The Role of Frequency in Korean Learners’ Acquisition of English Dative Construction

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This study draws on recent corpus-based information to investigate the influence of frequency on Korean ESL learners’ acquisition of English verbs occurring with the double object construction (DC). Thirty low English proficiency Koreans (LPK), 30 high English proficiency Koreans (HPK), and 30 native English speakers (NS) participated in an acceptability judgment test and an elicited production task featuring six high frequency (HF) verbs and six low frequency (LF) verbs. Results indicate that (a) both the LPK and the HPK more favorably accepted and more frequently produced DC sentences with HF verbs than with LF verbs and (b) the HPK more favorably accepted and more frequently produced DC sentences with both HF and LF verbs than the LPK. These results are interpreted as evidence for the significant role of frequency in Korean learners’ acquisition of English verbs occurring with the DC. The study ends with a discussion of theoretical and pedagogical implications.

Keywords: frequency, corpus, dative construction, L2 acquisition

I. INTRODUCTION

Researchers from various theoretical positions focus on specific linguistic features in their efforts to understand the nature and process of second language (L2) acquisition. This study focuses on two English dative constructions and verbs occurring with those constructions (hereafter simply dative constructions) and investigates the role of frequency in Korean learners’ acquisition of such constructions.

A dative construction is defined here as one consisting of an agent argument (A), a verb, a recipient argument (R), and a theme argument (T). Two dative constructions are allowed in the English language: the prepositional dative construction (PC) as in (1a) and the double object construction (DC) as in (1b).
The English dative constructions include to- and for-dative constructions. The two types can be treated differently on the basis that to is a goal-oriented preposition, whereas for is a benefactive-oriented preposition (Levin, 1993). Moreover, Mazurkerwich (1984) reports that children might construe the for-dative alternation as more difficult to process than its to counterpart. Therefore, although these two types are similar in many respects, this study concentrates on the to-dative construction.

The English dative constructions have received a considerable amount of attention in L2 acquisition research partly because they have been identified as one of the most problematic areas for L2 learners (DeKeysar, 2005; Radwan, 2005). The key question is how L2 learners come to know that some verbs such as give can occur with both the PC and the DC as in (1a) and (1b), whereas other verbs such as report can occur only with the PC as in (2a).

In their attempts to identify factors that make L2 acquisition of the English dative constructions particularly difficult (or easy), researchers in various theoretical camps have proposed diverse accounts, including a lexicosemantic account (e.g., Bley-Vroman & Yoshinaga, 1992; Davies, 1994; Inagaki, 1997; Schwartz & Sprouse, 1996), a markedness-theory-based account (e.g., Mazurkewich, 1984), and a discourse-functional account (e.g., Marefat, 2005).

Korean learners’ acquisition of the English dative constructions can be a good testing ground for factors involved in L2 acquisition because of similarities and differences between the two languages. The Korean language allows the PC only as in (3).
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This issue is critical because if we accept the DC in (4a) as an admissible construction in Korean, we may have to assume that it is analogous to the English DC, and, due to this similarity, we may have to accept that Korean and English are similar in terms of not only the PC and but also the DC. Several researchers accept the DC with two accusative -ul/lul markers as an admissible construction in Korean and link it to the English DC (e.g., Choi & Lim, 2004; O’Grady, 1991; Siewierska, 1998; Whong-Barr & Schwartz, 2002). However, even these researchers agree that Korean verbs occurring with the DC are very limited, in fact, limited to three verbs: cwuta (give), karuchita (teach), and meokita (feed). Even such a limited argument, however, has been challenged. Many other researchers argue that Korean does not allow the DC (e.g., Lee, 1997; Moon, 2004; Oh, 2010; Ryu, 2001). These researchers base their argument on the fact that the majority of native Korean speakers find the DC not simply awkward but clearly inadmissible. To explore this issue, the author of this study conducted an experiment with 103 Korean university students. They were asked to judge the acceptability of 13 Korean sentences given in the DC. The sentences consisted of three double accusative sentences created with the three verbs presented by lung and Miyagawa (2004) as the verbs occurring with the DC (i.e., cwuta, karuchita, meokita) and 10 double accusative sentences presented by Whong-Barr and Schwartz (2002) as admissible sentences in Korean. All but two students found all the double accusative sentences unacceptable or at least awkward. The two students judged acceptable only one of the 10 double accusative sentences from Whong-Barr and Schwartz (2002): “Mia-ka Yong-ul yeolsoi-lul chaca cwu-essta” (Mia found the key for Yong). On the basis of this result, this study argues that the DC is not admissible in the Korean language and, thus, Korean has no construction which is analogous to the English DC.

In short, Korean and English exhibit similarities with regard to the PC, but they are different with regard to the DC. These inter-language similarities and differences warrant productive research on L2 acquisition of the English dative constructions. However, to date, research on Korean learners is scarce. Among the available are an unpublished doctoral dissertation (Lee, 1997) and three journal articles (Oh, 2010; Whong-Barr & Schwartz, 2002; Yook, 2012b). Moreover, these available studies do not reflect the recent resurgence of interest in frequency. Since the 1980s, frequency has received considerable attention in
first language (L1) and L2 literature. This interest in frequency has been intensified with the advancement of corpus linguistics. Recent corpus-based studies have shown that some English dative verbs are biased toward the DC, while others are biased toward the PC (e.g., Biber, Johansson, Leech, Conrad, & Finegan, 1999; Carter & McCarthy, 2006). This biased pattern of frequency, or frequency of a specific verb occurring with DC (and PC), is called verb-specific frequency. Several researchers have attempted to relate this corpus linguistic information to L1/L2 acquisition of the English dative constructions (e.g., Callies & Szczenak, 2006; Campbell & Tomasello, 2001; Gries & Wulff, 2005). The available studies on Korean learners’ acquisition of the English dative constructions do not reflect this current interest in frequency. The current study attempts to fill this gap.

In sum, this study attempts to answer the following question: Does frequency play a significant role in Korean learners’ acquisition of the English dative constructions? The focus of the present study is on Korean learners’ acquisition of the English DC, which is not admissible in Korean. In addition, the study takes into consideration current corpus linguistic information on verb-specific frequencies of the English dative constructions. Thus, the research question can be rephrased to read: Do verb-specific frequencies of the English dative constructions influence Korean learners’ acquisition of English dative verbs occurring with the DC?

II. FREQUENCY AND ACQUISITION OF DATIVE CONSTRUCTION

Until the 1980s, claims about frequency were not taken seriously in the field of L1 and L2 research (Bybee, 2007). A major challenge to this trend has been the usage-based approach. This approach takes a functionalist perspective on language acquisition, holding that language acquisition is item-specific and grammar is the product of language use (Bybee, 2007; Ellis, 2002; Tomasello, 2000, 2003). For example, Tomasello (2000) claims that “the psycholinguistic units with which individuals operate are determined not by theoretical fiat but by observation of actual language use in actual communicative events” (p. 61). More importantly, researchers within the usage-based approach present frequency as a key determinant of language acquisition. Ellis (2002) claims that language acquisition is “the piecemeal learning of many thousands of constructions and the frequency-biased abstraction of regularities within them” (p. 144). Diessel (2007) provides a similar but

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1 The term, usage-based approach, is used here in such a way that it often covers other models such as corpus-linguistic (e.g., Biber et al., 1999), probabilistic (e.g., Diessel, 2007), and constructionist models (e.g., Casenhiser & Goldberg, 2005). These models share a functionalist view of language and language acquisition, and a belief in the significant role of frequency in language acquisition.
more detailed explanation:

One factor that has an impact on the emergence of linguistic structure is frequency of occurrence, which is the driving force of several psychological mechanisms that are involved in using language. The frequency-based mechanism interacts with other psychological mechanisms such as analogy and information processing, which together shape linguistic structure in the process of language use. (p. 123)

With the advancement of corpus linguistics, frequency has been studied in relation to the English dative constructions. *Longman Grammar of Spoken and Written English* (Biber et al., 1999) and *Cambridge Grammar of English* (Carter & McCarthy, 2006) provide evidence for the constructional bias of English dative verbs as part of their extensive corpus-based analysis of English. Biber et al. (1999), for example, show that, with the verbs *give* and *offer*, the DC is about four times more common than the PC (p. 928). Similarly, Bresnan and Nikitina (2003) analyzed the SWITCHBOARD corpus, a three-million-word database of spontaneous telephone conversations spoken by over 500 American English speakers, and found that, in conversational use, there is a syntactic bias of dative verbs toward the DC.

Researchers have conducted corpus analyses to show the correlation between frequency distributions of the English dative constructions in natural use and L1/L2 acquisition of those constructions. Campbell and Tomasello (2001) analyzed the DC, the goal PC, and the benefactive PC in the spontaneous speech of seven children and their parents. The speech was taken from the Child Language Data Exchange System (CHILDES). Campbell and Tomasello found that the DC was acquired by most of the children before either of the PCs, and they attributed this acquisition pattern to the greater frequency with which children heard the DC with individual verbs in their parents’ speech. Their conclusion was that children’s initial use of dative constructions is based on the frequencies of individual verbs with the dative constructions and not on an abstract schema.

Gries and Wulff (2005) tested 64 German university students on a sentence fragment completion task. In the task, the students received questionnaires with incomplete sentences, namely primes, targets, and fillers. The primes consisted of sentence fragments of two kinds. One kind consisted of a fragment that would most naturally lead to the DC as in (5a). The other kind consisted of a fragment that would most naturally lead to the PC as in (5b). The targets consisted of sentence fragments without postverbal NPs.

(5) a. Mary gave [Tom] _________. (Tom is understood as a recipient/goal.)
   b. Mary gave [a book] _________. (A book is understood as a patient/theme.)
The point of this task was to determine which of the two English dative constructions the German students selected to complete fragments. The results showed that the German students’ verb-specific constructional preference resembled that of native English speakers. The results also showed that, like the native speakers’ constructional preference, the German students’ constructional preference reflected frequency information measured in the British component of the International Corpus of English (ICE-GB). In short, Gries and Wulff showed that L2 acquisition of the English dative constructions is influenced by the frequency patterns of those constructions in natural input.

Although their focus was on EFL learner awareness of discourse constraints on the selection between the PC and the DC, Callies and Szczesnak (2006) too provided empirical evidence that verb-specific frequencies of the English dative constructions in natural use influence L2 acquisition of those constructions. Callies and Szczesnak were interested in three related issues: (a) frequencies of use of the PC and the DC in the writing of advanced EFL learners with two different L1 backgrounds, (b) differences and similarities between the learner frequencies and frequencies of use of the same constructions in the writing of native English speakers from the US and England, and (c) factors which cause the differences or similarities of the two experiment groups’ frequency distributions. Callies and Szczesnak first turned to previous research on the English dative constructions such as Biber et al. (1999) and identified 15 highly frequent dative verbs. They then turned to the British National Corpus (BNC) to count total frequencies of the PC and the DC with the 15 verbs, which yielded the following counts: take (1797), give (1284), tell (775), show (598), bring (439), write (400), pay (381), carry (313), offer (293), read (284), send (250), sell (213), pass (204), teach (104), and hand (54) (the figures are frequencies normalized per million words). Using this frequency list, Callies and Szczesnak extracted all instances of the PC and the DC from the advanced German and Polish EFL learners’ written production taken from German and Polish subcorpora of the International Corpus of Learner English (ICLE) and from American and British native English speakers’ written production taken from American and British subcorpora of the Louvain Corpus of Native English Essays (LOCNESS). Callies and Szczesnak then came up with a frequency list, part of which is summarized in Table 1.

The table indicates that the preference patterns identified in the native English speaker corpora had a significant correlative relationship with EFL learners’ preference patterns identified in the German and Polish corpora. For example, native speaker preference for the DC with the verb give over the PC (152 vs. 73) was reflected in the German learner frequency figures for the same verb (115 vs. 39). Callies and Szczesnak thus showed that verb-specific frequencies of the English dative constructions in natural use influence L2 acquisition of those constructions.
TABLE 1
Frequencies of Verbs with the PC and the DC

<table>
<thead>
<tr>
<th>Verb</th>
<th>German (PC/DC)</th>
<th>Polish (PC/DC)</th>
<th>Native speakers (PC/DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>give</td>
<td>39 / 115</td>
<td>68 / 132</td>
<td>73 / 152</td>
</tr>
<tr>
<td>tell</td>
<td>1 / 145</td>
<td>1 / 49</td>
<td>0 / 55</td>
</tr>
<tr>
<td>teach</td>
<td>3 / 11</td>
<td>2 / 48</td>
<td>2 / 32</td>
</tr>
<tr>
<td>show</td>
<td>9 / 43</td>
<td>5 / 23</td>
<td>3 / 13</td>
</tr>
<tr>
<td>offer</td>
<td>4 / 17</td>
<td>11 / 10</td>
<td>7 / 9</td>
</tr>
<tr>
<td>pay</td>
<td>12 / 2</td>
<td>19 / 5</td>
<td>6 / 7</td>
</tr>
<tr>
<td>send</td>
<td>21 / 0</td>
<td>9 / 0</td>
<td>14 / 1</td>
</tr>
<tr>
<td>bring</td>
<td>2 / 4</td>
<td>9 / 0</td>
<td>31 / 3</td>
</tr>
</tbody>
</table>

Note: Figures are frequencies normalized per million words. Adopted from Callies and Szczesnak (2006).

In sum, these corpus-based studies present two findings: (a) English dative verbs show constructional bias in natural use and (b) resulting verb-specific frequencies of the PC and the DC influence L2 acquisition of English verbs occurring with those constructions. These findings indicate a strong possibility that verb-specific frequencies of the English dative constructions (DC in particular) influence Korean learners’ acquisition of English verbs occurring with the DC.

III. METHODS AND MATERIALS

The present study attempts to answer the following question: Do verb-specific frequencies of the English dative constructions influence Korean English as a second language (ESL) learners’ acquisition of English verbs occurring with the DC? With regard to the verb-specific frequency, a hypothesis is formed.

(6) A frequency hypothesis: Verb-specific frequencies of the English DC influence Koreans’ acquisition of English verbs occurring with that construction.

This hypothesis leads to two predictions:

(7) Verb-specific frequency predictions:

(a) Korean learners should acquire the DC with high frequency (HF) English dative verbs more easily and faster than that with low frequency (LF) English dative verbs.
(b) This frequency-based acquisition pattern will be evidenced in the form of Korean learners’ more favorable acceptability rating of and more frequent production of English DC sentences with HF dative verbs than with LF dative verbs.

Both low and high English proficiency Korean learners participated in the experiment. To take this proficiency variable into consideration, the prediction (6b) can be rephrased to read:

(b1) Both low and high English proficiency Korean learners should more favorably accept and more frequently produce English DC sentences with HF verbs than with LF verbs.

(b2) Assuming that high English proficiency Korean learners have been exposed to the English DC sentences with both HF and LF verbs more frequently than low English proficiency Korean learners, the acceptability rating and production of English DC sentences with both HF and LF verbs by high English proficiency Korean learners should be more favorable and frequent than those by low English proficiency Korean learners.

1. Participants

The participants consisted of 60 adult Korean ESL learners and 30 native English speakers. The Korean participants were recruited from several universities in a southern city of the U.S. They were divided into two groups, 30 for each group, by their English proficiency and length of residency in the U.S.: a low English proficiency adult Korean group (LPK) and a high English proficiency adult Korean group (HPK). Educational Testing Service (http://www.ets.org) guidelines for Test of English as a Foreign Language (TOEFL) were followed in deciding English proficiency levels. Students with Computer-based test (CBT) TOEFL scores lower than 170 were recruited for the LPK, and those with CBT TOEFL scores higher than 230 were recruited for the HPK. Participants’ length of residency in the U.S. was also considered in the recruitment. The rationale behind this decision was that the longer ESL learners stay in the U.S., the more they are exposed to the natural use of the English dative constructions. For the LPK, students who had stayed for four months to a year by the time of the experiment were recruited, whereas, for the HPK, those who had stayed for three to seven years were recruited.

The bio data of the Korean participants are summarized in Table 2. The LPK consisted of students attending the intermediate level of an intensive English program of a university located in the southern city. Thirteen of them were male and the remaining seventeen, female. Their average age was 21.9 years, and their average length of residency was seven
months at the time of the experiment. The HPK consisted of students attending graduate programs at three different universities in the southern city. Eighteen of them were male and the remaining twelve, female. Four of the students were M.A. students and sixteen, Ph.D. students. Their major areas were diverse, including computer science, engineering, humanities, and social science. Their average length of residency was 4.3 years. Thirty native speakers were also recruited at the university where the LPK students were recruited. This native speaker group (NS) served as a control group.

### TABLE 2

<table>
<thead>
<tr>
<th>Group</th>
<th>Male/Female</th>
<th>Age Range</th>
<th>Length of residency</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPK</td>
<td>13/17</td>
<td>17-32</td>
<td>4 months - 1 year</td>
</tr>
<tr>
<td>HPK</td>
<td>18/12</td>
<td>27-40</td>
<td>3 - 7 years</td>
</tr>
</tbody>
</table>

2. Tasks and Materials

The experiment consisted of two tasks: an acceptability judgment test and an elicited production task. For the two tasks, 12 English dative verbs were selected. Among them, six are high frequency verbs (ask, give, offer, show, teach, tell), and the other six, low frequency verbs (award, charge, deny, grant, promise, wish).

In order to select the verbs, several previous studies such as Biber et al. (1999), Carter and McCarthy (2006), Callies and Szczesnak (2006), Gries and Stefanowitsch (2004), Gropen, Pinker, Hollander, Goldberg & Wilson (1989), and Pinker (1989) were consulted. Among the studies, two studies were particularly useful. As discussed earlier, Callies and Szczesnak (2006) provided a list that shows combined frequencies of the PC and the DC with 15 English dative verbs. Gries and Stefanowitsch (2004) performed a “collostructional analysis” of five alternating pairs, including the dative alternation. A collostructional analysis identifies lexemes that exhibit a strong bias toward one of semantically similar grammatical constructions. Gries and Stefanowitsch extracted all tokens of the dative constructions from the British component of the ICE-GB and then ranked 39 dative verbs according to their frequencies in the PC and the DC: give (146/461), tell (2/128), show (15/49), offer (15/43), cost (1/20), teach (1/15), wish (1/9), promise (1/7), deny (3/8), award (3/7), grant (2/5) cause (9/8), drop (2/3), charge (4/4), get (32/20), allocate (5/4), send (113/64), owe (9/6), lose (3/2), bring (82/7), play (37/1), take (3/12), pass (9/2), make (3/3), sell (14/1), do (40/10), supply (12/1), read (10/1), hand (21/5), feed (9/1), leave (20/6), keep (7/1), pay (34/13), assign (8/3), set (6/2), write (9/4), cut (5/2), and lend (3/7) (p. 106; figures in parentheses are normalize (per million words) frequencies in
These two frequency lists were based on native British English speaker corpora, but the intended target of the experiment was Korean ESL learners who had been exposed to American English by the time of the experiment. It was therefore necessary to check whether the frequency patterns identified in the British corpora were reflected in American corpora. For this purpose, an EFL textbook used in Korea: Middle School English 1 (Lee et al., 2008) was analyzed manually, and the top five most frequently used dative verbs were selected: bring, give, show, tell, and write. Then the frequencies of these five verbs with the PC and the DC were counted in the Michigan Corpus of Academic Spoken English (MICASE) (Simpson, 2002). The MICASE is specialized to contemporary academic speech and consists of approximately 1.7 million words, covering four academic divisions (i.e., humanities and arts, social sciences and education, biological and health sciences, and physical sciences and engineering) in 16 speech events.

Results of the analysis of this American corpus are summarized in Table 3. The table indicates that, regarding the combined frequencies of the PC and the DC, give is the most frequent verb followed by show, tell, write and bring. The table also indicates that give, show, and tell are biased toward the DC. On the basis of the results, it can be said that, frequencies identified in the American corpus are generally consistent with those identified in the British English corpora. One exception is the case of bring. Table 3 shows that bring is biased toward the DC, whereas the two previous studies based on the British corpora show the opposite.

**Table 3**

<table>
<thead>
<tr>
<th>Verb</th>
<th>MICASE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PC</td>
</tr>
<tr>
<td>give</td>
<td>45.9</td>
</tr>
<tr>
<td>show</td>
<td>11.2</td>
</tr>
<tr>
<td>tell</td>
<td>1.2</td>
</tr>
<tr>
<td>write</td>
<td>1.2</td>
</tr>
<tr>
<td>bring</td>
<td>1.8</td>
</tr>
</tbody>
</table>

*Note: Frequencies were normalized to a million words.*

After the overall similarity between the frequency patterns identified in the British corpora and those identified in the American corpus was checked, six verbs identified as high frequency (HF) verbs and another six verbs identified as low frequency (LF) verbs in the Callies and Szczesnak’s and Gries and Stefanowitsch’s lists were selected. The six HF verbs included ask, give, offer, show, teach, tell, and the six LF verbs included award,
charge, deny, grant, promise, wish. All these selected verbs are identified as DC-prone. The reason for selecting only DC-prone verbs was that if PC-prone verbs are included, it may be difficult, if not impossible, to discern frequency effects from L1 transfer effects in Korean learners' responses to PC sentences with PC-prone verbs. For example, bring is identified as a high frequency PC-prone verb in the above-mentioned lists. If Korean learners produce PC sentences with bring more frequently than its DC counterparts, we may not be able to tell whether the production pattern is the result of the influence of L1, which allows the PC only, or the result of the high frequency of the verb with the PC, which leads to easier and faster acquisition of the verb with the PC, which in turn results in frequent production of PC sentences with the verb. To avoid this possible controversy, only DC-prone verbs were selected for the two tasks.

To avoid the test effect, different verbs were used in the acceptability judgment test and the elicited production task. For the acceptability judgment test, eight of the 12 verbs were used: four HF verbs (ask, offer, teach, tell) and another four LF verbs (charge, grant, promise, wish). Sixteen sentences were created with the eight verbs, eight DC sentences and another eight PC sentences. In order to keep the participants from noticing the intention of the test, 32 filler sentences, twice the number of the test items, were created. Each sentence was given with a 5-point Likert scale with the numbers -2 (absolutely unacceptable in English) through 0 (unable to decide) to 2 (absolutely acceptable). In the actual test, the 48 sentences were given in random order. Participants were asked to rate the acceptability of each sentence by circling one of the scale numbers.

(8) An example of the acceptability judgment test

<table>
<thead>
<tr>
<th></th>
<th>absolutely unacceptable</th>
<th>absolutely acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom offered water to the lady.</td>
<td>-2</td>
<td>-1</td>
</tr>
<tr>
<td>Kate offered the child a toy.</td>
<td>-2</td>
<td>-1</td>
</tr>
</tbody>
</table>

For the elicited production task, the remaining four verbs were used: two HF verbs (give, show) and two LF verbs (award, deny). Four test drawings were created with the four verbs. Each drawing described an interaction between two figures and provided four words: a word for an agent, a word for a recipient, one of the four verbs, and a word for a theme. Four filler drawings were also created. In the actual experiment, the eight drawings were
presented in random order. Participants first read the direction and practiced with an example drawing. The drawing described a man named Tom reading a newspaper. The drawing was given with a question “What does Tom do?” and three words (read, Tom, newspaper). Participants were asked to read the expected answer “Tom reads a newspaper.’ Participants were then asked to look at each of the eight test drawings and respond to a question given in each drawing, which asked about the interaction between two figures in the drawing, by writing a complete sentence using the four words given in the drawing (see Appendix for examples). Participants were reminded that they could change forms of verbs (but not nouns) or add prepositions whenever they felt necessary.

3. Analysis

In the analysis of the data collected from the acceptability judgment test, 1 was assigned for -2, 2 for -1, 3 for 0, 4 for 1, and 5 for 2 in the 5-point Likert scale. In the analysis of the data collected from the elicited production task, since the focus of the study was on participants’ production of DC sentences, 1 was given whenever participants produced a DC sentence. Therefore, the possible maximum mean of the production of DC sentences were 2 for each type of verbs, that is, HF or LF. Any sentence produced which was not exactly a DC sentence was given 0. For example, the drawing with a LF verb deny, the expected DC sentence was “Mary denies Tom a visa.” However, several participants produced a sentence using a possessive case, “Mary denies Tom’s visa.” This sentence was given 0 in the statistical analysis. Repeated measures (RM) ANOVAs, paired-samples t-tests, and one-way ANOVAs were used to check intra- and inter-group differences. Tukey’s post hoc tests were used whenever they were needed.

IV. RESULTS AND DISCUSSION

The means and standard deviations of the acceptability ratings by the LPK, the HPK, and the NS are summarized in Table 4. A RM ANOVA showed a significant main effect for verb-specific frequency, $F(2, 87) = 27.57$, $p < .001$, $\eta^2_p = .241$. Each group accepted the DC sentences with HF verbs more favorably than the ones with LF verbs. Paired samples t-tests showed that the LPK accepted the DC sentences with the HF verbs more favorably than the ones with the LF verbs, $t(29) = 3.07$, $p = .005$, $d = .59$. The HPK too accepted the DC sentences with the HF verbs more favorably than the ones with the LF verbs, $t(29) = 5.34$, $p < .001$, $d = 1.43$. Even the NS accepted the DC sentences with the HF verbs more favorably than the ones with the LF verbs, $t(29) = 2.11$, $p = .043$, $d = .50$. In short, verb-specific frequencies influenced the two Korean groups’ acceptability ratings, leading them
to a more favorable rating of DC sentences with the HF verbs than those with the LF verbs.

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### TABLE 4

<table>
<thead>
<tr>
<th>DC/PC sentences with HF/LF verbs</th>
<th>Group</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC sentences with HF verbs</td>
<td>LPK</td>
<td>2.83</td>
<td>.47</td>
</tr>
<tr>
<td></td>
<td>HPK</td>
<td>4.32</td>
<td>.51</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>4.83</td>
<td>.27</td>
</tr>
<tr>
<td>DC sentences with LH verbs</td>
<td>LPK</td>
<td>2.53</td>
<td>.54</td>
</tr>
<tr>
<td></td>
<td>HPK</td>
<td>3.52</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>4.69</td>
<td>.29</td>
</tr>
<tr>
<td>PC sentences with HF verbs</td>
<td>LPK</td>
<td>4.18</td>
<td>.54</td>
</tr>
<tr>
<td></td>
<td>HPK</td>
<td>4.14</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>3.83</td>
<td>.53</td>
</tr>
<tr>
<td>PC sentences with LF verbs</td>
<td>LPK</td>
<td>3.88</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td>HPK</td>
<td>3.57</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>3.28</td>
<td>.59</td>
</tr>
</tbody>
</table>

The RM ANOVA also revealed a significant main effect for English proficiency (i.e., LPK, HPK, NS), $F(2, 87) = 48.23, p < .001, \eta_p^2 = .526$. Post hoc tests showed that the NS accepted the sentences more favorably than the HPK ($p = .004$), the HPK accepted the sentences more favorably than the LPK ($p < .001$), and the NS accepted the sentences more favorably than the LPK ($p < .001$). A one-way ANOVA showed a significant group difference when the HF verbs were presented with the DC, $F(2, 87) = 172.78, p < .001, \eta_p^2 = .799$. The HPK accepted the DC sentences with the HF verbs more favorably than the LPK ($p < .001$) but less favorably than the NS ($p < .001$). The NS accepted the DC sentences with the HF verbs more favorably than the LPK ($p < .001$). Another one-way ANOVA revealed a significant group difference when the LF verbs were presented with the DC, $F(2, 87) = 141.46, p < .001, \eta_p^2 = .765$. The HPK accepted the DC sentences with the LF verbs more favorably than the LPK ($p < .001$) but less favorably than the NS ($p < .001$). The NS accepted the DC sentences more favorably than the LPK ($p < .001$). In short, the results indicated that the higher English proficiency is, the more favorable rating of the acceptability of DC sentences with either the HF verbs or the LF verbs was.

Moreover, the RM ANOVA revealed a significant interaction between verb-specific frequency and English proficiency, $F(2, 87) = 78.33, p < .001, \eta_p^2 = .499$. As Figure 1 shows, which presents the means of the acceptability ratings presented in Table 4, group differences were larger when DC sentences were concerned than when PC sentences were...
concerned, reflecting more visible frequency effect on the acceptability rating of the DC than that of the PC.

**Figure 1**

*Means of Acceptability Ratings by the LPK, HPK, and NS*

It is worth noticing the pattern of the HPK’s acceptability rating. The difference between the HPK and the NS was smaller when the HF verbs were given than when the LF verbs were given. In contrast, the difference between the HPK and the LPK was larger when the HF verbs were given than when the LF verbs were given. This suggests that the HPK’s favorable rating was intensified when the DC sentences were presented with the HF verbs. This can be explained by a double frequency effect. Due to higher English proficiency and longer residency in the U.S., the HPK was exposed to the HF verbs more often than the LPK. The effect of this (exposure) frequency was combined with the effect of the verb’s high frequency, producing synergy. This synergy was reflected in the HPK’s intensified favorable rating of the DC sentences with the HF verbs, which was close to the NS’s rating of the DC sentences with HF verbs. In contrast, the double frequency effect was not observed in the HPK’s rating of the DC sentences with the LF verbs. The pattern of the HPK’s rating was not close to that of the NS. Even though the HPK was exposed to DC sentences with the LF verbs more frequently than the LPK, because of the verb’s low frequency, the HPK’s rating of the DC sentences presented with the LF verbs in the test was not intensified. The results related to the interaction between verb-specific frequency and group evidence the effect of frequency on the acceptability ratings.

Taken together, the results of the acceptability judgment test indicate that (a) the higher the frequencies of the verbs given in the test were, the more favorable the Korean participants’ acceptability ratings of the DC sentences were, and (b) the higher the Korean participants’ English proficiency levels were and the longer they resided in the U.S., the more favorable their acceptability ratings of the DC sentences (with both the HF and LF
verbs) were. In other words, the results substantiate the significant effect of frequency on Korean ESL learners’ acceptability ratings of English DC sentences.

Table 5 presents the means and standard deviations of DC sentence productions by the LPK, the HPK, and the NS. A RM ANOVA showed a significant main effect for verb-specific frequency (i.e., LF and HF), $F(2, 87) = 14.42, p < .001, \eta^2_p = .142$; a significant main effect for English proficiency (i.e., LPK, HPK, and NS), $F(2, 87) = 74.88, p < .001, \eta^2_p = .633$; but no main effect for interaction between verb-specific frequency and proficiency, $\eta^2_p = .027$. Because a main effect for interaction was not observed, the results of paired-samples $t$-tests and one-way ANOVAs are discussed here.

**TABLE 5**

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Group</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>LPK</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>HF</td>
<td>HPK</td>
<td>1.13</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>1.63</td>
<td>0.62</td>
</tr>
<tr>
<td>LF</td>
<td>LPK</td>
<td>0.63</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>1.47</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Figure 2 presents the mean scores of the three groups’ DC productions, which is summarized in Table 5. The effect of verb-specific frequency was reflected in each group’s production of DC sentences with the HF verbs and the LF verbs. Paired samples $t$-tests showed that the LPK produced DC sentences with the HF verbs more frequently than with the LF verbs, $t(29) = 3.01, p = .005, d = .79$. The HPK too produced DC sentences with the HF verbs more frequently than with the LF verbs, $t(29) = 2.76, p = .011, d = .74$. However, there was no difference in the NS’s production of DC sentences with the HF verbs and with the LF verbs. In short, the results indicated that verb-specific frequency influenced both the LPK’ and the HPK’ production of English DC sentences.
The effect of verb-specific frequency was also reflected in the difference in the three groups' productions of DC sentences. A one-way ANOVA revealed a significant group difference when the HF verbs were given, \( F(2, 87) = 28.70, p < .001, \eta^2_p = .40 \). Post hoc tests showed that the HPK produced DC sentences more frequently than the LPK \( (p < .001) \) but less frequently than the NS \( (p = .013) \). The NS produced DC sentences more frequently than the LPK \( (p < .001) \). Another one-way ANOVA showed a significant group difference when the LF verbs were given, \( F(2, 87) = 57.80, p < .001, \eta^2_p = .57 \). Post hoc tests showed that the HPK produced DC sentences more frequently than the LPK \( (p < .001) \) but less frequently than the NS \( (p < .001) \). The NS produced DC sentences more frequently than the LPK \( (p < .001) \). The difference between the HPK and the LPK can be explained by the HPK’s higher English proficiency and longer residency in the U.S., which led to a more frequent exposure to DC sentences with not only the HF verbs but also the LF verbs. As a result, the HPK produced DC sentences with both the HF verbs and the LF verbs more frequently than the LPK, which produced no DC sentence at all with the LF verbs.

Taken together, these results from the production task indicate that (a) the higher the frequencies of the verbs given in the task were, the more frequent the participants’ productions of DC sentences were and (b) the higher the participants’ English proficiency levels were and the longer they resided in the U.S., the more frequent their productions of DC sentences (with the HF and LF verbs) were.

In sum, the results from the two tasks indicate that (a) both the LPK and the HPK accepted more favorably and produced more frequently English DC sentences with HF verbs than with LF verbs and (b) the HPK accepted more favorably and produced more frequently English DC sentences with both HF and LF verbs than the LPK. Therefore, the results from the two tasks confirm the two verb-specific frequency predictions (7b1) and (7b2). Both the LPK and the HPK were assumed to be exposed to the HF verbs occurring
with the DC more frequently than to the LF counterparts. Due to this more frequent exposure, both the LPK and the HPK learned and acquired the DC with the HF verbs more easily and faster than the DC with the LF counterparts. Moreover, the HPK were exposed to the DC with both the HF and LF verbs more frequently than the LPK. Due to this more frequent exposure, the HPK learned and acquired the DC with both the HF and LF verbs more easily and faster than the LPK.

Interestingly, Table 4 (and Figure 1) indicates that, when PC sentences were given with the HF verbs, the LPK accepted the PC sentences more favorably than the NS. A one-way ANOVA revealed that, when PC sentences were given with the HF verbs, there was a group difference, $F(2, 87) = 3.48, p = .035, \eta_p^2 = .074$. Post hoc tests showed that the LPK accepted the PC sentences with the HF verbs more favorably than the NS ($p = .049$). However, there was no difference between the HPK and the NS, and the LPK and the HPK. Considering the fact that the HF verbs used in the acceptability judgment test were DC-prone, this high preference of PC sentences with the HF verbs by the LPK is interesting. This preference of PC sentences cannot be well explained with frequency. It seems to indicate that there may be other variables (e.g., L1 transfer because Korean allows the PC only) that influence Korean learners' acquisition of English dative constructions and verbs occurring with them. This should be further investigated.

**V. CONCLUSION**

The findings of this study are consistent with those of Gries and Wulff (2005) and Callies and Szczesnak (2006). Gries and Wulff (2005) concluded that "in spite of various differences between first and second/foreign language learning, the probabilistic nature of the results and their similarity to that obtained for native speakers provide strong additional support for exemplar-based theories of second/foreign language acquisition in which frequency of exposure to, and use of, constructions play a vital role" (p. 196). DeKeyser (2005) presented frequency as an important factor that helps determine easiness or difficulty of learning a specific linguistic feature or structure. DeKeyser even argued that, due to sufficient input, HF English dative verbs are unproblematic for L2 learners with high English proficiency. The current study's findings support DeKeyser's argument.

This study's findings have several implications. First of all, they have a theoretical implication. They indicate that frequency deserves more attention in L2 acquisition research. With regard to the LPK's preference for the PC, factors other than frequency may be involved in Korean learners' acquisition of the English dative constructions. Ellis (2002) presents frequency as "a bridging variable that binds the different schools of language acquisition." (p. 143). This implies that an investigation of frequency together with other
variables would be productive and meaningful for a better understanding of L2 acquisition of the English dative constructions and, by extension, of L2 acquisition of English as a whole. In fact, Yook (2012b) pursues this theoretical implication, concluding that L1 transfer plays a significant role in Korean learners’ acquisition of English dative constructions.

The findings also have a pedagogical implication. They imply that we need to look for effective ways to gather information on the frequency of a target linguistic feature in natural use, and use that information in teaching that linguistic feature. In fact, a number of researchers have been attending to the role of frequency as part of their interest in the effectiveness of instruction (Ellis, 2001; Norris & Ortega, 2001). Many researchers have been testing effectiveness of certain instruction styles by introducing variations in frequencies of target features in the input. What we need to do now is use what corpus-based research can offer. Biber and Reppen (2002) compared the information presented in six popular ESL grammar books to the frequency findings reported in Biber et al. (1999). Yook (2012a) too investigated the extent to which EFL textbooks used in Korea reflect frequency patterns of the English dative constructions in the MICASE, for example. They found a number of mismatches between frequencies identified in textbooks and those identified in corpora/natural use. For example, four of the six grammar books examined by Biber and Reppen (2002) introduced the progressive in the first chapter, assuming that progressive aspect was the unmarked choice in conversation. In contrast, Biber et al.’s corpus analysis shows that simple aspect verb phrases are more than 20 times as common as progressive in conversation (p. 461). Biber and Reppen’s (2002) suggestion was a more careful reflection into pedagogy of frequency patterns as identified in natural use: “A selective revision of pedagogy to reflect actual use, as shown by frequency studies, could result in radical changes that facilitate the learning process for students” (p. 207). This study’s findings support that suggestion. When we teach certain linguistic features, we need to reflect the information provided by corpus-based research on frequencies of the features in our teaching.

REFERENCES

Bley-Vroman, R., & Yoshinaga, N. (1992). Broad and narrow constraints on the English dative alternation: Some fundamental differences between native speakers and


The Role of Frequency in Korean Learners’ Acquisition of English Dative Construction


**APPENDIX**

Examples of Drawings for the Elicited Production Task

1. An example of test drawings

![Example of test drawings](image)

2. An example of filler drawings

![Example of filler drawings](image)
Applicable levels: all levels

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