Left/right-node-raising in Korean

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In this experimental study, we explore the syntactic constructions of left-node-raising (LNR) and right-node-raising (RNR) in Korean, examining whether LNR functions as a mirror image of RNR, as suggested in previous work by Yatabe (2001), Nakao (2009; 2010), and Chung (2010). Our findings from formal experiments indicate the existence of a unique left/right-node-raising (LRNR) construction in Korean, which we propose as a true mirror of RNR. We analyze RNR and LRNR through the framework of multidominance theory, drawing specifically on Wilder's (1999; 2008) *in situ* linearization approach and Citko's (2005) movement-based linearization approach, which provide insights into how shared elements (i.e. pivots) in these constructions are interpreted syntactically and semantically across conjuncts. For the derivation of LNR, however, we propose an alternative approach, namely, a scrambling-plus-*pro* analysis. Our experiment centers on acceptability judgments of sentences featuring dependent-plural markers (DPMs) within pivots across these constructions, revealing that DPMs influence acceptability differently in each structure. Specifically, DPMs mildly impact the acceptability of RNR but more strongly affect LRNR, which we attribute to distinct linearization schemes in each construction. In contrast, the presence of DPMs within pivots severely degrades the acceptability of LNR. Our study concludes that RNR and LRNR are more effectively explained by multidominance theory with *in situ* and/or movement-based linearization, while LNR aligns better with the scrambling-plus-*pro* analysis due to its unique derivational properties. Thus, our findings support the claim by Kim et al. (2023) that LNR is not a direct mirror of RNR.

Keywords: dependent-plural marker, left-node-raising, left/right-node-raising, multidominance, right-node-raising

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1. Introduction

English has a right-node-raising (RNR) construction, first observed by Ross (1967) and named by Postal (1974). In this construction, a shared string of words (i.e. pivot) appearing in the rightmost position is interpreted as residing in both conjuncts, as illustrated in (1).

(1) John wrote, and Mary read a book.
'John wrote (a book), and Mary read a book.'

Japanese and Korean have a similar construction, also referred to as RNR (Saito 1987), as shown below:

(2) *John-wa hon-o, Mary-wa ronbun-o yonda.* (Japanese)
John-un chayk-ul, Mary-nun nonmwun-ul ilkessta. (Korean)
John-TOP book-ACC Mary-TOP article-ACC read
'John (read) a book, and Mary read an article.'

Although the pivot is an NP in (1) and a verb in (2), the verbs in English RNR and Japanese/Korean RNR are fully inflected. The common property is that the pivot appears only in the second conjunct but can be interpreted as belonging to both conjuncts.

Nakao (2009; 2010) reports, following Yatabe (2001), that Japanese has a mirror image of RNR, which is called left-node-raising (LNR), as exemplified in (3).

(3) *Hon-o John-wa kaki, Mary-wa yonda.* (Japanese)
book-ACC John-TOP write Mary-TOP read
'The book, John wrote and Mary read (it).'

The rule of LNR produces the effect of having a single string of words interpreted in both conjuncts while only appearing in the left periphery. It is important to note that in Japanese verbal coordination, the verb in the first conjunct must be untensed (Hirata 2006):

(4) *John-wa ringo-o tabe-Ø/*-ru/*-ta, (soshite) Mary-wa banana-o*
John-TOP apple-ACC eat-Ø/*-PRES/*-PAST (and) Mary-TOP banana-ACC
tabe-ru/ta. (Japanese)
eat-PRES/PAST
'John eats/ate an apple, and Mary eats/ate a banana.' (Hirata 2006: 70)

Hirata (2006) observes that the first conjunct of Japanese verbal coordination can never contain a tense morpheme. According to him, the temporal interpretation of the tenseless first conjunct is determined by the tense of the second conjunct. Similarly, the verb in the first conjunct of Japanese LNR must be uninflected.

Chung (2010) reports that Korean has LNR, too, as sampled in (5).

(5) *Chayk-ul John-un ssu-ko, Mary-nun ilkessta.*
book-ACC John-TOP write-and Mary-TOP read
'The book, John wrote and Mary read (it).'

The left-peripheral pivot *hon-o* 'book-ACC' in (3) and *chayk-ul* 'book-ACC' in (5) can be interpreted as the missing element in both conjuncts. Although typical examples of LNR in Japanese and Korean literature have been documented with an uninflected verb in the first conjunct, we note that the first conjunct verb in Korean LNR can be inflected, as shown below:

(6) *Chayk-ul John-un ss-ess-ko, Mary-nun ilk-essta.*
book-ACC John-TOP write-PAST-and Mary-TOP read-PAST
'The book, John wrote and Mary read (it).'

The fact that inflection on both verbs is possible in Korean LNR but not in Japanese LNR may be significant, as it may further show the difference between Korean and Japanese. In this study, we focus on Korean LNR, deliberately setting aside the question of whether the uninflected nature of the first verb in Japanese LNR accounts for this potential difference.

In order to explain the nature of LNR, Yatabe (2001) and others (Abe & Nakao 2009; Park & Lee 2009; Nakao 2009, 2010; Chung 2010; Kim et al. 2020, 2023) have proposed various analyses. In particular, Chung (2010) claims that the Korean dependent-plural marker (DPM) *tul* within a pivot is acceptable in LNR and is evidence of a multidominance analysis of LNR as follows:

(7) **Yelsimhi-tul John-un chayk-ul ilk-ko, Mary-nun nonmwun-ul ilkessta.*
diligently-DPM John-TOP book-ACC read-and Mary-TOP article-ACC read
'Diligently, John read books, and Mary read articles.' (Chung 2010: 63)

The example in (7) is judged by Chung (2010) as being acceptable in that the pivot was co-c-commanded by the first and second conjunct subjects prior to fronting. However, Kim et al. (2023) report that (7) is unacceptable. Keeping in mind the data dispute in (7), consider the following pair:

(8) *John-un chayk-ul, Mary-nun nonmwun-ul yelsimhi-tul ilkessta.*
John-TOP book-ACC Mary-TOP article-ACC diligently-DPM read
'John (diligently read) books, and Mary diligently read articles.'

(9) *Yelsimhi-tul John-un chayk-ul, Mary-nun nonmwun-ul ilkessta.*
diligently-DPM John-TOP book-ACC Mary-TOP article-ACC read
'Diligently, John (read) books, and Mary read articles.'

In (8), which illustrates an RNR construction, the verb and its adjunct are right-node-raised, while in the so-called LNR construction in (7), the identical (but not shared) verb *ilk* 'to read' is neither right-node-raised nor left-node-raised although the shared adjunct *yelsimhi-tul* 'diligently-DPM' is left-node-raised. Meanwhile, in (9), the shared adjunct is left-node-raised, and the shared verb is right-node-raised. Thus far, the construction in (9) has not been documented in Korean (and Japanese) literature, which we call the left/right-node-raising (LRNR) construction.

In this light, this study aims to show that LRNR, but not LNR, is a true mirror image of RNR, and then investigate in what sense and how the status of Korean DPM *tul* within a pivot affects the acceptability of RNR, LNR, and LRNR. Specifically, we shall discuss the theoretical implications of how to resolve the linearization problem caused by multidominance structures: Wilder's (1999; 2008) *in situ* linearization *vs.* Citko's (2005) movement-based linearization. This paper is organized as follows. §2 addresses the theoretical predictions of our hypotheses on the (un)acceptability of Korean RNR, LNR, and LRNR constructions. §3 reports an acceptability experiment with two 2 × 2 factorial designs. §4 discusses how the experimental findings could be explained by the previous analyses of sharing: across-the-board (ATB) movement, multidominance, and scrambling-plus-*pro*. §5 concludes the paper.

2. Theoretical predictions

2.1 Deriving a pivot

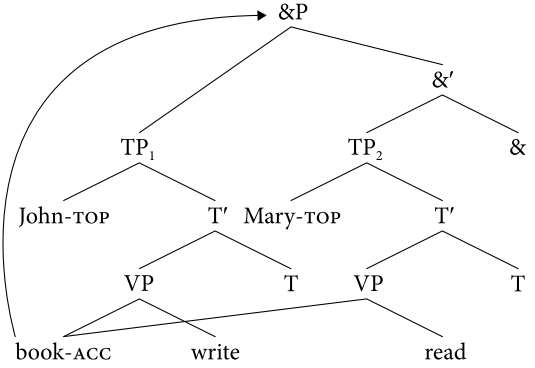
Nakao (2009; 2010) proposes that the pivot of LNR is base-generated separately in both conjuncts and dislocated ATB out of them into a single left-periphery. The following shows the derivation of (3).

(10) ATB movement analysis (Nakao 2009; 2010)

book$_1$-ACC [John-TOP t_1 write]
[Mary-TOP t_1 read]

As an alternative, Chung (2010) proposes that the left-node-raised (LNRed) pivot in (5) is multidominated by each predicate of conjuncts and dislocated out of the coordinate site as in (11).

(11) multidominance analysis (Chung 2010)



Taken together, Nakao and Chung independently propose that the pivot in LNR syntactically originates in conjuncts because it is the complement of each predicate. Hence, under the symmetric approach such as the ATB movement or multidominance analyses, case-matches of the pivot should be mandatory.

Meanwhile, Kim et al. (2023) argue that the LNRed pivot in (5) is the argument of the first conjunct predicate, and the missing argument in the second conjunct is a null *pro*, as shown in (12).

(12) scrambling-plus-*pro* analysis (Kim et al. 2023)
book$_1$-ACC [John-TOP t_1 write]
[Mary-TOP *pro* read]

Therefore, under the asymmetric approach such as a scrambling-plus-*pro* analysis, the first conjunct predicate is solely responsible for licensing the case of the pivot.

2.2 Licensing dependent-plural markers within a pivot

Korean has plural-dependent expressions such as *tul* 'dependent-plural marker (DPM)', *kakkak* 'each', or *selo* 'each other' (Choe 1988; Chung 2010). These expressions require an antecedent. In this section, we elaborate on the intriguing properties of the DPM *tul*, which can be attached to adverbials under certain circumstances.

First, the DPM *tul* requires a plural antecedent, as illustrated below:

(13) {*John-kwa Mary, *John*}-(n)un nonmwun-ul yelsimhi-tul ilkessta.
{John-and Mary, *John}-TOP article-ACC diligently-DPM read
'{John and Mary, *John} read articles diligently.'

Manner adverbials, such as *yelsimhi-tul*, typically occur immediately before the modified predicate but can be scrambled (Sohn 1999), as in (14), provided there is a plural antecedent c-commanding the original position:

(14) *Yelsimhi-tul John-kwa Mary-nun nonmwun-ul __ ilkessta.*
diligently-DPM John-and Mary-TOP article-ACC read
'John and Mary read articles diligently.'

Second, the DPM and its antecedent must be local:

(15) a. *John-kwa Mary-ka ilccik-tul ttenassta.*
John-and Mary-NOM early-DPM left
'John and Mary left early.'
b. **John-kwa Mary-nun Tom-i ilccik-tul ttenassta-ko* sayngkakhanta.
John-and Mary-TOP Tom-NOM early-DPM left-COMP think
'John and Mary think that Tom left early.'

Third, the DPM must be c-commanded by its antecedent, as shown by the contrast below:

(16) a. *John-kwa Mary-ka sinnakey-tul nolassul kes-ita.*
John-and Mary-NOM joyfully-DPM hang.out thing-be
'John and Mary must have hung out joyfully.'
b. **John-i sinnakey-tul Mary-wa nolassul kes-ita.*
John-NOM joyfully-DPM Mary-with hang.out thing-be
'John must have hung out joyfully with Mary.'

In (16a), the manner adverbial *sinnakey* with the DPM is generated as a VP adjunct and is c-commanded by the plural antecedent. In contrast, in (16b), it is not c-commanded by the potential antecedent, *John* and *Mary*. Fourth, only a subject can be an antecedent of the DPM:

(17) a. *Tom-kwa Mary-ka swukcey-lul ilccik-tul ceychwulhayssta.*
Tom-and Mary-NOM assignment-ACC early-DPM submitted
'Tom and Mary submitted their assignments early.'
b. **Tom-i Mary-wa Sue-lul seykey-tul ttayleyssta.*
Tom-NOM Mary-and Sue-ACC hard-DPM hit
'Tom hit Mary and Sue hard.'
c. **Tom-i Mary-wa Sue-eykey ton-ul manhi-tul cwuessta.*
Tom-NOM Mary-and Sue-to money-ACC a.lot.of-DPM gave
'Tom gave a lot of money to Mary and Sue.'
d. **John-i Tom-kwa Mary-lopwuthe chotay-lul ilccik-tul patassta.*
John-NOM Tom-and Mary-from invitation-ACC early-DPM received
'John received an invitation from Tom and Mary early.'

To set the context for the following discussion, we first examine the examples below:

(18) a. *John-i khukey wus-ess-ko, Mary-to khukey/kulehkey wus-esse.*
John-NOM loudly laugh-PAST-and Mary-also loudly/so laugh-PAST
'John laughed loudly, and Mary also laughed loudly/so.'

b. *John-i khukey wus-ess-ko, Mary-to.*
John-NOM loudly laugh-PAST-and Mary-also
'John laughed loudly, and Mary too.'

c. *John-i khukey wus-ess-ko, Mary-to wus-esse.*
John-NOM loudly laugh-PAST-and Mary-also laugh-PAST
'John laughed loudly, and Mary also laughed.'

d. *Khukey John-i wus-ess-ko, Mary-to wus-esse.*
loudly John-NOM laugh-PAST-and Mary-also laugh-PAST
'Loudly, John laughed, and Mary also laughed.'

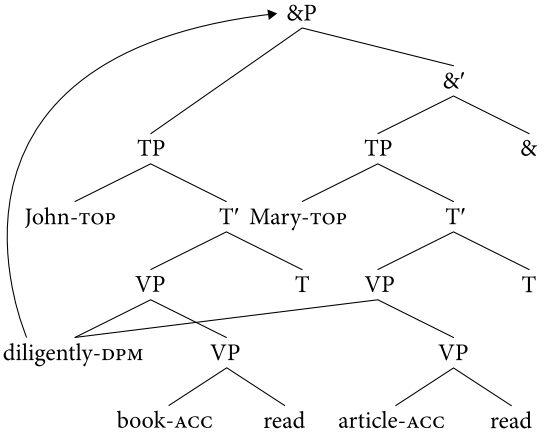
As shown in (18a), Korean has the overt adjunct *pro*-form *kulehkey* 'so'. Interestingly, the second conjunct in (18b) only allows the adjunct-inclusive reading ('Mary laughed loudly'), while in (18c), it is ambiguous between the adjunct-inclusive reading and the adjunct-exclusive reading ('Mary laughed'). This difference is not surprising under Kim's (1997) ellipsis analysis of fragments, which proposes that the subject in (18b) undergoes overt focus movement to Spec of FocusP followed by TP deletion. Consequently, the VP-adjunct reading is ensured. Regarding the interpretive ambiguity in (18c), we suggest that the adjunct-inclusive reading is pragmatically inferred by the parallelism with the first conjunct. Here, the adjunct-inclusive reading (interpreting that *both John and Mary laughed loudly*) is inferred from the parallel structure with the first conjunct, allowing the omitted adjunct in the second conjunct to be understood implicitly. This parallelism creates an expectation that the manner in which *John laughed* applies to *Mary* as well, even though it is not explicitly repeated.[1] Since manner adverbials such as *khukey* 'loudly' are assumed to be generated as VP adjuncts (Sohn 1999), (18d) could be a candidate for an apparent leftward movement. We note that (18d) is an example of LNR and has a structure like (12).

As mentioned earlier, the acceptability status of (7) could be a clue to uncover which of the previous analyses of LNR is superior. If the example in (7), repeated below as (19), turns out to be acceptable, then it could be evidence of Chung's (2010) multidominance proposal. The multidominated structure of (19) is represented in (20).

1. We are grateful to the reviewer for offering such a valuable suggestion.

(19) *Yelsimhi-tul John-un chayk-ul ilk-ko, Mary-nun nonmwun-ul*
diligently-DPM John-TOP book-ACC read-and Mary-TOP article-ACC
ilk-essta.
read-PAST
'Diligently, John read books, and Mary read articles.'

(20)



The dependent-plural-marked (DPMed) pivot is successfully licensed under Chung's multidominance proposal because it has a chance to be cumulatively c-commanded by the split plural subject *John + Mary* prior to fronting.

Meanwhile, it remains mysterious how the ATB movement or scrambling-plus-*pro* analyses can license the pivot with DPMs. Notice, however, that Chung's (2010) multidominance analysis is viable only if the DPMed pivot in LNR as in (19) is acceptable.

In relation to this, there is another candidate for a mirror image of RNR, which is apparently similar to LNR in (19) but different in that the identical verb disappears in the first conjunct. Consider again the examples in (8) and (9), which are repeated below:

(21) *John-un chayk-ul, Mary-nun nonmwun-ul yelsimhi-tul ilkessta.*
John-TOP book-ACC Mary-TOP article-ACC diligently-DPM read
'John (diligently read) books, and Mary diligently read articles.'

(22) *Yelsimhi-tul John-un chayk-ul, Mary-nun nonmwun-ul ilkessta.*
diligently-DPM John-TOP book-ACC Mary-TOP article-ACC read
'Diligently, John (read) books, and Mary read articles.'

Chung (2010) claims that the LNR in (19) is a mirror image of the RNR in (21) in that the pivot appears in the left-peripheral position in the former while it appears in the right-peripheral position in the latter. What he has overlooked, however, is that there is another identical element in (19), which is the first conjunct verb. If

the identical verb becomes a pivot as well at the right-peripheral position, then (22) will be produced, which may be called left/right-node-raising (LRNR). Logically, the LRNR in (22) appears to be a true mirror image as a minimal pair of the RNR in (21).

Since split c-commanding of the DPM within a pivot indicates the possibility of multidominance, and linguistic theories ideally rest on robust empirical foundations, the data require rigorous verification. In this light, we investigate the role of DPMs with respect to Korean RNR, LNR, and LRNR, via the methods of experimental syntax.

3. Experiment

3.1 Logic of the experiment

In the experiment, we examine the acceptability of a range of Korean edge-sharing constructions to explore whether it is possible for the pivotal DPM to be properly licensed. For this, the canonical RNR construction in (23) will be included as the baseline of the experiment, whose acceptability will establish how acceptable a typical RNR construction is.

(23) *John-un chayk-ul, Mary-nun nonmwun-ul yelsimhi ilkessta.*
John-TOP book-ACC Mary-TOP article-ACC diligently read
'John (diligently read) books, and Mary diligently read articles.'

It is noteworthy that it may not be rated as perfectly acceptable. Since RNR has some missing or shared elements (i.e. the pivot) that the parser needs to recover for a successful interpretation, the cost of such a process will be reflected in acceptability. The processing burden should be considered within the experimental design as it is applied to all Korean RNR constructions.

Next, we shall measure the effects of the pivotal DPM on acceptability. To do this, we shall adopt the factorial design for island effects from Sprouse et al. (2012). In this experimental design, a factor is a variable that can be manipulated, such as the direction or complexity of sharing, or the presence or absence of the DPM. Each value of a factor is called a level. By selecting factors and their respective levels that represent the components of a more detailed explanation, we can isolate and analyze the contributions of each component. Notice that each DPM of the three sharing phenomena presents an additional challenge to the parser. First, in processing the cumulative agreement in RNR as in (21), the parser is presented with an atypical licensing environment for the DPM *tul*. Given that there is no plural nominal, the parser should make an extra effort to find nominals that

may license the DPM *tul* in the pivot. That is, even though the parser eventually recognizes the two split subjects across conjuncts as being collectively able to license the DPM *tul*, this endeavor may affect acceptability. We shall tease apart the effect of such a cumulative agreement by comparing the acceptability of RNR with a DPM in (21) and that of RNR without a DPM in (23).

Second, in the case of LNR (19) and LRNR (22) with a pivotal DPM, the parser would make efforts to reconstruct the pivot into left- and/or right-peripheral position in order to be c-commanded by a plural subject. While the parser will eventually succeed, such a process will affect acceptability. Again, we shall measure this effect by comparing the acceptability of LNR/LRNR with a pivotal DPM in (19) and (22) and that of LNR/LRNR without a pivotal DPM in (24) and (25), respectively.

(24) *Yelsimhi John-un chayk-ul ilk-ko, Mary-nun nonmwun-ul ilk-essta.*
diligently John-TOP book-ACC read-and Mary-TOP article-ACC read-PAST
'Diligently, John read books, and Mary read articles.'

(25) *Yelsimhi John-un chayk-ul, Mary-nun nonmwun-ul ilk-essta.*
diligently John-TOP book-ACC Mary-TOP article-ACC read-PAST
'Diligently, John (read) books, and Mary read articles.'

After measuring the DPM effects of RNR, LNR, and LRNR, we can ask our main question as to whether RNR, LNR, and LRNR with pivotal DPMs will suffer an additional amount of penalty that cannot be explained by the sum of individual effects.

If LNR and LRNR with a pivotal DPM are less acceptable than RNR with a pivotal DPM only to the degree of the sum of individual effects, it may be evidence that the three sharing phenomena can be accounted for uniformly via multidominance. In this case, we can consider LNR and LRNR with a pivotal DPM to be well-formed, only suffering from the individual penalties, but nothing more.

However, if we observe LNR and LRNR with a pivotal DPM to be significantly less acceptable compared to the sum of individual effects, it may suggest that LNR/LRNR and RNR should involve different derivations. That is, there is something more to be explained for the difference between LNR/LRNR and RNR. The super-additive amount of degradation in acceptability may suggest that LNR and LRNR suffer from another issue in the construction, which is caused by the distinct operation involved. It is likely that one phenomenon (e.g., LNR) requires the separate phrases to exist in each conjunct in order to be licensed, while the other (e.g., RNR and LRNR) demands the pivot to be shared by two conjuncts, enabling the subjects of the two conjuncts to function as split licensors. These different derivational requirements may induce the super-additive amount of degradation in acceptability.

In what follows, we shall launch an experimental probe of whether Korean DPMs within a pivot influence the acceptability ratings of LNR and LRNR in relation to RNR.

3.2 Design and materials

The goal of this study was to evaluate whether Korean LNR and LRNR allow the DPM *tul* to exist within a pivot. Since the cumulative licensing potential of the DPM may extend to all edge-sharing phenomena, we compared the status of the DPM in LNR and LRNR with that in RNR. We employed a 2 × 2 design that crossed SHARING (RNR, LNR) with PLURAL (–DPM, +DPM). Additionally, we included two LRNR conditions for comparison with RNR conditions, implementing a second 2 × 2 design that crossed SHARING (RNR, LRNR) with PLURAL (–DPM, +DPM). This resulted in an experiment comprising two 2 × 2 sub-experiments, as sampled in (26).

(26) a. [RNR | –DPM]
John-un TOEFL-ul, Mary-nun TOEIC-ul yelsimhi kongpwuha-essta.
John-TOP TOEFL-ACC Mary-TOP TOEIC-ACC diligently study-PAST
'John (studied) TOEFL (diligently), and Mary studied TOEIC diligently.'

b. [LNR | –DPM]
Yelsimhi John-un TOEFL-ul kaluchi-ko, Mary-nun TOEIC-ul
diligently John-TOP TOEFL-ACC teach-and Mary-TOP TOEIC-ACC
kongpwuha-essta.
study-PAST
'Diligently, John taught TOEFL, and Mary studied TOEIC.'

c. [LRNR | –DPM]
Yelsimhi John-un TOEFL-ul, Mary-nun TOEIC-ul kongpwuha-essta.
diligently John-TOP TOEFL-ACC Mary-TOP TOEIC-ACC study-PAST
'Diligently, John (studied) TOEFL, and Mary studied TOEIC.'

d. [RNR | +DPM]
John-un TOEFL-ul, Mary-nun TOEIC-ul yelsimhi-tul
John-TOP TOEFL-ACC Mary-TOP TOEIC-ACC diligently-DPM
kongpwuha-essta.
study-PAST
'John (studied) TOEFL (diligently), and Mary studied TOEIC diligently.'

e. [LNR | +DPM]
Yelsimhi-tul John-un TOEFL-ul kaluchi-ko, Mary-nun TOEIC-ul
diligently-DPM John-TOP TOEFL-ACC teach-and Mary-TOP TOEIC-ACC
kongpwuha-essta.
study-PAST
'Diligently, John taught TOEFL, and Mary studied TOEIC.'

f. [LRNR | +DPM]
Yelsimhi-tul John-un TOEFL-ul, Mary-nun TOEIC-ul
diligently-DPM John-TOP TOEFL-ACC Mary-TOP TOEIC-ACC
kongpwuha-essta.
study-PAST
'Diligently, John (studied) TOEFL, and Mary studied TOEIC.'

We postulated the SHARING factor to assess whether the acceptability of the conditions with the DPMed pivot is influenced by the syntactic difference of RNR, LNR, and LRNR. We also postulated the PLURAL factor to test whether the presence of DPM *tul* within a pivot modulates the acceptability ratings of RNR, LNR, and LRNR conditions. In each set, we used the most-frequently-used DPM markers as sample stimuli, based on Korean corpus distributed by the National Institute of Korean Language (https://corpus.korean.go.kr): *kkomkkomhi-tul* 'thoroughly-DPM', *yelsimhi-tul* 'diligently-DPM', *kkalkkumhi-tul* 'tidily-DPM', *kiphkey-tul* 'deeply-DPM', *ssakey-tul* 'cheaply-DPM', *yeyppukey-tul* 'beautifully-DPM', *kapcaki-tul* 'suddenly-DPM', *calkey-tul* 'thinly-DPM', *tancenghakey-tul* 'neatly-DPM', *melli-tul* 'far.away-DPM', *sinsokhi-tul* 'quickly-DPM', and *coyonghi-tul* 'quietly-DPM'. The full list of experimental items is available online.[2]

In this design, we predicted that the [–DPM] condition would be more acceptable than the [+DPM] condition in LNR and LRNR due to the markedness (thus, lower frequency) of the DPM *tul*. Then, the cumulative effect of the DPM would be examined by measuring the amount of degradation in the [+DPM] condition relative to the [–DPM] condition. If the degradation in the [LNR] and [LRNR] conditions is significantly greater than that in the [RNR] condition, which will be verified by a significant two-way interaction SHARING × PLURAL, it will indicate that neither LNR nor LRNR allows the DPM within a pivot.

Twelve lexically-matched sets of the six experimental conditions were made, and they were counterbalanced across six lists using a Latin square design so that a list has only one item from each set.[3] Therefore, each list contained 12 experimental items, along with 54 filler items (i.e. experimental items:filler items = 1:4.5)

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2. https://doi.org/10.13140/RG.2.2.28323.98083

3. One might wonder why more sets of the experimental conditions were not constructed for the experiment. Although the distribution of the DPM *tul* attached to an adjunct is syntactically licensed by a plural subject, it is pragmatically limited in Korean.

of comparable length but with varying degrees of acceptability. Taken together, there were 66 sentences in each list.

3.3 Participants, procedure, and data analysis

One hundred and sixteen self-reported native Korean speakers (age: *mean* = 23.23), who were all undergraduate students at a university in South Korea, were recruited to participate in the experiment online in exchange for course credit. We excluded the responses from eight participants who were not paying attention during the task (by the procedure to be made precise below). Accordingly, only the responses from 108 participants (18 for each of the six lists) were included in the analysis.

We programmed the experiment with a web-based experiment platform PCIbex (Zehr & Schwarz 2018). Sentences were presented one at a time on a computer screen and participants were asked to make acceptability judgments on the Likert scale of 1 (*very unnatural*) to 7 (*very natural*). In addition to test items, there were 16 "gold standard" filler items. These filler items included eight good and eight bad filler items, which showed either the highest or the lowest acceptability most clearly in the previous tests conducted on about 200 participants prior to the experiment. We obtained the expected value of these filler items from the results of these previous tests. For each gold standard item, we calculated the difference between each participant's response and its expected value (i.e. 1 or 7). To compare the size of the differences that were either positive or negative numbers, we squared each of the differences and summed the squared differences for each participant. This gave us the sum-of-the-squared-differences value of each participant. We excluded any participants whose sum-of-the-squared-differences value was greater than two standard deviations away from the mean (cf. Sprouse et al. 2022).

Prior to analyzing the data, the raw judgment ratings, including both experimental items and filler items, were converted to z-scores in order to eliminate certain kinds of scale biases between participants (Schütze & Sprouse 2013). Linear mixed-effects models were used to analyze the data; these models allow the simultaneous inclusion of random participant and item variables (Baayen et al. 2008). Each model was fit using the maximal random effects structure that converged (Barr et al. 2013). These models were run in the R environment (R Core Team 2020) using the *lme4* package (Bates et al. 2015). *P*-value estimates for the fixed and random effects were calculated by Satterthwaite's approximation, using the *lmerTest* package (Kuznetsova et al. 2017). A likelihood ratio test (using the *anova()* function in R) was used to compare multiple models and determine the final model that provided the best fit to the data.

3.4 Results

Figure 1 presents the mean z-scores for the acceptability judgments for the six experimental conditions of the experiment. The zero represents the overall mean acceptability rating; positive z-scores indicate that conditions are rated towards being acceptable, while negative z-scores indicate that conditions are rated towards being unacceptable. The SHARING effect is represented by a vertical separation between the lines, and the PLURAL effect is represented by the downward slope of the lines:

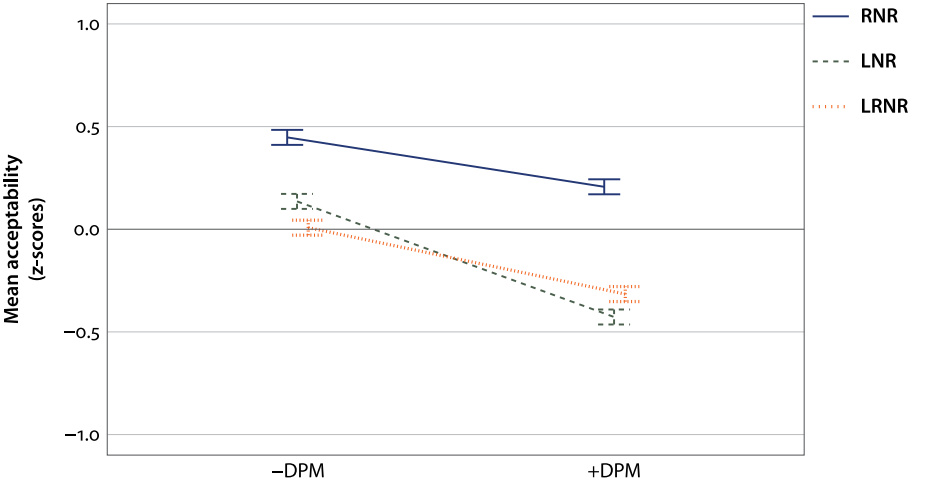


Figure 1. Mean acceptability of experimental conditions (error bars = *SE*)

Two 2 × 2 analyses were conducted on the stimuli in (26). In the first 2 × 2 analysis, we fit a mixed-effects linear model predicting z-transformed acceptability ratings for SHARING [RNR | LNR] crossed with PLURAL [−DPM | +DPM]. The results of the model are summarized in Table 1.

Table 1. Summary of model for SHARING [RNR | LNR] by PLURAL

	β	*SE*	*t*	*p*
(Intercept)	0.443	0.053	8.373	< 0.001
SHARING [RNR | LNR]	−0.304	0.077	−3.974	< 0.001
PLURAL	−0.233	0.075	−3.112	< 0.01
SHARING:PLURAL	−0.327	0.105	−3.103	< 0.01

In this model, a significant effect of SHARING was observed, indicating that the RNR condition was rated better than the LNR condition. A significant effect of PLURAL was also observed, demonstrating that the DPM-less condition was rated better than the DPM-marked condition. There was a reliable interaction between the factors, revealing that the difference in acceptability between RNR and LNR cases in the DPM-marked condition was greater than that in the DPM-less condition. *Post hoc* tests confirmed that the DPM-marked LNR condition suffered a separate penalty: [RNR | +DPM] *vs.* [LNR | +DPM] ($\beta = 0.631$, $SE = 0.077$, $t = 8.174$, $p < 0.001$) and [RNR | −DPM] *vs.* [LNR | −DPM] ($\beta = 0.304$, $SE = 0.077$, $t = 3.957$, $p < 0.01$).[4] These results are not predicted by a multidominance approach to LNR, which predicts no interaction between the factors, such that the DPM-marked LNR condition should be acceptable.

In the second 2 × 2 analysis, we fit a model predicting z-transformed acceptability ratings for SHARING [RNR | LRNR] crossed with PLURAL [−DPM | +DPM]. The results of the model are summarized in Table 2.

Table 2. Summary of model for SHARING [RNR | LRNR] by PLURAL

	β	*SE*	*t*	*p*
(Intercept)	0.462	0.040	11.543	< 0.001
SHARING [RNR | LRNR]	−0.475	0.045	−10.534	< 0.001
PLURAL	−0.273	0.046	−5.985	< 0.001

Model comparison between models with and without the interaction between SHARING and PLURAL revealed no difference in model fit ($\chi^2(1) = 0.873$, $p = 0.35$); thus, the model without the interaction was used as the base model. We observed a significant effect of SHARING, such that the RNR condition was rated better than the LRNR condition. We also observed a significant effect of PLURAL such that the DPM-less condition was rated better than the DPM-marked condition. However, there was no interaction between the factors, revealing that the difference in acceptability between RNR and LRNR cases in the DPM-marked condition was similar to that in the DPM-less condition. *Post hoc* tests confirmed that the DPM-marked LRNR condition did not suffer a separate penalty: [RNR | +DPM] *vs.* [LRNR | +DPM] ($\beta = 0.516$, $SE = 0.064$, $t = 8.009$, $p < 0.001$) and [RNR | −DPM] *vs.* [LRNR | −DPM] ($\beta = 0.434$, $SE = 0.064$, $t = 6.750$, $p < 0.001$). These results suggest that the acceptability of [LRNR | +DPM] in (26f) is worse than that of [RNR | +DPM] in (26d) only to the degree of the sum of

4. To obtain pairwise comparisons, a *post hoc* test with Bonferroni correction was performed using the *emmeans()* function (Lenth et al. 2018).

the two individual effects (i.e. the sharing penalty + the plural penalty). Therefore, we could state that these results are predicted by a multidominance approach to LRNR, which predicts no interaction between the factors, such that the DPM-marked LRNR condition is a well-formed sharing construction.

We conducted a *post hoc* power analysis using the *pwr.f2.test()* function from the *pwr* package in R. The parameters used were as follows: u (the numerator degrees of freedom) = 3, v (the denominator degrees of freedom) = 1292, and f^2 (the effect size) = 0.392. For small, medium, and large effect sizes as defined by Cohen (2016), the results yielded power values above 0.80, indicating that the experiment was sufficiently powered.

4. General discussion

The main goal of this study was to investigate the effect of pivotal DPMs on the acceptability of LNR and LRNR, compared with that of RNR in Korean. Results from the experiment revealed two findings.

First, the acceptability of [LNR | +DPM] in (26e) was significantly lower than what would have been expected by the sum of the two effects (i.e. the sharing penalty + the plural penalty). That is, there is something more to be explained in the difference between [RNR | +DPM] in (26d) and [LNR | +DPM] in (26e). This super-additive amount of degradation in acceptability thus suggests that [LNR | +DPM] in (26e) suffers from another issue in the construction, which we hypothesize due to the distinct derivational procedures of the two phenomena: RNR *vs.* LNR.

Second, the acceptability of [LRNR | +DPM] in (26f) was worse than that of [RNR | +DPM] in (26d) only to the degree of the sum of the two effects (i.e. the sharing penalty + the plural penalty). This linear-additive amount of degradation in acceptability suggests that [LRNR | +DPM] in (26f) suffers from processing difficulty, which we assert stems from the similar derivational procedures of the two phenomena: RNR *vs.* LRNR.[5] Below, we shall discuss the theoretical implications of our experimental findings.

4.1 Deriving a pivot in LNR

According to the symmetric approach, the pivot, which originated in both conjuncts, was subcategorized by both conjunct predicates. Under this approach,

5. We acknowledge that the z-score for the [LRNR | +DPM] condition is somewhat low (*mean*: −0.311); however, it is significantly higher than the z-score for bad filler items (*mean*: −1.247).

theories fall neatly into two groups: the ATB scrambling account and the multidominance account.

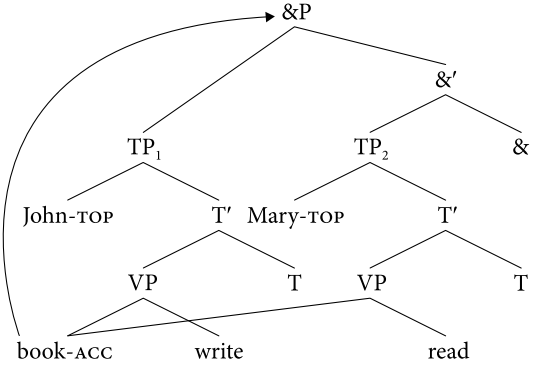
Let us first consider Nakao's (2009; 2010) ATB scrambling account. She proposes that Japanese/Korean LNR is derived via the ATB scrambling of the pivot, as shown in (27).

(27) *Hon*$_1$*-o John-wa* t_1 *kaki, Mary-wa* t_1 *yonda.* (Japanese)
Chayk$_1$*-ul John-un* t_1 *ssu-ko, Mary-nun* t_1 *ilkessta.* (Korean)
book-ACC John-TOP write-and Mary-TOP read
'The book, John wrote and Mary read (it).'

Under this account, the pivot was base-generated in each conjunct and has moved to the left-periphery. Hence, it should satisfy the case-matching requirement for the missing argument of each predicate, mandating the case of the pivot to be morphologically identical.

Such a case-matching requirement should be fundamental under the multidominance approach, too. Nakao (2009; 2010) explores a multidominance reformulation of her ATB scrambling account of LNR, adopting Citko's (2005) theory of multidominance. According to Citko, the LNRed pivot could be parallelly merged with each predicate in coordination as in (11), repeated below as (28).

(28)



The multidominated pivot in (28), which naturally captures the case-matching requirement, was base-generated as the argument of each predicate. Under Citko's movement-based linearization, the pivot must move to a higher position in order to be linearized, observing Kayne's (1994) Linear Correspondence Axiom (LCA), according to which a c-command relation directly determines a precedence relation: α precedes β only if α asymmetrically c-commands β. In other words, if a multidominated element stays *in situ*, it cannot be linearized.

Meanwhile, Kim et al.'s (2023) experimental findings show that the case-matching requirement may be obviated as long as the case of the LNRed pivot is licensed in the first conjunct, as shown below:

(29) a. *Mary-eykey oppa-ka kkochtapal-ul cwu-ko, emma-ka*
Mary-DAT brother-NOM bouquet-ACC give$_{DAT}$-and mom-NOM
ttattushakey macihayssta.
warmly welcomed$_{ACC}$
'(To) Mary, her brother gave a bouquet, and her mom welcomed (her) warmly.'

b. **Mary-eykey emma-ka ttattushakey maciha-ko, oppa-ka*
Mary-DAT mom-NOM warmly welcome$_{ACC}$-and brother-NOM
kkochtapal-ul cwuessta.
bouquet-ACC gave$_{DAT}$
'(To) Mary, her mom welcomed warmly, and her brother gave (her) a bouquet.'

In (29), the second conjunct predicate *macihayssta* 'welcomed' licenses an accusative case only, which is mismatched with the dative case of the pivot. The symmetric approach thus would invariably predict that both (29a) and (29b) are ill-formed. However, Kim et al.'s (2023) experimental results reveal that the case-mismatch in the first conjunct of (29b) is significantly less acceptable than that in the second conjunct of (29a).

Since Korean is a *pro*-drop language, the LNR constructions in (29) necessitate the existence of the so-called null object constructions (NOCs), as follows:

(30) a. *Oppa-ka Mary-eykey kkochtapal-ul cwu-ko, emma-ka*
brother-NOM Mary-DAT bouquet-ACC give$_{DAT}$-and mom-NOM
ttattushakey macihayssta.
warmly welcomed$_{ACC}$
'Her brother gave Mary a bouquet, and her mom welcomed (her) warmly.'

b. **Emma-ka Mary-eykey ttattushakey maciha-ko, oppa-ka*
mom-NOM Mary-DAT warmly welcome$_{ACC}$-and brother-NOM
kkochtapal-ul cwuessta.
bouquet-ACC gave$_{DAT}$
'Her mom welcomed Mary warmly, and her brother gave (her) a bouquet.'

A reviewer inquired whether (29a) is simply less unacceptable than (29b) or if it is as "perfectly" acceptable as the NOC example in (30a). We emphasize that, although the case-mismatched NOC in (30a) is generally considered acceptable, it does not receive ratings as high as the case-matched NOC in (31a). Similarly, the mean acceptability score for the case-mismatched LNR in (29a) falls within the acceptable range, but it is not rated as highly as the case-matched LNR in (31b).

(31) a. *Oppa-ka Mary-eykey kkochtapal-ul cwu-ko, emma-ka*
brother-NOM Mary-DAT bouquet-ACC give$_{DAT}$-and mom-NOM
os-ul senmwulhayssta.
clothes-ACC presented$_{DAT}$
'Her brother gave Mary a bouquet, and her mom presented (her) with clothes.'

b. *Mary-eykey oppa-ka kkochtapal-ul cwu-ko, emma-ka*
Mary-DAT brother-NOM bouquet-ACC give$_{DAT}$-and mom-NOM
os-ul senmwulhayssta.
clothes-ACC presented$_{DAT}$
'(To) Mary, her brother gave a bouquet, and her mom presented (her) with clothes.'

As pointed out by a reviewer, the fact that (29a) is acceptable as much as (30a) can directly support the scrambling-plus-*pro* analysis.

Nakao (2010) explores the scrambling-plus-*pro* analysis of Japanese LNR. However, she claims that the acceptability of Japanese LNR in (32) is different from that of Japanese NOC in (33), leading her to abandon the option of reducing LNR to NOC.

(32) ??*Mary-ni John-ga hana-o okuri, Tom-ga nagusameta.*
Mary-DAT John-NOM flower-ACC send$_{DAT}$ Tom-NOM comforted$_{ACC}$
'(To) Mary, John sent a flower, and Tom comforted (her).'

(33) *Mary-ni John-ga hana-o okutta. Tom-wa pro* nagusameta. (Japanese)
Mary-DAT John-NOM flower-ACC sent$_{DAT}$ Tom-TOP comforted$_{ACC}$
'John sent a flower to Mary. Tom comforted (her).' (Nakao 2010: 157)

Nakao reports that the Japanese NOC in (33), which resembles the LNR in (32) except that NOC consists of two sentences without coordination, allows the null pronoun *pro* and its antecedent to have different cases.

Nevertheless, Nakao (2010) adopts a scrambling-plus-resumptive *pro* analysis, which is essentially similar to Kim et al.'s (2023) proposal, to account for LNR involving an island, as contrasted in (34) and (35).

(34) **Ku cikap$_1$-ul John-i [t$_1$ cwuwun salam-ul] chacass-ko, Mary-ka*
the wallet-ACC John-NOM pick.up person-ACC looked.for-and Mary-NOM
[t$_1$ hwumchin namca-lul] ccochassta.
stole man-ACC chased
'The wallet, John looked for the person who picked (it) up, and Mary chased the man who stole (it).'

(35) *Ku cikap$_1$-ul John-i t_1 cwup-ko, Mary-ka [t_1 hwumchin namca-lul]*
the wallet-ACC John-NOM pick.up-and Mary-NOM stole man-ACC
ccochassta.
chased
'The wallet, John picked up, and Mary chased the man who stole (it).'

In (34), the pivot is base-generated within an island in both conjuncts and has scrambled ATB across a relative island, which is ruled out according to her ATB scrambling analysis. Although admitting interspeaker variation, Nakao judges the Japanese counterpart of (35) as acceptable, where only the second conjunct has a relative island. She claims that (35) does not display the properties of typical LNR, while proposing that this non-typical apparent LNR resorts to a resumptive *pro* strategy to avoid an island violation. Next, consider the example in (36) where the case-mismatched pivot is base-generated within an island only in the second conjunct:

(36) *Ku yepaywu$_1$-lul John-i t_1 wiloha-ko, Mary-ka [pro khisuhan*
the actress-ACC John-NOM comfort$_{ACC}$-and Mary-NOM kissed$_{DAT}$
suthokhe-lul] ccochassta.
stalker-ACC chased
'The actress, John comforted$_{ACC}$, and Mary chased the stalker who kissed$_{DAT}$ (her).'

Nakao (2010) first reports that certain speakers, including herself, accept the Japanese counterpart of (36). She then claims that the second conjunct gap/trace is a null resumptive pronoun, avoiding an island violation. However, if resumptive *pro* is not significantly different from the so-called null *pro*, the emerging option is that at least some instances of Japanese/Korean LNR can be accommodated under the umbrella of the NOC proposal: the scrambling-plus-*pro* analysis.[6]

Crucially, Nakao (2010) points out that the case-mismatched pivot in (36), unlike that in (32), is acceptable. In (36), the first conjunct predicate *wiloha* 'comfort$_{ACC}$' assigns an accusative case, while the second conjunct predicate *khisuha* 'kiss$_{DAT}$' inside the island assigns a dative case. Nakao acknowledges that (36) is as acceptable as (35) for the speakers who accept (35) despite the case mismatches. This can be well captured by the scrambling-plus-*pro* analysis. If the apparent piv-

6. It is questionable whether null resumption can repair island violations. Under the standard assumption, resumptive pronouns have phonetic values, compared with their trace counterparts. As illustrated in (i), the relative clause island violation is ameliorated when the trace is replaced with an overt resumptive pronoun (cf. Boeckx 2008):

(i) All the students who the papers which {they$_{resumptive}$, *__ } submitted were lousy I'm not going to allow to register next term.

ots *ku cicap-ul* 'the wallet-ACC' in (35) and *ku yepaywu-lul* 'the actress-ACC' in (36) were to move in an ATB fashion, both sentences should have been ruled out. Under the current proposal, the apparent pivots have moved only in the first conjunct via scrambling, and the gap within the island in the second conjunct is *pro*. Since there is no movement out of the island, (35) and (36) are acceptable.

To summarize, the conjunct-sensitive property would be easily accounted for under the asymmetric approach to LNR. Following Kim et al. (2023), we propose that Korean LNR constructions are a type of null object constructions, where the pivot is asymmetrically scrambled only from the first conjunct and there is a null pronoun *pro* in the second conjunct, which is anaphoric to the LNRed pivot. The following shows the derivation of (29a).

(37) scrambling-plus-*pro* analysis of LNR

Mary_1-DAT	[brother-NOM	t_1	bouquet-ACC	give_{DAT}]
	[mom-NOM	warmly	*pro*	$\text{welcomed}_{\text{ACC}}$]

The pivot in (37) is base-generated only in the first conjunct and assigned case exclusively from the first conjunct predicate. The missing argument in the second conjunct is *pro*. The scrambling-plus-*pro* account would be better than the ATB or multidominance accounts with respect to the case-mismatching property in Korean LNR.

4.2 Pivotal dependent-plural markers: RNR, LNR, and LRNR

Under the spirit of Citko's (2005) movement-based linearization of multidominance, Nakao (2010) explores a multidominance analysis of LNR. More precisely, she proposes that the pivot is parallelly merged with each conjunct predicate. Later, the pivot must move to a higher position in order to observe Kayne's (1994) LCA. Such a linearization scheme is reformulated by Chung (2010) under Wilder's (1999; 2008) *in situ* linearization of multidominance.

In this vein, let us consider again the apparent similarity among the three types of edge-sharing phenomena concerning the DPM *tul* within a pivot: RNR in (38a), LNR in (38b), and LRNR in (38c).

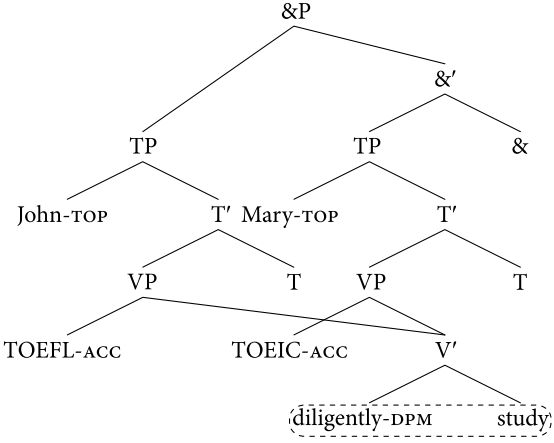
(38) a. [RNR | +DPM] (= 26d)
John-un TOEFL-ul, Mary-nun TOEIC-ul yelsimhi-tul
John-TOP TOEFL-ACC Mary-TOP TOEIC-ACC diligently-DPM
kongpwuha-essta.
study-PAST
'John (studied) TOEFL (diligently), and Mary studied TOEIC diligently.'

b. [LNR | +DPM] (= 26e)
Yelsimhi-tul John-un TOEFL-ul kaluchi-ko, Mary-nun TOEIC-ul
diligently-DPM John-TOP TOEFL-ACC teach-and Mary-TOP TOEIC-ACC
kongpwuha-essta.
study-PAST
'Diligently, John taught TOEFL, and Mary studied TOEIC.'

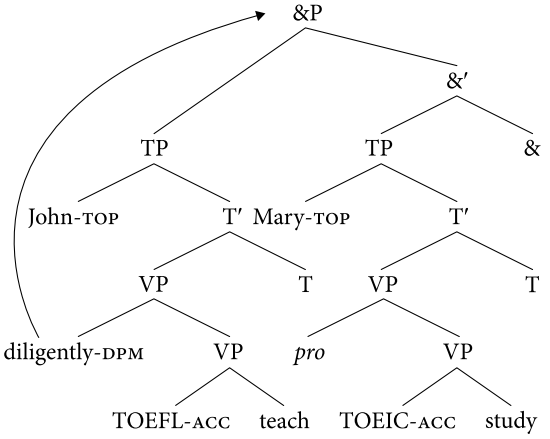
c. [LRNR | +DPM] (= 26f)
Yelsimhi-tul John-un TOEFL-ul, Mary-nun TOEIC-ul
diligently-DPM John-TOP TOEFL-ACC Mary-TOP TOEIC-ACC
kongpwuha-essta.
study-PAST
'Diligently, John (studied) TOEFL, and Mary studied TOEIC.'

We propose that the DPM-marked experimental stimuli in (38) are derived as follows:

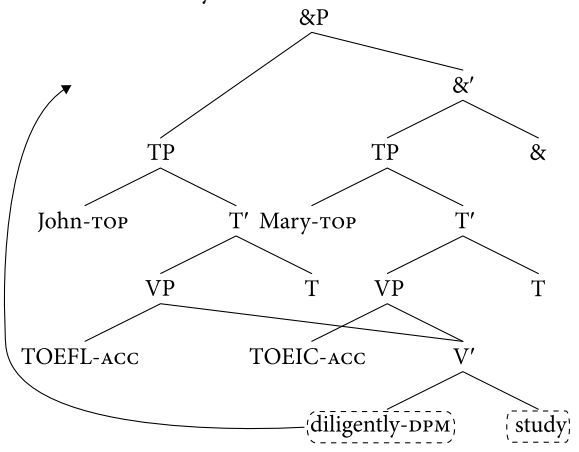
(39) a. RNR is derived by multidominance.



b. LNR is derived via scrambling-plus-*pro*.



c. LRNR is derived by multidominance.



Regarding the z-score rating (*mean*: 0.207) of [RNR | +DPM] in (38a), the derivation of which is shown in (39a), we propose that the multidominated pivot V' (i.e. [$_{V'}$ diligently-DPM study]) does not evoke a contradictory linear order under Wilder's (1999; 2008) *in situ* linearization. According to Wilder, an *in situ* pivot can be linearized at the right periphery, deriving the RNR construction in (38a).

Chung (2010) claims that the multidominance analysis has an advantage over the ATB scrambling analysis with regard to the distribution of DPMs in LNR. Based on Choe's (1988) preliminary observation, he points out that the DPMs, which must be licensed by a c-commanding plural antecedent in the local domain, are licensed in both RNR (Chung 2004) and LNR (Chung 2010) even when the subjects from separate conjuncts work together to license plural agreement on the pivot in (38a) and (38b).

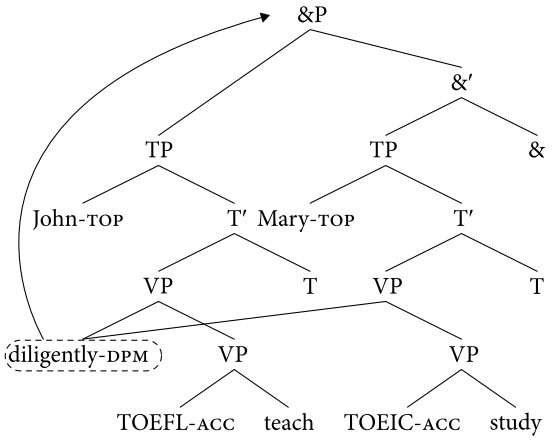
As proved by the experiment, however, there is an acceptability difference between RNR and LNR regarding the licensing of the DPM. RNR in (38a) is significantly more acceptable than LNR in (38b), which raises an issue of whether the DPM-marked pivots in RNR and LNR are licensed in a similar way. Recall that the RNR construction in (38a) is more acceptable than the LNR construction in (38b) according to the results of our experiment. Thus, the right-node-raised DPMs may be licensed under the multidominance approach in that their *in situ* positions are cumulatively c-commanded by the split antecedent *John* + *Mary*. Since LNR in (38b) is predicted to be acceptable under the multidominance approach, the experimental findings of the DPM-marked pivot in LNR are not compatible with Chung's (2010) multidominance prediction.

The relatively low z-score rating (*mean*: −0.428) of LNR in (38b) is predicted by the scrambling-plus-*pro* approach, as shown in (39b). In this approach, the DPM-marked pivot is generated within the first conjunct and then fronted to the left-edge position. As such, there is no opportunity for the DPM-marked pivot to be cumulatively c-commanded by a (split) plural subject. In short, the property of the DPM-marked pivot that reduces acceptability could serve as evidence for the scrambling-plus-*pro* approach. Korean RNR requires the pivot to be shared by two conjuncts, enabling the subjects of the two conjuncts to function as split licensors, while Korean LNR demands the separate phrases to exist in each conjunct. We argue that such a difference would induce the super-additive amount of degradation for the acceptability of LNR in (38b).

Meanwhile, the acceptability status of LRNR in (38c) can be explained by an eclectic multidominance approach to the left-and-right sharing phenomenon. As represented in (39c), the multidominated pivot is V', which is non-distinct from the pivot in (39a) (i.e. [$_{V'}$ diligently-DPM study]). In the case of LRNR, the verbal pivot *kongpwuha* 'to study' can be linearized at the right-peripheral position, according to Wilder's (1999; 2008) *in situ* linearization, while the DPM-marked adverbial pivot can be linearized at the left peripheral position, according to Citko's (2005) movement-based linearization. Both Korean RNR and LRNR constructions require the pivot to be shared by two conjuncts, enabling the subjects of the two conjuncts to function as split licensors. We propose that the two separate (i.e. leftward and rightward) linearization solutions of LRNR in (38c), compared to the unique linearization solution of RNR in (38a), would induce a linear-additive amount of degradation for the acceptability of LRNR in (38c) due to processing complexity.

A reviewer raised a question of what would block the derivation in (40) if our empirical finding that LRNR, but not LNR, is compatible with the DPM is accurate.

(40)



More precisely, if movement-based linearization is a legitimate operation for LRNR in (39c), it might salvage the ill-formed LNR derivation in (40). As pointed out by the reviewer, if our analysis of edge-sharing phenomena with the DPM is correct, movement-based linearization of the multidominated DPM would be allowed only when there is another multidominated pivot (i.e. the verb). Regarding this important question, we suggest that movement-based linearization of the pivot depends on *in situ* linearization.

This idea is based on Richards' (1998) Principle of Minimal Compliance. Consider the contrast between (41a) and (41b) as evidence that Subjacency applies only to overt movements:

(41) a. ??What$_1$ do you wonder who bought t_1?
b. Who wonders who bought what?

In (41a), *what* crosses *who*, violating the wh-island constraint under Subjacency. In (41b), *what* and *who* both take matrix scope. If *what* takes matrix scope via LF movement to the matrix Spec of CP, it would presumably violate Subjacency. However, the well-formed status of (41b) traditionally implies that Subjacency only constrains overt movements.

Richards (1998) offers a new interpretation; though Subjacency constrains both overt and covert movements, the licit movement of *who* saves the Subjacency violation by *what*. Because the movement of *who* satisfies Subjacency with the matrix C target, *what* need not satisfy this constraint. Richards formalizes this idea with the following principle:

(42) Principle of Minimal Compliance
For any dependency D that obeys constraint C, any elements that are relevant for determining whether D obeys C can be ignored for the rest of the derivation for purposes of determining whether any other dependency D' obeys C.
(Richards 1998: 601)

In essence, this principle allows the grammar to bypass a constraint for a subsequent movement to the same target if a prior movement has already satisfied it. This principle not only accounts for the contrast between (41a) and (41b) but also generalizes to other cases where a well-formed dependency supports dependencies that would otherwise be ill-formed. Likewise, we propose that *in situ* linearization of multidominance can allow the grammar to bypass constraints for the subsequent linearization that would otherwise be ill-formed.[7]

Summing up, the degraded status of the DPM-marked pivot in LNR could be evidence of the scrambling-plus-*pro* approach, but not of the multidominance approach. The fact that the DPM within a pivot is licensed in RNR and LRNR but not in LNR suggests that RNR and LRNR are derivationally related, but RNR and LNR are not. We thus conclude that LRNR, but not LNR, is a true mirror image of RNR.

5. Conclusion

In this study, we conducted an acceptability judgment experiment to argue that the dependent-plural marker (DPM) within a pivot modulates the acceptability of Korean edge-sharing phenomena differently in right-node-raising (RNR), left-node-raising (LNR), and left-right-node-raising (LRNR) constructions. The effect of the dislocated DPM, which requires a clause-mate c-commanding plural subject, was relatively mild in RNR constructions but severe in LRNR constructions. We proposed that this difference results from the distinct linearization schemes of the pivot: uniformly linearized at the right-peripheral position in RNR, but partly at the left-peripheral and partly at the right-peripheral positions in LRNR.

We then demonstrated that there are motivations to analyze LNR as being derived differently from RNR and LRNR, contrary to Yatabe (2001), Nakao (2009; 2010), and Chung (2010). Specifically, we argued that the DPM within a

7. We appreciate the reviewer's insightful suggestion. The editor questioned whether, in our proposal for the linearization of multidominated syntactic objects, *in situ* linearization must precede movement-based linearization when applicable. This question is particularly relevant in light of Chung's (2010) proposal on the linearization of multidominated elements. He advocated for movement-based linearization in LNR constructions, arguing that the clause-initial DPM is permissible. However, our experimental findings refute this claim, providing no evidence that movement-based linearization independently applies to sharing phenomena in Korean. Instead, *in situ* linearization resolves multidominance issues and enables movement-based linearization as a secondary or free-riding process. Further discussion will be deferred to future research.

pivot supports the scrambling-plus-*pro* approach to LNR (Kim et al. 2023), while it supports the multidominance approach to RNR and LRNR. From a processing perspective, we suggested that *in situ* linearization (Wilder 1999; 2008) is more favorable than movement-based linearization (Citko 2005), as the latter requires an extra movement operation out of coordination.

It is important to note that the experimental findings from this study do not necessarily contradict those of Yatabe (2001) or Nakao (2009; 2010), as their research studies focus on Japanese, not Korean. Additionally, informal consultation with Spanish speakers has indicated that the second conjunct of the Spanish counterpart of (18c) — such as *John se rió en voz alta y Mary también se rió* ('John laughed loudly, and Mary also laughed') — is ambiguous between adjunct-inclusive and adjunct-exclusive readings. We aim to investigate whether our proposed null *pro* analysis for Korean can be extended to other *pro*-drop languages.

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List of abbreviations

ACC	accusative
ATB	across-the-board
COMP	complementizer
DAT	dative
DPM	dependent-plural marker
LCA	Linear Correspondence Axiom
LNR	left-node-raising
LRNR	left/right-node-raising
NOM	nominative
PRES	present
RNR	right-node-raising
TOP	topic

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