

Movement and Islands in Right Node Raising

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1. Puzzles about Right Node Raising

There has been a long-standing issue on whether movement is involved in Right Node Raising (RNR), an example of which is given in (1) (e.g., Ross 1967, McCawley 1982, Wilder 1999, Bošković 2004, Abels 2004, Sabbagh 2007, Ha 2008).

(1) Bill bought ____, and Mary sold ____, a book about mathematics.

A well-known fact about RNR is that it is immune to island constraints (Wexler & Culicover 1980).

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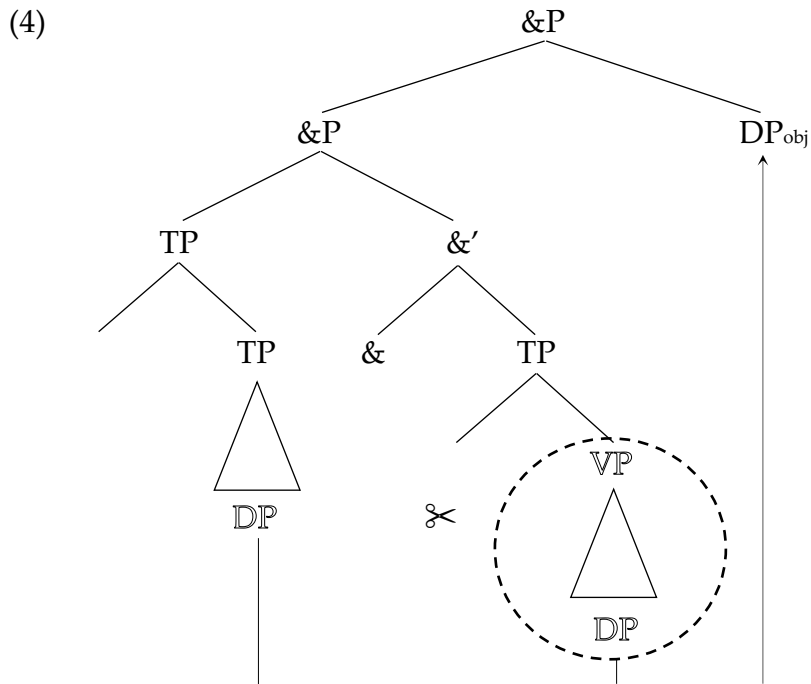
(2) Bill knows [someone who bought ___], and Mary knows [someone who sold ___], a book about mathematics.

This fact has been taken as evidence for the absence of movement in RNR (Wexler & Culicover 1980, Ha 2008, among others).

Furthermore, Abels (2004) shows that RNR cannot co-occur with VP-ellipsis (VPE), as shown below (3):

(3) *Jane talked about ___, and/but Frank didn't Δ , the achievements of the syntax students.

If RNR involved (Across-the-Board, ATB) movement to the right periphery of the conjuncts, the shared DP (henceforth, *right node (RN)*) would move out of the VP. Then, if the VP within the second conjunct is elided, the RN, which sits at a position higher than VP, should be unaffected and thereby expected to survive VPE, as in (4).



The ungrammaticality of (3), then, suggests that the RN remains in-situ and is deleted by VPE, contrary to what the movement analysis would predict.¹

In contrast to these observations, Sabbagh (2007) has offered compelling evidence for the presence of movement based on scope facts. The following sentence resists an inverse scope reading.

¹ It has been known that even immobile elements (e.g., non-constituents) can be an RN (see Citko 2017, Bachrach & Katzir 2017), which is apparently problematic for a movement approach. However, as various researchers point out, RNR should be seen as a cover term for a family of similar constructions (e.g., Barros & Vicente 2011, Chaves 2014, among others). I assume that the movement derivation only holds for RN that can undergo rightward movement (Kimura, 2018a, b).

(5) Some nurse gave a flu shot to **every patient**, and administered a blood test for **every patient**. ($\exists > \forall; * \forall > \exists$)

By contrast, the corresponding RNR sentence permits it, as shown in (6).

(6) Some nurse gave a flu shot to ____, and administered a blood test for ____, **every patient who was admitted** last night. ($\exists > \forall; \forall > \exists$)

By assuming (rightward ATB) movement in RNR, the RN can take scope over subject QPs without recourse to illicit application of QR (5) (see also Bošković & Franks 2000).

Deletion approaches (e.g., Hartmann 2000, Bošković 2004, Chalcraft 2006, Ha 2008) must assume the structure in (5) for semantic interpretation, and consequently, the inverse scope reading should be equally unavailable in (6) as it is in (5) for the very same reason (but see Bachrach & Katzir 2007 for a solution under multidominance).

However, Sabbagh's (2007) movement analysis, as it stands, faces the

problem of island insensitivity, which he attempts to resolve by adopting Fox and Pesetsky's (2005) Spell-Out mechanism. Fox and Pesetsky assume that Spell-Out applies phase by phase, and linear order statements are created at each phase. These statements must not be contradicted at any later stage of the derivation. Given this, let us consider why RNR accommodates islands under movement. As repeated below, RNR is compatible with an island, though movement could be involved.

(7) Bill knows [someone who bought___], and Mary knows [someone who sold___], a book about mathematics.

When the complex NP (CNP) in the second clause of (7) is subject to Spell-Out, the linear order statement in (8) is made, which must then not be contradicted by any other statement to be made at subsequent steps of the derivation.

(8) Spell-Out(CNP): *someone > who > sold > a book about mathematics*

Then, at the last step of derivation (&P), an RN within the CNP, *a book about*

mathematics, moves out of the CNP island to the right edge, as in (9a). However, as shown in (9b), moving the RN rightward induces no contradiction of linear order statements. Therefore, island effects do not arise even though the movement crosses an island.

- (9) a. Derivation: [_{&P} [_{TP1} & [_{TP2} Mary knows [_{CNP} someone who sold DP]]] DP]
b. Spell-Out(&P): ... *Mary* > *knows* > *someone* > *who* > *sold* > *DP*

In contrast to the *string vacuous* (SV) configuration in (7), a non-SV configuration as in (10) evokes a violation of the island constraint (Bachrach & Katzir 2009: 289).

- (10) *[A man who loves____danced], and [a woman who hates____went home]
a book by Kafka.

This occurs because the linear order statement made at TP1 (11a) contradicts the one made at the matrix &P (11b). Thus, island effects arise as a result of a contradiction in linear ordering.

- (11) a. Spell-Out(TP1): ... *A man > who > loves > a book by Kafka > danced*
- b. Spell-Out(&P): ... *A man > who > loves > danced > a book by Kafka*

2. Reconciling Conflicting Facts under Movement

2.1 RNR + VPE Reconsidered

In what follows, I will argue that Abel's (2004) objection to the movement approach fails and the alleged incompatibility of RNR and VPE is only apparent. Next, I will address a new puzzle involving islands, which cannot be solved without recourse to movement. Finally, I will argue that the fact I provide presents a problem for Sabbagh's solution to the island insensitivity of RNR.

My departure point is to argue against Abels' (2004) account. Abels claims that RNR is incompatible with VPE and cannot, consequently, be derived by movement. However, it is questionable whether the ungrammaticality of (3), repeated here as (12), truly comes from the absence of movement.

(12) *Jane talked about____, and/but Frank didn't Δ, the achievements of the

syntax students.

Consider Grosu's (1976) example in (13a), which is similarly unacceptable.

Hartmann (2000) argues that it becomes acceptable by emphasizing the contrast, as in (13b) (i.e., *did* vs. *didn't (give)*, rather than **gave* vs. *didn't give*).

- (13) a. *John **gave**___, but Bill **didn't give**___, a present to Mary.
b. John **did**___, but Bill **didn't give**___, a present to Mary.

Abels' example patterns with unacceptable (13a), and his RNR+VPE test should be reevaluated against a revised example that has a clearer contrast like (13b).²

² As an anonymous reviewer points out, (13b) could be analyzed as the result of backward ellipsis, deleting the VP in the first conjunct, as in (i) (Ha 2008).

- (i) John did <_{VP} give a present to Mary>, but Bill didn't [_{VP} give a present to Mary].

Note that licensing conditions on VPE and RNR are different, as the following contrast shows (Ha 2008).

- (ii) a. *John **does** Δ, and Bill **likes** Mary. RNR
b. Bill **likes** Mary, and John **does** Δ, too. VPE

Instead, the licensing condition on RNR appears to be related to the one generally imposed on coordinated structures. Then, the condition must be satisfied whether VPE is involved (in the first conjunct) or not. In RNR, it is likely that T (+polarity) (or V) in both conjuncts must be contrasted (see Ha (2008) for a fuller account). (13b) is much improved in comparison with (13a) and (iia) by making the two Ts contrastive (*does* vs. *does not*). My example in (14) is intended to make two Ts contrastive (*has* vs. *hasn't*).

As a result of such revision, the RNR+VPE combination gets much better, as given in (14).^{3, 4}

(14) Prof. White **has** read____, but Prof. Green **hasn't** Δ, a new book on gravity.

The possibility of VPE in RNR suggests that the RN is located at a higher position than the base position (i.e., RNR involves movement).⁵

2.2 RNR + VPE + Island

As we have seen, RNR is compatible with islands. In this subsection, I will

³ The judgment data reported here were collected via Amazon Mechanical Turk (Erlewine & Kotek 2016), in addition to judgments by a reliable informant. I presented 50 informants 20 sentences with a five-point scale in random order. Test items were (12), (14), (15a, b), (16a, b), and (i) in note 6 below, with three pre-conditional sentences (a simple RNR, an RNR with a PP-RN, and a sentence with VPE in an embedded clause) plus fillers ($n=10$) such as gapping and pseudogapping. Obtained results for the target sentences went into statistical analyses only when the participant correctly accepted the pre-conditional sentences.

⁴ The comparison between Abel's (2004) sentence (3)/(12) (mean acceptance (M)=3.24) and my example (14) (M =3.84) showed a statistically significant difference (Wilcoxon's signed rank test with continuity correction, $V(n=25)=33.5$, two-tailed $p=0.01$).

⁵ It seems that not all kinds of RNs undergo movement. I have argued elsewhere that RNR with a phonologically light RN does not exhibit evidence of movement (Kimura, 2018a, b). For example, it resists the application of VPE, as in (i). Moreover, as discussed by Ha (2009), inverse scope is unavailable in RNR with a light RN, as in (ii).

(i) *Prof. White has read, but Prof. Green hasn't Δ, a book.

(ii) Some policeman arrested____, but ended up releasing____, every teenager.

($\exists > \forall$; * $\forall > \exists$)

argue that the island (in)sensitivity problem raises further issues in relation to movement by combining VPE and islands in RNR.

First, as can be seen in (15), VPE can apply to VP within islands.

- (15) a. Bill met [_{CNP} a professor who has read a book on gravity], and Jack met
[_{CNP} a student who hasn't Δ].
- b. Bill wonders [_{WH} who has written a book on gravity], and Jack wants to
know [_{WH} who hasn't Δ].

Furthermore, RNR is compatible with VPE, as shown above. Interestingly, however, combining RNR, islands, and VPE produces an island effect, as given in (16).⁶

⁶ I also investigated via the judgment task reported in note 3 whether the unacceptability truly comes from the presence of islands by examining the acceptability of sentences with an embedded clause and VPE but without an island (i) (I thank an anonymous reviewer for the suggestion to test it).

- (i) Bill said that his professor has read___, and Jack said that his dean hasn't Δ, a book on gravity.

The results showed a clear discrepancy between a merely complex sentence (i) ($M=3.75$) and island-involving sentences ((16a) ($M=2.96$) and (16b) ($M=2.75$)). The inferential statistics support the discrepancy between them: Friedman rank sum test indicated a significant difference between them (i.e., complex sentence without RNR (i), RNR + CNP-island + VPE (16a), and RNR + WH-island + VPE (16b)), $\chi^2 = 10.34$, $df = 2$, $p < 0.01$; and Wilcoxon's signed rank test with continuity correction showed significant differences

- (16) a. *Bill met [_{CNP} a professor who has read___], and Jack met [_{CNP} a student who hasn't Δ], a book on gravity.
- b. *Bill wonders [_{WH} who has written___], and Jack wants to know [_{WH} who hasn't Δ], a book on gravity.

This fact brings some important implications. First, the ungrammaticality of (16) implies the presence of an island effect, providing further evidence that RNR involves movement. Of note is that the movement involved is applied string-vacuously. Islands are generally inactive in SV-RNR without VPE. The example I just offered presents a serious problem for Sabbagh's (2007) solution to the island-insensitivity puzzle in RNR. Recall that under Sabbagh's (2007) and Fox and Pesetsky's (2005) conception of island violations, island effects result from a contradiction of linear order statements. However, this cannot explain the fact under discussion. Their conception of islands explains why SV-

between (i) and (16a) ($V(n=28)= 106.5$, Bonferroni-corrected $p < 0.05$) and between (i) and (16b), $V(n=28)=191$, Bonferroni-corrected $p < 0.05$. Moreover, the difference between the two islands ((16a) and (16b)) was not significant ($V(n=28)= 64$, Bonferroni-corrected $p = 1.43$). These results showed that the unacceptability for (16a, b) does not simply come from embedding or from structural complexity but rather from the presence of islands.

RNR can co-occur with an island, as we saw earlier: Rightward movement that does not cross overt material (i.e., SV movement) can be applied beyond an island without giving rise to a contradiction. However, if VPE is applied to the island-containing configuration (17a), contradiction of linear order statements does not occur, as given in (17b, c). Therefore, island effects should not be active, contrary to fact.

- (17) a. Ellipsis: [_{&P} [_{&P} & [_{TP2} Jack met [_{CNP} a student who hasn't [_{VP} ~~VDP~~]]]] DP]
- b. Spell-Out(CNP): *a student > who > hasn't > read > a book on gravity*
- c. Spell-Out(&P) w/VPE: ... *Jack > met > a student > who > hasn't > a book on gravity*

Furthermore, Bachrach and Katzir (2009: 289) present the interesting observation that while leftward *wh*-movement cannot cross an island in a mono-clausal sentence, as in (18b), moving a *wh*-RN leftward out of an island in RNR is possible, as in (18a).⁷

⁷ I would like to thank an anonymous reviewer for the suggestion to add this observation.

- (18) a. **Which book_i** did [John meet the man who wrote___], and [Mary meet the man who published___] *t_i*?
- b. *Which book_i did John meet the man who wrote *t_i*?

Moreover, subextraction of a *wh*-phrase from the RN is grammatical, as in (19).

- (19) **Which animal_i** did John say that Mary knows [a man who wrote___], and [a woman who published___], **an encyclopedia about *t_i***?

The grammaticality of (19) poses a problem for Sabbagh's (2007) analysis. Under his account, Spell-Out(CNP) fixes the linear order (*an encyclopedia about* > *which animal*). Then, *wh*-extraction out of the RN would yield a linear ordering contradiction (i.e., **which animal* > *an encyclopedia about*). Thus, Sabbagh's solution to the island-insensitivity puzzle cannot accommodate VPE or leftward extraction applied to island-involving RNRs.

3. Conclusion

This paper has shown that the grammaticality of combined RNR and VPE supports a movement analysis of RNR, contrary to Abels (2004). It has further shown that RNR with VPE and an island induces an island effect, though SV-RNR is compatible with both VPE and islands, offering further evidence for the presence of movement in RNR.

However, I pointed out that Sabbagh's (2007) linearization-based movement approach cannot offer a valid account for the facts I presented. It accounts for the island-insensitivity of RNR in simple cases such as (2), repeated here as (20).

(20) Bill knows [someone who bought___], and Mary knows [someone who sold___], a book about mathematics.

However, I argued that it cannot explain the occurrence of the island effect in VPE contexts. In addition, it also fails to account for the absence of an island effect with leftward ATB extraction, as we have seen in (18, 19) (Bachrach & Katzir, 2009). Therefore, proponents of a movement approach to RNR will have

to offer an alternative solution to these island-(in)sensitivity puzzles in any future research.

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