

Linking Problem in the L2 Acquisition of English Raising*

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Choe, Jinsun. (2015). Linking Problem in the L2 Acquisition of English Raising. *The Linguistic Association of Korea Journal* 23(4), 115-130. This study investigates whether Korean learners of English comprehend English constructions that involve raising over an experiencer (e.g., *John seems to Mary to be happy*). Such constructions exhibit a non-canonical mapping on the surface, which violates the Thematic Hierarchy, as the theme NP *John* maps to the higher syntactic position than the experiencer NP *Mary*. A Truth-Value Judgment Task was employed to test thirty Korean L2ers of English, whose English proficiency was measured via a C-test, and thirty-five native English speakers. The results revealed that L2ers have difficulty comprehending raising structures with an experiencer, and that more advanced learners exhibit higher levels of competence. As English raising over an experiencer is a cross-linguistically highly marked phenomenon, these findings suggest that L2ers have a tendency to follow a canonical mapping rule that links experiencers to the subject position, when they are faced with a structure that is illicit in their L1. Finally, these results are considered in relation to the previous findings on L2 acquisition of English psych verbs.

Key Words: raising, experiencer, psych verbs, linking problem, second language acquisition

1. Introduction

Previous studies have shown that L2 learners have difficulty with sentences involving a non-canonical mapping between thematic roles and syntactic

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positions, which violates the Thematic Hierarchy. A notorious example is English psych verbs with a subject NP (*tigers* in (1)) bearing a theme role:

(1) Tigers frighten Bill.

It is well-known from many empirical studies (e.g., Sato, 2003; White et al., 1998) that sentences such as (1) cause more difficulty than those with a subject NP (*Bill* in (2)) bearing an experiencer role:

(2) Bill fears tigers.

Yet another example that exhibits such a non-canonical mapping, that has not received much attention to date, is English constructions that involve raising across an experiencer, as in (3).

(3) John seems to Mary to be happy.

The raising sentence in (3) is similar to (1) in that the subject NP (*John*) bears the theme role, and the other NP (*Mary*) bears the experiencer role, occupying the position structurally lower than the subject. In this paper, I investigate whether Korean-speaking learners of English comprehend English raising constructions over an experiencer (3). To the best of my knowledge, no study has investigated L2 learners' comprehension of raising sentences with an experiencer. As English raising over an experiencer is a cross-linguistically highly marked structure, and it exhibits a non-canonical mapping on the surface structure, it was predicted that the construction in question would pose a challenge to L2ers. Furthermore, the current study also aims to investigate how the L1 syntactic properties affect the learning task of converging on a second language syntax in L2 adults. The outline of the paper is as follows. Section 2 introduces raising constructions in English and in Korean. Section 3 presents a review of previous studies on the acquisition of raising and the related psych verb constructions. Section 4 describes the experiment with L2ers' comprehension of raising sentences. Lastly, Section 5 discusses the findings and concludes the paper.

2. Raising in English and Korean

2.1. Raising in English

English raising verbs like the verb *seem* typically display an alternation between an unraised variant (4a) and a raising variant (4b):

- (4) a. It seems [that John is happy].
 b. John seems [_ to be happy].

In (4b), the NP *John* is semantically linked to the VP *to be happy* in the embedded clause but is syntactically realized as the subject of the matrix clause. Raising structures are said to involve an A-movement which raises the subject of the embedded non-finite clauses to the subject position of the matrix clause (e.g., Postal, 1974).

From a cross-linguistic perspective, English is a language that exhibits a high degree of typological markedness in terms of the types and the frequency of raising structures (Givón, 2001). In particular, patterns like (5), where raising takes place across the experiencer (*to Mary*), are cross-linguistically rare. In some languages, such as Icelandic, Italian, and Spanish, raising across an experiencer NP is simply forbidden (e.g., Boeckx, 1999, 2008).

- (5) John seems to Mary [_ to be happy].

Note that with or without the experiencer, the thematic relation between *John* and the embedded clause *to be happy* remains the same. In other words, in (5), the dative-marked NP (*Mary*) bears the experiencer role, while the matrix subject NP (*John*) bears the theme role.

Thus, when the raising verb *seem* takes an experiencer argument, the following alternation is displayed:

- (6) a. Unraised: It seems to Mary that John is happy.
Experiencer *Theme*
 b. Raised: John seems to Mary to be happy.
Theme *Experiencer*

Both the unraised structure (6a) and its raised counterpart (6b) contain the experiencer phrase which intervenes between the raising verb *seem* and the embedded clause. But notice that there is a difference between the two structures, in terms of how the experiencer NP *Mary* is ordered relative to the theme NP *John*. In the case of the unraised structure, the experiencer appears before (and is structurally higher than) the theme, whereas their order is reversed in the raised structure.

The situation with the raising structure is reminiscent of the well-known contrast involving the argument structure of psych verbs. Psych verbs are known to select two semantic roles: the experiencer and the theme, and in the research on English psych verbs, much attention has been given to the alternation between (7a) and (7b) (Belletti & Rizzi, 1988; Dowty, 1991; Landau, 2010; Pesetsky 1995).

- (7) a. Subject Experiencer (SE): John fears tigers.
- b. Object Experiencer (OE): Tigers frighten John.

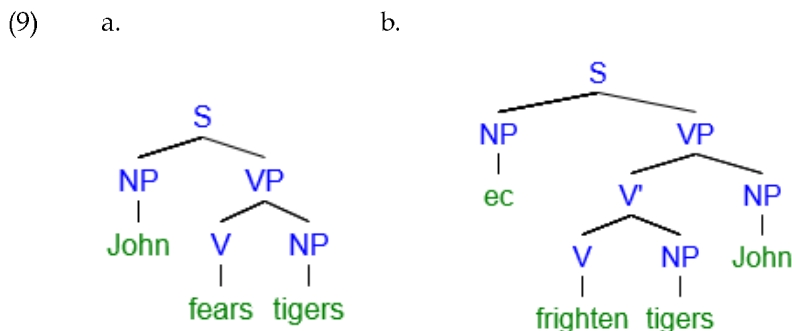
Both in (7a) and (7b), *John* is the experiencer, and *Tigers* is the theme. However, their syntactic positions are different. In (7a), the experiencer occupies the subject position, while in (7b), it is found in the object position. This non-systematic linking between thematic roles and syntactic positions poses a problem for the various versions of a thematic hierarchy such as (8) (Belletti & Rizzi, 1988; Grimshaw 1990; Jackendoff 1972).

- (8) “(Agent (Experiencer (Goal/ Source/ Location (Theme))))”
 (Agent is syntactically positioned higher than Experiencer, which in turn is higher than Goal, Source, Location, which is higher than Theme.)

It should be noted that this does not create a linking problem for the SE psych verbs (7a), as they are associated with the canonical mapping, consistent with the thematic hierarchy. The OE psych verbs (7b), on the other hand, violate the thematic hierarchy in (8), since the theme is structurally higher than the experiencer as it occurs in the subject position. Thus, the OE psych verbs appear

to involve a non-canonical mapping.

To solve this problem, Belletti and Rizzi (1988) proposed that both SE and OE psych verbs have the same underlying D-structure in which the experiencer (*John* in (7)) is structurally higher than the theme (*tigers* in (7)). The D-structures for sentences (7a) and (7b) are illustrated in (9a) and (9b), respectively.



Therefore, this solution appears to work for the arbitrary mapping of both psych verbs and raising structures (6b), since there is no linking problem with the D-structure of the raising sentence (10b), in which the theme *John* is in the lower position than the experiencer *Mary*.

- (10) a. Raising (S-structure): John seems to Mary [to be happy].
 b. Raising (D-structure): seems to Mary [John to be happy].

However, as the linking problem concerns the underlying structure of the given structure, it may not be an easy task for L2 learners to map the arguments of the raising structure onto their correct syntactic positions.

2.2. Raising in Korean

Just as in English, subject-to-subject raising can take place in Korean, as evidenced by the subject-verb honorific agreement in (11b), in which *halapeci* 'grandfather', the matrix subject, agrees with the honorific marker *-usi-* on the matrix verb (Um, 2010). But note that there is no overt change in word order between the unraised structure (11a) and its raised counterpart (11b).

- (11) a. Unraised: [[halapeci-kkeyse apu-si-n] kes]
 grandfather-Hon sick-Hon-Rel kes
 kath-ta.
 seem-Decl
 'It seems that grandfather is sick.'
 (kes: nominalizer)
- b. Raised: halapeci-**kkeyse** [[_ apu-si-n] kes]
 grandfather-**Hon** sick-Hon-Rel kes
 kath-**usi**-ta.
 seem-**Hon**-Decl
 'Grandfather seems to be sick.'

However, while Korean allows an experiencer (*ku ai* 'the child' in (12)) to occur in the unraised structure, as in (12a), it does not allow raising over an experiencer, as in (12b).

- (12) a. ku ai-hanthey [[halapeci-kkeyse apu-si-n] kes]
 the child-Dat grandfather-Hon sick-Hon-Rel kes
 kath-ta.
 seem-Decl
 'It seems to the child that grandfather is sick.'
- b. *halapeci-kkeyse ku ai-hanthey [[_ apu-si-n] kes]
 grandfather-Hon the child-Dat sick-Hon-Rel kes
 kath-**usi**-ta.
 seem-Hon-Decl
 'Grandfather seems to the child to be sick.'

Thus, it was predicted that English raising over experiencers would be problematic for Korean-speaking L2 learners, as the given structure is banned in their L1 Korean. In other words, if one considers an approach involving the L1 syntactic system constituting the initial state of adult L2 acquisition, such as Full Transfer/Full Access model (e.g., Schwartz & Sprouse, 1996), then the developmental patterns of Korean-speaking L2 learners should be constrained by

the L1 system, leading to their difficulties comprehending English raising sentences over an experiencer.

3. Previous Acquisition Studies

There have been only a few studies concerning how L2 learners acquire raising structures. Callies (2008) found that German and Polish learners of English have problems with the target-like use of raising constructions in written discourse in terms of information structuring and thematic progression. More recently, Campos-Dintrans, Pires, and Rothman (2012) used a grammaticality acceptability task to test English learners of Spanish on the properties of Spanish subject-to-subject raising with and without an experiencer. Their results support Full Access approaches to Universal Grammar in adult L2 acquisition (e.g., Schwartz & Sprouse, 1996, 2000) because they showed that advanced L2 Spanish speakers (L1 English) performed just like native Spanish speakers by correctly rejecting subject-to-subject raising across experiencers in L2 Spanish, even though it is allowed in their L1 English. Thus, their results indicated that the advanced L2 learners were able to reconfigure uninterpretable syntactic features in L2, suggesting that convergence on the L2 syntax is possible.

Yet, to the best of our knowledge, no study has investigated L2ers' comprehension of raising structures. That is, none of the studies described above looked at the question of how L2ers would map the arguments onto syntactic positions in the raising structure which is associated with a non-canonical mapping on the surface.

Before describing our comprehension experiment, though, it is important to also review the acquisition studies on English psych verbs. Various studies (Chen, 1997; Hirakawa & Suzuki, 2014; Juffs, 1996a, 1996b; Sato, 2003; White et al., 1998) have reported that while L2 learners of different L1 backgrounds had little difficulty with SE verbs (13a), they performed poorly on OE verbs (13b), which exhibits the non-canonical linking problem.

- (13) a. Subject Experiencer (SE): John fears tigers.
 b. Object Experiencer (OE): Tigers frighten John.

For example, Hirakawa and Suzuki (2014) conducted a picture matching task and an acceptability judgment task with L1 Japanese and L1 Spanish learners of English. They investigated how the arguments of psych adjectives (experiencer and theme) are represented in the L2 grammar. Overall results from the two tasks showed that both Japanese and Spanish learners had more difficulty with the psych adjectives which modify the theme NP, as in (14b) than with those which modify the experiencer NP, as in (14a).

- (14) a. The woman is embarrassed.
 b. The woman is embarrassing.

Based on these results, Hirakawa and Suzuki (2014) argue that the linking of arguments to grammatical positions in L2ers' grammars observes universal principles such as the Thematic Hierarchy.

4. The Experiment

4.1. Participants

Thirty native speakers of Korean who learned English as a second language were recruited from a university in Seoul, Korea (age 19-30, mean = 21.6). In addition, thirty-five native English speakers from the University of Hawai'i participated in the experiment as a control group. The L2ers were divided into three groups based on their scores of the English C-test (Schulz, 2006), which was an independent measure to examine their English proficiency. It was a fill-in-the-blank test consisting of two texts with a total of 40 blanks (for each word), and one point was given for each correct completion of the blank. The high-level group comprised L2ers with a score higher than 29; the intermediate-level group included those whose scores were between 20 and 29; and the low-level group was made up of those whose scores were below 20 (See Table 1). These three groups showed a significant difference in their C-test scores as revealed by a one-way ANOVA ($F(2, 27) = 91.07, p < .001$), with post-hoc Turkey tests confirming that each group differed significantly from the other two ($ps < .001$).

Table 1. Mean C-test scores of the three L2 groups

| Group | <i>n</i> | C-test scores (max=40) | | |
|--------------------------|----------|------------------------|-----------|-------|
| | | <i>M</i> | <i>SD</i> | Range |
| High-level group | 11 | 33.1 | 3.05 | 30-38 |
| Intermediate-level group | 10 | 23.9 | 2.96 | 20-28 |
| Low-level group | 9 | 15.4 | 2.70 | 10-19 |

4.2. Procedure

The present study employed a Truth-Value Judgment Task (Crain & McKee, 1985; Crain & Thornton, 1998). Participants were shown illustrated stories via a laptop computer. At the end of each story, a teddy bear puppet appeared on the screen and made a one-sentence statement about what he thought had happened in the story. (Participants were told in advance that the study was originally designed to test children, and thus, it involved child-friendly characters such as the teddy bear.) After the puppet's statement, the participants were asked to determine whether the statement was true or false and to provide justifications (either in English or in Korean) for their answers. After the experiment session, the L2 group was asked to complete the C-test (see above).

4.3. Materials

Each participant was presented with ten stories in total: two warm-ups, two control items, four critical items, and two fillers. The warm-ups and the fillers were unrelated to raising or complementation structures, as the warm-ups were practice items, and the fillers functioned as distractors to hide the real purpose of the experiment. Three types of sentence structures were used for control and critical items, balanced for match and mismatch¹): (1) control test items including finite clauses with the verb *think*, (2) *unraised* sentences with an experiencer phrase, (3) *raised* sentences with an experiencer phrase. These sentences were counterbalanced across six lists to minimize item effects. The complete script of a sample story and a corresponding pictures are shown below in Figure 1, and a sample set of test items are presented in Table 2.

1) Match items are those where the target response is *true*; mismatch items are those where the target response is *false*.

This is a story about three friends: Donald, Daisy, and Mickey. One day, Donald and Daisy are playing outside, digging a big hole. Just then Mickey appears and comes close to Donald and Daisy. Mickey sees Donald who is inside the hole and thinks that Donald is very short. Mickey says, "Hey, Donald, I thought you and I are the same height, but I was wrong." Without looking at Mickey, Donald says, "What do you mean? We are the same height." Then, Mickey says, "No, you are so short!" Daisy, who is standing next to Donald, says "No, that's because you are looking at him from up there. Donald is not short." But Mickey says, "What do you mean? Donald is so short." Still without looking at Mickey, Donald says, "Well, if I'm short, then you are short, too." Mickey says "Yeah? Turn around and look then." Donald turns around to look at Mickey, and Donald says, "Uh-oh, you are not short. I was wrong." Mickey says, "See? We are not the same height, after all. You are so short, haha"



Figure 1. A Sample Story with Pictures

Table 2. A Sample Set of Test Items in Each Condition

| | Match items |
|-----------------|--|
| Control | At the end of the story, Mickey still thinks Donald is short. |
| Unraised | At the end of the story, it still seems to Mickey that Donald is short. |
| Raised | At the end of the story, Donald still seems to Mickey to be short. |
| | Mismatch items |
| Control | At the end of the story, Donald still thinks Mickey is short. |
| Unraised | At the end of the story, it still seems to Donald that Mickey is short. |
| Raised | At the end of the story, Mickey still seems to Donald to be short. |

3.4. Results

All participants correctly responded to all filler items in the test. Participants' performance is presented in Figure 2 in the form of the mean correct percentage for each condition.

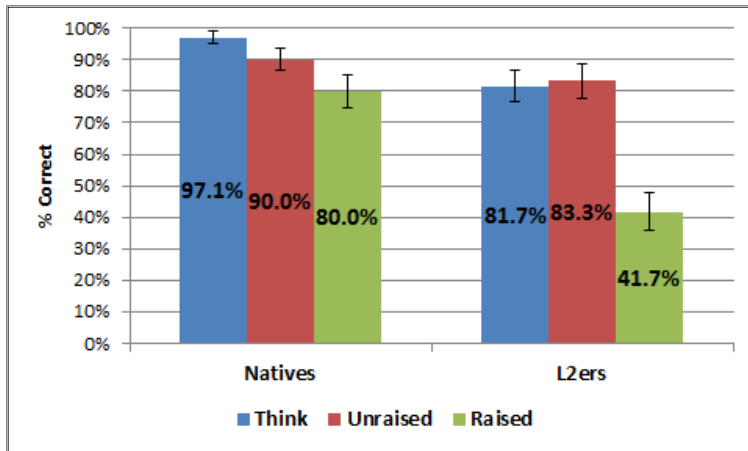


Figure 2. Mean Accuracy by Condition

The one-way repeated-measures ANOVAs, with each condition (*Think*, *Unraised*, *Raised*) as a within-subjects variable, were run separately for the native speaker group and the L2 group. For both groups, the results revealed a significant main effect of Condition (Natives: $F(2,68) = 6.27$, $p = .003$; L2ers: $F(2,58) = 18.17$, $p < .001$). However, Bonferroni-corrected post hoc pairwise comparisons showed different results for the two groups. For the native speakers, the significant difference was observed only between the *Think* and *Raised* conditions ($p = .01$), and no differences were found between the *Think* and *Unraised* conditions or between the *Unraised* and *Raised* conditions ($p > .1$). In contrast, for the L2ers, pairwise comparisons found that while there was no significant difference between the *Think* and *Unraised* conditions ($p > .1$), the differences between the *Think* and *Raised* conditions and between the *Unraised* and *Raised* conditions were both significant ($ps < .05$), revealing the L2ers' particular difficulty with the *Raised* condition.

Furthermore, one sample *t*-tests were conducted separately for each condition

in the two groups. As expected, the performance of the native speakers was significantly above chance for all three conditions (*Think*: $t(34) = 23.69, p < .001$; *Unraised*: $t(34) = 11.66, p < .001$; *Raised*: $t(34) = 5.88, p < .001$). However, the L2ers' performance on the *Raised* condition was at a chance level (41.7%; $t(29) = -1.41, p = .17$), while they performed relatively well on the *Think* and *Unraised* conditions, scoring significantly above chance level (*Think*: $t(29) = 6.24, p < .001$; *Unraised*: $t(29) = 6.02, p < .001$), and thus, confirming their difficulty in comprehending raising structures over an experiencer.

For additional data analysis, the L2 group's results on the *Raised* condition were divided into three sub-groups based on their proficiency.²⁾ As illustrated in Figure 3, the results show that high-level learners have better comprehension of raising sentences than low- and intermediate-level learners, although their score (59.1%) is still significantly lower than that of the native speaker group (80%, $p = .05$). Moreover, the poor performance associated with the low- and intermediate-level learners suggest that these learners are consistently and incorrectly using the canonical mapping strategy to interpret the raising structure with an experiencer (i.e., mapping the experiencer higher than the theme, consistent with the thematic hierarchy).

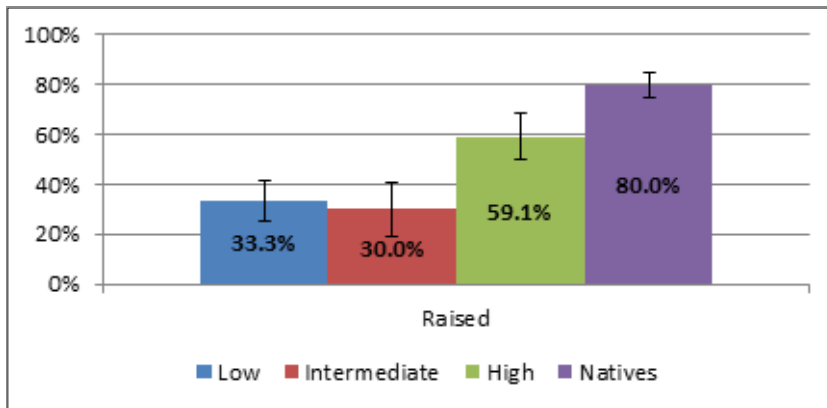


Figure 3. Mean Accuracy on Raised by Proficiency

2) No particular differences were observed among the three sub-groups on the other two conditions - *Think* and *Unraised* conditions.

5. Discussion and Conclusion

The present study explored whether adult L2 speakers of English (L1 Korean) comprehend English constructions that involve raising over an experiencer phrase (e.g., *John seems to Mary to be happy*). Such constructions are typologically marked (i.e., cross-linguistically rare), and they are illicit in Korean. Furthermore, the linking between thematic roles and syntactic positions is non-canonical in that the theme is mapped onto the subject position which is higher than the position of the dative-marked experiencer. Thus, it was predicted that they would pose a great challenge to L2 learners. As expected, the results of the experiment indicated (i) that Korean L2ers of English have difficulty comprehending structures that involve raising over an experiencer, as in child L1 acquisition, and (ii) that more advanced L2 learners exhibit higher levels of competence.

These findings are consistent with the results of the previous studies on L2 acquisition of English psych verbs, which also involve the same contrast between the canonical and non-canonical mapping. Thus, both findings suggest that when L2ers link semantic roles to syntactic positions, they have a tendency to use a canonical mapping rule, guided by universal principles, such as the Thematic Hierarchy. Furthermore, as Korean bans raising over an experiencer, it appears that such a tendency becomes stronger when L2ers are faced with a highly marked structure that is illicit in their L1. Given the comparison between L1 Korean and L2 English, the results are also consistent with the Full Transfer/Full Access theory (Schwartz & Sprouse, 1996), which states that the initial state of L2 acquisition is the final state of L1 acquisition. That is, as Korean disallows raising over an experiencer argument, Korean learners of English have difficulties comprehending such a structure, at least in the initial state of their L2 acquisition (i.e., for the low- and intermediate-level learners), but the better performance of the high-level learners seems to suggest that the acquisition of the target L2 grammar does, in fact, take place over time. However, as the given task in the current experiment tested only comprehension of the raising construction, further investigation is necessary to know whether the L2ers found raising structures ungrammatical or simply had difficulty interpreting the sentences.

As for the general shortcomings of the current study, I acknowledge that there were too few critical items per condition as the study was originally designed to test L1 child participants, and the stories involving the verb *seem* were inevitably long and complex. While there were enough L2 learners who participated in the experiment to overcome this weakness, it would be beneficial in future studies to have more number of critical items as well as to test L2 learners with a wider range of proficiency in L2 English.

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