Does Instruction Make a Difference in the Order of Acquisition of English Grammatical Morphemes?

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This study attempts to answer the question: What would happen to the established order of acquisition of two English grammatical morphemes: plural -s and possessive –s, if students received formal classroom instruction on the morpheme of possessive –s only? A syntax elicitation task was conducted twice to eight Chinese English as a second language learners at a university in the U.S. Between the pretest and the posttest, four of the eight students received a 50-minute classroom instruction on possessive –s, while the other four did not. Results of statistical analyses of their performances on the tasks indicate that there was no statistically significant difference between the acquisition order of the experimental group and that of the control group. On the basis of this finding, the paper concludes that, regarding the two morphemes, formal classroom instruction do not alter the established order of acquisition.

I. INTRODUCTION

Researchers in the area of morpheme acquisition order have suggested a "natural" order of acquisition common to all English as a second language (ESL) learners regardless of age, learning environment, or first language background. For example, Dulay and Burt (1973) reported that ESL learners acquire morphemes in the following order: (1) plural –s, (2) progressive –ing, (3) articles a, an, the, (4) regular past –ed, (5) third person singular present –s, and (6) possessive –s. For these morphemes, many other researchers have found high correlations in acquisition order. At the same time, some researchers have suggested that instruction has no effect on the morpheme acquisition order because it is due to the learner’s innate linguistic
ability. Some other researchers, including Long (1983), however, have shown that formal classroom instruction can change the order of acquisition.

One of the major concerns we have as ESL/EFL teachers is with the usefulness and effect of formal classroom instruction. If we accept the natural order hypothesis, we should also accept the implication of the hypothesis: the order of morpheme acquisition has nothing to do with the type of exposure to English and, so, instruction may not be necessary. This is a serious implication because it ultimately says that students' acquisition of L2 will be accomplished "naturally" and formal classroom instruction, which is our vocation, may be unnecessary. On the contrary, if the established order of acquisition can be changed by formal classroom instruction, then the significance of formal classroom instruction can also be recognized.

The current study investigates whether formal classroom instruction on morphemes can change the typically suggested order of acquisition of those morphemes. To be more specific, the study attempts to determine the effect of formal instruction on the acquisition order for two English grammatical morphemes: plural -s and possessive -s. The research question is as follows: What would happen to the established order of acquisition of two English grammatical morphemes, plural -s and possessive -s, if students received formal classroom instruction on the morpheme of possessive -s only?

The reason that the two morphemes were selected was that they look similar in appearance but differ in rank orders of accuracy in all the previous studies: the plural -s is to be acquired much earlier than the possessive -s (Goldschneider & DeKeyser, 2001). It may be possible that different amount of instruction on the two morphemes, plural -s and possessive -s, results in an acquisition order of the two morphemes that are different from the typically suggested acquisition order of these morphemes. It was thus hypothesized: different amount of instruction on the two morphemes, plural -s and possessive -s, results in a different acquisition order of the two morphemes from the one previously established.

II. LITERATURE REVIEW
Brown's (1973) longitudinal study of three American children is recognized as the benchmark study in morpheme acquisition order research. Brown's research set the standard for scoring and comparing data on morpheme acquisition order by introducing the concept of suppliance in obligatory context (SOC). SOC is a method in which the percentage of morphemes supplied in obligatory contexts is calculated. This method was used almost all the previous studies. Using SOC, Brown elicited from the children data on 14 grammatical morphemes and found that they showed a similar order in acquiring the 14 morphemes. This finding led to a number of studies on the order of morpheme acquisition. De Villiers and de Villiers (1973) used Brown's 14 morphemes in their cross-sectional study of 21 English-speaking children. They used, however, a modified version of Brown's scoring method. Instead of using Brown's cutoff point of acquisition (90% of accuracy), they simply ranked the morphemes according to relative accuracy of use. They found an order of acquisition similar to the one Brown found.

Since the early days of second language acquisition research, researchers have been interested in whether the processes involved in first and second language acquisition is same or different. Naturally, research on the order of L1 morpheme acquisition led to research in the order of L2 morpheme acquisition. Dulay and Burt's (1973) study was the starting point for research on the order of morpheme acquisition in a second language. Dulay and Burt predicted that if a common order were found for L2 children, it would be different from the order Brown (1973) suggested for L1. They investigated the performance of 152 Spanish-speaking children, aged 5 to 8, from two locations in California and one in New York. They used an instrument called the Bilingual Syntax Measure (BSM) to elicit data from the children. The BSM consists of 7 cartoon pictures and 33 questions designed to elicit some type of response from a child so that a degree of proficiency may be calculated for the structures the child produces. The BSM used by Dulay and Burt included eight of the 14 morphemes from Brown (1973). Results indicated that the overall rank order of the acquisition of the morphemes was similar across the three groups, and as they predicted, that order was different from the order suggested by Brown (1973). Their next
study (Dulay & Burt, 1974) confirmed these findings. In this study, they looked at two groups of children with two different L1s, Spanish and Chinese, and found similar orders for the two groups.

After Dulay and Burt reported a consistent order for ESL children, Bailey, Madden, and Krashen (1974) investigated whether there was a consistent acquisition order among adult ESL learners, and if so, whether it was different from the order shown by ESL children. They administered the BSM to 73 adults, aged 17 to 55. Thirty-three of the 73 participants were Spanish speakers, and the rest were non-Spanish speakers. From the results, Bailey et al. found that the acquisition orders for Spanish and non-Spanish speakers were similar and that the overall order for the adults was very similar to the child order found in Dulay and Burt (1973). In contrast, Hakuta (1976) reported that the acquisition order he found in a longitudinal study of one Japanese child ESL learner did not correlate with any of the orders from the previous cross-sectional studies. This finding started not only the debate over which method was best for studying morpheme acquisition order but also criticism of research on morpheme acquisition order itself. As Goldschneider and DeKeyser (2001) summarized succinctly, some researchers criticized that the group of morphemes used in acquisition order studies is too linguistically heterogeneous, that the scoring methods do not take function into account and miss oversuppliance, that the morphemes studied constitute a very small part of the language, and that there is no cross-linguistic generalization.

Larsen-Freeman (1975) conducted a research on adult ESL order of acquisition in order to identify causes underlying the order. After brief discussion of possible factors, including semantic and syntactic complexity, phonological form, perceptual salience, and frequency of occurrence, Larsen-Freeman concluded that there might be more than a single cause behind the order. A number of other researchers too have tried to come up with explanations for the morpheme acquisition order. Some researchers suggested that the L2 morpheme acquisition order is due to some sort of innate linguistic ability of the learners. Others, however, believed that the order could be explained by looking at properties of morphemes and general cognitive principles of learning. Still others thought that the phenomenon
could be explained with other factors external to the morphemes, such as L1 transfer. Krashen (1977) and later Pienemann (1998) suggested that the acquisition order phenomenon was a result of our innate linguistic ability. In contrast, Cameron and Kang (1999) investigated utilization of major English morphemes by 6-year-old Chinese-speaking children who were learning English as a second language in Canada. Analyzing the emergent phase in the children’s acquisition of English morphemes, they concluded that the three existing explanations (i.e., the innate linguistic hypothesis, the first language transfer, and the saliency hypothesis) were not enough to explain the pattern of the morpheme acquisition order. Goldschneider and DeKeyser (2001) focused on variance in acquisition order and, to explain the variance, conducted a reanalysis of the data they got from 12 previous studies. Goldschneider and DeKeyser's conclusion was similar to that of Larsen-Freeman (1975). A large portion of the total variation is explained by five determinants: perceptual salience, semantic complexity, morphophonological regularity, syntactic category, and frequency.

An important issue that is closely related to the attempt to find causes for the morpheme acquisition order is whether instruction has any effect on the order. For example, Krashen's Monitor Theory, which used the "natural" order of morpheme acquisition as evidence of the workings of acquisition, rejected any effect of formal instruction on the morpheme acquisition order. Pica (1983) investigated the effects of formal classroom instruction versus learning in a naturalistic environment and found that different conditions of exposure to English did not significantly alter the acquisition order of ESL learners. Pica's conclusion was that instruction did not affect the acquisition order. In contrast, Lightbown (1983) came up with a rather ambivalent conclusion in a longitudinal study on 36 French-speaking Canadian ESL students. After analyzing and discussing the data collected from the students' language, the textbook, the teacher's speech, and the interaction between the teacher and the students, Lightbown concluded that she could not make a conclusion on whether formal classroom instruction had any effect on the acquisition order.

Some of the researchers who investigated the effect of instruction on morpheme acquisition order looked at saliency as a most possible explanation
for the order. Perkins and Larsen–Freeman (1975) tried to find answers to the following questions: "First, would the same acquisition order exist for ESL learners not receiving formal instruction, and secondly, for those who were receiving instruction, what would happen to the established order if only certain grammatical morphemes were to be explained and drilled?" (p. 238). After analyzing data from two groups of ESL learners (12 Venezuelan and six Spanish–speaking ESL learners), Perkins and Larsen–Freeman concluded that instruction might result in improved performance per morpheme for the morphemes taught but not necessarily a change in acquisition order. They suggested that a better explanation could be found in occurrence frequency and perceptual salience of morphemes. If the acquisition order is a function of salience, as Perkins and Larsen–Freeman suggested, then a primary task for teachers is to make morphemes more salient in an attempt to bring them to the learner's consciousness. Doughty and Williams (1998) took up this issue and insisted that typographical enhancement is a way of increasing saliency. Kupferberg and Olshtain (1996) also tested the effect of enhanced contrastive input on the acquisition of difficult grammatical structures (particularly morphemes) in English by 137 Hebrew speakers. The results indicated that the contrastive instruction increased salience of the difficult structures taught and, as a result, helped the students who received the contrastive instruction acquire those structures more easily and earlier. Although they did not address the morpheme acquisition order directly, they showed evidence that instruction may affect the acquisition order. One of the strongest supports for instruction came from Long (1983), who challenged the natural order hypothesis (Krashen's Monitor Theory) and suggested a redefinition of learning, thereby, of instruction. What is important is that Long proved the effect of formal instruction on acquisition order of grammatical morphemes, showing that instruction can change the order. Therefore, as mentioned above, this paper attempts to clarify whether or not formal classroom instruction on morphemes can change the typically suggested order of acquisition of those morphemes.

III. METHODS
1. Participants

The participants in this study were 8 ESL students from Taiwan. All of them were in the same class at a low intermediate level of an ESL program operated by a university in the U.S. All participants were female, aged 19 to 24. All of them had studied English for more than 6 years and had been in U.S. for one to three months. Two of the participants had been to English-speaking countries (e.g., Australia, Canada), and five of them had been to other-than-English-speaking countries for traveling. All of the participants thought their overall English proficiency to be intermediate. They all volunteered to participate in the experiment. They were randomly divided and assigned to two groups, experimental and control.

2. Procedures

The participants were asked to take the pretest, which lasted for 20 minutes. A week after the pretest, the participants were randomly divided and assigned to two groups, an experimental group and a control group, and the experimental group received a 50-minute formal instruction on the usage of possessive -s, while the control group was not. The instruction was given by a female native English speaker who was working for a master's degree in TESOL. A week after the instruction, all the participants (of both the experimental and control groups) took the posttest for 25 minutes.

3. Materials

The existing Syntax Elicitation Task (SET) was originally intended to be used. The SET is designed to elicit from subjects the production of basic English grammatical morphemes such as article, copula, possessive, progressive, and plural. The SET, however, was protected by copyright and was too expensive to be purchased for this study. Therefore, a special task based on the SET was devised for this study. This task involved a set of four drawings and four short questions.

The set of drawings was originally from Turone and Yule (1989) and was
modified by the researcher to elicit production of possessive -s and plural -s from the students. The drawings show a grocery store where a mother (Nancy) and her daughter (Ann) put some apples and other items into a cart, the daughter ate one of the apples, and the mother checked out. In the first part of the pretest, the drawing was shown to the participants, and they were asked to describe what was happening in the drawing.

In the second part, they were asked to answer four short questions: 1) Who is Ann? (explain the relationship with Nancy), 2) How many apple(s) are in the cart when Nancy tries to pay for her shopping? 3) Who is Jane? (explain the relationship with Nancy), and 4) What would Jane find in her bag? These questions were devised for the students who might avoid using possessive -s and plural -s in the first part. In fact, in a pilot experiment, the drawing was given to an international graduate student, who was asked to describe it in spoken English. The student did not use possessive -s and plural -s in his description of the drawing. Moreover, a tentative analysis of the results of the pretest indicated that most of the students tended to avoid the use of plural -s and possessive -s. Therefore, in order to increase specific obligatory occasions for the production of the two morphemes, in the posttest, the drawing was slightly modified, two more questions were added in the second part, and completion part was added as the third part. The completion test was in tended to elicit more production of possessive -s and plural -s (see Appendix for more information).

The materials for a classroom instruction were largely from the textbook the subjects used in the regular ESL classes, Azar (1992), but some additional materials and exercises designed to promote subjects' learning and use of possessive -s were added.

4. Analyses

To calculate the group scores for both pretest and posttest, the concept of suppliance in obligatory contexts (SOC) introduced in Dulay and Burt (1974) was used. One of the problems with SOC scoring is that it ignores the possible overuse of the morphemes. A student may appear to be completely accurate in the use of particular morphemes because she supplies
them in all obligatory contexts, but may also use them inappropriately in other contexts. Despite the problem (and others), this study decided to use SOC scoring because the purpose was to see whether the order of acquisition of English morphemes established by previous researches could be changed, and most of the previous researches used SOC scoring. The SOC score in this study was calculated as follows.

\[
SOC = \frac{(n \text{ correct supply in obligatory context } \times 2) + (n \text{ misformation in obligatory context } \times 1)}{\text{total obligatory contexts } \times 2}
\]

The participant receives 2 points if a morpheme is supplied in its correct form in an obligatory context. If the context called for a morpheme to be produced and none is supplied or missupplied, the participant receives 0 point. If a morpheme is supplied in a required context, but in an incorrect form, the participant receives 1 point. There could be missuppliance of plural -s as in "two apple," but there could not be missuppliance of possessive -s for an obligatory context. For this reason, 1 point was not given in this study. The following null hypothesis was implicated in the analysis.

\[
H_0: \text{There is significant difference between the experimental and control groups (e=c)}
\]

\[
H_A: \text{There is no significant difference between the experimental and control groups (e \neq c)}
\]

This null hypothesis was motivated to be rejected to support the research hypothesis suggested in the introduction. In addition, group averages were computed for possessive -s and plural -s for both pretest and posttest. Two sample t-test procedures were performed to determine whether these proportions were significantly different for the two groups of participants at the .01 level. SAS was conducted to get p value and make a decision.

IV. RESULTS AND CONCLUSION
The results of the experiment are given in Table 1. The table shows the acquisition accuracy that the eight participants showed individually and as groups in the pretest and the posttest.

In the pretest, the two groups showed no difference for the mean and SD for possessive -s. The null hypothesis, however, was rejected for plural -s, and alternative hypothesis was accepted (t = 3.88, df = 6, p < .01). There was, therefore, difference between experimental and the control groups for plural -s. In the posttest, the experimental group did better than the control group, but there was no statistically significant difference for possessive -s (t = .85, df = 6, p < .476). The experimental group was better than the control group, but there was no significant difference for the plural -s (t = .16, df = 6, p < .878). Null hypothesis was accepted in both posttests. That is, there was no statistically significant difference between the two groups and, as a result, the hypothesis of this study was disconfirmed.

<table>
<thead>
<tr>
<th>Student</th>
<th>pretest possessive</th>
<th>pretest plural</th>
<th>posttest possessive</th>
<th>posttest plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
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<td>0.75</td>
<td>0.7775</td>
</tr>
<tr>
<td>Student 2</td>
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<td>0.846</td>
<td>0.818</td>
<td>0.8665</td>
</tr>
<tr>
<td>Student 3</td>
<td>1</td>
<td>0.8</td>
<td>1</td>
<td>0.5625</td>
</tr>
<tr>
<td>Student 4</td>
<td>1</td>
<td>0.875</td>
<td>0.75</td>
<td>0.8665</td>
</tr>
<tr>
<td>MEAN</td>
<td>1</td>
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<td>0.76825</td>
</tr>
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<td>SD</td>
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<td>0.1181</td>
<td>0.14344</td>
</tr>
<tr>
<td>Student 5</td>
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<td>0.5625</td>
</tr>
<tr>
<td>Student 6</td>
<td>1</td>
<td>0.6665</td>
<td>0.857</td>
<td>1</td>
</tr>
<tr>
<td>Student 7</td>
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<td>0.8</td>
<td>0.6665</td>
</tr>
<tr>
<td>Student 8</td>
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<td>0.75</td>
<td>0.769</td>
</tr>
<tr>
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<td>SD</td>
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<td>0.08816</td>
<td>0.080769</td>
<td>0.187073</td>
</tr>
</tbody>
</table>

2 sample t-test 0.008201 0.425661 0.878828

* Students 1–4 were in the experimental group, while students 5–8 were in the control group.

The results indicate that the formal classroom instruction did not have any significant effect on the order of acquisition of the two morphemes. This
finding may indicate that the explanation with the learner's innate linguistic ability is correct. Or it may indicate that the formal classroom instruction was not sufficient to make any difference; there was only one 50-minute instruction. It is thus suggested that a study with relatively longer and more systematic instruction is desirable.

An unexpected finding is that, as the table shows, the participants as a whole did better for possessive -s than for plural -s in both pretest and posttest. This pattern of acquisition order is different from the established acquisition order. In all previous studies, plural -s is higher in ranking order than possessive -s. This inconsistency may be explained with the L1 transfer hypothesis. Chinese has a similar representation to English plural -s, but nouns are not pluralized in Chinese (Jiang, 2006). Thus, it can be inferred that, due to positive L1 transfer, the participants whose L1 was Chinese did better for possessive -s than for plural -s in the task. More attention must be paid to the relationship between order of acquisition of L2 morphemes and L1 transfer.

REFERENCES

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APPENDIX

Pretest

Part I: Description of the Drawing

[The drawings show a grocery store where a mother (Nancy) and her daughter (Ann) put some apples and other items into a cart, the daughter ate one of the apples, and the mother checked out.]

Here is a set of four drawings numbered 1 to 4. They show a series of events. Look over the drawings and think about what is happening. First, describe what is happening in the grocery store as much as in detail as you can. When you describe the drawing 1 and 2, you should mention what kinds of food each of the two women has in their own cart.

Part II: Questions

1) Who is Ann? (explain the relationship with Nancy)
2) How many apple(s) are in the cart when Nancy tries to pay for her shopping?
3) Who is Jane? (explain the relationship with Nancy)
4) What would Jane find in her bag?

Posttest

Part I: Description of the Drawing

Here is a set of four drawings numbered 1 to 4. They show a series of events. Look over the drawings and think about what is happening. First,
describe what is happening in the grocery store as much as in detail as you can. When you describe the drawing 1 and 2, you should mention what kinds of food each of the two women has in their own cart. Try not to use possessive pronouns such as her, his, and my.

Part II: Questions

1) Who is Ann? (explain the relationship with Nancy)
2) How many apple(s) are in the cart when Nancy tries to pay for her shopping?
3) Who is Jane? (explain the relationship with Nancy)
4) What would Jane find in her bag?
5) To whom does the black bag belong?
6) What does Ann do in picture 1?

Part III: Completion Test

Complete the following sentences by filling out the blanks.

1) There are _______ _______ and _______ _______ in the selves that are behind Nancy in the drawing 3.
2) The cart which Nancy is using has wheels with _____ legs.
3) Jane will find ____ ____ which has been bitten by Ann when she checks out her shopping.

Key words: acquisition order, instruction, grammatical morpheme, plural -s, possessive -s

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