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Korean EFL Learners' Production of English Relative Clauses*

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Speakers constantly choose among alternative language structures that express the same meaning. The question of why speakers tend to prefer some structures over others raises issues involving language typology and processing. Relative clause (RC) structures are widely used to investigate these issues. Previous research on English RCs has reported that adults and children who speak English as a first language find it easier to produce subject RCs than object RCs. To expand this discussion, this study investigates L1-Korean English learners' production of two types of RCs. The study tests the extent to which native speakers and non-native speakers of English choose passive subject RCs over active direct object RCs when describing animate entities. Data were collected from 10 native speakers and 18 EFL leaners using a picture-elicited production task. The results indicate two main findings: (i) L2 English learners' production shows a strong preference for subject RCs and (ii) L2 English learners tend to employ an avoidance strategy in contexts that elicit direct object RCs, instead producing passive subject RCs. The patterns of response provide strong evidence for a subject-object asymmetry in L2 English learners' production that is identical to that of L1 English speakers.

**[sentence production/English relative clauses/passivization/ L2 acquisition/
문장생성/영어 관계절/수동화/제2언어습득]**

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I. INTRODUCTION

Previous studies have consistently demonstrated that subject relatives are easier to produce and comprehend than direct object relatives for English native speakers (on comprehension: Gibson, Desmet, Grodner, Watson, & Ko, 2005; King & Just, 1991; Traxler, Morris, & Seely, 2002; on production: McDaniel, McKee, & Bernstein, 1998; McKee & McDaniel, 2001; Zukowski, 2009). More specifically, native English-speaking children and adults produce higher rates of target responses in subject relative clause (RC) conditions than in direct object RC conditions in production tasks (Hamburger & Crain, 1982; McKee, McDaniel, & Snedeker, 1998; Zukowski, 2009). Nevertheless, the fact that speakers produce low rates of target responses in direct object conditions does not in itself prove that direct object RCs are more difficult to produce than subject RCs (Hsu, Hermon, & Zukowski, 2009); it may instead simply show a preference. Because speakers can choose among alternative structures to express the same idea (i.e., message), it is necessary to examine the production process to conclude whether a true subject-direct object asymmetry exists. Previous L1 acquisition and processing research has widely used comprehension tasks. However, the results of comprehension tasks may show an asymmetrical pattern but not provide information on how second language (L2) speakers of English plan to produce the two types of RCs; therefore, an elicited production task will be adopted in this study.

1. The Language Production Process

Language production is a highly complex process. Whether in writing or speaking, it requires converting conceptual information into an orderly sequence (MacDonald, 2013). The development and organization of plans for output sequences are the most important operations in language production. In particular, speaking requires complex sequential actions, and this highly demanding process is guided by a plan that a speaker develops before uttering a sentence (Kemper, Hoffman, Schmalzried, Herman, & Kieweg, 2011).

Different sentence structures are available to communicate any given message. In most cases, a speaker chooses a structure to prepare for sentence production, and this choice makes the planning process easier (Ferreira & Dell, 2000). As a typical example, the choice between active and passive voices can be explained as shown in (1a) and (1b). The *theme* is in the subject position in (1b), but in the object position in (1a); the *agent* is in the oblique position in (1b), but in the subject position in (1a).

(1a) Active voice: the boy pushed the girl.
(1b) Passive voice: the girl is pushed (by the boy).

These two sentences indicate the same event, and a speaker can therefore choose either of them (or something else) to describe the event. When language producers are choosing among possible sentences, the planning demands of language production operate strongly in the producers' minds (MacDonald, 2013). Observing a particular pattern in production can give a better understanding of how and why language—and language comprehension—works in a certain way.

2. The Animacy Factor in RCs

Head nouns can be modified by various types of relative clauses, as in examples (2a-b). In (2b), *the boy* is modified by the bracketed relative clause; because *the boy* is the object of the relative clause verb (*kiss*), this structure is called a direct object RC. In (2a), where *the boy* is the subject of the relative clause verb *kiss*, the RC structure is called a subject RC.

(2a) Subject RC: the boy [that _ kissed the girl]
|___0__|
(2b) Direct object RC: the boy [that the girl kissed__]
|_____1____2__|

One approach to accounting for the different levels of difficulty of RCs is the *distance hypothesis* (O'Grady, 2015), which proposes that the length between a gap and its filler contributes to the level of processing difficulty (Gibson, 1998, 2000; Hawkins, 2004). The processing burden increases with the number of discourse materials intervening between the filler and the gap, as in (2a), which has no intervening items, and (2b), which has two intervening items. The distance hypothesis provides one explanation for why speakers would produce subject RCs more easily than direct object RCs.

In particular, speakers have two ways to describe direct object RCs in English. Depending on the producer's choice, the *theta*-role can be assigned to different positions in active and passive voices. A traditional sentence structure with a transitive verb has an agent in the subject position and the patient/theme of some action in the object position, as shown in (1). To describe the theme/patient, either an object relative (3a, 3c) or a passive relative (3b, 3d), where the optional agent is indicated by a "by-phrase," can be produced. According to MacDonald (2013), when producers are describing something inanimate (e.g., *the toy*), they produce direct object relatives like (3c); however, they almost never produce direct object relatives to describe something animate (e.g., *the boy*) as in (3a). Instead, they use passive relatives like (3b) (Gennari, Mirković, & MacDonald, 2012; Montag & MacDonald, 2009).

(3a) Direct object RC with animate noun: the boy [that the girl kissed_]
(3b) Passive RC with animate noun: the boy [that _ is kissed {by the girl}]
(3c) Direct object RC with inanimate noun: the toy [that the girl kissed_]
(3d) Passive RC with inanimate noun: the toy [that _ is kissed {by the girl}]

Animate nouns are (i) conceptually more prominent than inanimate nouns, and (ii) easily retrieved from memory, and they therefore tend to occur in early or prominent sentence positions (Aissen, 2003; Givón, 1985; C. E. Kim, 2013; MacDonald, 2013). The frequently observed structure illustrated in (3b) allows the described noun to be in the prominent subject position of the RC. Furthermore, the asymmetry between subject and direct object RCs demonstrates the greater difficulty of producing a direct object RC with two animate nouns compared to producing a direct object RC with one animate and one inanimate noun (MacDonald, 2013; Mak, Vonk, & Schriefers, 2006). There is more interference between conceptually similar entities (i.e., two animate nouns), as in (3a), than when an animate entity acts on an inanimate one, as in (3c) (Gennari et al., 2012; Mak et al., 2006; Traxler et al., 2002; Wells, Christiansen, Race, Acheson, & MacDonald, 2009). The interference can be reduced by omitting the agent in the utterance plan, which is possible in passive forms (3b), but not in direct object relatives (3a). Gennari et al. (2012) showed that when conceptually similar arguments in an event are described, producers tend to use passive agent-omission relative clauses. Wells et al. (2009) also suggested correlations between animacy and RC type in production.

3. RC Production in SLA

Research has shown comparable patterns in first language (L1) and second language (L2) acquisition with respect to RCs. L2 acquisition studies of English RCs (Eckman, Bell, & Nelson, 1988; Gass, 1979; Wolfe-Quintero, 1992) have supported the idea that subject RCs are easier to comprehend than direct object RCs. In addition, C. E. Kim (2013) extended this line of inquiry in an investigation of asymmetries among various types of RCs (e.g., indirect object, oblique) with a production task with both L1 and L2 English speakers.

Some previous L2 research on this topic has focused on native Korean speakers, but such research is limited in that most of it has focused on comprehension and examined whether L1 Korean speakers acquire English relativization in the order predicted by Keenan and Comrie's (1977) noun phrase accessibility hierarchy (NPAH; e.g., Eckman et al., 1988; Gass, 1979; Hamilton, 1994; Jang 2005; O'Grady, M. Lee, & M. Choo, 2003; O. S. Lee, 2014; Wolfe-Quintero 1992; Y. J. Kim, 1987). Little research has examined English RC production by L1 Korean speakers.

Production tasks have the advantage of not restricting the participants' structure choices. Even if a study targets direct object relative clauses, participants can make alternative responses that are grammatically correct. Several studies have shown that speakers of diverse languages may use an *avoidance strategy*; that is, they will choose a grammatically correct alternative rather than produce certain relative clauses (English: MacDonald, 2013, Zukowski, 2009; Korean: C. E. Kim, 2013, 2015; Mandarin Chinese: Hsu et al., 2009). The current study therefore employs a production task designed to elicit English subject and direct object RCs from native Korean speakers. The previous research suggests that the greater difficulty of producing direct object RCs will lead the participants to produce higher rates of alternative responses and/or high error rates in the condition that targets the direct object RC structure (MacDonald, 2013). The study's goal is to observe L1 and L2 groups' (dis)similar production patterns, which may contribute to our understanding of the difficulty of English direct object RCs.

4. Research Questions

This study addresses the following research questions:

1) When producing English RCs, do L1 Korean-speaking L2 learners of English manifest a subject-direct object asymmetry?
2) If so, how do their production patterns compare to those of English native speakers?

II. THE EXPERIMENT

1. Method: Elicited Production Task

The experiment used a picture-based elicited production task (Goodluck & Stojanovic, 1996; Hsu et al., 2009). The test items in the production task are from Tanaka's (2016) study, which examined Tagalog RCs. The picture-based task is designed to elicit basic clauses in two conditions: a subject RC condition and a direct object RC condition. The task comprised 10 items, with five in each condition. A complete list of items is given in Appendix A.

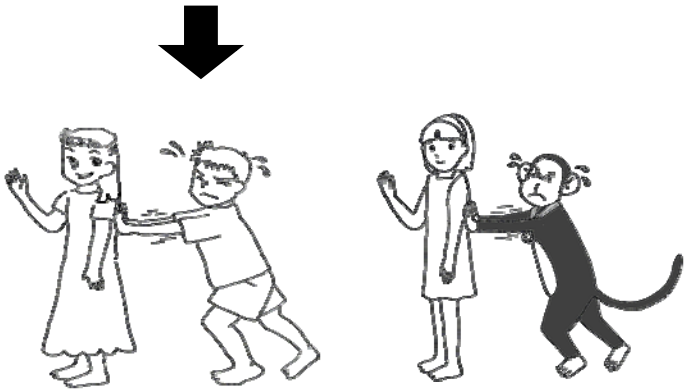
2. Participants

Eighteen undergraduates attending at university in Seoul, South Korea participated in this experiment in exchange for course credit in an English linguistics course. The 18 L2

learners were all more than 20 years old, with a mean age of 22.56 (range: 21-24) and were native speakers of Korean. A C-test[1] was used to measure the Korean participants' English proficiency (Schulz, 2006). Their scores ranged from 30-37 out of 40, with a mean of 33.5, indicating that they were all high-proficiency learners. Ten adult native speakers of English also participated in the study as a control group. They were all undergraduate students and were paid five dollars for their participation in the experiment.

3. Materials

The experiment manipulated one factor: gap position (subject gap vs. direct object gap). Five verbs with semantically reversible predicates (i.e., they can take both an animate head noun and an animate object) were selected: *carry*, *hug*, *pinch*, *pull*, and *push*. The questions were designed to elicit either subject or direct object RCs, as exemplified in Figures 1 and 2.



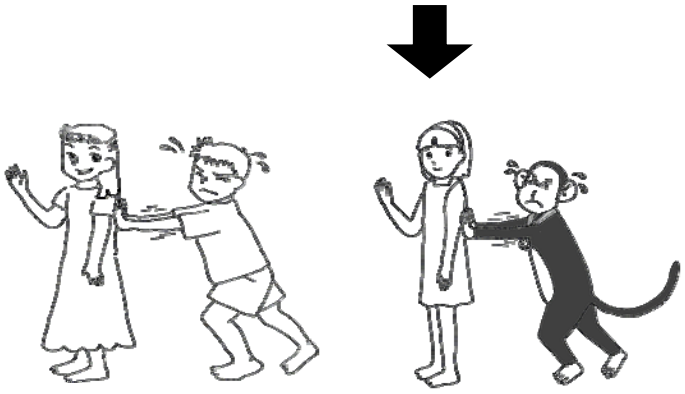
Prompts: In the first picture, a boy is pushing a girl. In the second picture, a monkey is pushing a girl. (Which one has an arrow mark?)

Target responses:

Subject RC: the boy [that _is pushing the girl] (in the left picture)

FIGURE 1 Sample Item Targeting Subject RC With an Animate Head Noun

[1] An English C-test consisted of two short English texts which contain 40 blanks and was given to all participants. Because the first half of the targeted word was provided, they needed to complete the word.



Prompts: In the first picture, a boy is pushing a girl. In the second picture, a monkey is pushing a girl. (Which one has an arrow mark?)

Target responses:

Direct object RC: the girl [that the monkey is pushing _] (in the right picture)

FIGURE 2 Sample Item Targeting Direct Object RC With an Animate Head Noun

4. Procedure

As mentioned, all test items were semantically reversible, with animate subjects and animate direct objects, to make it impossible for the participants to understand the test items without syntactic knowledge (see C. E. Kim, 2013, 2015). In the experiment, the participants sat at a desk looking at a computer screen. As Figures 1 and 2 illustrate, each item contained two sets of pictures. The experimental session lasted less than 10 minutes, including a practice session. The whole experiment, including the participants' responses, was recorded with the program *Audacity* (http://www.audacityteam.org/download/).

The brief practice session helped participants understand what they were supposed to do in the experiment, using a verb (e.g., *run*, *sleep*) that did not appear in the experimental materials. In the practice session, the participants were explicitly asked to describe the person or the animal in the picture that had an arrow mark over it, that is, the intended head noun of the target RC. A previous production study used a question in the form of "Which one is …?" to elicit the relative clause for each test item (MacDonald, 2013). However, hearing a *wh*-subject question might cause participants to shift their perspective from the subject to the direct object. This perspective shift could cause more processing difficulty with the direct object RCs for the L2 learners (MacWhinney, 2005). Therefore, in this experiment, the *wh*-question ("Which one has the arrow?") was used in the practice session, but not in the actual task, because the participants understood what they were expected to do in the task once they had

completed the practice session. In place of a question, a beeping sound from the computer prompted the participants to respond. After they responded, the experimenter pressed a button to show the participant the next item.

III. RESULTS

1. Subject-Direct Object Asymmetry

The recorded data were transcribed by the researcher and inserted into an Excel sheet for data analysis. To avoid any priming effect, as proposed by Hsu et al. (2009), only participants' first responses for each item were analyzed. The 18 L2 learners of English produced a total of 180 responses: 90 in the subject RC condition and 90 in the direct object RC condition. The ten native speakers produced a total of 100 responses: 50 in the subject RC condition and 50 in the direct object RC condition. All responses were categorized into three categories: grammatical target responses, grammatical but non-target responses, and non-RC responses.

The basic response types that were observed in the L2 group are categorized in Table 1, as a function of types of RCs. The EFL learners produced target responses for subject RCs at a very high rate, 98.8 percent, and at a much lower rate, 8.8 percent, for the direct object RCs. Most of the L2 group's responses were grammatically correct, but the L2 group did produce a few ungrammatical responses. To examine the effects of gap position, a *t*-test was conducted on the groups' scores, with the gap position as a variable. The results for both groups demonstrated a statistically significant effect of gap position ($t(17) = -15.04$, $p = .000$).

TABLE 1

L2 Group: Responses in Each Category for Subject and Direct Object RCs

	Target response	Grammatical but non-target response	Non-RC[2]
Subject RCs	98.8% (89/90)	0% (0/90)	1.1% (1/90)
Direct object RCs	8.8% (8/90)	87.7% (79/90)	3.3% (3/90)

2. Similarities Between L1 and L2

Table 2 presents the response patterns of the L1 group. All of the L1 group's responses

[2] Non-RC refers to the pattern that did not have a relative clause, as exemplified below.
Non-RC: The boy is pushing the girl. (Target response: the boy [that is pushing the girl])

were grammatically correct. The L1 group produced 100 percent target responses for the subject RCs, but only 10 percent target responses for the object RCs.

TABLE 2
L1 Group: Responses in Each Category for Subject and Direct Object RCs

	Target response	Grammatical but non-target response	Non-RC
Subject RCs	100% (50/50)	0% (0/50)	0% (0/50)
Direct object RCs	10% (5/50)	90% (45/50)	0% (0/50)

The high rates of grammatical but non-target responses for the direct object RC condition suggest that both groups have a preference for passive RCs over direct object RCs. It is concluded that the subject RC is overall the preferred pattern in both L1 and L2 production.

IV. CONCLUSION

This study was designed to examine the preferences shown by L1 and L2 speakers of English in their production of subject and direct object RCs. The study resulted in two main findings: (i) both L1 and L2 English speakers' production shows a strong preference for subject RCs and (ii) both L1 and L2 English speakers tend to employ an avoidance strategy in contexts that elicit direct object RCs, instead producing passive subject RCs.

First, except for a very small number of ungrammatical responses from the L2 group, both groups produced the target structures in the subject RC condition. For the most part, the groups produced non-target structures only in the direct object RC condition. The L2 learners again produced a small number of ungrammatical responses in this condition. They also produced non-RC responses at a slightly higher rate than the L1 group. These results are in line with the results of MacDonald's (2013) study on L1 adults' production of subject and direct object RCs, which showed that English L1 speakers are more likely to produce subject than object RCs and are less accurate in the production of object than subject RCs. These results also echo the findings of MacDonald and her colleagues' cross-linguistic work on English and Asian languages (Korean, Japanese, and Mandarin).

Second, both groups used an avoidance strategy much more frequently in the direct object RC condition than in the subject RC condition. Responses with passives as in (4a) were common in the object RC condition, and this was true for both L1 and L2 groups. Thus, they produced more subject RCs when direct objects RCs were elicited; however, they never produced passive RCs in the subject RC condition, as in (4b).

(4a) Passive subject RC when direct object RC is elicited:
the boy [that ___ is pushed by the girl]
|___0___|
(4b) Passive oblique RC when subject RC is elicited:
the girl [that the boy is pushed by __]
|_____1_____2_____|

This study confirms that L2 learners of English, like L1 speakers of English, use passivization to avoid structurally complex direct object RCs in an elicited production task, suggesting that both groups prefer structurally less complex constructions over direct object RCs. According to the distance hypothesis, passive subject RCs like (4a) should be easier to comprehend and produce because they have no intervening materials between the filler and the gap, whereas passive oblique RCs like (4b) have two discourse referents (e.g., *boy*, *push*) intervening between the filler and the gap. The results of the present study suggest that in second language acquisition, learners will use an avoidance strategy (passivization) when a direct object RC is elicited; that is, they will seek a means to shorten the length between the filler and the gap.

Furthermore, as mentioned in section 1, animate nouns are conceptually prominent; passive RCs allow the animate noun to be in the prominent subject position of the RC, as in (5). Using passive subject RCs allows participants to minimize processing burdens when both nouns are animate.

(5) the boy [that _ is kissed {by the girl}]

If participants want to reduce the interference between the conceptually similar (i.e., both animate) nouns when they are asked to produce a direct object RC, they can omit the agent if they use the passive form, in contrast to a direct object RC, as in (5). Therefore, when they encounter conceptual similarity between an agent and a theme, speakers are more likely to produce passive agent-omission relative clauses (Gemnari et al., 2012). As MacDonald (2013) pointed out, results from production tasks reflect sentence processing.

To conclude, the results of the present study confirm that L2 learners' greater difficulty with direct object RCs compared to subject RCs in English can be explained by the distance hypothesis (O'Grady, 2015). This finding is consistent with the previous research on asymmetry in subject-direct object RCs in the L1 and L2 acquisition and processing literature. To the best of my knowledge, this is the first study observing the subject-direct object asymmetry with the same materials in a production task with both L1 and L2 English speakers and focusing on the passivization of direct object RCs.

The results provide pedagogical information that can be useful in the L2 classroom. The current findings suggest that EFL leaners in this study tend to avoid complex structure such as direct object RC and use passivization instead. For EFL teachers, it is essential to understand learners' production strategy, provide adequate explanation and facilitate their learning process.

This study has some limitations, which lead to suggestions for further research. First, a future study on subject and direct object RCs is needed to consider the animacy effect by employing materials with animate head nouns and inanimate themes. Many researchers (C. E. Kim, 2013; Traxler et al., 2002) have pointed out that common direct object RCs in actual speech take an inanimate head noun as in (6). According to MacDonald (2013), there is less interference between entities that are conceptually dissimilar (i.e., one animate and one inanimate).

(6) the cookies [that the boy ate ___]

However, using such direct object RCs in experimental materials produces a possible problem as well. Even without fully fledged syntactic knowledge, producers can easily plan such direct object RCs by taking the inanimate noun as the head of the direct object RC because of the clause's non-reversibility (*boy can eat cookies* but *cookies cannot eat boy*). Animacy has an important role in the expectation-based approach in psycholinguistics (Levy, 2008; Verhoeven, 2014). To separate the compounded effects of different factors, a study comparing subject and direct object RCs as in (7a) and (7b) is in progress to see how L2 learners manifest subject and object asymmetry regardless of the animacy of the head noun.

(7a) the boy [that _ ate the cookies]
(7b) the cookies [that the boy ate ___]

Second, the L2 participants in this study were all high proficiency speakers. A study is needed to test low- and intermediate-proficiency groups to understand the interaction of L2 developmental patterns and the subject-direct object asymmetry.

Third, further research is needed to investigate any L1 effect on L2 relative clause production. Another study with L1 Korean speakers would be appropriate, because of Korean's typological differences from English, such as the different canonical word orders. A future study could use the same task and the same materials to elicit relative clauses in L1 Korean in order to compare the responses and error types in L1 and L2 English and L1 Korean.

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APPENDIX

1. In the first picture, a girl is pinching a boy. In the second picture, a girl is pinching a monkey.
2. In the first picture, a monkey is pushing a girl. In the second picture, a boy is pushing a girl.
3. In the first picture, a boy is hugging a girl. In the second picture, a monkey is hugging a girl.
4. In the first picture, a girl is pulling a boy. In the second picture, a girl is pulling a monkey.
5. In the first picture, a boy is carrying a girl. In the second picture, a monkey is carrying a girl.
6. In the first picture, a boy is pushing a girl. In the second picture, a boy is pushing a monkey.
7. In the first picture, a boy is hugging a girl. In the second picture, a boy is hugging a monkey.
8. In the first picture, a monkey is pulling a boy. In the second picture, a girl is pulling a boy.
9. In the first picture, a boy is carrying a monkey. In the second picture, a boy is carrying a girl.
10. In the first picture, a girl is pinching a boy. In the second picture, a monkey is pinching a boy.

Examples in: English
Applicable Languages: English
Applicable Levels: Elementary/Secondary

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