DERIVATION VERSUS REPRESENTATION: EVIDENCE FROM MINIMALITY EFFECTS IN ADVERB MOVEMENT*
Rebecca Shields
University of Wisconsin-Madison

1 INTRODUCTION

- An influential recent trend in generative syntactic theory has been to abandon representational models of constraints on movement in favor of strictly derivational ones (e.g. Chomsky 1995, Epstein et al. 1998, Epstein & Seely 2002).
- But some have argued that the grammar must include at least some representational conditions (Lasnik 2001, Aoun & Li 2003, Boeckx & Lasnik 2006).
- This paper provides new data on adverb movement in support of the latter position: the grammar is (at least partially) representational.

2 CORE PUZZLE: RM EFFECTS IN LONGER BUT NOT SHORTER MOVEMENTS

Long-distance (LD) scrambling: Relativized Minimality (RM) effect as expected:¹

(1) a. Ja 
   b. * Ja 

(2) a. Hayaku, boku-wa [Peter-ga 
   b. * Hayaku, boku-wa [Peter-ga 

¹ LD-adverb scrambling in Russian is quite colloquial and appears to be grammatically more limited than it is in Japanese or Korean. It is easiest to get out of a non-finite embedded clause (infinitive or subjunctive, as in (1) above), and some speakers reject it entirely. The judgments on LD-scrambling reported here are those of one speaker, who finds the base LD-scrambling cases to be quite good. In both Japanese and Russian, speakers report a significant decrease in acceptability on the downstairs reading if the LD-scrambled adverb is semantically compatible with the upstairs predicate. I will not address the additional factors limiting LD-scrambling here. In this paper we are concerned with contrasts such as that in (1), for those cases where the (a) sentences are independently acceptable.
(3) a. ?Ppalli_i na-nun [Mary-ka t_i wuncenha-ntako] tul-ess-ta. (Korean)
Fast_i I-TOP M-NOM t_i drive-that heard
‘I heard that Mary drives fast.’
b.???(Acwu) ppalli_i na-nun [Mary-ka cacwu t_i wuncenha-ntako] tul-ess-ta.
(Very) fast_i I-TOP M-NOM frequently t_i drive-that heard
‘I heard that Mary frequently drives (very) fast.’

Local adverb scrambling: no RM effect:

(4) a. Ona chasto bystro zavodilas’. (Russian)
It.FEM.SG often quickly started
‘It often started quickly.’
b. Bystro ona chasto t_i zavodilas’.
Quickly_it:FEM.SG often t_i started

(5) a. Sore-wa hinpan-ni subayaku hassinsu-ru (Japanese)
It-TOP frequently quickly start-NonPast
‘It frequently started quickly.’
b. Sore-wa subayaku hinpan-ni t_i hassinsu-ru
It-TOP quickly_it frequently t_i start-NonPast

(6) a. Mary-nun cacwu ppalli chayk-ul ilk-nunta. (Korean)
M-TOP frequently fast book-ACC read
‘Mary frequently read books fast’
b. ?Ppalli_i Mary-nun cacwu t_i chayk-ul ilk-nun-ta.
Fast_it M-TOP frequently t_i book-ACC read

- The grammatical shorter movement (4-6) cannot feed the longer movement (1-3) if an intervener is present, even though it was during the shorter movement that the intervener was crossed. A derivational approach can’t capture this contrast between LD and local scrambling, since each step must be evaluated independently. A representational constraint which has access to the ultimate landing site as well as to any interveners along the path is required.

Problem for derivational approach:

(7) Step 1: local scrambling of ‘quickly’, crossing an intervener → good

\[
\begin{array}{c}
\text{Bystro ona chasto t_i zavodilas’}. \\
\text{Quickly it often t_i started}
\end{array}
\]

(8) Steps 2+: LD-scrambling of ‘quickly’ to a higher clause → bad if an intervener was present during step 1, although the derivation has no longer access to step 1 during subsequent steps

\[
\begin{array}{c}
\text{Ja bystro_i xochu [t_i chtoby t_i ona (*chasto) t_i zavodilas’].} \\
\text{I quickly want [t_i that t_i it (often) t_i started]}
\end{array}
\]
Representational approach could handle the contrast:

- evaluates the end configuration (LF)
- simultaneously has access to information about the presence of interveners anywhere along the chain and the ultimate distance between the head and tail of the chain.

3 **BACKGROUND: ADVERBS AND MINIMALITY**

3.1 **HIERARCHY OF ADVERBS**

- Cinque (1999): adverb phrases are specifiers of functional heads projected in a strict hierarchy above VP.

(9) evaluative > evidential > volitional > frequency > manner > resultative

(10) evaluative: unexpectedly, fortunately

evidential: apparently, presumably
volitional: intentionally, willingly
frequency: regularly, often
manner: loudly, rudely, awkwardly
resultative: slice something thinly, plant something deeply

3.2 **RELATIVIZED MINIMALITY (RIZZI 1990, 2001)**

(11) **Relativized Minimality Condition (RMC)**

Y is in a Minimal Configuration with X iff there is no Z such that

(i) Z is of the same structural type as X
(ii) Z intervenes between X and Y

(12) \(... X_i \ldots \ldots Z \ldots \ldots Y_i \ldots \ldots \) (where X and Z are of the same structural type)

4 **LOCAL ADVERB SCRAMBLING REVISITED**

4.1 **LOCAL SCRAMBLING ACROSS TWO OR MORE ADVERB CLASSES: OBEYS RMC**

4.1.1 **Evaluative > evidential > volitional > frequency > manner**

(13) a. On neozhidanno gromko vsem rasskazal.
He unexpectedly loudly everyone.DAT told
‘He unexpectedly told everyone loudly.’

b. * On gromko_i neozhidanno t_i vsem rasskazal.
He loudly_i unexpectedly t_i everyone.DAT told

(14) a. Neozhidannoi on t_i gromko vsem rasskazal.
Unexpectedly_i he t_i loudly everyone.DAT told
‘He unexpectedly told everyone loudly.’

b. * Gromko_i on neozhidanno t_i vsem rasskazal.
Loudly_i he unexpectedly t_i everyone.DAT told
(15) a. Kare-wa fui-ni oo-goe-de min’na-ni it-ta
   He-TOP unexpectedly big-voice-in everyone-DAT said
   ‘He unexpectedly told everyone loudly.’

   b. ?? Kare-wa oo-goe-de\i_ fui-ni \i_ t\i_ min’na-ni it-ta
      He-TOP big-voice-in\i_ unexpectedly \i_ everyone-DAT said

    I-NOM fortunately brake-ACC quickly put-PAST-DECL.
    ‘I fortunately pushed the brake quickly.’

   b. ??* Ppalli\i_ nay-ka tabaynghi brake-lul \i_ palp-ass-ta.
      Quickly I-NOM fortunately brake-ACC \i_ palp-ass-DECL.

4.1.2 Evaluative > evidential > volitional > frequency > manner > resultative
(17) a. On neozhidanno shiroko raspxanul dver’.
    He unexpectedly widely flung.open door
    ‘He unexpectedly flung open the door widely.’

   b. * On shiroko\i_ neozhidanno t\i_ raspxanul dver’.
      He widely\i_ unexpectedly t\i_ flung.open door

4.1.3 Evidential > volitional > frequency > manner
(18) a. On predpolozhitel’no/ochevidno gromko vsem rasskazal.
    He presumably/obviously loudly everyone.DAT told
    ‘He presumably/obviously told everyone loudly.’

   b. * On gromko\i_ predpolozhitel’no/ochevidno t\i_ vsem rasskazal.\(^2\)
      He loudly\i_ presumably/obviously t\i_ everyone.DAT told

(19) a. Predpolozhitel’no/ochevidno on t\i_ gromko vsem rasskazal.
    Presumably\i_/obviously\i_ he t\i_ loudly everyone.DAT told
    ‘He presumably/obviously told everyone loudly.’

   b. * Gromko\i_ on predpolozhitel’no/ochevidno t\i_ vsem rasskazal.
      Loudly\i_ he presumably/obviously t\i_ everyone.DAT told

4.1.4 Volitional > frequency > manner
(20) a. Palachi dobrovol’no zhestoko muchili plennikov.
    Executioners willingly cruelly tortured prisoners
    ‘The executioners willingly cruelly tortured the prisoners.’

   b. * Palachi zhestoko dobrovol’no t\i_ muchili plennikov.
      Executioners cruelly\i_ willingly t\i_ tortured prisoners

4.1.5 Volitional > frequency > manner > resultative
(21) a. On narochno shiroko raspxanul dver’.
    He intentionally widely flung.open door
    ‘He intentionally flung open the door widely.’

   b. * On shiroko\i_ narochno t\i_ raspxanul dver’.
      He widely\i_ intentionally t\i_ flung.open door

\(^2\) Ungrammatical on the evidential reading of ochevidno. As ochevidno also has a manner reading, this sentence is grammatical on the irrelevant interpretation ‘he told loudly in an obvious manner’
4.1.6 Frequency > manner > resultative

(22) a. On ezheminutno shiroko otkryval dver'.
    He every.minute widely opened door
    'He opened the door widely every minute.'

   * On shiroko ezheminutno otkryval dver'.
    He widely every.minute opened door

4.2 Local scrambling across next higher adverb class: no RM effect

4.2.1 Volitional > frequency

(23) a. On namerenno ezheminutno vstreval v ix razgovor.
    He intentionally every.minute interrupted in their conversation
    'He intentionally interrupted their conversation every minute.'

   b. On ezheminutno_i namerenno_ti vstreval v ix razgovor.
    He every.minute_ti intentionally_ti interrupted in their conversation

4.2.2 Frequency > manner

(24) a. On reguljarno grubo otvechaet.
    He regularly rudely answers
    'He regularly answers rudely.'

   b. On grubo_i reguljarno_ti otvechaet.
    He rudely_ti regularly_ti answers

(25) a. Reguljarno_i on ti grubo otvechaet.
    Regularly_ti he_ti rudely answers
    'He regularly answers rudely.'

   b. Grubo_i on reguljarno_ti otvechaet.
    Rudely_ti he regularly_ti answers

(26) a. Sore-wa hinpan-ni subayaku hassinsu-ru.
    It-TOP frequently quickly start-NonPast
    'It frequently starts quickly.'

   b. Sore-wa subayaku_i hinpan-ni_ti hassinsu-ru.
    Fast_ti he frequently_ti start-NonPast

    M-top frequently/often fast book-ACC read
    'Mary frequently read books fast'

   b. ?Ppalli_t Mary-nun cacwu/congcong_ti chayk-ul ilk-nun-ta.
    Fast_ti M-TOP frequently/often_ti book-ACC read
4.3 Summary of the data

Table 1: RM effects in adverb scrambling

<table>
<thead>
<tr>
<th>RM effects</th>
<th>No RM effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>• LD scrambling</td>
<td>• Local scrambling which crosses only one maximal projection</td>
</tr>
<tr>
<td>• Local scrambling which crosses two or more maximal projections</td>
<td></td>
</tr>
</tbody>
</table>

5 Proposal: RM only constrains movements that are “far enough”

Basic idea: RM is not a derivational condition on movement in general, but a representational constraint on chains that are “far enough” apart, in a manner to be made precise.

Proposal: classical RM only constrains movement of adverbs that have moved beyond the maximal projection immediately dominating the node they adjoin to in the base, i.e. out of the m-command domain of the node they originally adjoined to. In other words, if the head $\alpha$ of the adverb movement chain $[\alpha \beta]$ is within the m-command domain of the node that tail $\beta$ is adjoined to, the RMC does not apply. Intuitively, this is because the head and tail in this case are automatically “close enough” together to form a coherent chain. I call the maximal projection an adverb must adjoin to in the base the licenser of that adverb chain.

(28) m-command (Chomsky 1986, where it is called c-command):
1) The domain of $\alpha$ is the least maximal projection containing $\alpha$.
2) $\alpha$ m-commands every element of its domain that is not contained within $\alpha$.

(29)

\[
\begin{array}{c}
\alpha_i \\
Y' \\
Z \\
Y \\
 XP \\
\beta_i \\
X' \\
X \\
\ldots
\end{array}
\]

$\leftarrow$ m-command domain of XP is RMC-free zone

(30) Revised Relativized Minimality Condition (additions in bold):
$\beta$ is in a Minimal Configuration (MC) with $\alpha$ iff either
(A) $\alpha$ is located within the m-command domain of the licenser of the chain $[\alpha \beta]$;
or
(B) there is no $Z$ such that
(i) $Z$ is of the same structural type as $\alpha$
(ii) $Z$ intervenes between $\alpha$ and $\beta$
Case #1: no RM effect

(31)  On grubo\textsubscript{i} reguljarno\textsubscript{t\textsubscript{i}} otvechaet.

   He rudely\textsubscript{i} regularly\textsubscript{t\textsubscript{i}} answers

   ‘He regularly answers rudely.’

(32)        YP

\begin{center}
\begin{tikzpicture}[scale=0.8]
  \node (AdvP1) at (0,0) {AdvP1};
  \node (grubo) at (AdvP1) {grubo\textsubscript{i}};
  \node (AdvP2) at (AdvP1) {AdvP2};
  \node (reguljarno) at (AdvP2) {reguljarno\textsubscript{Y}};
  \node (XP) at (AdvP2) {XP};
  \node (t\textsubscript{i}) at (XP) {t\textsubscript{i}};
  \node (X') at (XP) {X'};
  \node (X) at (X') {X};
  \node (…) at (X') {…};

  \draw[->] (AdvP1) -- (AdvP2);
  \draw[->] (AdvP2) -- (XP);
  \draw[->] (XP) -- (t\textsubscript{i});
  \draw[->] (XP) -- (X');
  \draw[->] (XP) -- (X);

  \node at (-1,1) {YP};

  \node at (0,1) {← m-command domain of XP};
\end{tikzpicture}
\end{center}

Case #2: RM effect

(33)      * Ja bystro\textsubscript{i} xochu [chtoby ona chasto\textsubscript{t\textsubscript{i}} zavodilas’].

   I quickly\textsubscript{i} want [that she often\textsubscript{t\textsubscript{i}} started]

   ‘I want it to often start quickly.’

(34)      * On gromko\textsubscript{i} predpolozhit’no/ocenevico\textsubscript{t\textsubscript{i}} vsem rasskazal.

   He loudly\textsubscript{i} presumably/obviously\textsubscript{t\textsubscript{i}} everyone.DAT told

   ‘He presumably/obviously told everyone loudly.’

- In order to rule out examples like (34), we must assume the strong hypothesis of Cinque (1999): the functional projections in a language’s inventory are always projected in the clause, whether or not they contain lexical material. In this case, the evidential phrase in (34) is separated from the trace of the manner adverb by (at least) volitional and frequency phrases.
- As we saw in some examples above, RM effects may be obviated in cases of local scrambling to the left of the subject (35). My proposal requires the assumption that the subject is not overtly in Spec, TP in these cases. This is consistent with the standard treatment of Russian arguments: they do not move overtly for Case or other strictly grammatical reasons (Holloway King 1994). Instead, arguments in languages like Russian move out of vP only for discourse-related reasons (i.e., when they scramble), remaining in situ by default. (See also E. Kiss 1995 and the references cited there for similar proposals for a large number of other languages, including Hungarian, Greek, and Korean.)

(35)   Grubo\textsubscript{i} on reguljarno\textsubscript{t\textsubscript{i}} otvechaet.

   Rudely\textsubscript{i} he regularly\textsubscript{t\textsubscript{i}} answers

   ‘He regularly answers rudely.’

6 Conclusion: Implications for Derivation vs. Representation

In scrambling languages, adverbs are capable of crossing an intervener unscathed for extremely short movements, but not for longer movements. These facts are problematic for all current formulations of RM: the derivational formulation in terms of the Minimal Link Condition of Chomsky (1995), and
Rizzi’s (2001) representational formulation. I proposed a modified representational RMC which can accommodate the facts. The expanded empirical coverage comes at the cost of a complication to the grammar, a disjoint condition on the definition of Minimal Configuration – a cost which I argue is empirically justified. Importantly, it appears that it is simply impossible to modify the derivational approach so that it can handle the facts.

Bibliography