

# Left Node Raising as a Shared Node Raising\*

Daeho Chung  
(Hanyang University)

Nakao (2009a, b) analyzes the so-called Left Node Raising construction (LNR) as an instance of across-the-board (leftward) scrambling. She favors the across-the-board scrambling analysis (ASA) over a pro-drop analysis due to the isomorphic properties (case and honorification matching requirements) displayed by the LNRed pivot; and over a deletion or multi-dominance analysis (MDA) due to the obligatory movement property of the pivot. The current work claims, however, that MDA is favored over ASA since the former not only accommodates the isomorphic properties but also the distribution of plural dependent elements (relational modifiers and dummy plural markers). It will be also argued that the obligatory movement property of LNRed pivots follows from Wilder's (1999, 2008) revised version of LCA. Cf. Citko (2005)

**Key words:** Left Node Raising (LNR), Right Node Raising (RNR), across-the-board (ATB) scrambling, multi-dominance, matching requirement, plural dependent element, relational modifier, dummy plural marker, (revised) LCA

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## 1. Introduction

In natural languages, there are constructions in which a part of sentence is phonetically realized just once but interpreted more than once. A well-known case richly discussed in the literature is the so-called right node raising (RNR) construction, in which two or more clauses are coordinated and a pivot, a shared element in the final conjunct, is interpreted across all the conjuncts. Some examples are provided in English, and Korean below:

- (1) a. John likes and Peter hates *your best friend*  
 b. John-un Mary-lul, kuliko Peter-nun Susan-ul *manna-ess-ta*  
 J.-Top M.-Acc and P.-Top S.-Acc meet-Pst-DE  
 'John met Mary, and Peter met Susan.'

(1a), for example, means 'John likes your best friend and Peter hates your best friend,' although the pivot *your best friend* reveals itself just once at PF. Similarly the sentence in (1b), where the predicate *manna-ess-ta* 'met' is phonetically realized just once, means that John met Mary and Peter met Susan.<sup>1</sup>

As observed in Yatabe (1991) and Nakao (2009a, b) among others, natural languages also witness a mirror image of RNR, the so-called left node raising (LNR), in which two (or more) clauses are conjoined and a pivot, a shared element at the left periphery of the whole coordination, is interpreted in both clauses. Some LNR examples in Japanese and Korean are provided below: ((2a) is cited from Nakao 2009b: 217, her (4).)

- (2) a. **keeki-o** John- ga tukuri, (soshite) Mary-ga tabe-ta.  
**cake-Acc** J.-Nom make, (and) M.-Nom eat-Pst  
 'John made, and Mary ate the cake.'  
 b. **kheikhu-lul** John-i mantul-ko (kuliko) Mary-ka mek-ess-ta.  
**cake-Acc** J.-Nom make, (and) M.-Nom eat-Pst

<sup>1</sup> There are some exceptional cases wherein the pivot is ambiguously interpreted, especially when the pivot involves a coordinate structure (De Vos and Vicente 2005, Park 2005, 2007, 2009, etc.) or relational modifiers SAME and DIFFERENT (Jackendoff, 1977: 192-194).

- (i) John loves and Peter hates [Mary and Susan].  
 (ii) John sang, and Mary recorded, [two quite different songs].

The shared element in (i) can have a collective or a distributive reading. The pivot in (ii) may have an NP-internal reading or a discourse reading. See Section 2 and Section 3 for some discussion.

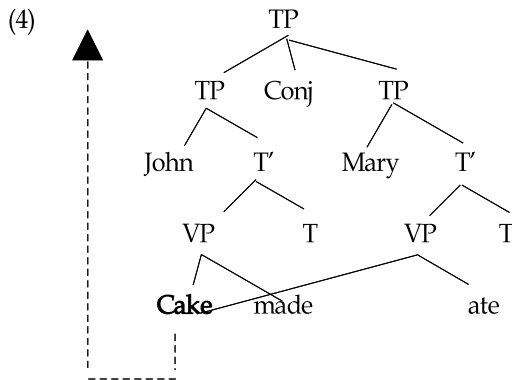
'John made, and Mary ate the cake.'

As for the syntax of LNR, Nakao (2009a, b) argues for an across-the-board (ATB) scrambling analysis (ASA), as illustrated in (3), based on the case matching requirement and the honorification matching requirement. (See Section 2 for details.)

(3) Cake-Acc<sub>i</sub> John-Nom t<sub>i</sub> made (And) Mary-Nom t<sub>i</sub> ate.

According to ASA, the pivot, *Cake-Acc* in (3), is base generated in each of the conjuncts, and undergoes an ATB movement to the left periphery of the whole coordination.

The current work, however, lends support to a multi-dominance analysis (MDA), as in (4), in which the pivot is numerated just once and is multi-dominated at the base and moves to the left periphery at the surface.



Although it is explicitly discarded by Nakao (2009a) for an obligatory movement property of the pivot, MDA is shown in this paper to not only capture the isomorphic properties but also account for the distribution of plural dependent elements in LNR, which can be hardly accommodated by ASA. (cf. Chung 2004). It will be also shown that the obligatory property of the pivot movement in LNR, a main reason that Nakao (2009a) abandons MDA (and Deletion Analysis), naturally follows from the (revised) LCA (Wilder1999, 2008).<sup>2</sup>

## 2. Nakao's (2009a, b) ATB-scrambling Analysis (ASA) of LNR

Japanese and Korean being pro-drop languages, one possible way of deriving LNR would be that the element in the left periphery has moved from the first conjunct only, while the gap in the second conjunct is not a trace but a pro, as illustrated in (5) below:

- (5) a. **keeki-o<sub>1</sub>** John-ga **t<sub>1</sub>** tukuri, (soshite) Mary-ga **pro<sub>1</sub>** tabe-ta.  
**cake-Acc** J.-Nom make and M.-Nom eat-Pst  
 'John made a cake. Mary ate (it).'
- b. **kheikhu-lul<sub>1</sub>** John-i **t<sub>1</sub>** mantul-ko (kuliko) Mary-ka **pro<sub>1</sub>** mek-ess-ta.  
**cake-Acc** J.-Nom make-and and M.-Nom eat-Pst-DE

Nakao (2009a, b), however, argues against such a pro-drop analysis based on the fact that LNR behaves differently from the null object construction (NOC), a typical pro-drop construction, in several respects to be discussed below. (See also Yatabe 2001 for some other relevant facts. Korean behaves like Japanese in these respects, although examples are generally omitted in this section.)

### i. Case Matching Requirement

The first difference between LNR and NOC lies in the presence and absence of the case matching requirement: LNR observes it, but NOC does not, as exemplified in (6) and (7):

- (6) \***Mary-ni/o** John-ga hana-o okuri, Tom-ga nagusame-ta.  
**M.-Dat/Acc** J.-Nom flower-Acc give, T.-Nom comfort-Pst  
 'John gave flowers to Mary and Tom comforted (her).'

<sup>2</sup> In her dissertation, Nakao (2009b: 269-271) concedes that MDA may be compatible with her ASA, given Citko's (2005) proposal that, to be linearized, the shared element should move to a position that c-commands the whole coordination. I find, however, that the two are not 'compatible' with each other since the numerations will differ. The former analysis requires a numeration {..., o<sub>2</sub>, ...}, while the latter {..., o<sub>1</sub>, ...}, where o is a lexical element that constitutes the pivot. Notice that the pivot is externally merged twice in the former analysis (unless some sort of sideward movement is assumed), while it is externally merged just once in the latter analysis, though simultaneously with two elements.

The current work argues that, as far as Korean and Japanese LNR is concerned, MDA is a superior analysis to ASA since LNR displays properties that cannot be accounted for by an ATB movement analysis. See Section 3. I depart from Citko (2005), however, since multi-dominated elements do not necessarily leave their base position. See Section 4.

- (7) **Mary-ni/\*o** John-ga hana-o okut-ta. Tom-wa **pro** nagusame-ta.  
**M.-Dat/\*Acc** J.-Nom flower-Acc send-Pst T.-Top comfort-Pst  
 'John gave a flower to Mary. Tom comforted (her).'

In the LNR example in (6), the element in the left periphery takes neither a dative nor an accusative case marker: The dative case marker is not allowed because the predicate in the second conjunct COMFORT does not license it; the accusative case marker is not allowed because the predicate in the first conjunct GIVE already has an accusative nominal expression. In the NOC example in (7), the accusative case marker is disallowed for the same reason as in (6): SEND licenses an accusative case marker but an accusative case marked element has already showed up. However, a dative case marked nominal expression is fine, though the predicate in the continuing sentence COMFORT is not able to license a dative case. The difference in the case matching requirement between NOC and LNR indicates that LNR is not an instance of NOC.

## ii. Honorification Matching Requirement

Another instance of disparity between NOC and LNR has to do with honorification matching requirement. Japanese has inherently honorific nouns. For example, *ozyoosama* refers to a daughter of someone honorable, while *musume* is used in a neutral way. Consider (8) below. When a neutral form is used, (8) can mean 'The teacher went to see off his daughter and I went to pick up my daughter', where the pivot denotes two daughters. When the pivot is an honorific form, however, the 'two daughters' reading is unavailable, because one of the referents (i.e., 'my daughter') should not be honorified.

- (8) **Musume/\*Ozyoosama-o** sensei-wa omiokuri-ni ik-are,  
**Daughter/Daughter(Hon)-Acc** teacher-Top see-off(Hon)-to go-Hon,  
 boku-wa mukae-ni it-ta.  
 I-Top pick-up-to go-Pst  
 'The teacher went to see off, and I went to pick up, our daughters.'

In contrast, NOC does not call for such a matching in honorification between pro and its antecedent, as in (9).

- (9) **Musume-o/?Ozyoosama-o** sensei-wa omiokuri-ni ik-are-ta.  
**Daughter-Acc/Daughter(Hon)-Acc** teacher-Top see-off(Hon)-to go-Hon-Pst

Boku-wa **pro** mukae-ni it-ta.  
 I-Top pick-up-to go-Pst  
 'The teacher went to see off his daughter. I went to pick (mine) up.'

The difference in honorification matching requirement indicates that LNR cannot be treated as a subtype of NOC.

### iii. Availability of an NP-Internal Reading of SAME/DIFFERENT

As discussed in Jackendoff (1977), Carlson (1987) and Moltmann (1992), etc., relational modifiers like SAME/DIFFERENT are ambiguous between an NP-internal reading vs. a discourse reading. The former reading is generated when those expressions are dependent on a plural or a universal, while the latter reading is produced when they require a contextual antecedent or a comparison clause. Consider the following examples:

- (10) a. Alice and Beth bought the same book.  
       b. Every girl bought the same book.  
 (11) a. Alice bought the same book as Beth.  
       b. Alice bought *Neverwhere* Beth bought the same book.

Sentences in (10) are ambiguous. When the relation modifiers are dependent on the plural or universal subject, they convey an NP-internal reading. For example, (10a) means 'The book Alice bought is the same one that Beth bought.' The relational modifiers may also be dependent on some object established in the course of discourse. Then the sentence means 'The book that Alice and Beth bought is the same as the one mentioned in the discourse.' In contrast, the relational modifiers in (11) cannot be ambiguously interpreted. There being neither plural nor universal antecedent in the sentence available in the relevant domain, the relational modifiers convey a discourse reading only.

With this background knowledge in mind, now consider how SAME/DIFFERENT behave in the context of LNR and NOC. Relational modifiers contained in the pivot may have an NP-internal reading in LNR but not in NOC. Compare (12) and (13). (See footnote 1 for a similar ambiguity present in RNR.)

- (12) **Hutasu-no tigau kyoku-o** John-wa utai, Mary-wa rokuonsi-ta.  
**Two-Gen different song-Acc** J.-Top sing, M.-Top record-Pst

- 'John sang, and Mary recorded two different songs.'
- (13) **Hutatu-no tigau kyoku-o** John-wa utat-ta Mary-wa **pro** rokuonsi-ta.  
**Two-Gen different song-Acc** J.-Top sing-Pst M.-Top record-Pst  
 'John sang two different songs. Mary recorded (them).'

The example in (12) allows the reading 'The song John sang differs from the song Mary recorded.' The NOC example in (13) does not convey that reading; it only means 'John sang two songs and Mary recorded the same two songs.'<sup>3</sup>

Nakao (2009a, b) claims that, given the disparities between LNR and NOC, the pro-drop analysis of LNR is not tenable. She further notes that prosperities **i** and **ii** above indicate that the shared element must be identical in form in both conjuncts. To account for the isomorphic properties, she proposes ASA as in (3).

<sup>3</sup> Nakao (2009b: 226-227) provides another piece of evidence that LNR cannot be treated on a par with NOC: A complement clause that includes a wh-phrase inside it can be shared and fronted in LNR but it cannot be replaced by pro in NOC:

- (i) (=Nakao 2009b: 226, her (18))  
 [cp Taroo-ga nani-o tabe-ta to] Hanako-ga ii Sachiko-ga sinzi-tei-ru no?  
 T.-Nom what-Acc eat-Pst C H-Nom say S.-Nom believe-Prog-Pres Q  
 (Lit) '[That Taro ate what] does Hanako say and Sachiko believe?  
 'What does Hanako say that Taro ate and Sachiko believes that Taro ate?'
- (ii) (=Nakao 2009b: 227, her (19))  
 Hanako-ga [cp Taroo-ga nani-o tabe-ta to] omot-tei-ru no? \*Sachiko-mo pro omot-tei-ru no?  
 H-Nom T.-Nom what-Acc eat-Pst C think-Prog-Pres Q S.-also think-Prog-Pres Q  
 'What does Hanako think that Taro ate? (What) does Sachiko also think (that Taro ate)?'

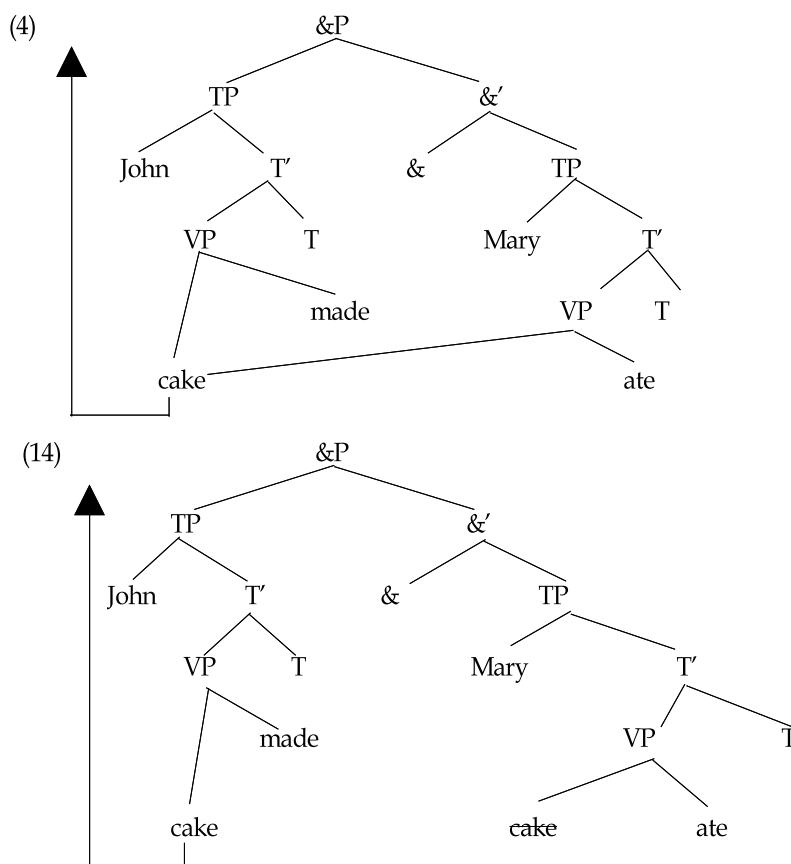
Two remarks are in order. First, as pointed out in Ahn and Cho (2009), THINK and BELIEVE behave differently with respect to the missing complement: BELIEVE, but not THINK, can take pro as complement even when no wh-phrase is involved.

- (iii) a. John-un [cp Mary-ka ttenna-ess-ta-ko] sayngkakha-n-ta.?\*Tom-to e saynkakha-n-ta.  
 J.-Top M.-Nom leave-Pst-DE-C think-Pres-DE T.-also think-Pres-DE  
 'John thinks that Mary left. Tom thinks (that Mary left). too.'
- b. John-un [cp Mary-ka ttenna-ess-ta-ko] mit-nun-ta Tom-to e mit-nun-ta.  
 J.-Top M.-Nom leave-Pst-DE-C believe-Pres-DE T.-also believe-Pres-DE  
 'John believes that Mary left. Tom believes (that Mary left), too.'

According to Ahn and Cho (2009), the gap in (iiia) is an instance of CP ellipsis, while the gap in (iiib) is pro. (iiia) is ungrammatical since ellipsis cannot target a CP under the assumption that ellipsis only target the complement of a functional category (Merchant 2001).

A second remark is that the contrast between (i) and (ii) may have nothing to do with the difference between LNR vs. NOC. The second sentence in (ii) may be ruled out by a principle, whatever it turns out to be, that is responsible for Chung's (2008) generalization that an overt [+wh] Q requires an overt wh-phrase in its domain in a language like Korean.

On the other hand, she (2009a) explicitly discards MDA in (4), repeated below, as well as Deletion Analysis in (14) below:



She asserts that neither MDA nor Deletion Analysis is tenable because it is unclear why multi-dominance or deletion occurs only when the pivot moves.

### 3. Multi-dominance Analysis (MDA)

Despite Nakao's (2009a) claim to the contrary, the current work tries to show in this section that MDA is favored over ASA since it not only accounts for the isomorphic properties of the pivot but also for the distribution of plural dependent elements in LNR. It will be also shown in Section 4 that the



obligatory property of pivot movement follows from Wilder's (1999, 2008) revised version of Kayne's (1993) linear correspondence axiom (LCA).

### i. Isomorphism

The isomorphic properties of the pivot, i.e., the case matching requirement and the honorification matching requirement discussed in the previous section, automatically follow from MDA. Being shared by both conjuncts, the pivot must have direct syntactic relations with elements in both conjuncts. Thus it is required that the case property of the pivot be commonly licensed by the case licensers scattered across the conjuncts. A similar comment applies to the honorification matching requirement.<sup>4</sup>

<sup>4</sup> One of the reviewers pointed out to me that Park and Lee (2009), who propose an 'RNR' analysis of LNR, account for the contrast between a simplex vs. complex (coordinated) RNRed pivot: A simplex RNRed pivot does not have to display the matching effects, while a complex RNRed pivot has to. Consider the following examples, cited from them:

- (i) (=Park and Lee 2009: 522, their (30))

Mary-ka sakwa-lul, kuliko emeni-ka banana-lul, sa-si-ess-ta.  
M.-Nom apple-Acc and mother-Nom banana-Acc buy-Hon-Pst-DE  
'Mary (bought) apples, and (my) mother bought bananas.'

- (ii) (=Park and Lee 2009: 522, their (31))

apenim-un piano-lul, kuliko John-un nolay-lul, (kakkak) chi-\*(si)-ko pwulu-ess-ta.  
father-Top piano-Acc and J.-Top song-Acc respectively play-Hon-and sang-Pst-DE  
'(His) Father played the piano, and John sang a song(, respectively).'

According to them, the LNR construction is a sort of 'RNR' construction with a complex pivot, where the non-shared coordinated part is 'RNRed'. Thus, they claim that the matching naturally follows from their 'RNR' analysis of the LNR construction.

Some remarks are in order. First, not everyone agrees with the judgment on sentences like (i). For some speakers including myself, examples like (i) are as unacceptable as (ii) without the honorific marker. Second, even with the grammatical judgment about the sentences like (i) as reported in Park and Lee (2009), I do not find why the difference should exist at all. Notice that the simplex vs. complex difference in pivot is nothing but the result of the conjunction reduction in their system: Identical 'RNRed' elements are realized just once, while different 'RNRed' elements are coordinated. It is not clear how the predicate in (i) is derived at all. We cannot say that predicate *sa-* 'to buy' can be merged onto the predicate *sa-si* 'buy-Hon' simply because the latter includes more semantic features. For example, we cannot merge MOVE in the first conjunct onto WALK in the second conjunct in an RNR construction, even though the latter properly contains all the semantic features of the former. Moreover, when the subjects are switched in (i), for example, the predicate should not include the honorific morpheme even for the speakers that take (i) as acceptable. A third remark I would like to make is that RNR and LNR differ from each other in the locus of the matching effects. Notice that the matching effects in the latter are required of the morphology in the RNRed part, while the ones in the former are of the morphology in the non-RNRed part.

## ii. NP-Internal reading of SAME/DIFFERENT

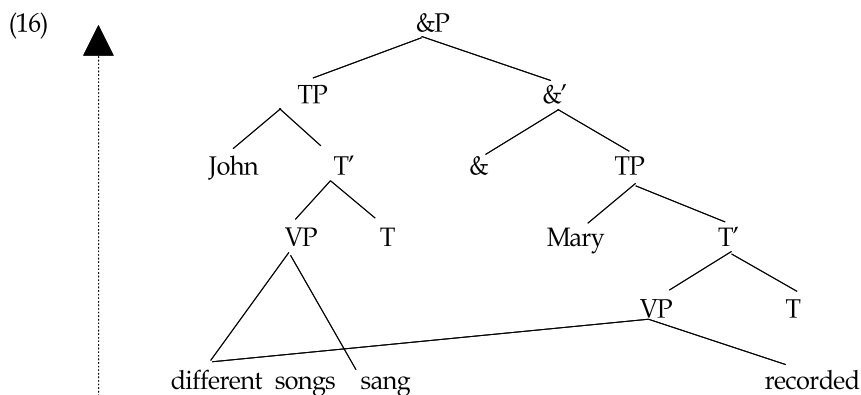
As Nakao (2009) claims, the pro-drop analysis of LNR cannot account for the fact that relational modifiers SAME/DIFFERENT may produce an NP-internal reading in the LNR context. It is not clear, however, whether ASA is able to account for the availability of an NP-internal reading of such relational modifiers in LNR. According to ASA, (12), for example, will have the following structure:

(15) [Two different songs-Acc]<sub>i</sub> John-Top <sub>t<sub>i</sub></sub> sang, and Mary-Top <sub>t<sub>i</sub></sub> recorded



Since the pivot containing the expression DIFFERENT is never c-commanded by a plural or universal expression in the course of derivation, it is expected that the expression DIFFERENT may have a discourse reading but not an NP-internal reading. Thus, ASA does not seem to properly capture the potential ambiguity of relational modifiers like SAME/DIFFERENT in the LNR context.<sup>5</sup>

MDA, however, does seem to be able to accommodate the ambiguity of the relational modifiers in the LNR context as follows. According to MDA, (12) will have the following structure:



<sup>5</sup> One of the reviewers brought an interesting possibility, in which an ATB movement analysis can also capture the availability of the NP-internal reading, given the notions like chain or reconstruction. I do not see, however, how such notions are of any help. There will be two chains under the ATB movement analysis. Notice that neither the head nor the tail(s) is in a position that is c-commanded by plural antecedents. For the chain head in the surface position, there is no antecedent that c-commands it, and for the chain tail(s) in the base position(s), there is no appropriate plural antecedent in the appropriate domain, i.e., in each of the conjuncts.

Since the expression containing the relational modifier DIFFERENT is c-commanded by singular but two nouns, i.e., John and Mary, at the same time at least once in the derivational history of the sentence, the plurality of the antecedent is guaranteed, which makes it possible for the relational modifier DIFFERENT to convey an NP-internal reading.<sup>6</sup>

### iii. Plural Dependent Elements

Plural dependent elements like dummy plural marker (DPM) *-tul* is licensed only when it is c-commanded by a plural subject in the local domain (Choe 1988).

- (17) a. \*John-un yelsimhi-**tul** chayk-ul ilk-ess-ta.  
 J.-Top diligently-DPM book-Acc read-Pst-DE  
 'John read books diligently<sub>PL</sub>.'
- b. {John-kwa Mary-nun/kutul-un} yelsimhi-**tul** chayk-ul ilk-ess-ta.  
 J.-and M.-Top/They-Top diligently-DPM book-Acc read-Pst-DE  
 '{John and Mary/They} read books diligently<sub>PL</sub>.'
- c.\*{John-kwa Mary-nun/kutul-un} [Tom-i yelsimhi-**tul** hayk-ul  
 J.-and M.-Top/They-Top T.-Nom diligently-DPM book-Acc  
 ilk-ess-ta-ko] sayngkakha-n-ta.  
 read-Pst-DE-C think-Pres-DE  
 '{John and Mary/They} think that Tom read books diligently<sub>PL</sub>.'
- d. \*John-un chayk-ul yelsimhi-**tul** ilk-ko,  
 J.-Top book-Acc diligently-DPM read-and  
 Mary-nun nomwun-ul yelsimhi-**tul** ilk-ess-ta.  
 M.-Top article-Acc diligently-DPM read-Pst-DE  
 'John read books diligently<sub>PL</sub> and Mary read articles diligently<sub>PL</sub>.'

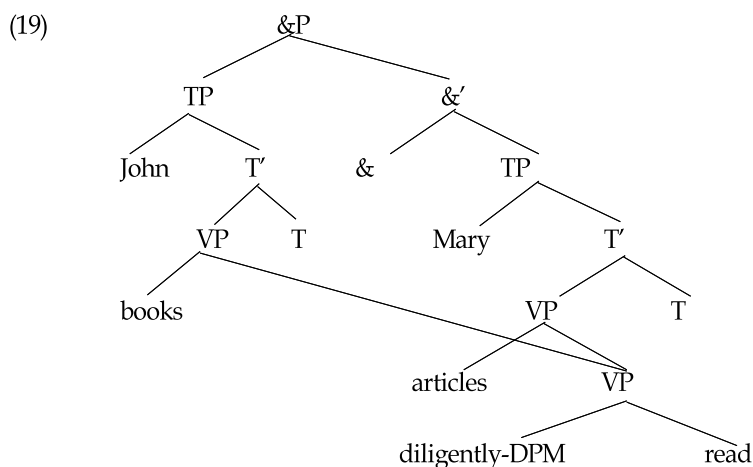
(17a, b) indicate that DPM should be linked to a plural element. (17c) indicates that DPM licensing respects a locality condition. (17d) indicates the same rule applies to the DPM in the coordinate structure. Interestingly, however, Chung (2004) observes that DPM is licensed in the RNR context in Korean, even when the subject of each conjunct in the coordinate structure is singular:

- (18) John-un chayk-ul,, Mary-nun nomwun-ul yelsimhi-**tul** ilk-ess-ta.

<sup>6</sup> The current work does not address the exact semantic mechanism for the two readings that relational modifiers produce. It is just assumed that to have an NP-internal reading, a relational modifier must be c-commanded by an expression that denotes plurality.

J.-Top book-Acc, M.-Top article-Acc diligently-DPM read-Pst-DE  
 'John read books diligently and Mary read articles diligently.'

Chung (2004) shows that a multi-dominance analysis of RNR can nicely capture the distributional facts about the plural dependent elements like DPM in Korean RNR. Given that the pivot is multi-dominated, (18) will have the following structure:



Being c-commanded by singular but **two** (therefore plural) subjects in the local domain at the same time, the DPM is properly licensed, accounting for the grammaticality of the sentences like (18). (As noted in Chung 2004, an ATB rightward movement analysis or a deletion analysis hardly captures the licensing property of DPM in the RNR context.)<sup>7</sup>

<sup>7</sup> One of the reviewers pointed out to me that Postal (1988), a proponent of the ATB movement analysis, explains the plural dependency in the RNR construction. Consider the following examples cited from Postal (1998):

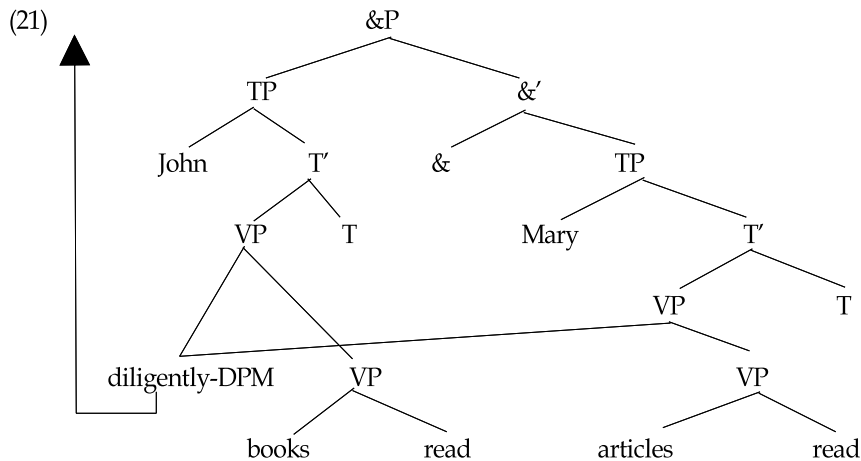
- (i) (=Postal 1998: 173, his (1))
- a. The pilot claimed that the first nurse was a spy and the sailor proved that the second nurse was a spy.
  - b. The pilot claimed that the first nurse  $t_1$  and the sailor proved that the second nurse  $t_1$  \_\_\_ \*[was a spy]<sub>1</sub>/[were spies]<sub>1</sub>.

Postal (1998: 173) mentions, '... there is the possibility of seeing *were spies* in (ib) as some sort of realization of an *n*-ad of ATB extracted singulars.' As pointed out Levine (2001), however, it is hard to find what Postal means by the quoted part since he does not spell out his account at all.

Exactly the same comment applies to the DPM in the LNR context. Consider the examples in (20).

- (20) a. pwucilenhi-**tul**, John-un path-ul kal-ko Mary-nun kim-ul may-ess-ta.  
diligently-DPM J.-Top field-Acc plow-and M.-Top weed-Acc pick-Pst-DE  
'John plowed the field and Mary weeded the field diligently<sub>PL</sub>.'
- b. yelsimhi-**tul**, John-un chayk-ul ilk-ko, Mary-nun nonmwun-ul ilk-ess-ta.  
hard-DPM J.-Top book-Acc read-and M.-Top article-Acc read-Pst-DE  
'John read books, and Mary read articles hard.'

Given that DPM *-tul* is licensed only when it is c-commanded by a plural subject in a local domain, the grammatical status of the examples in (20) follows from MDA, according to which (20b), for example, will have the following structure:



DPM *-tul* contained in the pivot is c-commanded by singular but **two** (therefore plural) subjects in the local domain at the base, satisfying the licensing condition. Other analyses (ASA, pro-drop analysis, deletion analysis, or sideward movement analysis in the sense of Nunes 2001, 2004) cannot account for this fact since plural dependent elements in such examples are analyzed to be linked to a singular subject in each conjunct: the pivot is never c-commanded by a plural antecedent in the course of derivation.

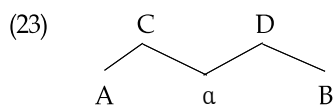
#### 4. On the Obligatory Pivot Movement

Nakao (2009a) explicitly discards MDA and Deletion Analysis of LNR. She asserts that it is not clear under these analyses why the pivot obligatorily moves to the left periphery. It will be shown in this section, however, that, under MDA, the movement to the left periphery in LNR is not an *ad hoc* stipulation but derives from Wilder's (1999,2008) revised version of Kayne's (1994) Linear Correspondence Axiom (LCA).

Multi-dominance always leads to a linearization problem with Kayne's (1994: 33) original version of LCA, which states as follows:

- (22) Let  $X, Y$  be non-terminals and  $x, y$  terminals such that  $X$  dominates  $x$  and  $Y$  dominates  $y$ . Then if  $X$  asymmetrically  $c$ -commands  $Y$ , then  $x$  precedes  $y$ .

Consider the following multi-dominance structure:



Suppose  $C$   $c$ -commands  $D$  and  $a$  is shared. With the original version of LCA in (22), the 'image' of  $C$ , i.e.,  $(A, a)$ , should precede the image of  $D$ , i.e.,  $(a, B)$ . Then  $a$  precedes  $a$ , violating the irreflexiveness condition.<sup>8</sup>

To avoid this problem that multi-dominance necessarily leads to, Wilder (1999, 2008) modifies LCA as follows. First, he assumes that a shared element does not belong to the image of the non-terminals that dominate it. Second, he qualifies the notion of  $c$ -command and defines other relevant notions as follows:<sup>9</sup>

<sup>8</sup>There are four conditions in the linearization.

- (i) For any  $x, y, z \in T$ ,
- a.  $x < y$  or  $y < x$  (total)
  - b. if  $x < y$ , then not  $y < x$  (asymmetric)
  - c. not  $x < x$  (irreflexive)
  - d. if  $x < y$  and  $y < z$ , then  $x < z$  (transitive)

<sup>9</sup> Citko (2005) does not adopt Wilder's (1999) reversion of LCA due to the complexity caused by the introduction of the notion of 'fully dominate'. Instead she claims that the shared, or parallel merged elements should leave their original position due to LCA. However, Citko does not seem to be right since the shared element in RNR does not have to leave its original position, unless a rightward movement is assumed.

- (24) a. X **c-commands** Y only if X does not fully dominate Y.  
 b. X **fully dominates** a iff X dominates a and X does not share a.  
 c. a **is shared** by X and Y iff (i) neither of X and Y dominates the other and (ii) both X and Y dominate a.

With these modifications, Wilder was able to nicely account for the two properties that RNR displays. First, the pivot should be located at the rightmost position in every (but the last) conjunct in the coordinate structure (the so-called Right Edge Condition). Second, the pivot in RNR should be realized at the last conjunct (the so-called Directionality Condition).<sup>10</sup>

Let us first see how the Right Edge Condition follows from the revised LCA. Consider the following structure, where a is shared by A and B:

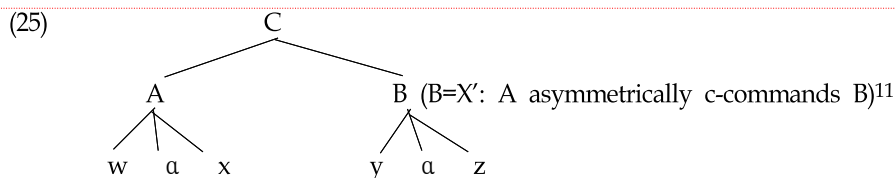
<sup>10</sup> According to Wilder (1999, 2008), the Right Edge Condition applies to every but the last conjunct, i.e., to the non-final conjuncts. The following examples show that the last conjunct is exempt from the condition.

- (i) (=Wilder 2008: 244, (40d))  
 John should fetch *\_\_\_* and give *the book* to Mary.  
 (ii) (=Wilder 2008: 254, (75))  
 a. Mary [congratulated *\_\_\_*] [and gave *the boy* the prize]  
 b. She neither [fed *\_\_\_*] [nor gave the child a drink]  
 c. A Cabinet committee held on Wednesday night was described as a “bloody battlefield” by a Whitehall source after as many as seventeen ministers clashed over moves to [weaken *\_\_\_*] and [prevent *the bill* becoming law next year].  
 [*Guardian*, July 3, 1998]

Notice that the pivots in these examples (italicized) are not in the rightmost position of the second conjunct. It is also clear from the following examples that the post-pivotal elements in these sentences cannot be treated as part of the shared elements:

- (i)' John should fetch the book {\*to/for} Mary.  
 (ii)' a. \*Mary [congratulated theboytheprize]  
 b. \*She neither [fed thechildadrink]  
 c. \*..... weaken the bill becoming law next year.

If the post-pivotal elements were part of the first conjunct, the sentences in (i)' and (ii)' should be grammatical as well, which is not true. This shows that the last conjunct is exempt from the Right Edge Condition.



According to the revised LCA, the tree will include the linearization processes in (26), and will finally produce the linear order in (27).

- (26) a. w c-commands a, which in turn c-commands x (within A). → {w<a, w<x, a<x}
- b. y c-commands a, which in turn c-commands z (within B). → {y<a, y<z, a<z}
- c. A c-commands y, a, and z. → {w<y, w<a, w<z, x<y, x<a, x<z}<sup>12</sup>
- (27)
- |               |     |               |     |
|---------------|-----|---------------|-----|
| w<x           | w<y | w<a           | w<z |
|               | x<y | <b>x&lt;a</b> | x<z |
|               |     | y<a           | y<z |
| <b>a&lt;x</b> |     |               | a<z |

(27) contains both  $x<a$ , and  $a<x$ , violating the asymmetry condition ((ib) in footnote 8). The unique way to avoid this problem is to have no content in x. If there is nothing in x in (25), it will be guaranteed that the shared element will show up at the last position of conjunct A, satisfying the Right Edge Condition.

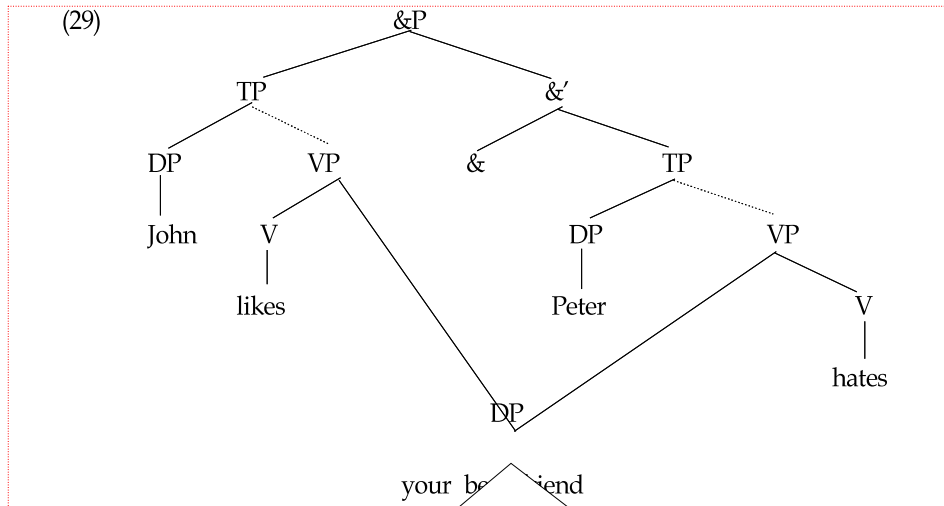
Now address how the revised LCA accounts for the Directionality Condition in RNR. Consider the sentence in (28) and its structure in (29):

- (28) \*John likes your best friends and Peter hates.

<sup>11</sup> To linearize a specifier and the rest of a phrase, X' is assumed not to c-command the specifier.

<sup>12</sup> Notice that a does not belong to the image of A but A c-commands into B. Thus each element in the image of A, i.e., {w,x}, should precede all the terminals in B including a.





The sentence in (28) is not a correct linearization of the structure in (29). Notice that the subject DP in the second conjunct, for example, asymmetrically c-commands the shared element as shown in (29) but is linearized later in (28), violating the (revised) LCA. To resolve this problem, the shared element should be linearized at the final conjunct as in (30a), an RNR structure, or should leave its original position for a position that c-commands the whole coordination, as in (30b), an LNR structure.<sup>13</sup>

- (30) a. John likes, and Peter hates your best friends. (RNR)  
 b. Your best friends, John likes, and Peter hates. (LNR)

To sum up, a shared element in a coordinate structure either appears at the right(most) conjunct, realizing as an RNR structure or at the left periphery of the whole coordination, realizing as an LNR structure. The obligatory property of pivot movement in LNR well meshes with the Right Edge Condition in RNR,

<sup>13</sup> No LCA problem seems to arise even if the shared element moves to any position, as far as the landing site c-commands its original position. Then a question that arises is what forces the shared element to move to the left periphery of the whole coordination. What prevents the shared element from moving to some 'middle' position, e.g., to *v*P of the first conjunct? There will be no LCA problem since there will be no c-command relation between the middle position and the second conjunct. I speculate that some sort of Parallelism Requirement, a constraint that coordinate structures are independently subject to, blocks such an unbalanced operation. To satisfy the Parallelism Requirement, a shared element moves to a position that c-commands the whole coordination, if it moves at all.

which dictates that the pivot in RNR be located at the right edge of non-final conjuncts and with the Directionality Condition, which dictates that the pivot in RNR be pronounced at the final conjunct (Wilder 1999, 2008).<sup>14</sup>

## 5. Concluding Remarks

This paper has shown that the multi-dominance analysis (MDA) better captures the syntactic properties displayed in the Left Node Raising construction (LNR) than Nakao's (2009a, b) across-the-board scrambling analysis (ASA). Although both MDA and ASA accommodate the isomorphic properties (case and

<sup>14</sup> Japanese and Korean apparently seem to allow a shared element to show up at the left conjunct but not at the periphery, violating the (revised) LCA:

- |        |                                     |             |                    |         |             |
|--------|-------------------------------------|-------------|--------------------|---------|-------------|
| (i) a. | John-ga                             | keeki-o     | tukuri, (soshite)  | Mary-ga | tabe-ta.    |
|        | J.-Nom                              | cake-Acc    | make, (and)        | M.-Nom  | eat-Pst     |
|        | 'John made, and Mary ate the cake.' |             |                    |         |             |
| b.     | John-i                              | kheikhu-lul | mantul-ko (kuliko) | Mary-ka | mek-ess-ta. |
|        | J.-Nom                              | cake-Acc    | make-and (and)     | M.-Nom  | eat-Pst-DE  |

I assume with Nakao (2009a, b) that the gap in the second conjunct is *pro*, which is available in Japanese and Korean anyway. No element being shared, no LCA problem will arise in such sentences.

Given the availability of a NOC analysis for (i), an immediate question that arises is why LNR examples like (2) cannot have a NOC structure, as in (5), repeated as (ii) below:

- |         |                                    |         |                      |                    |         |                        |             |
|---------|------------------------------------|---------|----------------------|--------------------|---------|------------------------|-------------|
| (ii) a. | <b>keeki-o<sub>1</sub></b>         | John-ga | <b>t<sub>1</sub></b> | tukuri, (soshite)  | Mary-ga | <b>pro<sub>1</sub></b> | tabe-ta.    |
|         | <b>cake-Acc</b>                    | J.-Nom  |                      | make and           | M.-Nom  |                        | eat-Pst     |
|         | 'John made a cake. Mary ate (it).' |         |                      |                    |         |                        |             |
| b.      | <b>kheikhu-lul<sub>1</sub></b>     | John-i  | <b>t<sub>1</sub></b> | mantul-ko (kuliko) | Mary-ka | <b>pro<sub>1</sub></b> | mek-ess-ta. |
|         | <b>cake-Acc</b>                    | J.-Nom  |                      | make-and and       | M.-Nom  |                        | eat-Pst-DE  |

Just as in Nakao (2009a, b), we might resort to Hornstein's (1999, 2003) hypothesis that UG favors movement over construal. Notice that the pivot in LNR is assumed to move in MDA as well as in ASA. As one of the reviewers pointed out, however, this account contains a theoretical defect. Notice that the derivation under MDA could not block the ones under NOC since the numerations will differ, unlike the famous Merge over Move cases. The same reviewer suggested that a parallel requirement in coordination may be in charge instead. Notice that the first conjunct has undergone a scrambling, while the second does not in examples like (ii). Furthermore, as the same reviewer pointed out, sentences like (ii) sound strange without some pause after the LNRed element:

- |       |                                |      |        |                      |           |          |         |                      |             |
|-------|--------------------------------|------|--------|----------------------|-----------|----------|---------|----------------------|-------------|
| (iii) | <b>kheikhu-lul<sub>1</sub></b> | *(#) | John-i | <b>e<sub>1</sub></b> | mantul-ko | (kuliko) | Mary-ka | <b>e<sub>1</sub></b> | mek-ess-ta. |
|       | <b>cake-Acc</b>                |      | J.-Nom |                      | make-and  | and      | M.-Nom  |                      | eat-Pst-DE  |

This indicates that the LNRed element is located outside of the first conjunct, scoping over the whole coordination.

honorification matching requirements), MDA but not ASA accounts for the distribution of plural dependent elements like relational modifiers and dummy plural markers. The obligatory movement property of the pivot in LNR, which Nakao (2009a,b) takes up as a main reason for abandoning MDA, can in fact follow from MDA, given Wilder's (1999, 2008) revised version of the linear correspondence axiom (LCA) along with a Parallelism Requirement, which coordinate structures are independently subject to. A shared element in the coordination should realize either in the final conjunct, producing an RNR structure, or at the left periphery of the whole coordination, resulting in an LNR structure.<sup>15</sup>

<sup>15</sup> There are some issues pointed out by reviewers but left open here for future studies. One is about scope facts. Takahashi (2008) notes the following contrast in quantifier scope interpretation:

- (i) a. modun   sensayngnim-ul   etten yehaksayng-i e   conkyengha-ko,   etten namhaksaying-to e   conkyingha-n-ta.  
 all   teacher-Acc some girl/student-Nom   respect-and   some boy/student-also   respect-Pres-DE  
 'Some girl students respect all teachers, and some boy students also respect them.' (EVERY > < SOME)
- b. modun   sensayngnim-ul   etten yehaksayng-i e   conkyengha-ko,   Chelswu-to e   conkyingha-n-ta.  
 all   teacher-Acc   some girl/student-Nom   respect-and   Ch.-also   respect-Pres-DE  
 'Some girl students respect all teachers, and Chelswu also respects them.' (EVERY > SOME)

One of the reviewers asks how the contrast can be accounted for by MDA. I speculate that the parallelism requirement for the coordinate structure and a corollary of Fox's (1999) approach to scope economy are responsible for the contrast. The base position of the LNRed element in (ib) does not play any role in scope interpretation for the second conjunct since there is no other quantifier in the second conjunct. Thus the copy in the original position does not play any role as far as the scope interpretation is concerned. The parallelism requirement for coordinate structures blocks the reconstruction effect for the first conjunct as well, account for the scope facts.

Another issue the current paper has not addressed is the LNR construction with a coordinated pivot, call it a Co-LNR, the mirror image of the so-called Co-RNR construction in the sense of De Vos and Vicente (2005). One of the reviewers pointed out to me that agreement facts in some WH-Comp agreement languages like West Flemish pose a serious problem for a multi-dominance analysis. In those languages, the complementizers of the embedded clauses have a singular agreement morpheme, when the LNRed element is a coordinate structure with two singular conjuncts, as schematically represented in English below:.

- (ii) Which novel and which poem (respectively) did Mary think that-sg John read and Susan think that-sg Bob recite last week?

The agreement facts indicate that the pivot cannot be generated as a shared element at the base. I do not have any idea of resolving this challenge for the time being, except for making a speculation that RESPECTIVELY might have a 'magic' function as a distributive operator, individualizing/singularizing its plural complement: RESPECTIVELY (NP1 and NP2) ⇒ NP1 (for the first conjunct) and NP2 (for the second conjunct), which seems to be necessarily required in the interpretation of a coordinate structure with this operator.

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Daeho Chung  
 Department of English Language and Culture  
 Hanyang University  
 1271 Sa 3-dong, Sangnok-gu, Ansan-si  
 Gyeonggi-do, 426-791, Korea

Email: cdaeho@hanyang.ac.kr

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