A corpus-based study of contextual factors influencing Korean EFL learners’ dative alternation

Lexical verbs, syntactic weights, and information structures

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English datives show two syntactic patterns, the double object dative (DOD) and the prepositional dative (PD). The alternation between DOD and PD is influenced by three contextual factors: lexical verbs, syntactic weights, and information structures. However, it has been observed that English dative alternation by second language (L2) learners significantly deviates from the native norm. Accordingly, this study examines whether the three factors are influential when L2 learners produce dative sentences, by analyzing a learner corpus and a native speaker corpus. Results show that the learners produced PD significantly more frequently than the native speakers did. Even when DOD should be contextually preferred, the learners produced many PD sentences. These results suggest that L2 learners have trouble noticing the contextual factors when structuring English datives. The finding is further discussed as it relates to the major tenets of L2 acquisition such as cross-linguistic transfer, constructional knowledge, and language processing.

Keywords: English dative structures, learner corpus, lexical verbs, end-weight principle, given-before-new principle

1. Influential factors in dative alternation

Since Givón’s (1979) pioneering work, a number of researchers have endeavored to identify influential variables in English dative alternation: double object dative (DOD), for example, *she gave me a card*, and prepositional dative (PD), for example, *I gave it to a stranger* (Arnold, Losongco, Wasow, & Ginstrom, 2000; Biber et al., 1999; Bresnan, Cueni, Nikitina, & Baayen, 2007; Brown, Savova, & Gibson,
To date, the findings have suggested that English dative alternation is influenced by at least three factors, that is, lexical, syntactic, and discoursal variables.

First, it is acknowledged that one of the major determinants that influence the dative structures is the lexical verb. According to Grimshaw and Prince (1986), the DOD structure disallows a majority of Latinate verbs, such as explain, donate, report, transport, whereas certain Latinate verbs with initial stress, such as offer or promise, can occur in both types of dative structures. This contrast is exemplified in the followings:

(1) a. The lady explained me the story.
    b. The lady explained the story to me.

(2) a. The boss offered Jack the new position.
    b. The boss offered the new position to Jack.

It is noteworthy here that, even when a lexical verb permits the dative alternation and thus can appear both in the DOD and the PD structure (e.g., give, send, ask, sell, and pay), there is a statistical tendency of that verb to appear in one of the dative structures more frequently, all else being equal (Bresnan & Ford, 2010; Celce-Murcia & Larsen-Freeman, 1999; Hovav & Levin, 2008; Levin, 1993; Lapata, 1999; Gries, 2005; Gries & Stefanowitsch, 2004; Wasow & Arnold, 2003). Gries and Stefanowitsch (2004) investigated dative verbs in the British component of the International Corpus of English, and determined that some verbs are distinctive for one of the dative structures. For example, the verb give was found to be the most distinctive one for the DOD structure ($p = 1.84E-120$), appearing 461 times in DOD, but 146 times in PD. In contrast, the verb bring was found to be the most distinctive one for the PD structure ($p = 1.47E-09$), appearing 82 times in PD, but only 7 times in DOD. Therefore, it can be argued that the lexical verb serves as an important factor when ordering the constituents of dative sentences.

Another influential factor for the dative alternation is the syntactic weights of post-verb arguments, that is, theme (an argument undergoing a certain type of motion, e.g., a flower) and goal (an argument indicating the endpoint of a path and/or receiving something, e.g., a lady). The principle of end-weight predicts that a long and complex phrase will appear later in a sentence (Quirk, Greenbaum, Leech, & Svartvik, 1972), and this principle applies to the dative alternation (Arnold et al., 2000; Biber et al., 1999; Celce-Murcia & Larsen-Freeman, 1999; Cowan, 2008; Wasow & Arnold, 2003). To be more specific, when the theme argument is long and complex, the DOD structure, that is, [verb goal theme], is selected; when the goal argument is long and complex, the PD structure, that is, [verb theme to/for goal], is selected, as exemplified in the followings:
(3) Heavy theme
   a. I gave my teacher [theme the complete research which I worked on for three days].
   b. I gave [theme the complete research which I worked on for three days] to my teacher.

(4) Heavy goal
   a. I gave [goal the teacher whom I had worked with for three days] the report.
   b. I gave the report to [goal the teacher whom I had worked with for three days].

Sentences (3a) and (4b) sound more natural and proper than (3b) and (4a), respectively, since the complex objects appear in the sentence-final positions. This structuring pattern is closely related to the finding of a corpus study by Biber et al. (1999), which investigated dative sentences in a large-scale corpus to measure the length of the post-verbal argument that is adjacent to the verb, that is, goal in DOD and theme in PD. Their results showed that the first post-verbal arguments in dative sentences were light: a majority of the DOD sentences (85%) had one-word goal arguments (e.g., her and men), and a majority of the PD sentences had one- or two-word theme arguments, 55% and 25%, respectively. Further, Arnold et al. (2000) contended that research of syntactic heaviness should take into account the relative weight between the two post-verbal constituents, as when both theme and goal are light or heavy, the heavier constituent is more likely to appear in the right-hand position than the lighter one.

Finally, the decision between PD and DOD observes an important rule for information structures, namely the given-before-new principle, which “states that ‘given,’ or ‘old‘ (previously mentioned), information in an ongoing discourse should appear in a sentence before ‘new’ (not yet mentioned) information” (Cowan, 2008, p. 337, emphases and parentheses original). To be more specific, the DOD structure, that is, [verb goal theme], is preferred when the referent of the goal is previously mentioned but that of the theme is not, while the PD structure, that is, [verb theme to/for goal], is preferred when the referent of the theme is previously mentioned, but that of the goal is not (Erteschik-Shir, 1979, 2007; Givón, 1979), as shown in (5) and (6):

(5) What did you give Mary? (The goal, Mary, is given information.)
   a. I gave Mary a book.
   b. I gave a book to Mary.

(6) Who did you give the book to? (The theme, the book, is given information.)
   a. I gave Mary the book.
   b. I gave the book to Mary.
The wh-question in example (5) above shows that the goal argument Mary is considered to be given information by the interlocutors. Accordingly, the DOD structure, where the goal argument precedes the theme argument, is more appropriate. In contrast, the wh-question in (6) shows that the theme argument is given information, and thus the PD structure is more appropriate for this particular context.

The recent advances in corpus linguistics have allowed for more rigorous analyses of these variables in dative alternation and re-examination of the previous findings on native speakers’ and/or second language (L2) learners’ production of PD and DOD. Such an attempt was made by Callies and Szczesniak (2008), who investigated the English dative structures in Polish-speaking and German-speaking learner essays extracted from the International Corpus of Learner English as well as those in a native speaker corpus, i.e., the Louvain Corpus of Native English Essays. Their study focused on the information structure and syntactic heaviness of post-verbal arguments in dative sentences and found that, although the L2 English learners were at advanced English proficiency, they seemed to observe the end-weight and the given-before-new principle less strictly than did the native English speakers. The finding, however, had an issue of generalizability since the learners’ mother tongues (i.e., Polish and German) have dative alternation. Learners whose L1 does not have dative alternation might show very different patterns when producing dative sentences. In addition, Callies and Szczesniak did not fully address the issue of lexical verbs, i.e., whether either PD or DOD was preferred by certain types of verbs. Considering that a rigorous analysis of the type and token frequencies of certain lexical units is possible in corpus-based research, it is worth further investigating whether native speakers and L2 learners have similar or different verb biases toward PD or DOD.

The aforementioned research gaps call for a more systematic investigation of L2 acquisition of dative structures that includes a learner population from a different mother tongue background and synthesizes different levels of influential factors in dative alternation. To this end, the present study analyzes English dative sentences produced by learners of English who have a different mother tongue, that is, the Korean language, which is known to lack dative alternation. This effort aims to provide detailed accounts of learners’ processes for structuring PD or DOD by examining dative sentences in a learner corpus of essays and a native speaker corpus of a similar nature. A special focus is placed on the three important determinants of dative alternation, namely, types of lexical verbs, syntactic heaviness of post-verbal arguments, and information structures of preceding discourses.

The rest of this paper is organized as follows. Section 2 introduces major studies on L2 acquisition of English dative structures. Section 3 describes the target corpora and methods of data analysis, and Section 4 reports on the results of a corpus-based study that investigated lexical verbs, post-verbal arguments, and
information structures of dative sentences in native speaker and learner corpora. Section 5 discusses the major findings of the current study, and Section 6 concludes the paper with pedagogical implications and suggestions for future research.

2. Second language acquisition of dative structures

One of the major questions in L2 acquisition research of English dative structures is whether a certain structure is acquired earlier and/or is more preferred than the other. The most noteworthy finding related to this question is that, in contrast to the first language acquisition of dative structures, L2 learners of English acquire PD earlier than DOD and overuse the PD structure even when the native speaker would use the DOD structure (Chang, 2004; Hawkins, 1987; Le Compagnon, 1984; Lee & Kim, 2011; Mazurkewich, 1981, 1985; Mazurkewich & White, 1984; Tanaka, 1987; Wolk, Wolfer, Baumann, Hemforth, & Konieczny, 2011). Le Compagnon (1984) investigated how French-speaking learners of English as a foreign language (EFL) performed on grammaticality judgment tasks and identified the learners’ general preference for the PD structure over the DOD structure. Similar patterns have been reported in studies completed on East-Asian learners of English, whose mother tongues are known to lack dative alternation (Chinese-speaking learners: Chang, 2004; Japanese-speaking learners: Tanaka, 1987; and Korean-speaking learners: Kim, 2014; Park, 2011; Yook, 2012, 2013). In particular, Korean-speaking learners of English significantly favored the PD structure over the DOD structure, both for grammaticality judgment tasks and (elicited) production tasks.

L2 learner difficulties in acquiring and using dative structures (e.g., a non-native-like preference for the PD structure) have been further examined for the three aforementioned factors, i.e., lexical verbs, syntactic weights, and information structures (Callies & Szczesniak, 2008; Chang, 2004; Kim, 2014; Jäschke & Plag, 2016; Lee, Lee, & Kim, 2008; Marefat, 2005; Park, 2011; Tanaka, 1987; Wolk et al., 2011). Although the results reported for these studies are not uncontroversial, it is argued that some aspects of these factors are challenging for L2 learners of English.

First, to determine the influences of lexical verbs, Callies and Szczesniak (2008) analyzed learner corpora representing written English production by German and Polish EFL learners in comparison with native speaker corpora of a similar nature. Callies and Szczesniak found that the learners acquired the difference between alternating and non-alternating verbs (e.g., give vs. explain), while a more subtle aspect of the same issue – namely, verb bias toward either PD or DOD – was found to be less accessible to EFL learners (cf. Wolk et al., 2011). In particular, the verb biases toward the DOD structure were acquired later than those toward the PD
structure, as these EFL learners frequently produced PD sentences even when that structure was not lexically preferred.

Another important determinant of dative alternation, i.e., syntactic weights of post-verbal arguments, was examined using paper-based tests (Tanaka, 1987) and learner corpora (Callies & Szczesniak, 2008). Both of these studies reported that EFL learners observed the end-weight principle, as dative alternation was determined in such a way that shorter constituents were placed before longer ones. These studies, however, had methodological weaknesses. Tanaka (1987) used translation and grammaticality judgment tasks, which have been argued to be compromised by the linguistic features of a mother tongue and explicit knowledge of English grammar. Therefore, the results may not be deemed as a valid and reliable account of the L2 acquisition of dative structures.

On the other hand, Callies and Szczesniak (2008) did not report necessary statistical tests when presenting their arguments. Further, the causal relationship in the end-weight principle was investigated in a questionable way. According to the end-weight principle, syntactic weights of post-verbal arguments are considered as independent variables, and dative structures are considered as the dependent variable: the syntactic weights of the post-verbal arguments partly determine which dative structure is produced. However, Callies and Szczesniak (2008) presented only the mean word-lengths of constituents in PD and DOD sentences. Although this choice produced a simplified illustration of the corpus data, it could give the wrong implication, namely, that the dative structures determine the syntactic weights of their arguments. This causal relationship assumes the dative structures as independent variables and the syntactic weights as dependent variables, which is opposite to the causal direction set in the end-weight principle. The present study explicitly addresses this methodological problem by reporting the frequencies of PD and DOD sentences for every possible scenario of syntactic weights between themes and goals – for example, when themes were lighter than goals, native speakers produced one DOD sentence and seven PD sentences.

Finally, it has been argued that L2 learners of English are less sensitive than native speakers are to the given-new distinction when structuring dative sentences (Chang, 2004; Jäschke & Plag, 2016; Marefat, 2005). Lower-level EFL learners had a consistent preference for PD with little awareness of the information structure (Marefat, 2005), and even higher-level learners had trouble applying the information structure to dative alternation (Lee et al., 2008; Park, 2011). More specifically, when goal arguments were given information, and thus the production of DOD sentences was required, EFL learners often produced PD sentences instead, resulting in an unnatural new-given order.

Overall, L2 studies of dative structures have found that EFL learners from a variety of mother tongue backgrounds tend to overuse the PD structure when the
DOD structure should be preferred. This interlanguage feature has been ascribed to learners’ insensitivity to the three important determinants of dative alternation, that is, lexical verbs, syntactic weights, and information structures. However, there has been little effort as yet to provide a comprehensive analysis of the influences that these factors have on actual dative alternation in learner English. Moreover, notable methodological concerns related to the validity of data analysis have been raised, and thus a more systematic account of the influential factors on learners’ production of dative sentences is required. The present study addresses these issues by conducting multi-faceted analyses of the three important determinants of dative alternation in a written corpus of Korean EFL learners and its native counterpart.

3. Methodology

3.1 Corpora

An English native speaker corpus and a learner corpus representing Korean-speaking learners of English were extracted from the International Corpus Network of Asian Learners of English ([ICNALE] Ishikawa, 2011). The native speaker corpus (ICNALE-ENS) was composed of 400 argumentative essays written by 200 native speakers of English (100 native college students and 100 employed native adults), while the learner corpus (ICNALE-KOR) was composed of 600 argumentative essays written by 300 Korean-speaking college students. Each participant of ICNALE wrote two 200–300 word essays on two topics, namely, college students’ part time jobs and the smoking ban in restaurants.

<table>
<thead>
<tr>
<th>Corpus</th>
<th>Type</th>
<th>Participant</th>
<th>No. of essays</th>
<th>No. of words</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICNALE-ENS</td>
<td>Native speaker corpus</td>
<td>College students and adults</td>
<td>400</td>
<td>88,792</td>
</tr>
<tr>
<td>ICNALE-KOR</td>
<td>Learner corpus</td>
<td>Korean college students</td>
<td>600</td>
<td>130,626</td>
</tr>
</tbody>
</table>

ICNALE provides proficiency information with reference to the Common European Framework of Reference (Verhelst, Van Avermaet, Takala, Figueras, & North, 2009). Each learner was placed at one of four proficiency levels – A2 (waystage), B1–1 (threshold: lower), B1–2 (threshold: upper), and B2+ (vantage or higher). The Korean learners seemed to be evenly distributed across these levels: 25.0% in A2, 20.3% in B1–1, 29.3% in B1–2, and 25.3% in B2+. 
3.2 Data analysis

Each token of DOD or PD in the corpora was searched for by referencing the following fifteen verbs, which have been identified as frequent dative verbs (Biber et al., 1999; Callies & Szczesniak, 2008; Levin, 1993):

\[\text{bring, carry, send, take, write, sell, pass, hand, pay, read, give, show, teach, tell, offer}\]

The initial lemma-based search of these fifteen verbs via WordSmith Tools Package Version 5.0 (Scott, 2008) resulted in 630 and 866 concordance lines for the native speaker corpus and the learner corpus, respectively. Every concordance line was then manually investigated to exclude non-dative cases (e.g., \text{He read the sign}). In addition, fixed-goal expressions (e.g., \text{bring to an end} and \text{bring to light}) were not considered in the analysis, while fixed-theme expression (e.g., \text{give birth} and \text{give rise}) were included, since “fixed-theme expressions like \text{give a break} are possible in alternations, especially so when discourse factors become involved. Alternations of fixed-goal expressions, on the other hand, are not attested, even under conducive discourse conditions” (Callies & Szczesniak, 2008, p. 176). The manual investigation found that only nine verbs (i.e., \text{bring, send, take, pay, give, show, teach, tell, and offer}) were used in dative structures both by the native speakers and the learners. For a comparative analysis between the two corpora, the cases of the other six verbs (i.e., \text{carry, hand, read, sell, pass, and write}) were excluded from further analysis. These screening processes allowed the researcher to exclude 489 and 713 cases from the native speaker corpus and the learner corpus, respectively, leaving 141 and 153 dative cases for each of these corpora.

Each dative sentence was coded for the structure (i.e., PD or DOD) along with the three important determinants of the dative alternation: lexical verbs, syntactic weights, and information structures. First, the coding of lexical verbs was based on the root forms of the verbs. Second, the syntactic weight of theme and goal arguments, following the lead of Callies and Szczesniak (2008), was measured by the number of words constituting the arguments (e.g., \text{I gave it to a stranger}: theme [\text{it}] = 1 word; goal [\text{a stranger}] = 2 words). Third, the information structures of theme and goal arguments were identified as either old or new information according to whether or not the referents of the arguments had been mentioned in the preceding discourse of the essay (Park, 2011).

As the data was input into Excel spreadsheets, the distribution of PD and DOD structures according to the three determinants was analyzed at ease via the pivot-table function. In particular, the concepts of relative heaviness (Arnold et al., 2000) and relative givenness or newness (Birner & Ward, 2009) were adopted. The relative heaviness of the two post-verbal arguments in a dative sentence was the word number of the theme minus that of the goal; the relative givenness of the two
arguments was illustrated by one of the four possible pairings between the information structure of the theme and that of the goal, i.e., old-old, old-new, new-old, and new-new. The end-weight principle predicts that if the theme is heavier and thus the relative heaviness is greater than zero, then the DOD structure will be preferred. The given-before-new principle, on the other hand, predicts that if only the referent of the goal argument was previously mentioned and thus the relative givenness is shown as new-old (theme-goal), then the DOD structure will be preferred. Comparing the results acquired from the two corpora based on Chi-square tests and odds ratios, the present study investigated whether and to what extent the influence of the three determinants for the learners’ dative alternation was different from that for their native counterpart.

4. Results

4.1 Overall distribution of dative structures and influences of lexical verbs

A frequency analysis of dative structures across the nine lexical verbs in the native speaker and the learner corpus revealed that there were striking differences in the use of dative structures between the native speakers and the EFL learners. As presented in Table 2, the learners produced PD sentences much more frequently than the native speakers did (62 cases vs. 17 cases). The proportion of PD sentences in the learners’ production of the dative structures (40.5%) was much higher than that found in the native counterpart (12.1%). This difference was confirmed as statistically significant using a Chi-square test on the frequencies of dative structures between the two corpora, \( \chi^2(\text{df1}) = 30.259, p < .001, \) Cramer’s \( V = 0.32. \)

<table>
<thead>
<tr>
<th>Corpus</th>
<th>Structure</th>
<th>give</th>
<th>teach</th>
<th>tell</th>
<th>show</th>
<th>take</th>
<th>bring</th>
<th>send</th>
<th>offer</th>
<th>pay</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICNALE-ENS</td>
<td>DOD</td>
<td>70</td>
<td>22</td>
<td>22</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>PD</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>ICNALE-KOR</td>
<td>DOD</td>
<td>67</td>
<td>8</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>PD</td>
<td>41</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>62</td>
</tr>
</tbody>
</table>

A further analysis of the dative structures for each lexical verb showed that the learners’ overuse of PD was greatly affected by the verb give. While the frequency of PD sentences for the verb give in ICNALE-ENS was only five, that in the ICNALE-KOR was about eight times greater (i.e., 41). Provided that the odds ratio of producing PD for the verb give between the learner and the native speaker corpus (i.e.,
8.57) was much higher than that for the other verbs (i.e., 3.94), the bias effect that the verb *give* had on the learners’ dative alternation appeared to be evident.

### 4.2 Influences of syntactic weight on dative alternation

Syntactic weights of post-verbal arguments were measured by the number of words that constituted the arguments (Callies & Szczesniak, 2008). A noteworthy difference in syntactic weights between the two corpora was observed for theme arguments. As compared in Table 3, the mean weight of themes in ICNALE-ENS (i.e., 8.66) was much greater than that in ICNALE-KOR (i.e., 3.69). In particular, there were several cases where native speakers produced theme arguments with lengthy modifying phrases such as infinitive and relative clauses, e.g., *it also gives them [theme an opportunity to display whatever skills they may already possess or gain new skill sets]*.

<table>
<thead>
<tr>
<th>Argument Type</th>
<th>ICNALE-ENS</th>
<th>ICNALE-KOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
<td>1.33</td>
<td>1.43</td>
</tr>
<tr>
<td>Theme</td>
<td>8.66</td>
<td>3.69</td>
</tr>
<tr>
<td>Min – Max</td>
<td>1–8</td>
<td>1–6</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.90</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>7.47</td>
<td>3.18</td>
</tr>
</tbody>
</table>

Considering that heavy theme arguments prefer the DOD structure [verb goal theme] (Celce-Murcia & Larsen-Freeman, 1999), this current finding may provide a plausible account of why the native speaker corpus, despite its smaller size, had more DOD sentences than the learner corpus did.

More interesting patterns of dative structures were observed when applying the concept of relative heaviness, measured by the syntactic weight of theme minus that of goal:

- **Target sentence:** *We can give [theme *it*] to [goal *the old lady]*.
  - **Relative heaviness:** 1 word (*it*) minus 3 words (*the old lady*) = − 2 words

In the above example, the goal *the old lady* is heavier than the theme *it*, so the relative heaviness was below zero. In this case, the PD structure should be preferred. This structuring pattern was proved to be relevant in both corpora: when the relative heaviness was below zero, the PD sentences were produced seven times more frequently than the DOD sentences were (7 to 1 in ICNALE-ENS; 21 to 3 in ICNALE-KOR).
The two corpora, however, showed different patterns of dative alternation when the relative heaviness was zero or above. When it was zero, the native speakers preferred the DOD structure, while the learners preferred the PD structure. A Chi-square test showed that this difference was marginally significant, $\chi^2(1) = 2.798$, $p = .094$, Cramer’s $V = 0.32$.

A more striking difference was observed when the relative heaviness was above zero. When given this condition, the native speakers produced only six PD sentences out of 123 cases (4.9%), while the learners produced many more PD sentences, 28 out of 111 cases (25.2%). This difference was found to be statistically significant, $\chi^2(1) = 19.451$, $p < .001$, Cramer’s $V = 0.29$.

In sum, there seem to be two factors behind the phenomena where the native speaker corpus has more DOD and less PD sentences than the learner corpus does. First, the native speaker corpus in this instance had many heavy theme arguments, which demanded the production of DOD sentences. Second, the learners produced many PD sentences not only when the relative heaviness between themes and goals required neither PD nor DOD (i.e., RH = 0) but also when the relative heaviness did require DOD (i.e., RH > 0).

### 4.3 Influences of information structure on dative alternation

As noted above, the information structure of post-verbal arguments was marked either as new or old, according to whether or not the referent of the object was previously mentioned in the essay. Effects of the information structure on dative alternation were found to be inconsistent between the native speaker and the learner corpus (Table 5). A series of Chi-square tests on the frequencies of DODs and PDs between the native speaker and the learner corpus were conducted for the information structures of goal and theme. Interestingly, the frequency distributions of the dative structures between the two corpora were found to be statistically significant whenever the given-before-new principle predicted the use of DOD: 1) goals were previous mentioned and thus old information ($\chi^2(1) = 25.85$, $p < .001$, Cramer’s $V = 0.31$), and 2) themes were not mentioned and thus new information

Table 4. Frequencies of dative structures according to relative heaviness

<table>
<thead>
<tr>
<th>Corpus</th>
<th>Structure</th>
<th>RH &lt; 0</th>
<th>RH = 0</th>
<th>RH &gt; 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICNALE-ENS</td>
<td>DOD</td>
<td>1</td>
<td>6</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>PD</td>
<td>7</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>ICNALE-KOR</td>
<td>DOD</td>
<td>3</td>
<td>5</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>PD</td>
<td>21</td>
<td>13</td>
<td>28</td>
</tr>
</tbody>
</table>

* RH stands for relative heaviness.
(\chi^2[df1] = 29.285, p < .001, Cramer’s V = 0.35). Although both the native speakers and the learners preferred the DOD structure in these conditions, the frequency of PD in the learner corpus (i.e., 45 + 40 = 85) was significantly greater than that in the native speaker corpus (i.e., 11 + 9 = 20).

**Table 5.** Frequencies of dative structures according to information structures

<table>
<thead>
<tr>
<th>ICNALE-ENS</th>
<th>ICNALE-KOR</th>
<th>ICNALE-ENS</th>
<th>ICNALE-KOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td><strong>DOD</strong></td>
<td><strong>PD</strong></td>
<td><strong>DOD</strong></td>
</tr>
<tr>
<td>New</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Old</td>
<td>121</td>
<td>11</td>
<td>88</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td>124</td>
<td>17</td>
<td>91</td>
</tr>
</tbody>
</table>

**Table 6.** Frequencies of dative structures according to paired information structures

<table>
<thead>
<tr>
<th>Theme – Goal</th>
<th>ICNALE-ENS</th>
<th>ICNALE-KOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>New – New</td>
<td>DOD: 3</td>
<td>PD: 3</td>
</tr>
<tr>
<td>New – Old</td>
<td>DOD: 113</td>
<td>PD: 6</td>
</tr>
<tr>
<td>Old – New</td>
<td>DOD: 0</td>
<td>PD: 3</td>
</tr>
<tr>
<td>Old – Old</td>
<td>DOD: 8</td>
<td>PD: 5</td>
</tr>
</tbody>
</table>

**Note.** DOD = \([\text{verb goal}]\); PD = \([\text{verb theme to/for goal}]\).

Second, the learners’ overuse of PDs was observed in those cases where neither PD nor DOD was preferred by the given-before-new principle, i.e., when both arguments have the same information status. When the information structure was old-old, the native speakers produced the DOD structure slightly more frequently, but the learners produced the PD structure a bit more frequently. This difference became even more evident when considering the other case. When both arguments
were new information, the learners showed a strong preference for the PD structure (14 out of 15 cases: 93.3%), which was proved to be significantly different from the native speakers’ production pattern (3 out 6 cases: 50%), $\chi^2[df1] = 5.219, p < .05$, Cramer’s $V = 0.50$.

In summary, the present study of dative alternation revealed several important aspects of Korean EFL learners’ acquisition of this structuring pattern. First, the learners overused the PD structure when writing essays in English. Second, the learners’ overproduction of PDs is closely related to certain verbs such as give. Third, the learners’ overproduction of PDs was found to be more evident for those cases where neither the end-weight principle nor the given-before-new principles necessitated the production of PDs. Previous research on L2 learners’ problems in dative alternation has presented diverse sources of difficulty, such as L1-L2 dissimilarities, syntactic complexity, and inefficient instruction. These issues will be further addressed in the discussion section.

5. Discussion

5.1 The overproduction of PD

The corpus-based analysis of argumentative essays in the present study revealed that Korean EFL learners overuse PDs. The proportion of PDs in the ICNALE-KOR was significantly higher than that in the ICNALE-ENS (40.5% vs. 12.1%). This finding is in line with the previous research, which has reported EFL learners’ overuse of PDs or their avoidance of DODs (Chang, 2004; Hawkins, 1987; Kim, 2014; Le Compagnon, 1984; Mazurkewich, 1981, 1985; Mazurkewich & White, 1984; Park, 2011; Tanaka, 1987; Wolk et al., 2011). It has been argued that this problem is attributable to two factors, (a) inherent features of English dative structures and (b) corresponding structures in the learners’ mother tongues.

The former factor, i.e., inherent features of English dative structures, suggests that the PD structure is more canonical and thus easier to learn than is the DOD structure (Birner & Ward, 2009; Brown et al., 2012; Kim 2014). Brown et al. (2012) states:

[T]he [PD] structure is the more canonical form within the dative alternation. […] Whereas almost all dative verbs can be used with the [PD] structure, only a subset permit the felicitous use of the [DOD] structure. … Further, in languages that lack the dative alternation, the [PD] construction is much more frequently observed than the [DOD] construction […]. Finally, the [PD] structure is more congruent with the basic English SVOX word order than the [DOD] structure. (p. 195)
Therefore, it can be argued that the Korean EFL learners in the present study may have overused the canonical structure (i.e., PD) even when the other structure (i.e., DOD) should be preferred.

Another possible account for the learners’ overuse of PDs is based on cross-linguistic influences. It has been contended that the Korean language disallows dative alternation as it does not have a structure equivalent to English DOD (Hong, 1991; O’Grady, 1991; Park, 2011; Whong-Barr & Schwartz, 2002):

Mia-NOM Jin-to/DAT picture-card-ACC give-PAST-DECL
“Mia gave a postcard to Jin.”

Mia-NOM Jin-ACC picture-card-ACC give-PAST-DECL
(Adapted from Whong-Barr & Schwartz, 2002, p. 584)

As shown in the above examples, Korean dative verbs allow a structure using the dative marker – eykey (i.e., goal-DAT theme-ACC). This structure corresponds to the PD structure in English, while the double-accusative form (i.e., goal-ACC theme-ACC) is not allowed in Korean, with only a few exceptions. Accordingly, it might be the case that this L1 feature led the Korean EFL learners to acquire the PD structure as “the default construction in the English dative alternation” (Park, 2011, p. 108) and thus overuse it when writing essays in English.

5.2 Lexical verbs

The present study examined whether the dative alternation in a native speaker and a learner corpus was affected by lexical verbs. The results reveal that there is a drastic difference for the verb give between the two corpora. The native speakers seldom produced PDs with the verb give (5 out of 75 cases: 6.7%), while the Korean EFL learners produced many PDs with the verb give (41 out of 108 cases: 38.0%). This problem could possibly be ascribed to two factors, namely, inappropriate instruction and L1 transfer.

In the Korean public education system, dative alternation is taught as one of the important linguistic structures. The most common way for teaching this structuring pattern is to present PD and DOD as having the same meaning and offer lists of to-dative and for-dative verbs. The learners are often provided with pattern drill practices, wherein they have to transform PD sentences into DOD sentences or vice versa, regardless of the different connotations that the two different structures can have:
Spending a day at a bakery could give me some ideas about bakers.
= Spending a day at a bakery could give some ideas about bakers to me.

She gives him a letter.
= She gives a letter to him.

The above example is extracted from one of the English textbooks currently used in secondary schools throughout the country. It explicitly teaches the transformative relationship between PD and DOD, using the verb *give* as the prototypical verb for the dative structures. However, learners may misunderstand that the two dative structures are freely interchangeable for the verb *give*, thus remaining unaware that the verb *give* appears much more frequently in DODs than in PDs (Bresnan & Ford, 2010; Gries & Stefanowitsch, 2004).

Another possible account of the learners’ overproduction of PDs for the verb *give* is that the Korean dative verb *chu*-，which corresponds to the English verb *give*, may render it more difficult for learners to build the syntactic structure for DOD sentences. According to the Construction Grammar (Goldberg, 1995; Sung & Yang, 2016), DOD and PD sentences are analyzed as instances of two different constructions, i.e., the ditransitive construction and the caused-motion construction, respectively. Each construction is described as a pairing of idiosyncratic form and meaning with the most significant difference being that the former construction has two nominal objects, while the latter one has one object and one oblique (a phrase referring to a path and/or a location, e.g., *to the man* and *in the house*):

- **Ditransitive construction** (e.g., *She will give the boy a ball*)
  < Form: Subj V Obj₁ Obj₂ > ↔ < Meaning: X causes Y to receive Z >

- **Caused-motion construction** (e.g., *She will give the ball to a boy*)
  < Form: Subj V Obj Obl₉path/loc > ↔ < Meaning: X causes Y to move Zpath/loc >

When Korean EFL learners produced English dative sentences, the knowledge of Korean dative verbs might have been transferred to the process. Then, the single verb sense of the Korean dative verb *chu*- could have impeded the learners from producing the ditransitive construction, which has two nominal objects, while other Korean dative verbs, which consist of two verbal components, e.g., *karchye-chu* (meaning: teach) and *malhae-chu* (meaning: tell), may encourage the learners to produce two nominal objects. This cross-linguistic account may explain why the Korean learners frequently located the verb *give* in the construction of a single nominal object (i.e., PD or caused-motion construction).
5.3 Syntactic weights and information structures

The present study also examined whether and to what extent the production of dative structures in a native speaker and a learner corpus can be affected by two contextual factors – syntactic weights and information structures. Each of these factors is related to different principles that govern constituent ordering in English, namely, the end-weight principle and the give-before-new principle (Celce-Murcia & Larsen-Freeman, 1999).

Measuring the syntactic weight of post-verbal arguments revealed that the mean number of words for theme arguments was greater than that for goal arguments, regardless of the corpus type (8.66 vs. 3.69 in ICNALE-ENS; 3.69 vs. 1.43 in ICNALE-KOR). Accordingly, it can be argued that the DOD structure, which is preferred by heavier theme arguments, had to be more frequent than the PD structure. Although this production pattern was the case for both corpora, a significantly weaker preference for DODs was observed in the learner corpus. A further analysis of relative heaviness between theme and goal identified a distinct pattern between the native speakers and the learners. When the relative heaviness was above zero and thus the native speakers strongly preferred the DOD structure, the learners overproduced PDs:

(8) we should … give [theme a little more comfort zone] to [goal smokers].
(From ICNALE-KOR)

In (8), the theme argument a little more comfort zone was evidently heavier than the goal argument smokers, but the PD structure was selected and thus the lighter constituent (i.e., goal) was placed at the end of the sentence. This structuring pattern is a clear violation of the end-weight principle.

A similar pattern was identified in terms of the given-before-new principle. When the post-verbal arguments had the same information status (i.e., new-new or old-old), the learners preferred producing PDs over DODs. Moreover, even when the information structure necessitated the production of DODs (i.e., old goal and new theme), the learners frequently produced PDs:

(9) we can help the poor kids. (…) we can give [theme water, rice, bread and new life] to [goal the poor kids].
(From ICNALE-KOR)

In (9), the goal argument of the dative sentence (i.e., the poor kids) was mentioned already in a preceding sentence, as marked by the definite article the, and thus it was old information. However, the learner placed that information after the theme argument (i.e., water, rice, bread and new life), which was new information, thereby violating the given-before-new principle. These findings indicate that the
learners had trouble structuring dative sentences according to contextual factors, such as syntactic weights and information structures.

These problems might be attributed to the difficulty that L2 learners have in managing information at the suprasentential level (Oh, 2014). Kim (2014) noted that even advanced learners of English had difficulty applying contextual factors to the production of dative structures. A possible reason may be that producing different structures according to the discoursal conditions requires additional cognitive burdens. According to Sorace (2011), L2 learners experience much greater cognitive burdens than native speakers when integrating multiple sources of information. For example, it is difficult for L2 learners to decide syntactic patterns of dative sentences according to various contextual conditions. Due to such increased cognitive loads, Korean EFL learners may have been hindered from observing the end-weight and the given-before-new principles, thus selecting one of the two dative structures in a rather arbitrary manner.

Another major source of the problems is found in the way that dative structures are taught in most educational institutes. As noted above, it is very common in Korean secondary schools to teach PD and DOD using sentence-level paraphrase practice. This teaching approach may lead to the misunderstanding that the two dative structures have the same meaning and thus are freely interchangeable, regardless of the contextual factors. This problem could be avoided by providing explicit instruction on the end-weight and the given-before-new principle, which will help learners to better understand the precise functions of the dative structures and ultimately lead them to produce appropriate dative sentences that meet contextual requirements.

6. Implications and limitations

The finding herein that Korean EFL learners overuse the PD structure even when the DOD structure is more appropriate has meaningful implications for the research and pedagogy of dative structures. First, it might be an inadequate choice to present the two structures in a transformational relation. As noted in Construction Grammar (Goldberg, 1995; Gries & Stefanowitsch, 2004), the two structures represent different form-meaning pairings, and thus formal and functional contrasts may be worth teaching to EFL learners. Second, L2 learners’ mother tongues should be given more due attention as a deeper understanding of syntactic patterns and verb senses in their mother tongues will allow researchers and teachers to predict specific areas of difficulties that the learners will experience when acquiring dative structures. Finally, EFL learners should be provided more discourse-oriented instruction of dative structures so as to become more aware of
the significant roles that such contextual factors as syntactic weights and information structures play when structuring dative sentences.

The present study is, however, limited in that it focused only on the corpora of written English and the specific context of essay writing. More comprehensive and plausible accounts can be provided if learner corpora of spoken English as well as other registers of written English are investigated. Another limitation in the present study is that learners using mother tongues other than the Korean language were not considered. Future research should offer more cross-linguistic accounts of dative structures by investigating learner corpora from different mother tongue backgrounds.

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References


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