Ways to Sidestep Minimality (and How to Diagnose Them)

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1 A Reconstruction Asymmetry

Background: *intermediate* scrambling of the direct object (DObj) (indirect object, IObj) to a position preceding the subject (Subj) often shows reconstruction wrt. Principle A, C / variable binding. *Short* scrambling of the DObj to a position preceding the IObj (but following the Subj) often lacks such effects. (1-a,b) illustrate this for Principle A in Korean (Lee & Santorini, 1994; Lee, 2020). Similar facts hold for Japanese (Saito, 1992; Tada, 1993; Miyagawa, 1997), German (Frey, 1993; Lee & Santorini, 1994), and Hindi (Mahajan, 1990; Bhatt & Anagnostopoulou, 1996).

(1) a. ?*[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.'

    b. **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

The Puzzle: Assuming a) that the IObj is merged above the DObj, and b) that all scrambling involves movement, this is puzzling because *representationally* the relevant aspects of short and intermediate scrambling are the same: The moved category, which contains the bindee, is merged in a position that is c-commanded by the binder, thus providing the typical configuration for reconstruction.

Previous accounts: Previous accounts involve a) a distinction between A- and A′-scrambling (Mahajan, 1990; Tada, 1993); b) binding by agreement features (Frey, 1993); c) elaborate notions of binding-domain and argument-domain (Lee & Santorini, 1994); d) a non-uniform analysis of scrambling (short = base generation; intermediate = movement) (Miyagawa, 1997); e) an anti-locality requirement sensitive for binding (Lee, 2020). While all these approaches manage to account for the asymmetry, they do so either by invoking otherwise non-motivated concepts (Frey, 1993; Lee & Santorini, 1994; Lee, 2020) or by analyzing scrambling as a heterogeneous phenomenon (Mahajan, 1990; Tada, 1993; Miyagawa, 1997).

New proposal: The asymmetry follows from independent assumptions about scrambling, reconstruction, and the nature of syntactic derivations. In a nutshell, short and intermediate scrambling differ *derivationally*: Due to minimality, short scrambling can apply only if the IObj is not present yet. The IObj is merged late – too late to c-command the DObj (no reconstruction). In contrast, intermediate scrambling (of DObj or IObj) can "leapfrog" over the Subj without violating minimality, leading to reconstruction. In this way, reconstruction provides a diagnostic for distinguishing different ways to sidestep minimality: leapfrogging (Bobaljik 1995) vs. late merger (Stepanov 2001).
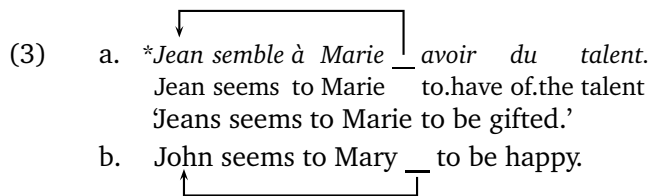
2 Assumptions

a) Scrambling is triggered by an EPP-feature relativized to nominal categories (covering NP, PP, CP): [EPP$_N$] (Miyagawa 2001). Hence, scrambling one argument across another one is subject to the Minimal Link Condition (MLC; Ferguson 1993; Chomsky 1995). This assimilates scrambling (in Hindi,

German, Japanese, etc.) to Scandinavian object shift and also to scrambling in Dutch (Vikner 1989; Neeleman 1994; Thráinsson 2001). **b)** Grammatical principles (Principle A/C, variable binding) are evaluated during the derivation (Burzio, 1986; Belletti & Rizzi, 1988; Lebeaux, 1988; Heycock, 1995; Sabel, 1998). Reconstruction wrt some principle P may arise because P is satisfied/violated before movement applies. **c)** Every vP is a phase. Due to the Phase Impenetrability Condition (Chomsky 2001) only categories in Specv are accessible from outside vP. Successive-cyclic movement of NP to Specv is triggered by an edge feature [EF_N] (Chomsky 2008). [EF_N] differs from [EPP_N] in that a category attracted by [EF_N] may not remain at its landing site (cf. *Who [$_{vP}$ what bought __]) while a category attracted by [EPP_N] may. **d)** Multiple movement to the same specifier domain triggered by a single feature ([EPP_{+mult}], able to attract multiple categories) is order preserving; multiple movement triggered by different features is not (McGinnis 1998). **e)** Derivations make use of workspaces (WSPs), which host categories participating in the derivation. The notion of WSP has proven useful/indispensable for i) the derivation of complex specifiers (Uriagereka 1999), ii) a strictly cyclic account of head-movement (Bobaljik & Brown 1996), (iii) a strictly cyclic analysis of order-preservation of multiple movement (Stroik 2009). (iv) Moreover, it has been argued that movement of XP (2-a) triggered by some feature [F] decomposes into two sub-steps (2-b) (Heck 2016): Removal of XP, placing XP in some WSP, plus remerge of XP from the WSP.
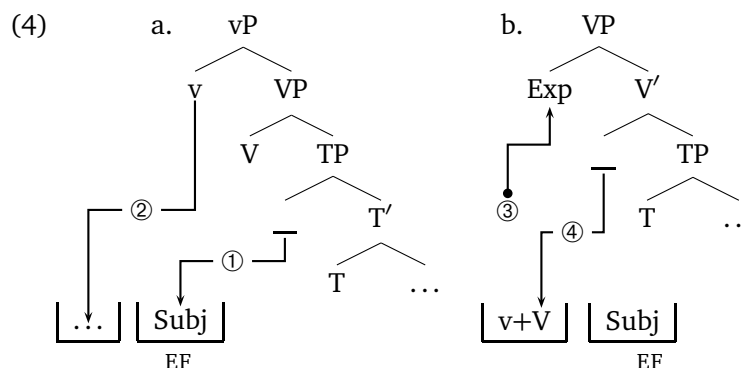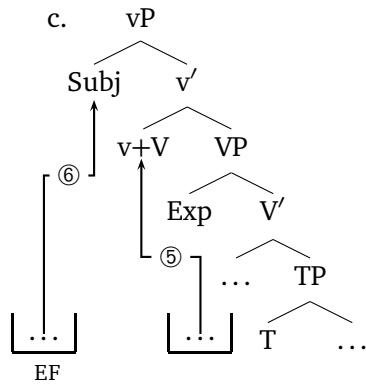
(2)   a. $[_{HP}$ XP $[_{H'}$ H $[_{KP}$ __ $[_{K'}$ K ...]]]]   b. $[_{HP}$ ... $[_{H'}$ H $[_{KP}$ __ $[_{K'}$ K ...]]]]

$$\boxed{XP} \atop [F]$$
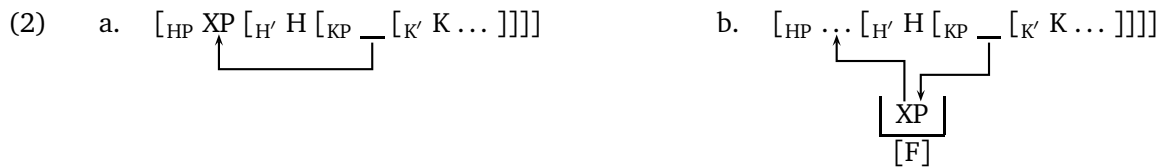
3 Interlude: Raising across Experiencers

Rizzi (1986): Subject-raising out of an infinitive across an experiencer is ungrammatical in Italian. Similar facts hold for French (3-a). This sharply contrast with English, where raising across an experiencer is fine (3-b) (Chomsky, 1995; McGinnis, 1998):
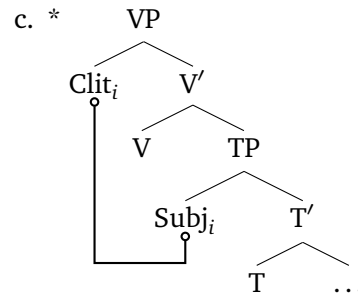
(3)   a. *Jean semble à Marie __ avoir du talent.
          Jean seems to Marie   to.have of.the talent
          'Jeans seems to Marie to be gifted.'
       b. John seems to Mary __ to be happy.

Heck (2016): Raising in English (but not French) may apply in a *non-monotonic* fashion (4-a-c). The idea is that Merge of the experiencer (step ③ in (4-b)) may apply after the subject has been attracted (and is temporarily stored in some WSP) by the matrix v-head (see step ①), thus sidestepping an MLC-violation. Note that late Merge of the experiencer in (4-b) respects the Extension Condition (EC) (Chomsky, 1995), which requires Merge at the root: When the v-head is removed to facilitate V-to-v movement (Bobaljik & Brown, 1996) at step ②, its projection vanishes (Heycock & Kroch, 1993; Takano, 2000).

(4)   a. [vP tree diagram with v, VP, V, TP, T', T, ..., steps ②, ①, and leaf nodes "..." and "Subj" with EF]   b. [VP tree diagram with Exp, V', TP, T, ..., steps ③, ④, and leaf nodes "v+V" and "Subj" with EF]

c.

```
              vP
          ┌────┴────┐
        Subj        v′
         ↑      ┌────┴────┐
        ⑥     v+V        VP
         │      ↑    ┌─────┴────┐
        ···    Exp       V′
        EF      ⑤  ┌────┴────┐
                   ···       TP
                         ┌────┴────┐
                        ···   T   ···
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A/No Principle C effect: If the experiencer cliticizes, the intervention effect disappears (Rizzi, 1986), (5-a). Usual explanation: Cliticization of the experiencer (via head-movement) frees up the way for raising of the embedded subject. But: Before the clitic experiencer adjoins to T, it c-commands the embedded subject (5-c). Assuming that binding applies derivationally, this should lead to a Principle C violation if the experiencer clitic is a co-indexed reflexive (Heck, 2016). This is borne out (Rizzi, 1986; McGinnis, 1998), (5-b).

(5) a. *Jean lui   semble ⌐_⌐ avoir du   talent.*
         Jean him.DAT seems   to.have of.the talent
         "Jean seems to him to be gifted."

     b. **Jean$_i$ se$_i$ semble t t avoir du   talent.*
         Jean SELF.DAT seems   to.have of.the talent
         "Jean seems to himself to be gifted."

c. *

```
            VP
        ┌────┴────┐
      Clit$_i$      V′
        ○      ┌────┴────┐
               V        TP
                    ┌────┴────┐
                  Subj$_i$     T′
                    ○      ┌───┴───┐
                           T     ···
```

Since in English, by hypothesis, raising of the subject across an experiencer applies before the experiencer is merged, the latter never comes to c-command the former. This correctly predicts that raising across a reflexive experiencer is fine in English (6).

(6)   John$_i$ seems to himself$_i$ ⌐ to be happy.

The conclusion is that reconstruction effects (or, more precisely: the lack thereof) can be used as a diagnostic for (some type of) non-monotonic derivations.

4 Analyzing the Asymmetry

Analysis: intermediate scrambling (DObj > Subj > IObj): The DObj must cross both Subj and IObj. It cannot scramble across the IObj because of the MLC. Therefore, the IObj scrambles to Specv ([EPP$_N$]) first, and the DObj then undergoes cyclic movement to Specv ([EF$_N$], leapfrogging), changing the order of the objects (7-a). Later, both DObj and Subj undergo multiple scrambling to SpecT, triggered by two instances of [EPP$_N$] on T (again leapfrogging, (7-b)). As the IObj c-commands the DObj (before both move to Specv), binding into the DObj by the IObj (reconstruction) is possible.

(7) a. [$_{vP}$ DObj IObj [$_{VP}$ _ _ V] v]   b. [$_{TP}$ DObj Subj [$_{vP}$ _ _ IObj …] T]

Analysis: short scrambling (Subj > DObj > IObj): Short scrambling cannot involve cyclic movement ([EF$_N$]) of the DObj to Specv: The DObj would be forced to move on, generating the order

DObj > Subj (cf. (7)). Thus, the DObj must cross the IObj by scrambling ($[EPP_N]$) to Specv. Due to the MLC, this is only possible if the DObj is attracted before the IObj gets merged into the structure. To avoid a violation of the EC, the DObj first gets stored in another WSP after attraction (step ① in (8-a)). When the v-head is removed for head-movement (step ②), its projection vanishes. At this point, late merge of the IObj can apply in conformity with the EC (step ③), and head movement is completed (steps ④, ⑤). Finally, the DObj is remerged in Specv (step ⑥). Since the IObj is merged too late to c-command the DObj, no reconstruction arises.

(8)   a.
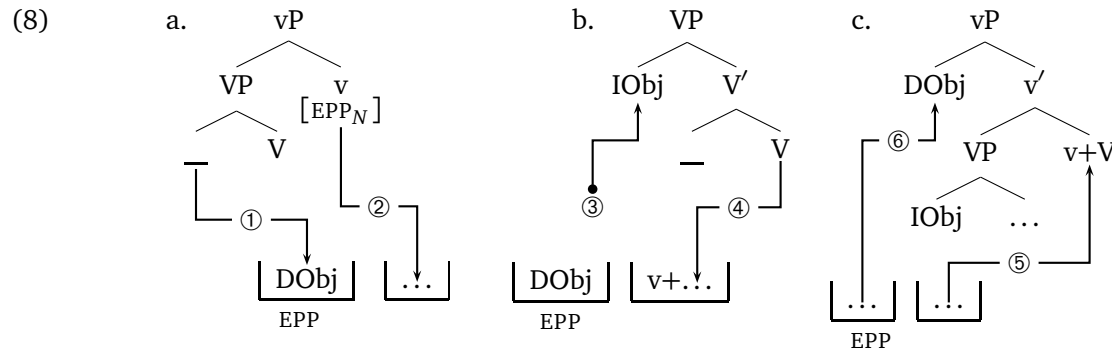
To derive the asymmetry, v must not bear two instances of $[EPP_N]$, each attracting one of the objects: This would lead to leapfrogging, failing to derive the lack of reconstruction. However, assuming two instances of $[EPP_N]$ on v may explain that some speakers of Korean and German do allow for reconstruction of short scrambling (Lee & Santorini, 1994).

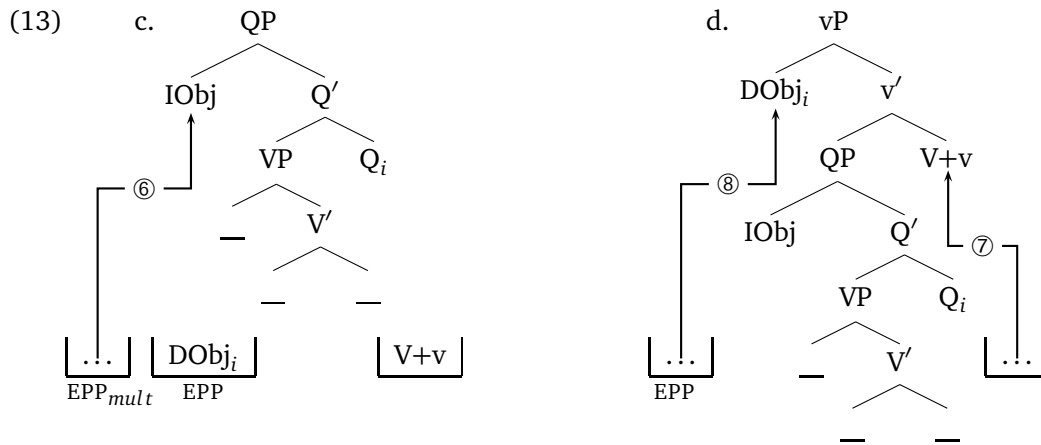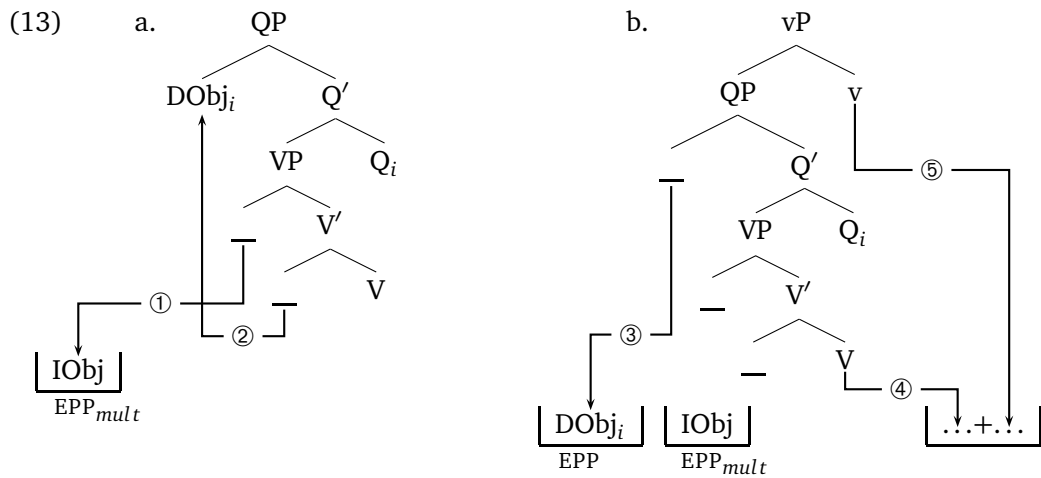# 5   Complication: Numeral Quantifiers in Japanese

Miyagawa (1997): A DObj that undergoes short scrambling in Japanese exceptionally reconstructs if it associates with a floating numeral quantifier ((9-a,b) illustrate for Principle C).

(9) a. *_John-ga   gakusei-tati$_i$-o karera-zisini$_i$-ni   futa-ri miseta._
        John-NOM students$_i$-ACC they-SELF$_i$-DAT   2-CL   showed.
        'John showed two students to themselves.'

     b. _John-ga   gakusei-tati$_i$-o [karera-zisini$_i$-no sensei   ]-ni   futa-ri syookaisita._
        John-NOM students$_i$-ACC   they-SELF$_i$-GEN teachers -DAT   2-CL   introduced
        'John introduced two students to their own teachers.'
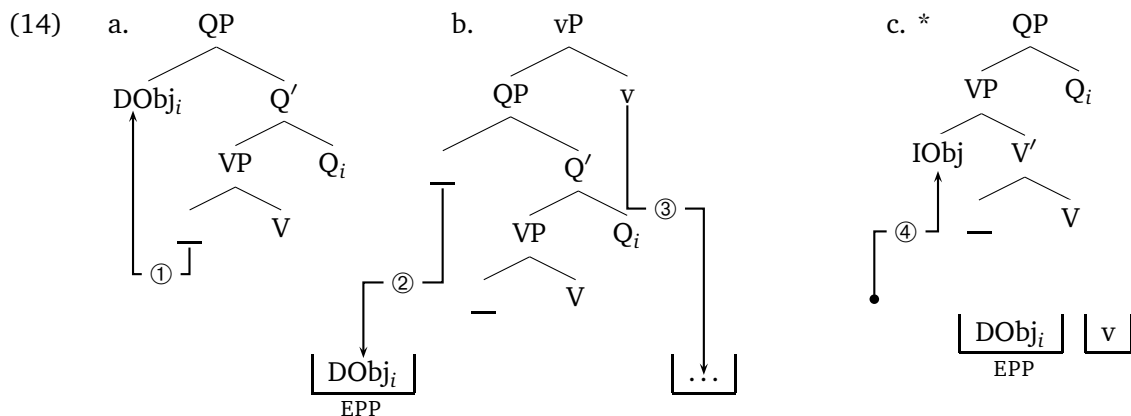
Assumptions: The numeral quantifier takes VP (10) or NP (11) as its complement. (The latter is needed to generate cases such as (12).) If an NP is suppposed to associate with the quantifier, it must, at some point, be merged within its projection. This is achieved either by movement (10) or directly by Merge (11).

(10)

(11)

(12) _John-ga   gakusei-tati$_i$-o futa-ri otagai$_i$-ni   syookaisita._
     John-NOM students$_i$-acc 2-CL   each other$_i$-DAT introduced
     'John introduced two students to each other.'

Generating (9-b): Q may attract multiple categories (bears $[\text{EPP}_{mult/N}]$). First the DObj moves to SpecQ (and the IObj to some WSP) (13-a). Then the DObj gets attracted by v (and is also temporarily stored in some WSP) (13-b). Finally, the IObj moves to SpecQ and the DObj is remerged in Specv (13-c,d).

(13)   a.

QP
DObj$_i$ Q′
VP   Q$_i$
V′
V
① ②
IObj
EPP$_{mult}$

    b.

vP
QP   v
Q′   ⑤
VP   Q$_i$
V′
V
③ ④
DObj$_i$ IObj
EPP   EPP$_{mult}$
...+...

(13)   c.

QP
IObj   Q′
VP   Q$_i$
V′
⑥
...   DObj$_i$ V+v
EPP$_{mult}$ EPP

    d.

vP
DObj$_i$ v′
QP   V+v
IObj   Q′   ⑦
VP   Q$_i$
V′
⑧
...   ...
EPP

Blocking (9-a): (9-a) cannot be generated along the lines of (9-b) since such a derivation would incur a Principle C violation (the anaphor is not embedded within the IObj, as in (9-b), it *is* the IObj). However, any attempt to maneuver the DObj past the IObj by merging the IObj late (via a non-monotonic derivation) must also fail: The Q-Projection cannot be removed since it does not participate in head-movement. Hence, late Merge of the IObj violates the EC (step ④ in (14-c)). Assuming that these are the only options, (9-a) cannot be generated.

(14)   a.

QP
DObj$_i$ Q′
VP   Q$_i$
V
①
DObj$_i$
EPP

    b.

vP
QP   v
Q′   ③
VP   Q$_i$
V
②
DObj$_i$
EPP
...

    c. *

QP
VP   Q$_i$
IObj   V′
V
④
DObj$_i$ v
EPP

References

Belletti, Adriana & Luigi Rizzi. 1988. Psych-verbs and θ-theory. *Natural Language and Linguistic Theory* 6. 291–352.

Bhatt, Rajesh & Elena Anagnostopoulou. 1996. Object shift and specificity: Evidence from *ko*-phrases in Hindi. In *32nd Chicago Linguistic Society*, 11–22.

Bobaljik, Jonathan. 1995. *Morphosyntax: The syntax of verbal inflection*: MIT dissertation.

Bobaljik, Jonathan & Samuel Brown. 1996. Interarboreal operations: Head movement and the extension requirement. *Linguistic Inquiry* 28. 345–365.

Burzio, Luigi. 1986. *Italian syntax: A government-binding approach*. Reidel.

Chomsky, Noam. 1995. *The minimalist program*. MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale. A life in language*, 1–52. MIT Press.

Chomsky, Noam. 2008. On phases. In *Foundational issues in linguistic theory. Essays in honor of Jean-Roger Vergnaud*, 133–166. MIT Press.

Ferguson, K. Scott. 1993. Notes on the shortest move metric and object checking. *HWPL* 3. 65–80.

Frey, Werner. 1993. *Syntaktische Bedingungen für die semantische Interpretation*. Akademie-Verlag.

Heck, Fabian. 2016. Non-monotonic derivations. Habilitation thesis, Leipzig University.

Heycock, Caroline. 1995. Asymmetries in reconstruction. *Linguistic Inquiry* 26. 547–570.

Heycock, Caroline & Anthony Kroch. 1993. Verb movement and the status of subjects: Implications for the theory of licensing. *Groninger Arbeiten zur Germanistischen Linguistik* 36. 75–102.

Lebeaux, David. 1988. *Language aquisition and the form of the grammar*: UMass dissertation.

Lee, Hyunjung. 2020. Reconstruction Effects for Binding and Anti-Locality. Ms., Leipzig University.

Lee, Young-Suk & Beatrice Santorini. 1994. Towards resolving Webelhuth's paradox: Evidence from German and Korean. In *Studies on scrambling*, 257–300. Mouton de Gruyter.

Mahajan, Anoop. 1990. *The A/A-bar distinction and movement theory*: MIT dissertation.

McGinnis, Martha. 1998. *Locality in A-movement*: MIT dissertation.

Miyagawa, Shigeru. 1997. Against optional scrambling. *Linguistic Inquiry* 28. 1–25.

Miyagawa, Shigeru. 2001. The EPP, Scrambling, and *Wh*-in-situ. In *Ken Hale: A life in language*, 293–338. MIT Press.

Neeleman, Ad. 1994. Scrambling as a D-structure phenomenon. In *Studies on scrambling*, 387–430. Mouton de Gruyter.

Rizzi, Luigi. 1986. On chain formation. In *The syntax of pronominal clitics*, vol. 19 Syntax and Semantics, 65–96. Academic Press.

Sabel, Joachim. 1998. Principles and Parameters of Wh-Movement. Habilitation, University Frankf.

Saito, Mamoru. 1992. Long distance scrambling in Japanese. *Journal of East Asian Linguistics* 1. 69–118.

Stepanov, Arthur. 2001. Late adjunction and minimalist phrase structure. *Syntax* 4. 94–125.

Stroik, Thomas. 2009. *Locality in minimalist syntax*. MIT Press.

Tada, Hiroaki. 1993. *A/A'' partition in derivation*: MIT dissertation.

Takano, Yuji. 2000. Illicit remnant movement: An argument for feature-driven movement. *Linguistic Inquiry* 31. 141–156.

Thráinsson, Höskuldur. 2001. Object shift and scrambling. In *Handbook of syntactic theory*, 148–202.

Uriagereka, Juan. 1999. Multiple spell-out. In *Working minimalism*, 251–282. MIT Press.

Vikner, Sten. 1989. Object shift and double objects in Danish. *Comparative Germanic Syntax* 44. 119–141.