The Role of Semantic Constraints in L2 Acquisition of Dative Constructions

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The alternation between prepositional dative (PD) and double object dative (DOD) constructions is often overgeneralized by L2 learners. This paper aims to suggest pedagogical implications for teaching the English dative constructions to Korean learners of English by examining the roles of constraints in L2 acquisition. According to Mazurkewich and White (1984) and Pinker (1989), there are three types of constraints that determine the dative alternation in English: broad semantic constraint (possession constraint), narrow semantic constraint, and morphological constraint. Based on Pinker's (1989) theory of verb lexical structure, a grammaticality judgment task was devised and administered to Korean students at four different age levels. There were developmental improvements in ability to discriminate between alternating and non-alternating dative verbs. In other words, at the initial stage of learning, Korean learners or English overgeneralized the alternation, but the overgeneralization decreased gradually. Their sensitivity to constraints which determine dativizability was examined. The results showed that the subjects were generally most sensitive to broad range constraint (possession constraint), and then to narrow range constraint, and least sensitive to morphological constraint. These results seem to support the Pinker's claim that the constraints of argument structure alternations are fundamentally semantic.

I. INTRODUCTION

The class of dative verbs in English consists of syntactic subclasses, namely (1) alternating and (2) non-alternating datives. The alternation between these two types has been of great interest to language acquisition theory primarily because of the complex constraints on its productivity (Sawyer, 1995).
(1) Jack gave some books to Ann. (PD)
    Jack gave Ann some books. (DOD)

(2) Jack donated some books to Ann. (PD)
    *Jack donated Ann some books. (DOD)

The dative alternation in English poses a learnability paradox in L1 acquisition: When children hear give some books to Ann and give Ann some books, they could formulate a rule deriving the double object dative (DOD) form from the prepositional dative (PD) form. This rule could be overgeneralized to produce such expressions as *donate Ann some books. Nevertheless, most children are able to avoid this overgeneralization even though they are not corrected for speaking ungrammatically. How does this happen? In other words, how do children avoid such mistakes, as shown in (2) above, in the absence of negative evidence (Gropen et al., 1989)? This is what Pinker (1989) calls 'Baker's Paradox'. Although there are some examples of productive double object forms in children's spontaneous speech as illustrated in Gropen et al. (1989, p. 209), the reported cases of overgeneralization in the acquisition of English as L1 are rare.

On the other hand, English dative verbs have been found to present much more difficulty for many L2 learners (Choonkyoung Kim, 1996). The argument structures and their alternations in English seem to be one of the most difficult areas for Korean learners of English to acquire. Among many argument structure alternations (e.g., passive, dative, causative, and locative), this study focuses on the dative alternation in particular. It was chosen because, as has been mentioned in Wolfe-Quintero (1992), there has been evidence for overgeneralization in L2 acquisition (Mazurkewich, 1984; Le Compagnon, 1984; Hawkins, 1987; Tanaka, 1987; Wolfe-Quintero, 1992; Sawyer, 1995) and there exists a well-developed theoretical analysis of the dative alternation proposed by Pinker (1989). In the studies of the acquisition of English dative constructions by L2 learners, the roles of markedness within the framework of UG and L1 transfer have been examined most commonly.

It would be helpful to Korean learners of English if a principle which governs dative alternation in L1 acquisition could be found and applied to L2 acquisition. For this purpose, the acquisition of dative constructions in English as L1 will be examined with special reference to constraints on their alternation.

The present study has the following limitations: In order to include elementary school students as subjects, the lexicon, sentence complexity, and method for the experimental design had to remain simple. In addition, because the study focuses on the syntactic and semantic issues regarding dative constructions, the pragmatically relevant issues are not covered in this paper.
II. THEORETICAL BACKGROUND


Pinker (1984) has presented "criteria-governed productivity" as a solution to Baker's Paradox. Children can avoid or overcome overgeneralizations because those are governed by certain constraining criteria. In the case of dative alternation, these criteria are possession constraint and morphological constraint, which will be described in the following section. He argues that the child initially uses semantic notions as evidence for the presence of grammatical entities. He calls this argument "semantic bootstrapping hypothesis" (Heesook Kim, 1999).

According to Pinker (1989), a verb is represented lexically by means of a semantic structure, which is linked to a grammatical structure via universal linking rules. These semantic structures are created from a set of universal semantic features that are grammatically relevant. The semantic structures are organized at three levels of generality. At the narrowest level, each lexical entry of a verb has a unique semantic structure shared by no other verb. At the broadest level, each semantic structure has a thematic core that expresses only the semantic features that are linked to grammatical structures, and that can be shared by a broad group of verbs. Each can also be parameterized for non-thematic semantic features and these parameterized structures can be shared by a narrow group of verbs. This distinction between broad verb classes based on shared thematic cores and narrow verb classes based on shared parameterized semantic features is important in explaining how lexical alternations apply to dative verbs (Wolfe-Quintero, 1992).

Semantic structures are mapped into syntactic argument structures by linking rules, so when the verb meaning changes, the syntactic/argument structure changes too, as an automatic consequence (Pinker, 1989). Even though a complete lexical structure includes both a semantic and a syntactic/argument structure with the links between them, lexical alternations operate only at the level of the semantic structure. And lexical alternations operate on the semantic structure at two levels of generality, as alternations of thematic cores that define broad verb classes, and as alternations of parameterized semantic structures that define narrow verb classes. Thus there are two types of lexical rules: 'broad range rules' (BRR) and 'narrow range rules' (NRR) (Wolfe-Quintero, 1992). The classes of verbs that BRR apply to are called 'broad conflation classes'. And the more selective versions of BRR, the NRR, pick out 'narrow conflation classes of verbs' (or 'conflation subclasses') (Pinker, 1989, p. 103).

Membership in a broad conflation class is only a necessary condition for a verb to alternate; it is membership in one of the narrow conflation classes that is a sufficient condition (Pinker, 1989). These broad and narrow semantic constraints which determine the dativizability will be discussed in detail in the following section.
2. Constraints on Dative Alternation

The alternation between PD and DOD constructions is often overgeneralized by L2 learners (Donghan Lee, 1997). However, there are some constraints on whether or not a particular verb may occur in the PD or the DOD construction in English. In this section, the three constraints governing dative alternation in English will be examined in detail.

As far as the learning paradox is concerned, there have been several proposals to resolve it by examining the syntactic properties of dative constructions. For example, Randall (1987), cited in Pinker (1989), suggests that dativizable verbs are represented as having two obligatory internal arguments, the theme and the goal, whereas for non-dativizable verbs the goal argument is optional. However, as mentioned in Groppen et al. (1989), many verbs with optional to-objects dativize (e.g., write, ask, throw, mail, bring) and some verbs with obligatory to-objects do not (e.g., entrust, credit), and this generalization fails.

Grimshaw (1989) and others make the related proposal that dativizability depends on a more fundamental distinction, that between arguments vs. adjuncts. The to-phrases appearing with dativizable verbs can be arguments, whereas those appearing with non-dativizable must be adjuncts. Unfortunately, tests of the argument/adjunct distinction do not distinguish the dativizable from the non-dativizable ones (e.g., Matthew threw Elizabeth the box. *Matthew pushed Elizabeth the box) (Pinker, 1989; Groppen et al., 1989).

We can see that such syntactic proposals cannot resolve Baker's paradox. Therefore, we now turn to semantic and morphological analyses.

Mazurkewich and White (1984) propose that initially learners acquire the PD construction since it is unmarked in English and in UG. Once they acquire a general lexical rule relating the PD to DOD based on input evidence, they may produce the DOD structure for any verb they hear in the PD form, which will lead to overgeneralization errors that violate possession and morphological constraints. Mazurkewich and White claim that learners must acquire possession constraint and morphological constraint to overcome these overgeneralizations. Pinker (1984) presents a 'criteria-governed productivity' hypothesis to show how these possession and morphological constraint might resolve Baker's paradox. However, it is faced with the following problems, as illustrated in Pinker (1989, pp. 56-61).

There are two possible kinds of exceptions: positive and negative exceptions. Positive exceptions are verbs that should not dativize to the constraints, but do. However, the criterion hypothesis is not necessarily refuted by positive exceptions, because they can be learned from positive evidence. Some examples of positive exceptions are shown in (3) (Pinker, 1989, p. 57).
(3) Positive exceptions to the morphophonological constraints:
   Dr. Bear referred me a patient.
   I telegraphed her the news.
   Kathy xeroxed me a copy.
   He bequeathed me his fortune.
   They forwarded me some mail.
   She reserved him a seat.

   On the other hand, the theory fails more clearly in the case of negative exceptions: verbs that should alternate but do not. Here, negative evidence is required, and these negative exceptions shown below in (4) bring Baker’s paradox back in full force (Pinker, 1989, p. 58).

(4) Negative exceptions to the possessor constraint:
   *John pulled Bill the box [cf. John brought Bill the box].
   *Sam shouted John the story [cf. Sam told John the story].
   *Becky credited Bill the money [cf. Becky promised Bill the money].

   In order to account for the negative exceptions, Pinker (1989) adds another constraint, the narrow semantic constraint, to Mazurkewich and White’s proposal. Thus, according to Mazurkewich and White (1984) and Pinker (1989), there are three types of constraints that determine the dative alternation in English: broad semantic constraint (possession constraint), narrow semantic constraint, and morphological constraint. These three will be reviewed in detail in turn.

1) Broad Semantic (or Possession) Constraint

   Dativizable verbs have a semantic property in common. They must be capable of denoting prospective possession of the referent of the second object by the referent of the first object (Green, 1974; Oehrle, 1976; Mazurkewich & White, 1984; Pinker, 1989). That is, only indirect objects which are animate and are capable of possession can occur in the DOD construction (Pinker, 1989). What Pinker calls the ‘possessor effect’ is illustrated below in (5). The examples are from Wolfe-Quintero (1992, p. 54).

(5) The indirect object must be capable of possession:
   a. Mary sent a package to the boarder/border.
      Mary sent the boarder a package. [+animate]
*Mary sent the border the package. [-animate]
b. Mary sewed a shirt for John/covers for the chairs.
   Mary sewed John a shirt. [+animate]
*Mary sewed the chairs covers. [-animate]

The action must be possessable:
c. John opened a beer/a window for Mary.
   John opened Mary a beer.
*John opened Mary a window.
d. John drove the car for Mary.
   *John drove Mary the car.

The examples above show that if the indirect object is inanimate or if the action indirectly benefits the person without possession being involved, the DOD construction cannot occur. However, there is another group of verbs that can occur only in the DOD, but not in the PD. This may be because the meaning involves inherent possession as in (6a), or malefactive or adversative meaning as in (6b) (Wolfe-Quintero, 1992, p. 55).

(6) Possession may be inherently or adversely affected:
   a. Mary gave John a present/a headache.
      Mary gave a present to John.
*Mary gave a headache to John.
   b. Mary cost/envied/denied/forgave John his promotion.
      *Mary cost/envied/denied/forgave John’s promotion to him.

In the examples above (5-6), Wolfe-Quintero clearly shows that semantic notion of possession is required to license the DOD construction.

However, being able to express possession does not guarantee that the DOD is grammatical. There appear to be additional semantic constraints on which verbs, even when they clearly indicate possession, can occur in the DOD (Wolfe-Quintero, 1992). Pinker (1989) proposes another condition, the narrow semantic constraint, based on complex semantic features.

2) Narrow Semantic Constraint

Pinker (1989) analyzes the semantic features of the dative lexical structure in order to account for not only the broadly-applicable possessional constraint but also the semantic features that
narrowly distinguish the verbs that alternate from the potentially possessional but non-alternating. As has been mentioned earlier, membership in a broad conflation class is only a necessary condition for a verb to alternate; it is membership in one of the narrow conflation classes that is a sufficient condition (Pinker, 1989). That is, being able to express possession (broad range constraint) does not guarantee that the DOD is grammatical (Wolfe-Quintero, 1992).

The semantic features that are used to represent a narrow verb class include event types: embedded events or states that express obligations, effects, means, or purposes; time line differences, and manner or property requirements (Pinker, 1989: Chapter 5; Wolfe-Quintero, 1992).

The alternating and non-alternating narrow range conflation classes are illustrated in Table 1 and Table 2 (Pinker, 1989, pp. 110-123). Based on Pinker (1989), dative alternation consists of two types, one involving the preposition to (11-7) and the other involving the preposition for (18, 19). However, 14 can be used with either to or for. (* indicates non-alternating verbs.)

**TABLE 1**

<table>
<thead>
<tr>
<th>Dativizable subclasses (PD or DOD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 giving: give, pass, lend, sell, vs. *donate, *contribute</td>
</tr>
<tr>
<td>2 sending: send, ship, mail, vs. *transport, *deliver</td>
</tr>
<tr>
<td>3 instantaneous causation of ballistic motion: throw, kick, toss, slap, vs. *release, *propel</td>
</tr>
<tr>
<td>4 continuous causation of accompanied motion: bring, take</td>
</tr>
<tr>
<td>5 communication/illocutionary: tell, show, teach, write, read vs. *explain, *announce, *describe, *declare, *demonstrate</td>
</tr>
<tr>
<td>6 instrument of communication: fax, e-mail, modem, telephone</td>
</tr>
<tr>
<td>7 future having: offer, promise, recommend, vs. future not having: *cost, *envy, *forgive, *forgive, *save (DOD only)</td>
</tr>
<tr>
<td>8 creation: make, bake, build, cook, fix (when dinner results) pour (when drink results) vs. *construct, *create, *design</td>
</tr>
<tr>
<td>9 obtaining: buy, get, find, order, earn vs. *purchase, *obtain</td>
</tr>
</tbody>
</table>

**TABLE 2**

<table>
<thead>
<tr>
<th>Non-dativizable subclasses that are cognitively compatible with change of possession (PD only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 fulfilling: *supply, *present, *credit, *entrust</td>
</tr>
<tr>
<td>12 choosing/designation: *choose, *pick, *select</td>
</tr>
<tr>
<td>13 manner of speaking: *shout, *scream, *whisper</td>
</tr>
<tr>
<td>14 other communication verb: *say, *ask</td>
</tr>
</tbody>
</table>
3) Morphological Constraint

There is also a morphological constraint on the DOD construction. Mazurkewich and White (1984) and Pinker (1989) propose that dativizable verbs tend to have native (Germanic), not Latinate stems. The relevant contrast is shown in the following examples in (7), adapted from Gropen et al. (1989) and Wolfe-Quintero (1992).

(7)  a. Jack gave/donated some books to them. PD
    Jack gave/*donated them some books. DOD
  b. Missy told/reported the news to Bob.
    Missy told/*reported Bob the news.
  c. Bill showed/demonstrated the technique to Tom.
    Bill showed/*demonstrated Tom the technique.
  d. Joe built/constructed a cradle for his son.
    Joe built/*constructed his son a cradle.

This correlation is related to historical developments in morphology, as described in Pinker (1989, pp. 45-46). English had case makers for accusative and dative cases in its earlier stages. According to Visser (1963), in Old English ‘V NP-DAT NP-ACC’ order was more common than the order ‘V NP-ACC NP-DAT’. Case markers eroded in Middle English resulting in a ‘V NPGoal NPTheme’ verb phrase similar to the DOD construction of contemporary English. But in the fourteenth and fifteenth centuries a large number of new verbs of French and Latin origin started to have Goal arguments marked with to, by analogy to the French preposition d. Native verbs were then allowed to take this argument structure as well, but verbs of French or Latin origin failed to take a DOD form.

However, children are insensitive to the etymology and seem to rely on sound contrast to distinguish verbs that appear in the DOD from those that do not. As it turns out, there is a consistent phonological correlate to the Germanic/Latinate distinction: While Latinate verbs are normally polysyllabic, native (Germanic) verbs are monosyllabic or polysyllabic with initial stress. Using the single metrical foot criterion for dativizability, Pinker is able to explain a number of apparent counterexamples. For example, Latinate verbs of one metrical foot like promise and offer can dativize, but recommend and describe cannot, as shown in (8) (Sawyer, 1995).

(8)  a. Matthew promised/offered/recommended/described the computer to Lesley.
    b. Matthew promised/offered Lesley the computer.
c. *Matthew recommended/described Lesley the computer.

Although the morphological constraint is demonstrably psychologically real (Gropen et. al., 1989), it does not apply to certain subclasses (Pinker, 1989). For instance, there are multimorphemic verbs that belong to the subclasses of future having (e.g., bequeath, refer, recommend, guarantee, reserve) and instrument of communication (e.g., telegraph, telephone, satellite, netmail) that do dativize (Pinker, 1989, p. 47).

III. RESEARCH DESIGN

1. Subjects

The Subjects were 20 elementary, 20 middle, 20 high school students, who were enrolled in 'Hakwons', and 20 university students, as illustrated in Table 3. To control the effect of variables such as individual differences, this experiment was implemented at private institutions called 'Hakwons' where students in each grade were already divided into different proficiency levels (e.g., beginning/intermediate/advanced) through placement tests.

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Number of Subjects per Age-Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary school students (5\textsuperscript{th}, 6\textsuperscript{th} grade)</td>
<td>20</td>
</tr>
<tr>
<td>Middle school students (1\textsuperscript{st}, 2\textsuperscript{nd} year)</td>
<td>20</td>
</tr>
<tr>
<td>High school students (1\textsuperscript{st} year)</td>
<td>20</td>
</tr>
<tr>
<td>University students (sophomores)</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
</tr>
</tbody>
</table>

The elementary school students from E Hakwon were 5\textsuperscript{th} (N=10) and 6\textsuperscript{th} (N=10) graders in intermediate-advanced level classes. The middle school students from T Hakwon were in the first year of middle school (N=10) and in the second (N=10). They were in advanced level classes. The high school students from D Hakwon were in the first year of high school (N=20) and were also in advanced level classes. The university students were sophomores (N=20) attending K university. It was assumed that, based on their scores of the university entrance exam, they generally have above-average proficiency in English.
2. Materials and Procedure

To find out which of the constraints for dative alternation the subjects are sensitive to, a grammaticality judgment task (Appendix) was devised with four sentences violating broad semantic constraint, four sentences violating narrow semantic constraint and four sentences violating morphological constraint. Seven sentences were grammatical sentences with alternating verbs. One sentence with the verb 'say' was also included. The subjects were asked to make grammaticality judgments by choosing one of the given options (PD/DOD/both). They were given approximately 10 minutes to complete the task. First, the one way ANOVA was used to investigate whether there were significant differences regarding the mean scores of correct judgments among different age-groups (elementary school (ES)/middle school (MS)/high school (HS)/university (U)). Then an LSD post hoc test was done to check whether there were meaningful differences between any two groups.

IV. RESULT AND DISCUSSION

1. Comparison of Mean Scores for GJT on Dative Alternation

The mean scores went up gradually. That is, MS students (M=9.50) did better than ES students (M=8.85), HS students (M=9.90) better than MS, and U students (M=11.00) better than HS students as shown in Table 4.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td></td>
</tr>
<tr>
<td>ES</td>
<td>20</td>
<td>8.85</td>
<td>2.06</td>
<td>.46</td>
<td>7.89</td>
<td>9.81</td>
<td>5</td>
</tr>
<tr>
<td>MS</td>
<td>20</td>
<td>9.50</td>
<td>2.37</td>
<td>.53</td>
<td>8.39</td>
<td>10.61</td>
<td>5</td>
</tr>
<tr>
<td>HS</td>
<td>20</td>
<td>9.90</td>
<td>2.79</td>
<td>.62</td>
<td>8.59</td>
<td>11.21</td>
<td>6</td>
</tr>
<tr>
<td>U</td>
<td>20</td>
<td>11.00</td>
<td>3.43</td>
<td>.77</td>
<td>9.39</td>
<td>12.61</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>9.81</td>
<td>2.77</td>
<td>.31</td>
<td>9.20</td>
<td>10.43</td>
<td>3</td>
</tr>
</tbody>
</table>

Although there were no statistically significant differences between the groups as shown in Table 5, the results seem to suggest that there were developmental gains in ability to discriminate between the verbs that alternate and those that do not.
2. Constraints

In order to find out which of the three constraints the learners were more sensitive to, the means for each constraint were examined. The within subject factors were BRC (Broad Range Constraint), NRC (Narrow Range Constraint), and MC (Morphological Constraint). To compare the means with the different constraint types, Repeated Measurements in General Linear Model were used. There were significant differences between the means of the constraints within a 95% confidence level.

So, it could be argued that subjects were most sensitive to BRC and then to NRC, and least sensitive to MC (BRC \rightarrow NRC \rightarrow MC) regardless of the group as shown in Table 6.

### TABLE 6
Descriptive Statistics on Constraints

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRC</td>
<td>.6250</td>
<td>.2142</td>
<td>80</td>
</tr>
<tr>
<td>BRC</td>
<td>.7375</td>
<td>.2753</td>
<td>80</td>
</tr>
<tr>
<td>MC</td>
<td>.5813</td>
<td>.2778</td>
<td>80</td>
</tr>
</tbody>
</table>

This time, constraints were compared with respect to each age group. The results were statistically significant between the high school and the university groups, but not significant between the elementary and the middle school groups.

### TABLE 7
Tests of Within-Subjects Effects (Constraints)

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACTOR1</td>
<td>1.040</td>
<td>2</td>
<td>.520</td>
<td>14.870</td>
<td>.000</td>
</tr>
<tr>
<td>Error</td>
<td>5.523</td>
<td>158</td>
<td>3.496E-02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

First, Table 8 indicates that the elementary school students were sensitive to the constraints in the following order: BRC \rightarrow NRC \rightarrow MC. However, the result was not statistically significant.
Second, Table 9 indicates that in the case of middle school students, the order was BRC → MC → NRC. However, the result was not statistically significant either.

Third, Table 10 shows that in the case of high school students, the order was BRC → NRC → MC, the same result as that of the elementary school students. This result is statistically significant as shown in Table 11, and therefore, it can be inferred that they probably made grammatical judgments based on semantic constraints (BRC/NRC) and were less sensitive to morphological constraint.

Finally, University students were sensitive to the constraints in the following order as shown in Table 12: BRC → NRC → MC. This result was also statistically significant as shown in Table 13.
TABLE 12
Descriptive Statistics (U)

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRC</td>
<td>.6875</td>
<td>.1966</td>
<td>20</td>
</tr>
<tr>
<td>BRC</td>
<td>.8500</td>
<td>.2052</td>
<td>20</td>
</tr>
<tr>
<td>MC</td>
<td>.6625</td>
<td>.3065</td>
<td>20</td>
</tr>
</tbody>
</table>

TABLE 13
Tests of Within-Subjects Effects (U)

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACTOR1</td>
<td>.415</td>
<td>2</td>
<td>.207</td>
<td>9.924</td>
<td>.000</td>
</tr>
<tr>
<td>Error(FACTOR1)</td>
<td>.794</td>
<td>38</td>
<td>2.089E-02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus, we can conclude that learners are generally most sensitive to BRC, and next to NRC and least sensitive to MC. This result provides support for Pinker’s (1989) theory in that the second language learners rely more on semantic constraints when determining dativizability.

3. Discussion

The mean scores for grammatical judgment went up gradually. That is, middle school students did better than elementary school students, high school students better than middle school students, and university students better than high school students.

Although the evidence is inconclusive as to the exact reason for this developmental improvement, two reasons seem likely. One of the reasons has to do with the degree of L1 influence. It may be argued that as the students advance at school, the degree of L1 transfer decreases. Heesook Kim and Eunjoo Moon (2003) showed that L1 transfer plays a significant role in L2 acquisition of dative constructions in English. The results from an elicited production task and a grammaticality judgment task revealed that Korean learners of English strongly preferred the PD to the DOD construction. The result of the present study also showed the same tendency, as is shown in Table 14. The students preferred the PD form, regardless of grammaticality, for each verb. For example, majority of students marked ‘PD only’ for alternating verbs such as give, send2, throw1, open2 and teach.

The second reason may be that students overgeneralized the alternation at the initial stage of learning, but gradually became more sensitive to constraints governing dative alternation in English.
<table>
<thead>
<tr>
<th>Verb</th>
<th>Frequency</th>
<th>Percent</th>
<th>Verb</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give</td>
<td>PD 45</td>
<td>56.3</td>
<td>Open1</td>
<td>NR 1</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>DOD 12</td>
<td>15.0</td>
<td></td>
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(NR = no response)
The results regarding the constraints showed that subjects were generally most sensitive to BRC and then to NRC, and least sensitive to MC. Thus, it can be inferred that second language learners are more sensitive to semantic constraints (NRC, BRC) than to morphological constraint (MC) when determining dative alternation in English. It is recommended that second language learners acquire both the semantic and morphological constraints to overcome overgeneralization regarding the acquisition of dative alternation in English.

V. CONCLUSION

Korean learners of English showed a gradual development in their ability to discriminate between alternating and non-alternating dative verbs in English (L2). In other words, Korean students overgeneralized the alternation (e.g., from the PD to the DOD) at the initial stage of learning. However, the overgeneralization decreased as the students advanced at school.

The results also showed that subjects were most sensitive to broad range constraint, then to narrow range constraint and least sensitive to morphological constraint (BRC→NRC→MC). These results seem to support the Pinker's claim that acquisition of argument structure is a process of forming increasingly narrow verb semantic structures.

It turned out that semantic constraints, especially the possession constraint, are the generally universal constraints that determine dativizability (since Korean learners of English were more sensitive to semantic constraint than to morphological constraint). Consequently, one of the pedagogical implications of this study is that it may be helpful to make use of 'possession constraint' when teaching dative constructions to Korean learners of English. Just giving some good sample sentences displaying this constraint, as illustrated in (9) below, would certainly facilitate learning. Further, the result revealed that it is necessary to draw more attention to 'morphological constraint' when teaching dative constructions to Korean learners of English.

Fortunately, as Bley-Vroman (1989) argues, instruction and negative evidence could play a role in L2 acquisition in contrast with evidence against this in the case of L1 acquisition (Choonkyong Kim, 1996).

(9) The three types of constraints determining dative alternation in English

1. Broad semantic constraint (possession constraint): Only the indirect objects which are animate and are capable of possession can occur in the DOD construction.
b. Sam opened the can/the window for Lisa.
   Sam opened Lisa the can/the window.

(2) Narrow semantic constraint (narrowly defined semantic features): Pinker (1989) proposes
that lexical alternations are generalized only to small classes of verbs with similar
semantic features.
   c. Bill told/shouted the story to Jenny.
      Bill told/shouted Jenny the story.
   d. Susan threw/pushed a ball to Pam.
      Susan threw/pushed Pam a ball.

(3) Morphological constraint: Dative verbs of native origin (not Latinate) which are
monosyllabic or bisyllabic with initial stress can occur in DOD construction.
   e. Eugene told/reported the news to Tom.
      Eugene told/reported Tom the news.
   f. Joe built/constructed a house for Mary.
      Joe built/constructed Mary a house.

Thus, negative evidence and the formal instruction with qualitative input such as illustrated in
(9) above will help L2 learners of English to avoid overgeneralization in the acquisition of dative
alternation in English.

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APPENDIX
Grammaticality Judgment Task on Dative Alternation in English

Read the following sentences. Decide whether only PD, only DOD, or both PD and DOD forms are possible. Circle the letter (a, b, c) of one of the given options. If you think only sentence a is correct, circle the letter a; if you think only sentence b is correct circle the letter b; if you think both sentences a and b are correct, circle the letter c. The English verb and its meaning in Korean are specified in the parentheses.

1. a. Eric gave a pencil to Ann. (give: 주다.)
   b. Eric gave Ann a pencil.
   c. both
2. a. I donated some books to the library. (donate: 기부하다.)
   b. I donated the library some books.
   c. both
3. a. I sent a letter to New York. (send: 보내다.)
   b. I sent New York a letter.
   c. both
4. a. I sent a letter to Julie. (send: 보내다.)
   b. I sent Julie a letter.
   c. both
5. a. Ann pushed the box to Tom. (push: 밀다.)
   b. Ann pushed Tom the box.
   c. both
6. a. I threw the ball to Sandy. (throw: 던지다.)
   b. I threw Sandy the ball.
   c. both
7. a. I threw the ball to the tree. (throw: 던지다.)
   b. I threw the tree the ball.
   c. both
8. a. I opened the door for John. (open: 열다.)
   b. I opened John the door.
   c. both
9. a. Tom opened a coke for Mary. (open: 열다.)
   b. Tom opened Mary a coke
   c. both
10. a. I whispered the news to Lisa. (whisper: 청암말로 얘기하다.)
    b. I whispered Lisa the news.
    c. both
11. a. Jack told the story to her. (tell: 말하다.)
    b. Jack told her the story.
c. both
12. a. I reported the news to Mr. Kim. (report: 보고하다.)
   b. I reported Mr. Kim the news.
   c. both
13. a. Mrs. Smith explained this to Peter. (explain: 설명하다.)
   b. Mrs. Smith explained Peter this.
   c. both
14. a. Bill built a house for Mary. (build: 건설하다.)
   b. Bill built Mary a house.
   c. both
15. a. Bill constructed a house for Mary. (construct: 건설하다.)
   b. Bill constructed Mary a house.
   c. both
16. a. Mrs. Smith cut the cake for him. (cut: 자르다.)
   b. Mrs. Smith cut him the cake.
   c. both
17. a. I'll show my dog to you. (show: 보여주다.)
   b. I'll show you my dog.
   c. both
18. a. I drove the car for Jane. (drive: 운전하다.)
   b. I drove Jane the car.
   c. both
19. a. Peter taught English to Jinho. (teach: 가르치다.)
   b. Peter taught Jinho English.
   c. both
20. a. I said nothing to him. (say: 말하다.)
   b. I said him nothing.
   c. both

Applicable levels: elementary, secondary, tertiary, university education
Key words: dative alternation, constraints

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