On ellipsis features and Right Node Raising

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In this paper, I propose that Right Node Raising (RNR) is an ellipsis phenomenon and licensed by a variant of the E(llipsis) feature (i.e. E_{RNR}). The E_{RNR} feature imposes syntactic, semantic and phonological requirements that must be fulfilled for RNR to be licensed. Following Merchant (2001), I will argue that i) the E_{RNR} feature enters the derivation with a focused lexical element and checked by the focus feature of C in syntax, ii) the feature instructs PF to unpronounce the RNR target, and iii) as the semantic requirement, e-GIVENness must be satisfied.

1. Introduction

Right Node Raising (RNR) refers to a coordination construction in which parts of the first conjunct are missing. For instance, the object DP *a piece of furniture* in the first conjunct is RNRed in (1).

(1) Bill MADE, and Jon SOLD – a piece of furniture.

VP ellipsis in (2) and RNR in (3) are similar in that both can target some part of the embedded clause for deletion.

(2) a. John liked the opera, but Mary didn't <~~like the opera~~>.
b. John thought Mary was going to donate his car to the charity, and Mary thought John was going to <~~donate his car to the charity~~>

(3) a. John LIKED <~~the opera~~>, but Mary HATED – the opera.
b. John thought Mary was trying to SELL <~~his car to the charity~~>, and Mary thought John was trying to DONATE – his car to the charity.

On the other hand, RNR also has several unique properties, some of which are discussed in the following. Only constituents can undergo VP ellipsis, but even non-constituents can undergo RNR. The object DP *a large amount of money* and the VP adjunct *from the bank* do not form a constituent, yet RNR is allowed in (4).

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(4) John [BORROWED [<~~a large amount of money~~>] <~~from the bank~~>], and Bill [STOLE – [a large amount of money] [from the bank]].

RNR can also target expressions below the word-level. The part of the word *generation* is elided in the first conjunct in (5a), and a similar case in German is observed in (5b), due to Hartmann (2000).

(5) a. This analysis suffers from both UNDER-<~~generation~~> and OVER-generation.
b. Frühlings~~blumen~~ und Herbstblumen
Springtime ~~flowers~~ and autumn flowers

(Hartmann 2000: 57)

For RNR to be licensed, there must be a contrastive focus just prior to the RNR target (Hartmann 2000). In (6a), the verb *likes* as the pre-RNR element is contrastively focused, contrasted with *dislikes* in the second conjunct. If there is no contrast, the sentence is degraded in (6b).

(6) a. Bill LIKES <~~the TV show~~>, but Mary DISLIKES – the TV show.
b. *Bill likes <~~the TV show~~>, and Mary likes – the TV show.

RNR affects the entire right edge of the first conjunct. Once RNR starts left to right following the contrastively focused constituent in the first conjunct, pronunciation cannot resume until the coordinator is reached (at least, in English). Thus, (7) is ungrammatical, since the VP adjunct in the first conjunct remains pronounced.

(7) *John [BORROWED [<~~a large amount of money~~>] from the bank], and Bill [STOLE – [a large amount of money] [from the bank]].

RNR exhibits many ellipsis properties, such as Vehicle Change effects, lack of morphological identity, and sloppy identity. Ha (2006, 2007) argues that the PF-based accounts – Strict Phonological Deletion (Hartmann 2000, Abels 2004, a.o) and Multiple Dominance (Wilder 1999, a.o) – have difficulty capturing those flexibilities. However, crucially, these empirical phenomena also arise in standard ellipsis, thus weigh in favor of the ellipsis account of RNR.

In VP ellipsis context, it has been shown that Principle C violations can be avoided. Let us examine (8a-b). In (8a), if the elided copy were phonologically identical to its antecedent, we would expect a Principle C violation to occur since the subject of the main clause binds the R-expression in the second conjunct. Similarly, in (8b), a Principle A violation would be expected since the reflexive is not bound within its binding domain.

(8) a. Mary loves John$_i$, and he$_i$ thinks Sally does <~~love John$_i$~~>, too.
b. Josh$_i$ didn't vote for **himself$_i$**, but Mary did <~~vote for **himself$_i$**~~>.

(Fiengo & May 1994:220)

Fiengo & May (1994) argue that (8) is grammatical because reconstruction of elided material is not sensitive to the value of the feature ([±pronoun]) that differentiates proper names and pronouns. Thus, a proper name can be reconstructed as a pronoun in the ellipsis site. Fiengo & May (1994) dubbed this Vehicle Change (9).

(9) Vehicle Change (simplified version, Fiengo & May 1994)
As long as indices remain constant, proper names and their pronominal correlates are considered equivalent.

Fiengo & May (1994) also propose that pronouns and reflexives are nondistinct, assuming that reflexives are composed by a pronoun and *–self* which only has a syntactic function. Under their proposal, *himself* and *him* are the same argument for reconstruction. Therefore, the ellipsis sites in (8a-b) are reconstructed as in (10a-b). The proper name is converted into a pronoun by Vehicle Change which bleeds the Principle C violation in (10a), and the reflexive is shifted into the pronoun, so that the Principle A violation is avoided.

(10) a. Mary loves John$_i$, and he$_i$ thinks Sally does <~~love **him$_i$**~~>, too
b. Josh$_i$ didn't vote for **himself$_i$**, but Mary did <~~vote for **him$_i$**~~>.

We observe similar Vehicle Change effects in RNR constructions (11). The acceptability of (11a) indicates that no Principle C violation has occurred, and that the proper name has been shifted into a reflexive. Similarly, the pronoun in (11b) must have been shifted into a reflexive in (11b) to avoid a Principle B violation.

(11) a. Mary heard that John$_i$ SUBMITTED <~~the article about **himself$_i$** for the magazine~~>, but Sue said that Bill actually WROTE – the article about **John$_i$** for the magazine.
b. John$_i$ COULDN'T <~~nominate **himself**~~>, so I nominated him$_i$

On the other hand, under the PF-based approaches, Vehicle Change effects are unexpected since the phonological form between the RNRed material and its antecedent would not exactly match each other. In (11b), for example, the RNRed VP *nominate himself* differs phonologically from its antecedent VP *nominated him*.

In the ellipsis literature, it has been observed that verbal morphology need not match between conjuncts (Warner 1986, Lasnik 1999, Lightfoot 1999). There is a tense mismatch in (12a) between *met* and *meet*, and the tense mismatch for main verbs seems to be tolerable. For some reason when *be/have* is involved, it must be overtly present in the ellipsis clause, so (12b) is acceptable with the copula is pronounced, and (12c) is not with the ellipsis of the copula.

(12) a. Bill met Prof. Smith yesterday, and I will <~~meet Prof. Smith~~> this afternoon.
b. Jane was here, and I will be <~~here~~>, too.
c. *Jane was here, and I will <~~be here~~>, too.

RNR shows the same patterns (Bošković 1997, 2004). In (13a), the verbal morphology of the antecedent clause does not match that of the RNRed clause. In addition, whatever the cause of the restriction on *be* and *have* in VP ellipsis, (13b-c) behave the same way. *Be* and *have* must be realized in the RNRed clause.

(13) a. John WILL <~~sleep in her house~~>, and Peter already HAS – slept in her house.
b. John MUST have been <~~hassled by the police~~>, and Peter COULD have been – hassled by the police.
c. ?*John MUST <~~have been hassled by the police~~>, and Peter COULD – have been hassled by the police.

(Bošković 1997: (8), (11))

This distributional similarity between RNR and ellipsis is unexpected on the other non-movement analyses. In particular, under the PF accounts, the restrictions for *be* and *have* in the RNRed clause would be puzzling. Under the phonological deletion view, it is not clear why phonological identity should make morpho-syntactic distinctions with respect to *be* and *have*. The Multiple Dominance account has nothing to say about the size of the RNR target unless the conjuncts can be linearized. Since the size of the RNR target is unconstrained and (13c) does not yield conflicts in linear order, the Multiple Dominance account predicts (13c) to be linearizable, yet the sentence is ungrammatical. Those accounts need additional assumptions to exclude *be* and *have* from RNR, whereas the ellipsis account does not.

Ellipsis is well-known to allow some interpretations that are not available when the elided part is overtly pronounced. Such an example is the availability of sloppy identity in VP ellipsis (Sag 1976, Williams 1977, Reinhart 1983). The pronoun *his* in the ellipsis site can serve as a referential or a bound variable in (14), and the sloppy reading arises when the elided pronoun is bound by the subject of the second conjunct.

(14) John likes his father, but Bill doesn't <~~like his father~~>.
a. John likes John's father, but Bill doesn't like Bill's father. (Sloppy reading)
b. John likes John's father, but Bill doesn't like John's father. (Strict reading)

Interestingly, RNR also allows sloppy identity. The RNR target *his father* can be interpreted as *John's father* (sloppy reading) as well as *Bill's father* (strict reading) in (15). Under the MD account, the availability of sloppy reading is not predicted in (15) since the MD assumes a shared constituent as the RNR target, which is only one occurrence of the RNR target. Notice that the RNR target contains a pronoun *his* in (15). To get the sloppy reading, the pronoun needs to be a bound variable and must be simultaneously bound by two different operators.

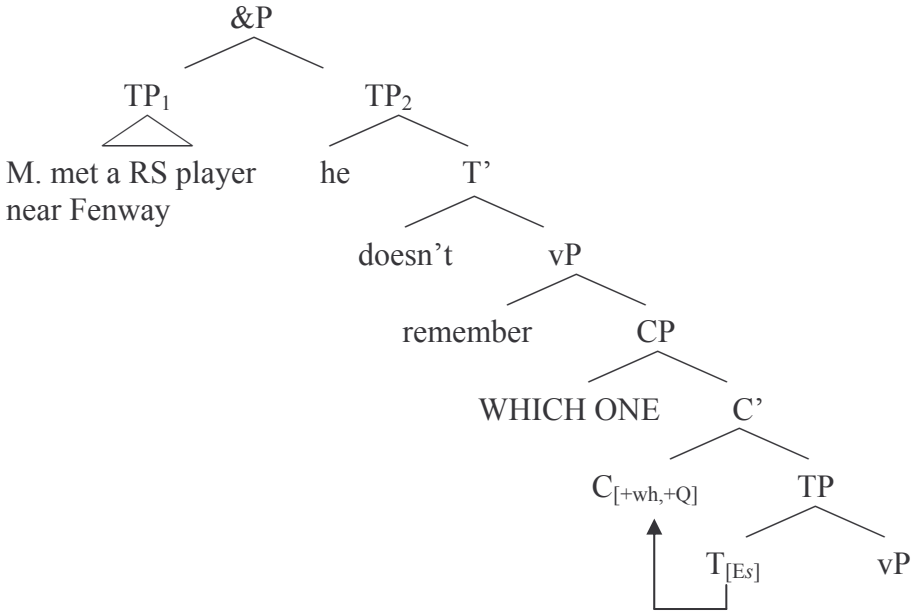
(15) John_i LIKES, but Bill_j HATES – $\text{his}_{i/j}$ father.
a. John likes John's father, but Bill hates Bill's father. (Sloppy reading)
b. John likes Bill's father, but Bill hates Bill's father. (Strict reading)

Given the empirical similarities between ellipsis and RNR reviewed above, there are good reasons to believe that RNR is also a type of ellipsis. The next question to ask is what licenses RNR, and moreover whether RNR obeys the same licensing conditions of the other types of ellipsis. I will propose semantic licensing conditions for RNR, based on mutual entailment relationships between focus alternatives of the conjuncts, and formalize RNR licensing in principled ways within the Minimalist Program. More specifically, I will address the syntactic, semantic, and phonological aspects of RNR licensing conditions by introducing an E(llipsis) feature for RNR, extending the concept of E features introduced by Merchant (2001, 2004).

2. Ellipsis features

Merchant (2001) proposes that sluicing is licensed by an ellipsis feature, which he labels E_S. The presence of the E_S feature imposes syntactic, semantic and phonological requirements that must be fulfilled for sluicing to be licensed. Let us first consider the syntactic requirements on the English sentence in (16). Merchant (2001) proposes that E_S is [wh*, Q*] and is a feature of T. E_S is a strong feature that needs to be checked during the syntactic derivation. When the C head bears the [+wh, +Q] feature, it checks E_S. Then, T moves to C, as illustrated in the tree structure (16).

(16) Matthew met a Red Sox player near Fenway, but he doesn't remember WHICH ONE.



Second, the E_S feature now attached to C as part of T is interpreted at PF as an instruction not to pronounce its complement. Therefore, the TP of the second conjunct is required to be unpronounced in (17).

(17) …and [$_{TP}$ he doesn't remember [$_{CP}$ WHICH ONE $C_{[Es]}$ <~~[$_{TP}$ Matthew met t near Fenway]~~>

Third, as the semantic requirement for the inclusion of E_S, e-GIVENness must be met, which can be defined as (18).

(18) e-GIVEN
An expression E is e-GIVEN iff there is an antecedent A which entails E and which is entailed by E, modulo ∃-type-shifting.

(Merchant 2001)

Let us examine how the e-GIVENness of the example (16) is satisfied. The antecedent is the first conjunct, *Matthew met a Red Sox player near Fenway* and the corresponding elided clause is the embedded CP of the second conjunct, *WHICH ONE Matthew met t near Fenway*. By ∃-type shifting, the first conjunct yields *∃x. Matthew met x near Fenway* (E-clo (A)).

Given that the fronted wh-phrase is focused, it would be also existentially closed by F-closure.[1] As a result, F-clo (E) is the same as E-clo (A). All the calculations are summarized in (3). Since A entails F-clo (E) and E entails E-clo (A), e-GIVEN is satisfied.

(19) e-GIVENness of (16)
a. A = Matthew met a Red Sox player near Fenway.
b. E = He met WHICH ONE near Fenway.
c. F-clo (E) = ∃x. he met x near Fenway.
d. E-clo (A) = ∃x. he met x near Fenway.

Since the syntactic, phonological and semantic licensing conditions are satisfied, sluicing in (16) is licensed. Merchant (2004) claims that fragment answers to wh-questions are also derived by ellipsis, and licensed by an ellipsis feature, E_f. Let us take (20). Following Rizzi's (1997) proposal concerning the upper portion of the clausal structure, Merchant assumes that there is a FocusP in the left periphery, so that the fragment answer can undergo focus movement to the specifier of FocusP. In the answer part to the wh-question (20), the object DP, *The syntax of silence*, undergoes focus movement, and the focus head bears E_f, which instructs PF not to pronounce its complement. Regarding semantic licensing conditions of E_f, it is clear that F-closure of the answer and E-closure of the question are the same: *∃x. John read x last night*. Then, e-GIVENness condition is satisfied given that the question entails F-closure of the answer and the answer entails E-closure of the question.

(20) Q: What did John read last night?
A: [$_{\text{FocusP}}$ [$_{\text{DP}}$ The syntax of silence] Focus$_{[Ef]}$ <~~$_{\text{TP}}$ John read t last night~~>].

Merchant (2004) argues that E_f should reside on a head lower than the focus head in C since, if it were as high as Focus, it would erroneously predict that examples like (21) would be grammatical, given that ellipsis should have repaired the island violation that occurs within TP.[2]

(21) Q: Does Abby speak the same Balkan language that *Ben* speaks?
A: *No, [$_{\text{FocusP}}$ [$_{\text{DP}}$ Charlie] Focus$_{[E]}$ <~~[$_{\text{TP}}$ Abby speaks the same Balkan language that t speaks]~~>.

If the C head bear E_f, there still remains a defective intermediate trace *t'* undeleted and crashes, as shown in (22).[3]

(22) A: [$_{\text{FocusP}}$ [$_{\text{DP}}$ Charlie] [$_{\text{CP}}$ t' C$_{[E]}$ [$_{\text{TP}}$ <~~Abby speaks the same Balkan language that t speaks~~>]]].

(Merchant 2004: 708, (166))

[1] F-closure (F-clo) refers to an existential closure of focused constituents.

[2] Merchant does not specify what this lower head is. He just names it as C and the higher focus head as F.

[3] However, in his later work, Merchant (2006) argues that a focus head can bear an E feature. He assumes that psuedogapping is derived by focus movement of the object DP to the intermediate position between TP and vP in the second conjunct, followed by the deletion of vP. Let us take (i).

(i) John brought roses, and the others did [$_{\text{FocP}}$ lilies$_i$ Foc$_{[E]}$ <[$_{\text{vP}}$ ~~brough t$_i$~~]>].

Therefore, the manipulation made in (22) remains problematic since it is unknown why the focus head merged to vP can, but the one in the CP cannot bear the ellipsis feature.

2.1. The E_{RNR} feature

Following Merchant (2004), I assume that the focus head can bear an E feature. The focused pre-RNR element enters the syntactic derivation bearing E, and instructs PF to leave the RNRed element unpronounced.

(23) Ellipsis feature of Right Node Raising (*the first pass*)
a. A focused constituent in the first conjunct can bear E in syntax.
b. E instructs the PF-interface not to pronounce its complement.
c. The e-GIVENness condition must be satisfied by the conjuncts.

With the assumptions in (23), let us examine examples in (24). RNR and VP ellipsis are compared in (24). In (24a-b), there is a contrast in polarity between the conjuncts, and both constructions are grammatical. On the other hand, without any contrast, as (24c-d) indicate, RNR is degraded, but VP ellipsis is not affected by the lack of contrast. This indicates that a certain type of contrast between the two conjuncts is required to license RNR, but not necessarily ellipsis.

(24) a. John likes Mary, but Bill doesn't. (Ellipsis – contrast in polarity)
b. John DOES, but Bill DOESN'T – like Mary. (RNR – contrast in polarity)
c. John likes Mary, and Bill does, too. (Ellipsis – no contrast)
d.*John DOES, and Bill LIKES Mary, too. (RNR – no contrast)

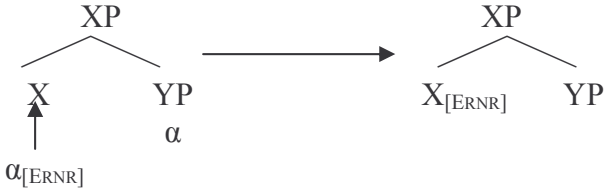
I propose that not just any focused constituent licenses RNR: Only *contrastive* focus can contain an E feature (henceforth, E_{RNR}) and license RNR. In (24d), RNR is not licensed since the focus on the pre-RNR element is not contrastive.

The E_{RNR} feature enters the derivation with a contrastively focused lexical item. Note that in the analyses proposed by Merchant (2001, 2004, 2006), the E feature enters the derivation with a functional head – T for sluicing, and Focus for pseudogapping and fragment answers (but see footnote 2). I argue that the differences could be understood in terms of the differences between specifier and complement positions that arise under the *Multiple Spellout hypothesis* (Uriagereka 1999, Bartos 2001, Johnson 2002, among others). According to the Multiple Spellout hypothesis, a specifier position, like an adjunct, enters the derivation having already been fully spelled-out, meaning that no further alteration is possible – in particular, movement is not possible out of such a constituent. The complement position, on the other hand, is different, in that nothing prevents agreement or movement from the complement position. Therefore, the constituent in the complement position can undergo movement later in the derivation, whereas such possibility is blocked for the constituent in the specifier position. Assuming a Boolean Phrase analysis of coordinate structure (Munn 1993), the RNR target to be elided would always be part of the *specifier* position of &P. This means that there should be no further syntactic derivation in the first conjunct at the point that it is merged to the specifier position of &P. The only possible options for the computational system would be limited to PF-effects, such as phonological deletion (Bartos 2001). Therefore, E_{RNR} must instruct phonology to unpronounce the RNR target.

A question might arise how PF and LF can interpret an E feature if the feature enters the derivation with the lexical item. The Y-model of the Minimalist Program assumes that syntactic derivation guides PF or LF interpretations, so if there is no status of the E_{RNR} feature in syntax, the interface would come out of nowhere. I assume that syntax also acknowledges

syntactic features which lexical items bring in. As shown in (25), the syntactic head, in which a lexical item with the E_{RNR} feature enters $\alpha_{[ERNR]}$, is endowed with the feature. In other words, the feature is transmitted to the syntactic head from the lexical item.

(25) E feature transmission from a lexical item to a syntactic head



The *syntactic* feature E_{RNR} is now subject to be checked by the focus feature of the C head by agreement.[4] Let us consider (26). Where two clauses are coordinated in English, I assume that it forms a TP coordination structure. As an RNR construction, the verb in each conjunct is contrastively focused in (26), and the one in the first conjunct can bear the E_{RNR} feature. When the C head is merged to the coordinate structure, it agrees with E_{RNR}, licening ellipsis of the object DP.[5]

(26) [$_{CP}$ $C_{[focus]}$ [$_{\&P}$ John $MADE_{[ERNR]}$ <~~the spaghetti~~>, and BILL ATE – the spaghetti.]

A question arises here why a sentence like (27) would not be available. Notice that (27) differs from (26), in that the deletion occurs in the second conjunct. Given that the verb in the second conjunct is also contrastively focused, it is reasonable to assume that it could bear an ellipsis feature.

(27) *JOHN MADE the spaghetti, and BILL $ATE_{[ERNR]}$ <~~the spaghetti~~>.

Traditionally, the ungrammaticality of (27) has been taken to follow from Lobeck's (1995) generalization, which can be briefly summarized as: Only a functional head can license (forward) ellipsis. Since V is a lexical head, its complement – the object DP – cannot be elided. Reanalyzing Lobeck's hypothesis within the Minimalist Program, Merchant (2001) recasts this functional head requirement in ellipsis into a feature-checking analysis. Following Merchant, I argue that the difference between (26) and (27) follows from the locality requirements on feature checking. In (27), the E feature cannot be checked by the focus feature of C since there is always E_{RNR} in the first conjunct, which is closer to the C head,

[4] I assume that unlike movement, a feature outside the coordinate structure can agree with a feature in the first conjunct.

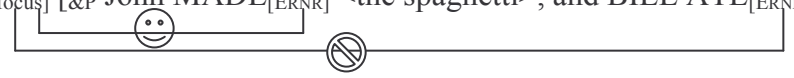
[5] An interesting question arises what prevents a sentence like (i). If it is supposed that the wh-word generates a set of alternatives that is directly comparable to those generated by the focused constituent (see also Beck 2006), the F-closure of the first and the second conjunct both would be *∃x.∃R. x R-ed the book*. Then, the antecedent entails F-clo (E) and the elided clause entails F-clo (A), satisfying e-GIVENness. Therefore, it would seem that (i) is predicted to be grammatical, contrary to fact.

(i) *JOHN SOLD and WHO BOUGHT the book?

I will speculate that the solution is provided by the different clause-types in the conjuncts. Assuming that [clause-type] is an uninterpretable feature on the C head, it needs to be valued by merging to TP (Cheng 1991). Since the second conjunct is interrogative, C would be valued as [clause-type: interrogative]. There would be two scenarios at this point. First, the first conjunct, merged to the specifier position of &P, bear a mismatching clause type, which is declarative, so that the derivation would crash. Alternatively, we can assume that the type mismatches do not matter, but the wh-word in-situ fails to check its wh-feature in C.

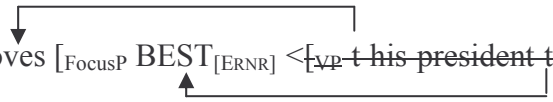
which is illustrated in (28) (*Closeness*, Chomsky 1995). The focus feature in C *always* agrees with the closer E_{RNR}, so only (26) is licensed.[6]

(28) [$_{CP}$ $C_{[focus]}$ [$_{\&P}$ John $MADE_{[ERNR]}$ <~~the spaghetti~~>, and BILL $ATE_{[ERNR]}$ – the spaghetti.]



While it is true that no further movement is possible in the first conjunct, it is sometimes allowed in cases where movement in the first conjunct is independently motivated *before* merging to &P. I argue that (29) is such a case where the focus movement of the adverb inside the first conjunct is motivated. I assume that there is a focus phrase between vP and VP and the focused VP adverb *BEST* in the first conjunct can undergo focus movement to the SpecFocusP.[7] Given that the adverb is contrastively focused, it is eligible to bear the E_{RNR} feature. Therefore, the VP in the first conjunct can be elided. On the surface, (29) looks similar to Heavy NP Shift, but here I suppose that no movement is involved.

(29) Every American [$_{vP}$ loves [$_{FocusP}$ $BEST_{[ERNR]}$ <[~~$_{vP}$ t his president t~~]>], but every German loves LEAST – his president.



Note that the VP adverb in the second conjunct also has to move to the SpecFocusP position. If it does not, the sentence is degraded, as shown in (30). One might challenge this claim that this type of focus movement is forced by syntactic parallelism, which is a reasonable question, on the grounds that the movement to the focus position would not have truth-conditional consequences.

(30) ?*Every American loves BEST, but every German his president LEAST.

I propose that this movement is not enforced by syntactic parallelism, but rather by an independent rule imposed by information structure or discourse coherence. In other words, there is nothing wrong with (30) syntactically, but the unacceptability is attributed to the non-parallel focus structure when focus movement occurs only in the first conjunct. This proposal can be easily supported by the comparison between (31) and (32), neither of which involves ellipsis at all. The sentences in (31) are well-formed since the focus structure is parallel. In (31a), the contrastively focused vP adjunct is located at the end of each conjunct, and a Heavy NP shift appear to operate in (31b), so that the vP adjunct in each conjunct is followed by the dislocated object DP. On the other hand, the sentences in (32) are ill-formed, since they have non-parallel focus structures. Note that each conjunct by itself is fully grammatical in (32a-b), so that the ungrammaticality is not due to syntax. It is rather a failure of coherent information structure.

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[6] Attaching E_{RNR} to a lexical item is optional, so that a sentence like (i) is possible without RNR.

(i) John MADE the spaghetti, and Bill ATE the spaghetti.

If this is true, then a crucial question arises whether it is possible for only the verb in the second conjunct to bear the E_{RNR} feature, as illustrated in (ii). If this were possible, the locality-based explanation of the ungrammaticality of (11) would not extend to (ii).

(ii) *John $MADE_{[ø]}$ the spaghetti, and Bill $ATE_{[ERNR]}$ <~~the spaghetti~~>.

[7] I assume that FocusP can be merged to any XP, including VP. However, Movement to this FocusP position is not forced. It only occurs when it influences in overt or covert syntax (Chomsky 1993, Fox 1995) and it obeys every grammatical constraint.

(31) a. John loves every new Red Sox player in this season BEST, and his friend loves every new Red Sox player in this season LEAST.
b. John loves BEST every new Red Sox player in this season, and his friend loves LEAST every new Red Sox player in this season.

(32) a. ?*John loves every new Red Sox player in this season BEST, and his friend loves LEAST every new Red Sox player in this season.
b. ?*John loves BEST every new Red Sox player in this season, and his friend loves every new Red Sox player in this season LEAST.

This type of failure cannot be repaired by deletion, so (30) is not well-formed, in which the DP in the first conjunct is RNRed in (32b). On the other hand, the deletion would be licensed if RNR occurs in (31b), which is shown in (33). This indicates that the coherent information structure is an independent factor in focus-related constructions.

(33) John loves BEST$_{[ERNR]}$ <~~every new Red Sox player in this season~~>, and his friend loves LEAST – every new Red Sox player in this season.

Therefore, we can conclude that the focused constituent must undergo movement in the second conjunct if there is a focus movement in the first conjunct to satisfy the parallel focus structure in (34).

(34) Parallel focus structure in coordination
Focus structure must be parallel in the coordinate structure. If there is a focus movement in the first conjunct, the second conjunct must also undergo focus movement.

(34) accounts for why backwards gapping is not available in English. Note that RNR itself is licensed by E_{RNR}, attached to the contrastively focused object DP in the first conjunct. However, it forces focus movement of the DP in the second conjunct, which is not possible in English. Therefore, (35) is ruled out.

(35) *Sue [$_{FocusP}$ THE CAR$_{[ERNR]}$ <[~~$_{vP}$ bought t~~]>], but John THE BIKE bought.

Compare (35) with Korean (36). Backwards gapping in Korean is acceptable since parallel focus structure can be constructed on the surface. Again, the grammaticality is considerably degraded if the object in the second conjunct undergoes scrambling, making the focus structure no longer parallel (36).

(36) SUE-NUN CHA-LUL$_{[ERNR]}$ <~~sa-ss-ta~~>, kuliko JOHN-UN CACENKE-LUL sa-ass-ta
S.- TOP car- ACC bought, and J.- TOP bike-ACC bought
'Sue bought the car, and John bought the bike.'

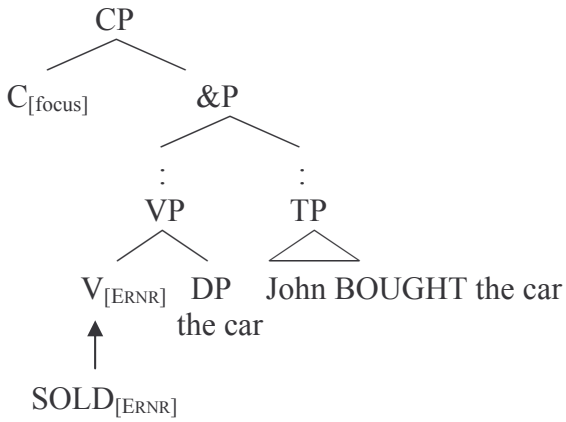
(37) ?*SUE-NUN CHA-LUL$_{[ERNR]}$, kuliko CACENKE-LUL JOHN-UN t sa-ass-ta
S.-TOP car-ACC and bike- ACC J.-TOP bought
'Sue bought the car, and John bought the bike.'

If this is true, we can further predict that the grammaticality would be improved if the object DPs in both conjuncts undergo scrambling, so that the parallel focus structure can be established. As shown in (38), the prediction is borne out.

(38) CHA-LUL$_{[ERNR]}$ SUE-KA t kuliko CACENKE-LUL JOHN-I t sa-ass-ta
Car-ACC S.-NOM and bike-ACC J.-NOM bought
'Sue bought the car, and John bought the bike.'

To summarize so far, the E_{RNR} feature enters the derivation with a contrastively focused lexical item and the syntactic head is endowed with the feature. When C is merged to the coordinate structure, the E_{RNR} feature agrees with the focus feature of C. We also saw that focus movement is independently motivated to ensure a coherent discourse structure. The E_{RNR} feature in interpreted independently at PF and LF. At PF, the E_{RNR} feature is interpreted as a signal for deletion of the RNR target, and at LF, it forces a mutual entailment relationship between the conjuncts. The feature can be formalized in (39) with an example, *Mary SOLD, and John BOUGHT the car*.

(39) E_{RNR} (*Revised*)
a. Syntax of E_{RNR}



b. Phonology of E_{RNR}
XP → Ø/ E_{RNR} ____]$_{TP1}$.
c. Semantics of E_{RNR}: e-GIVEN must be observed in RNR.
i) Mary sold the car → F-clo (E) = ∃x.∃R. x *R-ed* the car
ii) John bought the car → F-clo (A) = ∃x.∃R. x *R-ed* the car

The focused verb *SOLD* is merged to the derivation, bearing the E_{RNR} feature in syntax in (39a). E_{RNR} is an uninterpretable feature, which must be checked by a focus feature from C. E_{RNR} instructs PF to leave the RNR target unpronounced in (39b). Note that the RNR target is not necessarily a constituent; it is everything "left" in the conjunct after the E_{RNR} feature is encountered by PF. Therefore, the phonological rule of E_{RNR} is such that any XP can be elided, following the feature, to the end of the first conjunct. Finally, e-GIVEN must be observed in RNR in (39c).

2.2. Consequences of E_{RNR}

In this section, I will lay out consequences of the ellipsis feature analysis for RNR. First, the ellipsis properties, found in RNR, such as sloppy identity, Vehicle Change effects, and morphological mismatches will be reanalyzed in terms of E_{RNR}. Second, we will see different predictions of licensing RNR between double object constructions and dative constructions. Finally, the E_{RNR} analysis will be able to predict cases where the RNR target is larger than what is actually left unpronounced.

2.2.1. Ellipsis properties

The semantic licensing condition of E_{RNR}, i.e. e-GIVENness, requires that the two conjuncts mutually entail each other, after F-closure. For example, in (40), the F-closure of the antecedent and the elided clause is identical, *∃x.∃R. x R-ed his father*, and the antecedent or the elided clause entails *∃x.∃R. x R-ed his father*. To account for how sloppy identity arises, we need to assume that the pronoun serves as a bound variable.[8] As Merchant (2001) proposes for cases of sluicing, I assume that the antecedent would be *Bill λx. x hates x' father* and the RNR clause would be *John λy. y likes <y's father>*. The result of F-closure of the antecedent and the elided clause would be still identical, *∃x.∃R. x R-ed x's father*. Given that the antecedent entails F-clo (E) in (40a), and the elided clause entails F-clo (A) in (40b), e-GIVENness is satisfied. Therefore, we predict that sloppy identity in RNR is available.[9]

(40) JOHN$_i$ LIKES$_{[ERNR]}$ <his$_i$ father>, but BILL$_j$ HATES his$_j$ father.
a. *Bill λx. x hates x' father* entails *∃y.∃R. y R-ed y's father.*
b. *John λy. y likes y's father* entails *∃x.∃R. x R-ed x's father*

Vehicle Change effects (Fiengo & May 1994) can be derived in a the similar manner. Let us take (41). The E_{RNR} feature is linked to the contrastively focused verb *SUBMITTED* in the first conjunct and licenses the ellipsis of the object DP. The e-GIVENness conditions are satisfied, on the grounds that the deleted DP *the article about himself$_8$ for the magazine* satisfies the Focus conditions just in case the pronoun refers to *John*, since the following formula $[\![\text{John}_8]\!]^g = [\![\text{himself}_8]\!]^g$ is established for any g (cf. Merchant 2006). An RNR configuration is possible with (41), but only under relatively limited conditions. Since there are some conditions under which the RNR configuration is possible, the sentence in (41) is grammatical and interpretable. However, for RNR to have been licensed, we require that the e-GIVENness conditions be met: the antecedent must entail the F-closure of the elided clause and vice-versa. Since *John* is not focused (clearly neither is *him*, given that it is not pronounced), the entailment will only go through if *him* and *John* are co-referential. This means that the only coherent interpretation for the sentence in (41) uses the pronoun as if it were a name,

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[8] Sloppy identity has been argued to be insensitive to phi-features in VP ellipsis, but it is not the case for RNR. Let us compare VP ellipsis (i) with RNR (ii):

(i) John$_i$ think he$_i$'s going to win the race, and Mary$_j$ does <think she$_j$'s going to win the race>, too.

(ii) *John$_i$ believed <that he$_i$ could win the race>, but Mary$_j$ almost knew that she$_j$ would win the race.

If RNR is ellipsis, it is reasonable to ask why only RNR is sensitive to phi-features in sloppy identity. I do not have a principled reason why they differ in this matter, but it seems that the requirement of contrastive focus in RNR constructions is relevant here. Notice that phi-feature mismatches in the sloppy reading are as hard in VP ellipsis in (iii) as they are in RNR (ii) when the two conjuncts stand in contrast with one another.

(iii) ??John$_i$ thinks he$_i$'s going to win the race, but Mary$_j$ doesn't <think she$_j$'s going to win the race>.

[9] The strict reading is predicted to arise in RNR when the pronoun is interpreted as referential.

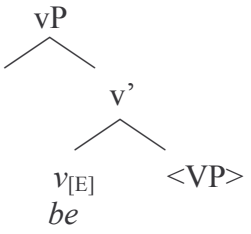
constantly referring to *John* regardless of the assignment function. Therefore, the R-expression can license the deletion of the pronoun.

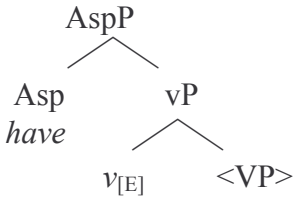
(41) Mary heard that John$_8$ SUBMITTED$_{[E_{RNR}]}$ <~~the article about **himself$_8$** for the magazine~~>, but Sue said that Bill actually WROTE – the article about **John$_8$** for the magazine.
   a. *Bill wrote the article about John$_8$ for the magazine* entails *∃x.∃R x R-ed the article about himself$_8$ for the magazine*.
   b. *John submitted the article about himself$_8$ for the magazine* entails *∃x.∃R x R-ed the article about John$_8$ for the magazine*.

The E_{RNR} analysis predicts that RNR would not require morphological identity, just as VP ellipsis does not. As noted earlier, when the copula *be* is involved in RNR, it must be overtly realized. Let us first consider (42a). Although the verb in the antecedent is a form of participle, the bare form of the verb can be deleted in the first conjunct. Now let us compare (42b) with (42c). The contrastive focus is assigned on the modal in the first conjunct, and the copula in the second, meaning that the location of the E_{RNR} feature is on the modal, not on the auxiliary. By hypothesis, the target for deletion in RNR is the string immediately following the word with the E_{RNR} feature. As in (42c), the RNR target is predicted to be *be settled with this non-sense negotiation*, where the copula is included in the target. Surprisingly, the deletion of the full RNR target results in ungrammaticality, as shown in (42c). In fact, the grammatical (42b) indicates that the copula must be pronounced even if they are within the RNR target by virtue of the fact that the E_{RNR} feature is on the modal.

(42) a. John WON'T$_{[E_{RNR}]}$ <~~**negotiate** her salary~~>, but Mary has ALREADY – **negotiated** her salary with the company.
   b. John WON'T$_{[E_{RNR}]}$ **be** <~~settled with this non-sense negotiation~~>, but MARY **IS** – settled with this non-sense negotiation.
   c. *John WON'T$_{[E_{RNR}]}$ <~~be settled with this non-sense negotiation~~>, but MARY **IS** – settled with this non-sense negotiation.

There are several possible ways to approach this mismatch between the RNR target and the unpronounced string. First, we might assume what we observe in (42b) is VP ellipsis in the first conjunct. In the context of VP-ellipsis, Merchant (2006) argues that *v* is capable of bearing the E feature, thereby forcing VP to be elided. Indeed, it captures impossibility of morphological mismatches for *be* and *have* in VP ellipsis, if one assumes that the auxiliaries are merged at least as high as *v*, as illustrated in (43a-b).[10] They are not within the domain of VP ellipsis.

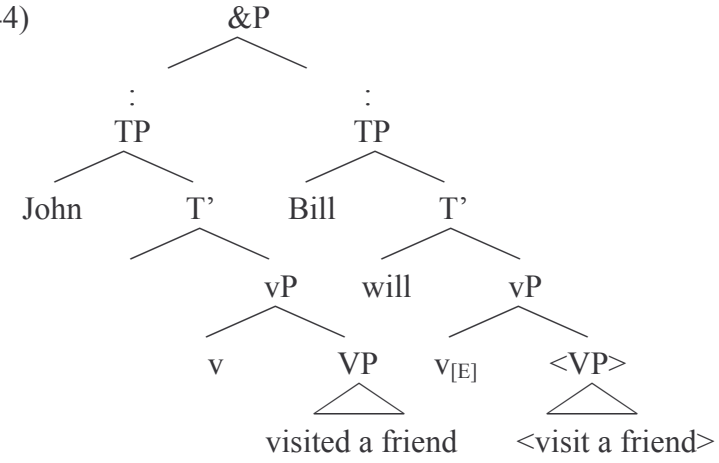
(43) a.


b.


[10] For concreteness, here I suppose that *have* heads an Aspectual phrase and *be* is generated in *v*.

On the other hand, a lexical verb stays in V and is subject to be elided in VP ellipsis whether or not its morphology matches the antecedent, as shown in (44).[11]

(44)



However, as we observed in (24), contrastive focus is a key factor in licensing RNR. Thus, the E_{RNR} feature cannot be linked to the copula in (42b) since *be* and *is* are not contrastively focused. Therefore, Merchant's approach for the morphological mismatches may not be applicable to RNR.

Second, Lasnik (1999) proposes that lexical verbs and the auxiliaries in English are numerated in different ways. He argues that lexical verbs enter the derivation as a bare form, and affixes are realized in verbs at PF. In VP ellipsis, the bare form of the verb can be elided under strict identity with any other form of verb. Let us take (45), for example. The elided vP finds an identical vP in the antecedent, on the grounds that the bare form of the verb *stop* exists in syntax (45b).

(45) a. John stopped by my office, and Mary will, too.
b. John –ED **stop by my office**, and Mary will <~~**stop by my office**~~> too.

On the other hand, *be* and *have* are numerated as fully inflected. Note that, in (46), the copula is inflected with the past tense morpheme, and the one in the elided vP must be its bare form. Since the copula enters the derivation fully inflected, the morpheme in the copula must match. Matching inflection would yield ungrammaticality as shown in (46a). By hypothesis, the copula cannot be divided into an affix and its bare form, so *be* must be realized as shown in (46b). Therefore, the only possibility is to realize be in the second conjunct as in (47).

(46) *John was asleep, and Mary will, too.
a. *John was asleep, and Mary will <~~was asleep~~>, too.
b. *John -PAST be asleep, and Mary will <~~be asleep~~>, too.

(47) John was asleep, and Mary will be <~~asleep~~>, too.

Lasnik (1999) argues that the same holds for the auxiliary *have*. In (48a), the morphology of *have* is mismatched between the conjuncts, so it should be overtly realized in the second

[11] Following Merchant (2006), I assume that there is no V-to-v movement.

conjunct. (48b) indicates that the phonological identity is not enough. The bare form of *have* needs to be realized even if it can find the identical phonological string in the first conjunct.

(48) a. Mary has left the room earlier, and Bill could *(have).
b. The boys have called their mother, but the girls shouldn't *(have).

Lasnik's (1999) analysis appears to be applicable to RNR. The morphology of the lexical verb does not have to match in RNR in (42a), on the grounds that the bare form of the verb in the second conjunct matches the one in the RNR clause, as shown in (49a). On the other hand, the copula needs to be realized in the second conjunct if it is not identical to the first conjunct. As shown in (49b), the fully inflected copula in the RNRed target would cause the derivation to crash. The only way to save this RNR structure would be to pronounce the copula, as in (49c), so that the deletion does not include the copula. The same holds for the auxiliary *have* (50a-b).

(49) a. John WON'T$_{[E_{RNR}]}$ <~~**negotiate** her salary with the company~~>, but Mary has ALREADY -ED – [**negotiate** her salary with the company].
b. *John WON'T$_{[E_{RNR}]}$ <~~IS settled with this non-sense negotiation~~>, but MARY – **IS** settled with this non-sense negotiation.
c. John WON'T$_{[E_{RNR}]}$ **be** <~~settled with this non-sense negotiation~~>, but MARY **IS** – settled with this non-sense negotiation.

(50) a. The women SHOULDN'T$_{[E_{RNR}]}$ *(have) <left>, but THE MEN HAVE – left.
b. Mary SHOULDN'T$_{[E_{RNR}]}$ *(have) <had a driver's license>, but JOHN HAS – a driver's license.

The way described here for (49c) raises an interesting question, namely whether the RNR target, imposed by the E_{RNR} feature, includes *be* and *have* in (49c) and (50a-b). In section 2.2.3, I will argue that they are inside the RNR target, but undeletable for independent reasons. This analysis can be understood as following from the MaxElide constraint (Fiengo & May 1994, Kennedy 2002, Takahashi & Fox 2005, Merchant to appear), in the sense that the RNR target, defined by the placement of the E_{RNR} feature, might be different from the deletable target, due to independent factors. Also, I will propose that the deletion process operates right-to-left, and stops prior to *be* and *have* in cases of (49c) and (50a-b).

2.2.2. Double object constructions vs. Dative structures

Double object constructions differ from dative constructions with respect to the availability of RNR. Let us consider the contrast in (51a-b). It appears that in a dative structure (51a), RNR can occur even when not targeting the right-most position in the first conjunct. On the other hand, such a possibility is not available in double object construction (51b). Under the system I have been developing, appearances must be deceiving in (51a), because the ellipsis triggered by an E_{RNR} feature will leave the entire remainder of the conjunct unpronounced. Therefore, we are forced to assume that the apparent remnant is actually to the left of the E_{RNR} feature, either because a movement that would normally have left it at the end does not happen, which I will suggest shortly, or because the remnant moves past the head on which the E_{RNR} feature is found.

(51) a. Mommy gave <~~an interesting book~~> to MARY, and Daddy gave to BILL – an interesting book.
b. *John gave ~~Mary~~ a BOOK, and Bill gave Mary a PRESENT.

This discrepancy can be understood if we assume that dative constructions are derived from the theme DP, originally base-generated below the goal PP, undergoing movement to its surface position (Dryer 1987, Aoun and Li 1993, Pesetsky 1995, Takano 1998, Sauerland 2000, and Sauerland and Elbourne 2002). Under this view, we can assume that the underlying structure of the first conjunct in (51a) is (52a), and the linear order is derived by movement of the object DP *an interesting book*, passing the PP, as shown in (52b).

(52) a. Mommy gave to Mary an interesting book.
b. Mommy gave an interesting book to Mary t.

I propose that E_{RNR} is attached to the PP *to MARY* in the base position of the first conjunct, and license the ellipsis of the object DP *an interesting book* in (53). To maintain parallel focus structure, the object DP in the second conjunct does not undergo movement. If it undergoes movement, the well-formedness of this sentence is degraded in (54), for the same reason (32) is not acceptable.

(53) Mommy gave to $MARY_{[E_{RNR}]}$ <~~an interesting book~~>, and Daddy gave to BILL – an interesting book.

(54) *Mommy gave to MARY, and Daddy gave an interesting book to BILL t.

On the other hand, the double object construction is base-generated exactly as shown in the surface structure of (51b). One type of evidence comes from NPI licensing. Larson (1988, 1990), Aoun and Li (1989, 1993), and Marantz (1993) argue that the NPI licensing possibilities indicate that the indirect object asymmetrically c-commands the direct object position in (55). In particular, the ungrammaticality of (55b) tells us that *anyone* is not below the direct object at any time of the derivation.

(55) a. John gave nobody any valuable present.
b. *John gave anyone nothing.

With this, let us return to (55b). The direct object in each conjunct is contrastively focused, hence eligible to bear E_{RNR}. Since the direct object cannot move, there is no way for E_{RNR} to license the elision of the indirect object in the first conjunct. Thus, (55b) is ruled out.

2.2.3 Focus and agreement in the C head

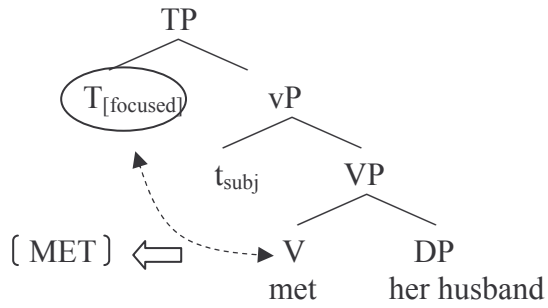
There are some RNR cases in which the RNR target in the first conjunct and its antecedent mismatch. Let us consider (56). Note that the RNR target is *her husband at the train station*, but the antecedent should include the verb, assuming that the corresponding antecedent is determined as word strings immediately following the focused constituent, *DIDN'T* in (56).

Therefore, it seems to be puzzling since the conjuncts would generate different sets of alternatives, as shown in (56a-b).

(56) Cathy MET, but Mary DIDN'T – meet her husband at the train station.
a. {Cathy met her husband at the station, Mary met her husband at the station, Cathy called her husband at the station, Mary called her husband at the station, Cathy found her husband at the station, Mary found her husband at the station…}
b. {Mary did meet her husband at the station, Cathy did meet her husband at the station, Mary didn't meet her husband at the train station, Cathy didn't meet her husband at the train station…}

To get around this problem, I argue that it is the null T (cf. [Verum Focus]), not the verb in the first conjunct, that is focused.[12] Since focus features must be phonetically realized but cannot be realized on the null T, the verb picks up the focus pronunciation, as in (57), in the same way that the main verbs pick up tense morphology (c.f., Halle & Marantz 1993).

(57)

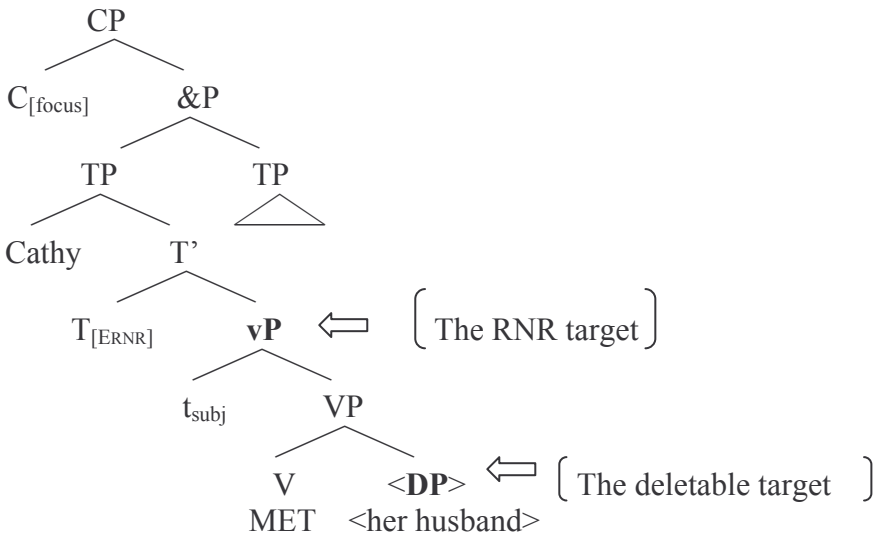


The reasoning above indicates that T is contrastively focused, so it is the null T that bears E_{RNR}. Therefore, the vP in the first conjunct is eligible to be RNRed. When the coordinate structure is merged to CP, the focus feature in C agrees with E_{RNR} in the null T, and licenses the elision of the RNR target, which is the vP in the first conjunct. However, the whole vP cannot be elided since there is an intervening focused verb, so only the object DP is deletable in (58) (MaxElide, Takahashi & Fox 2005).[13]

[12] While [Verum Focus] pertains to polarity differences, what T can care about is rather broad given that modals and auxiliaries, including polarity, land at T in the end. Therefore, these two assumptions make different predictions when sets of alternatives are calculated with respect to e-GIVEN.

[13] Takahashi & Fox (2005) argue that the target of ellipsis must be the largest within some Parallelism Domain (PD). An elided clause is considered a PD when it is semantically identical to an antecedent clause. It is important to notice that the target of ellipsis within PD may differ from the actual deletable target due to independent factors. Takahashi & Fox (2005) discuss this is in the context of re-binding phenomena of ellipsis.

(58)



I assume that the focus feature in T generates the same sets of alternatives that the focused dummy *do* does. Therefore, at LF, both conjuncts yield the same sets of alternatives as in (59a-b).

(59) Cathy $T_{[ERNR]}$ <MET her husband at the train station>, but Mary DIDN'T – [meet her husband at the train station].
   a. Cathy {Auxiliaries, Modals, dummy do, including polarity} met her husband at the train station.
   b. Mary {DIDN'T, Auxiliaries, Modals, dummy do, including polarity} meet her husband at the train station.

I further assume that polarity is within the set of alternatives on the grounds that the negativity in English moves along with modals and auxiliaries. For example, the negative clitic *n't* is taken to adjoin to T in the second conjunct in (59).

Now let us consider cases where the negation is separated from the modals and pronounced in a different position in the tree. In (60), the modals are constrastive, so E_{RNR} is linked to *COULD*. Also, the negation should be focused since the polarity is also contrastive. In such a case, I argue that E_{RNR} is transmitted to the negation.[14]

(60) Mike [$COULD_{[\ ]}$ $NOT]_{[ERNR]}$ <~~drive his car~~>, so Mary SHOULD – [drive his car].

[14] I argue the same thing happens to VP ellipsis as well. Let us assume that T bears the E feature for VP ellipsis, in the line with Lobeck (1995), contra Merchant (2006). Assuming that dummy *do* is merged to T and the negation is merged to its own projection, as in (i), a question arises how VP is elided skipping the intervening negation.

(i) John likes candies, but Bill $does_{[E]}$ not <~~like candies~~>.

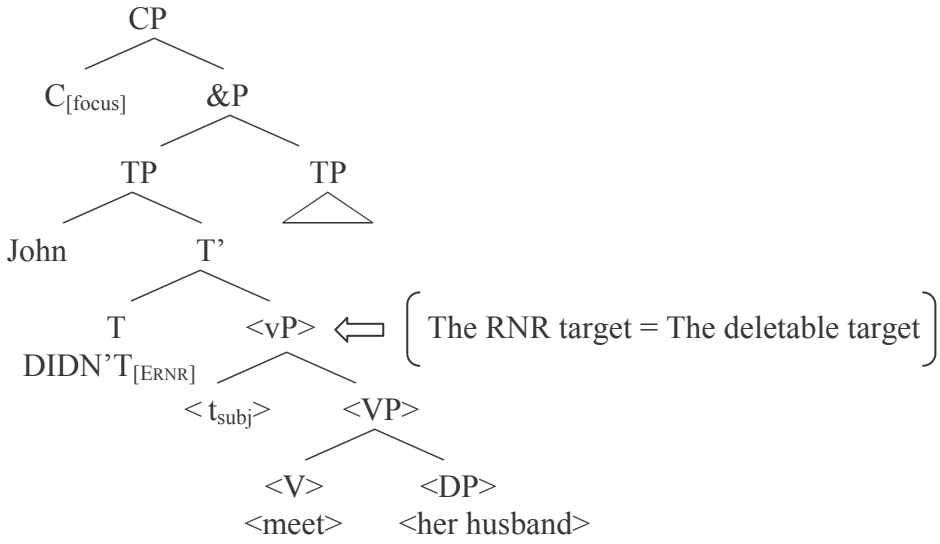
I assume that the E feature is transmitted to the negation as in (ii). The modal-auxiliary combination in section 2.2.1 can be understood in the same way that the E feature is merged to the modal and transmitted to the auxiliary in (iii)

(ii) John likes candies, but Bill does $not_{[E]}$ <~~like candies~~>.

(iii) John wasn't working hard, but he should have $been_{[E]}$ <~~working hard~~>

If either a modal or an auxiliary exists, it picks up the focus pronunciation, since it is closer to T than the verb, shown in (61). E_{RNR} is checked by the focus feature from C, and licenses the deletion of VP. Note that here the RNR target is the same as the deletable target.

(61)



As assumed, all the modals and auxiliaries create the same sets of alternatives, so RNR is predicted to be licensed. That prediction is borne out in (62-65).

(62) Jane LOVES, but she SHOULDN'T love – her friend's husband.

(63) Jane DOES, but she SHOULDN'T love – her friend's husband.

(64) Joe GAVE, but Mary COULDN'T give – a present to her teacher.

(65) Joe DID, but Mary COULDN'T give – a present to her teacher.

The possibility that the RNR target can differ from the deletable target provides an important theoretical implication: The deletion must occur right-to-left. Only that way can we predict the deletion in (58) to be available. If the deletion occured left-to-right after the E_{RNR} feature, the deletion would be immediately blocked by the focused verb *MET*, leaving the rest of the RNR target, *her husband at the train station*, pronounced. As far as I know, there has been no prior proposal for the directionality of the deletion process in the literature on RNR and ellipsis.[15] In forward ellipsis, either direction seems to give us the right result, as shown in (66).

(66) a. Jon gave the movie ticket to Mike, but Mary wanted to$_{[E]}$ <~~give the movie ticket to Mike~~>, too.
b. John finished writing his dissertation on Tuesday, but Bill did$_{[E]}$ <~~finish writing his dissertation~~> on Friday.
c. I met somebody at the party, but I don't remember WHO$_{[E]}$ <~~I met~~>.

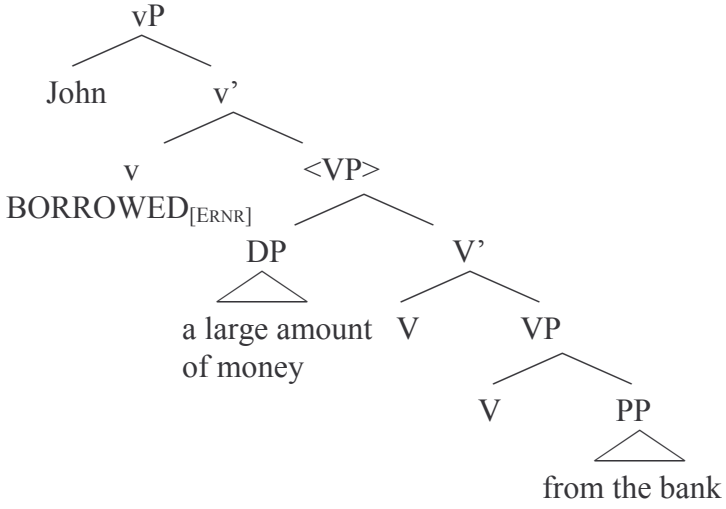
[15] However, in some sense, the definition of MaxElide implies a right-to-left deletion process since it means deletion may occur up to an intervening factor.

Alternatively, it might be possible to suppose that once the ellipsis begins after the E_{RNR} feature, strings can be unpronounced as soon as possible. In the case of (58), the deletion cannot start right away, due to the focused verb *MET*. Once passing *MET*, the deletion starts leaving things unpronounced. It would give us the same result. However, in the next section, I will show that this alternative cannot be right. I will provide evidence that this alternative account would fail to capture, and that the deletion at PF must operate from right to left. I will also revisit constituency in RNR and propose that RNR obeys constituency.

3. Non-constituency in RNR revisited

In the first section, we observed there is evidence that non-pronunciation under RNR is not constrained by constituent structure, although this seems incongruent with forward ellipsis, which has been argued to target only constituents. We also noted that we would be able to reanalyze non-constituent RNR cases under Larson's VP shell structure. For example, in (67), the object DP and the vP adjunct would form a constituent if the adjunct is merged to the complement position of the lower VP, as shown in the tree structure.

(67) John [BORROWED [~~<a large amount of money>~~] ~~<from the bank>~~], and Bill [STOLE – [a large amount of money] [from the bank]].



However, the Larsonian VP shell construction does not much help for some RNR cases found in SOV (68a) or V2 languages (68b), where part of the matrix clause along with part with the embedded clause are elided through RNR. In the Korean example (68a), the verb of the embedded clause and vP of the matrix clause are elided, and in the German example (68b), the NP *Katzen* 'cats' and the verb inside the relative clause and the verb of the matrix clause are elided. Those elements do not form constituents at any time during the derivation even under a VP shell analysis.

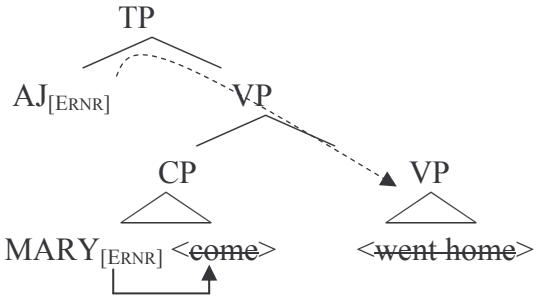
(68) a. [$_{TP}$ AJ-nun [$_{CP}$ MARY-ka ~~<wa-seo>~~] ~~<cip-e ka-ess-ta>~~], kuliko
AJ-TOP M.-NOM come-because home-to go-PAST-DEC CONJ
[$_{TP}$ SUE-nun [$_{CP}$ JOHN-i wa-seo] cip-e kas-ess-ta.]
S.-TOP J.-nom come-because home-to go-PAST-DEC.
'AJ went home because Mary came, and Sue went home because John came.'
(Korean, Ha 2007)

b. [$_{CP}$ Ich habe einen Mann, [$_{CP}$ der DREI <~~Katzen besitzt~~>], <~~gekannt~~>], und
I have a man who three cats owns knows and
[$_{CP}$ Sie hat eine Frau, [$_{CP}$ die VIER Katzen besitzt], gekannt.]
she has a woman who four cats owns knows
'I have known a man who owns three cats, and she has known a woman who owns four cats.'

(German, Wilder 1997)

One possible solution would be to suppose that there are multiple E_{RNR} features in the first conjunct. Notice that the subject of the matrix and embedded clause are each contrastively focused in (68a). Let us assume that each subject can bear E_{RNR}. In the first conjunct of (68a), there are two independent deletion processes, as shown in (69). The lower E_{RNR} feature in *MARY* licenses elision of its complement, so only the embedded verb is elided. The upper E_{RNR} feature in the matrix subject *AJ* elides the matrix VP. In other words, the entire embedded clause including *Mary* is the target of RNR for the upper E_{RNR} feature, and the post-*Mary* material is the target of RNR for the lower E_{RNR} feature. The lower E_{RNR} feature actually has no effect, since the embedded verb has been scheduled to be unpronounced by the upper E_{RNR} feature. Given that the deletion goes from right to left at PF, it begins from the strings of the matrix VP and then proceeds into the embedded VP. The deletion, however, has to stop prior to *Mary*, which has focus stress, and is thus unable to be deleted.

(69) [$_{TP}$ AJ-nun$_{[ERNR]}$ [$_{CP}$ MARY-ka$_{[ERNR]}$ <~~wa-seo~~>] <~~cip-e ka-ess-ta~~>]…
AJ-TOP M.-NOM come-because home-to go-PAST-DEC CONJ



If this is correct, we can predict that any unfocused material between the upper and the lower E_{RNR} feature would survive. The prediction seems to be borne out in (70). The adverb *ilccik* 'early' between the E_{RNR} features in the first conjunct cannot be deleted.

(70) [$_{TP}$ AJ-nun [$_{CP}$ **ilccik** MARY-ka <~~wa-seo~~>] <~~cip-e kaya hay-ss-ta~~>], kuliko
AJ-TOP early M.-NOM come-because home-to go must-PAST-DEC CONJ
[$_{TP}$ SUE-nun [$_{CP}$ **ppali** JOHN-i wa-seo] cip-e kaya hay-ss-ta.]
S.-TOP early J.-nom come-because home-to go must-PAST-DEC.
'AJ had to go home because Mary came early, and Sue had to go home because John came early.'

The non-deletion of the adverb provides us with two important theoretical implications; First, it supports the claim that the deletion at PF operates from right to left. The upper E_{RNR} feature would be able to delete the adverb if the deletion worked the other way around. Second, the deletion stops when it encounters any undeletable material and goes no further, so the adverb is not deleted.

Let us consider the German case (68b). Here the object DP *MANN* 'man' and the numeral in the relative clause are contrastively focused, so let us assume that they can bear the E_{RNR} feature, as in (71). By hypothesis, the RNR target is determined by the upper E_{RNR} feature, the matrix vP and the relative clause are included in the RNR target. First, the upper E_{RNR} feature licenses the elision of its constituent from right to left. Therefore, the matrix verb *gekannt* 'know' is elided first and then the relative clause. The lower E_{RNR} feature in the numeral quantifier *DREI* 'three' would delete the NP, but it has no effect, since it is contained by the complement of the upper E_{RNR} feature. The deletion stops prior to the focused numeral quantifier, so that the relative pronoun is pronounced.

(71) $[_{TP}$ Ich habe einen MANN$_{[ERNR]}$, $[_{CP}$ der DREI$_{[ERNR]}$ <~~Katzen besitzt~~>], <~~gekannt~~>]…
I have a man who three cats owns knows

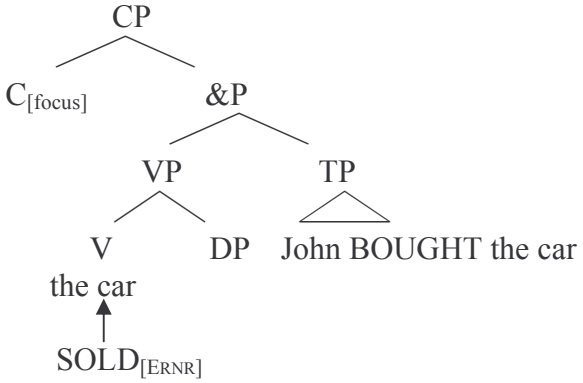
To summarize this section, my central proposal, regarding constituency in RNR, is that at the level of syntax, the E_{RNR} feature licenses the deletion of its complement. That is how the matrix verb in (68a-b) can be elided. If there were no E_{RNR} in the matrix subject (68a), the whole RNR would not be licensed, due to a violation of the Right Edge Restriction (RER) (Sabbagh 2007). The RER states that the right edge of the first conjunct must be unpronounced in RNR. Therefore, if there is no upper E_{RNR} feature, (72) would result. Since the subject in the embedded clause only licenses the deletion of its complement, nothing can delete the matrix verb. The pronunciation of the matrix verb violates the RER.

(72) *$[_{TP}$ Subject$_{[ø]}$ $[_{CP}$ Subject$_{[ERNR]}$ <~~verb~~>] verb] and …

In addition, at PF, the deletion needs to obey other rules, such as MaxElide. Therefore, a gap between syntactic licensing and phonological deletion could arise. We observe such a case in (70). The upper E_{RNR} feature licenses the larger RNR target, but the deletable target is smaller due to an intervening focus. All in all, the final version of E_{RNR} is proposed in (73).

(73) E_{RNR} (*The final version*)

a. Syntax of E_{RNR}: The E_{RNR} feature enters the derivation with contrastively focused lexical item, checked by focus feature of the C head. E_{RNR} determines the categorical domain of the RNR target.



b. Phonology of E_{RNR}: The deletion at PF operates from the end of the first conjunct up to any focus intervener.
XP → Ø/ E_{RNR} ____ $]_{TP1}$.

c. Semantics of E_{RNR}: e-GIVEN must be observed in RNR. (e.g. E → F-clo (A), A → F-clo (E).

i) Mary sold the car → F-clo (E) = ∃x.∃R. x *R-ed* the car
ii) John bought the car → F-clo (A) = ∃x.∃R. x *R-ed* the car

4. Conclusion

In this paper, I have argued that RNR is an ellipsis phenomenon and licensed by semantic identity. Then, I proposed an ellipsis feature for RNR, a variant of the E feature proposed by Merchant (2001). That is, the E_{RNR} feature imposes syntactic, semantic and phonological requirements. I suggested that the point of the entrance of E in RNR in syntax differs from in the other ellipsis, on the grounds that the E_{RNR} feature enters derivation along with contrastively focused lexical item in the first conjunct in syntax, and that it must be checked by a focus feature from the C head. Crucially, during the syntactic derivation, the RNR target is categorically determined, with which we maintain the view that only constituents can be elided, including RNR. Also, the semantic licensing conditions, i.e. e-GIVENness, must be satisfied: After F-closure, the conjuncts must mutually entail each other. At PF, then, the syntactically licensed the E_{RNR} feature is interpreted as an instruction to leave the RNR target unpronounced to the maximum extent possible, by deleting material in the target from right to left.

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References

Aoun, J, & Y.-H. A. Li (1993). *Syntax of scope*. MIT Press, Cambridge, MA.
Abels, K. (2004). Right Node Raising: ellipsis or ATB movement? *North East Linguistics Society* 34, pp. 44–59.
Bachrach, A. & R. Krazir (2006). *Right Node Raising and delayed spell-out*. Ms., MIT.
Bartos, H. (2001). Sound-form non-insertion and the direction of ellipsis. *Acta Linguistica Hungarica* 48, pp. 3–24.
Bošković, Ž. (1997/2004). Two notes on right node raising. *University of Connecticut Working Papers in Linguistics* 12, pp. 13–24.
Chomsky, N. (1995). *Minimalist program*. MIT Press, Cambridge, MA.
Fiengo, R. & R. May (1994). *Indices and identity*. MIT Press, Cambridge, MA.
Gergel, R. (2004). Short-distance reanalysis of Middle English modals: evidence from ellipsis. *Studia Linguistica* 58, pp. 53-87.
Ha, S. (2006). Multiple Dominance CAN'T, but ellipsis CAN account for Right Node Raising. To appear in *Proceedings of the 42nd Chicago Linguistic Society* (CLS 42). Chicago University Press.
Ha, S. (2007). Contrastive focus: licensor for Right Node Raising. In proceedings of the 37th North East Linguistic Society. GSLA. Amherst, Umass.
Hartmann, K. (2000). *Right Node Raising and gapping: Interface conditions on prosodic deletion*. John Benjamins, Amsterdam.

Kennedy, C. (2002). Comparative deletion and optimality in syntax. *Natural Language and Linguistic Theory* 20, pp. 553–621
Klima, E. (1964). Negation in English. Fodor, J. A., & J. J. Katz (eds.), *The Structure of Language*, Prentice Hall, Englewood Cliffs, NJ.
Larson, R. (1988). On the double object construction. *Linguistic Inquiry* 19, pp. 335–391.
Larson, R. (1990). Double objects revisited: Reply to Jackendoff. *Linguistic Inquiry* 21, pp. 589–632.
Lasnik, H. (1999). Verbal morphology: Syntactic structures meets the Minimalist Program. Lasnik, H. (ed.), *Minimalist Analysis*. Blackwell, Malden, Mass., pp. 97–119.
Lebeaux, D. (1990). Relative clauses, licensing, and the nature of derivation. In Proceedings of NELS 20. GLSA, University of Massachusetts, Amherst, MA, pp. 318–332.
Lightfoot, D. (1999). *The development of language: Acquisition, change, and evolution*. Blackwell, Malden, Mass.
Lobeck, A. (1995). *On ellipsis: functional heads, licensing, and identification*. Oxford University Press, Oxford.
Marantz, A. (1993). Implications of asymmetries in double object constructions. Mchombo, S. A. (ed.), *Theoretical aspects of Bantu grammar*, CSLI Publication, Stanford, CA. pp. 113–150.
Merchant, J. (2001). *The syntax of silence*. Oxford University Press, Oxford.
Merchant, J. (2004). Fragments and ellipsis. *Linguistics and Philosophy* 27, pp. 661–738.
Merchant, J. (2006). An asymmetry in voice mismatches in VP ellipsis and pseudogapping. Ms. University of Chicago.
Merchant, J. (to appear). Variable island repair under ellipsis. Johnson, K. (ed.), *Topics in ellipsis*, Cambridge University Press, Cambridge.
Munn, A. (1993). *Topics in the syntax and semantics of coordinate structures*. Doctoral dissertation, University of Maryland, College Park.
Pesetsky, D. (1995). *Zero syntax: Experiencers and cascades*. MIT Press, Cambridge, MA.
Postal, P. (1998). *Three investigations of extraction*. MIT Press, Cambridge, MA.
Rizzi, L. (1997). The fine structure of the left periphery. Hageman, L. (ed.), *Elements of grammar: Handbook of generative syntax.* Kluwer, Dortrecht, pp. 281–337.
Ross, J. (1967). *Constraints on variables in syntax*. Doctoral dissertation, MIT.
Sabbagh, J. (2003). Ordering and linearizing rightward movement. *West Coast Conference in Formal Linguistics* 22, pp. 436–449.
Sag, I. (1976). *Deletion and logical form*. Doctoral dissertation, MIT.
Sauerland, U. (2000). Syntactic economy and quantifier raising. Ms., University of Tubingen.
Sauerland, U. & P. Elbourne (2002). Total reconstruction, PF-movement, and derivational order. *Linguistic Inquiry* 33, pp. 283–319
Takahashi, S. & D. Fox (2005). MaxElide and the re-binding problem. Paper presented at *Semantics and Linguistics Theory* 15.
Takano, Y. (1998). Object shift and scrambling. *Natural Language and Linguistic Theory* 17, pp. 817–889.
Uriagereka, J. (1999). Multiple spell-out. S. Epstein, & N. Hornstein (eds.), *Working Minimalism*, MIT Press, Cambridge, MA, pp. 251–282.
Warner, A. (1986). Ellipsis conditions and the status of the English copula. *York Papers in Linguistics* 12, University of York, Heslington, pp. 153–172.
Wilder, C. (1999). Right Node Raising and the LCA. *West Coast Conference in Formal Linguistics* 18, pp. 586–598.
Williams, E. (1977). Discourse and logical form. *Linguistic Inquiry* 8, pp. 101–139.
Winkler, S. (2005). *Ellipsis and focus in generative grammar*. Mouton De Gruyter, Berlin.