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# L2 acquisition of English raising constructions: Evidence from grammaticality judgments*

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**Choe, Jinsun. 2026. L2 acquisition of English raising constructions: Evidence from grammaticality judgments.** *Linguistic Research* 43(2): 451-473. This study investigates Korean-speaking learners' acquisition of English raising constructions, focusing on syntactic intervention effects. In particular, we examine raising structures with an intervening experiencer, a configuration that creates a potential intervention context under standard locality principles. In a binary grammaticality judgment task, 106 participants evaluated sentences varying in grammaticality (grammatical vs. ungrammatical), structure (raising vs. unraised), and experiencer type (intervening vs. fronted vs. none). Results showed higher accuracy for grammatical than ungrammatical sentences, indicating overall sensitivity to grammatical well-formedness. Critically, within grammatical sentences, accuracy was lowest for raising constructions with an intervening experiencer. These sentences elicited lower accuracy than both their unraised counterparts and raising constructions with either a fronted experiencer or no experiencer, indicating a clear signature of intervention effects. Overall, the findings suggest that learners' grammaticality judgments reflect sensitivity to structural intervention and that raising across an intervening experiencer remains especially difficult for Korean learners of English. **(Korea University of Technology and Education)**

**Keywords** raising constructions, intervention effects, experiencer, grammaticality judgment, L2 acquisition

## 1. Introduction

Raising constructions have played a central role in research on locality in syntactic dependencies. In English, subject-to-subject raising predicates such as *seem* allow the

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embedded subject to raise to the matrix subject position. When an experiencer phrase intervenes between the raised subject and its thematic position (e.g., *The boy$_i$ seems to the girl [t$_i$] to be happy*), the resulting configuration has been widely discussed as a potential intervention context under standard locality principles (e.g., Rizzi 1990; Boeckx 1999). As such, it provides a useful test case for locality-based accounts as well as acquisition research on intervention configurations.

Work on both first language (L1) and second language (L2) acquisition has reported difficulty specifically with raising across an intervening experiencer (e.g., Hirsch and Wexler 2007; Choe 2016b; Yoshimura et al. 2016). In L2 research in particular, evidence has largely come from comprehension tasks, although Franciotti and Martohardjono (2022) have more recently examined such intervention effects using judgment-based measures in L1 Italian-L2 English speakers.

The present study extends this line of work by examining Korean-speaking learners' grammaticality judgments of English raising constructions with and without potential intervention. This population is particularly informative given the cross-linguistic asymmetry between English and Korean with respect to raising constructions with experiencers. Using a binary grammaticality judgment task, we manipulated Grammaticality (grammatical vs. ungrammatical), Structure (raising vs. unraised), and Experiencer type (intervening vs. fronted vs. none). The key question is whether learners show a selective reduction in accuracy for raising constructions with an intervening experiencer compared to minimally different configurations that remove intervention. By using judgment data, this study complements prior comprehension-based findings and tests whether intervention signatures extend to L2 learners' grammaticality judgments.

The remainder of the paper is organized as follows. Section 2 reviews theoretical and empirical work on raising and intervention, including relevant cross-linguistic and acquisition findings. Section 3 describes the method of the study, Section 4 presents the results, and Section 5 discusses the findings and their implications for L2 acquisition of locality-sensitive configurations. Section 6 concludes the paper.

## 2. Theoretical and empirical background

### 2.1 Raising constructions and locality in English

Raising predicates such as *seem* and *appear* are central to the study of syntactic movement, particularly in the domain of subject-to-subject A-movement. In English, these predicates take clausal infinitival complements whose embedded subjects can optionally raise to the matrix subject position. The contrast between the unraised (1a) and raised (1b) variants illustrates this movement:

(1) a. It seems that John is happy.
b. John$_i$ seems [t$_i$] to be happy.

In (1b), the subject *John* originates in the embedded clause but raises to the [Spec, TP] position of the matrix clause, leaving behind a trace in its original position. This movement is typically analyzed as A-movement, driven by case and agreement requirements (Rosenbaum 1967; Postal 1974), and is generally assumed to comply with syntactic locality constraints.

Interestingly, raising predicates like *seem* also allow for an optional experiencer argument, which may appear between the matrix verb and the embedded clause. This is illustrated in (2b), where the raised subject crosses over an intervening experiencer, along with its unraised counterpart in (2a):

(2) a. It seems to Mary that John is happy.
b. John$_i$ seems to Mary [t$_i$] to be happy.

In such configurations, the raised subject appears to cross over an experiencer DP (e.g., *to Mary*) en route to its surface position. Under standard locality principles, particularly Relativized Minimality (RM) (Rizzi 1990), this movement should be blocked. RM states that in a configuration [X Z Y], a dependency between X and Y cannot be established if Z intervenes between them, c-commands Y, and is of the same structural type as X. Since both the raised subject and the experiencer are DPs, movement in (2b) is predicted to incur a locality violation. Despite this prediction, raising across experiencers is widely attested in the literature and has been described

as posing an apparent challenge to locality-based accounts. This pattern, referred to as the "experiencer paradox" (Boeckx 1999), has led some researchers to propose that English raising across experiencers constitutes an exception to otherwise robust intervention effects observed in the grammar (e.g., Hartman 2011), although Franciotti and Martohardjono (2022) showed that such sentences, while not categorically rejected by native English speakers, receive lower acceptability ratings than corresponding unraised structures.

Several theoretical accounts have been proposed to explain the apparent exceptionality of raising across experiencers, including derivational approaches such as the smuggling analysis (Collins 2005), which seeks to reconcile these structures with locality constraints. We do not adjudicate among competing derivational accounts of raising across experiencers. Instead, we use this configuration as a diagnostic environment to test whether L2 learners show sensitivity to structural intervention under locality constraints.

### 2.2 Raising in Korean and cross-linguistic implications

Korean has also been argued to exhibit subject-to-subject raising constructions, most notably involving the verb *-kathta* ('seem'). In contrast to English, however, raising movement in Korean is not readily identifiable from surface word order. For instance, the sentences in (3) are string-identical in their surface structure regardless of whether raising has applied:

(3) a. [Minho-ka hayngpokha-n kes] kath-ta. [Unraised]
Minho-Nom happy-Rel Nml seem-Decl
'It seems that Minho is happy.'

b. Minho$_i$-ka [[t$_i$] hayngpokha-n kes] kath-ta. [Raised]
Minho-Nom happy-Rel Nml seem-Decl
'Minho seems to be happy.'

Due to the lack of overt word order contrasts between these structures, the presence of raising has been difficult to diagnose through surface cues alone. As a result, early

work – often based on authors' introspective judgments about diagnostic environments – reached mixed conclusions about whether the construction involves raising (Choi 1988; Um and Kim 2009; Um 2010).

In response, subsequent experimental studies have provided empirical support for subject-to-subject raising in Korean. Using negative polarity items (NPIs) as a diagnostic, Choe (2016a) found that sentences with an NPI subject received high acceptability ratings from native Korean speakers not only when the NPI was licensed by embedded negation (4a), but also when the licensor appeared in the matrix clause (4b).

(4) a. [amwuto Minho-lul cohaha-ci anh-nun kes] kath-ta.
anyone Minho-Acc like-CI Neg-Rel Nml seem-Decl
'It seems that no one likes Minho.'
b. amwuto$_i$ [[t$_i$] Minho-lul cohaha-nun kes] kath-ci anh-ta.
anyone Minho-Acc like-Rel Nml seem-CI Neg-Decl
'No one seems to like Minho.'

Since NPIs must be licensed within the same clause as their licensor, the acceptability of (4b) suggests that the embedded subject *amwuto* ('anyone') raises to the matrix clause to be licensed by matrix negation, supporting the presence of raising movement. Additional evidence comes from honorific agreement: native speakers permit honorific marking on the matrix predicate in configurations where the only plausible honorific controller originates in the embedded clause, a pattern consistent with raising (Choe 2017).

Despite these similarities with English, Korean *-kathta* constructions differ in one critical respect: they do not permit an experiencer argument. Choe (2018) tested five *-kathta* conditions spanning raised and unraised structures, including experiencer-bearing sentences and raising constructions with either a medial or a fronted experiencer. Across conditions, sentences containing an experiencer received uniformly low ratings. The examples in (5) illustrate the two raising configurations tested in the study, with an intervening experiencer in (5a) and a fronted experiencer in (5b).

(5) a. *kyoswunim-kkeyse professor-Hon.nom kath-usi-ta. seem-Hon-Decl
na-hanthey I-Dat
pikonha-si-n tired-Hon-Rel
kes Nml
'The professor seems to me to be tired.'

b. *na-hanthey I-Dat kyoswunim-kkeyse professor-Hon.nom kath-usi-ta. seem-Hon-Decl
pikonha-si-n tired-Hon-Rel
kes Nml
'To me, the professor seems to be tired.'

These findings indicate that experiencer phrases are categorically disallowed in *-kathta* constructions in Korean. This typological contrast is particularly relevant for L2 acquisition, as it introduces a syntactic configuration in the L2 that is unattested in learners' L1 and exceptional from a locality standpoint.

### 2.3 Previous acquisition studies on raising

Previous research on L1 acquisition shows that English-speaking children have difficulty with raising across an intervening experiencer, while performing better on closely related structures that do not involve such intervention, including unraised counterparts (Hirsch and Wexler 2007; Hirsch, Orfitelli, and Wexler 2007; Hirsch 2011). This pattern suggests that the source of difficulty lies not in raising per se, but in the presence of an intervening argument. Children's comprehension improves when the intervening experiencer is displaced or reduced, including cases with a fronted experiencer or a pronominal experiencer (Choe and Deen 2016). Related work further found an asymmetry when manipulating the pronominal versus lexical status of the raised subject and the experiencer, with higher performance when a lexical NP raised across a pronominal experiencer than in the reverse configuration (Choe and O'Grady 2017). Overall, these findings are consistent with intervention effects widely attested in the acquisition of A'-dependencies, such as object relative clauses and object *wh*-questions, where an intervening lexical NP disrupts dependency formation (e.g., Friedmann et al. 2009; Belletti and Rizzi 2012). Taken together, these

L1 acquisition studies provide substantial evidence that raising constructions are subject to intervention effects in development.

L2 acquisition research has extended this line of work to adult learners by adapting manipulations from the child literature. Studies to date have primarily used comprehension-based tasks to examine learners' performance on raising constructions, consistently reporting reduced accuracy for configurations involving an intervening experiencer (Choe 2015, 2016b, 2021; Yoshimura et al. 2016; Yoshimura and Nakayama 2019). For Korean-speaking learners of English, Choe (2015) found that learners struggle with raising constructions in which the experiencer intervenes between the raised subject and its thematic position, as in (6a), while Choe (2016b) showed that comprehension significantly improves when the experiencer is fronted to a sentence-initial position, as in (6b).

(6) a. Donald seems to Mickey to be short.
b. To Mickey, Donald seems to be short.

Choe (2016b) interpreted this contrast as reflecting learners' sensitivity to intervention effects arising from a structural configuration absent from their L1. As discussed in Section 2.2, later work has provided experimental support for the view that Korean does not permit experiencer arguments in either raised or unraised constructions (Choe 2018). Further evidence for the role of the intervening experiencer comes from Choe (2021), which manipulated the type of both the raised subject and the experiencer. The results showed that Korean-speaking learners were more accurate when a lexical NP was raised across a pronominal experiencer, as in (7a), than when a pronominal subject was raised across a lexical NP experiencer, as in (7b).

(7) a. Donald seems to him to be short.
b. He seems to Mickey to be short.

This asymmetry underscores the importance of the structural properties of the intervening experiencer in shaping learners' comprehension. Comparable results have been reported for Japanese-speaking learners of English. Given that Japanese lacks English-type subject-to-subject raising involving A-movement, Yoshimura et al. (2016) found that raising constructions with an intervening experiencer were more difficult

to comprehend than structurally related control constructions. Subsequent work further showed that learners' performance improves when the experiencer is fronted or pronominal, while configurations involving an intervening lexical NP experiencer remain challenging (Yoshimura and Nakayama 2019).

More recently, Franciotti and Martohardjono (2022) extended this line of research by investigating raising constructions using acceptability judgment tasks, complemented by reaction time measures, in L1 Italian-L2 English speakers. Italian disallows raising across an intervening experiencer but permits experiencer arguments in other configurations, such as topicalization or cliticization. Franciotti and Martohardjono found that both native English speakers and L2 learners rated raising structures across an intervening experiencer significantly lower than corresponding unraised structures, indicating sensitivity to locality constraints in both groups. In addition, raising constructions with a topicalized experiencer were rated higher than those with an intervening experiencer by both groups, although L2 learners showed reduced acceptance overall. However, no reliable acceptability difference was found between lexical and pronominal interveners in either group, suggesting that the lexical category of the intervener may not constitute a relevant morphosyntactic feature for A-movement dependencies in judgment tasks. These results indicate that L2 learners' grammatical representations are constrained by locality principles, while also highlighting potential differences between comprehension- and judgment-based measures.

In sum, previous L2 acquisition studies converge on the finding that raising constructions are systematically more difficult when they involve structural intervention, a pattern that closely parallels findings from L1 acquisition. At the same time, much of this literature has relied on comprehension-based tasks, leaving open how learners evaluate the relevant grammatical contrast in judgment. Although Franciotti and Martohardjono (2022) extended this line of research to acceptability judgments supplemented by reaction time measures, comparable judgment-based evidence remains limited for Korean learners of English. Moreover, while Italian and Korean both disallow raising across an intervening experiencer, the two languages differ in the broader distribution of experiencer arguments. It therefore remains unclear whether findings from L1 Italian-L2 English speakers generalize straightforwardly to Korean learners of English. The present study addresses this gap by examining Korean learners' grammaticality judgments of raising constructions

involving intervention. More specifically, it asks whether the intervention-related contrast reported in earlier comprehension and acceptability studies is also reflected in learners' grammaticality judgments, and whether learners distinguish between well-formed and ill-formed *seem*-constructions across different experiencer configurations.

## 3. Method

Building on Franciotti and Martohardjono's (2022) judgment-based study, the present study employed a binary offline grammaticality judgment task. This format was chosen because our sample was expected to show a wider proficiency range and a lower overall proficiency level than the L2 group reported in Franciotti and Martohardjono (2022) (see Section 3.1). In particular, this binary offline task was used to maximize accessibility and minimize processing demands that might otherwise obscure learners' sensitivity to the target grammatical contrast. Pronominal experiencers were not included, as pronouns may be less pragmatically natural in isolated sentences in the absence of discourse context. The task crossed Structure and Experiencer type with Grammaticality; full design details are provided in Section 3.2.

### 3.1 Participants

The participants were 145 native Korean-speaking learners of English (38 females, 107 males; mean age = 19.3 years, range = 18-22). The majority were first-year university students enrolled in a required introductory English course. The average TOEIC score was 430 (SD = 157), ranging from 80 to 900.

### 3.2 Materials

In the experiment, three factors were manipulated in a 2 x 2 x 3 design: Grammaticality (Grammatical vs. Ungrammatical), Structure (Raising vs. Unraised) and Experiencer type (Intervening experiencer vs. Fronted experiencer vs. No experiencer). Following Franciotti and Martohardjono (2022), ungrammatical raising sentences were created by reversing the order of the copular verb *to be* and its adjectival complement, thus

resulting in word order violations. Ungrammatical unraised sentences were constructed using an analogous manipulation, introducing non-canonical word order by displacing the adjectival predicate from its canonical position within the embedded clause. This yielded 12 experimental conditions, with five items per condition (60 experimental items total). Tables 1 and 2 present sample stimuli for grammatical and ungrammatical conditions, respectively.

Table 1. Sample stimuli for grammatical conditions

| Structure | Experiencer type | Example sentence |
|---|---|---|
| Raising | Intervening Exp | The teacher seems to the student to be busy. |
| | Fronted Exp | To the singer, the manager seems to be respectful. |
| | No Exp | Students seem to be excited about the party tomorrow. |
| Unraised | Intervening Exp[1] | It seems to the manager that actors are hungry. |
| | Fronted Exp | To the woman, it seems that children are nice. |
| | No Exp | It seems that the child is tired after playing. |

Table 2. Sample stimuli for ungrammatical conditions

| Structure | Experiencer type | Example sentence |
|---|---|---|
| Raising | Intervening Exp | *The employee seems to the boss happy to be. |
| | Fronted Exp | *To the doctor, the nurse seems polite to be. |
| | No Exp | *Teachers seem very busy to be during the summer. |
| Unraised | Intervening Exp | *It seems to the coach tired that players are. |
| | Fronted Exp | *To the man, it seems nervous that boys are. |
| | No Exp | *It seems angry that the editor was before leaving. |

The full questionnaire consisted of 110 sentences: 60 experimental items and 50 filler items. Of the 50 filler items, 10 served as control items (five grammatical and five ungrammatical), which were designed to assess whether participants were paying attention to the task. These items consisted of simple sentences that were expected to be judged accurately by attentive participants and were used to screen out inattentive respondents. The remaining 40 filler items (20 grammatical and 20 ungrammatical) were drawn from an unrelated experiment with a different research question and were not analyzed in the present study. Overall, the task was balanced with respect to

1 Although labeled "Unraised – Intervening Exp" for consistency with its raising counterpart, the experiencer in this condition does not structurally intervene, as no movement occurs in unraised constructions. The same applies to the corresponding ungrammatical condition.

grammaticality, with an equal number of grammatical and ungrammatical sentences (55 each) within the experimental items and filler items. All items were presented in a fixed pseudo-randomized order.

### 3.3 Procedure

Participants completed an offline, paper-based grammaticality judgment task in which they evaluated the grammaticality of a series of English sentences. Responses were recorded by circling "O" for grammatical sentences and "X" for ungrammatical sentences. Prior to the task, two example sentences – one grammatical and one ungrammatical – were provided to ensure that participants understood the procedure. The task took approximately 30 minutes to complete.

### 3.4 Data analysis

Before analysis, participants were screened using the 10 control filler items (five grammatical and five ungrammatical) as an attention check. Those scoring below 70% accuracy were excluded, leaving 106 out of the original 145 participants for the main analyses.

The primary dependent variable was accuracy, defined as whether each response correctly classified a sentence as grammatical or ungrammatical. Accuracy was coded as a binary outcome (1 = correct, 0 = incorrect). Statistical analyses were conducted using generalized linear mixed-effects models (GLMMs) with a binomial error structure and logit link function. All models were implemented in R using the *lme4* package (Bates et al. 2015). Fixed effects varied depending on the specific research question and included Grammaticality (Grammatical vs. Ungrammatical), Structure (Raising vs. Unraised), Experiencer type (Intervening experiencer vs. Fronted experiencer vs. No experiencer), and L2 proficiency as measured by z-transformed TOEIC scores. Interactions among these predictors were included to evaluate whether the effects of structural and experiencer-related factors varied as a function of grammaticality and proficiency. All models included random intercepts for Participants and Items to account for subject- and item-level variability. Model comparisons and follow-up analyses were conducted using estimated marginal means and pairwise

contrasts, computed with the *emmeans* package (Lenth and Piaskowski 2025), with appropriate adjustments for multiple comparisons where applicable.

## 4. Results

### 4.1 General sensitivity to grammaticality

To examine participants' sensitivity to grammaticality, we conducted a generalized linear mixed-effects analysis of accuracy, with Grammaticality, Structure, and their interaction as fixed effects. The model revealed a significant main effect of Grammaticality ($\beta$ = -1.171, SE = 0.217, $z$ = -5.40, $p$ < .001), indicating higher accuracy for grammatical sentences. In contrast, no main effect of Structure was observed, and the interaction between Grammaticality and Structure was not significant, suggesting that grammaticality sensitivity did not differ between raising and unraised structures. Table 3 summarizes the fixed effects from the GLMM.

Table 3. GLMM results: Grammaticality x Structure

| Fixed effect | Estimate | SE | z | p |
|---|---|---|---|---|
| (Intercept) | 1.322 | 0.161 | 8.22 | < .001 |
| Ungrammatical (vs. Grammatical) | -1.171 | 0.217 | -5.40 | < .001 |
| Unraised (vs. Raised) | 0.187 | 0.220 | 0.85 | .395 |
| Ungrammatical x Unraised (vs. Grammatical x Raising) | -0.465 | 0.307 | -1.52 | .130 |

Separate pairwise comparisons confirmed significantly higher accuracy for grammatical than ungrammatical sentences in both raising and unraised contexts (both *p*s < .0001). Figure 1 illustrates mean accuracy by grammaticality and structure, visually reinforcing the robust grammaticality effect and the absence of structural modulation.

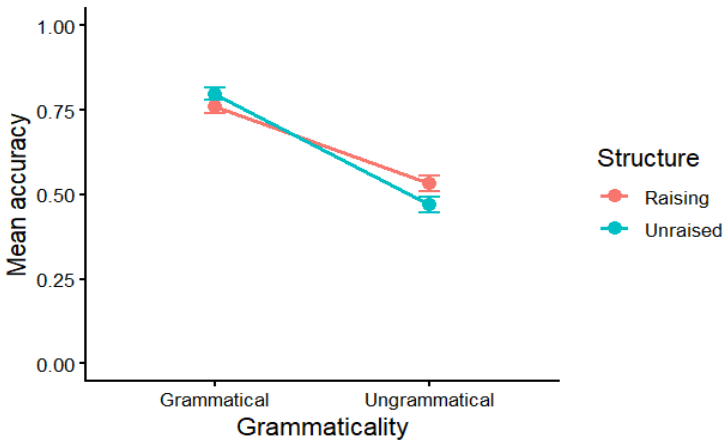


Figure 1. Mean accuracy by grammaticality and structure (95% CIs)

One potential concern is that the higher accuracy for grammatical items may reflect a general affirmative response bias, as correct responses required selecting "O" for grammatical and "X" for ungrammatical items. To address this possibility, we conducted a response-based analysis in which response type (O/X) served as the dependent variable. This model revealed a significant effect of Grammaticality ($p <$ .001), indicating that participants gave significantly more "O" responses to grammatical than to ungrammatical sentences. This pattern mirrors the accuracy-based results, confirming that participants were not indiscriminately selecting "O," but were indeed sensitive to grammatical distinctions.

### 4.2 Grammatical sentences

We fitted a generalized linear mixed-effects model to accuracy data from grammatical sentences only, with Structure, Experiencer, and their interaction as fixed effects. Raising structure with an intervening experiencer served as the reference level. The model revealed a significant main effect of Structure ($\beta$ = 0.609, SE = 0.213, $z$ = 2.86, $p$ = .004), indicating lower accuracy for raising than unraised sentences in the intervening experiencer condition. When comparing experiencer types within raising structures, accuracy was significantly lower when the experiencer intervened between the subject and its thematic position than when the experiencer was fronted ($\beta$ =

1.819, SE = 0.230, $z$ = 7.90, $p$ < .001) or absent ($\beta$ = 1.348, SE = 0.222, $z$ = 6.08, $p$ < .001). These results suggest that the observed reduction in accuracy is not attributable to raising per se, but rather to structural intervention introduced by the experiencer. The model also showed a significant interaction between Structure and Experiencer for the fronted experiencer condition ($\beta$ = -0.823, SE = 0.323, $z$ = -2.55, $p$ = .011), whereas the corresponding interaction involving the no experiencer condition was not significant ($p$ = .123). Table 4 presents the fixed effects estimates from this model, and Figure 2 illustrates the accuracy patterns across conditions.

Table 4. GLMM results for grammatical sentences: Structure x Experiencer

| Fixed effect | Estimate | SE | z | p |
|---|---|---|---|---|
| (Intercept) | 0.359 | 0.163 | 2.21 | .027 |
| Unraised (vs. Raising) | 0.609 | 0.213 | 2.86 | .004 |
| Fronted Exp (vs. Intervening Exp) | 1.819 | 0.230 | 7.90 | < .001 |
| No Exp (vs. Intervening Exp) | 1.348 | 0.222 | 6.08 | < .001 |
| Unraised x Fronted Exp (vs. Raising x Intervening Exp) | -0.823 | 0.323 | -2.55 | .011 |
| Unraised x No Exp (vs. Raising x Intervening Exp) | -0.486 | 0.315 | -1.54 | .123 |

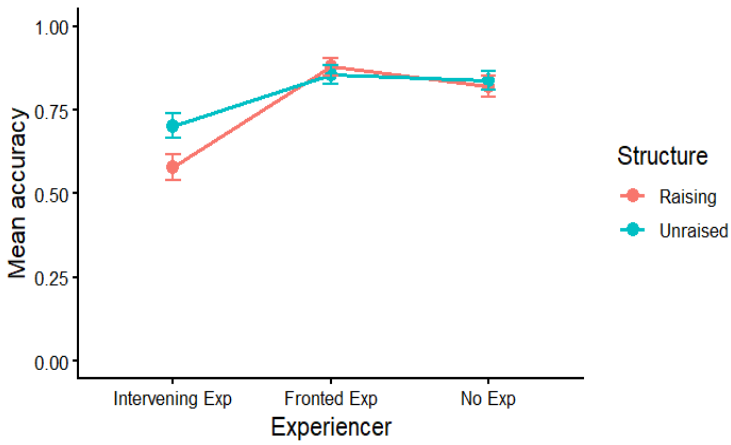


Figure 2. Mean accuracy for grammatical sentences (95% CIs)

To evaluate whether this pattern reflects a reliable overall interaction between Structure and Experiencer, we conducted a likelihood ratio test comparing models with and without the interaction term. This analysis revealed a marginally significant

interaction ($\chi^2(2) = 5.96$, $p = .051$), suggesting that the size of the structural contrast (raising vs. unraised) tended to vary across experiencer types. To clarify which conditions contributed to this trend, we conducted follow-up pairwise comparisons within each experiencer condition. The results confirmed that the raising-unraised contrast was significant only in the intervening experiencer condition ($p = .049$), whereas no reliable structural differences were observed in the fronted or no experiencer conditions. Taken together, these findings suggest that reduced accuracy in raising constructions is driven by the structural intervention of the experiencer, rather than by the raising per se or the mere presence of an experiencer.

### 4.3 Ungrammatical sentences

Unlike grammatical sentences, ungrammatical sentences do not permit a direct test of intervention effects, as no well-formed movement dependency is established. Following Franciotti and Martohardjono (2022), these items were included to assess learners' sensitivity to word order violations in constructions where *seem* functions as the main verb. Accordingly, the present analysis is exploratory, examining how L2 learners detect word order errors in *seem*-sentences across structural configurations (raising vs. unraised) and experiencer types (intervening, fronted, and no experiencer).

Given the exploratory nature of this analysis, we do not report the full reference-coded GLMM results in table form, as was done for grammatical sentences. Instead, omnibus main effects were evaluated using likelihood ratio tests on an additive model (Structure + Experiencer) and its reduced counterparts. The interaction was assessed by comparing the additive model with a full model (Structure x Experiencer). These analyses revealed a significant main effect of Structure ($\chi^2(1) = 4.03$, $p = .045$), with overall lower accuracy in the unraised than in the raising condition. A significant main effect of Experiencer was also observed ($\chi^2(2) = 14.82$, $p < .001$), indicating that accuracy differed across experiencer types. In contrast, the interaction between Structure and Experiencer was not statistically significant ($\chi^2(2) = 4.25$, $p = .12$). Figure 3 illustrates mean accuracy across structure and experiencer types for ungrammatical sentences.

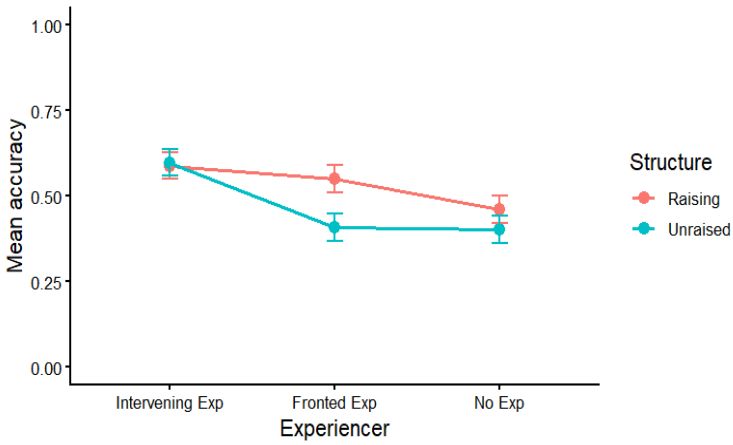


Figure 3. Mean accuracy for ungrammatical sentences (95% CIs)

To follow up on the main effect of Experiencer, pairwise comparisons collapsing across structure were conducted. The results showed that accuracy was significantly higher in the intervening experiencer condition than in both the fronted experiencer condition ($p$ = .004) and the no experiencer condition ($p$ < .001), while the latter two conditions did not differ reliably from each other. Pairwise comparisons were then conducted within each experiencer condition to assess raising-unraised differences. No significant difference between raising and unraised structures was observed in the intervening experiencer condition ($p$ = 1.00) or the no experiencer condition ($p$ = .845). In contrast, a marginal difference was observed in the fronted experiencer condition ($p$ = .050). Overall, evidence for a raising-unraised difference was limited and not consistently observed across experiencer types.

### 4.4 Proficiency effects

To examine whether proficiency modulated learners' sensitivity to grammaticality, a generalized linear mixed-effects model was fitted with Grammaticality, z-transformed TOEIC score, and their interaction as fixed effects. The model revealed a robust main effect of Grammaticality ($\beta$ = -1.483, SE = 0.161, $z$ = -9.19, $p$ < .001), with significantly lower accuracy for ungrammatical than grammatical sentences – replicating the pattern reported in Section 4.1. A marginal positive effect of TOEIC_z was observed ($\beta$ =

0.128, SE = 0.066, $z$ = 1.95, $p$ = .051), suggesting that higher proficiency tended to be associated with greater accuracy for grammatical sentences. However, the interaction between Grammaticality and TOEIC_z, though marginal ($p$ = .067), did not reach statistical significance, indicating that proficiency-related gains did not vary reliably across grammatical and ungrammatical sentences. Table 5 summarizes the fixed effects estimates from this model.

Table 5. GLMM results: Grammaticality x TOEIC

| Fixed effect | Estimate | SE | z | p |
|---|---|---|---|---|
| (Intercept) | 1.457 | 0.124 | 11.72 | < .001 |
| Ungrammatical (vs. Grammatical) | -1.483 | 0.161 | -9.19 | < .001 |
| TOEIC_z | 0.128 | 0.066 | 1.95 | .051 |
| Ungrammatical x TOEIC_z (vs. Grammatical x TOEIC_z) | -0.116 | 0.063 | -1.84 | .067 |

To clarify whether proficiency effects differed by sentence type, the model was re-estimated with ungrammatical sentences as the reference level. This analysis revealed no significant effect of TOEIC score within ungrammatical sentences ($p$ = .84), indicating that proficiency-related improvements were observed primarily in grammatical sentences.

Building on this pattern, we conducted an additional analysis focusing exclusively on grammatical sentences to examine whether proficiency interacted with structure and experiencer type. A marginal effect of proficiency was observed in the raising construction with an intervening experiencer ($p$ = .085). In addition, relative to this condition, unraised structures with an intervening experiencer showed a stronger proficiency-related increase in accuracy ($p$ = .020). Within raising constructions, interactions between proficiency and experiencer type further indicated that proficiency effects differed across experiencer configurations, with larger gains observed in the fronted experiencer ($p$ < .001) and no experiencer ($p$ = .017) conditions compared to the intervening experiencer condition. However, no robust three-way interaction among Structure, Experiencer, and proficiency was observed. Taken together, these results suggest that proficiency-related improvements were more evident in configurations where the experiencer did not structurally intervene. In contrast, raising constructions with an intervening experiencer showed relatively

limited proficiency effects, suggesting that this configuration may pose a persistent challenge for L2 learners – above and beyond general proficiency-related gains.

## 5. General discussion

The present study investigated the L2 acquisition of English raising constructions by Korean-speaking learners, focusing on their sensitivity to syntactic intervention effects. Specifically, we examined how learners judged raising constructions involving an intervening experiencer, a configuration known to disrupt the dependency between the subject and its thematic position. We also asked whether learners performed differently when the experiencer was fronted or absent. To address these questions, a binary grammaticality judgment task was administered to Korean-speaking learners of English.

The results are summarized as follows. First, there were clear grammaticality effects: learners performed significantly better on grammatical than on ungrammatical items. A follow-up analysis based on response type confirmed that this pattern did not merely reflect a general "yes"-bias, but rather genuine sensitivity to grammatical well-formedness. In this respect, the observed asymmetry suggests that learners were more successful at endorsing well-formed sentences than at detecting and rejecting ill-formed ones.

Second, within grammatical sentences, learners' accuracy was modulated by both structure and experiencer type. Accuracy was lowest in raising constructions with an intervening experiencer, yielding significantly lower accuracy than the corresponding unraised structure and than raising constructions with either a fronted or no experiencer. This pattern suggests that reduced accuracy is attributable to the structural configuration that involves raising movement across an experiencer. In this respect, the findings are consistent with previous L1 and L2 research showing that such configurations disrupt dependency formation under locality constraints such as RM (Rizzi 1990), which in turn lead to reduced comprehension and lower acceptability (e.g., Belletti and Rizzi 2012; Franciotti and Martohardjono 2022).

Third, ungrammatical sentences were included as a complementary measure of learners' sensitivity to ill-formed word order patterns in *seem*-constructions, rather than as a primary diagnostic of intervention effects. Although some significant main

effects were observed, no significant interaction between structure and experiencer type was found, and pairwise comparisons did not reveal a consistent structure-based contrast within each experiencer configuration. Overall, accuracy in ungrammatical conditions remained relatively low, suggesting difficulty in identifying and rejecting ill-formed *seem*-sentences with non-canonical word order. These findings should therefore be interpreted cautiously and are best viewed as exploratory. They nevertheless point to the need for further research that more systematically controls surface word order, in order to clarify how L2 learners distinguish well-formed from ill-formed raising-related structures.

Fourth, we examined whether L2 proficiency modulated learners' performance. A general trend emerged in which higher proficiency, as indexed by TOEIC scores, was marginally associated with better accuracy only for grammatical sentences. However, this effect was not uniform across conditions. Within grammatical sentences, proficiency effects were weakest in raising constructions with an intervening experiencer, but more pronounced in unraised structures with an intervening experiencer and in raising constructions with either a fronted or no experiencer. This pattern suggests that although increased proficiency can improve learners' judgments in many raising-related configurations, the configuration involving structural intervention remains especially difficult.

Taken together, the present findings support the view that Korean-speaking L2 learners are sensitive to intervention effects in English raising constructions. This is most clearly reflected in the significantly lower accuracy observed for raising constructions with an intervening experiencer relative to closely related comparison conditions. In particular, the contrast between raising constructions with an intervening experiencer and those with a fronted experiencer is especially informative, since both conditions involve raising and the presence of an experiencer but differ in whether the experiencer structurally intervenes. This pattern suggests that reduced performance is specifically associated with the configuration in which raising crosses an intervening experiencer. This interpretation is further supported by previous judgment-based work showing that native English speakers also assign reduced acceptability to raising constructions with an intervening experiencer relative to corresponding unraised structures (Franciotti and Martohardjono 2022). In this respect, the present results suggest that learners' grammaticality judgments are sensitive to the same intervention-related structural contrast reflected in native-speaker

judgments. At the same time, the relatively weak performance on ungrammatical items indicates that learners' grammatical knowledge of raising constructions may not yet be fully stable.

Korean, the learners' L1, does not permit experiencers in either raising or unraised constructions, regardless of their position (see Section 2.2). Despite this cross-linguistic mismatch, learners performed better in the unraised-intervening and raising-fronted conditions than in the raising-intervening condition, a pattern that is also consistent with previous comprehension findings for Korean L2 learners of English (Choe 2016b). This suggests that learners may acquire novel configurations such as topicalized experiencers more readily than those involving structural intervention. The fact that the raising-intervening condition remained the most difficult even among more proficient learners further indicates that intervention effects may not be easily attenuated by increased L2 proficiency alone. More broadly, these findings show that learners are not simply responding on the basis of L1 transfer or surface familiarity, but are tracking a structurally grounded asymmetry in the target language, a pattern that is consistent with locality-based accounts of intervention effects.

Several limitations of this study should be noted. First, the present study relied on an offline grammaticality judgment task. Although this design was appropriate for the learner population examined here, future research using online measures could extend the present findings by examining how intervention effects emerge under more time-sensitive processing conditions. Second, the present study focused on configurations involving lexical NP experiencers. Since pronominal experiencers may be less pragmatically natural in isolated sentences without discourse context, future research should directly compare lexical and pronominal interveners in discourse-supported judgment designs.

## 6. Conclusion

This study examined Korean-speaking learners' grammaticality judgments of English raising constructions involving experiencer phrases. The results showed that learners were significantly less accurate in judging raising constructions with an intervening experiencer than closely related comparison conditions, supporting the view that they are sensitive to intervention effects in English raising. More broadly, the present study

extends previous work by showing that intervention effects are also reflected in Korean learners' grammaticality judgments despite cross-linguistic differences between English and Korean.

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