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What Makes a Unification Possible in Right Node Raising Constructions of English?*

Myung-Kwan Park
(Dongguk University)

Park, Myung-Kwan. 2011. What Makes a Unification Possible in Right Node Raising Constructions of English? *Linguistic Research* 28(3), 451-469. This paper explores what makes successful unification of the two sub-elements of the preceding two conjunct clauses in the course of building the RNRed element via External Remerge that I have developed in my previous papers (Park (2010a-c)). In this paper I first show that what matters for the successful unification of them is not just form but syntactic identity which includes both strict and sloppy identity. In this regard, the union operation that is proposed for the unification is a syntactic operation sensitive not to PF but syntactic identity. I also show that the overt and the covert coordinating conjunction play different roles in distinguishing two types of the RNTed element: the one with respective reading and the other with cumulative reading. I finally show how ER, the union and the adjunction operations interact to add relational adjectives such as *different* and *same* to the RNRed element built in syntax. **(Dongguk University)**

Keywords right node raising, External Remerge, union operation, Spell-Out, strict and sloppy identity, overt and covert coordinating conjunction, respective and cumulative reading, relational adjectives, adjunction

1. Introduction

In my previous papers (Park (2010a-c)) I noted that there are at least three types of 'right node raising' (RNR) constructions in English, and argued that they are derived in a uniform way via External Remerge (ER) followed by the proposed operation of union that applies to two elements, each from the preceding two different conjunct clauses. The relevant examples illustrating three types of RNR constructions in English are as follows:

* I wish to thank two anonymous reviewers of this journal for their helpful comments and suggestions. All remaining errors, however, are mine.

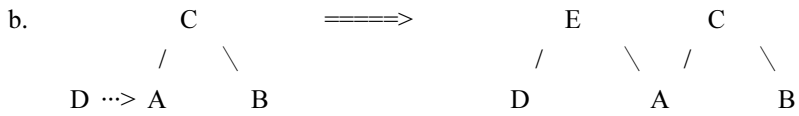
(1) John bought, and Mary broke, an expensive Chinese vase.
(2) John loves, and Mary hates, oysters and clams, respectively.
(3) Greg captured, and Lucille trained, 312 frogs all together.

Each of the above sentences has its own characteristics. First, in (1) the expression ***an expensive Chinese vase*** at the right edge of the sentence is shared by the preceding first and second incomplete conjunct clauses. Second, in (2) the expression ***oysters and clams*** at the right edge is constructed by the overt coordinating conjunction ***and***, and the first conjunct as one part of this expression is interpretatively associated with the preceding first conjunct clause, whereas the second conjunct as the other part of it is interpretively associated with the preceding second conjunct clause. Third, in (3) the expression ***312 frogs*** at the right edge is apparently similar to the one in (1), in that it does not involve the overt coordinating conjunction; however, interpretation-wise, the former is comparable to the right-edge expression in (2), in that the number of frogs result from adding the number of frog captured by Greg up to the number of frogs trained by Lucille. In other words, the formation of the expression at the right edge of (3) can be said obviously not to involve an overt coordinating conjunction, but in fact to involve a covert coordinating conjunction (say ***&***), which can be ascertained by considering the interpretation of it.

In the previous papers I tried to show that the three types of RNR constructions can receive a unified analysis by adopting the idea of External Remerge, ER, recently elaborated on by de Vries (2009). There are indeed two types of more well-known merge operation, External Merge and Internal (RE)Merge. The third type ER is a hybrid one, which is a combination of External and Internal (RE)Merge. It behaves like External Merge, in that it introduces a new lexical item from the numeration (or more generally, a new root constituent formed at a certain workspace). At the same time, it behaves like Internal (RE)Merge, in that the new lexical item from the numeration is merged with a term of a derived structure, as follows:

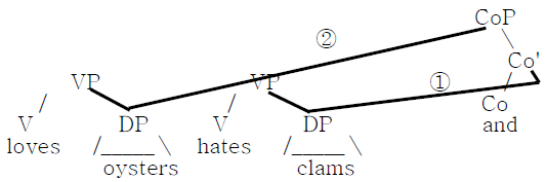
(4) a $[_C$ A B] and Merge (D, A) ---> $[_C$ A B] and $[_E$ D A]
(regular *External Remerge*: mDom[1] of A)

[1] mDom refers to multiple dominance.



The relevance of ER to the analysis of RNR is that the two elements at the right edges of the conjunct clauses can be conjoined together by ER. For example, in the course of deriving (2), the following derivation obtains via ER:

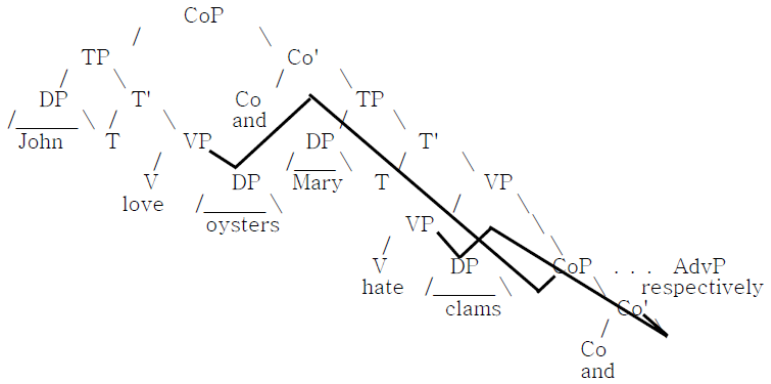
(5)



At this point of derivation, two VPs are constructed first. Now, one of the verbs is ERed with the coordinating conjunction ***and***. And then the other verb is ERed with ***and'***, forming ***andP***.

Now, the complete derivation of (2) can be represented as follows[2]:

(6)



What about the sharing type of RNR construction as in (1)? I suggested that the exactly same process as found in the 'interwoven dependency' (ID) type of RNR construction as in (2) is employed in producing the RNRed element of the sharing

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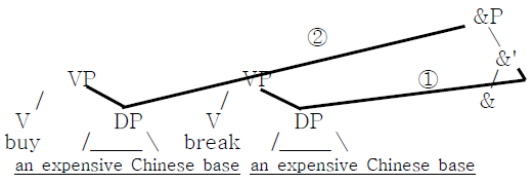
[2] In the structure of (6), the adverb ***respectively*** is not adjoined yet, which will be returned to later.

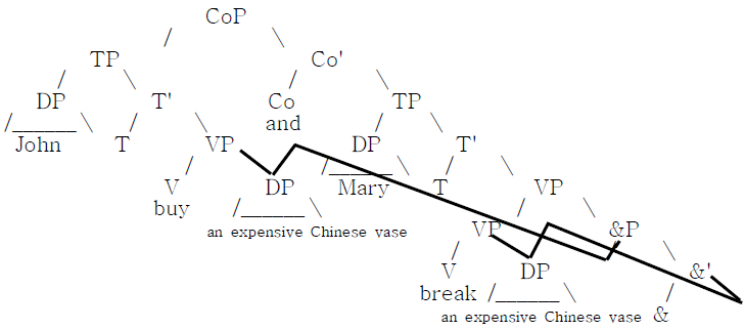
type of RNR construction. In other words, the two VPs are constructed first, and the DP objects inside them undergo ER with the invisible coordinating conjunction (&) and its projection in a step-by-step manner, as follows:

(7)



The full derivation of the sentence (1) is as in (8), which is almost the same as (6) except for the resulting form of RNRed element:

(8)



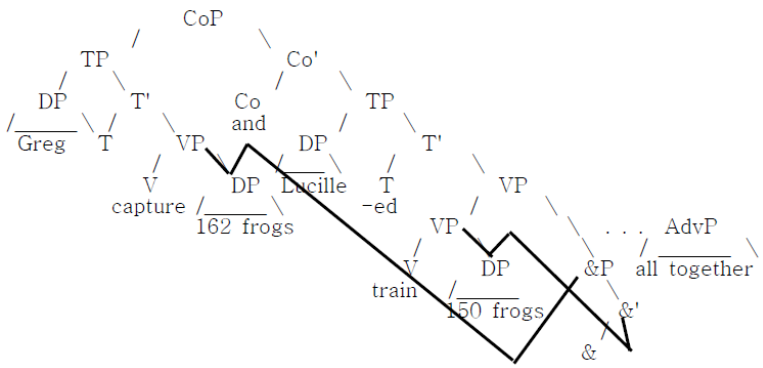
Is it harmless to generate the coordinate structure for the sharing case of RNRed element? It seems so. Let's suppose that the invisible coordinating conjunction (***&***) also plays a role as a union operator for the two conjoined elements. That is, the invisible coordinating conjunction (***&***) can be the union operator (∪). In a basic operation, A ∪ A = A. Hence in (8) the conjoined RNRed element [***an expensive Chinese vase*** [***& an expensive Chinese vase***]] results in yielding [***an expensive Chinese vase***]. Recall that, in the case of ID, two conjoined expressions are realized intact with the visible coordinating conjunction (***and***) which obviously functions as a union operator (∪). This approach based on edge-coordination is presumably the right way of accounting for both the 'sharing' and the ID instances of 'RNR' construction.

Now turning to cases involving 'additive coordination' (AD) in (3), I repeat the example (3) as (9):

(9) Greg captured and Lucille trained -- 312 frogs all together.

I suppose that this instance involving AD is not different from instances involving interwoven dependency. The ER-based account also provides a solution to the formation of this type of RNRed element. The idea is that the two DP objects in the first and second conjunct clauses are conjoined together via ER. For example, suppose that one object in the first conjunct clause is ***162 frogs*** and the other object in the second conjunct clause is ***150 frogs***. They are combined together in the following manner[3]:

(9)



The resulting conjunction structure [***162 frogs*** [***& 150 frogs***]], I assume, is spelled out as ***312 frogs*** in the post-syntactic morpho-phonological component that intervenes between syntax and PF.

In this paper I continue on with the ER-based analysis of RNR constructions, elaborating further on the points that I left open or unclear in the previous papers, such as (i) the nature of identity for the union operation that applies after ER in derivation, (ii) the contrast between the overt and the covert coordinating conjunctions such as ***and*** and ***&***, and (iii) the adjunction of the relational adjectives

[3] Likewise, in the structure of (9), the adverb phrase ***all together*** is not adjoined yet, which will be returned to later.

such as ***same*** and ***different***. All these points are brought forth by Shin and Chung (2011) as possible drawbacks in my ER-based analysis of RNR constructions.

2. Not Strict Identity but Non-distinctness Matters

As I argued in Park (2010b), in the course of forming the shared DP at the right-edge position what matters for the identity of the two conjunct DPs feeding into the union operation is not strict identity but non-distinctness. What I meant by non-distinction is that the union operation unifies two DPs into one not only when the two DPs are strictly identical, but also when they are sloppily identical. The relevant discussion of this point can also be found in (1), repeated below:

(10) John bought, and Mary broke, an expensive Chinese vase.

In (10), ***an expensive Chinese vase*** can be construed with the reading such that *John bought an expensive Chinese vase, and Mary broke this very vase*. In addition to this reading, the example (10) also allows another reading, which is that *John bought one expensive Chinese vase, and Mary broke another expensive Chinese vase.* As far as I know, this peculiar reading allowed by RNR was first discussed by Peterson (2001) with the following example:

(11) John bought but Bill only leased, a new Saab.

In (11), two different cars may be involved.

In Park (2010b), I argued that in addition to right node raising, leftward across-the-board (ATB) movement is also derived by External Remerge, which forms the shared wh-expression at the left edge position, as in (12a):

(12) a. What did Bill eat and drink?
b. He ate a hamburger and drank a coke.

In response to the question (12a), (12b) is felicitous. In this regard, ***what*** as an object of ***eat*** may be 'referentially' different from ***what*** as an object of ***drink***.

One question that arises is whether the two DPs can be unified into one DP via the union operation when they are not sloppily but non-sloppily or referentially different. The relevant examples will be as follows:

(13) John bought, and Mary broke, the/this/that expensive Chinese vase.
(14) John bought but Bill only leased, the/this/that new Saab.

In (13) and (14), I use the definite or demonstrative expression instead of the indefinite one. If RNR just obeyed Form-Identity that requires the apparent form identity of two token expressions in syntax or PF, I would wrongly allow (13) or (14) when the RNRed right-edge expression involves two referentially different objects. To reiterate, Form-Identity does not hold whatsoever in the formation of the RNRed element. Nor can referential indices of DPs be ignored for identity. Two DPs can be unified into one DP only when they are referentially or sloppily identical.

One word about syntactic identity is in order. It seems that sloppy identity is part of syntactic identity. Sloppy identity holds before syntactic features do not undergo feature checking or AGREE, as argued in Park (2005b). This means that prior to feature checking or Agree, syntactic features are in some sense lexically underspecified and syntactically unvalued. Thus, two sloppily identical expressions are different in apparent form identity, but they count as identical in syntactic representation. In other words, they are in fact exactly like referentially identical expressions. This in turn implies that sloppiness of the RNRed DP expression in (10), (11) and (12a) stems from such an syntactic operation as bound variable binding. Before this operation, the two DPs feeding into the union operation after ER count as identical, being able to be successfully unified into one DP. The contrast between (10), (11) & (12a) and (13)-(14) in the presence and absence of sloppiness for the RNRed DP clearly shows that it has to be accounted for syntactically by using the syntactic operation such as union operation.

Given this idea that the union operation applies under strict identity before feature checking or bound variable binding, I can also account for the following example involving pronominal bound variable binding (Park (2005a); Ha (2008, 2009)):

(15) John likes, and Bill hates, his father.

Before variable binding applies, ***his father*** as an object of ***likes*** and ***his father*** as an object of ***hates*** count as identical, thereby undergoing the union operation without any problem with identity.

In passing, Shin and Chung (2011) claim, following Heycock and Zamparelli (1999), that the sets denoted by full DP conjuncts should not overlap. They use this restriction to argue against the proposed syntactic operation of union which I argue unifies two referentially identical DPs into one DP. Note that the two DPs are conjoined together syntactically by the covert coordinating conjunction (***&***), which will violate the ban on overlapping for the sets denoted by conjunct DPs. However, the stark counterexample to this restriction is DPs like (16):

(16) a. John and only John
b. the boy and only the boy

Another relevant point to make is that the putative restriction Shin and Chung cite may only hold when the coordinating conjunction is an overt one. On the other hand, when the coordinating conjunction is an invisible one, the restriction simply does not hold. When two DPs are in sequence with the covert coordinating conjunction intervening, they can be unified into one as the input and output are apparently the same in reference, causing no problem in interpreting conjunct DPs.

3. The Contrast between Respective and Cumulative Readings in RNR

As I noted in Section 1, the following two examples (2) and (3), repeated as (17) and (18), are similar and different in the formation of the RNRed element:

(17) John loves, and Mary hates, oysters and clams, respectively.
(18) Greg captured, and Lucille trained, 312 frogs all together/between them.

The RNRed element in (17) and (18) is formed by combining together two sub-elements each of which is 'rightward displaced' or externally remerged from the

edge of each preceding conjunct clause. (17) and (18), however, diverge, in that in (17) the two sub-elements are realized as two conjuncts as part of the RNRed element. However, in (18) the two sub-elements are unified into one RNRed element without the coordinating conjunction. Following Postal (1998), let's say that (17) allows the respective reading, whereas (18) allows the cumulative reading. In (17), the first conjunct of the RNRed element is associated with the preceding first conjunct clause, and the second one is associated with the preceding second conjunct clause. In (18), on the other hand, the RNRed element is construed as cumulative or additive, which results from summing up the two right-edge sub-elements of the preceding two conjunct clauses.

On an observational level, respective and cumulative readings in RNR are distinguished structurally in two respects. One is that the respective reading always employs the overt/visible coordinating conjunction (***and***). For example, as Okada (1999) reports, the following example containing ***respectively*** without the coordinating conjunct is not acceptable:

(19) *The three students we're pleased by their scores, respectively.
Okada (1999: 890)

On the other hand, the cumulative reading always employs the covert/invisible coordinating conjunction (***&***).

What is the difference between the overt and the covert coordinating conjunction? The first has a role of preserving the morphological forms of the sub-elements displaced from the right-edges of the preceding two conjunct clauses, though as in the following example, the part of the sub-element can still undergo sharing.

(20) Greg captured, and Lucille trained, 150 and 162 frogs, respectively.

In (20), the common noun phrase ***frogs*** within the RNRed element is shared by the two conjunct DPs within it. The thing to note here is that the two number expressions ***150*** and ***162*** are not fused together into one numeral expression in this respective RNR construction.

On the other hand, the second covert coordinating conjunction has a role of

fusing together the two sub-elements that will be part of the RNRed expression. In this case, the two whole DPs are fused together. I can say that the common noun phrases are shared, while the number expressions are added up, producing the cumulative expression. Shin and Chung (2011) contend that we have to know the two number expressions in syntactic representation in order to yield the resulting cumulative expression successfully. I cannot understand why this is so. In my analysis, I build the first clause with 'Greg captured x-many frogs' and the second clause with 'Lucille trained y-many frogs,' and then via ER, the two right-edge sub-elements will turn into 'x-many & y-many frogs.' Finally, at the morphophological component, 'x-many & y-many' is replaced by the number expression matching the number of frogs Greg captured and Lucille trained. Suppose this number is 312. Then, what is the difference between inserting 312 at the base and doing so at the morphophological component? Especially, in the theory of Distributed Morphology advanced by Halle and Marantz (1993), the latter step of inserting a lexical element or replacing the output of syntactic operation with a cetain lexical element is innocuous. This replacement is assimilated to the one found in verbal morphology in English. As widely assumed, main verb and verbal inflectional morphemes are generated as separate entities in syntactic representation. Then, they are put together by such operations as Affix Hopping. The thing to note is that the form like ***go*** + 'past tense marker' that results from Affix Hopping is replaced by ***went***. Other irregular verb forms also follow suit. To reiterate, just as we insert the number expression, say, 312, at the base, so can we insert the number expression 312 in the course of derivation, replacing the output expression of ER.

Another thing that distinguishes the overt and the covert coordinating conjunctions is that the former is followed by the distributing adverb ***respectively***, whereas the latter is followed by the cumulative adverb such as ***all together*** and ***between them***. Their presence is optional for either respective or cumulative reading for the RNR construction, but when they are realized, each of them facilitate the interpretation associated with it.

Shin and Chung (2011) make an interesting claim, on the analogy between the binominal ***each*** and ***respectively***, that the range DP (R-DP) must c-command the distributing DP (D-DP). The two entities R-DP and D-DP are attributed to Safir and Stowell's description of the distribution of bi-nominal ***each***. Safir and Stowell refer to the DP containing postnominal ***each*** as the D-DP, for example, ***two women each***

in the following sentence:

(21) The men saw two women each

On the other hand, the DP that the D-DP is associated with is referred to as R-DP. ***The men*** in (21) corresponds to R-DP. Importantly, Safir and Stowell argue that the R-DP (***The men***) must c-command either the D-DP (***two women***) or some element within it (such as ***each*** or its null object).

Without any justification, extending Safir and Stowell's analysis of binominal each to the analysis of the distributing adverb ***respectively***, Shin and Chung contend that ***respectively*** has to be c-commanded by the two separate DPs that they refer to as R-DP. For example, in (17), repeated as (22), the adverb ***respectively*** in sentence-final position is, by their claim, required to be c-commanded by both ***John*** and ***Mary***:

(22) John loves, and Mary hates, oysters and clams, respectively.

The structure which I postulated for (22) in my early paper (2010b) allows the subject of the second conjunct clause to c-command ***respectively***, but it does not allow that of the first conjunct clause to do so.

Shin and Chung's analysis of ***respectively*** however has at least two problems. First, if ***respectively*** and binominal *each* were the same in terms of licensing condition, the replacement of ***respectively*** with *each* in (23) would maintain the same acceptability. Contrary to this prediction, the resulting sentence as follows is not acceptable.

(23) *John loves, and Mary hates, oysters and clams each.

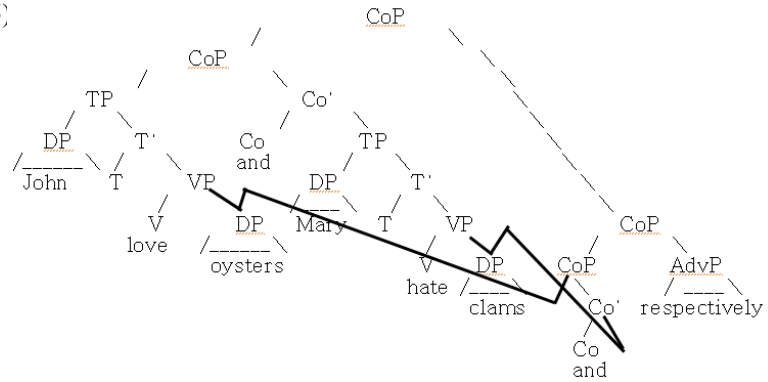
Second, contrary to Shin and Chung's claim, what Safir and Stowell (1998) call R-DP does not have to c-command ***respectively***. The relevant example (24) can be found in Postal (1998: 136).

(24) [How many frogs]$_1$ and [how many toads]$_2$ did *respectively* Greg capture t_1 and Lucille train t_2?

In (24), the R-DP is ***Greg*** and ***Lucille***. Neither of them c-commands ***respectively***, but the sentence is acceptable.

I have shown that ***respectively*** behaves differently from the binominal ***each***, which requires that the R-DP c-commands either the D-DP or some element within it (such as ***each*** or its null object). It cannot have a distributing function in a sentence containing only plurals. Rather it has a function of distributing individually a certain constituent involving a coordinating conjunction. For example, in sentence (8), repeated as (25), ***respectively*** distributes individually both the preceding conjunct clauses and the conjunct DPs. More specifically, it associates the first conjunct clause with the first conjunct DP, and the second conjunct clause with the second conjunct DP.

(25)



In the structure represented in (25), the preceding coordinated clause c-commands the adverb. In the following set of examples, it can be found that ***respectively*** is always preceded and c-commanded by a coordinate constituent or a plural DP:

(26) a. On Fridays and Saturdays respectively, John teaches and goes surfing.

b. On Fridays and Saturdays, John respectively teaches and goes surfing.
McCawley (1988: 538)

c. It was to Alice and Beverly respectively that Arthur and Bob proposed marriage. McCawley (1988: 538)

(27) a. The boys gave Susan and Harriet ***respectively*** candy and flowers respectively. McCawley (1988: 539)
b. The two boys sang and danced respectively.
c. The boys sang and danced respectively. Okada (1999: 892)

(28) They live in New York and Chicago respectively.

(29) a. John and Bill saved and burned their high school diplomas respectively.
b. Water can be solidified and vaporized by coldness and heat respectively.
Okada (1999: 886)

(30) John likes and dislikes coffee and beer respectively. (Jacobsen 1977: 336)

(31) Tom: Who married Susan and Helen?
Dick: John and Bill respectively (married them).

The distribution of ***respectively*** in these examples shows that the structure postulated in (25), where ***respectively*** is c-commanded by the coordinate clause, is on the right tract.

4. Relational Adjectives in Narrow Syntax

As has been seen, there are three forms of RNRed element. The first schematic form of RNRed element is A ***and*** B where the two conjuncts A and B are referentially different from each other. The second schematic form is just A, which is derived from A ***&*** A via union as the two conjuncts A and A are not distinct (i.e., $A \cup A = A$). What I meant by 'not distinct' is that they are referentially or sloppily identical. The third schematic form is A's, where referentially different A's are joined together and cumulation of A's is expressed by such expressions as numerals. In addition to these three forms, there are one more form of RNRed element, as in (32) taken from Postal (1998):

(32) a. John hummed and Mary sang --- different tunes.
b. John hummed and Mary sang --- the same tune.

The sentence (32a) means that Joh hummed one tune and Mary sang another tune. I suggest that in the course of generating the RNRed element ***different tunes***, the two expressions ***tune***$_1$ and ***tune***$_2$ are conjoined together and provided with the adjunct ***different*** to mark their referential status. Note that a conjunction of ***tune***$_1$ and ***tune***$_2$ is achieved via ER, but the final form ***tunes*** from the conjoined form ***tune***$_1$ & ***tune***$_2$ is taken care of by the process of Spell-Out in the post-syntactic morpho-phonological component.

The sentence (32b) looks similar to the sharing type of RNR construction. The DP objects of both the first-conjunct and the second-conjunct verbs are the same expressions ***the tune*** and ***the tune***. They are united into one single expression via an invisible coordinating conjunction, and their referential identicalness is highlighted by adding the context-appropriate adjunct ***same*** to the resulting expression ***the tune***.

I would like to make clear what is about the analysis of the examples (32a) and (32b). First, ER is a syntactic operation, like external or internal Merge. Second, the union operation is also a syntactic one, as it is sensitive to indices at narrow syntax like referential index. Third, adjunction of an adjective like ***same*** or ***different*** is also a syntactic operation. This operation cannot be a PF operation, as it adds meaning to the structure. But the Spell-Out operation is a post-syntactic operation. One word is in order about the relation between the union operation at narrow syntax and the Spell-Out operation at the post-syntactic operation. The former gives an instruction about how a certain combination like ***tune***1 & ***tune***2 or ***the tune*** & ***the tune*** has to be spelled out at the post-syntactic component. For example, as ***tune***1 are ***tune***2 in (32a) are scanned as referentially distinct, the union operation unifies it into the feature complex that yields ***tunes*** later at Spell-Out. And as ***the tune*** and ***the tune*** are scanned as referentially identical, likewise the union operation unifies it into the feature complex that yields ***the tune*** later at Spell-Out. Note that the adjunction of ***same*** in (32a) and ***different*** in (32b) applies in a non-cyclic manner at narrow syntax right after the union operation.

Shin and Chung (2011) raise a couple of questions on this line of analysis about (32a) and (32b). First they questioned why ***different*** does not occur in RNR constructions with cumulative or respective readings as in (33) and (34):

(33) Greg captured, and Lucille trained, 312 (*__**different**__) frogs all together.
(34) John loves, and Mary hates, (*__**different**__) oysters and clams,

respectively.

I agree with them that in (33), the RNRed element ***312 frogs*** refers to referentially distinct frogs. Hence ***different*** can be used to express the distinctness of frogs involved. However, this adjective has to be licensed by the distributive expression such as ***Greg*** and ***Lucille*** or the two events done by ***Greg*** and ***Lucille*** (Carlson (1987)). Therefore, there is a matching or association between the distributive expression and the RNRed element (the distributed share). This matching is hard to attain in (33), when the RNRed element is ***312 frogs***. It seems, however, that when the RNRed element is ***2 frogs*** as follows, it is appropriate as an distributed share, improving the relevant sentence as in (35).

(35) Greg captured, and Lucille trained, 2 (*__different__) frogs all together.

Moving onto (34), I conjecture that the inappropriateness of this sentence is attributed to the redundancy between the coordinating conjunction ***and*** and the adjective ***different***. As noted above, I employ the coordinating conjunction ***and*** when in the course of forming the RNRed element, the two conjuncts part of it are referentially distinct. The explicit use of the coordinating conjunction ***and*** in the RNR construction with respective reading obviates the adjunction of the adjective ***different***.

Unlike the overt use of the coordinating conjunction ***and*** as part of the RNRed element, however, the covert coordinating conjunction & does not preclude the adjunction of the adjective ***same*** when the two conjuncts as part of the RNRed element are referentially identical, as in the following example:

(36) John bought, and Mary broke, the (same) expensive Chinese vase.

I do not have a good answer to why the overt and the covert coordinate conjunctions play different roles in the use of ***different*** and ***same***. In the former case, ***different*** cannot modify the following unioned common NPs. In the latter case, ***same*** can optionally modify the following unioned common NPs. This question remains to be answered in the future.

Another question raised by Shin and Chung bears on the locality restriction on

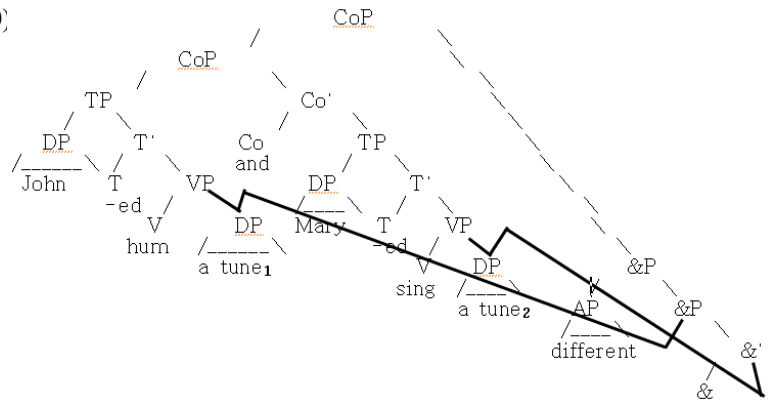
the distributor and the distributed share in sentences containing the adjective ***different***. As noted by Carlson (1987), they are subject to the clausemate condition.

(38) The two gorillas saw different men who were fed by a woman.
(39) The two gorillas saw a woman who were fed by different men.

In specific, (39) is not acceptable in a context where one gorilla saw a woman who was fed by John, and the other gorilla saw a woman who was fed by Bill. This is because unlike (38), in (39) the distributor ***the two gorillas*** are not in the same clause with the distributed share ***men***.

This restriction can be captured in the structure we can build on the basis of ER. For example, the sentence (32a) containing ***different*** can be represented as follows:

(40)



One thing to note about (40) is that cyclic applications of ER yield multi-dominance structure. This means that ***a tune***$_1$ and ***a tune***$_2$ involve structural ambiguity, as they involve multi-dominance. The first is regarded as part of the first clause and as part of &P. The second is also regarded as part of the second clause and as part of &P. Hence they preserve both their base-generated positions and the positions involved via ER.

The structure in (40) makes an interesting prediction about the distribution of the adjective ***different*** within the RNRed element. Since ***different*** is added after forming the RNRed element via ER and union operation, which is adjoined to the preceding

two conjunct clauses in derivation, the following sentence is predicted to be grammatical.

(41) John saw a boy who fed, and Mary saw a girl who fed, (two) different gorilla.

Recall (39), which is not acceptable, where the distributor and the distributee are not in the same clause. However, in RNR constructions like (41), the coordinate clause composed of the two conjunct clauses is in the same clause with the distributee ***two different gorilla***. This is a welcome resulting, rendering strong support to the line of analysis I have explored with the inventory of ER and union operation.

5. Summary and Conclusion

In the previous papers I argued that the formation of the RNRed element is achieved by putting together the right edge sub-elements of the preceding conjunct clauses via External Remerge. The Spell-Out realization of the resulting conjunct sub-elements crucially hinges on the union operation that ensues at narrow syntax after multiple applications of ER. When they are distinct in syntactic representation, they are instructed to be realized at Spell-Out as two conjuncts with the overt coordinating conjunction intervening. When, however, they are identical in syntactic representation, they are instructed to be realized at Spell-Out as one token rather two tokens with the coordinating conjunction intervening. I have shown in this paper that what I meant by identity in syntactic representation includes both strict and sloppy identity. I have argued that strict and sloppy identity cannot be distinguishable before the application of AGREE or the feature valuation. To reiterate, the union operation applies at narrow syntax, being subject to syntactic identity.

We have seen that the RNDed element with respective reading is construed in the same way as the one with cumulative reading. For example, on the one hand, the RNRed DP element with respective reading is composed of two conjunct DPs with the overt coordinating conjunction intervening. On the other hand, the RNRed DP element with cumulative reading is composed of one numeral expression followed by

one pluralized common noun phrase. In other words, the RNRed element either with respective or cumulative reading, after union operation, preserves what its sub-elements refer to, by use of coordination or pluralization. I have shown, however, that the two types of the RNRed element are importantly distinguished in the course of derivation. Recall that the RNRed element with respective reading involves the overt coordinating conjunction. On the other hand, the RNRed element with cumulative reading involves the covert/invisible coordinating conjunction. The first and the second cases are distinguished in the following way. As the former involves just coordination, the conjunct sub-elements as part of the RNRed element are kept intact, being conjoined together by the overt coordinating conjunction, resulting ultimately in respective reading. However, the latter case involves coordination followed by total unification (morphological coalescence & pluralization) of the conjunct sub-elements as part of the RNRed element. Note that the total unification is triggered by the covert coordinating conjunction.

The occurrence of relational adjectives such as *same* and *different* is contingent on total unification of the conjunct sub-elements as part of the RNRed element. As the conjunct sub-elements as part of the RNRed element undergo morphological coalescence, these adjectives are used optionally to mark their referential identity or distinctness.

References

Carlson, Gregory. 1987. Same and different: some consequences for syntax and semantics. *Linguistics and Philosophy* 10: 531-565.

de Vries, Mark. 2009. On multidominance and linearization. *Biolinguistics* 3(4): 344-403.

Heycock, Caroline, and Roberto Zamparelli. 1999. Toward a unified analysis of DP conjunction. In *Proceedings of the Twelfth Amsterdam Colloquium,* ed. by Paul Dekker, 127-132. University of Amsterdam: ILLC.

Ha, Seung-Wan. 2008. *Ellipsis, Right Node Raising, and the Across-the-board Constructions*. Doctoral dissertation, Boston University.

Ha, Seung-Wan. 2009. Multi-dominance CAN'T, but ellipsis CAN account for right node raising. In *The Proceedings of the Chicago Linguistic Society* 42.

Halle, Morris and Alec Marantz. 1993. Distributed morphology and the pieces of inflection.

In *The View from Building 20*, ed. by Kenneth Hale and S. Jay Keyser, 111-176. Cambridge: MIT Press.

Jacobsen, Bent. 1977. *Transformational-Generative Grammar*. Amsterdam: North-Holland.

McCawley, James D. 1998. *The Syntactic Phenomena of English*. Chicago: University of Chicago Press.

Okada, Sadayuki. 1999. On the function and distribution of the modifiers respective and respectively. *Linguistics* 37(5): 871-903.

Park, Myung-Kwan. 2005a. Two types of pronouns and the identity/parallelism condition in the RNR construction of English. *Studies in Modern Grammar* 42: 29-49.

Park, Myung-Kwan. 2005b. Morphological/Inflectional Strict vs. Sloppy Identity in RNR Constructions. *Studies in Generative Grammar* 16(1): 175-191.

Park, Myung-Kwan. 2010a. RNR as midway conjunction = external remerge. *Studies in Modern Grammar* 61: 25-50.

Park, Myung-Kwan. 2010b. Derivation via external remerge and linearization in ATB, RNR and PG constructions of English. *Language* 35(3): 613-634.

Park, Myung-Kwan. 2010c. The asymmetry in inflectional matching effects between ATB movement and RNR constructions: External remerge and timing of Agree. *English Linguistics* 10(3): 649-669.

Peterson, Peter G. 2001. The distribution of grammatical information across sets: Some consequences for coordination. *Proceedings of the 2001 Conference of the Australian Linguistics Society*.

Postal, Paul M. 1998. *Three Investigations of Extraction*. Cambridge,. MA: MIT Press.

Safir, Kenneth J. and Tim Stowell. 1988. Binomial *each*. In *Proceedings of NELS* 18, 426-450. Amherst, MA: GLSA.

Shin, Keun Young and Daeho Chung 2011. Remarks on the midway conjunction analysis of RNR constructions. *Studies in Generative Grammar* 21(2): 389-407.

Myung-Kwan Park
English, Dongguk University
26, 3-ga, Pil-dong, Chung-gu
Seoul 100-715, Korea
E-mail: parkmk@dgu.edu

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