A new look at Japanese and Korean scrambling

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Evidence from ang-movement in Tagalog sheds new light on A-scrambling in Korean and Japanese. Like A-movement, local scrambling can create new binding relations. This follows if local scrambling can be to an A-position. Yet, like A-bar movement, such A-scrambling cannot rescue a Condition C violation in some languages, including Japanese and Korean. I propose that this is because in these cases A-scrambling leaves behind a Case-marked copy that is accessible for binding. The R-expression in the copy remains bound, violating Condition C. The predictions of the proposed Minimalist analysis closely resemble those of Saito’s 1992 and 2003 analyses, but unlike Saito’s, the proposed analysis predicts that local scrambling can also create a new Condition C violation. Evidence for this analysis comes from Tagalog, where ang-movement to the highest A-position has the same binding properties as A-scrambling, and is morphologically distinct from A-bar scrambling.

1. Overview

Many languages, including Korean (1) and Japanese (2), allow local scrambling to an A-position, creating new binding possibilities. For example, scrambling the object quantifier in (1) allows it to bind a pronoun contained in the subject, while scrambling the pronominal object in (2) allows it to bind a reciprocal contained in the subject.

(1) a. *[pro_i chinkwu-ka] nwukwu-lul_i paypanhayss-ni.
   pro-GEN friend-NOM who-ACC betrayed-Q
   ‘*Who_i did hisfriend betray?’

      (Frank et al. 1996 (FLR):77)

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(2) a.  ?* [Otagai-i-no sensei-ga] karera-o hihaNshita (koto)  
each other-GEN teacher-NOM they-ACC criticized fact  
‘Each other’s teachers criticized them.’  

b.  ? Karera-o [otagai-i-no sensei-ga] ___ hihaNshita (koto)  
(Saito 1992 (S):74–75)  

However, unlike A-movement, local scrambling in Japanese (3) and Korean (4) cannot 
repair a Condition C violation. If an R-expression is bound, scrambling a phrase that 
contains it does not repair the violation.

(3) ?? [Taro-no shashi N]-o [kare-i-ga jibun-no heya-ni kazatteiru] (koto)  
Taro-gen picture-acc he-nom self-gen room-in display fact  
‘He displays Taro’s picture in his room.’ (S:91)

(4) a.  * Ku-ka_i [Minswu-uy_i emma]-lul coahanta.  
he-nom Minswu-gen mother-acc like-Q  
‘He likes Minswu’s mother.’  

b.  * [Minswu-uy_i emma]-lul ku-ka_i ___ coahanta.  
Minswu-gen mother-acc he-nom like-Q  
‘*He likes Minswu’s mother.’ (FLR:75)

To account for these facts, I will argue that local scrambling in Korean and Japanese can 
be movement to an A-position, but like A-bar movement, it leaves behind a Case-checked 
copy that is subject to binding from a higher position.

2. Binding and types of movement

Phrasal movement is traditionally divided into two types, A- and A-bar movement. A-movement typically targets the syntactic subject position, although there are other plausible cases, such as object shift, or raising to object in ECM contexts. A-movement often interacts with case-marking and phi-feature agreement. Indeed, it is widely assumed that A-movement is driven by the need to check structural Case, or at least made possible by the existence of an unchecked Case feature on DP. However, it has also been argued that A-movement is driven purely by the Extended Projection Principle (EPP) (Marantz 1991). By contrast, A-bar movement is typically to a position above the subject, as in the cases of wh-movement and topicalization. It usually does not interact with case-marking or phi-feature agreement, though there is at least one intriguing set of exceptions (Polinsky and Potsdam 2001, Branigan and MacKenzie 2002, Bruening 2001). It is generally assumed that A-bar movement is driven by interpretive requirements, such as the requirement for a wh-phrase to take clausal scope.

The core distinguishing features of A- and A-bar movement are their binding properties. These fall into two categories: the binding capacity of the target (the position after movement), and the ability of the source (the position before movement) to be bound from higher positions after movement has taken place.
2.1. The target position

A-bar positions are unable to bind pronouns, anaphors, or R-expressions. (5a) illustrates what is usually called a weak crossover (WCO) violation: an operator can only bind a variable from an A-position.¹ The highest A-position of who in (5a) is below the subject position, so who cannot bind a pronoun contained in the subject DP. On the other hand, in (5b), the highest A-position of who is the subject position. This position c-commands the pronoun, so no violation arises.

(5) a. *Who did his rival vote for <who>?
   b. Who voted for his rival?

Unlike A-bar movement, A-movement can create new binding possibilities. For example, in (6a), the pronoun contained in the matrix experiencer cannot be bound by the quantified embedded subject. However, if the quantified subject raises to the matrix subject position (6b), it does c-command the pronoun from an A-position, and binding is possible.

(6) a. *It seems to her father that every girl is likely to win the race.
   b. Every girl seems to her father to be likely to win the race.

The binding differences between A- and A-bar positions can be straightforwardly captured under certain assumptions about feature checking. I will assume that binding is established via c-command. I will also assume that A-positions are associated with an uninterpretable D-feature [uD] — either a selectional feature checked by the initial (external) Merge of the DP, or a categorial (EPP) feature on a higher head H that attracts the DP to Spec,H.² I propose that checked [uD] acts as a “binder prefix”, which bears the index responsible for binding lower DPs (Büring 2005:85–86). Under this analysis, while checked [uD] features are themselves uninterpretable, they play an important role in mediating binding dependencies, as illustrated in (8). For convenience, however, I will continue to use the notation of indexing the binder DP rather than a separate binder prefix.

¹ The term weak crossover is used purely descriptively here. The term implies that a violation arises because the operator undergoes A-bar movement over the variable (cf. Ritter and Rosen 2005). However, this does not appear to be the case. For example, in (i), the quantifier cannot bind the pronoun his even though, as (ii) shows, it cannot undergo QR out of the relative clause to a position above the matrix subject.

(i) *His mother resented [the woman who divorced every man].
(ii) # Someone resented [the woman who divorced every man]. (some>every, *every>some)

² I assume that “A-scrambling” is EPP-driven (Miyagawa 2001, 2005). However, such an analysis must somehow avoid the incorrect prediction that, like an external argument or a passive subject, a scrambled object will be able to bind the subject-oriented anaphor jibun (Saito 2006). The issue is a challenging one. The subject-oriented anaphor may be sensitive to the Case position of the antecedent; I assume that this is Spec,v or Spec,T for subjects, but below v for objects, even scrambled ones.
On the assumption that A-bar positions are not associated with either selectional or attracting [uD] features, they will be unable to bind pronouns, anaphors, and R-expressions. This analysis predicts that locality restrictions on A- and A-bar movement have different distributions, as is standardly observed. All things being equal, any DP will block a lower DP from undergoing A-movement to check a [uD] feature on a c-commanding head (8), while only a DP with a certain feature (for example, [wh]) will block a lower DP from undergoing A-bar movement driven by this feature (9).

(8) a. \[ \text{TP} \text{John} [vP <\text{John}> \text{read } <\text{a book}>] \].  
b. \* \[ \text{TP} \text{A book} [vP \text{John read } <\text{a book}>] \].

(9) a. \[ \text{CP} \text{What did } \text{TP} \text{John} [vP <\text{John}> \text{read } <\text{what}>]?? \]  
b. \* \[ \text{CP} \text{What did } \text{TP} \text{who} [vP <\text{who}> \text{read } <\text{what}>]?? \]  
c. \[ \text{CP} \text{Who } \text{TP} <\text{who}> [vP <\text{who}> \text{read } <\text{what}>]?? \]

While A-bar movement cannot create new anaphor- or pronoun-binding dependencies, it does license parasitic gaps. (10a) shows a wh-phrase extracted from object position, while (10b) shows the same wh-object licensing a parasitic gap in an adjunct clause. A parasitic gap cannot be bound from any A-position, even if it is bound from a higher A-bar position as well. (11a) shows well-formed wh-extraction from subject position, while (11b) shows that the wh-subject cannot license a parasitic gap.

(10) a. What did you [vP [vP file <what>]] [before PRO reading the paper]]?
  b. What did you [vP [vP file <what>]] [before PRO reading pg.]]?

(11) a. What was [TP <what>] [vP [vP filled <what>]] [before John reading the paper]]?
  b. \* What was [TP <what>] [vP [vP filled <what>]] [before John reading pg.]]?

I have no detailed Minimalist analysis to offer for this restriction, though it may be derivable from Case restrictions on syntactic dependencies. Because the subject position in (11b) is a Case-checking position, any dependency linking this position with the parasitic gap would involve two Case positions. This is apparently ruled out for parasitic
gap dependencies, as it generally is for movement dependencies. This may suggest that parasitic gaps involve across-the-board movement of the *wh*-phrase (for discussion, see Munn 1994, Postal 1993).

2.2. The source position

While the target position of A-movement can bind lower DPs, its source position does not remain bound by higher DPs. For example, A-movement can rescue a Condition C violation. (12a) shows that a matrix experiencer binds an R-expression contained in the subject of the complement clause of *seem*. If the clause is non-finite, its subject raises to the subject position of the matrix clause (12b). At this point the R-expression is no longer bound by the experiencer, and the result is grammatical.

(12) a. *It seems to him [that [Jack’s wife] is the best candidate].
    b. [Jack’s wife] seems to himi [<Jack’s wife> to be the best candidate].

A-movement can also disrupt well-formed binding dependencies. For example, in (13a), the quantified matrix experiencer binds a pronoun contained in an embedded subject. If the embedded subject raises into the matrix clause, the pronoun is no longer bound, and cannot be coindexed with the quantified phrase. (13b) is a WCO violation just like (5a) *Who did his rival vote for? and (6b) Every girl seems to her father to be likely to win the race.*

(13) a. It seemed to every womani [that her husband was the best cook].
    b. *Her husband seemed to every womani [<her husband> to be the best cook].

By contrast, A-bar movement leaves previous binding dependencies intact. For example, in (14a), the subject binds an object anaphor. Even if this anaphor undergoes A-bar movement (topicalization), the well-formed dependency is preserved (14b). Apparently, it is sufficient for an A-bar-moved anaphor to be bound in its source position.

(14) a. Maryi likes herselfi—she just can’t stand anyone else.
    b. Herself, Maryi likes <herselfi>—she just can’t stand anyone else.

A similar analysis can be extended to Strong Crossover (SCO) violations (see also McGinnis 2004). In (15a), the matrix subject pronoun binds an R-expression in the embedded clause, yielding a Condition C violation. If the R-expression is replaced with a *wh*-phrase that undergoes A-bar movement to a position above the matrix subject, the result is still ungrammatical, particularly by comparison with the weaker violation in (5a), *Who did his wife vote for?*

(15) a. *Shei thinks [that everyone will vote for [Jack’s wife]].
    b. *[Whose wife] does shei think that everyone will vote for <[whose wife]>?
The ill-formedness of (15b) derives from two distinct binding violations: as in (5a), the pronoun (she) is not bound from an A-position, as variables must be; and, unlike in (5a), the copy of the wh-operator in (15b) is bound, violating Condition C.

The judgements are more delicate for examples involving an R-expression rather than a wh-operator. Here coindexation need not involve binding, since coreference is permitted. In (16a) the coindexed pronoun does not c-command the source position of the wh-phrase containing the R-expression, so the example is grammatical. In (16b), however, the pronoun does c-command the source position of the coindexed R-expression, and the result is comparatively degraded.3

(16) a. [Which argument that Johni was wrong] <which argument that Johni was wrong> impressed him?

b. ?? [Which argument that Johni was wrong] did he accept <which argument that Johni was wrong>?

This contrast between A- and A-bar movement has been attributed to the Case properties of the source (Fox 2000, Boeckx 2001, McGinnis 2004). Once a DP checks Case, any movement it undergoes leaves copies susceptible to binding (17), while any copies with unchecked Case are inaccessible to binding (18). This implies that the unchecked Case feature renders a DP invisible for binding; once it is checked, the DP becomes visible in the relevant sense.4

(17) Copy with checked Case

(18) Copy with unchecked Case

2.3. A-copying

According to the analysis above, the differences between A- and A-bar movement arise from two logically independent distinctions: the status of the target as an A- or A-bar position, and the status of the source as a copy with checked or unchecked Case. This analysis thus differs in an important way from one that makes a binary distinction

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3 However, it cannot be denied that (16b) is better than a violation without wh-movement, as in (i).

(i) * Hei accepted one argument that Johni was wrong.

There is evidence that some copies of wh-movement, such as the lowest copy in (iii), can be ignored for binding purposes (Huang 1993). It is difficult to construct comparable examples for A-copying, since it appears to be clause-bound.

(ii) ?? [How many pictures of Johni] does he, think [__ that [I like __]]?

(iii) [How many pictures of Johni] do you think [__ that [he likes __]]?

4 See section 5 below for a refinement of this analysis.
between A-movement (which cannot reconstruct) and A-bar movement (which must do so). The analysis above predicts four possible types of XP-movement:

**Table 1: Types of XP-movement**

<table>
<thead>
<tr>
<th>TARGET</th>
<th>SOURCE</th>
<th>CASE-CHECKED COPY</th>
<th>UNCHECKED COPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-bar position</td>
<td>I</td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>A-position</td>
<td>III</td>
<td></td>
<td>IV</td>
</tr>
</tbody>
</table>

Two of the predicted options are well-attested: A-bar movement (Option I) and A-movement (Option IV). A-bar movement without Case checking (Option II) is generally ruled out by Full Interpretation, since A-bar positions are usually not accessible for Case-checking.\(^5\) A-movement after Case checking (Option III) is usually assumed to be ruled out by the Activation Condition. In the version adopted by Chomsky (2001: 6), a DP is active (for \(\phi\)-agreement or movement to an A-position) only when it has unvalued structural Case.

I propose that the Activation Condition does not rule out all cases of A-movement after Case checking. Let us briefly explore the role of the Activation Condition. As we have seen, it is not needed to rule out derivations such as (19a). Even if a DP can move after checking Case, (19a) will be ruled out by locality: \(\text{Sue}\) is closer to T than a book, so it will move to check the [uD] feature on T. Indeed, a number of scholars have argued that an object that has checked Case can move over the external argument to Spec,T, provided that it moves first to the highest Spec,v, as in (19b). This possibility is argued to be available only in some languages, such as Passamaquoddy (Bruening 2001). If such approaches are correct, then the Activation Condition is too strong.

\[
\text{(19) a. } *[\text{TP A book } [\text{VP Sue} [\text{VP read <a book>}]].]
\]

\[
\text{b. } [\text{TP A book } [\text{VP <a book> Sue} [\text{VP read <a book>}]].]
\]

The effects of the Activation Condition can also be partly subsumed under the Phase Impenetrability Condition (PIC), under which an XP can move out of a phase (usually assumed to be CP, vP, or DP) only if it first moves to the edge of the phase (Chomsky 2001).\(^6\) Under this approach, (19a) can be ruled out because the object has not moved to the edge of the phase (here, Spec,v), while (19b) is fine because the object has done so. Similarly, the derivation in (20) can be ruled out by the PIC: the embedded subject of the finite clause cannot move into the subject position of the matrix clause because it has not first moved to the edge of the phase (Spec,C).

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\(^5\) There is some evidence that A-bar movement can feed \(\phi\)-agreement and Case-checking across a finite clause boundary (Branigan and McKenzie 2001, Potsdam and Polinsky 2001), including Japanese (Bruening 2001). However, the finiteness and/or ordinary agreement of the embedded clause suggest that in such cases, a single A-bar moved DP checks the Case features of two heads—one in the embedded clause and one in the higher clause. Binding facts support this analysis. It is unclear why all DPs would check a Case feature within their local CP.

\(^6\) Fox and Pesetsky’s (2004) linearization analysis of locality restrictions would require a similar step of movement to reorder the object and the verb in a VO language, as well as to reorder the object and the external argument in a language where vP is a Spell-out domain, as Ko (2007) argues for Korean.
(20) *[^TP Bob seems [CP C[^TP <Bob> is tired]]].

On the other hand, the PIC cannot rule out (21), where the embedded subject moves first into Spec,C, either via optional *wh*-movement to declarative Spec,C.

(21) *[^CP Who[^TP <who> seems [CP <who> Ø[^TP <who> is tired]]]]?

A possible analysis of (21) is that the embedded subject has checked its Case feature and thus cannot undergo A-movement into a higher clause. Such an analysis can be reconciled with the above account of (19b) if the generalization in (22) holds.

(22) **Locality restriction on A-movement**

An argument cannot check a [uD] feature outside the phase containing its Case-checking head.

This is a slightly more liberal version of the Activation Condition: a DP is active for [uD] feature-checking not only until its Case feature is valued, but also afterwards, as long as it remains within the same phase as its Case-assigner. Thus, while a DP is not frozen in its Case position, it is kept on a short leash, as far as A-movement is concerned (see also Bruening 2001: 286–287). Obviously (22) should be derived from more general syntactic mechanisms. For example:

(23) **Deletion of checked features**

Checked (uninterpretable) features are deleted only after the phase domain containing the matching features is spelled out.

Under this view, the Case feature on a *book* in (19) is not deleted until the matrix CP phase is complete, since only then is the v head (which checks its Case) spelled out. Thus, the object can move within this phase to check a [uD] feature on T. In (21), the case feature on the embedded subject *who* is deleted when it reaches the embedded Spec,C. Thus, in order to move out of this phase, *who* can only undergo A-bar movement, as in (24); it cannot move to check a [uD] feature in a higher phase.

(24) [CP Who does[^TP it seem [CP <who> Ø[^TP <who> is tired]]]]?

The Activation Condition can then be maintained under a slightly modified form:

(25) A DP is active for movement to an A-position only until its Case feature has been deleted.7

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7 On the other hand, an A-bar moved phrase apparently can trigger Agree in a higher phase (see footnote 5). Bruening (2001:286–287) proposes that Case features are not deleted until the next highest phase is complete; for (22), this would be the matrix vP, not the embedded CP. Under this view, some additional mechanism is needed to block A-movement out of CP. Bruening’s analysis blocks A-movement from embedded Spec,C to a position above matrix vP, but nothing seems to block A-movement to Spec,v itself.
I will assume the locality restriction in (22)—and, for concreteness, the account of it in (23). Option III above therefore constitutes an open possibility: a DP can undergo A-movement after checking Case, as in (21). I will argue that this kind of movement is involved in local scrambling in Japanese and Korean, as well as in another phenomenon, 

ang-movement in Tagalog. I will call this kind of movement \textit{A-copying}, since it leaves behind a Case-marked copy.

Moreover, I will argue that the binding properties of this third type of movement combine those of the other two attested types (A- and A-bar movement) in the predicted way. As we have seen, the copy of A-bar movement is subject to binding from a higher position, while the copy of A-movement is not. It has been suggested that this difference arises from the fact that the copy of A-movement has an unchecked Case feature, which renders it invisible for binding, while the copy of A-bar movement has checked Case. Under this analysis, A-copying should leave a copy subject to binding from a higher position, just like A-bar movement. However, the target of A-copying is an A-position, so this position can bind pronouns and anaphors, as with A-movement.

As noted above, the fourth movement option—A-bar movement before Case checking—is generally assumed to be ruled out for independent reasons, and may be unattested in human languages. If it is attested, however, the predictions are clear: while its theta-position should be able to bind lower DPs, after movement this position should not be accessible for binding from a higher position, since it has unchecked Case. The target position should be able to license parasitic gaps, but should not be able to bind anaphors and pronouns, since it is an A-bar position.

3. Local scrambling in Korean and Japanese

Under the analysis outlined above, the binding properties of A-scrambling in Japanese and Korean can be attributed to the target, as an A-position, and the source, as a copy with checked Case. (1) and (2) are repeated below as (26) and (27). If scrambling can be to an A-position, then the scrambled object wh-phrase in (26b) is correctly predicted to be able to bind a (null) pronoun contained in the external argument.

\begin{align*}
(26) & \quad \text{a.} & * \left[ \text{pro}_i \text{ chinkwu-ka}\right] \text{ nwukwu-lul} \text{ paypanhayss-ni.} \\
& & \text{pro-GEN friend-NOM who-ACC betrayed-Q} \\
& & \text{'Who did his friend betray?'} \\
& \quad \text{b.} & \text{nwukwu-lul,} \left[ \text{pro}_i \text{ chinkwu-ka}\right] \text{ ___ paypanhayss-ni.} \quad \text{FLR:77}
\end{align*}

Likewise, movement to an A-position above the external argument allows the scrambled object pronoun in (27b) to bind a reciprocal possessor contained in the external argument.

\begin{align*}
(27) & \quad \text{a.} & ? \left[ \text{Otagai-i-no sensei-ga} \right. \text{ karera-o hihaNshita (koto} \\
& & \text{each other-GEN teacher-NOM they-ACC criticized fact} \\
& & \text{‘Each other’s teachers criticized them.’} \\
& \quad \text{b.} & \text{Karera-,o otagai-i-no sensei-ga ___ hihaNshita (koto)} \quad \text{(S:74–75)}
\end{align*}
In this respect, scrambling resembles A-movement. On the other hand, if the object checks Case below the (highest A-position of the) external argument, then the external argument is correctly predicted to be able to bind the object even after it scrambles to a higher position. Thus, in (28a), a quantified external argument can bind a pronoun contained in the object. In (28b), the object has scrambled over the external argument, and binding is still well-formed.

(28) a. Nwukwuna-ka, \[pro\_ uymu\]-lul chwungsilhi ihaynghayssta.
Everyone-NOM pro-GEN duty-ACC faithfully carried out
‘Everyone, has carried out his duty faithfully.’ (FLR:77)

b. \[pro, Uymu\]-lul nwukwuna-ka, ___ chwungsilhi ihaynghayssta.

Likewise, an external argument can bind a reciprocal contained in the object (29a), even if the object scrambles to a higher position (29b) (Kimiko Nakanishi and Kazuko Yatsushiro, p.c.). In this respect, scrambling resembles A-bar movement. Under the analysis here, both leave behind a copy with checked Case.

(29) a. Karera-ga, [otagai, no sensei-o] hihaNshita (koto)
they-NOM each other-GEN teacher-ACC criticized fact
‘They criticized each other’s teachers.’

b. [Otagai-no sensei-o] karera-ga ___ hihaNshita (koto)

The properties of scrambling described above are also predicted if local scrambling can be either to an A-position or to an A-bar position, as argued by Mahajan (1990). Under this view, the examples in (26)-(27) would involve scrambling to an A-position, allowing binding after movement, while those in (28)-(29) would involve scrambling to an A-bar position, with reconstruction to allow binding into the source position.

However, there are two arguments against such an approach. The first, pointed out by Saito (1992), is that examples like (26)-(27) do not involve ordinary A-movement. As illustrated in (3)-(4) above, repeated below as (30)-(31), scrambling generally cannot repair a Condition C violation.\(^8\) These judgements are unexplained if scrambling can be ordinary A-movement, since A-movement does repair Condition C violations. On the other hand, if scrambling is A-copying, then in (31)-(32) the copy will remain bound, violating Condition C. The same analysis can be applied to (29)-(30): the copy remains bound after A-copying, so the prior binding dependency is preserved.\(^9\)

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\(^8\) The same judgements have been reported for German (Webelhuth 1989) and Russian (Nossalik 2005). However, Mahajan (1990) states that parallel examples are grammatical in Hindi.

\(^9\) Further possible evidence for A-copying includes scope reconstruction and the creation of new scope possibilities in local scrambling; see Saito (2005) and Han et al. (2007) for recent discussion.
A NEW LOOK AT JAPANESE AND KOREAN SCRAMBLING

(30) ?? [Taroo-no shashin]-o [kare-ga jibu-no heya-ni kazatteiru] (koto) Taro-GEN picture-ACC he-NOM self-GEN room-in display fact ‘He displays Taro’s picture in his room.’ (S:91)


The second argument against an A- versus A-bar-movement analysis of local scrambling is that examples like (29)-(30) need not involve A-bar movement. This evidence comes from Tagalog, an Austronesian language. In Tagalog, A-bar scrambling is morphosyntactically distinct from A-copying. Interestingly, Tagalog A-copying yields judgements like those for local scrambling in Korean and Japanese: A-copying creates new binding relations, but also preserves existing ones, whether well- or ill-formed.

4. Ang-movement in Tagalog

Tagalog provides an excellent case study of A-copying and A-bar scrambling, because the two are morphosyntactically distinct. Tagalog is generally verb-initial, but otherwise has quite free word order. The notations EA (external argument), G (goal), and T (theme) indicate loosely defined thematic roles, and are used here merely for ease of exposition.

   b. Nagbigay [ang lalaki]_EA [ng libro]_T [sa babae]_G.
   c. Nagbigay [sa babae]_G [ang lalaki]_EA [ng libro]_T.
   d. Nagbigay [sa babae]_G [ng libro]_T [ang lalaki]_EA.
   e. Nagbigay [ng libro]_T [ang lalaki]_EA [sa babae]_G.
   f. Nagbigay [ng libro]_T [sa babae]_G [ang lalaki]_EA.

Subjecthood, verb morphology, and case marking in Tagalog are the subject of vigorous scholarly debate. For example, Rackowski (2002) treats ang as an EPP-marker, indicating the DP that moves to the highest A-specifier (for her, the highest spec,Voice), while Aldridge (2004, 2005) treats it as an absolutive case marker. Since the distinction makes no difference to the present analysis, I have glossed ang simply as ANG. Similarly, I have glossed ng simply as a case marker (CS). Rackowski treats ng as a default case-marker, which can appear with either accusative or nominative common nouns, while Aldridge treats it as ambiguous between (a) an oblique case-marker, appearing on the logical object of an intransitive (antipassive) clause, and (b) the form of the ergative case-marker
that appears with common nouns in an active transitive clause.

Nevertheless, both authors agree that the DP marked with *ang* occupies the highest A-position in the clause, regardless of word order. For example, a quantified external argument marked with *ang* can bind a pronoun contained in the theme, whether it falls to the left (33a) or the right (33b) of the theme—although there is a preference for the quantified DP to precede the bound pronoun (Rackowski 2002:37).

(33) a. Nagmamahal [ang bawat ama]_EA [ng kanyang, anak]_T.
   loves ANG every father CS POSS child
   ‘Every father i loves hisi child.’ (Rackowski 2002 (R):36)

   b. Nagmamahal [ng kanyang, anak]_T [ang bawat ama]_EA.

On the other hand, a quantified theme cannot bind a pronoun contained in an external argument marked with *ang*, regardless of constituent order (34).

(34) a. * Nagmamahal [ang kanyang, ama]_EA [ng bawat anak]_T.
   loves ANG POSS father CS every child
   ‘Heri father loves every child.’

   b. * Nagmamahal [ng bawat anak]_T [ang kanyang, ama]_EA. (R:36–37)

The word order permutations in (32)-(34) evidently arise from A-bar scrambling. These permutations involve no changes to the verbal or nominal morphology, and no change in the possible binding dependencies.

However, another type of movement does affect both binding relations and inflectional morphology. In (35), the theme has moved to an A-position c-commanding the (highest A-position of the) external argument. This is indicated by *ang*-marking on the theme, as well as by verbal morphology. As we saw in (34), a quantified theme cannot bind a pronoun in the *ang*-DP. However, if the quantified theme is itself *ang*-marked, indicating that it has moved to an A-position above the external argument, then it can bind a pronoun in the external argument, as shown in (35).

(35) Minamahal [ng kanyang, ama]_EA [ang bawat anak]_T.
   loves.T>EA CS POSS father ANG every child
   ‘Every child i, heri father loves.’ (R:36)

While the description above (35) is uncontroversial, Tagalogists disagree about the nature of the verbal morphology. For example, Aldridge treats the infix *in*- in (35) as a marker of transitivity, and verb forms like *nagmamahal* in (33)-(34) as intransitive, with an oblique object. Rackowski treats *in*- as an aspectual marker with a number of allomorphs, including initial *n*- in (33)-(34). For her, the verb form in (33)-(34) agrees with the *ang*-marked external argument, which she regards as nominative, while the verb form in (35) agrees with the *ang*-marked theme, which she regards as accusative. Again, to sidestep the debate, I simply gloss verb forms like the one in (36) with the notation T>EA, to indicate that (as Aldridge and Rackowski agree) the theme moves to an A-position c-
commanding the external argument.

As (35) shows, ang-movement is to an A-position, from which an ang-moved quantified DP can bind a pronoun. However, an argument containing a bound pronoun can also undergo ang-movement over the binder. In (36a), the external argument is a quantified DP that binds a pronoun contained in the theme. This pronoun remains bound even if the theme undergoes ang-movement (36b).

(36) a. Nagmamahal [ang bawat ama_i]_EA [ng kanyang_i anak]_T.
   NOM-loves ANG every father CS POSS child
   ‘Every father_i loves his_i child.’ (R:36)

   b. Minamahal [ng bawat ama_i]_EA [ang kanyang_i anak]_T.
   loves-T>EA CS every father ANG POSS child
   ‘His_i child, every father_i loves.’ (R:42)

The examples of Tagalog ang-movement in (34)-(36) are parallel to the examples of local scrambling in Japanese and Korean given above in (26)-(29). Like local scrambling, ang-movement creates new binding possibilities, but also preserves existing ones. As noted above, this set of facts might be taken to suggest that local scrambling is simply ambiguous between A- and A-bar movement. In Tagalog, however, the morphological facts make it difficult to propose a similar analysis for ang-movement. A-bar scrambling exists independently in Tagalog, with no morphological correlates such as ang-marking or changes in verbal morphology. Particularly from a learnability perspective, it would be awkward to postulate that in a language with two morphological classes of movement and two syntactic classes of movement, the two classifications do not correspond—that is, that one morphological class involves A-bar movement, while the other is ambiguous between A- and A-bar movement. The fact that A-movement, unlike A-bar movement, is typically associated with alternations in DP and verb morphology provides additional (weak) supporting evidence that the theme undergoes movement to an A-position in (36b), just as it does in (35). Thus, ang-movement in (36b) does not seem to be A-bar movement.

Moreover, unlike ordinary A-movement—and like local scrambling in Korean and Japanese—ang-movement cannot rescue a Condition C violation. In (36a), a pronominal external argument binds an R-expression contained in the theme, yielding ungrammaticality. If the theme undergoes ang-movement (36b), the Condition C violation remains (Raphael Mercado, p.c.; example based on Kroeger 1993:117). Thus, ang-movement does not seem to be ordinary A-movement.

(37) a. Nagmamahal [siya]_EA [sa anak [ni Juan_j+i]]_T.
   loves ANG-he DAT child CS Juan
   ‘He_i loves Juan’s_j+i child.’

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10 Note that “ang-moved” pronouns have a special form, rather than ang. Similarly, “ang-moved” proper nouns are marked with si instead of ang. Obviously, it would be better to use a more general term than “ang-movement”, but see text above for discussion.
5. Against LF conversion

Saito (1992) gives an ingenious analysis of the Japanese facts within the framework of Government and Binding Theory. Saito argues that local scrambling is A-bar movement, but that a non-operator A-bar position is illegitimate at Logical Form (LF). He proposes two ways to rescue this illegitimate position. One is to reconstruct the scrambled phrase at LF. Saito maintains that Condition A applies at LF, so reconstruction would allow scrambling to “preserve” (re-establish) prior anaphor- (and pronoun-) binding dependencies. The second way Saito proposes to rescue the illegitimate A-bar position is to convert it to an A-position at LF. If Condition A applies at LF, this conversion would allow a scrambled phrase to bind anaphors (and pronouns) that it did not c-command until after movement. Saito argues that Condition C applies at S-Structure, so a Condition C violation cannot be rescued by A-bar-scrambling a phrase containing the bound R-expression out of the c-command domain of the binder, then converting the scrambled position to an A-position at LF.

While this analysis is both theoretically elegant and empirically strong, such an analysis is not available under Minimalist assumptions, for two reasons. First of all, converting an A-bar position to an A-position violates the inclusiveness condition (Chomsky 1995:228) by introducing new entities in the midst of the derivation. On the assumption that the A/A-bar distinction arises from the features of heads associated with the arguments in question (for example, selectional or other D-features for A-positions, and semantic features such as [wh], [topic], or [focus] for A-bar positions), inclusiveness will prevent the LF insertion of A-bar features on a head. Locality and cyclicity may also independently prevent a phrase that has moved to the specifier of a head H from subsequently checking A-bar features inserted on H. A second problem for adopting Saito’s analysis in a Minimalist approach is that Minimalist theory denies the existence of syntactic levels other than the interfaces with the articulatory-perceptual and conceptual-intentional systems. Thus binding Condition C cannot apply at S-Structure. Indeed, it has been argued that all binding conditions apply at LF, including Condition C (Chomsky 1993, Fox 2000:174-189).

By contrast, the analysis proposed here is consistent with Minimalist assumptions. Binding conditions apply at LF; “reconstruction” of both A-bar movement and A-copying is made possible by the Case-marked copy, while the ability of both A-movement and A-copying to create new binding options is made possible by the target of movement, assumed here to be an uninterpretable D-feature on the attracting head.

Theoretical considerations aside, there is empirical support for the analysis proposed here. For one thing, as we have seen, Tagalog has two types of local non-

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11 Saito (2003, 2005) gives a new account of the scrambling facts that is consistent with Minimalist theory.
operator movement. One, ang-movement, can create new binding relations, while the other, A-bar scrambling, cannot. Saito’s (1992) analysis seems to predict that only ang-movement should be possible. The alternative would be to stipulate that a reconstructed non-operator may or may not receive ang-marking (and corresponding verb morphology), while a non-operator converted to an A-position must. As with the A/A-bar analysis discussed in section 4, such an analysis would have the disadvantage of cross-classifying morphological and syntactic categories of movement.

A second piece of empirical support for the proposed analysis involves the creation of new Condition C violations. Under Saito’s (1992) analysis, non-operator A-bar movement is predicted not to create new Condition C violations, since the moved phrase is in an A-bar position when Condition C applies. By contrast, under the analysis proposed here, A-copying is predicted to create new Condition C violations, since movement is to an A-position.

In Korean, local scrambling apparently can create a new Condition C violation, as shown in (38). The same appears to be true for at least some Japanese speakers, as illustrated in (39), though some speakers find (40b) degraded only under certain discourse conditions (Kimiko Nakanishi and J.-R. Hayashishita, personal communication).

    Minswu-GEN parents-NOM he-ACC visited
    ‘Minswu’s parents visited him.’


(39) a. [Tarooi-no sensei-ga] kare-o hihanshita (koto)
    Taro-GEN teacher-NOM he-ACC criticized fact
    ‘Taro’s teacher criticized him.’

     b. ??/* Kare-o [Tarooi-no sensei-ga] ___ hihanshita (koto)

In fact, local scrambling in Japanese and Korean may not be the ideal context to test the prediction, since it is possible that speakers also allow local scrambling to an A-bar position. A scrambled argument in an A-bar position will not create a Condition C violation, so even if the A-copying derivation is ruled out by Condition C, the A-bar scrambling derivation will converge, modulo other considerations, such as discourse requirements.

However, the prediction is also supported by evidence from Tagalog, where A-copying (ang-movement) and A-bar scrambling are morphologically distinct. Ang-movement can create a Condition C violation, as illustrated in (41) (Raph Mercado, personal communication; example based on Kroeger 1993:117).

253
loves ANG mother CS Juan DAT him
‘Juan’s mother loves him.’ (Kroeger 1993:117)

b. Minamahal [siya$_i$/j]$_T$ [ng nanay [ni Juan$_j$]]$_{EA}$.
loves-T>EA ANG-he CS mother CS Juan
‘Him$_{i}$/j, Juan’s mother loves.’

5. A remaining issue: one-way dependencies

The proposed analysis correctly predicts that A-copying can create new Condition C violations. However, there is one context in which this does not seem to take place—namely, when an anaphor undergoes local scrambling or ang-movement over its antecedent. The copy of the anaphor should satisfy Condition A, but the antecedent should violate Condition C.

(41) a. Jibunjishin$_i$-o Hanako$_i$-ga ___ hihanshita (koto)
self-ACC Hanako-NOM criticized fact
‘Herself$_i$, Hanako$_i$ criticized.’ (S:76)

b. Pinuna [ng babae$_i$]$_{EA}$ [ang kanyang sarili$_i$]$_T$.
loves-T>EA CS woman ANG POSS self
‘Herself$_i$, the woman$_i$ criticized.’ (R:38)

The derivation in (41a) is predicted to be acceptable if Japanese allows local A-bar scrambling as well as local A-copying, but the Tagalog example (41b) clearly involves A-copying (ang-movement), not A-bar scrambling. To account for the well-formedness of (41b), I propose the following hypothesis:

(42) Early Binding
A binding dependency between two elements {X, Y} is established as soon as possible (at LF), and cannot be reversed by subsequent movement.

Assuming that vP and CP are phases, I will also make the following assumption:

(43) LF interpretation of phases
LF has access to each step of the derivation at the edge of a phase, but not to individual operations within a phase domain.

In (41), the external argument merges in Spec,v, which is at the edge of the vP phase. If LF has access to each step of the derivation at the edge of a phase, then the external argument can establish a binding dependency with the direct object as soon as it merges.

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12 Reportedly, (42b) becomes ungrammatical if the possessed anaphor, ang kanyang sarili, is replaced by a bare anaphor, ang sarili (Edith Aldridge, personal communication). This contrast may be comparable to the one in (45); however, in both Tagalog cases the subject DP is headed by the anaphor sarili. I leave this matter for further research.
The object can then move to a higher specifier of $v$, but no Condition C violation will arise, because under Early Binding, only the first binding dependency is interpreted.

As predicted, scrambling can create a new binding dependency, as in (44a), because no prior dependency exists. In (44b), however, a binding dependency is created when the external argument merges, yielding a Condition C violation. Once created, this dependency cannot be reversed.

(44) a. Hiroshii-o [karejishiN-no hahaoya]-ga ___ waratta.
    Hiroshi-ACC self-NOM mother laughed
    ‘His mother laughed at Hiroshii.’

b. * Hiroshii-o karejishiN-ga ___ waratta.
    Hiroshi-ACC self-NOM laughed
    ‘Himself laughed at Hiroshii.’ (Yatsushiro 1997)

Under an A-copying analysis, (44b) is expected to be ungrammatical even without assuming Early Binding, because the Case-marked copy of the scrambled object violates Condition C. However, the same contrast can be found with ordinary A-movement, whose copy is not marked with Case, and thus should not violate Condition C. (44a) shows a “long passive” from Albanian, in which the direct object moves past the indirect object to subject position. From this position, a quantified derived subject can bind a pronoun contained in the indirect object—a possibility unavailable before movement. However, the derived subject cannot bind the indirect object itself. It can be shown that the reflexive anaphor is not agent-oriented in Albanian (see Massey 1992 for further details).

(45) a. Secili libërë i iu kthye [autorit të tij]-___.
    each book-NOM CL returned.NACT author.DAT its
    ‘Each book i was returned to its author.’ (Massey 1992:75)

b. * Drita i iu tregua vetesë ___ prej artistit.
    Drita.NOM CL show.NACT self.DAT by the.artist
    ‘Drita i was shown to herselfi by the artist.’ (Massey 1992:71)

The contrast in (45) can follow from Early Binding if the following assumption holds:

(46) A binding dependency can be established—though not interpreted—with the head of a DP chain even before it checks Case.

Suppose that Albanian applicatives are phases (McGinnis 2001, 2004). If so, then the ill-formed dependency in (45b) is established when vetes is merged in Spec,Appl. Drita then moves to a higher specifier of Appl, but has not yet checked Case. Nevertheless, it cannot bind vetes because the opposite binding dependency has already been established.13

13 This analysis also rules out circular binding if an A-copied object anaphor binds a subject anaphor, which
By contrast, (47) is grammatical. This observation follows if in this case, the anaphor is not merged at a phase edge (McGinnis 2004). This would allow the embedded subject to move to the matrix Spec,T, where it c-commands the anaphor, before this portion of the derivation is sent to LF. In that case, a well-formed binding dependency will be established, with Mary binding herself. The copy of the embedded subject is presumably invisible for binding because it has unchecked Case, and is not the head of its chain.

(47) Mary seems to herself [<Mary> to be the best candidate].

These speculations suggest a new approach to facts previously captured under lethal ambiguity (McGinnis 1998a, 1998b, 2004) or the chain condition (Rizzi 1986). I leave this matter for further research.

One remaining empirical puzzle from Korean is noted below. The anaphor in (48) should satisfy Condition A, but the copy of the scrambled object should violate Condition C, as in the Japanese example (44b). Nevertheless, the Korean example is reportedly well-formed.

(48) ?Chelswu-ACC casin-NOM ___ miwehanta.
     ‘Himself, Chelswu hates.’

Further investigation suggests that the contrast is not between languages, but between types of examples. Some Japanese examples are also not as bad as (44b):

(49) ?Hiroshii-ACC karejishin-NOM ___ suisenshita.
     ‘Himself recommended Hiroshii.’

Moreover, some Korean examples are worse than (48); note the contrast below.

(50) a. Chelswu-NOM casin-ACC piwusessta.
     ‘Chelswu laughed at himself.’

     ‘Himself, laughed at Chelswu.’

(Apparently, something about the argument structure of these clauses affects the binding judgements. It is possible that the accusative argument is generated above the nominative

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in turn binds the copy of the object, but it does not rule out cases in which both anaphors are possessors contained in each other’s antecedents (\([\text{anaphor's, } X_f, [\text{anaphor's, } Y_f, <\text{anaphor's, } X_f, >}\)). In fact, I assume that circular binding is ruled out semantically. Thanks to Heedon Ahn for raising this point.
one in (48) and (49), and below it in (44b) and (50b). I leave this matter for further research.

6. Conclusions

Based on the binding properties of two well-attested types of movement—A- and A-bar movement—I have argued that local scrambling in Korean and Japanese involves a third type of movement, A-copying. The target position of A-copying is an A-position, but the source position is a Case-checked copy, as with A-bar movement. As a result, A-copying both creates new binding relations, and preserves prior ones. Evidence from this view was drawn from binding phenomena in Japanese and Korean—and especially in Tagalog, where A-copying (ang-movement) and A-bar scrambling are morphologically distinct. Some surprising exceptions to the predictions of the proposed analysis can be captured under the assumption that binding dependencies, once established, cannot be reversed. Given a certain view of the relation between syntax and LF, this assumption also captures phenomena previously attributed to lethal ambiguity or the chain condition.

References


