Information Structure and Dative Word Order in Adult L2 Learners

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1. Introduction

There has been a longstanding interest in the link between information structure and the variation of constituent ordering in a sentence (e.g., Chafe, 1976, 1994; Gundel et al., 1993; Prince, 1992; Wasow & Arnold, 2003; inter alia). The term “information structure” here is to be understood as a partitioning between given (i.e., old) information and new information. Much empirical research suggests that there is a Given-before-New principle in native adult speech such that given information is more likely than new information to occupy an earlier position in a sentence (Arnold et al., 2000; Bock & Irwin, 1980; Bock & Warren, 1985; Bresnan et al., 2007; Clark & Haviland, 1977; inter alia). In the English dative alternation, for instance, the discourse-given theme the toys tends to occur earlier in the prepositional dative in (1a), while the discourse-given recipient the children tends to occur earlier in the double object dative in (1b).

(1) a. I gave the toys to children.  
   Prepositional Dative (PD)
   b. I gave the children toys.  
   Double Object Dative (DOD)

With recent expansion of interest in information structure and language universals, a growing body of empirical evidence suggests that the Given-before-New principle holds crosslinguistically (e.g., for Finnish, Kaiser & Trueswell, 2004; for Japanese, Ferreira & Yoshita, 2003; for Korean, Choi 2008, 2009; Jackson, 2008; Park (In prep.); for Persian, Marefat, 2005). Relating this universalist observation to L2 acquisition, in the present study we pursue the intriguing question of whether adult L2ers who have knowledge of the Given-before-New principle in their L1 automatically have knowledge of it in their L2. We conducted an experimental study on Korean adult L2ers’ syntactic choices in association with information structure in the English dative alternation. This study helps shed light on the L2 development of competence at the discourse-syntax interface by determining the extent to which L2ers comply with the Given-before-New principle.

This paper is organized in the following way: Section 2 introduces the English dative alternation and Korean dative constructions. Section 3 briefly reviews and critiques two previous L2 studies on the Given-before-New principle in regard to the English dative alternation. In Section 4, we develop a model for givenness and provide a criterion for the distinction between given information and new information. Section 5 lays out the research questions and presents the experimental design, materials, and procedure. Section 6 reports the major findings of native speakers and Korean L2ers of English. Finally, Section 7 discusses the L2ers’ (dis)preference for the given-before-new order and concludes.

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2. Dative constructions

2.1. English dative alternation

The English dative alternation has attracted the most attention in the information structure literature on the Given-before-New principle (e.g., Arnold et al., 2000; Bresnan, 2007; Bresnan et al., 2007; Bresnan & Nikitina, 2009; Clark & Haviland, 1977; Collins, 1995; Quirk et al., 1985; Thompson, 1990; inter alia). The English dative construction alternates between two syntactic variants, the PD and the DOD, as shown in (1). The two variants have two postverbal object arguments, a direct object (DO) (*the toys* in (1)) and an indirect object (IO) (*to children* in (1)). The PD has an immediate postverbal theme NP followed by a recipient PP, which corresponds to a postverbal constituent order of DO–IO, as in (1a). In contrast, the DOD has an immediate postverbal recipient NP followed by a theme NP, which corresponds to the reversed order of IO–DO, as in (1b).

2.2. Korean dative constructions

In Korean dative constructions, the DO is marked by accusative case *-ul*, while the IO can be marked by either dative case *-eykey* or accusative case *-ul*, depending on the verb. As in (2a), the verb *cwu* ‘give’ allows the IO to be marked by either dative case *-eykey* or accusative case *-ul*, generating a double accusative dative. However, most Korean dative verbs disallow the IO to be marked by accusative case *-ul*, as in (2b) (Choe, 1986; Hong, 1991; Jung & Miyagawa, 2004; Whong-Barr & Schwartz, 2002).

   Mary-Nom John-Dat/-Acc book-Acc give-Past-Decl
   ‘Mary gave John a book.’
   (Jung & Miyagawa, 2004, p. 108, (12a))

      Mary-Nom John-Dat/*-Acc book-Acc send-Past-Decl
      ‘Mary sent a book to John.’
      (Jung & Miyagawa, 2004, p. 107, (11a))

3. Previous L2 research on the Given-before-New principle

There is little research on L2ers’ knowledge of the Given-before-New principle in regard to the English dative alternation. In an acceptability judgment task and an elicited written production task with Persian EFL learners, Marefat (2005) found that the advanced L2ers show a preference for the given-before-new order in the English dative alternation in comprehension, but not at all in production. However, the study is called into question for the following reasons: First, both the comprehension and production tasks failed to include contexts to establish givenness so that the distinction between given information and new information was not made in the discourse context. In the production task, for instance, Marefat used, as a prompt, a question comprised of either a PD (e.g., *What did you give to Mary?* or *Whom did you give the book to?*) or a DOD (e.g., *What did you tell Mary?* or *Whom did Mary tell the secret?*), to which participants were asked to respond in a written format. The prompt questions, not surprisingly, caused a strong effect of echoicity/priming. Most problematic, even the English-speaking natives did not show any sensitivity to the given-before-new ordering, which indicates the experimental paradigm did not work.

Callies and Szczesniak (2008) conducted a corpus-based study using German and Polish EFL learners’ compositions. Based on their finding that advanced adult L2ers place shorter, discourse-given information prior to longer, discourse-new information in the English dative alternation, they argued that information structure in association with syntactic weight plays a role in L2ers’ syntactic choices. However, corpus data are not free from confounding factors, such as syntactic weight, structural parallelism, and different degrees of topic continuity throughout the corpus.

L2ers’ knowledge of the Given-before-New principle would benefit from more rigorous investigation. The present study therefore tests whether adult L2ers who have knowledge of the Given-before-New principle in their L1 automatically have knowledge of it in their L2 in an experiment controlling for such confounding variables as found in the two studies above.
4. Model for givenness

As a taxonomy, we employ the binary distinction of information structure, given information vs. new information. Prince (1981) categorized givenness into three levels: predictability/recoverability marked as Givenness\(_p\), saliency marked as Givenness\(_s\), and shared knowledge marked as Givenness\(_k\).

In Givenness\(_p\) terms, old/given is information that is predictable and recoverable (Halliday, 1967; Halliday & Hasan, 1976; Kuno, 1972, 1978, 1979). In Givenness\(_s\) terms, old/given is information that is introduced into the hearer’s consciousness (Chafe, 1976; Prince, 1978); an old/given referent is an entity that has been introduced in the discourse or that is present in the physical context. In Givenness\(_k\) terms, old/given is information that the speaker assumes that the hearer already knows (Clark & Haviland, 1977; Kuno, 1972).

The present study integrates saliency and shared knowledge into the notion of givenness in our rubric. We define given information as follows:

(3) Given is information that has been explicitly mentioned in the preceding context such that it is salient and that has been heard by the listener such that the speaker assumes that the listener already knows it.

As seen in (4), when a referent such as the pie, which has been mentioned in the discourse, appears in the subsequent sentences (4a)–(4b), it is considered given. Moreover, the given-new distinction is built on the relative relation between two referents. In (4a)–(4b) the theme the pie is given information, but the recipient some friends, which is unmentioned in the context, is introduced for the first time in the subsequent sentences and it is thus new information.

(4) John came home. When he entered the kitchen, he was happy to find two huge apple pies on the table. They were still warm and looked very delicious. Just then his mom came home. John asked, “Mom, what will we do with the two pies?” His mom said, “We will eat one and give away the other.” John knew what to do with the extra pie.

a. John brought the pie to some friends. (given-before-new: NP PP)

b. John brought some friends the pie. (new-before-given: NP NP)

5. Methodology

5.1. Research questions

This study addresses the following research questions:

(5) a. Do Korean L2ers of English who have knowledge of the Given-before-New principle in their L1 Korean automatically show a preference for the given-new ordering in the English dative alternation?

b. Do Korean L2ers of English show a difference in preference for the given-before-new order in accordance with the degree of topic continuity (i.e., givenness)?

5.2. Participants

A total of 30 Korean L2ers of English (\(\bar{x} = 27\) years; age range = 21–35 years) and 20 native English speakers (\(\bar{x} = 27\) years; age range = 19–56 years) participated in the study. All the participants were recruited at the University of Hawai‘i. L2ers’ proficiency was measured with respect to accuracy in morphosyntax and lexicon\(^1\) (Unsworth, 2008) through a Picture-Description task, following Whong-Burr and Schwartz (2002).\(^2\) The results of only 23 L2ers whose morphosyntactic and lexical accuracy

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\(^1\) Measurement of L2 proficiency is in progress; for now, only morphosyntactic and lexical accuracy is complete.

\(^2\) In the Picture-Description task, 3 sets of pictures with 4 pictures each were shown to participants in a sequential order via PowerPoint. The participants were asked to describe them orally. Their utterances were recorded and transcribed in CHAT format using the CLAN program available from CHILDES (MacWhinney, 2000).
(i.e., rate of error-free utterances) was above 70% are reported in this study due to the limitation of space ($\bar{x} = 84\%$; $SD = 0.11$).  

5.3. Materials

In English discourse, the most continuous topic is encoded by a pronoun, and the least continuous topic, by a lexical NP (see, e.g., Givón’s 1983 givenness hierarchy). In order to test L2ers’ sensitivity to givenness in accordance with the degree of givenness, we developed two Oral Contextualized Preference Tasks, an NP Task and a Pronoun Task. The NP Task uses definite NPs with lexical nouns (e.g., the pie, the policeman, etc.) as the given-referents and the Pronoun Task uses pronouns (e.g., it, him, her, etc.) as the given-referents. In both tasks, the new referents are all indefinites formed with some (e.g., some friends, some cookies, etc.). The experimental conditions are created based on the combinations of information status of object arguments (given vs. new) and construction type (PD vs. DOD). Information status is manipulated as follows: given theme and new recipient vs. given recipient and new theme, as laid out in Table 1. The given-theme condition results in given-before-new order for PD and new-before-given order for DOD. In contrast, the given-recipient condition results in new-before-given order for PD and given-before-new order for DOD.

<table>
<thead>
<tr>
<th>Information Status</th>
<th>Construction Type</th>
<th>Information Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>given-theme &amp; new-recipient</td>
<td>PD (NP PP: theme-recipient order)</td>
<td>given-before-new</td>
</tr>
<tr>
<td></td>
<td>DOD (NP NP: recipient-theme order)</td>
<td>new-before-given</td>
</tr>
<tr>
<td>given-recipient &amp; new-theme</td>
<td>PD (NP PP: theme-recipient order)</td>
<td>new-before-given</td>
</tr>
<tr>
<td></td>
<td>DOD (NP NP: recipient-theme order)</td>
<td>given-before-new</td>
</tr>
</tbody>
</table>

As illustrated in the sample item in (6a), where the theme referent the pie is given, the PD has given-before-new order, and the DOD has the reverse order. In (6b), on the other hand, where the recipient referent the policeman is given, it is the DOD that has the given-before-new order (NB: bolding and italics are for expository purposes only).

(6) a. **given-theme & new-recipient**
John came home. When he entered the kitchen, he was happy to find **two huge apple pies** on the table. **They** were still warm and looked very delicious. Just then his mom came home. John asked, “Mom, what will we do with **the two pies**?” His mom said, “We will eat **one** and give away **the other**.” John knew what to do with **the extra pie**.

(i) John brought **the pie** to some friends. (given-before-new [NP PP])
(ii) John brought some friends **the pie**. (new-before-given [NP NP])

b. **given-recipient & new-theme**
Mary’s family moved to a new neighborhood. One day she went out and got lost. She was very scared and almost cried. Just then she found a policeman passing by and asked for help. **The kind policeman** helped her to find her way home. Mary and her parents thought of a way to thank **the policeman**.

(i) Mary brought some cookies to **the policeman**. (new-before-given [NP PP])
(ii) Mary brought **the policeman** some cookies. (given-before-new [NP NP])

Six alternating to-dative verbs are used in the test sentences: bring, give, mail, sell, send, show. Each verb is utilized in the given-theme condition and in the given-recipient condition, totaling 12 test...
items (6 tokens × 2 conditions). In addition, there are 12 filler items (for the NP Task, *it*-that cleft vs. non-cleft and adverb preposing vs. non-preposing; for the Pronoun Task, *it*-that cleft vs. non-cleft and grammatical vs. ungrammatical phrasal-verb constructions). The test sentences are presented in minimal pairs. In half the minimal pairs, the PD is presented first; in the other half, the DOD comes first. Items are randomized.

5.4. Procedure

The instructions as well as the stimuli (including test sentences) are presented aurally using PowerPoint. While the participant listens, a picture comes up on the laptop screen. The narrator explains how to perform the task and introduces two characters: Bobo, recorded by a male native speaker, and Kayu, recorded by a female native speaker.

(7) Hello, we’re going to play a game called ‘Which way is the better way to say things in English?’ Here’s how to play the game. Let me introduce our friends Bobo and Kayu. This is Bobo <picture of Bobo>. This is Kayu <picture of Kayu>. First, you will hear a story. But, how does the story end? Bobo and Kayu know how the story ends! Bobo and Kayu will say the ending in two different ways. Let me know which one you think is the better way to say things in English, Bobo’s way or Kayu’s way. We will play this game with different stories and pictures. We hope you’ll like it. Are you ready? Then let’s practice first.

After the instructions, the participant is given 3 (non-dative) practice items. Next the main task session begins. First, the context is narrated, accompanied by an illustration, which is followed by the narrator’s question, “Hey, Bobo and Kayu, do you know what happened next?” Then one character shows up on the screen and utters one version of the dative sentence (e.g., PD), immediately followed by the other character uttering the other version of the sentence (e.g., DOD). Immediately after the test sentences, the participant is asked “Which one is the better way to say it?” and his/her response is recorded in a written format. Experiments are administered individually. Each task takes 25 to 30 minutes to complete.

6. Results

Two independent *t*-tests revealed that there was a significant difference in the given-before-new choices between natives and L2ers in the NP Task (*p* < .0001) and in the Pronoun Task (*p* < .0001). Figure 1 shows that natives chose the given-before-new order in both the NP Task and the Pronoun Task at least 80% of the time, providing evidence that they overwhelmingly comply with the Given-before-New principle. L2ers also showed a preference for the given-before-new order in both the NP Task and the Pronoun Task (62% and 75%, respectively).

![Figure 1. Overall preferences (%) in the combined conditions of the NP Task and of the Pronoun Task](image)

Note: n = # of participants; k = # of tokens.
We now take a closer look at the data. Figure 2 presents the rate of participants’ information order choices (in percentages) in the given-theme condition and in the given-recipient condition of the NP Task. The data were analyzed in a two-way ANOVA with information status (given-theme vs. given-recipient) and group (natives vs. L2ers) as between-participants variables. The results of the NP Task revealed a significant effect for information status, $F(1, 82) = 65.00$, $p < .0001$ and for group, $F(1, 82) = 14.63$, $p < .0001$. Figure 2 indicates that natives preferred the given-before-new order in both the given-theme condition and the given-recipient condition (84% and 75%, respectively). L2ers also preferred the given-before-new order in the given-theme condition (95%). However, they preferred the new-before-given [NP PP] order in the given-recipient condition (72%) over the given-before-new [NP NP] order (28%), which resulted in a significant interaction effect between information status and group, $F(1, 82) = 37.37$, $p < .0001$.

![Figure 2. Preference by condition (%) in the NP Task](image)

Note: $n = \# \text{ of participants}; k = \# \text{ of tokens}.$

As for the Pronoun Task, there was a significant main effect for information status, $F(1, 82) = 74.96$, $p < .0001$ and for group, $F(1, 82) = 20.48$, $p < .0001$. Figure 3 shows that natives preferred the given-before-new order in both the given-theme condition and the given-recipient condition (100% and 83%, respectively). L2ers chose the given-before-new order in the given-theme condition 99% of the time, which indicates that they know that the new-before-given [NP NP] order is impossible when the theme is a pronoun (e.g., *Mary gave some children it/them). There is also a significant interaction between information status and group, $F(1, 82) = 17.08$, $p < .0001$. This interaction was due to the fact that in the given-recipient condition, L2ers (as a group) had no preference between the given-before-new [NP NP] order and the new-before-given [NP PP] order. It is worth noting that L2ers’ choices of the given-before-new [NP NP] order in the given-recipient condition increased from 28% in the NP Task to 51% in the Pronoun Task.

![Figure 3. Preference by condition (%) in the Pronoun Task](image)

Note: $n = \# \text{ of participants}; k = \# \text{ of tokens}.$
The L2 data were further analyzed for consistency in each individual’s choices of information order. Only the individuals who chose at least 4 (out of 6) given-before-new orderings (per condition) were counted as “consistent.” As summarized in Table 2, out of a total of 23 L2ers, 11 individuals showed a consistent preference for the given-before-new orderings only in the given-theme condition in both the NP Task and the Pronoun Task ([NP PP]); 9 individuals consistently preferred the given-before-new orderings in the given-theme condition in both the NP Task and the Pronoun Task ([NP PP]) as well as in the given-recipient condition in the Pronoun Task ([NP NP]); and 2 individuals consistently preferred the given-before-new orderings in both conditions across the two tasks. There was no correlation between preference for the given-before-new order and L2 proficiency (as measured by rate of error-free utterances).

<table>
<thead>
<tr>
<th>Table 2. Individual consistency of preference for the given-before-new orderings by condition</th>
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<tbody>
<tr>
<td>NP Task</td>
</tr>
<tr>
<td>given-theme</td>
</tr>
<tr>
<td>n = 11</td>
</tr>
<tr>
<td>n = 9</td>
</tr>
<tr>
<td>n = 1</td>
</tr>
<tr>
<td>n = 2</td>
</tr>
<tr>
<td>total n = 23</td>
</tr>
</tbody>
</table>

Note: √ = ≥ 4 out of 6; × = < 4 out of 6

7. Discussion and Conclusion

Why did L2ers, as a group, show a preference in the given-recipient condition for the new-before-given [NP PP] order over the given-before-new [NP NP] order? First, we examined the corresponding syntactic phenomena in the L1, Korean dative constructions. Some researchers, such as Jung and Miyagawa (2004) and Whong-Barr and Schwartz (2002), argued that the English PD corresponds to the Korean dative construction with a dative-marked IO ([IO–Dat–DO–Acc]) and the English DOD corresponds to the Korean double accusative construction ([IO–Acc–DO–Acc]). As mentioned in Section 2.2., only a small subset of Korean dative verbs allows double accusatives. Of the six alternating to-dative verbs used in the experiment, kacyeo- ‘bring’, cwu- ‘give’, and poyecwu- ‘show’ allow double accusative datives (Korean dative/accusative alternating verbs), whereas puchi- ‘mail’, phal- ‘sell’, and ponay- ‘send’ do not (Korean dative/accusative non-alternating verbs). We compared L2ers’ preferences for the PD and DOD between the L1 categories of Korean dative/accusative alternating verbs and non-alternating verbs and found that there was no difference between them. In the NP Task, the ratio of choices of PD to choices of DOD was 77% to 23% in both the dative/accusative alternating verbs and the non-alternating verbs. In the Pronoun Task, the ratio was 65% to 35% in the dative/accusative alternating verbs and 66% to 34% in the non-alternating verbs. This suggests that L2ers’ syntactic choices were not influenced by the type of dative verb in the L1.

Next, input frequency was considered. Bresnan (2007) noted that the [NP NP] order with two lexical NPs is infrequent in native-speaker usage (from the Switchboard corpus). Our data likewise suggest that natives chose the given-before-new [NP NP] with two lexical NPs at a relatively lower rate (75%). However, such a frequency-based approach cannot explain the L2ers’ lack of preference (51%, as a group) for the given-before-new [NP NP] order in the Pronoun Task.

To begin to account for the L2ers’ lack of preference for the given-before-new order in the given-recipient condition in both the NP Task (28%) and the Pronoun Task (51%), we integrate two factors. The first factor comes from the Clifton & Frazier (2004) suggestion that the [NP PP] order can be used felicitously for both the given-before-new order and the new-before-given order. In the given-recipient condition in our experiment, in which the felicitous new-before-given [NP PP] order competes with

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4 There was one L2er with a divergent pattern, consistently preferring the given-before-new orderings in the given-theme condition in both the NP Task and the Pronoun Task as well as in the given-recipient condition in the NP Task, but not in the Pronoun Task.

5 Jung and Miyagawa (2004) argued that the Korean double accusative dative construction bears a possession interpretation like the English DOD does (x CAUSES y to HAVE z), and, similarly, that like the English PD, the Korean dative construction with dative case has no such implication of possession.
the given-before-new [NP NP] order, the L2ers, as a group, had a preference for the former order in the NP Task and no preference in the Pronoun Task. This suggests that the L2ers have a syntactic bias for the [NP PP] order – and the question, then, is where this syntactic bias comes from. One possibility is the L1, and this is the second factor. Recall that Korean dative verbs all allow the [IO-Dat–DO-Acc] construction, and this is the variant that corresponds to the English PD ([NP PP]), whereas, by contrast, only a small subset of Korean dative verbs allow the [IO-Acc–DO-Acc] construction, the one that corresponds to the English DOD ([NP NP]). It is thus assumed that the [IO-Dat–DO-Acc] construction is the default for Korean dative verbs. And it is perhaps for this reason that L1-Korean speakers (initially) take the PD as the default construction in the English dative alternation, and this default (initially and hence subsequently) overrides the Given-before-New principle in the given-recipient condition, notably more strongly in the NP Task than in the Pronoun Task (see below).

In sum, overall L2ers preferred the new-before-given [NP PP] order in the given-recipient condition of the NP Task. This preference for the [NP PP] order can explain the L2ers’ strong (apparent) compliance with the Given-before-New principle in the given-theme conditions (95% in the NP Task; 99% in the Pronoun Task). Only a small subset of L2ers (n = 2) showed a preference for the given-before-new ordering in both the given-theme condition and the given-recipient condition across both tasks. Yet, as shown in Table 2, about 50% of L2ers in the Pronoun Task (n = 9 + 2) showed a preference for the given-before-new order in both the given-theme condition ([NP-PP] – cf. *[NP-NP]) and the given-recipient condition ([NP-NP]). The fact that L2ers showed stronger adherence to the Given-before-New principle in the Pronoun Task than in the NP Task is in accordance with Givón’s (1983) givenness hierarchy: English pronouns are generally used to refer to the most continuous topic and lexical NPs are generally used to refer to the least continuous topic. It is thus suggested that Korean L2ers are in fact sensitive to this distinction in the English givenness hierarchy.

Finally, we suggest that there is an implicational scale characterizing L1-Korean L2ers’ use of the Given-before-New principle in the English dative alternation. First, they apply the Given-before-New principle in the given-theme condition where the theme is either a lexical NP or a pronoun (due at least in part to transfer from the L1). Then, they extend its domain of application to the given-recipient condition where the recipient is a pronoun (in line with the givenness hierarchy). Finally, they appropriately apply it even when the given-recipient is a lexical NP.

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