

# Explicit Instruction vs. Natural Exposure in L2 Acquisition of Adjective Ordering in English

Marie Endo, Mayumi Shibuya, and Makiko Hirakawa

## 1. Introduction

This paper investigates whether multiple adjective orderings in English can be acquired by Japanese learners as a result of explicit instruction vs. natural exposure. It has been claimed that English observes direct modification for prenominal adjectives and that there are adjective ordering restrictions (AOR). If there are two or more adjectives in English, the ordering of adjectives is rather strictly determined, as shown in the examples in (1). *Small square table* (1a) is acceptable, but *\*square small table* (1b) is unacceptable. In contrast, there are no restrictions on adjective ordering in Japanese. So the Japanese equivalents in (2) are both acceptable.

- (1) a. small square table  
b. \*square small table (Sproat and Shih, 1991: 565)

- (2) a. chiisana shikakui ie  
small square house  
b. shikakui chiisana ie  
square small house (Sproat and Shih, 1991: 582)

Assuming a hierarchical structure for prenominal modification, Sproat and Shih (1991) have suggested two types of modification: direct and indirect. Direct modification refers to modification where each adjective assigns its  $\theta$ -role directly to its sister noun, and adjective ordering is strictly determined as in English. In contrast, indirect modification refers to modification where an adjective does not assign its  $\theta$ -role directly to the noun and the adjective ordering is free. Baker (2003) argues that adjectives in Japanese cannot be merged directly with nouns and that they modify nouns indirectly with copular and tense elements in a relative clause form as shown in (3). Note that *utsukushi*-type adjectives must bear a tense marking suffix (i.e., *-i*, *-katta*) when they modify nouns in Japanese.

- (3) a. utsukushi-i onna  
beautiful-PRES woman  
'a beautiful woman / a woman who is beautiful'  
b. utsukushi-katta onna  
beautiful-PAST woman  
'a woman that was beautiful' (based on Baker, 2003: 1(2))

---

\* Marie Endo, Suka Junior High School, Mayumi Shibuya and Makiko Hirakawa, Chuo University. Any questions should be directed to hirakawa@tamacc.chuo-u.ac.jp. We thank all the participants in our study. We have benefitted greatly from practical feedback David Stringer had given us in devising our experiment. Special thanks go to John Matthews and Neal Snape for their help with creating test materials and audio stimuli as well as preparing the manuscript, and to the audience of GASLA 2015 who gave us invaluable feedback. The study would not have been possible without generous support from Margaret Thomas, Richard Logan, Joyce Maeda, and Zorana Vasiljevic. All the remaining errors are our own. The study was in part supported by Grant-in-Aid #26284081 from the Japan Society for the Promotion of Science to the third author.

It should be also noted that forms of attributive adjectives such as (3a, b) are identical to the predicative form of the adjectives (e.g., *Hanako-wa utsukushi-i/katta* ‘Hanako is/was beautiful’). This shows that attributive adjectives in Japanese are a type of relative clause.

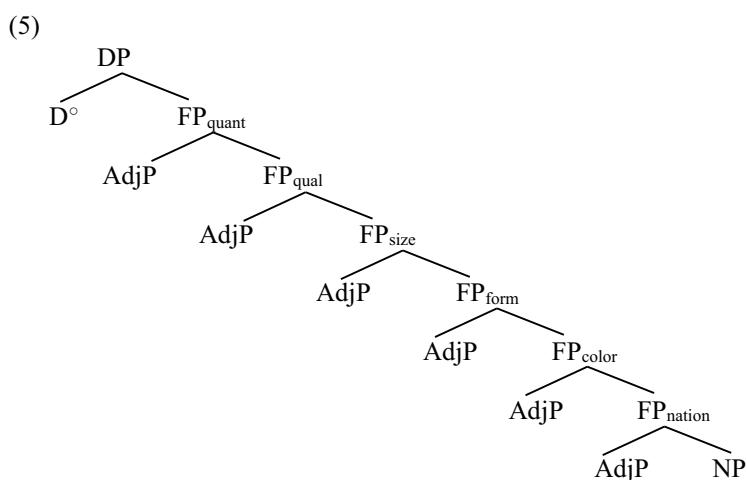
The present paper is organized as follows. We briefly review Laenzlinger (2005) in section 2, and previous studies on adjective ordering in L2 English are presented in section 3. We report on the present study in section 4, and the results are presented in section 5. Finally section 6 discusses the main findings and concludes the paper.

## 2. Research Background

In this study, we follow the adjective ordering in (4), which was suggested by Laenzlinger (2005).

- (4) [quantif ordinal > cardinal] > [speak-orient subjective comment > evidential] > [scalar physical property size > length > height > speed > depth > width] > [measure weight > temperature > wetness > age] > [non-scalar physical property shape > color > nationality/ origin > material]  
(Laenzlinger, 2005: 650 (14))

Adjectives included in QUANTIFICATION to MEASURE can be referred to as Nonabsolute (NA) adjectives and those in NON-SCALAR PHYSICAL PROPERTY as Absolute (A). Nonabsolute adjectives can be used with adverbs such as *very* and *extremely* to say that a thing or a person has more or less of a particular quality, such as *comfortable* and *happy*; thus, nonabsolute adjectives have a value according to a scale comparison. In contrast, absolute adjectives such as *Japanese*, *red* and *wooden* allow no intermediate degrees; in other words, absolute adjectives possess a value for which they do not rely on a scale of comparison. Adjectives which refer to absolute properties (i.e., absolute adjectives) are projected closer to the head noun than adjectives which refer to relative properties (i.e., nonabsolute adjectives). Laenzlinger suggests that the hierarchical order of adjectives can be explained if we assume the adjective-related functional projections occur between the determiner and the noun.



(Laenzlinger, 2005: 653 (16))

As shown in (5), all attributive adjectives are adjoined to a noun phrase. Laenzlinger argues that adjectives are merged as specifiers of their corresponding functional phrase categories.

### 3. Previous Studies

#### 3.1. Stringer (2013)

Stringer (2013) examined L2 knowledge of adjective ordering restrictions in English by learners of three L1 backgrounds (i.e., Arabic, Korean, and Chinese), and reported no L1 transfer effects in their L2 grammars. Arabic has strict adjective ordering restrictions and they are in the mirror order as adjectives follow the noun they modify, as shown in (6). (Arabic adjectives agree in Definiteness and Case.) In Chinese, if there are *de*-marked modifiers, the ordering is free, as shown in (7a). Bare modifiers, however, exhibit rigid ordering, as shown in (7b). Chinese therefore has both direct and indirect modification. In Korean, there is an adjective marker which is taken as a relative clause marker (glossed as REL) and the ordering is non-restrictive, as shown in (8).

(6) <Arabic>

l-kitaab-u	l-ʔaxɖar-u	ʃ-ʃaɖiir-
the-book-NOM	the-green- NOM	the-little- NOM
‘The little green book’		

(Fassi Fehri, 1999: 107)

(7) <Chinese>

a.	hǎo-de	yuán-de	pánzi	/	yuán-de	hǎo-de	pánzi
	good-REL	round-REL	plate	/	round-REL	good-REL	plate
	‘nice round plate’				‘round nice plate’		

b.	hǎo	yuán	pánzi	/	*yuán	hǎo	pánzi
	good	round	plate	/	round	good	plate
	‘nice round plate’				‘*round nice plate’		

(Sproat and Shih, 1991: 565–566)

(8) <Korean>

metji-n	dung-eun	jeopsi	/	dung-eun	metji-n	jeopsi
nice-REL	round-REL	plate	/	round-REL	nice-REL	plate
‘nice round plate’						

(Sproat and Shih, 1991: 565–566)

There were five proficiency levels of learners in each language group (i.e., L1 Arabic (n=119), L1 Chinese (n=23), and L1 Korean (n=21)). There was also a control group of 20 native English speakers. The task was a binary-preference task which included audio stimuli with pictures. Participants were asked to listen and choose one of the two choices as an appropriate description of the picture given. An example of the task is shown in (9).

(9) The house has a  fence.

- a. long white wooden      b. wooden white long

(Stringer, 2013: 94 (18))

The results showed (i) that all three groups revealed knowledge of the nonabsolute-absolute distinction (Arabic: 83%; Chinese: 80%; Korean: 94%), (ii) that their accuracy of the nonabsolute-absolute distinction improved as their proficiency level increased (from 74% to 97%), and (iii) that the learners had difficulty in the combinations of the same category, i.e. NA-NA, in other words, the participants performed at chance or just above chance. Importantly, no L1 influence was observed. Thus, Stringer argued that the NA-A distinction may be acquired as it is part of Universal Grammar, but the adjectival hierarchy beyond the NA-A distinction is complicated and difficult for L2 learners to acquire.

### 3.2. Endo et al. (2013)

Endo et al. (2013) expanded on Stringer's (2013) study with a new population, i.e., Japanese learners of English (JLEs). They investigated whether JLEs would observe adjective ordering restrictions (AOR) in English when L1 shows no AOR. There were 49 JLEs and 12 native speakers of English. They were undergraduate students in Japan and the USA respectively. JLEs were divided into two proficiency levels: Elementary (n=22) and Lower Intermediate (n=27), based on the results of the Oxford Quick Placement Test. Endo et al. (2013) hypothesized that Japanese learners would display L1 transfer effects and they would have problems with AOR in English, even though Stringer (2013) claimed no L1 influence in this domain. These participants were EFL students in Japan while the participants in Stringer (2013) were ESL students at a university in the USA. Thus, Endo et al. examined if any L1 influence would be observed in Japanese learners' interlanguage grammar.

The participants completed a written production task and a multiple-choice preference task. In both tasks, various pictures of objects such as those in (10), (11), and (12) were prepared, and each picture was presented to participants via PowerPoint.

(10)



(11)



(12)



First, the written production task required participants to freely fill in two or three adjectives that would describe an object in the picture. The task included two adjective combinations (n=3) and three adjective combinations (n=3). The prediction was that JLEs would produce adjectives in both an appropriate and inappropriate order. Examples of the production task are shown in (13).

(13) a. a (an) \_\_\_\_\_ girl (n=3)

b. a (an) \_\_\_\_\_ dog (n=3)

Second, in the preference task, participants were asked to choose one of the three options given: one correct (e.g., *a long narrow road*) and the other two incorrect choices (e.g., *\*a narrow long road*, and *both choices are OK*). Examples of the preference task are shown in (14).

(14) They are cycling on \_\_\_\_\_ .  
 a. a narrow long road  
 b. a long narrow road  
 c. Both (a) and (b) are OK.

The learners' responses for the production task showed that native speakers produced adjectives in the expected orders 63% of the time; however, the two learner groups, Elementary and Lower Intermediate groups, did so only 25% of the time. In addition, two learner groups overwhelmingly produced irrelevant responses where words other than adjectives were produced (60% for the Elementary group and 56% for the Lower Intermediate group).

Endo et al. (2013) drew two conclusions. First, the Elementary and Lower Intermediate groups did not observe AOR in English because the accuracy rates were from 50% to 70%, choosing a number of incorrect orderings. Second, the JLEs had much difficulty in distinguishing the ordering in the same categories (i.e., NA-NA, A-A), which partially replicated the results of Stringer (2013). The accuracy rate of NA-A combinations was also low (around 65 to 70%), which differed from Stringer's findings.

## 4. Present Study

The present study is an expansion of Endo et al. (2013), which revealed that Japanese learners had problems with AOR in English. We have revised the task and included audio stimuli which was created by an American speaker, as it was crucial that no pause should be inserted between adjectives. In the case of direct modification, hierarchical versus parallel modification needs to be distinguished (Sproat and Shih, 1991). In hierarchical modification, each adjective assigns its  $\theta$ -role directly to its sister noun phrase and the whole structure is hierarchical. In parallel modification, each adjective assigns its  $\theta$ -role directly to the head noun independently of other adjectives. In parallel modification, if there is a separate intonation pattern from that of the hierarchical direct modification using commas and pauses, the adjective ordering becomes free. Thus, it is important to use audio stimuli to exclude a possibility of parallel modification in which AOR does not apply. We examine and compare the effectiveness of two types of L2 input: explicit instruction on the one hand and extended exposure in a natural setting on the other.

Our research questions are (i) whether JLEs know adjective ordering restrictions in English, (ii) whether there are differences in their knowledge of absolute vs. nonabsolute adjectives, and (iii) whether multiple adjective ordering in English can be acquired by JLEs as a result of explicit instruction vs. natural exposure to English.

### 4.1. Participants

There were three groups of JLEs: Instructed (n=13), Non-Instructed (n=12), and Natural Exposure (n=13) groups. Table 1 gives background information of the learners regarding proficiency scores<sup>1</sup>, age at the time of Test 1, age of initial exposure to English, and length of study. There were also 13 English native speakers as controls.

Table 1  
*Background Information of Our Participants*

Group		Non-Instructed	Natural Exposure	Instructed
Proficiency test (CASEC)	Mean Score	549.83	586.54	523.85
	SD	99.20	41.91	15.32
	Range	405-689	521-647	497-544
Age at Test 1	Mean (yrs)	19.80	20.85	19.54
	SD	0.42	0.80	0.52
	Range	19-20	20-22	19-20
Age of exposure	Mean (yrs)	11.42	9.77	10.15
	SD	1.38	2.62	2.61
	Range	8-13	5-12	5-13
Length of study	Mean (yrs)	8.4	11.08	9.38
	SD	1.43	2.72	2.63
	Range	6-11	8-15	7-15

<sup>1</sup> CASEC (Computerized Assessment System for English Communication) proficiency test had been previously administered in the university the learners attended. The learners in the present study were considered as intermediate-level learners. CASEC score of 550 is equivalent to TOEIC score of 465.

#### 4.2. Outline of the Experiment

The outline of the experiment is as follows. The three learner groups responded to the same task twice, at Test 1 (Pre-Test) and at Test 2 (Post-Test). Only the instructed group received explicit instruction (one one-hour session per week, three hours in total) after Test 1, and one month later they took Test 2. The Non-Instructed group did not receive any instruction, and they took Test 2 about one month after Test 1. Participants in the Natural Exposure group took the two tests in Japan, once before leaving to study abroad and the second time after returning from the US. The same test with two versions was used for all three groups. We altered the version of the test for each group at each testing session.

The learners in the Natural Exposure group participated in a study-abroad program at a university in the US for 5 weeks. They attended 5-hour intensive English classes daily and in addition to their classes they received natural exposure to English whilst staying with English-speaking families. Thus, they were considered as a group who were exposed to ample L2 input in a natural setting, but they did not receive any explicit instruction on adjective ordering.

The details of the instruction for the Instructed group are as follows. Two of the authors administered three teaching sessions in Japanese (three hours in total). During the first session, the participants received explicit instruction on the difference in adjective ordering between Japanese and English, and AOR of Laenzlinger (2005). The focus was on semantic categories of absolute vs. nonabsolute adjectives in the hierarchical order. Then, the learners did exercises requiring them to describe objects with two or three adjectives. In the second session, we focused on semantic categories of absolute adjectives (e.g., *shape, color*), and checked the ordering of various absolute adjectives. The learners further completed exercises such as describing objects using absolute adjectives. In the third session, we focused on semantic categories of nonabsolute adjectives. Then, learners were asked to do exercises describing objects with nonabsolute adjectives. Crucially, none of the materials in the teaching session were included in the real test.

#### 4.3. Task

We administered a judgment task with audio and visual stimuli (e.g., (15)) presented in PowerPoint to each of the three learner groups on different occasions. Participants listened to sentences as a group (each sentence, one time only) and chose one of the two adjective combinations: one was in the appropriate order (e.g., (15b)) and the other was in the incorrect order (e.g., (15a)). The participants circled (a) or (b) to show their choice on the answer sheet.

(15)



- a. Mary loves her cotton new scarf.      b. Mary loves her new cotton scarf.

Table 2  
*Materials of the Task*

Type	Semantic property	Example	# of items
<u>2 Adjectives</u>			
i. A-A	SHAPE-MATERIAL	a round glass table	5
ii. NA-NA	SIZE-WEIGHT	a small light PC	5
iii. NA-A	LENGTH-COLOR	short brown hair	5
<u>3 Adjectives</u>			
iv. NA-A-A	SUBJ.C-SHAPE-MATERIAL	a nice round glass table	5
v. NA-NA-A	SUBJ.C-AGE-COLOR	lovely new pink shoes	5

Table 2 summarizes the test stimuli in the task. In total, five types of combinations were included. There were three combinations of absolute-absolute (e.g., shape-material, *a round glass table*), nonabsolute-nonabsolute (e.g., size-weight, *a small light PC*), nonabsolute-absolute (e.g., length-color, *short brown hair*), and two combinations of three adjectives nonabsolute-absolute-absolute (e.g., subjective comment-shape-material, *a nice round glass table*) and nonabsolute-nonabsolute-absolute (e.g., subjective comment- age-color, *lovely new pink shoes*).

## 5. Results

Table 3 shows the overall results in terms of accuracy rates by Sentence Type and Group over two test sessions.<sup>2</sup> The test materials were designed to examine if L2 learners would be sensitive to adjective ordering restrictions in English and if there would be any differences in their L2 knowledge among five types of adjective combinations (i.e., A-A, NA-NA, NA-A, NA-A-A, and NA-NA-A). The test was administered twice: Test 1 to all four groups and Test 2 to the three L2 learner groups (Non-Instructed, Natural Exposure, and Instructed).

Table 3

*Overall Results: Accuracy Rates by Sentence Type and Group in Two Test Sessions*

Sentence Type	Non-Instructed (n=12)		Natural Exposure (n=13)		Instructed (n=13)		NS (n=13)
	Test 1	Test 2	Test 1	Test2	Test 1	Test 2	Test 1
i. A-A	70%	75%	69%	75%	60%	83%	91%
ii. NA-NA	60%	67%	56%	73%	65%	81%	71%
iii. NA-A	60%	52%	66%	71%	75%	97%	95%
Mean: i - iii	63%	65%	64%	73%	67%	87%	86%
iv. NA-A-A	60%	57%	55%	71%	40%	85%	80%
v. NA-NA-A	50%	50%	48%	29%	52%	87%	83%
Mean: iv - v	55%	54%	52%	50%	46%	86%	82%
Mean: i - v	60%	60%	59%	64%	58%	86%	84%

As we can see from Table 3, the three learner groups were less accurate in choosing the correct adjective ordering than native speakers (NSs). The mean accuracy rate over the five types in each group at Test 1 was: the Non-Instructed (60%), Natural Exposure (59%), Instructed (52%), and NSs (86%), indicating that the learners performed poorly at around chance level. The learners' performance on binary combinations (i.e., A-A, NA-NA, and NA-A) was generally better than on ternary combinations (NA-A-A and NA-NA-A). In Test 2, the Instructed group's performance significantly improved (52% to 86%) whereas the Non-Instructed group remained the same (60%). The Natural Exposure group also made some progress (59% to 64%). The NSs in general responded as we had

<sup>2</sup> It should be noted that two test items were excluded from the analysis below due to unexpected responses from native speakers. They were (i) *a big expensive diamond* in NA-NA and (ii) *a tall old stone building* in NA-NA-A. For these two items, native speakers preferred the order that is not in accordance with the adjective ordering proposed by Laenzlinger (2005). Thus, even though the task originally included five test items in each sentence type, five test items were analyzed on A-A, NA-A, and NA-A-A, but only four test items were analyzed on the NA-NA and NA-NA-A combinations.

expected but there were some variations on NA-NA (71%), and we discuss the issue of variation further below.<sup>3</sup>

First, we will report the results of Test 1 in Figure 1 and then Test 2 in Figure 2 in more detail, examining if there are differences in performance among groups and types.

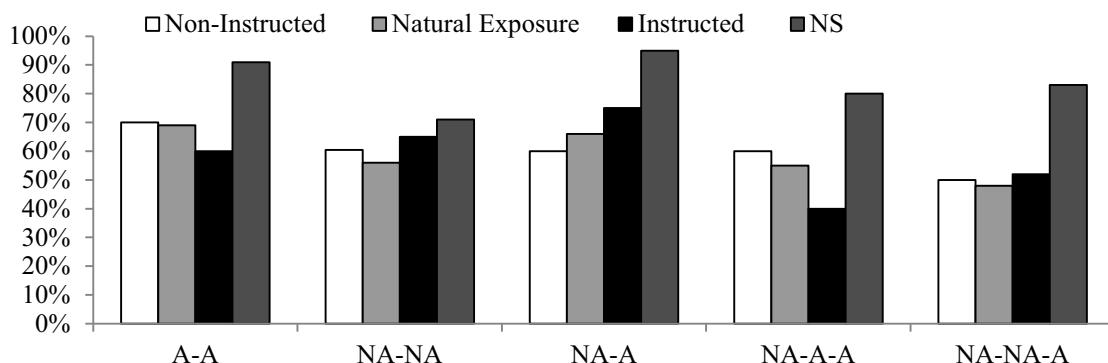


Figure 1. Accuracy Rates in Test 1

A two-way mixed design ANOVA was conducted on the accuracy rates of all four groups in Test 1, yielding main effects of Group and Sentence Type (Group:  $F(3, 47) = 11.56, p < .05$ , Sentence Type:  $F(4, 188) = 5.96, p < .05$ ) but no significant interaction between Group and Sentence Type ( $F(12, 188) = 1.44, ns$ ). Post-hoc tests showed significant differences between the NS and each of the three learner groups, but there were no significant differences among the three learner groups, suggesting that the learner groups behaved similarly to each other. Regarding the sentence types, the differences between ternary combinations (NA-A-A, NA-NA-A) vs. A-A and NA-A were found to be significant, indicating that ternary combinations were more difficult than A-A and NA-A binary combinations. The NA-NA combination turned out to be as difficult as ternary combinations.

Figure 2 presents the accuracy rates of the three learner groups on five sentence types in Test 2. As it is clear from the figure, the Instructed group scored the highest on all five sentence types. The Natural Exposure group followed the Instructed group except on NA-NA-A where the Non-Instructed group performed better.

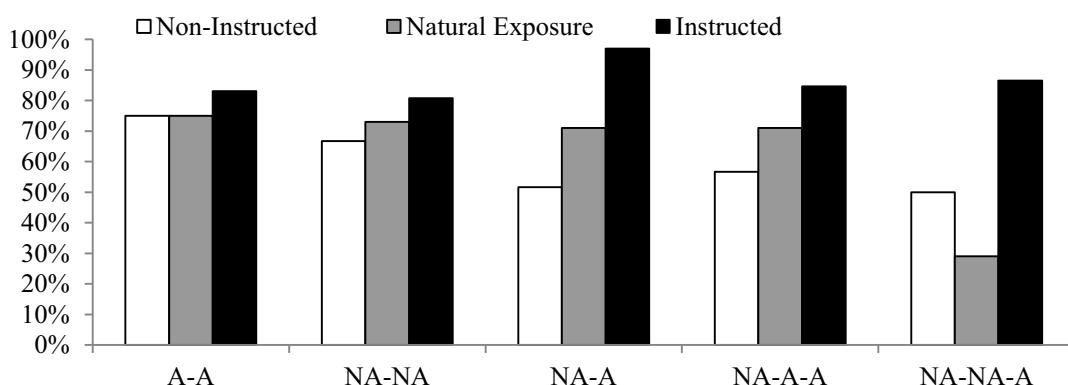


Figure 2. Accuracy Rates in Test 2

<sup>3</sup> A three-way mixed design ANOVA was conducted on the three groups of learners over the two testings and all three main effects were found significant: Group ( $F(2, 35) = 11.07, p < .05$ ), Test ( $F(1, 35) = 12.42, p < .05$ ), and Type ( $F(4, 140) = 9.30, p < .05$ ). All the interactions except an interaction between Test and Sentence Type ( $F(4, 140) = 1.78, p = .136$ ) are also found significant ( $p < .05$ ).

Among the three learner groups, a series of post-hoc, t-tests revealed that the accuracy rates of the Instructed group were significantly higher than the other two groups on NA-A and NA-NA-A combinations (NA-A:  $t(350) = 4.92, p < .05$  with the Non-Instructed,  $t(350) = 2.91, p < .05$  with the Natural Exposure; NA-NA-A:  $t(350) = 3.99, p < .05$  with the Non-Instructed,  $t(350) = 6.42, p < .05$  with the Natural Exposure). There was a significant difference on NA-NA-A ( $t(350) = 2.31, p < .05$ ) in which the Natural Exposure group marked the lowest accuracy rate (i.e., 29%). No other significant differences were found between the Non-Instructed and Natural Exposure groups.

Next we look at the change of accuracy over the two test sessions for each of the three learner groups: the Non-Instructed (Fig. 3), Natural Exposure (Fig. 4), and Instructed (Fig. 5). First, Figure 3 shows that no significant changes were observed in the Non-Instructed group's performance (Test & Type interaction:  $F(4, 140) = 0.55, p = .701$ ), suggesting that the learners made no progress in their performance over the two test sessions.

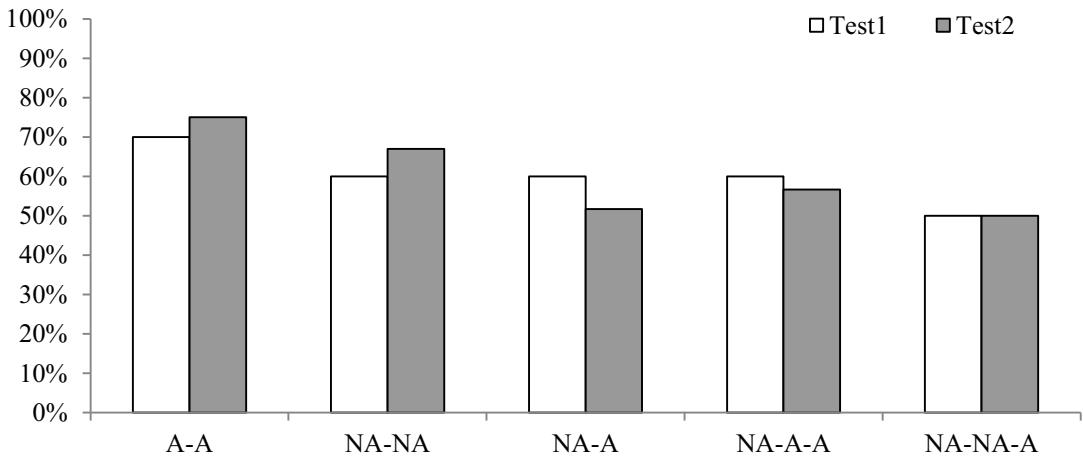


Figure 3. Accuracy Rates of the Non-Instructed Group in Tests 1 and 2

Second, the results of the Natural Exposure group are presented in Figure 4. Over the two test sessions, improvement was observed on all sentence types except NA-NA-A.

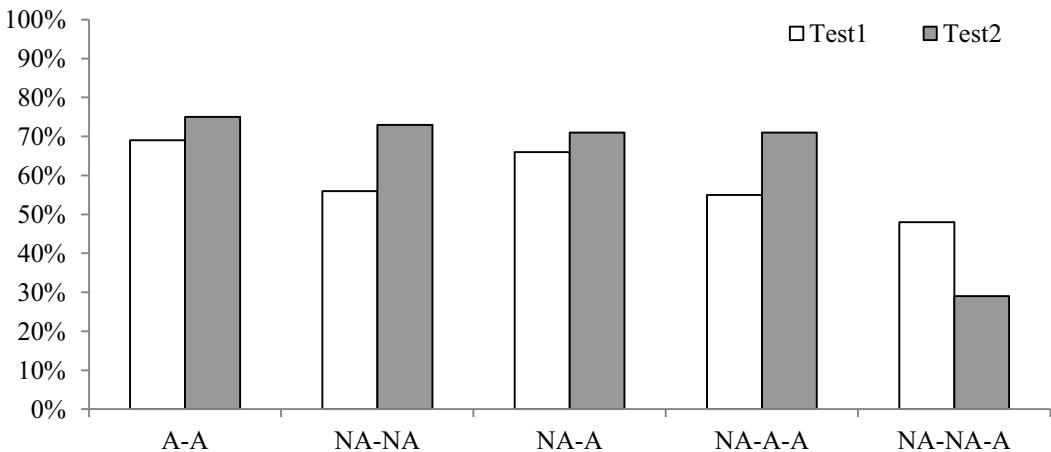


Figure 4. Accuracy Rates of the Natural Exposure Group in Tests 1 and 2

Results of the ANOVA revealed significant effects for Test and interaction between Test and Sentence Type ( $F(4, 140) = 3.21, p < .05$ ). The decrease on NA-NA-A was significant ( $F(1, 175) = 4.70, p < .05$ ), while only a marginal trend was observed on NA-NA ( $F(1, 175) = 3.81, p < .10$ ) and on

NA-A-A ( $F(1, 175) = 3.01, p < .10$ ). Thus, the Natural Exposure group appear to have made progress to some extent (i.e., on two out of five sentence types) but the improvement did not reach statistical significance.

Lastly, the results of the Instructed group are provided in Figure 5, which clearly shows improvement on all five sentence types from Test 1 to Test 2.

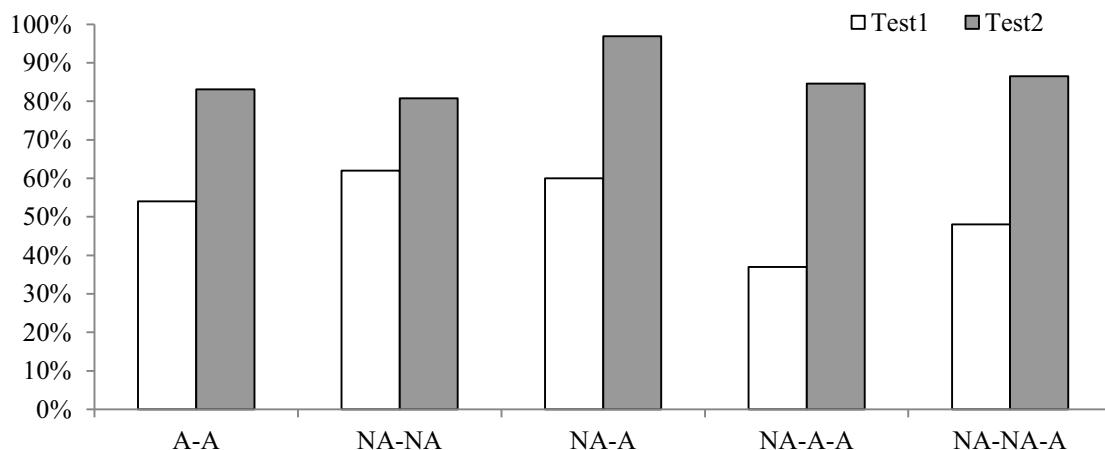


Figure 5. Accuracy Rates of the Instructed Group over Tests 1 and 2

Results of the ANOVA showed a significant increase over Tests 1 and 2 on all Sentence Types (A-A:  $F(1, 175) = 6.76, p < .05$ , NA-A:  $F(1, 175) = 5.89, p < .05$ , N-A-A:  $F(1, 175) = 25.28, p < .05$ , NA-NA-A:  $F(1, 175) = 15.21, p < .05$ ) except on NA-NA in which only a marginal trend was found ( $F(1, 175) = 3.01, p < .10$ ). The Instructed group made significant improvements from Test 1 to Test 2, and we argue that the improvements suggest the effectiveness of explicit teaching that this learner group had received between the two tests.

Finally, individual analyses on those who made correct responses consistently (more than 75%) are summarized in Table 4, which further confirms the overall results.

Table 4

*Number of Participants with Consistent Responses (over 75%)*

	Non-Instructed (n = 12)		Natural Exposure (n = 13)		Instructed (n = 13)		NS (n = 13)
	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1
A-A (4/5)	6	7	8	8	4	12	12
NA-NA (3/4)	5	7	4	9	7	9	9
NA-A (4/5)	3	2	6	8	11	13	13
NA-A-A (4/5)	2	5	5	6	2	11	9
NA-NA-A (3/4)	5	4	5	1	5	11	11

As we can see from Table 4, the number of learners who were accurate increased significantly in the Instructed group on all sentence types. In terms of the number of learners, all the learners in the Instructed group (n=13) acquired the correct ordering in the NA-A combination, and all but one (n=12) acquired the A-A combination. Among the binary combinations, NA-NA appears to be the most difficult for the Instructed group. The ternary combinations were difficult to acquire in Test 1, but 11 learners came to know the ordering restriction, suggesting a positive effect of explicit instruction. In contrast, there was not much difference in the numbers in the Non-Instructed group and there were both significant increases and decreases in the Natural Exposure group.

## 6. Discussion and Conclusion

The present study has investigated whether Japanese learners know the AOR in NP modifying adjectives in English along the hierarchical order of adjectives (Laenzlinger, 2005), and whether the type of input (i.e., explicit instruction and natural exposure to the target language) influences their L2 acquisition. Our experiments showed that the AOR in English was difficult for Japanese learners whose L1 exhibits no such restriction and that explicit instruction facilitated explicit knowledge of AOR. Natural exposure also had an effect to some extent, but the effect was not as significant as that of explicit instruction. As far as we have checked with the instructors for the Natural Exposure group, classroom instruction in the US did not include adjective ordering.

Regarding the types of combinations, the results showed that Japanese learners had problems with AOR in English, making considerable errors in all cases, especially with ternary combinations, in Test 1. Stringer (2013) reported that Arabic, Chinese and Korean learners of English showed robust knowledge of the NA-A distinction (over 70% accuracy) but poor knowledge of the NA-NA distinction (less than 60% accuracy), and that accuracy improved as the proficiency level increased. It is possible that our learners were less proficient and had problems with AOR. Nevertheless, the learners in the Instructed group performed best on the NA-A distinction among five types both at Test 1 (75% accuracy) and at Test 2 (97% accuracy), suggesting that the NA-A distinction was easier than the others and that the explicit instruction was in fact most effective on acquiring this distinction.

The accuracies on NA-NA increased in both the Instructed and Natural Exposure groups but the increase only displayed a marginal trend toward statistical significance. The combination of the adjectives in the same category (i.e., A-A versus NA-NA) caused difficulty in distinguishing the word order among them, which is in accordance with the findings of previous studies. In fact, our NSs showed variations on their preferred adjective ordering on NA-NA combinations, and that there was a test item where half of the NSs chose the combination which was not compatible with AOR.<sup>4</sup> Future research is necessary as to what causes the variation in the word order of nonabsolute adjectives.

The learners in the Instructed group benefitted from the explicit instruction since the improvements over two test sessions were observed on four out of five sentence types. The learners in the Natural Exposure group also improved on their knowledge of AOR on two sentence types (NA-NA and NA-A-A). They may have been exposed to multiple adjectives in everyday conversation among teachers and native speakers in the US, and this may have led the learners in this group to notice that there is in fact a preferred order among multiple adjectives. In contrast, the Non-Instructed group did not show any improvement. Thus, even though our intervention study lasted only for a short period, we believe that explicit instruction was most effective for Japanese learners to notice AOR.

Lastly, as far as we have examined, pre-nominal modification with more than one adjective rarely occurs in English textbooks widely used throughout Japanese schools. Only some grammar books targeting advanced learners discuss adjective ordering restrictions, thus learners in the present study were generally unaware of the ordering restrictions. Our study provides additional evidence that explicit instruction can be effective in raising L2 learners' awareness on certain aspects of grammar (cf. Hirakawa, 2013; Snape and Yusa, 2013). Further research is required in order to examine whether L2 knowledge can be sustained for a longer period after the intervention and whether explicit knowledge leads to implicit knowledge.

## References

- Baker, Mark C. (2003). *Lexical categories: Verbs, nouns and adjectives* (Vol. 102). Cambridge: Cambridge University Press.
- Endo, Marie, Inaba, Mikako, Yotsuya, Atsuko, Suzuki, Kazunori, Shibuya, Mayumi, & Hirakawa, Makiko. (2013). L2 acquisition of NP modification in English by Japanese speakers: adjective ordering and adjectival participle. Poster presented at the 32nd Second Language Research Forum, Brigham Young University, Utah. November 1, 2013.

---

<sup>4</sup> The result of the NSs on NA-NA was rather low (mean 71%) and it was due to one test item; i.e., *a small light PC* where 9 out of 13 NSs chose the reversed order *a light small PC*.

- Fassi Fehri, Abdelkader. (1999). Arabic modifying adjectives and DP structures. *Studia Linguistica*, 53, 105–154.
- Hirakawa, Makiko. (2013). Alternations and argument structure in second language English: Knowledge of two types of intransitive verbs. In Melinda Whong, Kook-Hee Gil & Heather Marsden (eds.), *Universal Grammar and the Second Language Classroom* (pp. 117–137). Dordrecht: Springer.
- Laenzlinger, Christopher. (2005). French adjective ordering: Perspectives on DP-internal movement types. *Lingua*, 115, 645–689.
- Snape, Neal, & Yusa, Noriaki. (2013). Explicit article instruction in definiteness, specificity, genericity and perception. In Melinda Whong, Kook-Hee Gil & Heather Marsden (eds.), *Universal Grammar and the Second Language Classroom* (pp. 161–183). Dordrecht: Springer.
- Sproat, Richard, & Shih, Chilin. (1991). The cross-linguistic distribution of adjective ordering restrictions. In Carol Georgopoulos & Roberta Ishihara (eds.), *Interdisciplinary approaches to language: Essays in honor to S-Y. Kuroda* (pp. 565–593). Dordrecht: Kluwer.
- Stringer, David. (2013). Modifying the teaching of modifiers: A lesson from Universal Grammar. In Melinda Whong, Kook-Hee Gil & Heather Marsden, (eds.), *Universal Grammar and the Second Language Classroom* (pp. 77–100). Dordrecht: Springer.

# Proceedings of the 13th Generative Approaches to Second Language Acquisition Conference (GASLA 2015)

edited by David Stringer, Jordan Garrett,  
Becky Halloran, and Sabrina Mossman

Cascadilla Proceedings Project Somerville, MA 2016

## Copyright information

Proceedings of the 13th Generative Approaches to Second Language Acquisition Conference (GASLA 2015)  
© 2016 Cascadilla Proceedings Project, Somerville, MA. All rights reserved

ISBN 978-1-57473-470-6 library binding

A copyright notice for each paper is located at the bottom of the first page of the paper.  
Reprints for course packs can be authorized by Cascadilla Proceedings Project.

## Ordering information

Orders for the library binding edition are handled by Cascadilla Press.  
To place an order, go to [www.lingref.com](http://www.lingref.com) or contact:

Cascadilla Press, P.O. Box 440355, Somerville, MA 02144, USA  
phone: 1-617-776-2370, fax: 1-617-776-2271, [sales@cascadilla.com](mailto:sales@cascadilla.com)

## Web access and citation information

This entire proceedings can also be viewed on the web at [www.lingref.com](http://www.lingref.com). Each paper has a unique document # which can be added to citations to facilitate access. The document # should not replace the full citation.

This paper can be cited as:

Endo, Marie, Mayumi Shibuya, and Makiko Hirakawa. 2016. Explicit Instruction vs. Natural Exposure in L2 Acquisition of Adjective Ordering in English. In *Proceedings of the 13th Generative Approaches to Second Language Acquisition Conference (GASLA 2015)*, ed. David Stringer et al., 60-71. Somerville, MA: Cascadilla Proceedings Project. [www.lingref.com](http://www.lingref.com), document #3275.