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ORDERING AND LINEARIZING RIGHTWARD MOVEMENT*

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ABSTRACT. This paper offers a novel solution to an old problem concerning Right Node Raising constructions—namely, that Right Node Raising constructions seem to involve an unbounded application of (Across-the-Board) rightward movement that flies in the face of certain locality constraints on movement generally, as well as to the locality constraint on (simple) rightward movement in particular. Despite these apparent challenges, I argue in this paper that RNR constructions are in fact movement derived. I propose that the apparent unbounded nature of the movement involved in RNR follows from the simple fact that rightward movement is actually, in principle, an unbounded type of movement. I propose, in addition, to analyze those cases where rightward movement appears to be bounded as the result of a derivational constraint proposed in recent work by Fox and Pesetsky (2004), which demands that certain instances of movement be order preserving.

1. INTRODUCTION

1.1. *Right Node Raising and the Right Roof Constraint*

Rightward movement, at least in English, is known to adhere to a rather strict locality condition. The contrast between the grammatical sentences in (1) and the ungrammatical sentences in (2) provide a sense of just how strict this locality restriction is.[1]

(1)a. Josh [$_{vP}$ returned _ to the library for Jamie], **each of the books she checked out last week**.
b. Josh will [$_{vP}$ eat _ raw], **almost anything you give him**.
c. Josh [$_{vP}$ edited [a review _] for Sue], **of Jamie's article**.

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[1] For the purposes of this article, I will not be concerned with the question of whether rightward displacement phenomena should be analyzed as literal rightward movement, or instead as a series of leftward movement operations consistent with Kayne's (1994) Linear Correspondence Axiom. On the whole, the facts discussed in this paper do not seem to bear too heavily on this issue.

(2)a. *?Max [$_{vP}$ described _ for Bill] drunk, **a popular Broadway musical**.
b. *Max said that he was going to [$_{vP}$ return _ to the library] yesterday, **each of the books that he checked out last week**.
c. *Jamie walked [$_{PP}$ into _] suddenly, **the dean's office**.
d. *Josh edited [a review [$_{PP}$ of an article _] for Jamie, **about verb-movement**.
(cf. Josh edited [a review _] for Sue, **of an article about verb-movement**.)

Given the bracketing shown, the examples in (1) show that rightward movement may move an argument across all vP-internal arguments and modifiers. The examples in (2a) and (2b), in contrast, show that rightward movement of an argument is impossible if it raises out of the vP that most immediately contains its base position. Rightward movement out of a PP also seems to be impossible, as illustrated by the illicit rightward movement of a DP from a PP in (2c), and the illicit rightward movement of a PP from a PP in (2d).[2]

The contrast between these and related examples has been accounted for by a constraint that places an upward bounding condition on rightward movement.[3] Streamlining the various formulations that have been proposed over the years, one general way of stating this bounding restriction is as in (3) (adapted slightly from McCloskey 1999) (cf. Ross 1967; Akmajian 1975; Johnson 1986; Rochemont 1992):

(3) *Right Roof Constraint* (RRC)
Rightward movement may move and right adjoin an element X to the cyclic-node in which X is merged, but no further.

Assuming for the time being that the relevant 'cyclic nodes' are at least vP and PP, (3) provides an adequate descriptive account for the grammaticality contrasts seen in (1)-(2) above.[4]

The question that is at the forefront of this paper is whether or not (3) is actually the correct characterization of the constraint on rightward movement. The correctness of (3), stated as such, is potentially called into question depending on the correct analysis of the Right Node Raising (RNR) constructions exemplified in (4):

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[2] Most accounts of the constraints on rightward movement attribute the ungrammaticality of examples like (2c) to a specific ban on preposition stranding by rightward movement (see, e.g., Ross 1967:126; Stowell 1981; Steedman 1996:68). Examples like (2d), on the other hand, are usually accounted for in terms of the more general Right Roof Constraint (see, e.g., Akmajian 1975). Throughout this paper, I will assume that examples like (2c) and (2d) should be given a unified treatment in terms of the Right Roof Constraint (or by whatever constraint should take its place—see Section 2 below).

[3] See Gazdar (1981:177-181) for an alternative view in which the bounding effects on rightward movement are not assumed to be part of the grammar.

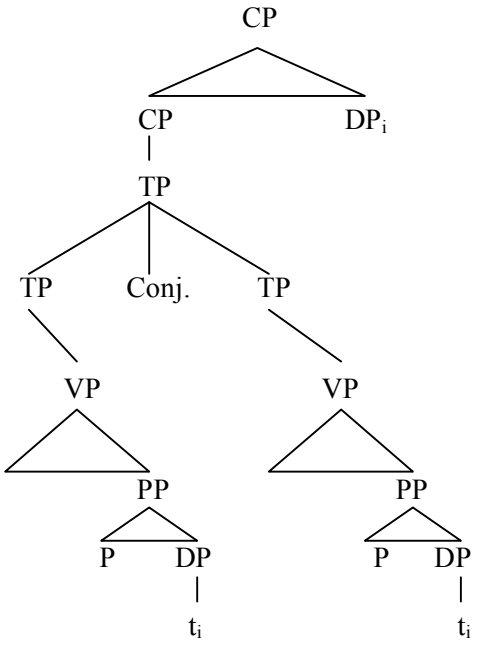
[4] On the status of vP as a cyclic-node (or Phase/Spell-Out domain), see Chomsky (1986, 2000, 2001); Fox (1999); Merchant (2003); among others. On the status of PP as a cyclic-node, see van Riemsdjik (1978); and Baltin (1978).

(4)a. Joss walked suddenly into _ , and Maria stormed quickly out of _, **the dean's office**.

b. Josh promised that he would give _ to Jamie, and Joss claimed that he was going to give _ to Sue, **all of the answers to the final exam**.

Most of the classic accounts of RNR (Ross 1967; Postal 1974,1998; Hankamer 1971; Abbot 1976; Grosu 1976; Bresnan 1974) assume a rule of Across-the-Board (ATB) rightward movement, which takes a 'shared' element from within each of the conjuncts of a coordinate structure and right-adjoins it to a position external to the coordinate structure. An example like (4a), for instance, would be assigned a structure like (5) under this analysis.

(5)



The structure in (5) directly accounts for the presence of the gap in the initial conjunct, as well as the perceived presence of a gap in the final conjunct.[5] This structure also captures straightforwardly the fact that the rightmost element in the clause (henceforth, the 'pivot') is associated with both of these gaps.

As plausible as it may seem initially, this structure and the derivation behind it do not accord at all with the bounding conditions imposed on rightward movement by the RRC in (3). Concretely, the DP pivot in (5) has been displaced from the PP cyclic node

[5] I say 'perceived' here because there is no direct word order evidence for the displacement, although there is an intonation pause, which can plausibly be taken to indicate the separation of the right-node-raised element from the complement position of the preposition. This work largely ignores the very interesting prosodic properties associated with RNR constructions. For early work on this topic, see Swingle (1993). The most in-depth and careful work on this topic (for both English and German) that I am aware of to date is that of Hartmann (2000). More work is needed to see how her observations about prosody could be integrated into the analysis proposed in this paper.

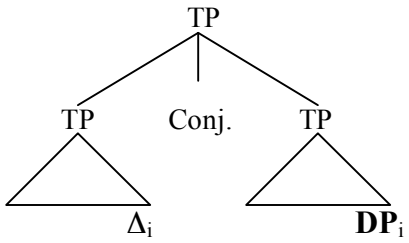
wherein it was initially merged, thus violating (3). (Note, it has also been displaced from the vP cyclic node which dominates this PP.) The fact that the sentences in (4) are grammatical, therefore, remains an unsolved mystery for an ATB-extraction analysis of RNR.[6]

1.2. *Two Solutions*

There are at least two imaginable ways of approaching the problem presented above. One approach would be to maintain the correctness of the RRC, and to reject the 'classic' analysis of RNR based on rightward ATB-movement. There are two specifically noteworthy proposals that take exactly this approach, both of which will be referred to throughout this paper as *in-situ* analyses.

One in-situ analysis rejects the analysis of examples like those in (4) in terms of rightward ATB-extraction, and proposes instead that such constructions are derived from an operation of 'Backward Deletion' (Wexler and Culicover 1980; Kayne 1994; Wilder 1997; Hartmann 2000, 2003). Under this approach, RNR structures are parsed as depicted schematically in (6), where Δ marks the cite of deletion:

(6)



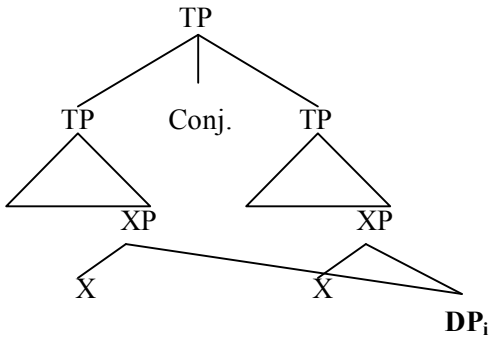
Another in-situ approach to RNR adopts the position that there is just one occurrence of the shared constituent in RNR constructions, which is multiply dominated by two separate positions within the clause (McCawley 1982; Levine 1985; McCloskey 1986; Blevins 1990; Phillips 1996; Wilder 1999). Under this approach, RNR constructions are parsed as depicted schematically in (7):

[6] There are other problems for the rightward ATB-extraction analysis of RNR, in particular involving apparent island insensitivity:

(i) I know someone who wants to buy _, and you know someone who wants to sell _, a copy of this manuscript.

I return to this issue in Section 5.2.2.

(7)



Crucial for both of these approaches is the claim that the RNR pivot remains in-situ within each conjunct individually and within the coordinate structure more generally. Since there is no extraction, the argument goes, there is no violation of the RRC in examples such as those in (4) above.

We might also imagine approaching the problem from the opposite direction. That is, instead of abandoning the analysis in terms of rightward ATB-movement, we might alternatively consider giving up the Right Roof Constraint by hypothesizing that rightward movement is actually an unbounded movement rule. Though this approach would require us to search for a novel account of the contrast between the examples in (1)-(2), it would absolve the problematic RNR constructions in (4). So far as I am aware, this approach has never seriously been considered. This is the direction I will take and defend in this paper.

The article is structured as follows. In section 2, I present and discuss a basic paradigm of RNR constructions upon which I motivate my initial hypothesis that rightward movement is an unbounded movement operation, which is nevertheless restricted from having certain phonological consequences. In sections 3 and 4, I present a number of new arguments supporting the rightward ATB-movement analysis of RNR in general. Here, I will also discuss some of the opposing arguments of this view. Finally, in section 5, I come back to the proposal of section 2 to develop it within a more general theory of locality from which the facts of section 2, as well as some others, follow. Section 6 concludes the discussion, followed by an appendix where I confront some remaining problems.

2. UNBOUNDED RIGHTWARD MOVEMENT

In this section, I present a basic paradigm of RNR constructions that any ideal theory of this construction should account for. It will become clear that neither of the in-situ analyses nor the extraction analysis as presently formulated can successfully derive the entire paradigm. In response to this problem, I will put forward a proposal to reformulate the 'bounding conditions' on rightward movement in terms of a PF (Phonological Form) constraint. In doing this, I will show that the rightward ATB-movement analysis can provide a unified and complete account of the facts that makes the in-situ mechanisms unnecessary.

2.1. *Non-String-Vacuous RNR*

For many well formed RNR constructions, the linear relation between the pivot and the gap it is associated with within each of the conjuncts (henceforth, the 'gap-pivot' relation) is string-vacuous (modulo the non-initial conjunct(s), see below).

(8)a. Josh is likely to accept _, and Jamie is likely to reject _,
the controversial amendment.
b. Some people are willing to accept _, but most people are also likely to
deny _, **that there is a problem with the administration.**

Ignoring the presence of the non-initial conjuncts (this will be dealt with in Section 5), the string-vacuous character of the gap-pivot relation in examples such as these makes it difficult to determine whether or not any (rightward) movement dependency has actually been formed. Generally speaking, the examples in (8) are compatible with either of the in-situ analyses mentioned above.

On the other hand, many well-formed RNR constructions have a surface profile in which the gap-pivot relation is not string-vacuous. Consider the examples in (9) below. In each of these examples, the pivot has been overtly displaced from its base position. This displacement is made visible by the presence of a constituent (or constituents) that intervenes between the surface position of the pivot and its base position (i.e., the position of the gap).

(9)a. Josh will [$_{vP}$ donate _ to the library], and Maria will
[$_{vP}$ donate _ to the museum], **each of these old novels**. (cf. (1a))
b. Josh will gladly [$_{vP}$ eat _ raw], but Jamie will probably
[$_{vP}$ toss _ to the dog], **whatever you put on the table**. (cf. (1b))
c. Joss [$_{vP}$ edited [one review _] for Blackwell], and Maria
[$_{vP}$ edited [two reviews _] for Oxford], **of my new book**. (cf. (1c))

Rightward displacement, as seen with respect to the final conjunct in each of these examples, is obligatory. This is shown by the ungrammaticality of the examples in (10). In each example, the pivot is in-situ within the final conjunct, and the result is ungrammatical.

(10)a. *Joss will [$_{vP}$ donate _ to the library], and Maria
will [$_{vP}$ donate **several old novels** to the museum].
b. *Joss will gladly [$_{vP}$ devour _ raw], but Jamie will
probably [$_{vP}$ toss **whatever you put on the table** to the dogs].
c. *Joss [$_{vP}$ edited [one review _] for Blackwell], and Maria
[$_{vP}$ edited [two reviews **of my new book**] for Oxford].

Returning to the examples in (9), these examples are minimal pairs with the simpler rightward movement constructions in (1) from Section 1—each conjunct in the examples in (9) has the same basic form as one of the corresponding example in (1). The important

point here is that rightward displacement is crucially involved in the derivation of at least some RNR constructions.

This point is further reinforced by the ungrammatical examples in (11). These examples are basically minimal pairs with the ungrammatical examples of simple rightward displacement in (2) above—the only difference relating to the presence of the coordinate structure.

(11)a. *?Josh [$_{vP}$ described _ for Jamie] drunk, and Joss [$_{vP}$ reenacted _ for Maria] sober, **a popular Broadway musical**. (cf. (2a))

b. *Joss said that he was going to [$_{vP}$ donate _ to the library] yesterday, and Jamie claimed that she would [$_{vP}$ donate _ to the museum] last week, **a large collection of ancient texts**. (cf. (2b))

c. *I sent one of those books [$_{PP}$ to _] in perfect condition, and sent the other ones [$_{PP}$ to _] in poor condition, **the Somerville public library**. (cf. (2c))

d. *Joss edited one long review [$_{PP}$ of an article _] for Jamie, and read three short reviews [$_{PP}$ of a book _] for Joss, **about verb-movement**. (cf. (2d))

What (9)-(11) collectively reveal is that, however RNR constructions are derived—i.e., whether by rightward ATB-movement, Deletion, or Multiple Dominance—each well-formed RNR construction requires conjunct internal rightward movement of the pivot within each of the conjuncts. This observation is not a new one. In fact, it has not only been observed that conjunct internal rightward movement takes place in RNR constructions, but it has also been proposed that this movement is a pre-condition for deriving RNR constructions (see, e.g., Postal 1974; McCawley 1982; Swingle 1993; Wilder 1997; Hartmann 2000; Wilder 1999). This condition is usually referred to as the *Right Edge Restriction*. This condition is formulated as follows with respect to each of the proposals discussed so far.[7]

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[7] It may not be clear from the examples above—specifically (9) and (11)— that an intermediate step of movement is actually necessary in order to satisfy the RER on a rightward ATB-movement analysis. For instance, how do we know in (9) that there is an initial step of movement to the right edge of the conjuncts, instead of a single application of rightward movement (ATB) out of the coordinate structure? Evidence for the intermediate step is based on the following observation: First, a constituent that is rightward moved is 'frozen' for other extractions (Wexler and Culicover 1980; cf. Kayne 1985 for some problematic cases).

(i) Josh sent _ to Mary, [a picture of Lennon].
(ii) ??Who did John send _ to Mary [a picture of _]?

In Right Node Raising constructions where the pivot surfaces at the right edge of each conjunct by virtue of the fact that its base position is rightmost within the conjuncts, this freezing effect apparently does not arise, as in (iii).

(iii) Who did Josh buy _ and Mary sell _, [a picture of _]?

On the other hand, when the pivot's base position is not rightmost, the freezing effect re-emerges, indicating the rightward movement has applied.

Right Edge Restriction (RER)

(12) In the configuration:

[[$_A$….X…] Conj. [$_B$…X…]]

X must be rightmost within A and B before either (i) X can be deleted from A; (ii) X can be rightward ATB-moved; or (iii) X can be multiply dominated by A and B.

An important question in the development of the theory of RNR constructions is why the condition in (12) should hold. I will not deal with this question in the present section, but will return to it later in Section 5 (see also Appendix 1).

2.2. *Conjunct External Positions*

The examples above involved displacement that was made visible by virtue of the word order relation between the pivot and material *within* the conjuncts. It is also possible to construct examples that seem to have the same basic profile of the RNR constructions above (i.e., where a right-peripheral element is associated with a single gap contained within a conjunct), but where word order evidence suggests that the pivot is external to the coordinate structure. Examples conforming to this general pattern are provided in (13).[8]

(iv) ??Who did Josh buy from Sam _, and Mary sell _ to Max, **[a portrait of _]?**

Thus, these facts would suggest that in deriving a RNR construction from a base structure in which the pivot is not rightmost, an initial step of rightward movement that will make the pivot rightmost is required.

An anonymous reviewer also makes the following observations. First, while simple rightward movement requires the pivot to be heavy, this is typically not so for the pivot in a RNR construction (judgments below are those of the reviewer):

(v) Josh returned for Jamie several books *(that she borrowed last month).
(vi) Josh gave Jamie, and Sue gave Sandy, several books (that she borrowed last month).

The reviewer then points out that in a RNR construction where the pivot's base position is not rightmost, the pivot apparently must be heavy as in simple rightward movement. This fact follows if the pivot must be rightward moved first (by simple rightward movement) to the right edge of the conjuncts, and only then after across-the-board out of the coordinate structure:

(vii) *?Joss will sell to the library today, and Maria will donate to the museum tomorrow, several books.

I am not certain that there is a contrast between (vii) on the one hand, and (vi) on the other. If the facts are this way, however, they would also help to establish the general correctness of the RER in (12) for all analyses of RNR—i.e., in-situ or extraction based.

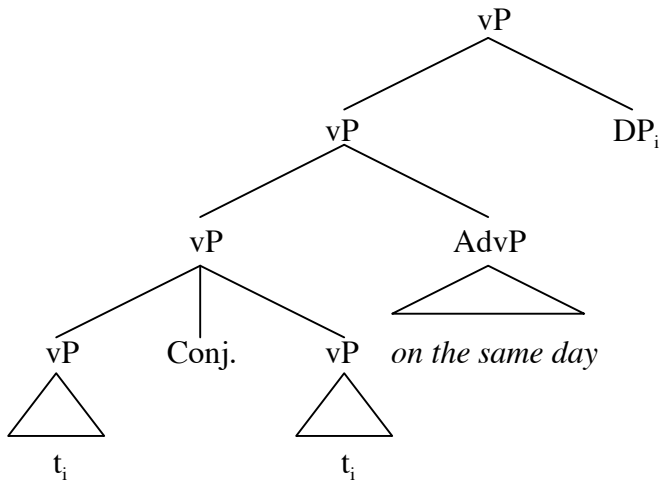
[8] I use modifiers containing *same* so as to rule out the possibility, under a deletion style analysis, of the examples in (13) instantiating multiple RNR, i.e., structures of the form (i):

(13)a. Joss will [$_{vP}$ sell _ to a library, and donate _ to a shelter] *on the same day*, **all of his old manuscripts.**

b. Jamie [$_{vP}$ read [a short review _, and two longer reviews _]] *for the same journal*, **of my recent book**.

In (13a), the modifier *on the same day* does not (and cannot, see fn. 8) modify either of the vP-conjuncts individually. Rather, it seems to modify the entire vP-coordinate structure. The structure for this example, therefore, would be something like that in (14):

(14)



Similarly, (13b) has a structure whereby the constituent to the right of the coordinate structure precedes the surface position of the displaced constituent, as illustrated in (15):

(i) Jamie read one short review (~~in the same journal~~) (~~of my recent book~~), and two long reviews in the same journal of my recent book.

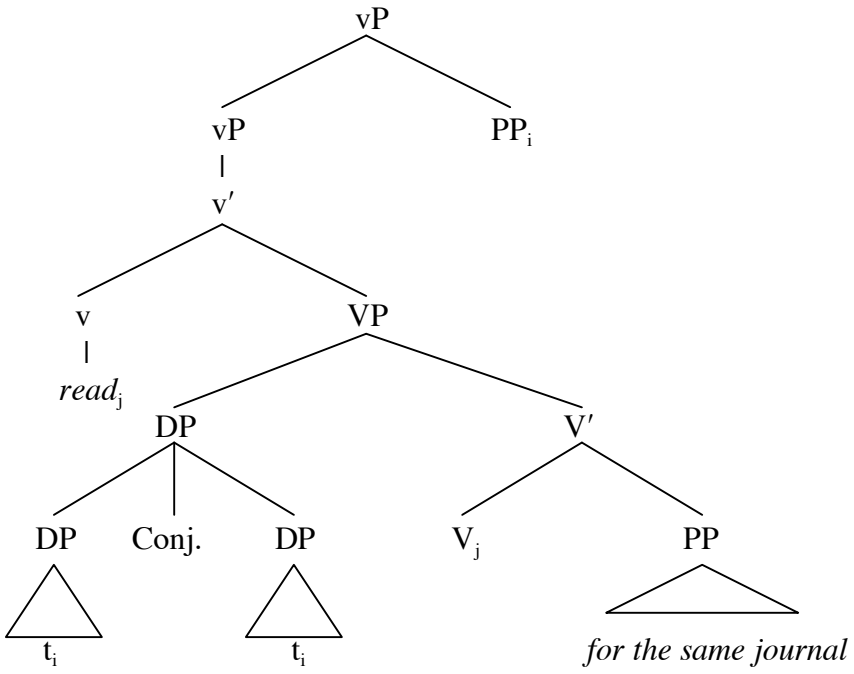
Such structures, it is generally assumed, cannot be assigned coherent interpretations (for further discussion, see also Section 4.2.3. of the present paper).

A reviewer also points out that this kind of analysis can also be controlled for with conjoined singular DP's which trigger plural agreement on a verb outside of the coordination, as in (ii):

(ii) %There are [a glowing review _, and a critical discussion _] *in today's NYT*, **of my recent book**.

For speakers of English who do not permit plural agreement here (i.e., those for whom first conjunct agreement is obligatory), this example is rather bad. For those speakers that do allow it, the example is quite good.

(15)



In the structures for both (14) and (15), the surface position of the pivot with respect to its conjunct internal base position seems to accord with the RRC. The pivot is crucially contained within the cyclic node (vP) that also contains its base position. In other cases where the pivot is too far removed from its base position, the result is ungrammatical. The examples in (16) illustrate:

(16)a. *Joss [said that he was going to [fire_], and insisted that no one would ever consider [rehiring_]] *on the same day*, **the crazy guy from accounting**.

b. *Jamie [read one long review [of a 10 page article _], and two long reviews [of a 20 page article _] *for the same journal*, **about my new book**.

In both of these examples, the pivot appears to have moved out of the local domain of the cyclic node (vP in (16a); PP in (16b)) wherein it was initially merged. These examples are straightforwardly ruled out as violations of the RRC.

2.3. *Interim Summary*

None of the analyses of RNR discussed so far offers a complete account for the entire paradigm that we have just presented. Since rightward ATB-movement is crucially involved in accounting for the examples in (13) and (16), this operation must be countenanced by the grammar. The question, then, is whether it is also possible to assume that this operation is involved in deriving other members of the paradigm—specifically, examples like (8) and (9).

If rightward movement is bounded (e.g., by the Right Roof Constraint), then the answer to the above question would seem logically to be no. It is at this point, therefore, that it seems necessary to introduce an additional mechanism (e.g., Backward Deletion or Multiple Dominance) to deal specifically with the RNR constructions that rightward (ATB-)movement cannot handle. On the other hand, if it is possible to develop a theory in which rightward movement is (potentially) unbounded but still constrained enough to deal with the basic Right Roof Constraint effects, then we might wonder whether these mechanisms are actually necessary for analyzing RNR.

In what follows immediately below, I will suggest an alternative movement based account of the facts involving 'unbounded' rightward movement that we have looked at so far. In Sections 3-4, I will provide arguments showing that this alternative in fact fares better than either of the in-situ approaches.

2.4. *Unbounded Rightward Movement*

The basic problem for the rightward ATB-movement analysis of RNR concerns the assumption that in examples like (8)-(9), the pivot has moved out of the coordinate structure. Even if these examples involve only sentential coordination, they should be ruled out by the RRC (see (3)). More dramatic examples of apparent unbounded rightward movement can be constructed, as in (17):

(17) Josh said that he thought that I should sell _, and Jamie said that she thought that she might want to buy _, **each of the Rambaldi artifacts that I have in my attic.**

Now, it is quite clear that the movement is bounded when conjunct internal rightward movement is required in order to satisfy the Right Edge Condition in (12) (see the examples in (11)). Simply comparing (8)-(9) with (11), we might hypothesize that rightward movement is only bounded when it does not apply across-the-board. Such a hypothesis is immediately proven wrong by the comparison of the examples in (13) with those in (16), a contrast that reveals quite clearly that rightward movement is bounded that applies across-the-board.

What, then, is the special property that the examples in (8)-(9) share, which the examples (11), (13), and (16) crucially do not? If we look carefully over the relevant examples, the following generalization seems to emerge: Movement that violates the RRC is licit *whenever it does not show overt effects (viz-á-viz word order) of having violated the RRC*. In other words, it appears that if the pivot does not cross over any overt element *outside of the pivot's right roof* (i.e., outside of the cyclic-node where the pivot originates), then the distance the rightward moving element may move is potentially unbounded. Let us state this observation as a condition on rightward movement, as in (18):

(18) *Rightward Crossing Constraint* (RCC)
Rightward movement of X many not cross phonologically overt material which is not contained within the cyclic node (=vP, PP) wherein X is initially merged.

For this to work, we must assume for the moment that a non-initial conjunct is not relevant for evaluating whether the dependency between the gap in the initial conjunct and its antecedent is well formed with respect to (18) (we will be absolved of this problem, in any case, in Section 5). Assuming this, the entire paradigm of rightward movement and RNR discussed so far is accounted for as follows.

Consider first the contrast between (19a) and (19b). In (19a), the rightward moved PP crosses only the element *for Sue*. This element is also contained in the vP, which is the first cyclic-node that dominates the moved PP's original (theta-)position.

(19)a. Josh edited [a review _] for Sue, **of Jamie's book**.
b. *Josh edited [a review [$_{PP}$ of an article _]] for Sue, **of Jamie's book**.

By contrast, (19b) is ruled out by (18). Here, the rightward moved PP once again crosses over *for Sue*, which, in this case, is *not* contained within the first cyclic node (PP) that is also the position where the moved argument was initially merged. Thus, the RCC in (18) accounts so far for the same contrasts that the RRC was originally formulated to account for.

The interest in (18) lies in how it handles RNR constructions. Since it imposes no specific bounding conditions on rightward movement (ATB- or non-ATB), examples like (20) below no longer pose any particular challenge.

(20) Josh said that he thought that I should sell _, and Jamie said that she thought that she might want to buy _, **each of the Rambaldi artifacts that I have in my attic**.

Since the gap is embedded within at least two clausal embeddings in each conjunct, the RRC precludes a rightward ATB-movement analysis of (20). This analysis is not precluded, however, once we abandon the RRC in favor of the RCC in (18). Concretely, the relation between the gap and the pivot is string-vacuous with respect to the final conjunct and (modulo the second conjunct, which I continue to ignore for the time being) with respect to the initial conjunct as well. According to (18), since no phonologically overt element (which is not also contained in the same cyclic-node as the base position of the pivot) is crossed, the sentence is well formed despite the unbounded nature of the movement.

The contrast between (21a) and (21b) also follows:

(21)a. Josh will [$_{vP}$ donate _ to the museum], and Jamie will [$_{vP}$ donate _ to the library], **a large collection of ancient texts**.
b. *Josh sent one of those books [back to _] in good condition, and sent the other one [back to _] in bad condition, **the Somerville public library**.

In (21a), overt material is crossed by rightward ATB-movement, but this is licit since the overt material is contained within the cyclic node that also contains the original (base position) of the RNR pivot. By contrast, (21b) is ill formed because the overt element that is crossed by movement out of the coordinate structure is not contained with the cyclic node (PP) that contains the original position of the pivot.[9]

2.5. *Summary and looking forward*

In terms of overall coverage, the proposal that rightward movement is unbounded modulo (18) seems to have much to offer. (Examples like (13) and (16) are also accounted for, as can be verified straightforwardly.) Crucially, the proposal provides a unified account for all examples in the paradigm above, thus making it ultimately unnecessary to invoke the kinds of mechanisms countenanced by the in-situ analyses.

The proposal, however, is crucially motivated by the assumption that all RNR constructions are derived by rightward ATB-movement—even those like (8) and (9) that were initially problematic for this view. In the sections that follow, I present several arguments showing that this assumption is, in fact, correct (see also Postal 1998: Chapter 4 for additional arguments).

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[9] The approach that I have developed here (developed further in Section 5) is actually quite similar to the approach developed within the framework of (Combinatory) Categorial Grammar (CCG, Steedman 1985; 1987; 1990; 1996). In CCG, surface structures involving rightward displacement are generated directly. No operations of movement are countenanced in this framework. However, a syntactic structure involving rightward displacement is composed by different combinatorial operations than one without. Specifically, to derive a structure involving rightward displacement, a rule of 'Backwards Crossed Composition' (BCC) is employed. BCC is the basic means by which a verb can combine directly with an element that is not its 'canonical sister'. For instance, a verb normally must combine first with the DP of a triadic predicate of the form V-DP-PP, then with the PP. However, BCC also allows verb to combine first with PP, then with the DP.

Crucially, CCG also generates structures that appear to involve rightward displacement, but where the word order is the same as a sentence without displacement. In other words, for a sentence like: *Josh said that Maria likes dogs*, *dogs* can be generated in a position that structurally dominates and c-commands the rest of the string. Thus, CCG allows a kind of 'string-vacuous' rightward displacement. This is carried out by a combinatory operation referred to as 'Forward Composition' (FC). FC is therefore the CCG analogue of my 'string-vacuous, unbounded rightward movement'. In CCG, FC can crucially apply across any unbounded domain. This is why, in particular, RNR constructions like (17) are completely problem free for CCG—in fact, they might be taken to support the ideas behind the operations that are assumed to be made available by the grammar. On the other hand, operations like BCC involved in composing structures involving rightward displacement that 'changes canonical order' are assumed to be more restricted and cannot apply over an unbounded distance. For instance, FC can strand prepositions, while the rule of BCC is formulated so that it cannot strand a preposition (Steedman 1996:66-69).

Overall then, my proposal and the proposal found in the CCG literature are similar in the basic claim that rightward displacement is an unbounded operation when it is 'order preserving' (does not cross overt material), but crucially restricted when its effects are overt (i.e., 'non-order preserving'). CCG assumes two distinct combinatory operations to derive structures involving rightward displacement—BCC and FC—and each of these is constrained independently. My proposal differs only in that I assume a single operation involved in deriving structures with rightward displacement, which is restricted by the constraint in (18). Differences in technical implementation aside, what is interesting to point out is that the CCG approach and my own converge on a particular point of view of the basic RNR paradigm.

3. RIGHT NODE RAISING AS EXTRACTION: 'STILL THERE' AND 'ANTI-STILL THERE' EFFECTS

This section begins by examining a set of arguments that Right Node Raising constructions should not be analyzed in terms of rightward ATB-movement. The three arguments I will focus on are based on Condition-C, Negative Polarity Licensing, and Bound Variable Anaphora. Each of these arguments apparently points to the conclusion that the (surface) structure posited under the rightward ATB-analysis of RNR (see (5) above) makes certain incorrect predictions. I argue that none of these arguments are persuasive, and that the facts are compatible with the ATB-extraction analysis. More importantly, I present evidence that argues for the opposite conclusion, namely, that there are certain phenomena that are only compatible with the structure posited for Right Node Raising by the extraction analysis.

3.1. '*Still-there*' *effects*

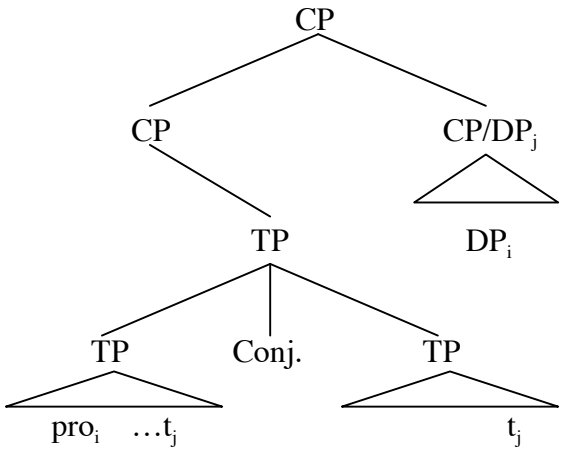
3.1.1. *Condition C*

Levine (1985) observes that if a pronoun contained within the pivot of an RNR construction is co-indexed with a subject of one of the conjuncts of the coordinate structure, a Condition-C effect arises. Consider the examples below ((22a) is from Levine 1985):

(22)a. *She$_i$ said _, and I happen to agree _, **that Mary$_i$ needs a new car**.
b. */??She$_i$ obviously accepts _, but Josh flat out rejects _, **the assumption that Jamie$_i$ is a genius**.

According to Levine, these Condition-C effects should be obviated under the ATB-movement analysis of RNR. Concretely, if the pivot of the RNR constructions is adjoined to a position that is outside of the coordinate structure, as in the structure in (23) below, then the R-expression contained within it would no longer be c-commanded by the preceding pronoun contained within the initial conjunct. Given this, the environment for Condition-C should be destroyed.

(23)



The conclusion that Levine draws from this observation is that the pivot of the RNR constructions could not have moved, but instead must be located in-situ within the conjuncts where it remains c-commanded by the pronoun, thus giving rise to the observed Condition-C effects.

All things being equal, this might appear to be a strong argument against the ATB-extraction analysis of RNR. All things are not equal in this case, however. In particular, other kinds of movement operations that could, in principle, diminish Condition-C effects, do not. Consider, for instance, the examples in (24).

(24)a. ??Guess [which of John$_i$'s friends] he$_i$ just went to visit t.
b. ?*Someone introduced him$_i$ to every one of John$_i$'s friends.

Neither Wh-movement in (24a), nor Quantifier Raising in (24b) obviates Condition-C effects (for fuller discussion, see Lebeaux 1988; Chomsky 1995; and Fox 1995). The facts in (22) above do not therefore conclusively tell us whether or not RNR constructions are derived by ATB-movement. The facts, in other words, are compatible either with an in-situ analysis, or with the ATB-movement analysis, assuming reconstruction of the RNR pivot.[10]

3.1.2. *Negative Polarity Licensing*

Kayne (1994) (see also Phillips 1996; and Hartmann 2000) observes that a Negative Polarity Item (NPI) of the form *any-XP* can be licensed as the pivot of an RNR construction. Kayne provides the example in (25a), the example in (25b) is from Phillips (1996):

[10] There seems to be a contrast, though a subtle one, between the examples in (i) and (ii):

(i) ??/*I tried to get Josh$_i$ to ignore _, and tried to get her$_i$ to stop repeating _,
the rumor about Aly$_i$'s cousin.
(ii) ?I tried to get Josh to ignore _, and tried to get her$_i$ to stop repeating _,
the rumor which Aly$_i$'s cousin started.

Coupled with Lebeaux's observation about argument/adjunct distinctions related to reconstruction of Condition-C effects with wh-movement (iii)-(iv), this contrast is expected from the perspective of the movement analysis of RNR.

(iii) *[Which picture of John's mother] does he like best?
(iv) ?[Which picture that John took] does he like best?

(i)-(ii) can be accounted for assuming that the option of late merger is available in (ii) for the adjunct but not in (i) for arguments. Crucially, late merger of the adjunct targets the raised RNR pivot outside of the coordinate structure, where the Condition-C effect is obviated. For this to be right, it crucially depends on the NP host of late adjunction being external to the coordinate structure (i.e., the host of the adjunct). This would not be possible, and the contrast therefore not predicted, under an in-situ analysis of RNR.

(25)a. Mary couldn't sell _, and John wouldn't buy _, **any books about linguistics**.
b. Nobody enjoyed _, and few people even like _, **any of the talks on 'Right Node Raising'**.

The argument based on these examples is similar to the one made on the basis of Condition-C. Since the putative surface position of the RNR pivot is outside of the scope of the negative operators contained within the conjuncts, the NPIs in (25a-b) should not be licensed.[11]

This argument is a bit more challenging to counter. As is well known, NPIs cannot generally be licensed under reconstruction (consider, e.g., **Any wine wasn't available*). On the other hand, NPI licensing under reconstruction is attested in certain contexts. Consider the example in (26), from Linebarger (1980, 1987) (see Aoun and Benmamoun 1998 and Sauerland and Elbourne 2002 for specific proposals).

(26) [A doctor with *any reputation*]$_i$ is likely not to be t_i available.

A question that I leave open for now is what common property, if any, unites the context in which reconstruction is possible in (26) with the RNR examples in (25). What is important for our present purposes is that the possibility of reconstruction for RNR cannot be excluded on general grounds.

3.1.3. *Bound Variable Anaphora*

A rather well known observation concerns pronouns contained within an RNR pivot that can be interpreted as bound 'simultaneously' by a quantifier phrase in each conjunct (see, e.g., Höhle 1991; and especially, Jacobson 1999).

(27)a. Every American$_i$ loves _, and Every German$_j$ hates _, **the town he$_{(i, j)}$ was born in.**
b. Every man$_i$ loves _, but no man$_j$ wants to marry _, **his$_{(i, j)}$ mother.**
(Jacobson 1999)

What is striking about these examples is that the pronoun contained within the pivot of the RNR construction is 'simultaneously' bound by the quantifier phrase located in each of the separate conjuncts. Crucially, this kind of variable binding does not require the different quantifier phrases to denote non-distinct sets. That is, (27a) has the straightforward meaning that every American loves the town he (=American) was born in,

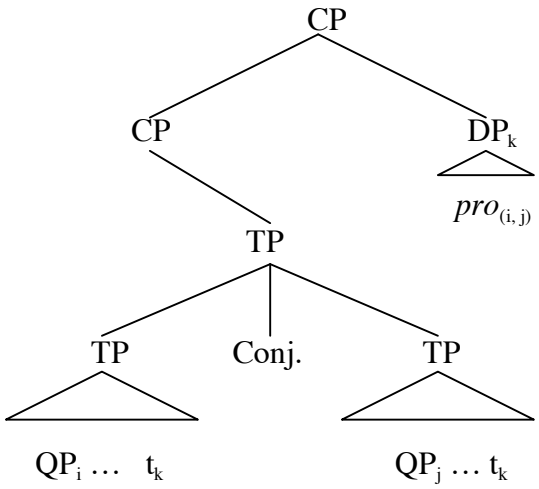
[11] For some speakers, it is crucial that the NPI be licensed in all conjuncts. For other speakers, however, it is only crucial for the NPI to be licensed in the rightmost conjunct. Thus, while (i) is acceptable for some, (ii) seems to be categorically bad.

(i) %John immensely enjoyed, but few other people liked, any of the talks on RNR.
(ii) *Few people liked, but John immensely enjoyed, any of the talks on RNR.

and every German hates the two he (=German) was born in (see also, Postal 2000 for a recent note about these facts).

These facts, like the other mentioned above, have been taken to preclude a movement analysis of RNR (see, e.g., Phillips 1996). This is because, according to the (surface) structure that this analysis assigns to RNR constructions (see (28) below), neither QP c-commands the pronoun contained within the RNR pivot. A bound variable interpretation, therefore, should be impossible.

(28)



This argument, like the preceding ones, is not conclusive. Other movement operations, e.g., Wh-movement, behave exactly the same as RNR in this respect. In particular, the phenomenon of 'simultaneous' binding observed for RNR has also been observed for ATB-dependencies involving Wh-movement (Höhle 1991; Jacobson 1999; Munn 1999; Nissenbaum 2000).

(29) Which of his$_{(i,j)}$ parents$_k$ does every American$_i$ love t$_k$ best, and every German$_j$ love t$_k$ least?

Once again, then, the facts used to argue against the ATB-extraction analysis fail to illustrate a significant difference between RNR and other constructions involving extraction.[12]

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[12] Jacobson (1999) discusses examples like these, and points out the particular importance of the generalization that ATB-binding is obligatory. That is, if a pronoun is interpreted as a bound variable in one conjunct, then it must also be interpreted as a bound variable in the second conjunct.

(i) Every man loves and no man marries his mother.

=Every man$_i$ loves his$_i$ mother and no man$_j$ marries his$_j$ mother.
≠Every man$_i$ loves his$_i$ mother and no man$_j$ marries his$_k$ mother.

Jacobson's work is carried out with the framework of Categorial Grammar. As I noted in footnote 9 (Section 2.4), the CG analysis of Right Node Raising is overall quite similar to the ATB-extraction analysis presented in this paper. Interestingly, Jacobson argues that the facts in (i)—in particular the impossibility of the second reading—cannot be explained if one assumes a representation whereby the RNR pivot is represented at any level as occupying a position within each conjunct. Thus, Jacobson argues that (i)

3.2. *Anti-'Still there' effects*

The 'still there' effects discussed above were argued to be compatible with either an extraction analysis or an in-situ analysis of RNR. This section explores previously undocumented observations that appear to make a strong case for the extraction analysis proposed in this paper. I will show, in particular, that an RNR pivot can take scope outside of the coordinate structure, even when the pivot is initially contained within an island.

3.2.1. *Quantifier Scope*

Consider the sentences in (30). In both of these examples, the indefinite DP in subject position (*some nurse*) scopes over the coordinate structure, so that both of the VP predicates denoted by each conjunct is predicated of this DP.

(30)a. Some nurse gave a flu shot to _, and administered a blood test for _, **every patient who was admitted last night**.

b. Some nurse gave a flu shot to **every patient**, and administered a blood test for **every patient**.

What is of interest for our purposes is the relative scope of the universal quantifier with respect to the indefinite subject. What is striking is that in (30a), but not (30b), the universal can take scope above the indefinite subject. That is, (30a) admits an inverse-scope interpretation whereby nurses co-vary with patients. That is, for every patient, there is a possibly different nurse who gave a flu shot to that patient and administered their blood test. Only a surface scope interpretation is possible in (30b), on the other hand. Under this reading, there is just one nurse who gave flu shots and administered blood tests for all patients.

According to an in-situ analysis invoking deletion, the only difference between (30a) and (30b) would be that the pivot of the RNR construction has been deleted in (30a) but not in (30b). There is, however, no obvious way to correlate the application of backwards deletion with the scope possibilities of the pivot. Under the extraction analysis of RNR, on the other hand, the scope differences are accounted for straightforwardly. The representation in (31) is generated under the ATB-analysis, and the relative scope of the quantifiers (i.e., *every* > *some*) accounts for the inverse-scope interpretation.

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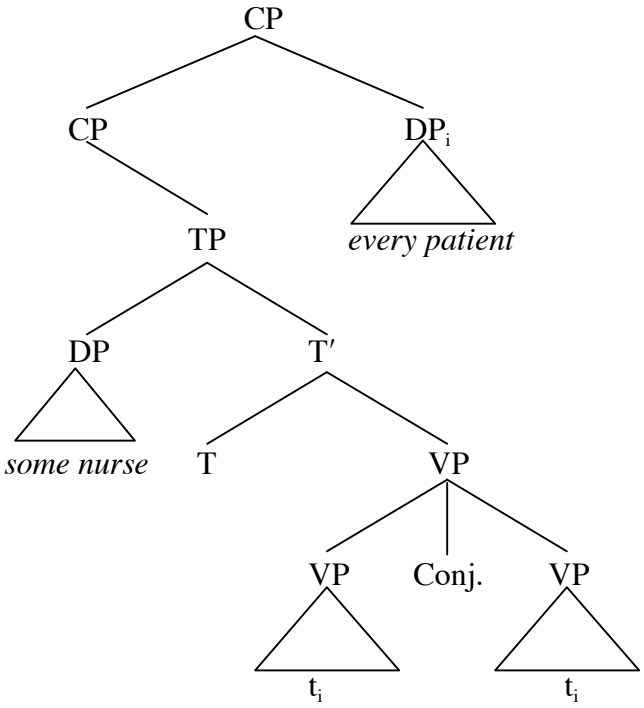
cannot be accounted for either with an in-situ deletion analysis or with an analysis that attempts to derive the ATB-binding interpretation with reconstruction. She argues instead that the structures assigned to RNR within CG, coupled with her 'Variable Free Semantics' accounts for the generalization that emerges from facts such as (i).

From one point of view, the analysis I am adopting is supported if Jacobson's argument is correct. This is because the representation that she argues is necessary for the interpretation of (i) to go through is also provided by my analysis at least at one level of its representation—though not by either of the in-situ analyses discussed earlier. I am indebted to one of the reviewers for pointing out the significance of Jacobson's work for my own arguments.

(31)



A further example of the inverse-scope possibility for RNR is given in (32).[13]

(32)a. The nurse will either give a flu shot to_, or administer a blood test for _, **every patient who was admitted last night**.

b. The nurse will either give a flu shot to **every patient**, or administer a blood test for **every patient**.

(32a) has two readings. On one, the nurse will determine on a patient-by-patient basis how each patient will be treated. Under this reading, some patients will be given flu shots, while others might be administered blood tests. The second reading is where all patients will be treated the same—i.e., all will either be given flu shots, or else all will be administered blood tests.

Of these two readings, (32b) only seems to have the second one mentioned above, where all patients are treated uniformly. The first reading results from the univeral quantifier having scope above the coordinate structure, and hence above the scopal

[13] This observation is modeled on the work of Bošković and Franks (2000), who argue more generally that there is no covert across-the-board movement. Following the insight of Citko (2000), we can account for Bošković and Franks' observation and, more specifically for the absence of an inverse scope interpretation for (30b) as a general consequence of the fact movement out of the coordinate structure is obligatory in contexts where there is shared constituency. Concretely, the grammar cannot generate structures like (30b) where the (bold faced) DP's are identical. The reason this is so is that such structures cannot be assigned a coherent linear ordering, since the relevant DP will be ordered as both preceding and following itself. Thus, anytime a constituent is 'shared' by separate conjuncts in a coordinate structure, extraction will be obligatory. A deletion style analysis of RNR could employ this account as well, maintaining that deletion from the first conjunct is obligatory in order to avoid a non-reflexive linear ordering. This alone will not, however, provide a means for generating the inverse scope reading in (30a).

element *or* (Rooth and Partee 1983; Larson 1985). This explains why the wide scope reading is absent in (32b).

A more remarkable fact involves the contrast between the example in (33) and the examples in (34). The example in (33) illustrates the general fact that a quantifier contained within an island cannot take scope out of the island—i.e., over another quantifier that is external to the island.

(33) Josh knows someone who speaks every Germanic language.
(*Someone* > *Every*; **Every* > *Someone*)

By contrast, it does seem possible for the pivot of an RNR construction to take scope over an indefinite even when the base position of the pivot is contained within an island.[14,15]

(34)a. John knows [someone who speaks _], and Bill knows [someone who wants to learn _], **every Germanic language**.
(*Someone* > *Every*; *Every* > *Someone*)

b. A different doctor asked [who last used _], and a different nurse will find out [who sold _], **every stethoscope in the ER**.
(*A different doctor/nurse* > *Every*; *Every* > *A different doctor/nurse*)

Assume that wide-scope for the universal in (34) is blocked by whatever constraint generally precludes (covert) Quantifier Raising out of an island. In (33), the quantifier is the pivot of the RNR construction and as such it will be obligatorily moved out of the coordinate structure (see fn. 12). Since this movement is insensitive to Wh-islands as well as adjunct islands (see Section 4), this movement is licit and the quantifier can, therefore, take wide scope.

3.2.2. *Antecedent Contained Deletion*

The scope possibilities of the RNR pivot can also be observed with the help of Antecedent Contained Deletion (ACD). Consider for instance the examples in (35), concentrating on the interpretation of the elided constituent (represented by Δ):

[14] Thanks to a reviewer for suggesting that I consider these examples. Observe also that RNR also seem to be able to feed scope interactions when the pivot is separated from another scope bearing element by a finite clause.

(i) *A different doctor* believes [that she can vaccinate _ and can eventually cure _], **every patient in the ER**.

[15] On the general immunity of RNR to certain kinds of islands, see Section 5. Not all speakers accept the judgments reported for this example. Reporting on similar evidence, Abels (2005:fn. 10) suggests that speakers who accept the relevant wide-scope readings also accept wide-scope readings out of islands in non-coordinate contexts. The speakers with whom I have consulted, however, do find the contrast reported in the text between the RNR and non-coordinated cases.

(35)a. The nurse said that she was going to give a flu shot to _, and administer a blood test for _, **every patient that the doctor did** Δ.

b. The nurse tried tried to give a flu shot to _, and administer a blood test for _, **every patient that the doctor did** Δ.

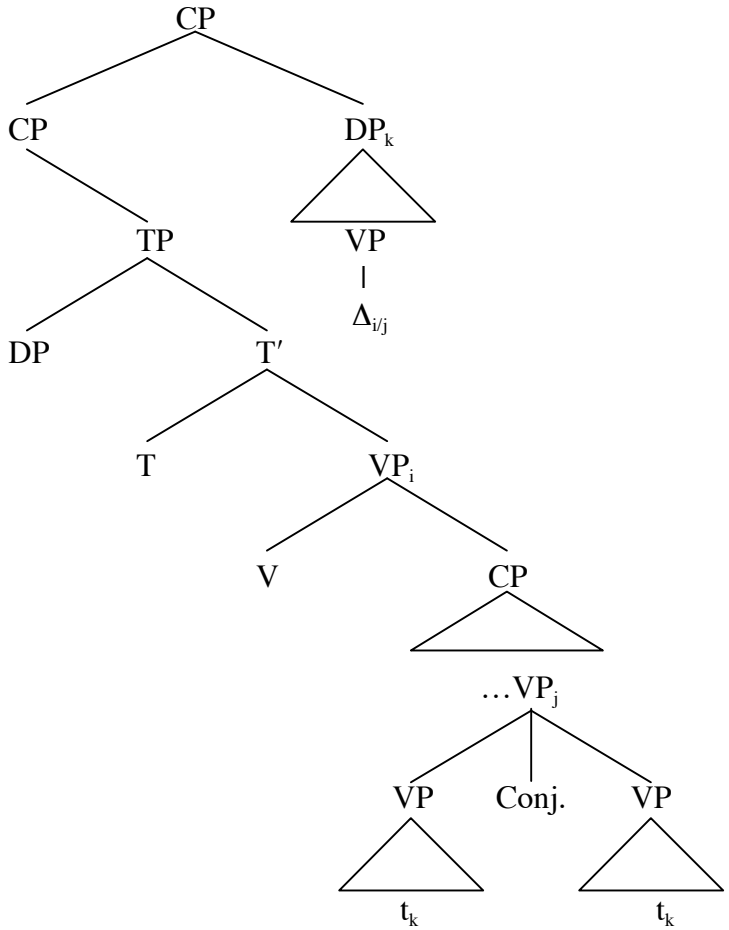
There are two ways of interpreting Δ in these examples that are of interest. In particular, the interpretation of Δ may either be supplied by the (embedded) VP-coordination ((36a)), or by the matrix VP ((36b)).

(36)a. Δ = give a flu shot to x and administer a blood test for x

b. Δ(35a) = say that he was going to give a flu shot to x and administer a blood test for x.
Δ(35b) = try to give a flu shot to x and administer a blood test for x

In order for an ellipsis site contained within its antecedent to be resolved (i.e., to be supplied with a suitable antecedent), the constituent containing the ellipsis site must raise to a position that is crucially not contained within its antecedent (see May 1985; Baltin 1987; Larson and May 1990; among others). The ATB-analysis of RNR provides us with a suitable structure, as illustrated in (37) immediately below.

(37)



What the judgments above indicate is that the RNR pivot must be at least higher than the coordinate structure. What is also interesting is that the scope of the RNR pivot can be higher than the matrix VP as well.

As one reviewer points out, the possibility of wide-scope ACD is not necessarily limited to contexts involving coordination. This reviewer points out, for instance, that wide-scope ACD seems to be possible in examples like: *The nurse tried to give a flu shot to every patient that the doctor did* Δ. This sentence is identical to the example in (35b) except that there is no coordination (see Fox 2002; and Wilder 2003).[16]

Although it does seem true that wide-scope ACD is independent of coordination, what is crucial for the argument being made here is that, when coordination is involved, the only way to achieve wide-scope is for RNR to have applied. In other words, the same wide-scope effects for ACD do not obtain when the argument containing the ACD is simply repeated in both conjuncts, as shown in (38).

(38) The nurse said that she was going to give a flu shot **every patient that the doctor did Δ_1**, and administered a blood test for **every patient that the doctor did Δ_2**.

When the argument containing the ACD is simply repeated in both conjuncts, the elided VP can only be construed with the VP that is a conjunct-mate with the argument containing the ACD. That is, the interpretations for both Δ's are as in (39).

(39)a. $\Delta_1 = [_{VP}$ give a flu shot to x]
b. $\Delta_2 = [_{VP}$ administer a blood test for x]

Crucially, the interpretations in (36) for the examples in (35) are not available for (38). This fact is explained in the same way that the scope facts discussed in the immediately preceding section were. Namely, the structures in (36) represent structure in which a true ATB-chain of movement has been formed. The structure in (38), on the other hand, does not represent an ATB-dependency because the two repeated DPs cannot actually be two tokens of the same item (see fn. 12). Since the repeated items are non-identical in the surface structure, there could furthermore be no LF ATB-movement that would raise the relevant DP's to a higher scope position. Under an in-situ analysis of the RNR example in (35), however, LF ATB-movement would be the only way to derive the readings in (36). It seems clear from (38), however, that this is not a real option.

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[16] An interesting question is whether the derivation of these wide-scope interpretations involves a single unbounded movement, or if it involves an initial step of ATB-rightward movement out of the coordinate structure, which then feeds further string-vacuous movement. Examples of the later type of derivation (where an initial application of rightward movement feeds a further string-vacuous one) have been documented. For instance, Lasnik (1995) observes that an ACD can take wide-scope (e.g., out of a sentential complement) if it is contained within a constituent that has been extraposed (see Wilder 2003 for a more detailed discussion).

(i) John believes everyone is a genius [that I do _].
(ii) *John believes [everyone that I do _] is a genius.

Thanks to an anonymous reviewer for pointing these examples out.

Though the following judgment is more delicate, wide-scope ACD also appears to be possible when the RNR pivot originates within an island. In the example below, for instance, the interpretation of the ellipsis contained within the RNR pivot can be supplied by the matrix VP headed by *find out*.

(40) The nurse tried to find out who gave flu shots to _, and who administered blood tests for _, **each of the same patients that the doctor also did Δ**.

Δ = try to find out who gave flu shots to x and administered blood tests for x.

3.2.3. Same *and* Different

We can round out the discussion with a few observations concerning modifiers such as *same* and *different*. The standard observation about these modifiers is that they permit a 'distributive' reading when they occur in the context of a plural noun phrase or plural predicate (e.g., a conjunction of VP or TP). Consider (41a) and (41b). In (41a), *the same* straightforwardly refers to the hat the Josh wore and the hat that Jamie wore, i.e., they are identical hats, or—in the case of *a different hat*, they are distinct. Similarly in (41b), *the same Smiths song* refers to the identical song which is sung in my church and played in my favorite club (In the case of *a different Smiths song*, they are distinct.)

(41)a. Josh and Jamie were wearing the same/a different hat.
b. The same/A different Smiths song is performed in my church and played in my favorite club.
c. #Josh was wearing the same/a different hat.
d. #The same/a different Smiths song is performed in my favorite club.

The behavior of *same*/*different* in examples in (41c-d) differs from its use in (41a-b). In (41c), for instance, *same hat*/*a different hat* can only refer to some unexpressed but contextually salient hat (e.g., the hat he wore yesterday). Similarly for (41d), *the same Smiths song*/*a different Smiths song* seems to be felicitous only when uttered in a context where some song is being discussed in relation to some independent event.

An important observation (appearing in Jackendoff 1977: 192-194; Abbot 1976:442; and Gazdar 1981:180) about RNR constructions is that the pivot may consist of relational modifiers such as *same* or *different* which receive the kind of distributed reading that is plainly available for (41a-b). Significantly, this is the case even when the 'unreduced' RNR configuration would not permit this. Consider (42a) and (42b):

(42)a. John hummed _ , and Mary sang _, **the same tune**/**a different tune**.
b. #John hummed **the same tune/a different tune** and Mary sang **the same tune/a different tune**.

The first example (42a) can straightforwardly mean that the tune that John hummed is the same or different tune from the one that the Mary sang. The example in (42b) does not have this meaning. At best, *same tune*/*a different* in both conjuncts of this example seems to refer to the tune that John repeatedly hums and the tune that Mary repeatedly hums, but they are crucially not the same/different tune in relation to one another.[17]

The contrast between these examples can be explained by the ATB-extraction analysis of RNR. If one assumes in particular, following Carlson (1987), that the relational elements must have a plural NP or conjunct of VP or TP in its scope to be interpreted distributively, then the absence of the distributive reading of (42b) follows. Within each individual conjunct, there is no licensing element (=plural NP or conjunction of VP or TP) for the relational modifier to scope above. Furthermore, the noun phrase containing the modifier cannot raise covertly out of the conjuncts either individually or in ATB-fashion (for reasons already discussed). Thus, (42b) fails to receive an interpretation whereby *the same tune*/*a different tune* refers both to the humming and singing event denoted by the conjoined clauses.

The situation is different for (42a) if we assume the rightward ATB-movement of RNR. This analysis provides a representation in which the pivot scopes above the coordinate structure. This structure is the one that (at LF) will give rise to the intended interpretation (shown schematically in (43)).

(43) [The same tune x][John hummed x and Mary sang x]

At best, (42b) can only be assigned the logical form in (44)—which crucially does not support the distributive reading.

(44) [The same tune x][John hummed x] and [the same tune x][Mary sang x]

The observation being made here is not new, and has been previously noted by several authors. The consequence that such facts have for in-situ analyses of RNR still seems to be rather strong. According to a deletion analysis of RNR for instance, it is predicted that (42a) should only have the interpretation that (42b) has.

We can conclude this section with one final new observation. As Carlson (1987) originally pointed out, a relational modifier can generally not be separated from its licensor by an island.

(45) *The two gorillas saw the woman who fed the same man/a different man.

The ungrammaticality of (45) is accounted for with respect to the logical forms that Carlson proposes—e.g., (43)—presumably because of the bounded behavior of Quantifier Raising (cf. (33)). Now, if what we have argued for so far is right—that RNR

[17] Hartmann (2000) claims that examples like (42a) are categorically ungrammatical in German. The status of these examples for English is also claimed to be ungrammatical on the basis of the judgments provided by Hartmann's informants. I have yet to find, however, any speakers of English who reject examples like (41a) on the intended reading.

involves (unbounded) rightward ATB-movement—then we should be able to construct RNR constructions that obviate the island effect in (45). I believe that (46) represents such a case.

(46) The gorilla saw a man who fed _, and the chimp saw a woman who groomed _, **the same cockatoo/a different cockatoo**.

This is a surprising fact, but not one that is unexpected at this point, given the extraction analysis of RNR. Though the effects of the extraction on linear order are vacuous, the consequences it has for scope allow us to see that the extraction has indeed taken place.

4. ILLICIT RNR EXTRACTIONS

This section discusses two additional arguments in support of the extraction analysis of RNR. The first argument involves adjunct extraposition and the observation that this operation apparently cannot apply across-the-board. I will argue that the best account of this observation resides with the extraction analysis of RNR. Second, I show that Right Node Raising is constrained by the Coordinate Structure Constraint. This fact, I argue, cannot be accounted for by any of the in-situ analyses proposed for RNR.[18]

4.1. *Adjunct Extraction from NP*

As is well known, elements adjoined to NP cannot be extracted to the left (e.g., by Wh-movement).

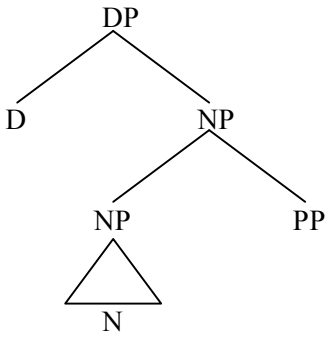
(47)a. *On which table$_i$ did you read [the book t_i]?
b. *From which city$_i$ did you meet [a man t_i]?

Since the DP from which the extraction has taken place in these examples is in object position, the DP on most accounts in not an island for extraction (cf. the grammaticality of complement extractions, e.g., *About whom did you write those autobiographies?*).

Culicover and Rochemont (1992) have argued that the illicitness of the extractions in (47) involves a violation of the *Proper Head Government* (PHG) condition on traces (Chomsky 1981, 1986; Kayne 1984; and Rizzi 1990). The PHG requirement, for English, requires that a trace be in a local relation to one of the lexical heads V, A, or P (or T[+finite]). The locality involved typically requires the trace either to be a sister to one of these heads, or to be in the specifier/adjunct position of a phrase that is selected by one of these heads. Suppose that the structure of the DP's in (47) is as in (48).

[18] Postal (1998:Ch.4) presents a total of 17 arguments supporting the view that RNR involves extraction. For obvious reasons of space, I cannot review each of these arguments here, and instead refer the reader to this work. See Levine (2001) for a recent review of Postal's arguments.

(48)



Since D is not a proper head governor, N is the only potential licensor for the trace of a moved NP adjunct. However, the NP-adjoined position is neither a sister to N, nor in the specifier/adjunct position of a phrase selected by N. Therefore, a trace of an adjunct extracted from NP will fail to be properly head governed.

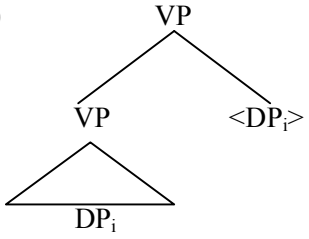
Given this account of the ill formed examples in (48), it is rather surprising that extraposition of NP adjuncts is generally possible.

(49)a. I sent [a book t_i] to Jamie **from my private collection$_i$**.
b. Jamie found [a dead fish t_i] yesterday **with three eyes$_i$**.

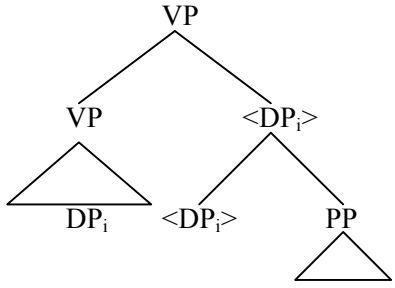
The contrast between the grammatical cases of adjunct extraposition in (49) and ungrammatical leftward adjunct extraction in (47) receives a coherent account under the theory of adjunct extraposition proposed by Fox and Nissenbaum (1999). For them, adjunct extraposition does not involve actual (rightward) displacement of an NP adjunct. Instead, adjunct extraposition involves covert movement of the adjunct's host NP (or DP), followed by 'late merger' of the adjunct (see also Fox 2002). This analysis is illustrated in (50) below.[19]

(50) *'Covert' Movement* *'Late Merger' of Adjunct*

(i)



(ii)



Among other arguments that can be given in support of this analysis, the one that is of particular interest for our purposes is that it explains why extraposition of NP adjuncts appears to be insensitive to the PHG requirement. Concretely, since no actual movement

[19] This theory requires a conception of covert movement that differs from the traditional one of involving movement at LF. Covert movement under this theory applies in tandem with movement operations (e.g., merger of an adjunct) of the 'narrow syntax'. Covert and overt movement are distinguished only with respect to whether they apply before or after Spell-Out (see section 5).

of the adjunct has taken place, there is no trace in the structure that needs to be licensed by PHG.

Importantly, this theory of adjunct extraposition also predicts that ATB-adjunct extraposition should not be possible. This is due to the fact that the late-merged adjunct requires a unique DP host to be (late) merged with, but this requirement will always fail in coordinate contexts because no such unique antecedent exists. This prediction appears to be borne out, as the examples in (51)-(52) below show (cf. (10c) and (15b) from Section 2, which both involve licit extraposition from DP of the PP argument of a noun).

(51)a. *?Josh spoke with [a student of Math _], and I chatted with [a student of Physics _], **(who was) from France**.

b. *Josh entertained [a relative of Mark's_], and Jamie entertained [a friend of Anne's _], **(who was) from out of town**.

(52)a. *Every man ordered [an appetizer _], and Every boy ordered [a main dish _], (**which was) from his native country**.

b. *No man can read [every book _], and no woman can read [every magazine _], **which is on this table**.

Given the theory of adjunct extraposition discussed above, there is no way to relate the peripheral adjunct to both the (distinct) DP's contained within either conjunct. That is, even if the DP's could be covertly moved separately to a position outside of the coordinate structure, there would still be no single DP for the adjunct to merge with.[20]

The facts in (51)-(52) do not follow as straightforwardly if one assumes an in-situ deletion style analysis of RNR. Such an analysis provides no obvious way to rule out these ungrammatical examples. It should be possible, for instance, for the adjunct's host to covertly move separately within each conjunct ((53i)), followed by the late merger of the adjunct and subsequent deletion of the later merged adjunct within the initial conjunct ((53ii)).

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[20] A reviewer points out examples like (i)-(ii) as potentially problematic:

(i) I searched every house and every yard that was accessible from the street.

Assuming a standard treatment of Relative Clauses, in which the relative CP is adjoined to the NP below D, these examples might seem to involve RNR of the relative CP-adjunct, which should be prohibited according to the claims made in the text. There is reason to suspect, however, that (i)-(ii) are not true instance of RNR. First, they do not have the typical intonation associated with RNR (cf. the examples (51)-(52) in the main text, which crucially do have the relevant intonation). Second, the relative CP-adjunct can be adjoined to the first DP preceding the second conjunct, and—significantly—the interpretation is exactly the same. (Note that just as in the examples in (i), the NP that does not have an overt adjoined relative CP can be interpreted either with the relative CP as its restrictor, or as an unrestricted universally quantified NP.)

(iii) I searched every house that was accessible from the street and every yard.

One possibility is that examples like (i) do not involve RNR at all, but coordination of DP's in which the NP of the second conjunct is restricted by a relative CP. I leave open for now the question of how the first NP is interpreted as if it were restricted by the relative CP, noting in passing that accounts for how this is possible in (ii) should be able to generalize to (i). Significantly, whatever is involved here, it crucially does not seem to generalize to the examples (50)-(51) in the main text.

(53) *'Covert' Movement applies in each conjunct*

i. [Every man ordered DP_i][<DP_i>] and

[Every boy ordered DP_j][<DP_j>]

'Later Merger' of adjunct, followed by Deletion

ii. [Every man ordered DP_i][<DP_i>[~~from his native country~~$_k$]] and

[Every boy ordered DP_i][<DP_i>[from his native country$_k$]]

The possibility outlined above is not made available under the ATB-extraction analysis of RNR. In the absence of the possibility of the late merger operation for deriving (51)-(52), there remains only one other possible way to derive these examples. To derive these examples, it is necessary to invoke rightward ATB-movement of the adjunct. This option is barred, however, since the trace left behind by such movement

would fail to be properly head governed, as discussed above with respect to the examples in (47).[21, 22]

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[21] I have focused here on adjunct extraction to demonstrate the sensitivity of RNR to PHG since it seems less likely that an alternative explanation involving certain phono-syntactic conditions will be involved.

For instance, a simpler demonstrations that the gaps in RNR must be licensed by Proper Head Government might be made on the basis of examples like (i)-(ii) (from Postal 1998):

(i) *Ellen objects to your _, and Betty objects to my _, **calling her**.
(ii) *Ted has always wanted a _, and so I've given him this _, **coffee grinder**.

On an extraction analysis, the relevant traces would be complements of D-heads (see (iii)-(iv)), and would therefore fail to be licensed by PHG.

(iii) $[_{DP}$ your $[_{D'}$ D $[_{NP}\ t]]]$
(iv) $[_{DP}$ $[_{D'}$ D-*a* $[_{NP}\ t]]]$

As pointed out originally by Swingle (1993), the ungrammaticality of these examples has an alternative explanation. In particular, Swingle suggests (following Hayes 1989) that D-elements in English tend to be pro-clitic, requiring an element to their immediate right to cliticize onto. If this approach is right, then the facts in (i)-(ii) could be compatible with either an extraction or an in-situ analysis. This approach seems to make quite a bit of sense, especially in light of the fact—pointed out to me by an anonymous reviewer—that parallel examples to (i)-(ii) are apparently grammatical in German. In other words, whether or not an functional element is pro-clitic or not is an expected cross-linguistic difference.

As pointed out to me by Marcel den Dikken (p.c.), on the other hand, English determiners like *a* can be separated from a NP by a parenthetical (*Ted has always had a—shall we say—peculiar kind of hobby*), suggesting that the pro-clitic status of this element is unclear. Pending further investigation of these matters, I will leave facts like (i)-(ii) out of the main discussion for the time being.

[22] Note that examples such as (i)-(ii) also seem to be rather degraded. These facts follow under the assumption that the relevant adjuncts are sentential, and thus originate in a position that is not properly head-governed (see, e.g., Rizzi 1990:46-51; see also Jackendoff 1972; Travis 1988).

(i) ??Josh said that Paul contacted the governor _, and Maria said that Sally also contacted the governor _, **rather upset**.

(ii) ??Jamie said that Paul would discuss his novel _, and Josh said that Sally would also discuss her play _, **completely drunk**.

Crucially, it will not be sufficient in general to claim that empty categories derived by movement are subject to the same constraint (e.g., the proper head government requirement) that empty categories derived by deletion/ellipsis are. For example, Deletion operations like NP-deletion and Sluicing (=TP-deletion) can form empty categories in a way that no comparable movement operation ever could (see Merchant 2001 for a recent discussion of the licensing conditions on ellipsis. Compare for instance the examples (iii) and (iv) with (v) and (vi):

(iii) Although John's friends were late to the rally, $[_{DP}$ Mary $[_{D'}$'s $[_{NP}\ e]]]$ were right on time.
(iv) Shelly wants to meet Jack, but she doesn't yet know $[_{CP}$ when $[_{C'}$ C $[_{IP}\ e]]]$.
(v) *It's $[_{NP}$ friends$]_I$ that I want to meet $[_{DP}$ Mary $[_{D'}$'s $[_{NP}\ t_i]]]$.

4.2. *Coordinate Structure Constraint*

Another extraction constraint that RNR appears to respect is the Coordinate Structure Constraint (CSC) (Ross 1967). In particular, RNR is sensitive to that part of the CSC that prohibits extraction *out of* one or more conjuncts of a coordinate structure (see also, Postal 1998:122). Each of the examples below involves a coordinate structure consisting of three conjuncts. The only good example is (54c), where a gap in all three conjuncts is connected to a single pivot in across-the-board fashion.

(54)a. *?Josh was looking for the dean's office, Maria was waiting in _, and reporters were trying to find _, **Joss' office**.
b. *Josh was looking for _, Maria was waiting in the dean's office, and reporters were trying to find _, **Joss' office**.
c. Josh was looking for _, Maria was waiting in _, and reporters were trying to find _, **Joss' office**.

The ungrammaticality of the examples in (54a,b) cannot be attributed to the CSC under a deletion style analysis of RNR. First, ellipsis sites are canonically found in coordinate structures. It is furthermore unlikely that the ungrammaticality of these examples could be due to the Backwards Anaphora Constraint (Langacker 1969; Sag 1976), as this constraint would rule out all instances of RNR in coordinate structures.

Finally, one might be tempted to account for ungrammatical sentences like (54b) in terms of a general prohibition on cross-conjunct anaphora (i.e., finding the antecedent for ellipsis in a conjunct that does not immediately precede, or follow, the conjunct containing the ellipsis). Such a proposal would not be able to explain the ungrammaticality of (54a), and furthermore seems to be too strong on the basis of examples of VP-ellipsis like (55). Observe here that the ellipsis in the final conjunct can be resolved either by the VP in the first conjunct, or the one in the medial conjunct.[23, 24]

(vi) *It's $[_{IP}$ Shelly wants to meet Jack$]_i$ that she doesn't known $[_{CP}$ $[_{C'}$ when $[_{IP}$ $t_i]]]$

[23] There seems to be an obvious pragmatic preference to resolve the ellipsis with the VP of the medial conjunct, i.e., the one that is closest to the conjunct containing the ellipsis.

[24] As pointed out by a reviewer, 'Gapping' also seems to be restricted by the CSC.

(i) *Josh *drank*$_i$ all the coffee, Mary ate the beets, and Fred $_i$ all the beer.
(cf. Josh *drank*$_i$ all the coffee, Mary $_i$ all the soda, and Fred $_i$ all the beer.

The reviewer notes that if Gapping involves deletion, then the argument that RNR is sensitive to the CSC is not entirely persuasive. However, an analysis of Gapping in terms of ATB-movement (of a verb) has also been proposed (see Johnson 1996), in which case the violation in (i) is entirely expected. Given the unsettled nature of the proper analysis for these constructions, however, it is not clear to what degree they can be used to inform the analysis of RNR constructions as movement or deletion.

(55) Josh read the map carefully, stayed on the trail, and expected that Jamie would [$_{VP}$ *e*] too.

a. *e* = read the map carefully
b. *e* = stay on the trail

Though there is no consensus on what type of constraint—e.g., syntactic or semantic—the CSC is (see, among others, Gazdar 1981; Munn 1993), there does seem to be a consensus that it does not derive from any of the more general locality constraints (e.g., the ECP or MLC or some equivalents) governing extraction. Nor does the CSC seem to be derivable from the principles that prevent extraction from subjects and adjuncts (e.g., the CED or some more recent equivalent such as Johnson's (2002) proposal). From this point of view, then, we have another instance of a constraint on movement that does not seem to differentiate between the types of movement involved.

5. ORDERING AND LINEARIZING RIGHTWARD MOVEMENT

The constraint on rightward movement that we ended with in Section 2 (the RCC in (18)), while successful in many ways in providing a unified account for the paradigm of RNR constructions, leaves us with at least one important theoretical question: Why should phonologically overt material be relevant to the a syntactic movement operation? Pullum and Zwicky 1988 present a number of arguments that raise significant doubts that syntactic operations (or constraints on syntactic operations) can refer directly to phonological information. One might wonder, then, whether there is a more general principle involving the relationship between the syntax and the phonology that will allow us not only to avoid contradicting Pullum and Zwicky's conclusions, but also to derive the effects of (18).

In this final section, I propose to answer this and related questions by drawing upon some recent ideas about the architecture of the grammar and the constraints that are imposed on the syntax to phonology mapping. The results achieved by the proposal in Section 2 will be shown to follow largely from these ideas.

5.1. *Cyclic Spell-Out and Order Preservation*

As the starting point for my proposal, I adopt the Cyclic Spell-Out model of grammar proposed originally by Bresnan (1971), and adopted in more recent work by authors including, among others, Chomsky (2000, 2001); Uriagereka (1999); Epstein and Seely (2000).

Concretely, in the course of the derivation of a syntactic object (which, I assume, proceeds from bottom-to-top), an operation of Spell-Out applies to specific subparts of the syntactic object. Spell-Out is the operation that takes a syntactic object and 'hands it over' to the PF component of the grammar. There, certain operations relevant to morpho-

phonology apply (possibly, among other operations, lexical insertion, construction of prosodic structures, etc.).

The parts of the syntactic object that are targeted for the operation of Spell-Out are what Chomsky (2000) has termed *Phases*, and these correspond to what I have so far been referring to as 'cyclic nodes', i.e., vP, PP, and CP.[25] In what follows, I will refer to these categories, following Fox and Pesetsky (2004), as *Spell-Out Domains* (SOD's).

I assume that when Spell-Out applies to one of these SOD's, a linear ordering of elements is established. More precisely, I will follow Chomsky (2000) and assume that when Spell-Out applies, it applies to the complement of the head of the Spell-Out domain. Thus, when Spell-Out applies to CP, it is the complement of C—namely, TP—that is sent off to PF for linearization. Similarly, when Spell-Out applies to vP, it is the complement of v—VP—that is spelled-out.[26] (The reasons for adopting this particular view of Spell-Out will be made clear shortly.)

It is not important for what follows that we have a detailed algorithm for determining exactly how a syntactic structure is mapped onto statements about linear ordering. For our purposes, it will suffice to speak informally about this procedure (see Fox and Pesetsky 2004 for a specific proposal of how such an algorithm might be formalized).

An application of Spell-Out provides a set of linear ordering statements, and each subsequent point of Spell-Out will add new linear ordering statements to the set of ordering statements previously established. Crucially, when Spell-Out applies to one of the SOD's, it may add new ordering statements, but may not revise any orderings statements that have already been established. We can refer to this principle, following Fox and Pesetsky (2004), as *Order Preservation*.

(56) *Order Preservation*
The linear ordering of syntactic units is affected by Merge and Move *within* a Spell-out Domain, but is fixed once and for all at the end of each Spell-out Domain.

As we will see in the discussion to follow, this constraint has important consequences for how movement operations are constrained. Ultimately, I show how the basic effects of the RCC constraint proposed earlier actually follow as part of the more general consequences of adopting (56).

[25] Chomsky assumes that vP and CP are the relevant Phases. I assume that PP is also a Phase. DP has also been argued to be a Phase, but this assumption is not clearly compatible with some of the data I have been considering (e.g., (9c)). In what follows, it is only important that the specific DP's in the examples I have been considering are not phases. On the assumption that DP may not refer to a homogeneous class, I leave it open for now whether all DP's are non-phases.

[26] Note, this assumption about the complement of the Phase head being spelled-out is not a part of the system developed by Fox and Pesetsky. For interesting recent evidence supporting this hypothesis based on a phenomenon of "Aux-Drop", see Fitzpatrick (2006).

5.2. *The Edge Condition on Movement*

To illustrate the most important consequence of the assumptions made above, consider the partial schematic derivation in (57). At the point of the derivation shown, Spell-Out has applied to α, and the elements within α have been assigned a linear ordering.

(57)a. $[_{\alpha}$ **X YP Z**$]$ → Spell-Out(α): X > YP > Z

b. $[_{\beta}$ A $[_{\alpha}$ **X YP Z**$]$ B$]$

At the stage of the derivation in (57b), YP cannot be moved either to the left of X, or to the right of Z. This follows from the Order Preservation constraint in (56) as follows. If YP moves, forming either of the structures in (58), the derivation will crash at the next point of Spell-Out because the movement results in a statements of linear precedence that contradicts the previously established linear precedence statements determined earlier, in (57a).[27]

(58)a. $[_{\beta}$ YP_i A $[_{\alpha}$ X t_i Z$]$ B$]$ →Spell-Out(β): YP > X > Z

b. $[_{\beta}$ A $[_{\alpha}$ X t_i Z$]$ B $YP_i]$ →Spell-Out(β): X > Z > YP

Of course, movement must in general be able to cross Spell-Out domains (otherwise, all movement operations would be bound to a single Spell-out Domain). Crucially, it is possible for an element to move from a lower SOD to a higher one if it moves from an *edge* position of the lower SOD before the point when Spell-Out applies.

To see how this follows, consider again the derivation in (57). If YP moves to the left edge of α before Spell-Out applies to α, then YP will be ordered with respect to the other elements in α as shown in (59a). Crucially, if YP is then moved into the next higher SOD, β, as in (59b), then no reversal of the ordering determined for α arises.

(59)a. $[_{\alpha}$ **X YP Z**$]$

↓ (Move YP)

$[_{\alpha}$ YP_i $[$**X** $\mathbf{t_i}$ **Z**$]]$ → Spell-Out(α): YP > X > Z

b. $[_{\beta}$ A $[_{\alpha}$ YP_i $[$**X** $\mathbf{t_i}$ **Z**$]]]$

↓ (Move YP)

$[_{\beta}$ YP_i [A $[_{\alpha}$ t'_i $[$**X** $\mathbf{t_i}$ **Z**$]]]$ → Spell-Out(β): YP > A > X > Z

[27] It will be sufficient for this presentation if we simply stipulate that traces (or copies) of moved elements are not relevant to linearization. This is not stipulated in the work of Fox and Pesetsky, but to keep the discussion as simple as possible, I will not go into the details of how they derive this.

Overall then, according to the assumptions stated above, it follows that movement across a SOD—if it is to have visible effects on linear order—will be possible only if the movement takes place from the *edge* of a SOD.[28]

Stepping back, the situation just described captures, in a very interesting way, the locality condition that has often been ascribed to movement operations generally, namely, that they apply successive-cyclically (Chomsky 1976, and much subsequent work). In particular, successive-cyclicity follows from the architecture of the grammar discussed above as the means by which movement from one SOD to a higher SOD satisfies Order Preservation. I elaborate on this point below.

5.2.1. *Locality*

Many accounts of island phenomena (e.g., Wh-islands like, **What do you wonder who bought* _?) attribute the illicitness of extraction from islands to a locality condition that forces movement to apply in a successive-cyclic fashion (i.e., the movement must apply on a lower cycle before the moving on to a higher one). The basic idea (beginning with Chomsky 1976) is that islands interfere with the ability to form local successive-cyclic chains of movement, thus causing the movement to violate the locality condition. Various constraints have been proposed to enforce this kind of locality, including (among others): Subjacency (Chomsky 1976); Antecedent Government (Chomsky 1981, Kayne 1984, Cinque 1990, Rizzi 1990); and the Minimal Link Condition (Chomsky 1995).

As just pointed out, the condition that movement must apply successive-cyclically follows from the theory of Order Preservation. What follows is a simplified presentation of Fox and Pesetsky's discussion of how successive-cyclicity can be captured in their theory, and how a straightforward account of Wh-islands additionally follows from it. Consider the configuration in (60):

(60) $[_{VP}$ V X WhP]

If the Wh-phrase is in its base position at the point in the derivation when Spell-Out applies to this VP, the ordering 'V > X > WhP' will be established. As a consequence of this, movement of the Wh-phrase to any higher position in the structure will be impossible. Suppose, for instance, that the derivation begun in (60) continues, and a [Spec, CP] position is made available for the Wh-phrase as shown in (61):

(61) $[_{CP}$ $C_{[Wh]}$ $[_{VP}$ V X WhP]]

The [Spec, CP] position in this structure is completely inaccessible to the Wh-phrase contained within VP. The reason for this is that there is no way to move the Wh-phrase in VP to the higher CP domain without altering the linear order 'V > X > WhP' established

[28] Actually, in Fox and Pesetsky's theory, there are two additional ways for the movement to be order preserving. One way is for the movement to be covert, i.e., apply after Spell-Out. Another way is for the X or Y to move subsequent to movement of YP—in a way that 'puts back' the original order. Fox and Pesetsky suggest that this later way of satisfying order preservation accounts for Holmberg's Generalization concerning Object Shift in Germanic (Holmberg 1999).

when Spell-Out applied to VP. If movement applies, the order 'WhP > V > X' will be formed, in contradiction of the earlier order.

Suppose on the other hand that before Spell-Out applies to VP, the Wh-phrase has moved to the (left) edge of VP as in (62):

(62) $[_{VP}\ WhP_i\ [V\ X\ t_i]]$ Spell-Out(VP):WhP > V > X

Now, when Spell-Out applies to this VP, the order established is 'WhP < V < X'. The desired consequence is that when a [Spec, CP] position is formed for the Wh-phrase, this position is accessible to the Wh-phrase. Movement of WhP from the edge of VP to [Spec, CP] as illustrated in (63) does not change the order of elements established by Spell-Out of the VP in (63).

(63) $[_{CP}\ WhP_i\ C_{[+Wh]}\ [_{VP}\ t_i'\ [V\ X\ t_i]]]$ Spell-Out(CP):WhP > V > X

Overall then, successive-cyclicity follows from the more general requirement that movement operations be order preserving.

We can now see how this theory of Order Preservation accounts for simple Wh-islands. Simply put, if one of the edge positions that successive-cyclic movement of a Wh-phrase needs access to is blocked (e.g., by the presence of another Wh-phrase), then movement of the Wh-phrase must apply non-successive-cyclically, ultimately violating order presentation. This scenario is illustrated in (64) below.

Successive-Cyclic Movement Blocked by 'Wh-island'

(64)a. $[_{CP1}\ Wh_j\ C_1\ X\ [_{VP}\ \ldots Wh_i \ldots]]$ Spell-Out(CP_1):$Wh_j > C_1 > X > Wh_i$

$[_{CP2}\ Wh_i\ C_{[+Wh]}\ [_{VP}\ V\ [_{CP1}\ Wh_j\ C\ X\ [_{VP}\ \ldots t_i \ldots]]]]$ Spell-Out(CP_2):$Wh_i > Wh_j > C_1 > X$

Contradictory Orders violate Order Preservation

b. $Wh_j > C > X > Wh_i$

$Wh_i > Wh_j > C > X$

Assuming this story to be basically correct, we can bring the discussion back to rightward movement.

5.2.2. *Locality and Rightward Movement*

Significantly, the theory of locality that comes about as a consequence of Order Preservation makes a rather interesting prediction for rightward movement. In particular, string-vacuous rightward movement should not be required to apply successive-cyclically, and thus should, therefore, be immune to some of the kinds of islands that limit Wh-movement. That is, from the point of view of the theory of locality presented

above, there is actually no expectation that the kind of string-vacuous rightward movement I have posited for RNR should be constrained by Wh-islands. Concretely, assuming no independent bounding conditions, either of the following derivations shown below would be licit with respect to Order Preservation.[29]

Successive-Cyclic String-Vacuous Rightward Movement

(65)a …. [and Bill will [find out [who [sold __ $_{VP}$] t′ $_{CP}$] t″ $_{VP}$]] DP_1

Non-Sucessive-Cyclic String-Vacuous Rightward Movement

b …. [and Bill will [find out [who [sold __ $_{VP}$] $_{CP}$] $_{VP}$]] DP_1

Overall then, if we follow Fox and Pesetsky and view the requirement that movement be successive-cyclic as a consequence of the more general requirement that movement be order preserving, then it follows under the analysis of RNR presented above that Wh-islands should not block rightward ATB-movement as they do leftward (ATB)-movement.

Crucially, this appears to be the correct prediction. Wexler and Culicover (1980) observe that RNR constructions appear insensitive to most of the types of islands that seem to restrict other kinds of movement operations. For instance, RNR constructions with gaps contained within a Relative Clause or Wh-island do not give rise to the degraded status typical of leftward (A′)-movement.

(66)a. Josh knows [someone who buys _], and Jamie knows
[someone who sells _], **pictures of Fred**. (*Rel.Clause Island*)

b. Josh wonders [who bought _], and Bill will find out
[who sold _], **pictures of Fred**. (*Wh-Island*)

Based on examples of this sort, Wexler and Culicover conclude that the operation responsible for deriving RNR constructions cannot be extraction (see also, McCawley 1982; Levine 1985; and Hartmann 2000, 2003 for the same argument). Given the theory of Order Preservation in addition to the hypothesis that rightward movement is a (potentially) unbounded movement, however, we can turn this argument around, noticing that the fact that RNR is immune to certain islands is actually predicted to follow.[30]

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[29] The point that I am making here really does not crucially rely on the theory of order preservation and its account of Wh-islands. The prediction that rightward movement should not be subject to Wh-islands also follows from Relativized Minimality or more recently proposed constraints like the Minimal Link Condition. Under such theories, the only way in which a Wh-island could block rightward movement (or vice-versa) would be if both the rightward moving element and the Wh-phrase were participating in the same type of movement, or rather, if both were being attracted to the same position. That this is not so has been argued for by Chung and McCloskey (1987) and Rizzi (1990:34-35).

[30] RNR also appears to be immune to adjunct-islands, as witnessed by the grammaticality of examples like (i) (this example from an anonymous reviewer):

More generally, as long as we assume no other specific constraints on rightward movement, then rightward movement should always be able to apply in an unbounded fashion as long as Order Preservation is respected. What remains then is an account of the specific instances where unbounded rightward movement is blocked as a consequence of Order Preservation.

5.3. *Ordering and Linearizing Rightward Movement*

We can now round out the picture by providing an overall treatment of rightward movement within the framework of assumptions outlined above. I assume the theory of Order Preservation in addition to the proposal that rightward movement is, all things being equal, an unbounded movement operation. What is required now is an account for the situations where all things are not equal—i.e., where rightward movement appears to be bounded. I will now show how these effects follow from Order Preservation, in addition to the following condition restricting the landing sites of rightward movement.[31]

(i) Politicians win [when they defend _], and lose [when they attack _], **the right of of a woman to an abortion**.

It is not clear at this time whether Fox and Pesetsky's theory of Order Preservation can be extended to account for illicit extraction from adjunct islands. An account in terms of this theory would require some way to prevent order preserving successive-cyclic movement to the adjunct's edge, though at the present time I am not sure about the best way to do this.

Johnson (2002) offers a theory of adjunct (and subject) islands that is very close in spirit to the approach taken to Wh-islands by Fox and Pesetsky. In particular, Johnson presents a theory of phrase structure in which adjuncts and subjects must be spelled-out before they can be merged with their hosts. Assuming this, he then proposes a principle similar to Fox and Pesetsky's Order Preservation.

(ii) Numerphology: Elements in the numeration get their syntax to phonology mapping values fixed.

Johnson's Linearization Principle is a much stronger constraint than order preservation in that it requires preservation not just of linear order, but of adjacency relations as well (Johnson 2002:21). Crucially, if linear order was the only value of the syntax-phonology mapping that mattered, as with Fox and Pesetsky's theory, then string-vacuous rightward movement as in (i) would not be predicted to give rise to adjunct-islands violations. Since a unification of Johnson's and Fox and Pesetsky's proposals is beyond of the scope of this paper, I leave it here in the hope that unification is possible, and might eventually provide a coherent account of the adjunct island cases that is very much in line with the general goals of this paper to recast certain locality restrictions in terms of constraints relating to the syntax-phonology interface.

[31] I think it is possible to eliminate the stipulation that only matrix CP is an available landing site, as opposed to, say, all CP's. In particular, application of rightward movement that targets an embedded CP that is s-selected by a higher verb will be ruled out if we assume the constraint on adjunction proposed in (ii) (see Chomsky 1986:70; McCloskey 1996, 2004):

(ii) Adjunction to a phrase that is s-selected by a lexical (open class) head is ungrammatical.

Ultimately, I think we do want to permit rightward movement to adjoin to any CP as long as it is not ruled out by (ii) so that we can account for cases of "embedded RNR"—i.e., RNR constructions where the RNR

(67) *Landing sites for rightward movement*
Rightward movement may move an element X: (i) to the right edge of the first Spell-Out domain that contains X's base position, or (ii) to the right edge of the matrix CP.

To illustrate with a concrete example, consider (68a-b). The rightward moved DP may surface at the right edge of vP, displaced from its theta-position as in (68a), but may not surface to the right of the subject depictive modifier as in (68b).

(68)a. [Max [$_{vP}$ described t_i for Sam] **a Broadway musical**$_i$ drunk]
b. *[Max [$_{vP}$ described t_i for Sam] drunk] **a Broadway musical**$_i$

According to (67), rightward movement may target the right edge of vP, since vP is the SOD that most immediately contains the theta-position of the rightward-displaced constituent. Construction of the vP SOD with rightward movement is illustrated in (69):

(69)a. [$_{vP}$ v [$_{VP}$ described **DP**$_i$ PP$_{for}$]
↓ (Move DP)
b. [$_{vP}$ v [$_{VP}$ described t_i PP$_{for}$] **DP**$_i$]
↓
Spell-Out(vP): *described* > PP$_{for}$

Notice that, since DP$_i$ has moved to the right edge of vP and since it is only the complement of v (=VP) that is linearized at Spell-Out, DP$_i$ is not actually included in the linear ordering statements at this point in the derivation. Rather, DP's linear order with respect to other vP/VP material will be determined at the next point of Spell-Out in the derivation.

Suppose next that the structure in (69b) is embedded in the structure in (70) (DepP stands in for the subject depictive modifier *drunk* in (68)).

(70) [C [$_{TP}$ Max [$_{vP}$ v [$_{VP}$ described t_i PP$_{for}$] **DP**$_i$]] DepP]]

According to (67), a further step of rightward movement will only be able to target the matrix CP. Before this can happen, however, Spell-Out will apply to CP, sending the

---

pivot of ConjP serves as the pivot for a larger RNR, as in (iii) (thanks to an anonymous NLLT reviewer for reminding me of these types of examples):

(iii) [John gave silver _ and Harry gave gold _], but no one gave platinum _, **to the father of the famous quintuplets**.

In (iii), crucially, the first ConjP (*John gave silver __ and Harry gave gold __*) is not the matrix CP, but nor is it s-selected by any head. Thus, adjunction to an embedded CP that is not the matrix CP does seem possible.

I will have to leave further exploration of these ideas open for now, leaving behind a promissory note on the possibility for simplifying (67).

complement of C (=TP) to PF for linearization. Thus, before DP can target CP, as in (71), the elements of TP will be linearized in the manner illustrated in (71).[32]

(71)a. $[_{CP}$ C $[_{TP}$ Max $[_{vP}$ v $[_{VP}$ described t_i $PP_{for}]$ **DP**$_i]]$ DepP$]]$

↓

Spell-Out(CP): *Max* > *described* > PP_{for} > DP_i > DepP

↓

b. $[[_{CP}$ C $[_{TP}$ Max $[_{vP}$ v $[_{VP}$ described t_i $PP_{for}]$ **t**$_i]]$ DepP$]]$ **DP**$_i]$

↓

Spell-Out(Matrix): *Max* > *described* > PP_{for} > DepP > DP_i

Rightward movement targeting the root as in (71b) is now impossible. This is because the movement cannot take place without violating Order Preservation. Concretely, when Spell-Out applies to CP in (71a), DP_i is ordered before DepP (a constituent adjoined to TP, I assume). When rightward movement of DP_i targets the matrix CP and forms the structure in (71b), however, this order is reversed. At the next point of Spell-Out, when Spell-Out applies for a final time to the matrix CP, DP_i is ordered following AdvP. The new ordering in (71b) contradicts the ordering established in (71a), thus violating Order Preservation. As a consequence, the derivation is ruled out.

The analysis correctly captures the essential 'bounding effects' of rightward movement without crucially assuming that rightward movement is bounded. Rightward movement is free, in principle, to apply across any distance. On the other hand, it is the phonological effects that such movement can have that are restricted under the present proposal because of the effects that (67) has on ordering rightward movement with respect to Spell-Out. Given this, we can now turn to the derivation involved in Right Node Raising constructions, where the proposal to treat rightward movement as an unbounded movement rule is most important.

5.4. *Right Node Raising*

I now demonstrate how the theory developed in the preceding sections accounts for the relevant facts of the paradigm presented in section 2. Let us start with the grammatical sentence in (72).

(72) Josh walked slowly into _, and Jamie walked quickly out of _,
the dean's office.

The construction of the individual conjuncts is illustrated in (73a-b). Within each conjunct, an application of rightward movement has applied before Spell-Out of the first

[32] Crucially, if Spell-Out applies to the maximal projection dominating the phase head, i.e., CP, then the presence of the TP-adjoined adverb will not be relevant to order preservation. That is, if movement can target the matrix CP before the elements of TP are linearized, then the rightward moving DP will be linearized with respect to the TP-adjoined adverb only after the movement. Under this scenario, no problem for order preservation arises. On the assumption that it is the complement of the phase head that is spelled-out, on the other hand, we correctly derive the bounding effect induced by TP-adjoined adverbs as a consequence of Order Preservation.

vP SOD ((i)). When Spell-Out applies to the VP's of each conjunct ((ii)), the shared constituent DP_i is ordered rightmost within each of the conjuncts.

First Conjunct

(73)a. i. $[_{vP1}$ v $[_{VP}$ walked $[_{PP}$ into $DP_i]$ slowly]]] (Move-PP)

ii. $[_{vP1}$ v $[_{VP}$ walked t_{PP} slowly] $[_{PP}$ into $DP_i]]$

↓

Spell-Out(vP_1): *walked* > *slowly*

iii. $[_{CP}$ [Josh T^0 $[_{vP1}$ v $[_{VP1}$ walked t_{PP} slowly] $[_{PP}$ into $DP_i]]]$

↓

Spell-Out(CP_1): *Josh* > VP_1 > *into* > **DP_i**

Second Conjunct

b. i. $[_{vP2}$ v $[_{VP}$ walked $[_{PP}$ out-of $DP_i]$ quickly]] (Move-PP)

ii. $[_{vP2}$ v $[_{VP2}$ walked t_{PP} quickly] $[_{PP}$ out-of $DP_i]]$

↓

Spell-Out(vP_2): *walked* > *quickly*

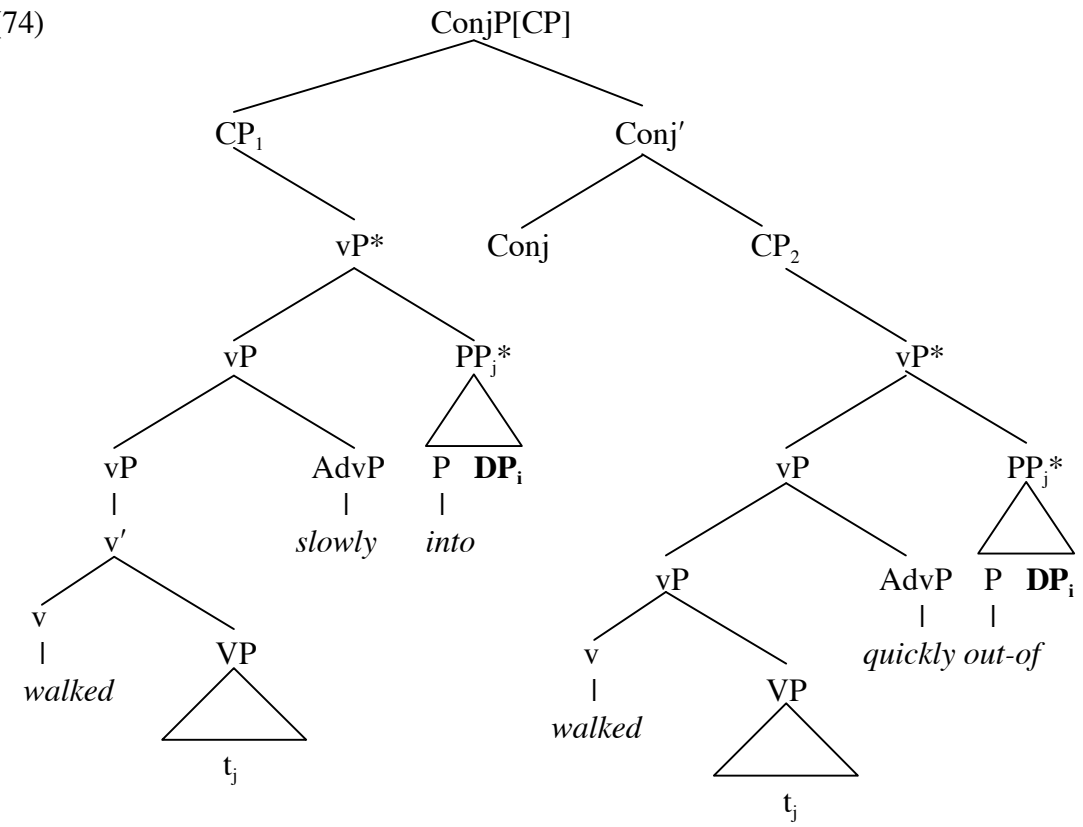
iii. $[_{Conj'}$ and $[_{CP}$ [Jamie T^0 $[_{vP2}$ v $[_{VP2}$ walked t_{PP} quickly] $[_{PP}$ out-of $DP_i]]]$

↓

Spell-Out(CP_2): *Jamie* > VP_2 > *out-of* > **DP_i**

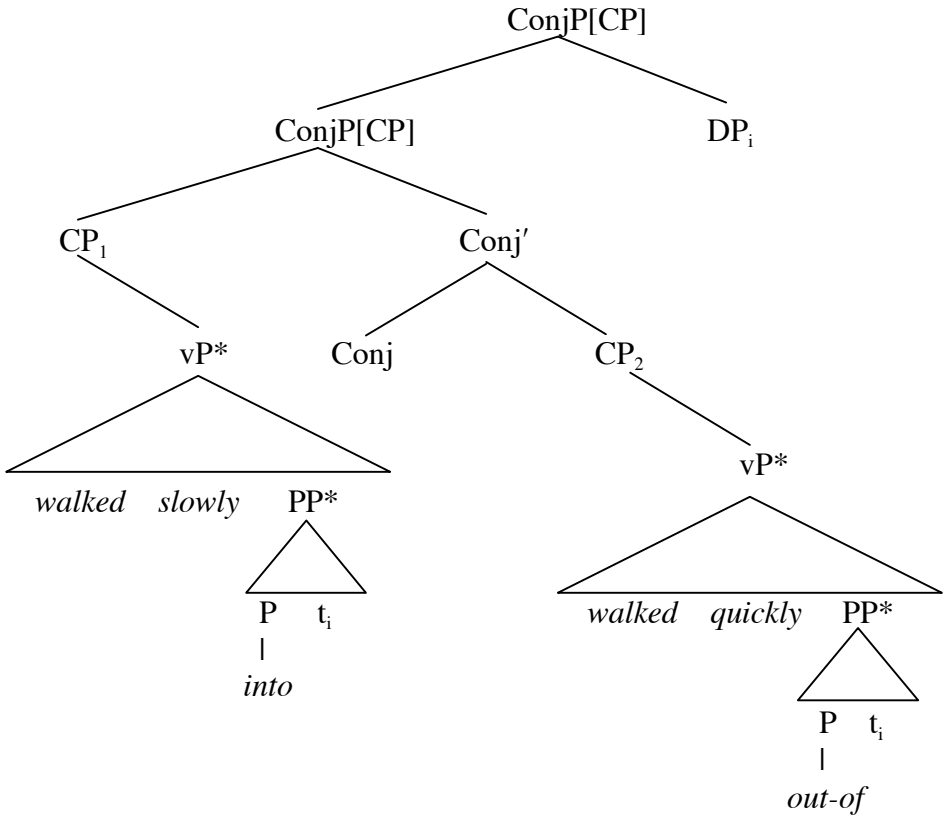
Next, the two conjuncts ((iii)) are merged together to form the coordinate structure. For present purposes, I adopt a ConjP style representation for coordinate structures of the sort proposed by Kayne 1994 as well as Johannessen 1998. Thus, overall (pre-RNR) structure for (72) is as shown in (74) (a '*' on a node indicates that Spell-Out has applied to that node).

(74)



I will assume that ConjP, made up as it is here of coordinated CP's, constitutes the matrix CP in this structure. ConjP is therefore an available landing site for rightward movement. Rightward movement of DP_i can apply targeting the rightmost edge position. This movement forms the structure in (75).

(75)



Spell-Out of (75) will include the linear ordering statements already established in (73a-b), but will also include new ordering statements that state the precedence relation between the first and second conjunct.

The ordering established by Spell-Out of (75) is given below in (76). (Note that ordering statements that are 'carried over' from previous points of Spell-Out have been repeated from above.)

Spell-Out (74):

(76)a. ***New ordering***:
CP$_1$ > Conj′; Conj > CP$_2$
ConjP[CP] > DP$_i$

b. ***Previously established ordering:***
Spell-Out(vP$_1$): *walked* > ***slowly***
Spell-Out(vP$_2$): *walked* > ***quickly***
Spell-Out(CP$_1$): *Josh* > VP$_1$ > *into* > **DP$_i$**
Spell-Out(CP$_2$): *Jamie* > VP$_2$ > *out-of* > **DP$_i$**

c. ***Total ordering:***
Josh > *walked* > ***slowly*** > *into* > *and*
> *Jamie* > *walked* > ***quickly*** > *out-of* > **DP$_i$**

Since the orderings determined from each application of Spell-Out are consistent with each other, Order Preservation is respected and the derivation is licit.

The situation described above is different when we consider the derivation of the sentence in (77), which minimally contrasts with the sentence in (72) above.

(77) *Josh walked into _ slowly, and Jamie walked out of _ quickly,
the dean's office.

The derivation of this sentence is basically identical to the one above, expect for the crucial first step involving rightward movement of the non-right-peripheral PP. The consequence of this is that when Spell-Out applies, the shared element is not rightmost within either conjunct.

First Conjunct

(78)a. i. $[_{vP1}$ v $[_{VP1}$ walked $[_{PP}$ into **DP$_i$**] slowly]]
↓
Spell-Out(vP_1): *walked* > *into* > **DP$_i$** > *slowly*

ii. $[_{CP}$ [Josh T^0 $[_{vP1}$ v $[_{VP1}$ walked $[_{PP}$ into DP_1] slowly]]]
↓
Spell-Out(CP_1) *Josh* > VP_1

Second Conjunct

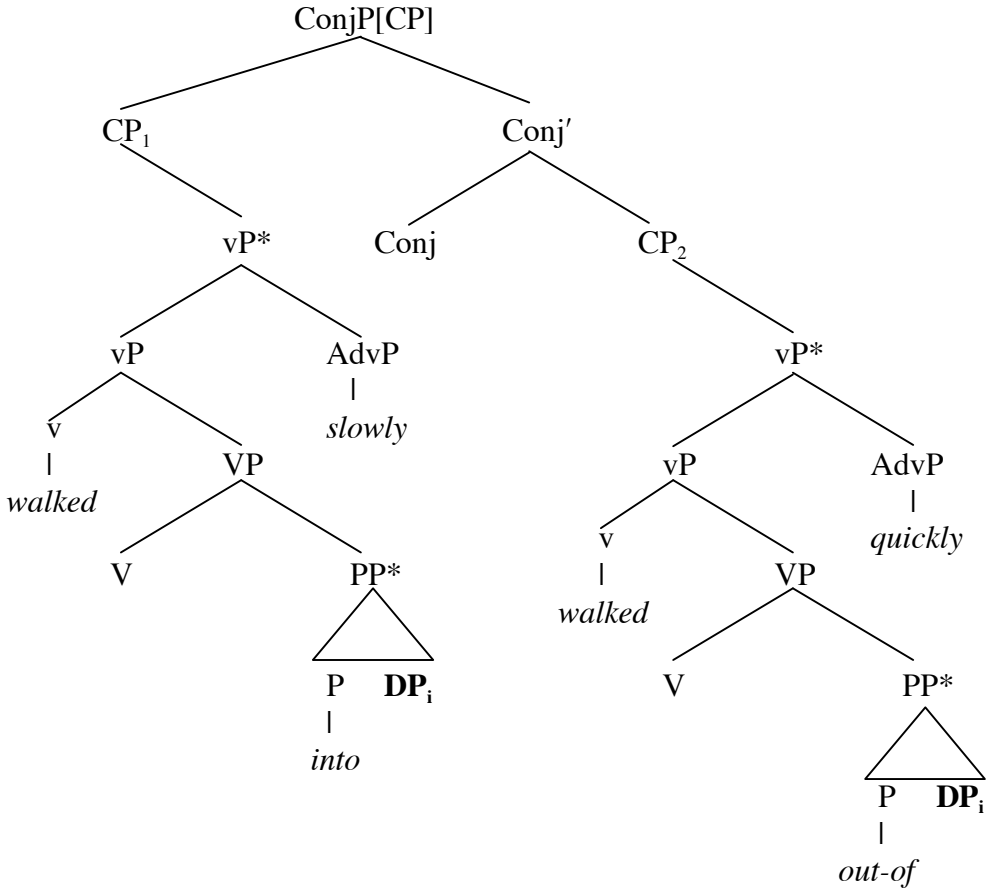
b. i. $[_{vP2}$ v $[_{VP2}$ walked $[_{PP}$ out of DP_1] quickly]]
↓
Spell-Out(vP_2): *walked* > *out-of* > **DP$_1$** > *quickly*

ii. $[_{Conj'}$ and $[_{CP}$ [Jamie T^0 $[_{vP2}$ v $[_{VP2}$ walked $[_{PP}$ out of DP_1] quickly]]]
↓
Spell-Out(CP_2): *Jamie* > VP_2

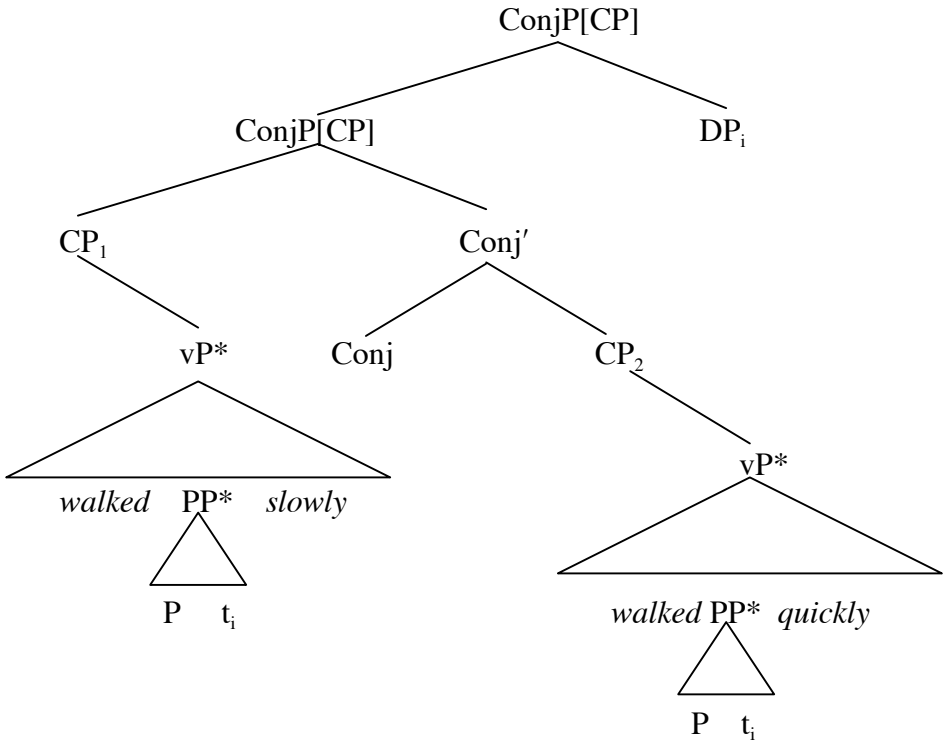
Crucially, rightward movement cannot apply, moving DP_i rightward out of the PP which it is contained within (unless it moves just to the right edge, movement that will have no consequences for linear order). Rightward movement can apply to DP_i only if the movement targets the matrix CP, which has not yet been formed. The consequence of this should now be clear. DP_i will not be the rightmost element within each of the conjuncts at the point in the derivation where rightward ATB-movement can apply, a fact that will preclude the formation of a well-formed RNR construction.

Coordination of the first and the second conjunct gives us the structure shown in (79). Since the structure represents the matrix of the sentence, rightward movement of DP_i can now apply, targeting the rightmost edge of ConjP[CP]. This derives the structure in (80).

(79)


ConjP[CP]
CP1
Conj′
vP*
Conj
CP2
vP
AdvP
vP*
v
slowly
VP
vP
AdvP
walked
quickly
V
PP*
v
VP
walked
P DPi
V
PP*
into
P DPi
out-of

(80)


ConjP[CP]
ConjP[CP]
DPi
CP1
Conj′
vP*
Conj
CP2
vP*
walked PP* slowly
P ti
walked PP* quickly
P ti

Spell-Out of this structure establishes the linear ordering statements in (81)—which include those carried over from previous applications of Spell-Out above.

Spell Out (79):

(81)a. ***New ordering***:
CP_1 > Conj′; Conj > CP_2
ConjP[CP] > DP_i

b. ***Previously established ordering:***
Spell-Out(vP_1): *walked* > *into* > **DP_i** > ***slowly***
Spell-Out(vP_2): *walked* > *out-of* > **DP_i** > ***quickly***
Spell-Out(CP_1): *Josh* > VP_1
Spell-Out:(CP_2): *Jamie* > VP_2

c. ***Total ordering:***
Josh > *walked* > *into* > ***quickly*** > *and*
> *Jamie* > *walked* > *out-of* > ***slowly*** > **DP_i**

Observe that the total ordering established at this point Spell-Out contradicts one of the previously established orderings. In particular, in the final ordering, *quickly* and *slowly* precedes DP_i. This ordering contradicts the ordering determined when Spell-Out applied to VP_1, where DP_i precedes both of these adverbs. This derivation therefore fails to produce a grammatical sentence by virtue of this ordering contradiction.

Notice that the Right Edge Restriction (see Section 2) follows from the proposals of the present section. In particular, if the pivot is not the rightmost element within its phase at the point of spell-out, then the pivot will be 'trapped' inside of the phase. Movement of the pivot after Spell-Out from a non-edge position, in other words, violates Order Preservation. Given this, there can no derivation of a RNR construction involving a single unbounded movement from a non-edge position to a position external to the coordinate structure.[33]

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[33] Various authors have pointed out that RNR appears to target sub-word elements, as in (i) from German, and (ii) from English (these examples due to an anonymous reviewer; see Wilder 1997 and references therein).

(i) Er sucht den Ein- und sie sucht den Aus**gang**.
he seeks the in- and she seeks the out-way
'He is looking for the entry and she is looking for the exit.'
(ii) His theory under- and her theory over**generates**.

Facts such as these—in conjunction with the observation that sub-words cannot independently be rightward extracted, as shown by (iii)—might be taken to refute the extraction analysis of RNR.

(iii) *His theory under- excessively **generates**.

This paradigm however seems to have the exact same descriptive profile as the paradigm for RNR involving phrasal movement considered in the main text. Concretely, RNR can remove an element across an opaque domain (e.g., a Spell-Out domain) as long as the movement has vacuous effects for word order.

The analysis presented here also makes a significant improvement over the RCC formulated in Section 2. Recall that presence of non-initial conjuncts had to be ignored when evaluating whether or not rightward movement had "crossed phonologically overt material". This problem simply does not arise for the phase-based analysis presented here, in particular, because ATB-rightward movement is allowed to apply prior to the point in the derivation where the entire coordinate structure has been spelled-out. In other words, since there is never a point where prior to ATB-rightward movement where the shared element of the RNR construction is ordered before the non-initial conjunct, there is no problem with the movement out of the initial conjunct as far as Order Preservation is concerned. In short, the non-initial conjunct is not relevant in determining whether ATB-rightward movement is licit, but this fact no longer has to be stipulated.[34]

6. CONCLUSION

To summarize, this paper has offered a solution to the longstanding problem that rightward movement appears to be a bounded movement operation in general, though apparently unbounded but in Right Node Raising constructions. I have argued that these conflicting observations could be reconciled under the hypothesis that rightward movement is, in fact, an unbounded movement operation—but one whose ability to effect linear precedence relations is tightly constrained. The basic hypothesis that rightward movement should be able to have unbounded effects was argued in Section 5 to follow from a more general theory of locality based on Fox and Pesetsky's theory of Order Preservation, i.e., a theory of the constrains that regulate the mapping between syntax and phonology. Overall, what has been offered is a unified analysis of Right Node Raising

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Thus, a generalization of the proposal based on phrasal movement to account for these facts seems plausible. For instance, if we make the plausible assumption that there is some generalized notion of Spell-Out domain that treats X^0 level elements as Spell-Out domains, then the analysis from the main text will treat (iii) as a violation of order preservation (i.e., since movement of the sub-word element will be forced to apply only after the entire X^0 *undergenerate* is ordered before *excessively*. On the other hand, since the effects of ATB X^0-movement in (i) and (ii) are string-vacuous (i.e., do not violate order preservation), they are considered well formed.

[34] The presentation above was simplified by looking only at RNR involving coordination of matrix CPs. A potential problem arises, however, when we consider cases like (i) (from Section 3.2.1. (footnote 14)), where a constituent presumably smaller than the embedded CP is coordinated, but in which the pivot scopes above the matrix subject.

(i) *A different doctor* believes [that she can vaccinate _ and can eventually cure _], **every patient in the ER**.

The problem is this: If the embedded ConjP involves coordination of, say, TP, then this ConjP will be completely spelled-out (as it is the complement of the Phase head, C) before the pivot has been raised out the coordinate structure to a position above the matrix subject (e.g., adjoined to the matrix CP). Given this, the RNR pivot will end up being linearized as preceding the conjunction particle and the second conjunct. Further extraction will therefore violate Order Preservation. We can solve this problem if we assume that—in addition to the landing sites stipulated in (67), *any* ConjP is also available as a potential landing site, regardless of its categorical status. Assuming this, the RNR pivot will be able to vacate ConjP[TP] in (i) before this constituent is spelled-out, and no additional problems for the analysis will arise. (Thanks to Marcel den Dikken (p.c.) for suggesting this solution.)

constructions—i.e., one that derives all Right Node Raising constructions by a single syntactic operation (Across-the-Board movement). This result seems desirable on general grounds of simplicity, as well as from the point of view of the arguments provided in Sections 3-4.

APPENDIX 1: THE RIGHT EDGE RESTRICTION

I have assumed since Section 2 of this paper that it is a desideratum of any theory of RNR that it accounts for the Right Edge Restriction. With the exception of Wilder (1999), the RER has in general been left unaccounted for by in-situ analyses of RNR. Wilder's analysis is an extremely valuable one because, unlike other multiple-dominance analyses (e.g., McCawley 1982; Phillips 1996, 2003) and alternative deletion analyses, it derives the RER directly from the principles that permit constituent sharing in the first place. In addition, Wilder's approach is similar to my own in its basic insight that the right edge restriction is ultimately tied to constraints on the syntax-phonology mapping—specifically those related to linear precedence. It is therefore worth going through his proposal and seeing where it makes different empirical predictions from my own account.

Wilder's basic proposal involves three important elements: One is the notion of *full dominance* ((82i)); another is an added condition the definition of c-command ((82ii); and the final one ((82iii)) is a reformulation of Kayne's (1994) definition of Image (=the (unordered) set of terminals dominated by A).

(82) *From Wilder (1999)*
- i. Full Dominance: X fully dominates A iff X dominates A and X does not share A.
- ii. C-command: X c-commands Y if X does not fully dominate Y (*addendum to the standard definition of C-command*).
- iii. Image (d(X)): The (unordered) set of terminals *fully dominated* by X.

These definitions give us the following theorem: A constituent A can be multiply dominated by X and Y only if A does not c-command any category within X or Y. To see how this follows, consider the schematic structure in (83), where A* is a shared constituent.

(83) $[_{XP}$ X A* Y]

The constituent labeled XP shares A*, and therefore does not fully dominate A*. According to (82ii), this means that XP c-commands A*. In the general LCA framework of Kayne (1994) that Wilder assumes, this relation of c-command translates into a statement about precedence relations. Concretely, since XP c-commands A, it follows that elements in the Image of XP precede the elements in the Image of A* as in (84a). This ordering is problematic however as long as A* also c-commands Y within XP, since this translates into the ordering statement in (84b).

(84)a. {X, Y} > A*
b. A* > Y

These ordering statements contradict one another. Assuming that linear orders need to be total and non-reflexive, the structure in (83) in which the shared element c-commands another element to its right cannot be licensed.

Examples like (85) and (86) are correctly accounted for. For examples like (86) in particular, the shared element is shared from the periphery of each conjunct assuming rightward movement has applied. The shared element therefore does not c-command anything to its right within either of the conjuncts.[35]

(85) Josh is likely to accept _, but Jamie is likely to reject _,
the controversial amendment.

(86) Joss will [$_{vP}$ donate _ to the library today], and Maria will
[$_{vP}$ donate _ to the museum tomorrow], **several old novels**.

There is a problem in accounting for certain examples, however. Consider (87). This example is correctly ruled out since the shared elements c-commands another element to its right within the second conjunct.

(87) *Joss will [$_{vP}$ donate _ to the library today], and Maria will [$_{vP}$ donate **several old novels** to the museum tomorrow].

It is not so clear how examples like (88) can be ruled out, however. Even if it is assumed that *my book* is peripheral within the initial conjunct, the fact that it is not peripheral within the second conjunct should not matter since it does not c-command anything to its right—i.e., because it is too deeply embedded with the DP which contains it.

(88) *Joss [$_{vP}$ edited [one review _] for Blackwell], and Maria [$_{vP}$ edited [two reviews **of my new book**] for Oxford].

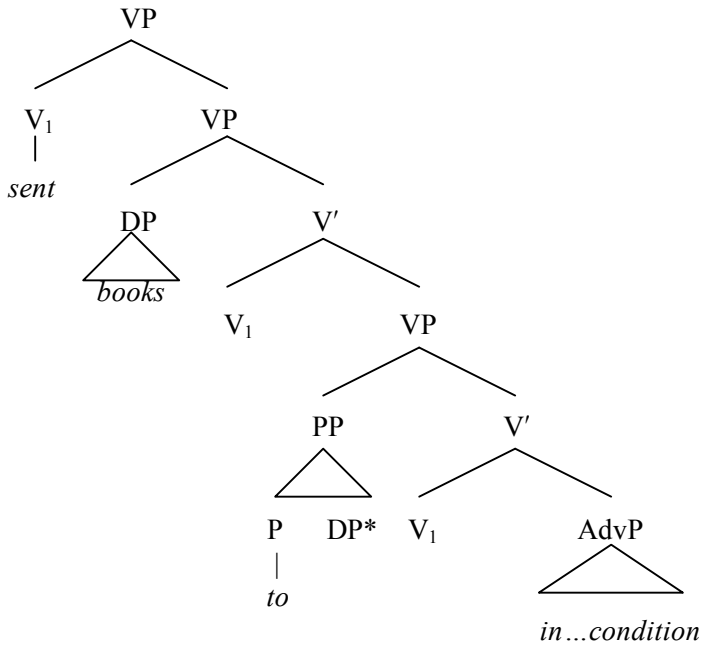
Generally speaking, Wilder's system precludes a non-peripheral element from being shared if the element c-commands anything to its right. If the shared element is embedded within a non-peripheral constituent, however, then it does not c-command any elements to the right of the category containing the shared element. Furthermore, the shared element cannot be ordered with respect to any category that the category containing it precedes (c-commands). This follows according to (82iii) because the shared element is not in the Image of the category that contains it. Sharing should therefore be possible from a non-peripheral position under these conditions, though this appears not to be a possibility attested by the facts.

[35] Wilder's analysis also accounts for the fact that the pivot is always right peripheral. Under his analysis, each conjunct c-commands the shared constituent. Thus, the shared constituent is linearly order after all the terminals (minus the shared constituent) of both conjuncts. The only ordering of the shared constituent with respect to the overall coordinate structure is, therefore, one in which it follows all terminals from the initial and non-initial conjuncts.

Other examples are problematic as well. Consider (89), and in particular the partial structure in (90), which represents a sub-part of the conjuncts in (89).

(89) *I sent one of those books [PP to _] in perfect condition, and sent the other ones [PP to _] in poor condition, **the Somerville public library**.

(90)



The shared DP* in this structure does not c-command the AdvP to its right because it is contained with PP. According to Wilder's account, it should be possible to shared DP* from this non-peripheral position. This appears to be an incorrect prediction, however.[36] Although Wilder's overall approach is similar to my own in that it treats the Right Edge Restriction as a consequence of certain constraints on well-formed linearizations—the theory of Order Preservation in Section 5 seems to have wider empirical coverage.

In particular, in each of the examples that Wilder's account does not account for, the pivot of the RNR construction *is* linearized before any elements that the node dominating the pivot c-commands—i.e., even if the pivot does not itself c-command these elements. This linearization is established before movement can apply, targeting the root and thus raising the pivot out of the coordinate structure. But since the pivot is linearized before all

[36] The same point can be made with slightly more complex examples. In the following examples, for instance, the shared constituent is contained within the subject of a clause in both conjuncts, giving rise to what seem to be subject-island effects for RNR. (See Section 4.2.2. for a bit more discussion).

(i) *[That Josh watched _] is certain, and [that Jamie recorded _] is likely—**ever episode of Friends from this season**.

(ii) *[Good reviews of _] have been written, but only [bad reviews of _] have been published—**my new novel**.

things to its right—not just those that it c-commands—before movement targeting the root can apply, the movement will violate Order Preservation.

APPENDIX 2: NON-CONSTITUENT COORDINATION AND 'IMPOSSIBLE' TARGETS

Appendix 2.1. Non-Constituent Coordination

One of the earliest controversies surrounding the extraction analysis of Right Node Raising concerns the observation that the RNR pivot can apparently be a non-constituent (Grosu 1976; Abbott 1976). Examples that have been cited included the following.

(91)a. John has sliced, and Mary also seems to have sliced, [a large piece of cake with a shining new knife]. (*Theme+Instrument*)

b. I borrowed, and my sister stole, [large sums of money from the Chase Manhattan Bank]. (*Theme+Source*)

c. John offered, and Mary actually gave, [a solid gold Cadillac to Billy Schwartz]. (*Theme+Goal*)

It was assumed at the time when these examples were first noted that 'multiple RNR' was not possible. It is not clear, however, what the empirical basis for that claim was. First, multiple rightward movement seems to be possible, as in (92) (Steedman 1996:70):

(92) I gave _ _ today to a policeman, an extremely pretty flower$_1$.

Examples of RNR modeled on (2) also seem to be quite acceptable:

(93) I will give _ _ today, and he will give _ _ tomorrow, to a policeman, an extremely pretty flower.

The issue of multiple RNR with respect to the examples in (91) became somewhat irrelevant in any case in the late 80's when Larson (1988) proposed his analysis of VP-structure. His analysis, in particular, would treat the bracketed strings in (90a-c) as constituents (see, in particular, Larson 1990:626-627).

(94)a. [$_{VP}$ a larger piece of cake [$_{V'}$ V with a shining new knife]]

b. [$_{VP}$ larger sums of money [$_{V'}$ V from the Chase Manhattan bank]]

c. [$_{VP}$ a solid gold Cadillac [$_{V'}$ to Billy Schwartz]]

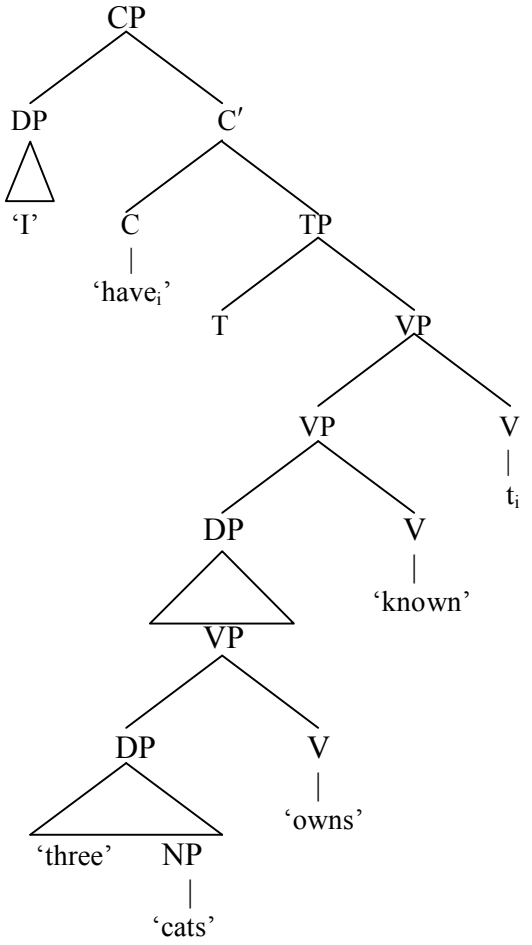
These examples of 'non-constituent' RNR therefore have been argued to have a natural account as constituent RNR. Even before Larson, examples like (91a-c) were derived naturally in the framework of Categorial Grammar, in spite of the assumption that the bracketed strings did not form a constituent (see, e.g., Steedman 1985:543).

More dramatic cases of non-constituent coordination have been cited however, which do not seem to have an obvious account as constituent coordination. Wilder (1997) cites the following example from German.

(95) ich habe einen Mann, der drei __ und sie hat eine Frau,
I have a man who three and she has a woman
die vier Katzen besitzt, gekannt.
who four cats owns knows
'I have known a man who owns three cats, and she has known a woman who owns four cats.'

The shared string in this example is *Katzen+besitzt+gekannt*, which includes the noun (*Katzen*) from inside a relative clause, the erb (*besitzt*) also from the relative clause, and the main verb (*gekannt*) of the main clause.

(96)



As a reviewer points out, in order to derive the RNR construction in (95), we must posit multiple RNR of NP, V_2, and V_1. These elements must furthermore move in a way that preserves their original order.

(97) $[\ldots[\ldots[D\ NP]\ V1\ ]V2] \rightarrow [\ldots[\ldots[D\ t_i\ ]\ t_j\ ]\ t_k\ ]\ NP_i\ V1_j\ V2_k$

The reviewer point out, however, that this derivation is problematic for the movement analysis I have proposed in this paper. In particular, if each constituent moves

individually in the manner depicted in (98)—i.e., in an "extending the tree" fashion—then Order Preservation would be violated. NP and V_2 are not contained within the same Spell-out Domain as V_1. Thus, movement of NP and/or V_2 will only be able to apply after Spell-Out of VP_1, after the linear ordering {NP, V_2} < V_1 has been established.

(98)a.	$[_{VP2}\ldots[D\ NP]\ V2\ ]$	Spell-Out(VP1): NP > V2
b.	$[_{VP1}\ldots[_{VP2}\ldots[D\ NP]\ V2]\ V1]$	Spell-Out(VP2): {NP, V2} > V1
c.	$*[_{VP1}\ldots[_{VP2}\ldots[D\ t_i]\ V2]\ V1]\ NP_i]$	(Move NP), {V2, V1} > NP

The assumption that seems to preclude a successful derivation for (94) is that the individual steps of movement extend the tree. If we allowed instead a "tucking in" derivation (see Richards 2001), then the problem noted by the reviewer disappears. This is illustrated in (99c-e). The "tucking in" derivation allows the highest element (V1) to move first. Since each additional movement tucks in, none of them ever crosses over a phonologically overt item, and Order Preservation is therefore respected at each point of movement.

(99)a.	$[_{VP2}\ldots[D\ NP]\ V2\ ]$	Spell-Out(VP1): NP > V2
b.	$[_{VP1}\ldots[_{VP2}\ldots[D\ NP]\ V2]\ V1]$	Spell-Out(VP2): {NP, V2} > V1
c.	$[_{VP1}\ldots[_{VP2}\ldots[D\ NP]\ V2]\ t_i]\ V1_i$	(Move V1)
d.	$[_{VP1}\ldots[_{VP2}\ldots[D\ NP]\ t_j]\ t_i]\ V2_j\ V1_i$	(Move V2, tuck in under V1)
e.	$[_{VP1}\ldots[_{VP2}\ldots[D\ t_k]\ t_j]\ t_i]\ NP_k\ V2_j\ V1_i$	(Move NP, tuck in under V2)

Of course, while this fact from German is compatible with the analysis proposed in this paper, I do not intend to claim at this point that the analysis is correct for German in general.

Appendix 2.2. Impossible Targets

Another often-cited problem for the extraction analysis of RNR concerns examples like (100) (due to Bresnan 1974), which appear to involve RNR of a TP constituent.

(100) I've been wondering whether _, but wouldn't want to positively state that _, **your theory is correct**.

The problem for extraction analysis of RNR is to explain why it is possible to extract TPs to the right across-the-board, but never to the left.

(101) ***[Your theory is correct]**, I've been wondering whether _, (but wouldn't want to positively state _).

I offer the following (admittedly speculative) account of this problem: First note that if TP is to move to the left, from the complement of an embedded C, it will have to move successive-cyclically for Order Preservation to be respected. This means, for instance, that TP will have to raise from the complement position of a C to Spec, CP, as illustrated in (101).

(102) $[_{CP}\ TP_i\ [_{C'}\ C\ t_i]]$

Suppose, following Pesetsky and Torrego (2001), that we assume that C has a (uninterpretable) Tense feature that must be checked by movement of the features associated with T to C. Assuming this, the question of why it is T and not the full TP projection that moves to C is one that requires a solution. The solution that Pesetsky and Torrego propose is that movement of TP is blocked by the *Head Movement Generalization,* which they formulate as in (103).

(103) *Head Movement Generalization*
Suppose a head H attracts a feature of XP as part of a movement operation.
a. If XP is the complement of H, copy the head of XP into the local domain of H.
b. Otherwise, copy XP into the local domain of H.

According to (103), in other words, it is quite generally impossible to move the complement of a given head to the head's specifier. To summarize: leftward movement of TP in (101) would first need to pass through Spec, CP on its way to a higher target position in order to satisfy Order Preservation, but this movement is ruled out by the generalization in (103).

Returning to the RNR example in (100), recall that rightward movement in general is not required to apply in successive-cyclic steps (see Section 5.2.1). Thus, there is no stage in the derivation of examples like (100) in which the TP necessarily needs to first raise through Spec, CP, thus ultimately violating (103). Because examples like (100) respect both Order Preservation and (103), the examples are well formed in contrast to the cases of illicit leftward movement of CP.[37]

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[37] An question that I leave open here is whether the proposal sketched in this appendix might offer a more general reconciliation with Chomsky's claim that only phases are capable of moving (Chomsky 2000, 2001).

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