A Study of the L2 Acquisition of Information Structure 
in the English Dative Alternation

Kazuko KATSUFUJI

The University of Tokushima

Abstract

The purpose of this study is to investigate the second language acquisition of information structure in English dative constructions by the speakers of Japanese. Data from acceptability judgments were collected in Japanese from Japanese monolingual speakers, and in English from English native speakers, Japanese advanced learners of English (JSAs) and Japanese novice learners of English (JSLs). Japanese is seen to prefer new-given order in responses to questions asking about the dative (who-dative questions); in responses to questions asking about the accusative (what-accusative questions), there is no such preference. English consistently prefers given-new order. In responses to who-datives, both JSAs and JSLs do not transfer the new-given order from their L1; they acquire the target-like ordering. Transfer effects surface in the environment where no distinction of information ordering exists in their L1, in response to what-accusatives.

1. Introduction

1.1. English dative structures and the effect of discourse

The English dative alternation has been of extensive interest in language acquisition theory because of its complex constraints that limits its productivity (Bley-Vroman & Yoshinaga, 1992). Besides such complicated sentence-level constraints, several researchers have noted that dative alternation was subject to consideration of information distribution in discourse (Halliday, 1970). Let us look at the following examples.

(1) Who did Paul give the book to?    (2) What did Paul give Jane to Jane?

When being read with normal intonation, (1b) and (2b) sound less natural than (1a) and (2a). Example (1b) shows that the double-object dative (hereafter DOD) structure is inappropriate when the
recipient carries new information because new information is usually placed at the end of the sentence. In example (2), however, where Jane as previously given information, (2a) uses the DOD in a way such that the recipient, as given information, is placed before the new information.

Halliday (1970) suggests that the relative order of the two object noun phrases (hereafter NP), interacts with the information distribution in the sentence within a context defined by the preceding interrogative sentence, so that the appropriate response carries a function of the information elicited by the question. Erteschik-Shir (1979) also suggests that in the DOD structure, the second NP is where the speaker intends to direct hearers’ attention because it is more likely to become the future topic. Givón claims that the dative shifting rule is better explained in terms of the universal word-order principle that “the left-most constituent is the more topical one, that is, the one more likely not to constitute new information, while the right-most constituent is the focus of the new information (Givón, 1979, p.161).”

An empirical approach to English dative constraints is attempted by Smyth, Prideaux, and Hogan (1979) by means of a recognition memory task using native speakers of English. They find that subjects are sensitive to changes in dative position under the influence of previous context. Thompson (1990) analyzes three written narratives and concludes that the dative NP are always more likely to be the topic of discussion and post verbal datives are much more likely to be the topic than datives in end position. Taken together, these studies confirm that information distribution is a crucial factor in the choice of one variant of the dative structures over the other, and the first NP in the dative structure tends to be topicalized as “known” or “given” information, and the second NP tends to be a possible future topic and is “unknown” or “new” information.

1.2. Studies on Japanese dative structures

Researchers, such as Sawyer (1995) and Bley-Vroman and Yoshinaga (1992) of the Japanese dative structure, frequently base their studies on the assumption that Japanese does not have a dative alternation. Bley-Vroman and Yoshinaga (1992), for instance, claim that the Japanese dative corresponds to the English DOD rather than the PD, based on principles of Case Theory (e.g., Chomsky, 1981). In addition to question of whether the Japanese dative form is a PD or a DOD, there are two opposite arguments to account for the word order flexibility in Japanese dative structure. Saito (cited in Miyagawa, 1992), for instance, argues that although the order of the dative and the accusative in Japanese dative sentences can be reversed, this change in word order is just one instance of the more general syntactic phenomenon of “scrambling,” a reflection of the free word order in Japanese due to its explicit case-marking system. On the other hand, Miyagawa (1997) argues that the two orderings of NPs in Japanese dative structures are base-generated. According to Miyagawa, in the following examples, (3a), the dative-accusative order in Japanese corresponds to the DOD in English, on the other hand, (3b), the accusative-dative order in Japanese corresponds to PD in English. The -ni is a Case marker in the dative-accusative order, but a postposition in the accusative-dative order.

(3) a. Paul-wa Jane-ni hon-o age-mashita
     Paul-Nom Jane-Dat book-Acc gave
b. Paul-wa hon-o Jane-ni age-mashita
Paul-Nom book-Acc Jane-Dat gave

Furthermore, Miyagawa, based on the fact that in Japanese a direct object NP with a contrastive marker -wa sounds acceptable when it is placed in the left of a manner adverbial, but not in the right, concludes that there is a focus position between the subject and the VP. This implies that not only are there syntactic differences between two orders in Japanese dative structures, but there are discourse-related differences between them.

The studies of the Japanese dative structures discussed above provide convincing evidence for each argument, however, some studies limit the scope of their examination to the level of sentential grammar, while others fail to provide any empirical support for the theory they advocate. Furthermore, there have not been any researches yet to investigate how Japanese speakers map information structure in Japanese dative sentences, needless to say the acquisition of information structure of the English dative alternation by Japanese learners of L2 English.

There is broad acceptance that transfer is more prevalent at the level of discourse (Ellis, 1994). One of the most often-cited studies of discourse transfer is a study of Chinese and Japanese learners of L2 English by Schachter and Rutherford (1979). They argue that the errors that appear to be transfers from L1 syntax at first sight might instead be transferred from L1 discourse. Based on written samples of the subjects, they find that sentences which appear to reflect confusions between active and passive voice to native speakers are actually a reflection of the topic-comment structure of Chinese and Japanese. They hypothesize that learners learn a particular form in a target language and then assume that the form is used to express a particular discourse function. Rutherford (1983), later in his study, emphatically comments: “I take these observations as evidence that it is therefore discourse and not syntax that gives gross overall shape to interlanguage (p.368).” Givón (1984) deals with the notion of the early stages of acquisition as being in ‘pragmatic mode,’ that is with the structure of utterances governed more by pragmatic than by syntactic principles. Clearly this is a vast and rich field for research, but as Ellis (1994) worries about the research methodology of many studies in the discourse-syntactic domain, saying “it is not even clear how the relative occurrences of transfer in discourse and syntax should be measured,” until recently little is known in second language acquisition of discourse factors. This study, therefore, attempts to show one possible methodology in the examination of the effect of L1 in L2 acquisition of the discourse-syntactic domain, and to describe whether information structure of L1 promotes or hinders the acquisition of information structure mapped in English dative structures.

Before proceeding to the main study, a preliminary experiment was conducted to investigate whether or not Japanese dative structures alternate according to information structure. Then, based on the results obtained from the experiment, the main investigation was conducted using data in English both from English native speakers and from Japanese learners of English. The result will be discussed in the context of L1 transfer and whether the degree of sensitivity to information structure in one’s first
language is available in second language acquisition or not. Consequently, research questions (RQs) are organized as follows:

RQ1. To what extent is the Japanese dative structures influenced by the context? In other words, do Japanese dative structures have similar discourse constraints as the English dative structures do?

RQ2. If there were differences between the influence from context on Japanese dative structures and English dative structures, how does it affect L2 acquisition?

RQ3. Is the L2 acquisition of information structure influenced by learners’ language ability? In other words, does such ability develop along language proficiency?

2. The Study

2.1. Experiment 1

2.1.1. Design

Experiment one was designed to investigate RQ1. Data from acceptability judgments on the orderings of Japanese dative structures with relevance to discourse were collected in Japanese from 56 Japanese monolingual speakers. The experiment was conducted on four combination types of wh-questions and dative constructions (4a+4b, 4a+4c, 5a+5b, 5a+5c) created from a two (dative prompt, accusative prompt) by two (new-given, given-new) matrix of tested factors. The sample test sentences were as follows:

(4) a. Dare-ni Paul-wa hon-o age-mashita-ka?
    who-Dat Paul-Nom book-Acc give-Past-tag?

b. Paul-wa hon-o Jane-ni age-mashita.
   Paul-Nom

c. Paul-wa Jane-ni hon-o age-mashita.
   Paul-Nom
   Jane-Dat book-Acc give-Past.

(5) a. Nani-o Paul-wa Jane-ni age-mashita-ka?
    what-Acc Paul-Nom Jane-Dat give-Past-tag?

b. Paul-wa hon-o Jane-ni age-mashita.
   Paul-Nom

c. Paul-wa Jane-ni hon-o age-mashita.
   Paul-Nom
   Jane-Dat book-Acc give-Past.

Each set contained a counterpart of an English dative verb that allows alternation. All sentences were grammatical in Japanese. There were 16 pairs of wh-questions and responses (4 pairs from each combination type). A seven-point Likert scale (1-7) followed each set of sentences, and subjects were asked to rate the acceptability of the response of each pair.
2.1.2. Analysis

The acceptability judgment rating on each dative construction served as the primary dependent variable of this study. One of the two independent variables of interest was the type of a prompt, that is, whether the preceding wh-question to elicit an answer in a dative structure starts with “who-dative” or “what-accusative.” This variable is labeled Prompt Type, and it has two levels: dative and accusative. The other independent variable was the order of information distribution on the dative constructions, that is whether the “given” information comes first and the “new” information follows or vice versa for a given dative construction. This variable is labeled Information Order in the analyses reported below, and it has two levels: given-new and new-given. The interval scale ratings for each dative construction were coded along with the nominal data for Prompt Type and Information Order. The overall α was set at <.05.

Table 1. Repeated-measures ANOVA summary for JMs’ acceptability judgment ratings for Prompt Type and Information Order

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>128.808</td>
<td>55</td>
<td>2.342</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt Type</td>
<td>.526</td>
<td>1</td>
<td>.526</td>
<td>2.810</td>
<td>.0993</td>
</tr>
<tr>
<td>Prompt Type x Subject</td>
<td>10.285</td>
<td>55</td>
<td>.187</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Order</td>
<td>6.497</td>
<td>1</td>
<td>6.497</td>
<td>5.321*</td>
<td>.0249</td>
</tr>
<tr>
<td>Information Order x Subject</td>
<td>67.156</td>
<td>55</td>
<td>1.221</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt Type x Information Order</td>
<td>5.579</td>
<td>1</td>
<td>5.579</td>
<td>20.412*</td>
<td>.0001</td>
</tr>
<tr>
<td>Prompt Type x Information Order x Subject</td>
<td>15.032</td>
<td>55</td>
<td>.273</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

*Figure 1. Interaction between Prompt Type and Information Order in JMs’ acceptability judgment ratings*
The internal reliability, calculated using Cronbach alpha, was .82. The repeated-measures analysis of variance (ANOVA) results are presented in Table 1. There were significant effects for Information Order, $F(1, 55) = 6.50^*$. This indicates that there are consistent mean differences in the ratings of the new-given information ordered and given-new information ordered. This suggests that Japanese monolingual speakers judged the new-given information order to be more natural, on the whole, than the given-new information order. As shown in Figure 1, the results of the study also indicate a significant interaction between Prompt Type and Information Order, $F(1, 55) = 5.58^*$. This indicates that Japanese monolingual speakers are more sensitive to the difference between new-given and given-new information order when Prompt Type is dative than when Prompt Type is accusative. These two levels of Prompt Type offset each other, thus there is no main effect of Prompt Type.

2.2. Experiment 2
2.2.1. Design

Another task was designed based on the result of the preliminary experiment to assess RQ 2 and 3. Data from acceptability judgments were collected in English from 35 native speakers of English (NSs), 35 Japanese advanced learners of English (JSA) and 35 Japanese novice learners of English (JSL). The advanced learners of English were graduate students at an American university, and their average scores of paper based TOEFL were higher than 600. Novice learners were freshmen of a university in a local city in Japan. In this task, the participants were asked to judge dative constructions that alternate in relation to their preceding $wh$-questions, using a seven-point Likert scale. The task adopted the same discourse factors used in the preliminary experiment: Prompt Type and Information Order. The following are the types of the combination of an interrogative sentence and the reply:

(6) a. Who did Paul give the book to? ($who$-dative prompt type)
b. Paul gave the book to Jane. (given-new ordered)
c. Paul gave Jane a book. (new-given ordered)

(7) a. What did Paul give Jane/to Jane? ($what$-accusative prompt type)
b. Paul gave Jane the book. (given-new ordered)
c. Paul gave the book to Jane. (new-given ordered)

As in the preliminary experiment, the acceptability judgment rating on each dative construction serves as the primary dependent variable of this study. The first independent variable of interest was the difference among three groups. This variable is labeled Group in the analyses reported below, and it has three levels: NSs, JASAs and JSLs. The second variable of interest is the type of a preceding $wh$-question (Prompt Type), and it has two levels: Who-dative (e.g., *Who did Paul give the book to?*) and What-accusative (e.g., *What did Paul give Jane/to Jane?). The last variable is the order of information distribution (Information Order), and it has two levels: new-given and given-new.
The interval scale ratings for each dative construction were coded along with the nominal data for Group, Prompt Type and Information Order. Descriptive statistics were computed. Internal reliability was calculated using Cronbach alpha. Three-way repeated measures ANOVAs were calculated with Groups as the single between-group factor and Prompt Type and Information Order as two within-group factors. The overall α was set at <0.05.

2.2.2. Analysis

The internal reliability, calculated using Cronbach alpha, was .96. The means (M) and standard deviations (SD) for the acceptability judgment for the four dative construction types as rated by NSs, JSAs and JSLs are shown in Table 2. The distribution of the acceptability rating for each category is normally distributed, fulfilling the assumption for applying ANOVA to mean comparisons.

<table>
<thead>
<tr>
<th></th>
<th>Acceptability Judgment Score</th>
<th>Acceptability Judgment Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dative Prompt</td>
<td>Accusative Prompt</td>
</tr>
<tr>
<td></td>
<td>New-Given</td>
<td>Given-New</td>
</tr>
<tr>
<td>NS</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.00</td>
<td>6.19</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>.79</td>
</tr>
<tr>
<td>JSA</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.48</td>
<td>6.56</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>.76</td>
</tr>
<tr>
<td>JSL</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.96</td>
<td>4.99</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>.13</td>
</tr>
</tbody>
</table>

The ANOVA results are presented in Table 3. There were significant effects for Groups, F (2, 107) = 57.78* and Information Order, F (1, 107) = 32.26*. This indicates that there are consistent mean differences among the ratings by NSs, by JSAs and by JSLs and between the given-new information ordered and new-given information ordered.

Figure 2 clearly shows the difference between NSs’ JSAs’ and JSLs’ perception pattern of information structure of dative constructions when the prompt type is what-accusative: While NSs consistently rate given-new ordered sentences higher than new-given ordered sentences, JSAs and JSLs rate new-given (NG) ordered sentences higher than given-new (GN) sentences. In contrast, as shown in Figure 3, when the prompt type is who-dative, all the groups rate given-new (GN) ordered sentences higher than new-given (NG) ordered sentences.
Table 3. Repeated-measures ANOVA summary for acceptability judgment ratings on Groups, Prompt Type and Information Order

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>213.129</td>
<td>2</td>
<td>106.56</td>
<td>57.779*</td>
<td>.0001</td>
</tr>
<tr>
<td>Subject (Group)</td>
<td>197.344</td>
<td>107</td>
<td>1.844</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt Type</td>
<td>.588</td>
<td>1</td>
<td>.588</td>
<td>1.270</td>
<td>.2623</td>
</tr>
<tr>
<td>Prompt Type x Group</td>
<td>2.209</td>
<td>2</td>
<td>1.105</td>
<td>2.386</td>
<td>.0969</td>
</tr>
<tr>
<td>Prompt Type x Subject (Group)</td>
<td>49.539</td>
<td>107</td>
<td>.463</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Order</td>
<td>33.863</td>
<td>1</td>
<td>33.863</td>
<td>32.260*</td>
<td>.0001</td>
</tr>
<tr>
<td>Information Order x Group</td>
<td>16.751</td>
<td>2</td>
<td>8.376</td>
<td>7.979*</td>
<td>.0006</td>
</tr>
<tr>
<td>Information Order x Subject (Group)</td>
<td>112.318</td>
<td>107</td>
<td>1.050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt Type x Information Order</td>
<td>32.465</td>
<td>1</td>
<td>32.465</td>
<td>53.245*</td>
<td>.0001</td>
</tr>
<tr>
<td>Prompt Type x Information Order x Group</td>
<td>11.997</td>
<td>2</td>
<td>5.998</td>
<td>9.838*</td>
<td>.0001</td>
</tr>
<tr>
<td>Prompt Type x Information Order x Subject (Group)</td>
<td>65.241</td>
<td>107</td>
<td>.610</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

3. Discussion

Answers to RQ1 were investigated in the preliminary experiment. The experiment was concerned with the information structure of Japanese dative sentences. Based on the results from the experiment, we have witnessed the fact that Japanese monolingual speakers are only sensitive to information structure in dative sentences when the preceding prompt type is who-dative. Furthermore, there was a striking difference between Japanese monolingual speakers and English native speakers in the results:
Japanese monolingual speakers rate new-given information ordered dative sentences higher than given-new information ordered ones. This is completely opposite information order to the information ordering by native English speakers.

RQ2 was concerned with the influence of Japanese speakers’ perception in their first language on the acquisition of information structure mapped in the English dative alternation. It was found that Japanese speakers of L2 English are sensitive to information structure in the English dative alternation as far as the prompt type is who-dative. Furthermore, it was found that their rating tendencies were similar to the rating patterns of English native speakers: they scored given-new information ordered sentences higher than new-given ordered sentences. Remember Japanese speakers’ performances in their first language. In Japanese, Japanese speakers rate new-given information ordered sentences higher than the given-new ordered, on the other hand, in English, they rate given-new information ordered sentences higher than the new-given ordered. It seems that Japanese learners of L2 English can acquire correct information ordering in the English dative alternation when the sentences are preceded by the who-dative prompt type.

RQ3 was set to investigate if there is any difference between performances of advanced Japanese learners of L2 English and novice learners. As shown in Figure 2 and 3, although the ratings by advanced and novice learners were significantly different, the patterns of judgment bear striking resemblance to each other: both groups rate new-given information ordered sentences higher than given-new information structures when the prompt type is what-accusative, while both groups rate given-new information ordered sentences higher than new-given information ordered ones when the prompt type is who-dative. From these results, it might be concluded that there is no essential difference between the advanced and novice learners. The difficulty in acquiring information structure mapped English dative sentences when the prompt type is what-accusative persists even after learners have reached to a certain high level in the target language.

4. Conclusion

From the results of the current study, it is concluded that sensitivity to information structure is available in second language acquisition to the extent where information structure is available in L1. The ordering of information does not matter as far as speakers are aware of the information mapping in the syntactic structure. In other words, where a syntactic structure in L1 reflects information structure, learners of L2 English can readily access to sensitivity to information order in L2 and reset the parameter. Thus Japanese learners of L2 English could notice information structure mapped in English dative sentences even though the ordering of information was opposite. When learners are sensitive to information structure no matter how order is different, they can notice and reset their information ordering patterns in their L1 to a new pattern in L2. On the other hand, where sensitivity to information structure is not available in L1 (i.e. dative sentences as a reply to a what-accusative prompt type), Japanese learners of L2 English are not able to be aware of information structure mapped in the
English dative alternation. The disability in noticing such information structure persists even after learners reached to certain advanced level in the target language.

It is generally well known that the use of English articles, such as the, a, and an, is hard to be mastered by Japanese speakers even after they have studied the language for long time. The current study indicates that the domain where discourse and syntactic structure interrelate is strongly influenced by the learners' first language and the influence persists for a long time.

References


