey keyiku-lul cwu-ess-ta.
Hana-NOM Chelswu-DAT cake-ACC give-PST-DECL
'Hana gave a cake to Chelswu.' *PDC*

b. Hana-ka Chelswu-lul keyiku-lul cwu-ess-ta.
Hana-NOM Chelswu-ACC cake-ACC give-PST-DECL
'Hana gave Chelswu a cake.' *DOC*

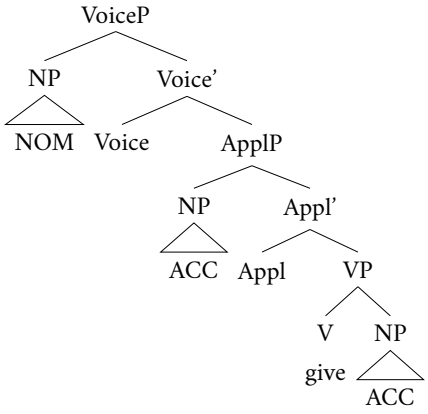
She proposes two different structures for each construction, as follows[23]:

[23]This asymmetry is supported with the evidence with regard to quantifier scope, nominalization, and idioms (Kim 2015).

(44) PDC



(45) DOC



An external argument is assumed to be introduced by a functional head Voice. The goal and theme in the PDC are the arguments of the ditransitive verb within the VP. In contrast, in the DOC, the first accusative object (i.e. indirect object) is introduced by an applicative head, while the second accusative object (i.e. direct object) is the argument of the ditransitive verb.

The prediction would be that shot scrambling of the direct object in the DOC is well-formed, since it undergoes scrambling to the specifier of Appl, where the higher copy can c-command its domain. This prediction is borne out. We can observe the contrast between the PDC and the DOC with respect to reconstruction effeects for bound variables, as shown in (46b) and (47b):

(46) (Non-)Reconstruction for variable pronouns in PDC

a. Chelswu-ka [etten$_i$ cwuin-eykey] [**ku**-uy$_i$ kangaci-lul] cwu-ess-ni?
C-NOM which owner-DAT he-GEN puppy-ACC give-PST-Q
'To which owner did Chelswu give his puppy?' *baseline*

b. *Chelswu-ka [**ku**-uy$_i$ kangaci-lul] [etten$_i$ cwuin-eykey] ___ cwu-ess-ni?
C-NOM he-GEN puppy-ACC which owner-DAT give-PST-Q
'To which owner did Chelswu give his puppy?'

c. ?[**Ku**-uy$_i$ kangaci-lul] Chelswu-ka [etten$_i$ cwuin-eykey] ___ cwu-ess-ni?
he-GEN puppy-ACC C-NOM which owner-DAT give-PST-Q
'To which owner did Chelswu give his puppy?'

(47) Reconstruction for variable pronouns in DOC

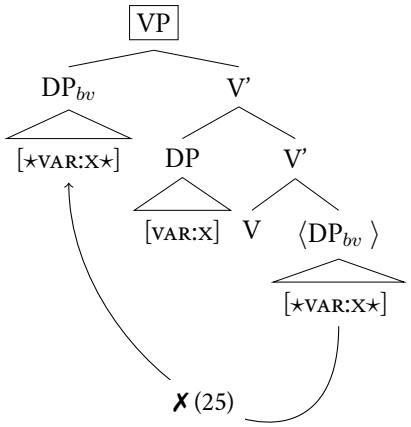
a. Chelswu-ka [etten$_i$ cwuin-ul] [**ku**-uy$_i$ kangaci-lul] cwu-ess-ni?
Chelswu-NOM which owner-ACC he-GEN puppy-ACC give-PST-Q
'Which owner did Chelswu give his puppy?' *baseline*

b. Chelswu-ka [**ku**-uy$_i$ kangaci-lul] [etten$_i$ cwuin-ul] ___ cwu-ess-ni?
Chelswu-NOM he-GEN puppy-ACC which owner-ACC give-PST-Q
'Which owner did Chelswu give his puppy?'

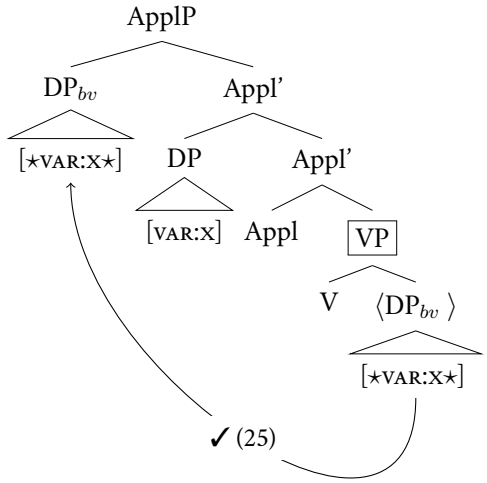
c. [**Ku**-uy$_i$ kangaci-lul] Chelswu-ka [etten$_i$ cwuin-ul] ___ cwu-ess-ni?
he-GEN puppy-ACC Chelswu-NOM which owner-ACC give-PST-Q
'Which owner did Chelswu give his puppy?'

When an XP which contains the bound variable pronoun undergoes movement in PDC, the movement step does not obey Anti-locality constraint, as schematized in (48). In contrast, when the referentially dependent XP undergoes short scrambling in DOC, the movement of both short and intermediate scrambling is licensed. The theme argument moves out of the VP in (49), resulting in conforming to the Anti-locality constraint.

(48)



(49)



In Kannada, two different ditransitive constructions in which the accusative argument precedes the dative argument in the base order also exhibits a similar contrastive pattern (Lidz and Williams (2005)):

(50) *Non-benefective ditransitives*

a. sampaadaka [pratiyondu lekhana$_i$-vannu] [**adar**$_i$-a lekhan-ige] kaḷis-id-a
editor every article-ACC it-GEN author-DAT send-PST-3SM
'The editor sent every article to its author.' *ACC ≺ DAT*

b. *sampaadaka [**adar**$_i$-a lekhan-ige] [pratiyondu lekhana$_i$-vannu] kaḷis-id-a
editor it-GEN author-DAT every article-ACC send-PST-3SM
'The editor sent every article to its author.' *DAT ≺ ACC*

(51) *Benefective ditransitives*

a. sampaadaka [pratiyondu lekhana$_i$-vannu] [**adar**$_i$-a lekhan-ige] kalisi-koṭṭ-a.
editor every article-ACC it-GEN author-DAT send-BEN.PST-3SM
'The editor sent every article to its author.' *ACC ≺ DAT*

b. sampaadaka [**adar**$_i$-a lekhan-ige] [pratiyondu lekhana$_i$-vannu] kalisi-koṭṭ-a.
editor it-GEN author-DAT every article-ACC send-BEN.PST-3SM
'The editor sent every article to its author.' *DAT* $\prec$ *ACC*

In non-benefactive ditransitives, a dative which contains the bound variable pronoun cannot reconstruct to its base position.[24] In benefactive constructions, due to the additional projection of benefactive, the movement dependency is well-formed, and exhibits reconstruction effect by interpretating the lower copy in the base position.

5 Concluding remarks

What has so far been addressed in terms of the concept of reconstruction for Principle A in the literature now emerges as a consequence of Generalized Anti-locality constraint on movements of referentially dependent items, without referring to the final landing site. The feature of the analysis is that the referentially dependent items are subject to Anti-locality. When an intervening projection makes this movement step sufficiently anti-local, the effect goes away.

This work, and others that assume such a too-short movement constraint, raises a question of why this anti-locality constraint might exist in the first place. It also raises the question of how far this restriction applies to. Given the notion of referential dependence, we may expect the illicit movement involving with other kinds of referential dependent items that have to obey Anti-Locality. For example, we may observe other cases of parallel behavior in remnant movement configuration, more specifically, where the two items undergo the same kind of movement (referred to as the "Müller-Takano genernalization" (Müller 1993; Takano 1994)). In (52a), a DP scrambling from VP to a position which precedes the subject is accompanied by remnant VP scrambling. In (52b), DP undergoes long-distance scrambling, followed by remnant CP scrambling. When one considers a remnant XP to be referentially dependent in the sense that it contains the trace left after DP scrambling, this movement step of the remnant XP is ruled out due to the Anti-locality requirement.

(52) a. *dass [$_{VP}$ t$_i$ zu lesen]$_j$ [$_{DP}$ das Buch]$_i$ keiner t$_j$ versucht hat *German*
that to read the book.ACC no-one tried has

b. *[$_{CP}$ Mary-ga t$_i$ yonda-to]$_j$ [$_{DP}$ sono hon-o]$_i$ John-ga t$_j$ itta (kota)*Japanese*
Mary-NOM read-COMP that book-ACC John-NOM said that

It also might be extended to referentiality or D-linking (in the sense of Cinque (1990); see also Pesetsky (1987); Rizzi (1990)) to acount for the extractability of wh-phrases out of weak islands. It remains to be open whether this new perspective can be extended to other types of Ā-movements

[24]Note that the scrambling of the dative argument over the accusative arguments in Kannada can obviate Weak Crossover.

with referentially independent items (e.g., topicalization, relativization, wh-movement). If we assume that operators are inherently dependent elements to the C head, the classical Ā-movements can be reconciled with Generalized Anti-Locality.

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