

LOWER COPY PRONUNCIATION AND MULTIPLE WH-FRONTING IN ATB CONTEXTS*

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1. Introduction

In this paper, I examine the patterns of lower copy pronunciation in Across-the-Board (ATB) multiple wh-fronting (MWF) in some Slavic languages and argue that the position of the shared material can be correctly accounted for by adopting Fox and Pesetsky's (2005) (F&P) system of cyclic linearization (CL) (see Bošković 2001, 2002 for lower copy pronunciation; see also Nunes 1995, 2004 for relevant discussion). I will also argue that the proposal can be extended to capture the curious distribution of the shared material in Right Node Raising (RNR) constructions as well (see An 2007 for extensive discussion on RNR and references). Therefore, the current analysis provides a uniform analysis of the distribution of the shared material in ATB and RNR constructions.

2. Background

2.1. Cyclic Linearization: Fox and Pesetsky 2005

I summarize the gist of F&P's CL in this section. (1) contains a list of assumptions adopted by F&P.

- (1) a. Syntactic derivation proceeds through a series of cyclic nodes called *phase*, which correspond to CPs and vPs, among others (Chomsky 2000, 2001).
- b. Phases determine the points of Spell-Out (SO).
- c. SO determines the linear order of the elements contained in the phase.
- d. The linear order determined by SO of a phase may not be contradicted by the linear order determined by SO of a later phase.

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For expository convenience, I will call the condition in (1) the *Principle of Order Preservation* (POP). (2) schematically illustrates how CL works. (X > Y means ‘X precedes Y.’)

(2)

	Syntax	Spell-Out	Linear Order
(a)	[_{VP} A B C]	⇒	A > B > C
(b)	[_{CP} A B [_{VP} t t C]]	⇒	A > B > C
(c)	[_{CP} B A [_{VP} t t C]]	⇒	* B > A > C

When the derivation reaches (2), the vP is spelled out, resulting in the ordering relation given in the right column. Suppose that in the course of the subsequent derivation, A and B move out of the vP. Suppose further that A moves to a position higher than the landing-site of B, as in (2). When the CP is spelled out, the resulting ordering relation, given in the right column of (2), is consistent with the previous ordering relation in (2). Therefore, no problem arises. Suppose on the other hand that B moves higher than A, as in (2). It is easy to see that SO of the CP will result in an ordering relation that is not consistent with the previous ordering relation in (2). F&P claim that derivations like (2) are ruled out by the POP.

F&P argue that CL accounts for a peculiar property of Scandinavian languages regarding object shift (OS), usually subsumed under the so-called Holmberg’s generalization (HG). The data in (3) illustrates the typical pattern of OS in Swedish.

- (3) a. Jag kysste henne inte [_{VP} t_v t_o]
I kissed her not
- b. * ... att jag henne inte [_{VP} kysste t_o]
... that I her not kissed
- c. * Jag har henne inte [_{VP} kysst t_o]
I have her not kissed (F&P, p.17)

Simplifying somewhat, what HG says is that an object can raise out of a VP only if the verb also moves out of it, as in (3) (see Holmberg 1999 for relevant discussion and references). F&P argue that this property can be straightforwardly accounted for by CL. Consider the derivation in (4).

- (4) a. [_{VP} V O] ⇒ order: V > O (= (3))¹
- b. [_{CP} S V O Adv [_{VP} t_v t_o]] ⇒ order: S > V > O > Adv

The crucial point in (4) is that the relative order between V and O remains constant after the SO of the VP and the CP. Therefore, no violation of the POP arises. On the other hand, in (3) and (3), whose derivation is schematically represented in (5), the POP is violated, since a contradiction with respect to the relative order between V and O arises.

¹ F&P assume that in Scandinavian, VP is a Spell-Out domain.

- (5) a. [VP V O] ⇒ order: V > O (= (3), (3))
 b. [CP S (aux) O Adv [VP V t₀]] ⇒ order: *S > (aux) > O > Adv > V

2.2. Deletion Analysis of ATB Constructions

In this section, I will briefly discuss the assumptions I adopt regarding ATB constructions. Basically, I assume that an ATB construction like (6) involves a full-clausal coordination that is subsequently reduced by PF deletion, as shown in (7) (see van Oirsouw 1987, Wilder 1994, 1997, among others, for relevant discussion).²

(6) **What did** John buy and Mary sell?

(7) [**What did** John buy] and [~~what did~~ Mary sell]

Regarding the deletion process in coordinated sentences, I adopt the assumptions in (8).

- (8) a. Conjunct clauses are spelled out separately (before they are conjoined), determining the *conjunct-internal* ordering relations.
 b. Part of the conjoining process is an evaluation procedure that applies to all conjuncts, checking them for various constraints that hold for coordinated structures, including identity for deletion.³ (I will call this procedure *Scan*.)
 c. Elements affected by deletion under identity are treated as copies of a single element, which is a characteristic shared by copy-deletion.⁴

On these assumptions, the derivation of (7) proceeds as in (9).

- (9) a. First conjunct: what > did > John > buy
 b. Second conjunct: what > did > Mary > sell

² Various mechanisms have been proposed to explain the nature of ATB constructions, e.g., deletion (van Oirsouw 1987, Wilder 1994, 1997), factorization (Williams 1977, 1978), null operator movement (Munn 1993), parallel movement (Burton and Grimshaw 1992, Ross 1967), sideward movement (Agbayani and Zoerner 2003, Hornstein and Nunes 2002), three dimensional structure (Goodall 1983, 1987, Moltmann 1992), and multi-dominance (Citko 2003, 2005).

³ I believe that in any theory of coordinated structures, there has to be some form of operation equivalent to *Scan* that checks the well-formedness of the structure, given the various forms of parallelism requirements (see, e.g., Munn 1993, Fox 2000). It may be that *Scan* is an interface process that applies at both LF and PF.

⁴ I am assuming that copy-deletion is also an operation of PF (Nunes 1995, 2004, Bošković 2001). Chomsky (1993, 1995) also suggests that deletion of copies may be a subcase of a broader phenomenon of ellipsis.

- c. Conjunction, Scan, Target Selection: {what, did}
- d. Deletion: what > did > John > buy > ~~what > did~~ > Mary > sell

One question that arises here is why the target has to delete in the second conjunct, as in (9). In fact, as shown by the ungrammaticality of (10), deletion must not affect the target in the first conjunct.

- (10) *John buy and **what did** Mary sell?
 [~~what > did~~ > John > buy > what > did > Mary > sell]

Crucially, I suggest that the output of the deletion operation in question must satisfy the POP. That is, the surface position of the target after the application of deletion must be consistent with the ordering relations established before the application of deletion. Note that the position of {what, did} in (10) after the application of deletion contradicts the ordering relation in (9), according to which {what, did} has to precede {John, buy}. Therefore, the POP is violated in (10), correctly predicting the ungrammaticality.

I provide below further evidence that the current proposal is on the right track. First, note that multiple topicalization in coordinated sentences is possible, as shown by (11).

- (11) *The rabbit*, the hunter followed in vain, and *the bear*, he caught in his backyard by accident.

Moreover, topicalization can apply in an ATB fashion as well, as shown by (12). Here, the subject is also ATB-moved.

- (12) **The rabbit, the hunter** followed in vain and caught in his backyard by accident.

Under the current analysis, the derivation of (12) can be represented as in (13).

- (13) [**The rabbit, the hunter** followed *t* in vain] and [~~the rabbit, the hunter~~ caught in his backyard by accident]

The fact that the shared material cannot appear in the second conjunct is predicted, as before, since that will violate the POP.

- (14) *~~[The rabbit, the hunter~~ followed *t* in vain] and [**the rabbit, the hunter** caught in his backyard by accident].

It is also correctly predicted that the subject may not undergo ATB movement—that is, PF deletion, if the topicalized elements that precede it are not identical. This is confirmed by the ungrammaticality of (15).

- (15) **The rabbit*, **the hunter** followed in vain and *the bear*, ___ caught in his backyard by accident.

Note that before the application of deletion, the ordering relations in (16) are established.

- (16) a. First Conjunct: the rabbit > the hunter > followed > in vain
 b. Second Conjunct: the bear > the hunter > caught > in his backyard > by accident

However, after the application of deletion, the position of the shared material {the, hunter} is not consistent with the ordering relation in (16), according to which {the, hunter} must follow {the, bear}. Therefore, the derivation of (15) is ruled out by a violation of the POP.

3. Lower Copy Pronunciation

In this section, I will summarize the basic patterns of MWF in some Slavic languages and also Bošković's (2001, 2002) analysis of lower copy pronunciation (see also Bobaljik 1995, 2002, Franks 1998).

First, it is well-known that *wh*-phrases must all undergo fronting in languages like Bulgarian, Romanian, Russian, and Serbo-Croatian (Rudin 1988, Richards 1997, Stjepanović 1999, Pesetsky 2000, Bošković 2002, among many others).⁵ This is illustrated below. (The data in (17)-(19) are from Bošković 2002:355.)

- (17) a. **Ko šta** kupuje? (SC)
who what buys
 b. ***Ko** kupuje **šta**?
- (18) a. **Koj kakvo** e kupil? (B)
who what is bought
 b. ***Koj** e kupil **kakvo**?
- (19) a. **Kto čto** kupil? (Ru)
who what bought
 b. ***Kto** kupil **čto**?
- (20) a. **Cine ce** cumpără? (Ro)
who what buys

⁵ There is some controversy regarding the precise landing site of multiple *wh*-fronting. For ease of exposition, I will simply assume that *wh*-phrases in these languages move to CP. See Bošković 2002 for further discussion and references.

- b. ***Cine** cumpără **ce**?⁶

Interestingly, there are contexts where multiple wh-fronting (MWF) is systematically disallowed in the languages in question. This is illustrated below. (The data in (21)-(24) are from Bošković 2002:364-365.)

- (21) a. **Šta** uslovljava **šta**? (SC)
what conditions what

- b. ***Šta šta** uslovljava?

- (22) a. **Kakvo** obuslavlja **kakvo**? (B)
what conditions what

- b. ***Kakvo kakvo** obuslavlja?

- (23) a. **Čto** obuslovalo **čto**? (Ru)
what conditioned what

- b. ***Čto čto** obuslovalo?

- (24) a. **Ce** precede **ce**? (Ro)
what precedes what

- b. ***Ce ce** precede?

It is important to notice that there is a shared property in (21)-(24), which is absent in (17)-(20). That is, in (21)-(24), the relevant wh-phrases have the same phonological form, i.e., they are homophonous. Given this, the generalization is that MWF is obligatory except when the wh-phrases are homophonous. In the latter case, one of the wh-phrases has to stay in-situ.

Given this generalization, Bošković (2001, 2002b) argues that the languages in question have a PF constraint that disallows a sequence of homophonous wh-phrases.⁷ (I will call this PF constraint *the what-what filter* for convenience.) Note that the standard assumption is that pronouncing the highest copy of a non-trivial chain is preferred (Chomsky 1993, 1995, Nunes 1995, 2004). Following Franks (1998), Bošković argues that this preference can be overridden, i.e., a lower copy can be pronounced, iff this is necessary to avoid a PF violation—that is, a violation of the *what-what* filter (see also Bobaljik 1995, 2002 for discussion on lower copy pronunciation). On Bošković's analysis, the derivation of (21) proceeds as in (25). First, MWF applies normally, as in (25). If the structure surfaces as is, the *what-what* filter will be violated, as shown in (25), since the sentence contains a sequence of

⁶ I ignore the speaker variation regarding the status of (20b) for ease of exposition.

⁷ Many languages have similar constraints that disallow sequences of homophonous elements. See Billings and Rudin 1996 and Bošković 2001:102-103, fn.6 for relevant discussion and references.

homophonous *wh*-phrases. To avoid this PF violation, pronunciation of a lower copy is allowed, as in (25), correctly deriving the surface form of (21).

- (25) a. [CP *šta* *šta*_i [TP uslovljava *šta*_i]]⁸
 b. * [CP *šta* *šta*_i [TP uslovljava ~~*šta*~~_i]] ⇒ **what-what filter*
 c. [CP *šta* ~~*šta*~~_i [TP uslovljava *šta*_i]] ⇒ √*what-what filter*

An important point in this account is that MWF applies in a normal fashion in all the sentences in (21)-(24). In other words, all the *wh*-phrases actually undergo “overt” *wh*-fronting in these sentences. The in-situ-ness of the lower *wh*-phrase is therefore only apparent, sanctioned by a low level PF constraint. As evidence for this claim, Bošković points out that the in-situ *wh*-phrase can license a parasitic gap, as shown by (26).

- (26) **Ce** precede **ce** fără să influențeze *e*? (Ro)
 what precedes what without SUBJ.PART influences
 ‘What precedes what without influencing?’

Note that parasitic gaps are only licensed by overt *wh*-movement, as shown by (27). Therefore, if the lower *wh*-phrase in (26) did not undergo overt *wh*-fronting, it would be mysterious how the parasitic gap can be licensed in (26) (Cf. (27)).

- (27) a. *What precedes **what** without influencing *e*?
 b. **What** does it precede without influencing *e*?

4. ATB Multiple *Wh*-Fronting

Given this background, we are now ready to examine the patterns of MWF in ATB contexts. Consider the data below.

- (28) **Ko šta** razbija i uništava? (SC)
 who what is-breaking and is-destroying
 ‘Who is breaking and destroying what?’

- (29) **Koj kakvo** vze ot bibliotekata i pročete? (B)
 who what took from library and read

- (30) **Kto čto** slomal i budet razrušat’? (Ru)
 who what broke and will destroy

⁸ Irrelevant details, e.g., the lower copy of the first *šta*, are omitted.

- (31) **Cine ce** a spart și a distrus? (Ro)
 who what has broken and has destroyed

The data in (28)-(31) show that MWF is possible in an ATB fashion. On the deletion analysis of ATB constructions, the derivation of these sentences proceeds as in (32).

- (32) a. First conjunct: cine > ce > a spart ⇒ *MWF*
 b. Second conjunct: cine > ce > a distrus ⇒ *MWF*
 c. Conjunction, Scan, Target Selection: {*Cine, ce*}
 d. Deletion: cine > ce > a spart > ~~cine~~ > ~~ce~~ > a distrus ⇒ *Deletion/ATB* (= (31))

In each conjunct, MWF applies normally. When the conjuncts are conjoined, the target of deletion is determined under identity, and deletion applies to it in a way that conforms to the POP, correctly deriving the surface form of the sentence in (31).

5. Lower Copy Pronunciation and ATB Multiple *Wh*-Fronting

Let us now examine the patterns of lower copy pronunciation in ATB MWF contexts based on a set of novel data given below.

- (33) a. ***Šta šta** ruši i uništava? (SC)
what what is-breaking and is-destroying
 b. **Šta** ruši i uništava **šta**?
- (34) a. ?***Kakvo kakvo** udari i izgori? (B)
what what broke and destroyed
 b. **Kakvo** udari i izgori **kakvo**
- (35) a. ?***Čto čto** slomal i budet razrušat'? (Ru)
what what broke and will destroy
 b. **Čto** slomalo i budet razrušat' **čto**?
- (36) a. ***Ce ce** a spart și a distrus? (Ro)
what what has broken and has destroyed
 b. **Ce** a spart și a distrus **ce**?

Note that when the *wh*-phrases are homophonous in coordinated sentences, one *wh*-phrase appears in the initial position of the first conjunct, while the other goes all the way down to the end of the second conjunct. This peculiar distribution is correctly predicted by the

current analysis. The derivation of the grammatical sentences in (33)-(36) is given in (37).

- (37) a. [Ce_s ce_o a spart] și [ce_s ce_o a distrus] ⇒ *MWF*
 b. [Ce_s a spart ce_o] și [ce_s a distrus ce_o] ⇒ *The what-what filter*⁹
 c. [Ce_s a spart ee_o] și [ee_s a distrus ce_o] ⇒ *Deletion/ATB* (= (36))

How F&P's CL captures this derivation should now be straightforward. For instance, for *ce_s*, applying deletion in the second conjunct is the only way to be consistent with the ordering relations in (38) and (38). On the other hand, for *ce_o*, applying deletion in the first conjunct is the only way that is consistent with both (38) and (38).

- (38) a. First conjunct: *ce_s* > a spart > *ce_o*
 b. Second conjunct: *ce_s* > a distrus > *ce_o*

Given this, the prediction is that the in-situ *wh*-phrase will not be allowed to appear in the first conjunct, since in that position, the in-situ *wh*-phrase will necessarily contradict the ordering relation established internally to the second conjunct (see the position of *ce_o* in (38)). This prediction is borne out by the ungrammaticality of the sentences in (39).

- (39) a. *Kakvo udari kakvo i izgori? (B)¹⁰
 what broke what and destroyed
 b. ??Ce a spart ce și a distrus? (Ro)
 what has broken what and has destroyed

⁹ An implicit assumption here is that the *what-what* filter is part of the linearization process in the languages in question, given that it deals with the linear position of the relevant *wh*-phrases. Therefore, the POP applies to the outcome of the *what-what* filter.

¹⁰ There seems to exist an apparent exception, where the in-situ *wh*-phrase appears in the first conjunct.

- (i) a.(?) Čto slomalo što i razrušilo? (Ru)
 what broke what and destroyed
 b. Šta ruši šta i uništava? (SC)
 what is-breaking what and is-destroying

However, Željko Bošković (p.c.) and Natasha Fitzgibbons (p.c.) note that a pause must clearly appear after the first conjunct in (i), unlike in (33b) and (35b). Given this, I assume that the apparent second conjunct in (i) is an afterthought, which is not coordinated with the preceding clause. In other words, I assume that the sentences in (i) are not a genuine instance of ATB construction.

6. Extension: Right Node Raising

I argue in this section that the current analysis can be extended to capture the peculiar distribution of the shared material in RNR constructions as well. Without going into details, I adopt here a PF deletion analysis of RNR, according to which an RNR sentence like (40) is derived as in (41).¹¹

(40) Tom believes, and John suspects, **that Einstein is from Mars**.

(41) [Tom believes ~~that Einstein is from Mars~~] and [John suspects **that Einstein is from Mars**]

6.1. The Distribution of the Shared Material in RNR

First, the shared material in RNR can only appear in the final conjunct, as shown in (42). Under the deletion analysis of RNR, this means that deletion should affect all and only non-final conjuncts, i.e., deletion must not affect the final conjunct, as shown in (43).

(42) a. Tom believes, Mary suspects, and John denies, **that Einstein is from Mars**.

b. *Tom believes, **that Einstein is from Mars**, Mary suspects, and John denies.

c. *Tom believes, Mary suspects, **that Einstein is from Mars**, and John denies.

(43) a. [first conjunct] ~~{target}~~ [second conjunct] ~~{target}~~ [third conjunct] [target]

b. *[first conjunct] ~~{target}~~ [second conjunct] [target] [third conjunct] ~~{target}~~

c. *[first conjunct] [target] [second conjunct] ~~{target}~~ [third conjunct] ~~{target}~~

Second, the shared material must form an unbroken string, as shown by the contrast in (44). This is also schematically represented in (45).

(44) a. *Lydia-nun _____ ppang-ul _____ kuliko (Korean)
L-top bread-acc and
 Nina-nun Ana-ka bap-ul mekess-tako malhaessta
N-top A-nom rice-acc ate-comp said

‘Lydia (said that Ana ate) bread and Nina said that Ana ate rice.’

¹¹ In the literature, basically three different approaches exist regarding RNR constructions: ATB movement (Ross 1967, Sabbagh 2003), multiple dominance (McCawley 1982, Wilder 1999, 2001, Abels 2003, Chung 2004, Park 2005), and PF deletion (Wexler and Culicover 1980, van Oirsouw 1987, Swingle 1993, Wilder 1994, 1997, Hartmann 2000, Abels 2003, Mukai 2003, Bošković 2004, te Velde 2005, Ha 2006, An 2007). I refer the reader to An 2007 for extensive arguments for the PF deletion analysis of RNR.

- b. Lydia-nun Ana-ka _____ kuliko
L-top A-nom and
 Nina-nun Tomo-ka bap-ul mekess-tako malhaessta
N-top T-nom rice-acc ate-comp said

‘Lydia (said that) Ana (ate rice) and Nina said that Tomo ate rice.’

(45) *[A B † C ‡] & [D E 1 F 2]

Third, the deleted string, i.e., the shared material, must occupy the edge of its conjunct, as shown by the contrast in (46). This is also schematically represented in (47).

- (46) a. *Tomo-nun Lydia-ka _____ ssessta kuliko
T-top L-nom wrote and
 Nina-nun Ana-ka pang-eyse chayk-ul ilkess-tako malhayssta
N-top A-nom room-at book-acc read-comp said

‘Tomo wrote (that) Lydia (read a book in the room) and Nina said that Ana read a book in the room.’

- b. Tomo-nun Lydia-ka _____ kuliko
T-top L-nom and
 Nina-nun Ana-ka pang-eyse chayk-ul ilkess-tako malhayssta
N-top A-nom room-at book-acc read-comp said

‘Tomo (said that) Lydia (read a book in the room) and Nina said that Ana read a book in the room.’

(47) *[A B †‡ C] & [D E 1 2 F]

I will show below that the current analysis can derive these properties by adopting F&P’s CL.

6.2. Deriving RNR

Let us first see why the fact that the shared material can only appear in the final conjunct. (48) schematically illustrates how an ordinary RNR sentence like (40) is derived.

- (48) a. First conjunct: A> B> 1> 2> 3
 b. Second conjunct: C> D> 1> 2> 3
 c. Conjunction, Scan, Target Selection: {1, 2, 3}
 d. Deletion: A> B> ~~1> 2> 3~~> C> D> 1> 2> 3

Note that the surface position of the shared material in (48) does not lead to a

contradiction with respect to (48) and (48). Note that if deletion affects the target in the final conjunct, as in (49), a contradiction arises with respect to (48). The ungrammaticality of (50) thus confirms this conclusion.

(49) *A> B> 1> 2> 3> C> D> ~~1>2>3~~

(50) *Tom believes **that Einstein is from Mars** and John suspects.

This way, the current analysis derives the fact that the shared material in RNR must appear in the final conjunct.

Next, let us see how the current analysis derives the fact that the shared material must form an unbroken string. The derivation of the ungrammatical sentence in (44), repeated here as (51), is schematically represented in (52).

(51) *Lydia-nun _____ ppang-ul _____ kuliko (Korean)
L-top bread-acc and
 Nina-nun Ana-ka bap-ul mekess-tako malhaessta
N-top A-nom rice-acc ate-comp said

‘Lydia (said that Ana ate) bread and Nina said that Ana ate rice.’

- (52) a. First conjunct: A> B> 1> C> 2
 b. Second conjunct: D> E> 1> F> 2
 c. Conjunction, Scan, Target Selection: {1, 2}
 d. Deletion: *A> B> ~~1>~~ C> ~~2>~~ D> E> 1> F> 2

The output of (52) contradicts the ordering relation in (52), according to which 1 should precede C.¹²

Finally, let us see how the requirement that the shared material occupy the edge of its conjunct can be derived. I repeat the relevant example below as (53).

(53) *Tomo-nun Lydia-ka _____ ssessta kuliko
T-top L-nom wrote and
 Nina-nun Ana-ka pang-eyse chayk-ul ilkess-tako malhayssta
N-top A-nom room-at book-acc read-comp said

‘Tomo wrote (that) Lydia (read a book in the room) and Nina said that Ana read a book in the room.’

¹² Recall that applying deletion in the final conjunct always leads to an ordering contradiction, as discussed based on (48)-(50). Therefore, deleting the target in the second conjunct in (52) will not do any good.

The derivation of (53) proceeds as in (54).

- (54) a. First conjunct: A> B> 1> 2> C
b. Second conjunct: D> E> 1> 2> F
c. Conjunction, Scan, Target Selection: {1, 2}
d. Deletion: * A> B> ~~1> 2>~~ C> D> E> 1> 2> F

The output of deletion in (54) contradicts the ordering relation in (54), according to which the shared material {1,2} must precede C. Therefore, the sentence is ruled out by a violation of the POP. Again, deleting the target in the second conjunct will not help, since it always leads to a violation of the POP.

I have argued in this section that the current analysis can be extended to capture the peculiar distribution of the shared material in RNR constructions as well.

7. Conclusion

I have argued in this paper that adopting F&P's CL allows us to *derive* several generalizations regarding the position of the shared material in ATB and RNR constructions. I have shown that the current analysis accounts for a set of novel data from some Slavic languages that involve lower copy pronunciation in ATB MWF contexts. In addition, the current analysis provides indirect support for the PF deletion analysis of ATB and RNR constructions in the sense that in explaining the properties examined above, the deletion analysis does not require any additional machinery, although its alternatives do.

References

- Abels, Klaus. 2003. Right Node Raising: Ellipsis or Across the Board Movement? In *Proceedings of NELS 34*, ed. by Keir Moulton and Matthew Wolf, 45-59. GLSA, Amherst.
- Agbayani, Brian and Ed Zoerner. 2003. A sideward movement approach to non-constituent deletion. Paper presented at WECOL 2003 University of Arizona, September.
- An, Duk-Ho. 2007. *Syntax at the PF interface: Prosodic mapping, linear order, and deletion*. Ph.D. dissertation. University of Connecticut, Storrs.
- Billings, Loren and Catherine Rudin. 1996. Optimality and superiority: A new approach to multiple-wh ordering. In *Formal approaches to Slavic linguistics: The College Park meeting, (1994)* J. Toman (ed.), 35-60. Ann Arbor: Michigan Slavic Publications.
- Bobaljik, Jonathan David. 1995. *Morphosyntax: The syntax of verbal inflection*. Ph.D. dissertation. MIT.
- Bobaljik, Jonathan David. 2002. A-chains at the PF-interface: Copies and 'covert' movement. *Natural Language and Linguistic Theory* 20:197-267.

- Bošković, Željko. 2001. *On the Nature of the Syntax-Phonology Interface: Cliticization and Related Phenomena*. Amsterdam: Elsevier.
- Bošković, Željko. 2002. On multiple wh-fronting. *Linguistic Inquiry* 33:351-383.
- Bošković, Željko. 2004. Two notes on right node raising. In *University of Connecticut Working Papers in Linguistics* 12, ed. Miguel Rodriguez Mondonedo and M. Emma Ticio, 13-24. Department of Linguistics, University of Connecticut, Storrs.
- Burton, Strang and Jane Grimshaw. 1992. Coordination and VP-internal subject. *Linguistic Inquiry* 23:305-313.
- Chomsky, Noam. 1993. A minimalist program for linguistic theory. In *The view from building 20: Essays in honor of Sylvain Bromberger*, ed. by Kenneth Hale and Samuel Jay Keyser, 1-52. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 1995. *The minimalist program*. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, ed. Roger Martin, David Michaels, and Juan Uriagereka, 53-87. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. Michael Kenstowicz, 1-52. Cambridge, Mass.: MIT Press.
- Chung, Dae-Ho. 2004. Multiple dominance analysis of Right Node Raising. *Language Research* 40:791-812.
- Citko, Barbara. 2003. Parallel Merge and across-the-board wh-movement. Ms. University of Connecticut.
- Citko, Barbara. 2005. On the nature of Merge: External Merge, Internal Merge, and Parallel Merge. *Linguistic Inquiry* 36:475-496.
- Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, Mass.: MIT Press.
- Fox, Danny and David Pesetsky. 2005. Cyclic linearization of syntactic structure. *Theoretical Linguistics* 31:1-45.
- Franks, Steven. 1998. Parameters of Slavic morphosyntax revisited: A minimalist retrospective. In *Formal approaches to Slavic linguistics: The Connecticut meeting, 1997*, ed. Željko Bošković, Steven Franks and William Snyder, 134-165. Ann Arbor.: Michigan Slavic Publications.
- Goodall, Grant. 1983. A three-dimensional analysis of coordination. *CLS* 19, 146-154.
- Goodall, Grant. 1987. *Parallel structures in syntax: Coordination, causatives, and restructuring*. London: Cambridge University Press.
- Ha, Seungwan. 2006. Multiple dominance CAN'T, but PF-deletion CAN account for Right Node Raising. Paper presented at the 42nd Annual Meeting of the Chicago Linguistic Society, April.
- Hartmann, Katharina. 2000. *Right Node Raising and Gapping: Interface conditions on prosodic deletion*. Amsterdam: John Benjamins Publishing Company.
- Holmberg, Anders. 1999. Remarks on Holmberg's generalization. *Studia Linguistica* 53:1-39.
- Hornstein, Norbert and Jairo Nunes. 2002. On asymmetries between parasitic gap and across-the-board constructions. *Syntax* 5, 26-54.
- McCawley, James D. 1982. Parentheticals and discontinuous constituent structure. *Linguistic Inquiry* 13:91-106.

- Moltmann, Frederike. 1992. *Coordination and Comparatives*. Ph.D. dissertation. MIT.
- Mukai, Emi. 2003. On verbless conjunction in Japanese. In *Proceedings of North East Linguistic Society 33*, ed. by Makoto Kadowaki and Shigeto Kawahara, 205-224. Amherst, Mass.: GLSA.
- Munn, Alan. 1993. *Topics in the Syntax and Semantics of Coordinate Structures*. Ph.D. dissertation. University of Maryland, College Park.
- Nunes, Jairo. 1995. *The Copy Theory of Movement and Linearization of Chains in the Minimalist Program*. Ph.D. dissertation. University of Maryland at College Park.
- Nunes, Jairo. 2004. *Linearization of chains and sideward movement*. Cambridge, Mass.: MIT Press.
- van Oirsouw, Robert R. 1987. *The syntax of coordination*. London: Croom Helm.
- Park, Myung-Kwan. 2005. When things are coordinated or distributed across coordinate conjuncts. Paper presented at the 7th Seoul International Conference on Generative Grammar. Konkuk University, Seoul.
- Pesetsky, David. 2000. *Phrasal movement and its kin*. Cambridge, Mass.: MIT Press.
- Richards, Norvin W. 1997. *What moves where when in which language?* Ph.D. dissertation. MIT.
- Ross, John Robert. 1967. *Constraints on variables in syntax*. Ph.D. dissertation. MIT. [Published as *Infinite Syntax!* Norwood, N. J.: Ablex (1986)]
- Rudin, Catherine. 1988. On multiple questions and multiple wh-fronting. *Natural Language and Linguistic Theory* 6: 455-501.
- Sabbagh, Joseph A. 2003. Ordering and linearizing rightward movement. In *Proceedings of the 22nd West Coast Conference on Formal Linguistics*, ed. by Gina Garding and Mimura Tsujimura, 436-449. Somerville, Mass.: Cascadilla.
- Stjepanović, Sandra. 1999. *What do second position cliticization, scrambling, and multiple wh-fronting have in common?* Ph.D. dissertation. University of Connecticut, Storrs.
- Swingle, Kari. 1993. The role of prosody in Right Node Raising. *Syntax at Santa Cruz* 2:84-111.
- te Velde, John R. 2005. Unifying prosody and syntax for right- and left-edge coordinate ellipsis. *Lingua* 115:483-502.
- Wexler, Kenneth and Peter Culicover. 1980. *Formal principles of language acquisition*. Cambridge, Mass.: MIT Press.
- Wilder, Chris. 1994. Coordination, ATB and Ellipsis. *Groninger Arbeiten zur Germanistischen Linguistik (GAGL)* 37, 291-329.
- Wilder, Chris. 1997. Some properties of ellipsis in coordination. In *Studies on universal grammar and typological variation*, Artemis Alexiadou and T. Alan Hall (eds), 59-107. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Wilder, Chris. 1999. Right node raising and the LCA. In *Proceedings of the 18th West Coast Conference on Formal Linguistics*, ed. by Andrew Carnie Sonya F. Bird, Jason D. Haugen, and Peter Norquest, 586-598. Cascadilla Press.
- Wilder, Chris. 2001. Shared constituent and linearization. Ms. ZAS, Berlin.
- Williams, Edwin. 1977. Across-the-board application of rules. *Linguistic Inquiry* 8, 419-423.
- Williams, Edwin. 1978. Across-the-board rule application. *Linguistic Inquiry* 9, 31-43.