Adjuncts can scramble, and scrambling obeys Relativized Minimality

Rebecca Shields – revised version 2011

This squib articulates a new empirical argument against the traceless LF lowering analysis of long-distance (LD) scrambling proposed in Bošković and Takahashi 1998 and defended in Bošković 2004 (hereafter BT/B). First, I show that adjuncts are capable of undergoing LD scrambling in Japanese, contra previous claims in the literature. Second, I show that LD scrambling of adjuncts displays Relativized Minimality (RM) effects in both Japanese and Russian, contra the predictions of the lowering analysis. Finally, I discuss and reject the possibility raised by Bošković 2004, that LD argument extraction and LD adjunct extraction may be fundamentally different kinds of movement, based on a series of empirical diagnostics in which the two behave identically in the languages in question.

1 Adjuncts can scramble

It has been previously claimed in the literature that adjuncts in Japanese cannot undergo long-distance (LD) scrambling (Miyara 1982, Saito 1985). An ungrammatical instance of LD adjunct scrambling is illustrated by this sentence from Saito 1985:

(1) *Riyuu-mo_1 naku Mary-ga [John-ga t_1 sono setu-o
Reason-even without Mary-NOM John-NOM that theory-ACC
sinziteriru to] omotteiru.
believes that thinks
‘Mary thinks [that John believes in that theory without any reason]’
BT/B cite the ungrammaticality of sentences like (1) as one argument for a base-generation plus LF lowering analysis of LD scrambling, where lowering is triggered by a Last Resort (Chomsky 1986, 1995) need to satisfy a grammatical licensing principle such as the Theta Criterion. In the case of an adjunct, they claim, there is no grammatical licensing principle at work, and therefore there is no trigger for an adjunct to lower, resulting in ungrammaticality.\(^2\)

However, contra these previous claims, LD adjunct scrambling is in fact possible in Japanese in certain contexts. My consultants, who generally agree with the judgment in (1), find (2) to be grammatical.\(^3\) The minimal difference between (1) and (2) is that the matrix subject is marked with -\text{ga} ‘NOM’ in (1) but -\text{wa} ‘TOP’ in (2). A similar pair is given in (3-4), where the scrambled expression is an adverb rather than a PP adjunct.

\begin{itemize}
  \item[(2)] Riyuu-mo\textsubscript{1} naku Mary-wa [John-ga \textsubscript{1} sono setu-o Reason-even without Mary-TOP John-NOM that theory-ACC sinziteriru to] omotteiru.

  ‘Mary thinks [that John believes in that theory without any reason].’

  \item[(3)] *Hinpan-ni\textsubscript{1} Mary-ga [Peter-ga \textsubscript{1} kuruma-o unten-suru to] sinjite-iru.

  Frequent Mary-TOP Peter-NOM car-ACC drive that believe

  ‘Mary believes that Peter frequently drives a car.’

  \item[(4)] Hinpan-ni\textsubscript{1} Mary-wa [Peter-ga \textsubscript{1} kuruma-o unten-suru to] sinjite-iru.

  Frequently Mary-TOP Peter-NOM car-ACC drive that believe

  ‘Mary believes that Peter frequently drives a car.’
\end{itemize}
It appears that the presence of a matrix -ga marked subject prevents extraction of an adjunct across it.\(^4\) If the matrix subject is marked with -wa, however, extraction of an adjunct is judged to be acceptable. These acceptable cases are the focus of this squib.

As pointed out in a response to BT by Bailyn (2001), LD adjunct scrambling is also possible in Russian:

(5) \(\text{Ja bystro}\_1 \text{ xoču, čtoby oni } t_1 \text{ dopisali kursovye.} \)

I quickly want that they wrote papers

‘I want them to write their papers quickly.’

Despite BT/B’s own view to the contrary, sentences such as (2), (4), and (5) do not in and of themselves appear to me to threaten the viability of their lowering analysis. If LD scrambling is traceless lowering, the fact that LD adjunct scrambling is grammatical would simply imply that there must exist some grammatical licensing principle which is capable of triggering lowering of an adjunct. Adjuncts are not subject to the Theta Criterion, but it is quite probable that they are subject to other, equally strict grammatical licensing principles; after all, since Cinque 1999 it has become quite clear that adverbs are not freely adjoinable in the base.\(^5\) The adjunct licensing mechanism could trigger lowering in a Last Resort fashion, and the spirit of BT’s original idea is preserved.

The availability of LD adjunct scrambling does have an important consequence for the lowering analysis, however. As long as we control for the -ga Intervention effect, we can now test for Relativized Minimalty (RM) violations in scrambling.\(^6\) As we will
see in the next section, the results of this test offer a more serious challenge for the lowering approach.

2 Adjunct scrambling obeys Relativized Minimality

There are at least three types of dependencies that have been posited to exist in grammar: upward movement, lowering, and base-generation with resumption (no movement). At most two of these are expected to be sensitive to Relativized Minimality. As is well-known, upward movement of adverbs displays RM effects (Koster 1978, Cinque 1999, Rizzi 2001, 2005). Aoun & Li (2003) argue on the basis of certain resumptive constructions in Lebanese Arabic that base-generated resumptive structures are also constrained by RM. The lowering mechanism proposed in BT/B, by contrast, is not predicted to be sensitive to RM, as discussed extensively by BT. This prediction holds whether RM effects are handled derivationally or representationally. Since no upward movement takes place on BT/B’s analysis, the derivational Minimal Link Condition (MLC) as defined in Chomsky 1995 simply does not apply. Likewise, since lowering does not leave behind a copy or trace at LF, no RM violation is expected if RM is handled as a representational LF filter as in Rizzi 1990, 2001, 2005: at LF, there is no dependency on this analysis.

As (6-7) show, adjunct scrambling in Japanese and Russian does in fact show RM effects. This is problematic for the BT/B account, but consistent with either an upward movement (Ross 1967, Saito 1989, among many others) or base-generated resumptive analysis of scrambling.

Fast₁ I-TOP Peter-NOM t₁ car-ACC drive that believe

‘I believe that Peter drives fast.’


Fast₁ I-TOP Peter-NOM frequently t₁ car-ACC drive that believe

‘I believe that Peter frequently drives fast.’

c. Hinpan-ni₁ boku-wa [Peter-ga t₁ (hayaku) kuruma-o unten-suru to]

Frequently₁ I-TOP Peter-NOM t₁ fast car-ACC drive that

sinjite-iru.

believe

‘I believe that Peter frequently drives fast.’

(7) a. Ja bystro₁ xochu [chtoby ona t₁ zavodilas’].

I quickly₁ want [that 3.FEM t₁ started]

‘I want it to start quickly.’

b. * Ja bystro₁ xochu [chtoby ona chasto t₁ zavodilas’].

I quickly₁ want [that 3.FEM often t₁ started]

‘I want it to often start quickly.’

Scrambling of the adjunct is fine in the (a) sentences, where no intervener is present, but scrambling across a c-commanding adjunct intervener results in ungrammaticality, as shown in the (b) sentences. The presence of a lower adverb does not prevent scrambling of a higher adverb, as shown in (6c), because the lower adverb does not structurally intervene.⁸ These contrasts appear to rule out a traceless lowering analysis of scrambling.

3 A possible confound: is adjunct scrambling really scrambling?
Bošković (2004), in response to Bailyn (2001), suggests that the apparent adjunct scrambling in Russian illustrated in (5) might not in fact be scrambling proper, but rather a different type of movement such as English-style focalization or topicalization, which is generated by upward movement. This objection could presumably be extended to the Japanese adjunct extraction in (2), (4), and (6) as well. If this hypothesis were correct, we would actually be dealing with two different phenomena: LD scrambling proper, which applies only to arguments, and LD topicalization/focalization, which can apply to both arguments and adjuncts. As noted by Bošković, these could involve fundamentally different types of dependencies, and properties of one type of dependency would not necessarily be applicable to the other. True scrambling, on this view, might still be LF lowering, while LD adjunct extraction, as topicalization/focalization, might involve upward movement.

In the following subsections I argue that this is not correct. LD adjunct and argument extraction in Japanese and Russian behave identically with respect to various tests which have been claimed to distinguish scrambling from topicalization/focalization cross-linguistically. Since this leads to a less complex architecture, this empirical result is theoretically pleasing as well.

3.1 **LD adjunct scrambling is not sensitive to wh-islands**

Bošković (2004) points out that argument scrambling in Japanese and argument topicalization/focalization in English can be empirically distinguished in that only the latter is sensitive to wh-islands, based on contrasts such as that between Japanese and Russian scrambling in (8-9), respectively, and English topicalization in (10).
Argument scrambling: no wh-island violation

(8)  Sono hon-o\textsubscript{1} John-wa [Mary-ga doko-de t\textsubscript{1} yonda ka] siritagatteiru

That book-ACC John-TOP Mary-NOM where read Q wants.to.know

‘John wants to know where Mary read that book.’

(9) Ty musor\textsubscript{1} slyshala [kogda uvozili t\textsubscript{1}]?

You trash heard when carried.away.PL

‘Did you hear when they carried away the trash?’

(Zemskaja 1973)

Argument topicalization: wh-island violation

(10) a. *That doctor\textsubscript{1}, you know [when Peter fired t\textsubscript{1}].

b. That doctor\textsubscript{1}, you know [that Peter fired t\textsubscript{1}].

If it were correct that the adjunct extraction in sections 1 and 2 is English-style topicalization/focalization rather than scrambling proper, then we would expect it to be ungrammatical out of wh-islands, like the English topicalization case in (10a). However, LD adjunct extraction in Japanese and Russian is possible out of wh-islands, just like argument scrambling:

Adjunct scrambling: no wh-island violation

(11) Hinpan-ni\textsubscript{1} John-wa [Mary-ga t\textsubscript{1} sono hon-o doko-de yonda ka]

Frequently John-TOP Mary-NOM that book-ACC where read Q siritagatteiru.

wants.to.know

‘John wants to know [where Mary frequently read that book].’
     Fast John-TOP Mary-NOM car-ACC drive whether doubt-PAST
     'John doubted [whether Mary drives fast].

(13)  Bystro₁ ja ne znaju [gde mozhno fotki t₁ napechatat’]
     Quickly I not know.1SG where possible photographs to.print
     'I don’t know where photographs can be printed quickly’

(14)  Tuda₁ ja ne znaju [kak idti t₁].
     there I not know.1SG how to.go
     'I don’t know how to go there.’

(Zemskaja 1973)

3.2  LD-adjunct extraction is ungrammatical in English

Another problem for the hypothesis that (5) is an instance of English-style topicalization/focalization is the fact that the English equivalent of (5) is actually ungrammatical, as shown in (15).

(15)  a.  *I quickly₁ want them to write their papers t₁.
     b.  *Quickly₁ I want them to write their papers t₁.

This makes it seem quite unlikely that the movement in (5) is an instance of English-style topicalization or focalization, since in English, this type of LD extraction of adjuncts is not even allowed.

3.3  Japanese LD adjunct extraction can co-occur with a topic

There is an additional reason to believe that the cases of LD adjunct extraction in Japanese do not involve topicalization. As Bošković (2004) discusses, Japanese has both topicalization and scrambling, and these movements are morphologically distinguished.
Japanese topics are overtly marked with the topic-marker -wa, and a sentence can have only one topic.\footnote{9} Moved expressions not marked with -wa are said to have scrambled. Notice that in example (2) and others like it above, the matrix subject is the topic and is overtly marked with -wa. The moved adverb cannot therefore have been topicalized, and must have scrambled.

### 3.4 Scope Economy anti-reconstruction effects with adjuncts

Miyagawa (2006) presents an argument against BT/B based on their prediction that scrambling will always involve a reconstructed reading. As Miyagawa discusses, a surface scope (non-reconstructed) interpretation is possible with argument scrambling in Japanese, as long as Fox’s (2000) Scope Economy principle is obeyed (i.e., as long as each successive movement independently leads to a new scope relation).\footnote{10} Example (16) illustrates:

(16)  Daremo-ni_i  John-ga  [dareka-ga  t_i kiusita to]  omotteiru.

\hspace{0.5cm} Everyone-DAT John-NOM someone-NOM kiss.do that thinks

\hspace{1cm} 'John thinks that someone kissed everyone.'

\hspace{1.5cm} i) Surface scope: everyone > someone

\hspace{2cm} ii) Reconstructed scope: someone > everyone

Examples like (16), where movement to the edge of the embedded clause crosses a scope bearing element such as dareka ‘someone’, are judged to be scopally ambiguous, showing that reconstruction is not obligatory.

The same is true of adjunct extraction, as shown in (17).

(17)  Hinpan-ni_i Mary-wa  [dareko-ga  t_i kuruma-o untensuru to]  sinjiteiru.
Frequently Mary-TOP someone-NOM car-ACC drives that believes
'Mary believes that someone frequently drives a car.'

i) Surface scope: frequently > someone
(i.e., it is frequently the case that someone (possibly a different person each time) drives a car)

ii) Reconstructed scope: someone > frequently
(i.e., one particular person frequently drives a car)

(17), like (16), is judged to be scopally ambiguous, indicating that adjunct scrambling, like argument scrambling, need not reconstruct.

In this section we have seen several ways in which LD adjunct extraction in Japanese and Russian patterns with argument scrambling. There appears to be no motivation (other than a desire to save the lowering analysis) for treating LD argument and adjunct extraction as fundamentally different phenomena; in fact, the evidence points to the opposite conclusion.

4 Conclusion

In the literature there have been various types of proposals for the analysis of scrambling: upward movement into scrambled position (Ross 1967, Saito 1989, Miyagawa 2006, among many others), LF lowering from scrambled position into “base” position (BT/B), and base-generation with in situ indexing (Hale 1983, E. Kiss 1994, among others). The goal of this squib has been to provide evidence against the lowering option, thereby narrowing the set of logically possible models to explore.
Bibliography


University of Wisconsin-Madison
Department of Linguistics
1168 Van Hise Hall
1220 Linden Drive
Madison, WI 53706
rashields@wisc.edu

---

1 I thank the following native speakers for providing grammaticality judgments: Yasuhiro Sasahira, Keiko Sasahira, Ichiro Noguchi, and two anonymous reviewers of an earlier version of this paper for Japanese, Iljoo Ha for Korean, and Aleksey Malyutin for Russian. I would also like to thank Yafei Li, Vivian Lin, David Pesetsky, and Yasuhiro Sasahira for helpful discussion.
It is not actually clear that this reasoning derives the ungrammaticality of (1). If there exists no grammatical principle for licensing adjuncts comparable to the Theta Criterion for arguments, then there would indeed be no Last Resort motivation for lowering, as BT state. However, if adjuncts are not subject to any grammatical licensing principles, then the string in (1) should presumably be grammatical, with base-generation of the adjunct in surface position and with no lowering. The fact that the extracted adjunct in (1) cannot be interpreted in the lower clause seems itself to imply some type of grammatical licensing condition on adjuncts (see e.g. Cinque 1999, among others).

There is some variation in judgments: of the five speakers I have consulted, three have the judgments reported here, one finds sentences such as (1) and (2) both relatively acceptable, and one finds sentences such as (1) and (2) both degraded. The crucial point for this paper is the existence of dialects in which LD adjunct scrambling is acceptable in the contexts discussed, because these dialects will allow us to test for RM violations in these contexts.

The ungrammatical examples in (1) and (3) may be analyzed as a type of focus-induced Intervention Effect/Weak Island, along the lines of Beck 1996, 2006. As discussed by Tomioka (2007), who attributes the original observation of the data to Watanabe 1998, matrix –ga marked subjects in Japanese are degraded if they structurally intervene between the question operator and a wh-in situ expression, as in (i):

(i)  John-wa /??-ga nani-o yon-da-no?
    John-TOP/ -NOM what-ACC read-PAST-Q

‘What did John read?’

Since matrix -ga marked subjects in Japanese receive focus, (i) can be analyzed in as a focus-induced Intervention Effect, following Beck 2006. Beck (1996) proposed a unification of Intervention Effects and Weak Islands. Overt adjunct movement across a -ga marked matrix subject as in (1) and (3) can be analyzed as a Weak Island effect in parallel fashion. (See Beck 1996, Pesetsky 2000 for syntactic accounts of Intervention Effects; Beck 2006 for a semantic analysis; and Tomioka 2007 for a purely pragmatic account.) For the purposes of this paper, the precise nature of the violation in (1) and (3) is not crucial;
what is important for us is the availability of LD-adjunct extraction in (2) and (4), which will allow us to test for RM effects with adjunct scrambling.

5 Cinque 1999 proposes that adverbs are base-generated in particular positions in a functional hierarchy, according to their semantic subclass. There must exist a licensing principle that requires, for example, epistemic adverbs to be generated higher in the hierarchy than frequency ones. As a technical mechanism, one might invoke the need of an adverb to check a feature in a Spec-head configuration with a particular functional head.

6 Argument scrambling is unfortunately not helpful here, given the fact that A and A’ positions do not interact in RM. For example, the fact that (i) is grammatical, which BT cite as an argument in favor of the lowering analysis, does not in fact reveal anything about the sensitivity of scrambling to RM:

(i) Sono hon-o1 John-ni2 [Bill-ga [Mary-ga t1 t2 wasita to] itta].

That book-ACC John-DAT Bill-NOM Mary-NOM handed that said

‘That book, to John, Bill said that Mary handed.’ (BT)

Assuming that sono hon-o ‘that book’ scrambles first, it will cross John-ni ‘to John’ while this expression is still in an A-position. Since sono hon-o is targeting an A’-position, the presence of John-ni (or for that matter Mary-ga or Bill-ga or any other Aspecifier it may happen to pass along the way) is irrelevant to the computation of RM, and no RM violation is expected. John-ni will subsequently move and “tuck in” (Richards 2001), yielding the word order in (i). The grammaticality of (i) is therefore not problematic for a leftward movement analysis of scrambling. Instead, the crucial test cases involve the adjunct scrambling scenarios discussed here.

7 BT discuss the possibility that the MLC might hold “backwards” of lowering, but reject the idea on empirical grounds. See the original paper for discussion.

8 It is not possible to get a clear test of this case in Russian, because Russian LD adjunct scrambling is best out of a subjunctive clause where the scrambled adverb is not semantically compatible with the upstairs predicate. Unfortunately all of the higher adverb classes appear to be compatible with the subjunctive taking predicates, making it difficult to interpret the results of such examples.
As pointed out to me by Yasuhiro Sasahira, a Japanese sentence may actually have more than one \( -\text{wa} \) marked phrase, but in that case the second \( -\text{wa} \) phrase is interpreted either as a contrastive focus or as a parenthetical (“downgraded”) expression rather than a topic (see Kuno 1973).

The original observation of such examples is attributed to Abe 2005.