Factors Involved in Korean EFL Learners’ Choice of English Dative Constructions

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The English dative alternation, which involves an alternation between the double object construction (DC) and the adpositional construction (AC), has been known to be one of the most problematic areas for L2 learners. This paper investigates the factors influencing the Korean English as a foreign language learners’ choices between the two constructions. The Korean section of the TOEFL11 corpus was used and sentences with dative constructions were extracted from the corpus. Nine factors were then encoded and analyzed with a generalized linear mixed-effect model. From the analysis, the following facts were observed: (1) Korean EFL learners’ choice between the DC and the AC was influenced by five factors: animacy of theme, definiteness of theme, pronominality of recipient, length difference between theme and recipient, and individual verbs; (2) despite some similarities in choice of alternation between Korean EFL learners and ENL speakers, the two groups also exhibited differences, and (3) these differences originated from the different effects of these factors.

**Key words:** English dative constructions, Korean EFL learner, corpus analysis, generalized linear mixed-effect model
1. INTRODUCTION

The dative alternation is an almost English-specific linguistic phenomenon. Two dative constructions are allowed in English, and they are presented in (1).

(1) a. Mary gave Tom a book.
   b. Mary gave a book to Tom.

(1a) consists of an agent, a verb, a recipient, and a theme; and is called a Double Object Construction (DC). In contrast, (1b) consists of an agent, a verb, a theme, and a recipient with the insertion of prepositions to or for between two NPs; this is called an Adpositional Construction (AC). Dative alternation refers to an alternation between the DC and the AC.

Many languages do not have such alternation, and it may not be an easy task for English as a foreign language (EFL) learners to learn which verbs can occur in both AC and DC constructions, and if a verb occurs in both constructions, which of the two constructions should be selected. Such difficulty can lead to an exclusive use of one of the two dative constructions and avoidance of the other construction. It has been observed that L2 learners often turn to an avoidance strategy when they perceive a word or a structure of the target language to be difficult to produce. Korean has a construction which corresponds to the English AC, but many scholars claim that the language has no construction which exactly corresponds to the English DC. Consequently, it may be difficult for Korean EFL learners to learn English dative constructions and their alternation (for more discussion on this issue, see Yook, 2012, 2013).

The goal of this paper is to investigate the factors involved in Korean EFL learners’ choice between the two members of the dative alternation in their writing. More specifically, the paper attempts to answer the following research questions:

(1) What factors are involved in Korean EFL learners’ choice between the two English dative constructions?
(2) Is Korean EFL learners’ choice between the two English dative constructions similar or different from that of ENL speakers?
(3) Are the factors that influence Korean EFL learners’ choice of the dative constructions different from those that influence English as a native language (ENL) speakers’ choice of the dative constructions, and if so, how different are they?

2. LITERATURE REVIEW

Research on L2 acquisition of the English dative constructions and their alternation has
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been diverse in terms of theory and method. Among the research is one which focuses on L1 influence. This type of research assumes that L2 acquisition is a wholly distinct process from L1 acquisition, and this assumption starts from the fact that the L2 learner already knows at least one language. Researchers who focus on L1 influence assume that adult L2 acquisition is fundamentally different from L1 acquisition, in that adult L2 learners bring the knowledge of their L1 grammar to L2 learning tasks (Odlin, 1989). Previous L2 studies have shown that L1 influence is evident in L2 acquisition at least at the initial stage. L1 influences of various linguistic subsystems, including phonetics, phonology, morphology, semantics, and syntax have also been shown (Odlin, 2003).

Previous studies have also shown L1 influence at the initial stage of L2 acquisition of the English dative constructions. However, consensus has not been reached on the properties and extent of L1 influence. For example, different assumptions and conclusions are observed in studies on Korean learners’ acquisition of English dative constructions. Lee (1997) argues that Korean allows only a construction which is analogous to the English AC, and, the unmarkedness of the English AC explains why adult Korean learners initially prefer the English AC to the DC. Their access to UG, Lee also claims, explains their overcoming of the initial preference. In contrast, Oh (2010) assumes that Korean allows only a construction which is analogous to the English DC and that the Korean goal DC is comparable to the English goal DC, whereas the Korean benefactive DC is not comparable to the English benefactive DC. Oh then argues that adult Korean learners acquire the English goal DC earlier than the English benefactive DC and that they use their knowledge of the properties of the English DC in their acquisition of the English benefactive DC. In short, these two studies hold different assumptions about similarities between Korean and English in terms of dative constructions, and provide different arguments for the factors that influence the initial stage of Korean learners’ acquisition of English dative constructions.

Another form of research on L2 acquisition is experimental, with Yook (2012) being a typical example. This study attempts to present experimental evidence for L1 influence, and the experimental design was based on the fact that semantically comparable English and Chinese dative verbs do not always behave similarly. Two groups of EFL learners (30 Koreans and 30 Chinese) participated in an acceptability judgment test and an elicited production task. In the experiment, three different types of English dative verbs were...

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1 The sentence in (1a) is an example of goal DC, where the indirect object Tom has a goal role. As example of benefactive DC is as follows.

(i) a. John made Mary a cake.
   b. John made a cake for Mary.

In this sentence, the indirect object Mary has a benefactive role. Accordingly, (i) can be classified as a benefactive DC.
selected based on how their translations are used in Chinese: verbs whose Chinese counterparts occur with the DC only (D-type); verbs whose Chinese counterparts occur with the AC only (A-type); and verbs whose Chinese counterparts occur with both the AC and the DC (B-type). In the experiment, the following were observed: (1) regardless of verb types, the Korean group more favorably accepted and more frequently produced AC sentences than DC sentences; (2) verb types influenced the Chinese group’s acceptability ratings and production; and (3) the two groups showed the greatest inter-group difference when they were given DC sentences with D-type verbs, but the smallest inter-group difference when they were given AC sentences with A-type verbs.

Recently a number of studies have employed advanced methods of statistical analysis in order to measure the effects of multiple factors that may influence L2 use of English dative constructions and interactions between the factors. Bresnan, Cueni, Nikitina, and Baayen (2007) extracted DCs and ACs from the Switchbord subcorpus of the Penn Treebank corpus. They then employed fourteen explanatory variables which might have influenced choices between the two constructions, and since the dependent variable was binomial, a logistic regression model was used. They found that some (not all) of these linguistic features played critical roles in the choice of the dative constructions. The factors influencing ENL speakers’ choice of dative constructions were accessibility of recipient, accessibility of theme, pronominality of recipient, pronominality of theme, definiteness of recipient, definiteness of theme, animacy of recipient, differences in the length of theme and recipient, and the verbs.

Since the Bresnan et al.’s study, several studies have attempted to measure L1 influence by including L1 background as one of various independent variables that may affect L2 use of the English dative constructions. These studies used learner corpora or a variety of other English corpora. For example, Gries and Deshors (2015) used the International Corpus of English (ICE) to compare choices for dative constructions by German and French learners (EFL varieties) and choices by Hong Kong, Indian, and Singaporean English speakers (ESL varieties). Eleven factors were chosen for the analysis (accessibility of recipient, accessibility of theme, semantics of recipient, semantics of theme, animacy of recipient, animacy of theme, pronominality of recipient, pronominality of theme, voice, differences in the length of theme and recipient, and mode (spoken vs. written). They adopted a multi-level regression model to compare the ESL data and the EFL data, and analyzed the constructions with a mixed-effects model. They concluded that EFL and ESL are “discrete types of varieties” (p. 154) (for the use of corpora in the Korean context, see Lee, 2008).

These studies show two features: (1) theoretical and experimental investigations of L1 influences on L2 acquisition of English dative constructions, and (2) sophisticated statistical analyses of large corpora for identifying other factors that influence L2 acquisition of English dative constructions. This paper revisits the issue of L2
acquisition/learning of English dative constructions by turning to sophisticated statistical analyses and a large corpus, and attempts to measure the extent to which Korean as an L1 and other factors identified in the previous studies influence Korean EFL learners’ learning of English dative constructions.

3. RESEARCH METHOD

3.1. Corpus Data

This study used two types of corpus data: the Korean section of the TOEFL11 corpus (LDC Catalog No.: LDC2014T06), and the data in Bresnan et al. (2007) as a reference data set. The second data set was taken for comparison with the Korean data set, and they were included in the LANGUAGE R package in the R software package.

The TOEFL11 corpus was released by the English Testing Service (ETS) in 2014, and consists of essays written for the TOEFL iBT® tests in 2006-2007 (Blanchard, Tetreault, Higgins, Cahill, & Chodorow, 2013). It contains 1,100 essays for each of the 11 native languages, totaling 12,100 essays, and all the essays were taken from a TOEFL independent task where test-takers were asked to write an essay in response to a brief writing topic. The essays were sampled as evenly as possible from eight different topics. The corpus also provides score levels (low/medium/high) for each essay, which were calculated first by combining the individual 5-point-scale scores from the human raters and then by collapsing the combined score into three levels (low/medium/high). The 5-point-scale human scores were determined by the defined criteria.

From the TOEFL11 corpus, the Korean section was excerpted for this study; this section consists of essays written by Korean EFL learners during the TOEFL iBT® tests in 2006-2007, and the corpus size was 328,384 word tokens. Since the corpus data were classified into three groups, we also divided the data according to proficiency levels. The High level contains 95,066 word tokens, the Medium level contains 202,531 word tokens, and the Low level contains 30,787 word tokens.

3.2. Statistical Analysis of Korean Section of the TOEFL 11 Corpus

The analysis of the Korean section of the TOEFL11 corpus was performed as follows. First, 40 dative verbs were selected from several previous studies. Carter and McCarthy (2006) provided 17 alternating dative verbs, while Biber, Johansson, Leech, Conrad, and Finegan (1999) listed seven dative verbs. Goldberg, Casenhiser, and Sethuraman (2004) provided additional dative verbs, with give as the most frequent verb appearing in the DC
construction. Gropen, Pinker, Hollander, Goldberg, and Wilson (1989) provided a number of alternating dative verbs, which reflect what Gropen et al. called narrow range rules. Levin (1993) provided the most extensive list of alternating dative verbs: 125 verbs under 10 categories. Most importantly, at least for the present study, Gries and Stefanowitsch (2004) ranked 39 alternating dative verbs according to their relative frequencies. Based on these studies, the following alternating dative verbs were selected: allocate, ask, assign, award, bring, carry, cause, charge, cost, cut, deny, do, drop, feed, get, give, grant, hand, keep, leave, lend, lose, make, offer, owe, pass, pay, play, promise, read, sell, send, set, show, supply, take, teach, tell, wish, and write.

Then all the sentences that included the 40 verbs were extracted from the Korean data. The software used for extraction was NLPTools (Lee, 2007), which was used for two reasons. First, a lexeme-based search is possible with this software, e.g., in searching for the verb give, sentences with all inflected forms of the verb (i.e., give, gives, giving, given, and gave) can be identified through a single search. Second, the software program contains a function to extract only the whole sentences with a given node word. After all sentences were extracted, sentences with the DC or the AC were manually extracted, and sentences with mono-transitive usage of verbs or other usages were excluded. Through this process, a total of 408 sentences were extracted.

### TABLE 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL</td>
<td>Proficiency level of test-takers’ writings (High, Medium, Low)</td>
</tr>
<tr>
<td>ANIMREC</td>
<td>Animacy of Recipient</td>
</tr>
<tr>
<td>ANIMTH</td>
<td>Animacy of Theme</td>
</tr>
<tr>
<td>DEFREC</td>
<td>Definiteness of Recipient</td>
</tr>
<tr>
<td>DEFTH</td>
<td>Definiteness of Theme</td>
</tr>
<tr>
<td>PRONREC</td>
<td>Pronominality of Recipient</td>
</tr>
<tr>
<td>PRONTH</td>
<td>Pronominality of Theme</td>
</tr>
<tr>
<td>LENGDIFF</td>
<td>Numeric difference in length of recipient minus the length of the theme (in words)</td>
</tr>
<tr>
<td>VERB</td>
<td>40 dative verbs</td>
</tr>
<tr>
<td>REALIZATION</td>
<td>Realization/Selection of dative alternation (DC or AC)</td>
</tr>
</tbody>
</table>

After DC and AC sentences were extracted from the corpus, nine relevant factors were manually encoded into the extracted sentences. Table 1 enumerates the factors/variables which were used in the analysis. Among these variables, the last one (REALIZATION) was

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2 Among the factors that Bresnan et al. (2007) adopted, two factors (accessibility of recipient and accessibility of theme) were excluded in the encoding process. Since these factors could be encoded within the discourse contexts. Since most writings in the TOEFL11 corpus were short in length, it was difficult to encode these factors within the discourse contexts. For this reason, accessibility of recipient and accessibility of theme were excluded in the encoding process.
the dependent variable and the others were independent variables. Among the independent variables, the first factor (LEVEL) is a non-linguistic factor and the others are linguistic factors. For example, two sentences in (2) can be encoded as follows.

(2) a. Mary gave the girl a book.
   b. Mary gave a book to the girl.

For (2a), since the order of this sentence is agent, verb, recipient, and theme, the value for REALIZATION is DC. In this sentence, the girl is a recipient and a book is a theme. The girl is an animate, definite, and non-pronominal entity. Accordingly, the values of ANIMREC, DEFREC, and PRONREC for the girl become anim(ate), def(inite), and nonpro(nominal) respectively. On the other hand, a book is an inanimate, indefinite, and non-pronominal entity. Accordingly, the values of ANIMTH, DEPTH, and PRONTH for a book become inanim(ate), indef(inite), and nonpro(nominal) respectively. Since both the girl and a book have two words, the value for LENGDIFF is 0 (2-2). The value for VERB is give. For (2b), since the order of this sentence is agent, verb, theme, and recipient, the value for REALIZATION is AC. Since the recipient NP and the theme NP are identical with those of (2a), the values for ANIMREC, DEFREC, PRONREC, ANIMTH, DEPTH, and PRONTH, and VERB are identical with those of (2a). However, since to the girl contains three words and a book have two words, the value for LENGDIFF becomes 1 (3-2).

4. RESULTS

4.1. Descriptive Statistics (AC vs. DC)

Before the inferential analysis, descriptive statistics were examined to see how the Korean EFL learners used ACs and DCs in their writings, as shown in Figure 1. The data for the ENL speakers were taken from Bresnan et al. (2007).

This plot shows the following. Both the ENL speakers and the Korean EFL learners used more DCs than ACs, and the Korean EFL learners used more ACs (i.e., less DCs) than the ENL speakers.
The ratio of ACs vs. DCs was 26:74 among ENL speakers, and 37:63 among Korean EFL learners. This ratio did not differ much as the proficiency level of the Korean EFL learners increased.

4.2. Generalized Linear Mixed-Effect Model

The statistical analysis adopted in this study is a generalized linear mixed model (GLMM). Since nine factors were encoded, a linear regression analysis was used (a multifactorial analysis; Gries, 2003). Because the dependent variable REALIZATION was binomial, a generalized linear mixed-effect model was used with logistic regression. Some factors (all the factors except VERB) were then applied to all data sets, but others were applied to only some parts of the data (VERB), so a generalized linear mixed-effect (regression) model (GLMM) was used. The former type of variables were treated as fixed effects, and the latter type as random effects.

In this study, we followed a stepwise model selection procedure as outlined in Zuur, Ieno, Walker, Saveliev, and Smith (2009, Chapter 5). This procedure can be summarized as follows: We first began with a model containing all fixed and random effects. We tried to find the optimal random effects structure (varying intercepts for one or more factors and/or varying slopes for one or more factors). In the last step, since the optimal random effects structure was found, we tried to find the optimal fixed effects structure. In the last two
steps, an optimal model was chosen according to criteria such as significance testing $p$-values or information criteria. The $p$-values could be used when a model $m_1$ contains (1) only random effects that made $m_1$ significantly better than the model $m_2$ where these effects were not included, and (2) only fixed effects (including their interactions) that made the model $m_1$ significantly better than the model $m_2$ where these effects and their interactions were not included.

4.2.1. Initial model

Our statistical analysis started from identifying random factors and fixed factors. Since not all the verbs were included in the study, the factor VERB became a random factor. Since all the factors except VERB were encoded in the entire data set, the other eight factors became fixed factors. Based on this classification, our initial model was constructed as follows.

**TABLE 2**

<table>
<thead>
<tr>
<th>Model</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 01</td>
<td>$\text{REALIZATION-LEVEL+ANIMREC+ANIMTH+DEFREC+DEFT+PRONREC+}$\n</td>
</tr>
</tbody>
</table>

Here, $\text{REALIZATION}$ was a dependent variable, $(1|\text{VERB})$ was a random variable and all the others were fixed variables.

4.2.2. Finding an optimal model

Since basic statistics were obtained for fixed and random effects, the following step was to find an optimal model. Through the stepwise model selection procedure in Zuur et al. (2009), the optimal model was chosen for the given data. However, because there were so many interactions among the eight fixed factors (a total of 233 interactions), it was impossible and unreasonable to describe all the interactions in this paper. Accordingly, in this paper, only the main factors were included in the final model, as displayed in Table 3, that significantly influenced the choice of the dative constructions in the Korean EFL learners' writings.

**TABLE 3**

<table>
<thead>
<tr>
<th>Model</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 02</td>
<td>$\text{REALIZATION-ANIMTH+DEFT+PRONREC+LENGDIFF+(1</td>
</tr>
</tbody>
</table>
As this final model demonstrates, four main fixed factors (animacy of theme, definiteness of theme, pronominality of recipient, and length differences) and VERB influenced the Korean EFL learners’ choice of the dative constructions.

Since the final model for our data sets was found, the statistical values for each factor were calculated again. Table 4 summarizes the results.

**TABLE 4**

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>z</th>
<th>p</th>
<th>Random Effects</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>10.274</td>
<td>0.002</td>
<td>4410</td>
<td>&lt; .001</td>
<td>VERB</td>
<td>1.607</td>
</tr>
<tr>
<td>ANIMTH</td>
<td>8.983</td>
<td>0.002</td>
<td>3855</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANIMTHANIMATE</td>
<td>8.983</td>
<td>0.002</td>
<td>3855</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEFTHE</td>
<td>2.030</td>
<td>0.002</td>
<td>900</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEFTHEMA</td>
<td>-0.483</td>
<td>0.002</td>
<td>-214</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRONRECPRON</td>
<td>1.376</td>
<td>0.002</td>
<td>610</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LENGDIFF</td>
<td>0.406</td>
<td>0.002</td>
<td>180</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As the *p*-values indicate, four fixed factors (animacy of theme, definiteness of theme, pronominality of recipient, and length differences) and VERB were significant (*p* < 0.001).

These results were compared with those of Bresnan et al. (2007), who investigated ENL speakers’ choices of dative constructions, as shown in Table 5. As the table indicates, nine factors significantly influenced ENL speakers’ choice of dative constructions, whereas only five factors significantly influenced Korean EFL learners’ choice. Even though two factors (accessibility of recipient and accessibility of theme) are excluded from the discussion, it is certain that fewer factors were employed in the Korean EFL learners’ choice of dative constructions and that the combination of factors differed slightly from the ENL speakers.

**TABLE 5**

<table>
<thead>
<tr>
<th>Factors</th>
<th>ENL Speakers</th>
<th>Korean EFL Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility of Recipient</td>
<td>significant</td>
<td>significant</td>
</tr>
<tr>
<td>Accessibility of Theme</td>
<td>significant</td>
<td></td>
</tr>
<tr>
<td>Pronominality of Recipient</td>
<td>significant</td>
<td>significant</td>
</tr>
<tr>
<td>Pronominality of Theme</td>
<td>significant</td>
<td></td>
</tr>
<tr>
<td>Definiteness of Recipient</td>
<td>significant</td>
<td></td>
</tr>
<tr>
<td>Definiteness of Theme</td>
<td>significant</td>
<td></td>
</tr>
<tr>
<td>Animacy of Recipient</td>
<td>significant</td>
<td></td>
</tr>
<tr>
<td>Animacy of Theme</td>
<td>significant</td>
<td></td>
</tr>
<tr>
<td>Length Differences</td>
<td>significant</td>
<td>significant</td>
</tr>
<tr>
<td>Verb</td>
<td>significant</td>
<td>significant</td>
</tr>
</tbody>
</table>

In this plot, I-shaped lines around the values indicate the 95% confidence intervals (CIs). As this figure indicates, the Korean EFL learners used only ACs for animate themes. In
contrast, they used more DCs (probability of ACs < 0.5) for inanimate themes. The percentage of ACs in Bresnan et al.’s (2007) data was 70% for animates and 75% for inanimates. This ratio implies that the Korean EFL learners used too many ACs for animate entities and a smaller number of ACs for inanimate entities.

4.3. Analysis With Effect Plots

4.3.1. Influence of ANIMTH

The second predictor to be examined is ANIMTH; and as noted in Table 3, this factor was significant \( p < 0.001 \); Figure 2 shows the effect plot for this factor.3

![FIGURE 2](image)

Effect Plot for ANIMTH

In this plot, I-shaped lines around the values indicate the 95% confidence intervals (CIs). As this figure indicates, the Korean EFL learners used only ACs for animate themes. In contrast, they used more DCs (probability of ACs < 0.5) for inanimate themes. The percentage of ACs in Bresnan et al.’s (2007) data was 70% for animates and 75% for inanimates. This ratio implies that the Korean EFL learners used too many ACs for animate entities and a smaller number of ACs for inanimate entities.

3 Though it was not clearly shown in this figure, the 95% CI was also included in the figure. The CI itself was too narrow.
entities and a smaller number of ACs for inanimate entities.

4.3.2. Influence of DEFTH

The third predictor to be examined is DEFTH, and as noted in Table 3, this factor was significant ($p < 0.001$); Figure 3 shows the effect plot for this factor. As this figure shows, Korean EFL learners used ACs predominantly when the theme referred to a definite entity. However, they used more DCs (probability of ACs $< 0.5$) when the theme was indefinite. The percentage of ACs in Bresnan et al.’s (2007) data was 44% for definite and 11% for indefinite. Consequently, the Korean EFL learners used too many ACs in all these instances.

Here, ‘NA (not available)’ refers to instances where the theme was not a simple NP but gerundives, to-infinitives, or clauses. In these cases, since it is meaningless to identify them as being definite or indefinite, they were classified as ‘NA’. As shown in Figure 3, the Korean EFL learners used more DCs for these non-thematic tokens; it seems that for such sentences, the factor LENGDIFF may have more influence than DEFTH.
4.3.3. Influence of PRONREC

The fourth predictor to be examined is PRONREC, and as noted in Table 3, this factor was significant \( (p < 0.001) \); Figure 4 shows the effect plot for this factor.

![Effect Plot for PRONREC](image)

As this figure indicates, the Korean EFL learners used more ACs \((0.5 < \text{probability of ACs})\) when the theme was not a pronoun, but they used more DCs \((\text{probability of ACs} < 0.5)\) when the theme was a pronoun. The percentage of ACs in the Bresnan et al. (2007) data was 60% for non-pronominals and 12% for pronouns. The Korean EFL learners thus used too many ACs in both cases.

4.3.4. Influence of LENGDIFF

The fifth predictor to be examined is LENGDIFF, and as noted in Table 3, this factor was significant \( (p < 0.001) \); Figure 5 shows how this factor affected the choice of dative constructions. Here, the x-axis indicates the length difference between recipient and theme. Negative values indicate that the recipient length is shorter than theme length; Positive values indicate that the recipient length is greater than the theme length.
The proportion of ACs increases from left to right, meaning that Korean EFL learners preferred AC more as the recipient length exceeded theme length. This tendency is consistent with the tendency observed in Bresnan et al. (2007).

4.3.5. Influence of VERB

In our statistical analysis, VERB was a random factor, and this factor played an important role in the choice between DC and AC. The ENL and the Korean EFL data were then examined for differences in their choices of DC and AC; Figure 6 shows the ratio of ACs measured for each verb in the writings of the Korean EFL learners. The vertical line in the middle indicates the 0.5 point in the scale. Data points to the left of this line indicate DC preferred over AC, while points on the right indicate AC preferred over DC. DC was used more frequently with some verbs, while AC was used more frequently with others.

In addition, 75 verbs were used in the ENL speaker data, while only 15 verbs were used in the Korean EFL learner writings; i.e., a much smaller number of verbs were used by the Korean EFL learners (about 20% of those used by the ENL speakers).
Gries and Stefanowitsch (2004) described three different types of dative verbs. The first type prefers the DCs to the ACs (ACs < DCs), and this type includes such verbs as *ask*, *give*, *offer*, *show*, *teach*, and *tell*. In the second type, the ratio of the DCs is similar to that of the ACs (ACs = DCs), and this type includes such verbs as *lend*, *owe*, and *send*. The third type prefers the ACs to the DCs (ACs > DCs), and this type includes such verbs as *bring*, *hand*, *leave*, *pass*, *pay*, *play*, and *sell*. Table 6 shows the ratio of the AC measured for each verb from Bresnan et al. (2007) and the Korean EFL learners’ writings. Here, ‘NA’ or ‘Not Available’ indicates that relevant data were not provided in Bresnan et al. (2007).

### Table 6

<table>
<thead>
<tr>
<th></th>
<th>ACs &lt; DCs</th>
<th>ACs = DCs</th>
<th>ACs &gt; DCs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verb</strong></td>
<td>Native</td>
<td>Korean</td>
<td>Native</td>
</tr>
<tr>
<td><em>ask</em></td>
<td>0.1537</td>
<td>0.2609</td>
<td>0.4128</td>
</tr>
<tr>
<td><em>give</em></td>
<td>0.3671</td>
<td>0.4444</td>
<td>0.5455</td>
</tr>
<tr>
<td><em>offer</em></td>
<td>0.1552</td>
<td>0.2000</td>
<td></td>
</tr>
<tr>
<td><em>show</em></td>
<td>0.0469</td>
<td>0.0417</td>
<td></td>
</tr>
<tr>
<td><em>teach</em></td>
<td>0.0469</td>
<td>0.0535</td>
<td></td>
</tr>
<tr>
<td><em>Tell</em></td>
<td>0.0469</td>
<td>0.0417</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.3961</td>
<td>0.4000</td>
<td>0.5455</td>
</tr>
</tbody>
</table>

The verbs on the left of the table prefer DCs to ACs, and all values in this category have values less than 0.5, for both the ENL speakers and the Korean EFL learners. The
tendencies of these verbs are consistent with those presented in Gries and Stefanowitsch (2004). However, the verbs in the middle column tell a different story, as their ratios would be close to 0.5 according to Gries and Stefanowitsch (2004). This tendency was observed in the verb lend. For the verb owe, the ENL speakers preferred the DCs. For the verb send, the ENL speakers tended to use ACs and DCs in similar proportions, while the Korean EFL learners used only ACs. For the verbs on the right of the table, their ratios would be greater than 0.5. However, the ENL speakers used the ACs less and the DCs more with the verb hand and leave. Interestingly, the ENL speakers preferred ACs except for hand and pay, while the Korean EFL learners preferred ACs. Overall, the ENL speakers and the Korean EFL learners demonstrated similar tendencies for verbs that occur more with ACs than with DCs, but two groups otherwise differed. It must be noted here that five verbs are not shown in Table 6, and among these, cost and get preferred DCs (0.25), and cause, do, and make were used only with ACs.

4.4. Testing Goodness of Fit

An optimal model was constructed for the data, the goodness of fit for the obtained model was tested. Since a logistic regression was used in the analysis (cf. Section 4.1), C-statistics was used for comparison.4

The C-statistics for model02 in Table 3 was 0.9370. For the C-values, Harrell (2001) stated that “C-values range from 0.5 to 1 and the higher the value, the better a regression model is at classifying or predicting the dependent variable; C-values ≥ 0.8 are generally considered good” (p. 248). Note that the C-value for model02 is 0.9370. This suggests that model02 is very good for explaining our data set. One may recall that there were a total of 233 interactions among eight fixed factors. Even though no interaction was included in the final model model02, a fairly strong and reasonable statistical model was obtained.

5. DISCUSSION

The research questions concerned (1) the factors involved in Korean EFL learners’ choices between the two English dative constructions, (2) whether Korean EFL learners’
choices between these differ from those of ENL speakers, (3) whether the factors that influence Korean EFL learners’ choices of dative constructions differ from those that influence ENL speakers’ choices, and if so, how they differ. The results of the two-step analysis provide answers to these questions.

For the first research question regarding the factors involved in choice of dative construction, Table 4 and Table 5 summarize the answer. In the Korean EFL learners’ writings, four fixed factors (animacy of theme, definiteness of theme, pronominality of recipient, and length differences) and the particular dative verb influenced the choice of dative constructions in statistically significant ways. In fact, this is what previous studies have found. Figure 6 and Table 6 also show that the Korean EFL learners’ (and the ENL speakers’) choice of dative construction varied depending on the verbs. For dative verbs are ask, give, offer, show, teach, and tell, both groups preferred DCs over ACs. In other cases, the two groups demonstrated slightly different behaviors. For the verbs which Gries and Stefanowitsch (2004) observed occurring with similar frequency in DCs and ACs, the ENL speakers preferred DCs, but the Korean EFL learners preferred ACs. For the verbs which Gries and Stefanowitsch indicated as occurring more frequently with AC than with DCs, the Korean EFL learners preferred ACs, but the ENL speakers demonstrated a different tendency depending on the verb itself. Accordingly, the analysis results partially support Gries and Stefanowitsch’s (2004) classification of English dative verbs, at least for the verbs with ACs < DCs in Table 6.

For the question of whether Korean EFL learners’ choices differ from ENL speakers’ choices (the second research question), the results indicate both similarities and differences in the use of dative alternation in both groups of speakers. Figure 1 in Section 4.2 shows that ENL speakers and Korean EFL learners used DCs more frequently than ACs, as the bar plot shows that both groups recognized the alternation and their tendencies in alternation patterns were similar. Figure 5 and Figure 6 also indicated that the tendencies were similar. Figure 5 shows that Korean EFL learners preferred ACs as the length of the object NPs increased; this pattern was also observed in Bresnan et al. (2007). Figure 6 also shows that both groups had similar tendencies. Many verbs which preferred DCs in the ENL speaker data also preferred DCs in the Korean EFL speakers’ writings, and several verbs which preferred ACs in the ENL speaker writings also preferred ACs in the Korean EFL speaker data. All of these provide evidence that ENL speakers and Korean EFL learners are similar in their use of dative alternation.

However, the results also indicated some differences. Figure 1 shows some differences between ENL speakers and Korean EFL learners. As noted in Section 4.2, Bresnan et al. (2007) reported an ACs versus DCs ratio of 24% vs. 76%, respectively, in the ENL speakers’ data. However, this study found a ratio of 37% to 63% for the Korean EFL learner. This implies that Korean EFL learners prefer ACs over DCs. In the effect plots
from Figure 2 to Figure 4, it was observed that the Korean EFL learners used too many ACs. This tendency can be explained by Lee’s (1997) claim that Korean allows only a construction which is analogous to the English ACs, and the unmarkedness of the English ACs explains why adult Korean learners initially prefer the ACs to the DCs. Since Korean has a construction which is analogous to the English AC, Korean EFL learners are familiar with the English ACs, and this leads to Korean EFL learners’ initial preference for the English ACs. These results also support Yook’s (2012) claim that Korean EFL learners more favorably accept and more frequently produce AC sentences than DC sentences. However, Oh’s (2010) claim that Korean allows only a construction analogous to the English DC, and that the Korean goal DC is comparable to the English goal DC, while the Korean benefactive DC is not comparable to the English benefactive DC, must be confirmed by further study. After more variables are included in the data (goal DC vs. benefactive DC), more statistical methods can be employed to examine whether the distinction is statistically significant.

The third research question regarding whether the factors involved in Korean EFL learners’ choices resemble ENL speakers’ choices of the dative constructions. For this question, Table 5 provides a negative answer. Nine factors were involved in the ENL speakers’ choices, while five factors (plus the L1 factor) influenced the Korean EFL learners’ choices. That is, a smaller number of factors was involved in the Korean EFL learners’ choices than for the ENL speakers’, and a different combination of dative constructions emerged among the two groups.

However, we do not claim that these differences between ENL speakers and Korean EFL learners arise from only L1 transfer effects. Another statistical analysis (such as another regression analysis with the ENL data and/or the data from Gries and Deshors (2015) is necessary to examine whether the L1 (here, Korean) actually influenced these (linguistic) factors, and to what degree L1 transfer effects are involved.

6. CONCLUSION

Factors that may influence Korean EFL learners’ choice between the English DCs and the ACs in their English writing have been identified through a two-step analysis. The results of the analysis show that: (1) Korean EFL learners’ choice between the DCs and the ACs was influenced by five factors: animacy of theme, definiteness of theme, pronominality of recipient, length difference between theme and recipient, and verbs; (2) despite some similarities in choices of alternation between Korean EFL learners and ENL speakers, the two groups also demonstrated differences, and (3) these differences were originated from different effects of these factors. The ENL speakers adopted nine factors
(accessibility of recipient, accessibility of theme, pronominality of recipient, pronominality of theme, definiteness of recipient, definiteness of theme, animacy of recipient, length differences, and verb), while the Korean EFL learners relied on five factors (pronominality of recipient, definiteness of theme, animacy of theme, length differences, and verb).

Though this study uncovered interesting facts about dative alternation in Korean EFL learners’ writings, more issues remain to be investigated through further research. First, it is necessary to investigate how Oh’s (2010) classification of the DC can affect the choice of the two dative constructions in Korean EFL learners’ writings. Second, this study has exclusively investigated choices between the two English dative constructions in EFL writings. However, as Gries and Deshors (2015) point out, written texts and spoken texts are different. Accordingly, it is necessary to expand this study into the spoken mode to investigate factors influencing choices between these constructions and how they differ from written texts. Finally, it is necessary to investigate whether Korean actually influences these five linguistic factors and to what degree L1 transfer effects are involved through another regression analysis with the ENL data and/or Multifactorial Prediction and Deviation Analysis with Regressions (Gries & Deshors, 2015).

REFERENCES


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