The perspective of external remerge on Right Node Raising*

Marlies Kluck

University of Groningen

Right Node Raising constructions display a couple of properties that are difficult to derive in a purely syntactic account. In this paper I will put Right Node Raising in the perspective of both LF and PF conditions and propose a syntactic account that is constrained by these interfaces. For this purpose, I will explore the possibilities of external remerge in the domain of coordination.

1 INTRODUCTION

Right Node Raising (henceforth RNR) is a form of conjunction reduction that applies in a backward manner. The most important properties of RNR are illustrated in (1) below, where I indicate the right nodes (RN) with italics:

(1) (a) [Pete sellsF_] and [Mary buysF_] old books on the market today
(b) [Pete sells todayF_] and [Bill bought yesterdayF_] old books
(c) [Pete sells todayF_] and [Bill bought yesterdayF_] old books about fairytales
(d) *[Pete won’t sellF_] but [Mary will buyF_] some books today
(e) *[Pete sells todayF_] and [Bill put outsideF_] old books about fairytales

The examples (1a-e) show that RNR can apply to non-constituents (1a), and that it is sensitive to some condition on the right periphery of the respective conjuncts (1b-c). Furthermore, there seems to be a requirement on matching between what is left out in the first and spelled out in the second conjunct (1d). Here, negation licenses a NPI (any) in the first conjunct, but not in the second. Finally, the conjuncts need to express contrastive focus in order for RNR to be licensed (1e). An important property that holds for RNR in general, is the prosodic structure. In order for RNR to be acceptable, the contrasted elements in the respective conjuncts must be stressed (marked with ‘F’). The latter is only felicitous if the stressed elements can be contrasted.

In this paper I will discuss RNR with a special focus on the derivation of the periphery condition, matching requirements and linearization. The aim is to see which aspects of RNR belong to the domain of syntax, and which aspects belong to other parts of grammar. It will be argued that any theory for RNR has to take into account syntactic, semantic and prosodic constraints. I will present an analysis in which RNR, at the level of syntax, involves external remerge of internal elements. The grammaticality of RNR constructions that are derived by applying external remerge then depends largely on the constraints at the semantic and phonological interfaces.

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2 THEORETICAL BACKGROUND

The syntactic accounts of RNR can be roughly divided into the ones that assume rightward movement of the RN out of the conjunction (ex-situ), and those assuming the RN to be in-situ. Approaches of the former kind can be found in Ross (1967) and Sabbagh (to appear). In this analysis, RNR is derived similarly to leftward ATB-movement. To account for the Periphery Condition, Sabbagh formulates a constraint prohibiting rightward movement to cross any overt material that is contained in the same cyclic node. It is questionable whether syntax can actually differentiate between overt and covert material in the derivation – one would probably have to assume some PF filter for this. My main argument against a movement analysis of RNR is that leftward ATB does not apply to non-constituents, while RNR can apply to non-constituents (1a). Furthermore, violations of islands result in ungrammaticality for ATB, which is not the case in examples of RNR.¹ This means that movement to the right is subject to very different constraints and restrictions than movement to the left.

The arguments against a movement analysis for RNR led to proposals involving multiple dominance of the RN (cf. McCawley 1987, Van Riemsdijk 1998, Wilder 1999, De Vries 2005b, Bachrach & Katzir 2006). Multiple Dominance (MD) of a given α means that α can be shared between two strings. Under this assumption we are forced to discard the single motherhood condition. For reasons of space, I will only briefly address the approach of Wilder here. I refer the reader to the references for other MD approaches for RNR. Wilder (1999) adopts the LCA (Kayne 1994) and proposes a notion of full dominance. Supposing A and B both dominate α, the images of A and B do not contain α; under Wilder’s definition of full dominance α is not fully dominated if shared. The periphery condition is said to follow from the symmetry violation that arises whenever there is an x such that x < α and α < x. However, since precedence relations in the LCA are defined in terms of c-command, it is thinkable that there are cases in which α is deeply embedded in the conjuncts and followed by material that it does not c-command. These cases would violate the periphery condition but their ungrammaticality does not follow from Wilder (1999).²

Hartmann (2000) considers RNR to be deletion at PF. This means that for syntax, there are two occurrences of α. The first α is deleted when the whole structure is spelled out. This type of deletion is licensed by the prosodic structure of the conjuncts, which is parallel and contains focus that needs to be aligned to the edge of the prosodic constituent (right or left depending on the language). In order for deletion at PF, α needs to be redundant (i.e. duplicate). This implies the same matching requirement found in MD accounts, which will be revisited in section 3.2.

In sum, it seems that the current in-situ accounts focus either on syntax and leave prosodic and semantic constraints out, or on PF without enabling syntax to provide clues for the correct Spellout of RNR. Before I propose an approach that combines the different levels, I will explore three issues of RNR in some more detail in section 3.

¹ For ATB versus RNR with respect to islands, consider (i) and (ii):
(i) (a) Who does Mary like and Jane adore e?
   (b) *What does Jane ask who hates e and Mary ask who loves e?
(ii) (a) Mary likes and Jane adores Bill
   (b) Jane asks who hates and Mary asks who loves cats

Leftward ATB of what in (ib) violates a wh-island, while the supposed rightward movement of cats in (iib) is grammatical.

² This point was actually made by Sabbagh (to appear), who states that Wilder (1999) does not predict ungrammaticality for (iii):
(iii) *[Joss edited [one review_] for Blackwell], and [Maria edited [two reviews of my new book] for Oxford]
3 PERIPHERY, MATCHING AND LINEARIZATION

3.1. Periphery condition: prosodic and contrastive focus

As pointed out in the previous section, the periphery condition is hard to derive as a syntactic condition. This is mainly due to the fact that this seems to be a unique characteristic of RNR. Let me first cite a theory-neutral description of the periphery condition of Sabbagh (to appear):

(2)  **Right Edge Restriction/Periphery Condition**
In the configuration 
\[ [A\ldots X\ldots] & [B\ldots X\ldots] \],
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.

Basically, we could formulate a syntactic constraint that captures this, but not without stipulation. That is, this condition seems unique for RNR, it does not occur in forward conjunction reduction (gapping, VP ellipsis), nor in ATB movements, as pointed out in section 2. This suggests that the Periphery Condition is not part of the syntactic component. Turning back to Hartmann (2000), it is a phonological observation that focus aligns to the edge of the prosodic constituent (this need not be a syntactic constituent or phrase). It follows naturally that when deletion at PF occurs post-focally, the RN is always associated with the edgemost position.\(^3\) The examples in (3) show how this condition works:

(3)  (a) *[Mary lost yesterdayF] and [Jane found todayF] a ring
    (b) [Mary lost yesterdayF] and [Jane found todayF] a very expensive necklace
    (c) *[Mary lost todayF] and [Jane took upstairs?F] a very expensive necklace

Note that (3b) may appear like a grammatical violation of the periphery condition. The RN in this case, is a heavy NP that can shift to the end of the clause it is contained in (HNPS is constrained by the Right Roof Constraint, see Ross 1967). Seeing that HNPS depends on the prosodic weight of the NP, we can assume that this is a condition at PF, not in syntax.

Based on the arguments in the above, ungrammaticality of (3c) is, however, not predicted. HNPS allows the RN to shift past the adjuncts *today* and *upstairs* in the respective conjuncts, and the conjuncts are organized in a parallel fashion. However, the stressed elements in the conjuncts of (3c) cannot express contrastive focus. Rooth (1992) proposes an account for focus within his framework of alternative semantics. Focus on an element X creates a set of alternatives for X.\(^4\) The basic idea (adopted also in Hartmann 2000) is then that for contrastive focus in RNR, the set of alternatives for the focused elements must be identical. There is no possible world in which *today* and *upstairs* create the same set of alternatives, which is why (3c) crashes. The prosodic constraints on RNR make the elements in contrastive relation prominent in the pronunciation, which leads to deletion in the first conjunct and a ‘flat’ intonation of the RN in the second conjunct (cf. Hartmann 2000). I conclude from the contrast between (3b) and (3c) that focus in RNR constructions explains

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\(^1\) In this paper I only address English and Dutch examples of RNR, Hartmann (2000) concerns mainly German data. These (Germanic) languages all align focus to the right edge of the prosodic constituent. Although outside the scope of the present paper, it will be interesting to see if RNR exists in languages that align focus to the left edge.

\(^2\) For example, consider (iv):
(iv)   (a) Jane\(_{1}\) went home after the session on Minimalism
      (b) Jane went home\(_{2}\) after the session on Minimalism

The interpretation that is associated with (iva) is that Jane was the one that went home after the session on Minimalism and not someone else. In (ivb) however, where *home* is focused, Jane is going home and nowhere else. The focused element is then the interpreted member of a set of alternatives (Rooth 1992).
the periphery but is constrained itself by semantics: prosodically stressed elements that cannot express contrast in RNR are ungrammatical.

3.2. The matching requirement

The MD and the PF-deletion accounts of RNR both require strict morphophonological matching of the RN. This has been argued against in the work of Ha (2006a) who claims RNR to be ellipsis. Examples are for instance some/any-alternation that would indicate an elliptical nature of RNR:

(4) (a) Steve has seen <some> but he has not bought any of the latest Harry Potter books.
(b) Steve has not bought <any> but he has seen some of the latest Harry Potter books.

Interestingly, (4) was rejected by British speakers. The reported reason for this is that when pronouncing (4), in the second conjunct, speakers need to assign stress to both bought and the NPI any. This causes the example to be rejected, and strengthens the idea that RNR cannot exist without the typical prosodic structure that is associated with it.

Another type of example would be to test different inflections on the verb in RNR constructions. For this purpose, consider the following Dutch examples:

(5) (a) Peter zei dat Marie naar huis en jij naar school gaat
Peter said that Mary to house and you-2-SG to school go-2/3-SG
‘Peter said that Mary is going home and that you are going to school’

(b) *Peter zei dat jij een boek en Marie een CD gekocht hebt
Peter said that you a book and Marie a CD bought has-2-SG

(c) ?Peter zei dat jij een boek en Marie een CD gekocht heeft
Peter said that you a book and Marie a CD bought has-3-SG
‘Peter said that you bought a book and Mary a CD’

In (5a) the inflection of gaan (‘to go’) is identical for both second and third person singular. This is not the case of inflections of the verb hebben (‘to have’) in (5b-c). In (5b), the realized RN matches the inflection requirements for second person singular, in (5c) for third person singular. However, (5c) is much better than (5b). This leads me to the assumption that as far as matching is concerned, RNR is acceptable as long as the RN matches the requirements of the conjunct it is realized in (the second conjunct). A solution for this is to assume Distributive Morphology (Halle & Marantz 1993). In this view, syntax concerns only the features of the lexical items which they represent in the structure. The phonological features are inserted only after the syntactic derivation is done. I will return to the advantages of this in 4.2.

3.3. Linearizing RNR constructions

What remains to be answered now is the role of syntax in RNR constructions. If the periphery can be explained from prosodic constraints, why not assume along with Hartmann (2000) that RNR is deletion at PF? The problem is that as long as RNR has no special syntax (i.e. just a coordination where a RN $\alpha$ is present in both conjuncts), there is no independent reason to not spell out the first instance of $\alpha$. In other words, we need a clue for the backwards directionality of the reduction in RNR for Spellout.
Another reason is that the prosodic rules for focus alignment as proposed in Hartmann (2000) work for the simple cases of RNR, but not for those cases of RNR that are embedded, like in (6):

(6) The fact that John hates $F_-$ and Mary likes $F_-$ to eat raw vegetables makes them incompatible.

Here, RNR is part of a complex subject of make. It is unclear from the prosodic rules in Hartmann (2000) whether the Spellout mechanism is able to continue the normal intonation pattern of the sentence without assigning the predicate makes them incompatible the same flat intonation that is part of the post-focal RN to eat raw vegetables. My idea is that what is needed for linearization of RNR is provided by the syntactic derivation which involves external remerge of the RN.

4 RIGHT NODE RAISING AS EXTERNAL REMERGE OF THE RN

4.1. External remerge as operation between derivations

Within the Minimalist approach to syntax, elements in a syntactic derivation are combined by the operation Merge. Merge applies to two syntactic objects \{A,B\} and puts them together. Suppose C is the result of the merger of A and B. C can then be merged with D into E, and so forth. A and B can be simplex, but as pointed out in Van Riemsdijk (2004, 2006), nothing in the theory forbids Merge to apply to objects that have been merged earlier in the derivation. For instance, recent proposals suggest that what has been called Move, is in fact the remerge of an internal element in the same derivation, such as wh-displacement (cf. Zhang 2004, De Vries 2005c). External remerge is then the merger of an internal object with an object in another derivation. The line of reasoning of Van Riemsdijk (2004, 2006) is that if we want to consider Move as internal remerge, excluding external remerge would be a stipulation. Basically, all we need to do is to show that natural language involves the kind of displacement that is predicted by external remerge. According to Van Riemsdijk, this would be the kind of displacement we see for instance in RNR.

So, what would we predict for RNR if we assume the RN is externally remerged? For starters, a proposal like this will necessarily involve multiple dominance and shared elements (see section 2). This raises the question of which of the two conjuncts the RN is initially merged in, and in addition, how the structure as a whole is linearized. The account of Van Riemsdijk (2004, 2006) furthermore suggests strict (morphophonological) matching of reduced and spelled out RN. For instance, if the RN were assigned overt case in the first conjunct that is different from the case marking that is realized in the second, the structure is out. The following sections focus on the possibilities of ‘softening’ this condition based on the difference in acceptability between (5b) and (5c), the syntactic derivation of RNR and the constraints at the interfaces.

4.2. RNR as external remerge between coordinated strings

If the RN is externally remerged in the syntactic derivation of RNR, this simply means that the derivation of the one conjunct uses material that is already part of the other. The question is then, which is the initial merger of the RN. I assume here that syntactic structures are derived in a bottom-up fashion, and that Spellout applies top-down from left to right. Consider the simple example of RNR in (7), with the representation below:

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5 Van Riemsdijk (2004, 2006) calls this type of Merge ‘grafting’, I will use the less metaphorical ‘external remerge’.
We start out by deriving the first conjunct: Maaike hates spiders. First, Merge applies to hate and spiders (V and complement), the result of merge is V’. V’ is merged with the external argument Maaike, the result is VP. When this derivation reaches VP (or vP, I use VP for brevity’s sake here), we start deriving the second conjunct Herman loves spiders. Spiders has already been merged as part of an existing derivation, namely what we have built up for the first conjunct. Since it is also the complement of V in the second, we can assume that it can be remerged as long as the first has not reached Spellout. Hate and love are internally remerged (or moved) into I-position, where syntax also marks focus (alternatively, this happens in a separate functional projection of FocP). When both conjuncts are projected into IP, Merge applies to Co (and in (7)), resulting in Co’. The latter finally merges with IP1 resulting in CoP.6

When the derived CoP reaches Spellout, PF spells out the first conjunct until VP. I assume that whenever an element is remerged into a different position, this is made visible in the syntax. This can be a marking of some sort that indicates that what was initially merged in the first conjunct, has been merged elsewhere again. I have marked this provisionally with ‘ext’ in the representation. When an element is internally remerged (consider for instance wh-displacement), Spellout applies to the highest merge of that element. But when we allow elements to be remerged in other derivations, this will not apply; we are not remerging them into a higher position. Instead, we can assume that for external remerge, Spellout applies to the final merger of a given α (which in case of internal remerge would be the highest position in which α has been merged). Obviously, we will need more examples of external remerge to create a better foundation for this hypothesis. For now, let me state that external remerge is an available option in the syntactic derivation of coordinated structures:

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6 I assume coordinators are heads that project into CoP, following De Vries (2005a) and the works cited herein. Note in addition that the merger of IP2 and Co is represented with a dotted line. This is to indicate a ‘behindance’ relation (b-Merge) instead of a dominance relation that is implied in ‘normal’ Merge. Although not relevant to the present proposal, b-Merge here prevents c-command between conjuncts (see De Vries 2005a,b,c for the notion b-Merge, and Progovac 1998 for the possible lack of c-command between conjuncts).
External remerge in coordination

In a structure $[\text{CoP} \ [\text{XP1} \ldots \alpha \ldots] \& \ [\text{XP2} \ldots]]$, $\alpha$ can be remerged in the derivation of $\text{XP2}$.

Finally, if Merge applies to only the roots of $\alpha$, it is possible that the $\alpha$ at the location of its first merger would have different phonological properties than at the location of the final merger. Combining external remerge with Distributed Morphology then accounts for the difference in acceptability between (5b) and (5c).

4.3. Interface constraints on RNR

So far, I have proposed a syntactic theory of RNR in terms of external remerge. It is clear that in this proposal, the syntactic component of grammar would overgenerate RNR constructions. After all, the periphery condition that rules out examples like (1b) is no part of syntax in the current proposal but will be filtered out at PF. Let me briefly suggest two interface conditions on RNR here. For the periphery condition, I propose (9), as extension of the constraint in Hartmann (2000):

(9) **Periphery Condition**
- In a structure $[…]_{\phi}$ where $\phi$ is the prosodic constituent, align $X_F$ to the right/left edge of $\phi$.
- In a structure $[\text{CoP} \ [\text{XP1} \ldots X_F1\ldots] \& \ [\text{XP2} \ldots X_F2\ldots]]$, $\alpha$ must immediately follow $X_F$.

As argued in section 3.1, prosodic focus is constrained by a condition on the semantics of the focused elements. The condition on contrastive focus based on Rooth (1992a,b) and Hartmann (2000) looks as follows:

(10) **Contrast Condition**
In a structure $[\text{CoP} \ [\text{XP1} \ldots X_{F1}\ldots] \& \ [\text{XP2} \ldots X_{F2}\ldots]]$, $X_{F1}$ and $X_{F2}$ must have identical sets of alternatives.

5 CONCLUSION

RNR is a construction constrained by different interfaces of grammar. The periphery condition is not part of syntax, but follows from a constraint on edge alignment of focus. This is in turn constrained by a condition on contrastive focus, which is a semantic condition on RNR. The syntax of RNR provides clues for the directionality of the conjunction reduction, i.e. the correct linearization. For this purpose, I have proposed external remerge between conjuncts, following the work of Van Riemsdijk (2004, 2006). It is clear that more work needs to be done on the notion of external remerge. First of all, more types of constructions need to be investigated. This is necessary to see whether external remerge is, for instance, dependent on coordination as in RNR, or can also take place between strings that are otherwise related. In addition, we need more judgments on non-matching RNR in, for instance, languages with overt case. This is needed to sustain the hypothesis that RNR is acceptable as long as the RN is grammatical in the conjunct in which it is remerged.
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REFERENCES


Marlies Kluck

University of Groningen
Department of Linguistics
Oude Kijk in ’t Jatstraat 26
9712 EK Groningen
The Netherlands

m.e.kluck@rug.nl
http://www.let.rug.nl/~kluck