

Interpretation of English pronouns and reflexives by Japanese learners
— a preliminary study —¹

日本語母語話者の英語の代名詞、再帰代名詞の解釈

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Abstract:

This study examines the acquisition of English binding expressions, or anaphors (both pronouns and reflexives) by Japanese learners of English (JLEs) (students from high school to college), and claims that (i) the English anaphors can be fully acquired, but (ii) the acquisition of reflexives is much easier than that of pronouns, and (iii) there must be a strong L1 transfer in the acquisition of anaphors. In the English textbooks (*Sunshine English Course*) for junior high school students used by the participants in this study, pronouns such as *him* appear repeatedly throughout the three-year-textbook series, while, reflexives appear only three times. If we consider only the frequency of these two grammatical items, it can be said that reflexives are more difficult than pronouns to acquire. Unlike English, Japanese does not have phonetically-realized pronoun forms. However, although JLEs are taught, for example, that the English *he* can be translated into *kare* in Japanese, it is essentially a demonstrative not a pronoun (Hoji, 1991). The real equivalent of the English pronouns in Japanese is a zero pronoun (Kanzaki, 1994). There are three different reflexive forms in Japanese: *kare-zisin* (= he-self), *zibun-zisin* (= self-self) and *zibun* (= self). Although each of them behaves slightly differently, all of them allow local binding. Thus, if JLEs transfer the property of the Japanese reflexives, it seems that they will have little difficulty acquiring the English reflexives in spite of the low frequency of them.

One hundred sixty-two participants were presented with pictures and short stories. They had to decide whether the story matched the picture on the test paper. Two characters, *Ken* and *Masaru* were doing something, for example, “Masaru and Ken are fighting. Masaru is hitting Ken.” When a participant thinks that the story matches the picture, he/she marks “Yes” and mismatches, “No.”

The results indicate that the JLEs have much greater success interpreting reflexives than pronouns. They tend to interpret the pronouns as if they were reflexives just like young L1

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children often misinterpret pronouns as referring to local c-commanding DPs (e.g., Jakubowics, 1984; Solan, 1987; Grimshaw & Rosen, 1990). The following hypothesis is established from the results. In Japanese, both Principle A and B of the Binding Principle are used. Since all of the Japanese reflexive forms observe local binding, the learners can easily interpret the correct antecedent of the reflexive in spite of the fact that the learners have had very little experience with the English reflexives. On the other hand, the learners in this study must learn that there are phonetically-realized pronoun forms in English, and their phonetic forms are varied. Second, *kare* is not a familiar word for Japanese, and it is not equal to the English *he*. When learners directly translate *him* as *kare-wo*, they produce rather unnatural sounding Japanese. In addition, Japanese has a lexical item *zibun*, which is generally considered as a reflexive, but there are some cases in which *he* can be translated as *zibun*, which results in the acceptance of a local NP as the antecedent of *him*. Although it is not impossible for the JLEs to master the properties of the English pronouns, it will take more time for them to acquire the English pronoun systems. If these assumptions are correct, it can be said that the JLEs will start from the L1 values as far as the acquisition of anaphors is concerned.

1. Introduction

The purpose of this study is to examine the process by which the English reflexives and pronouns are acquired by Japanese learners of English in a foreign language environment. These grammatical items are related to the Binding Principles of Binding Theory (BT) (Chomsky, 1981, 1995, among others).

A number of studies have examined Principles A and B in first language (L1) acquisition (Chien and Wexler, 1990; Grimshaw and Rosen, 1990; Jakubowicz, 1984; Solan, 1987; Wexler and Chien, 1985). Those studies have shown that L1 acquirers experience considerable delays in mastering properties related to Binding Principle B. L1 children perform inaccurately when they find possible antecedents for pronouns. Most younger children tend to treat pronouns as if they were reflexives.

In contrast, although there has been extensive investigation of second language (L2) knowledge of Principle A of the Binding Theory (Finer and Broselow, 1986; Hirakawa, 1990; Thomas, 1993; Matsumura, 1994; Wakabayashi, 1996; Yuan, 1998), Principle B has rarely been studied by L2 researchers (White, 1998, 2003). This is partly because reflexives are subject to parametric variation and can offer an interesting case for examining whether parameters can reset from the L1 value to an L2 value (Wexler and Manzini, 1987). Pronouns, on the other hand, are not parameterized; every language disallows pronouns from taking local antecedents (Reinhart and Reuland, 1993).

It is thus worthwhile to examine the acquisition of English reflexives and pronouns by Japanese learners of English. First, as far as I know, there has been no study investigating Japanese learners' interpretation of both items together. Second, the equivalent of the English pronoun *he* is not *kare* in Japanese, though *he* is often translated as *kare*. *Kare* is a

demonstrative by nature. A real equivalent of *he* is a 'zero pronoun, ϕ ' in Japanese, which is not a phonetically realized item. A zero pronoun in Japanese certainly obeys Principle B, and behaves like *he* in English. It is interesting how Japanese learners of English cope with these differences. Third, although White (1998) argues that Principle B is not problematic in adult L2 acquisition (in contrast to L1 acquisition), it is still worthwhile to evaluate this claim by analyzing different data obtained from Japanese learners of English.

2. Linguistic background

In (1a), the reflexive *himself* can have *John* as its antecedent, while in (1b), *John* cannot be an antecedent of *him*.

- (1) a. John_i hit himself.
b. *John_i hit him_i.

Chomsky (1981) introduced the Binding Theory (BT) for regulating anaphoric expressions. The BT can explain the differences in interpretations among anaphors, pronouns and referential expressions. Roughly speaking, Principle A states that an anaphor must be bound by an antecedent NP within its local domain, while pronominal forms should not be bound by an antecedent NP within its local domain.

Following Principle A, the English reflexives such as *himself*, *herself* do not allow LD binding but allow only local binding: the reflexive and its antecedent must be in the same local domain. Thus, in (3a), *John* is the antecedent of *himself*, while in (3b), *Bill* can be the antecedent of *himself* but *John* cannot because *John* is not within the local domain of *himself*.

- (3) a. John_i washed himself.
b. *John_i said that [Bill washed himself_i].

The English pronouns obey Principle B, which means that the pronoun and its antecedent must not be in the same local domain. In (4a), *John* cannot be the antecedent of *him*. In (4b), *John* can be the antecedent of *him*, but *Bill* cannot.

- (4) a. *John_i washed him_i.
b. John_i said that [Bill_j washed him_{i/j}].

English pronouns can also be interpreted as a bound variable as shown in (5). That is, as its antecedent, the English pronoun can take an NP which does not concretely specify any special person. Moreover, the English pronouns can be coreferential with a generic noun. That is, they can refer to an indefinite whole group. Examples are shown in (6).

- (5) a. Everyone_i broke the toy that he_i had made.
 b. No one_i brought along the toy that he_i had made.
- (6) a. A man_i is known by the company he_i keeps.
 b. A teacher_i should do whatever he_i thinks best.

Let us summarize the properties of the Japanese reflexives and pronouns. There are three anaphoric forms in Japanese: *zibun* ("self"), which is the most common and widely used anaphor among the three; *zibun-zisin* ("self-self"), which is a true local-binding reflexive in Japanese; and *kare-zisin* ("he-self"), which is a representative form for the third person singular. It is a relatively recent addition to the set of Japanese anaphors arising in the Meiji Period (late 19th century) and is a rarely used form. Although each of them meets local binding condition (Nakamura, 1996; Aikawa, 1999), *zibun* also allows long-distance (LD) binding.² In (7), *zibun*, *zibun-zisin* and *kare-zisin* all can have *John* as their antecedent.

- (7) a. John_i -ga zibun_i/ zibun-zisin_i/ kare-zisin_i -wo tataita.
 John_i-Nom self_i/ self-self_i/ he-self_i/ -Acc hit
 John hit himself.

In Japanese, there are nouns such as *kare* 'he', *kanojo* 'she' and/or *karera* 'they', etc. Although these forms seemingly correspond to the English *he*, *she* and/or *they* respectively, they are not true equivalence to the English pronouns. Kuroda (1979:121-122) claims that there are several personal pronouns in English but only one in Japanese, and while those in English are always realized by phonetic entities, the single personal pronoun in Japanese is never phonetically realized. This means that the equivalent of the English pronouns is the zero pronoun in Japanese (Kanzaki, 1994).

As demonstrated in (9b), the sentence becomes ungrammatical if *his* is deleted in English. On the contrary, in Japanese, although there might be some native Japanese speakers who think that the sentences (8a), (9c) and (10b) are acceptable, the majority would think that these sentences are rather formal and awkward because of the usage of *kare*. However, they become normal when *kare* is deleted as shown in (8b), (9d) and (10c). From this evidence, it can be concluded that it is normal for Japanese to use a zero pronoun, and it is the equivalent of the English pronoun.

- (8) a. ?John_i-wa [Bill-ga kare_i-wo tataita] to itta.
 John-Top [Bill-Nom he-Acc hit] Comp said
 John said that Bill hit him.

² Because of this unique property, it has been argued whether *zibun* is a reflexive or a pronoun (Fukui, 1986).

- b. John_i-wa [Bill-ga ϕ_i tataita] to itta
 John-Top [Bill-Nom ϕ_i hit] Comp said
 *John_i said that Bill hit ϕ_i .

- (9) a. John_i loved his_i son.
 b. *John_i loved ϕ_i son.
 c. ?John_i-wa kare_i-no musuko-wo aisiteita.
 John-Top his son-Acc loved
 John loved his son.
 d. John_i-wa ϕ_i musuko-wo aisiteita.
 John_i-Top ϕ_i son-Acc loved
 *John loved ϕ_i son

- (10) a. John visits Kyoto whenever he comes to Japan.
 b. ?John-wa kare-ga nihon-ni kuru tokiwa itumo Kyoto-wo tazuneru.
 John-Top he Japan-Dat come whenever Kyoto-Acc visit
 c. John-wa ϕ nihon-ni kuru tokiwa itumo Kyoto-wo tazuneru.
 John-Top ϕ Japan-Dat come whenever Kyoto-Acc visit

Then, what is the grammatical category of *kare*? Hoji (1991) claims it can be categorized as a demonstrative. There are good reasons behind this claim. For example, *kare* cannot be construed as a bound variable, whereas English pronouns can (see (5)), because it is not a pronoun like those in English. On the other hand, *zibun* and zero pronouns can be construed as a bound variable. This can be illustrated as in (11).

- (11) a. Daremo_i-ga [DP [TP zibun_i-ga/ *kare_i-ga/ ϕ_i tukutta] omocha]-wo kowasita.
 everyone-Nom self-Nom he-Nom made toy-Acc broke
 Everyone_i broke the toy that he_i had made.
 b. Daremo_i [DP [TP zibun_i-ga/ *kare_i-ga/ ϕ_i tukutta] omocha]-wo mottekonakatta.
 no one self-Nom he-Nom made toy-Acc did not bring along
 No one_i brought along the toy that he_i had made.

Citing examples from Kuno (1973: 283-284), Hoji (1991) claims that *kare* is more closely related to *ano hito* 'that person' than *sono hito* 'that person'. In (12) and (13), *ano hito* can be replaced by *kare* 'he'; wherever *ano hito* is allowed, *kare* is also allowed and vice versa.

- (12) A: Kinoo Yamada-san ni aimasita. Ano hito/ *Sono hito/ Kare itumo genki desu ne.
 Yesterday, I met Mr. Yamada. That man is always in high spirits.

B: Hontoo ni soo desu ne.

Indeed so.

- (13) A: Kinoo Yamada to yuu hito ni aimasita. *Ano hito/ Sono hito/ *Kare, miti ni mayotte komatte-ita node, tasukete agemasita.

Yesterday, I met a man by the name of Yamada. Since he lost his way and was having difficulties, I helped him.

Kuno (1973: 283) claims that the *a*-series is used only when the speaker knows that the hearer, as well as the speaker himself, knows the referent of the anaphoric demonstrative. The *so*-series, on the other hand, is used either when the speaker knows the referent but thinks that the hearer does not or when the speaker does not know the referent. Since *kare* is closely related to *a*-series, it can only be used when both the speaker and the hearer know the referent.

This usage of *kare* is completely different from that of the English pronouns. From the evidence discussed so far, it has become clear that *kare* is essentially a demonstrative.

We have discussed that the equivalent of *he* in English is a zero pronoun in Japanese. However, there are some cases in which *zibun* can also be used for *he* in English. One of the cases is illustrated in (11). Another case appears in (14).

- (14) a. John_i said that Bill hit him_i.
 b. John_i-wa [Bill-ga zibun_i-wo tataita] to itta.
 John-Top [Bill-Nom self_i-Acc hit] Comp said
 c. ?John_i-wa [Bill-ga kare_i-wo tataita] to itta.
 John-Top [Bill-Nom he_i-Acc hit] Comp said
 d. John_i-wa [Bill-ga ϕ _i tataita] to itta.
 John-Top [Bill-Nom ϕ _i hit] Comp said

Kare ('he') and *kanojo* ('she') in Japanese are newly-born words; they were invented at the start of the Meiji Era (1868-1912) in order to cope with the lexical items *he* and *she* in European languages. The word *kare* had already existed since the Nara Era (A.D. 710-784), but it had been a demonstrative. Thus, from a historical point of view, the claim that *kare* in the modern usage is essentially a demonstrative rather than a pronoun like that of English can also be demonstrated (Kuroda, 1965; Hoji, 1991; Kanzaki, 1994).

The Japanese language is commonly said to have a poor pronoun system. In reality, in terms of word frequency, *kare*, *kanojo*, and *karera* ('they') etc. are words that Japanese people hardly ever use. Instead, they often use proper nouns and/or demonstratives. In particular, Japanese children hardly ever use *kare*, *kanojo*, and *karera* etc. Most Japanese children come to learn these words as translations for *he*, *she*, *they* when they enter junior high school and start learning English.

When the Japanese learner of English at a beginner's level is presented a sentence like (15), how does he interpret it? If he depends on his L1 knowledge, there are three possible interpretations. They are demonstrated in (16). Whichever translation he uses, he can reach the correct interpretation of *himself* because (16a), (16b) and (16c) can all take *John* as their antecedent. Therefore, it will not be difficult for Japanese learners to interpret the meaning of (15).

(15) John_i is hitting himself_i.

- (16) a. John_i-ga zibun-zisin_i-wo tataiteiru.
 b. John_i-ga zibun_i-wo tataiteiru.
 c. John_i-ga kare-zisin_i-wo tataiteiru.

Let us consider the case of *him*, looking at the examples in (17) and (18). How does the Japanese learner of English at the beginning level deal with 'Ken_j is washing him_i'? In this case, it seems that the most standard expression is (18a). That is, we use the proper noun in Japanese. When the L2 learner literally translates *him* into *kare-wo*, some interpretational problems arise. Japanese people are not familiar with the lexical item, *kare*, especially its usage as a pure pronoun, as discussed above. Some learners who have not yet acquired the properties of the English pronouns may translate him as *zibun* because in some cases, *zibun* and the English pronouns can be used equally. When an L2 learner regards *him* as *zibun*, *Ken* and *him* can be coreferential as shown in (18d). Thus, in (17), the L2 learner would think that *him* can refer to *Ken*.

(17) Masaru_i is taking a bath with Ken_j. Ken_j is washing him_i.

- (18) Ken_j is washing him_i:
 a. Ken-ga Masaru-wo aratteiru.
 b. Ken_j-ga ϕ _i aratteiru.
 c. Ken_j-ga kare_i-wo aratteiru.
 d. Ken_j-ga zibun_j-wo aratteiru.

Japanese students usually begin to study English when they enter junior high school. The students use textbooks authorized by The Ministry of Education. Junior high school students in this study used one of the seven authorized textbooks. We call it Textbook S from now on. We will analyze here when and how often reflexives and pronouns appear in the textbooks. In Textbook S, *him* is introduced in the 1st-year. After the first introduction, *him* appears repeatedly as demonstrated in Table 1. On the other hand, *herself* is first introduced in the 2nd-year textbook, and *himself* appear in the 3rd-year textbook. These two reflexives appear only twice throughout the textbook series at junior high school.

Table 1. Frequency of pronouns and reflexives

	1 st grade	2 nd grade	3 rd grade	total
<i>he</i>	32	17	64	113
<i>him</i>	5	8	19	32
<i>she</i>	27	44	8	79
<i>her</i> (object case)	9	4	4	17
<i>himself/herslef</i>	0	1	1	2

If we consider only the frequency of these two grammatical items, pronouns are easier than reflexives because students are exposed to pronouns much more. We will see later whether this prediction is correct or not.

3. Literature review

3.1 L1 studies

L1 studies examining the acquisition of Binding Principle A and B show considerable delays for Binding Principle B. Most native-English children perform inaccurately in selecting possible antecedents of pronouns. They misinterpret, for example, the meaning of "John hit him" as "John hit himself." (Grimshaw and Rosen, 1990).

Grimshaw and Rosen (1990) suggest a number of possibilities for why L1 children make a lot of errors in pronoun interpretation. First, since children are so young, they are biased toward giving 'yes' answers on grammatical judgment tasks. They just say 'yes' to a question where 'no' is expected. Second, there is a pragmatic reason. Children tend to prefer to find an antecedent for each pronoun that they hear. When they are presented with sentences such as 'John hit himself' and 'John hit him,' separately, they can satisfy this pragmatic preference and will select *John* as the antecedent in each structure. Third, there is a possibility that children will misanalyse the structure of the stimulus sentence. For example, in the case of 'Cinderella's sister pointed to her,' they may associate *her* with *Cinderella's sister*, which is the more prominent DP. If so, this tendency is not related to the understanding of the BT at all.

3.2 L2 studies

White (1998) claims that adult L2 learners of English do not exhibit the same kinds of tendency on Principle B as L1 children do. Intermediate-level adult L2 learners (French and Japanese native-speakers) were investigated, using a truth value judgment task in order for the participants to identify the proper antecedents of pronouns. The result was that participants disallowed local antecedents for pronouns, so White concludes that they performed like adult native speakers of English. This result suggests that Principle B is not difficult for adult L2 learners.

4. Experiment

4.1 Participants

There are two groups: the experimental group and the control group. The former included 162 native Japanese speakers learning English in Japan. They were 57 11th graders (senior high school students), 63 university sophomores and 42 juniors at S University.

The forty-two juniors were majoring in English or English-related subjects such as International Understanding. It can be said that their English abilities were, as a whole, higher than those of the average Japanese students, and were considered 'advanced learners.' These students formed Group A. The sixty-three sophomores did not major in any field related to linguistics or English. Thus, they had no knowledge of binding principles or other related knowledge of linguistics. They belonged to Group B.

All the high school students went to M High School in Shizuoka Prefecture, Japan. They study English four times a week as one of their school subjects. They started learning English when they entered junior high school. Thus, they had studied English for four years at the time this experiment was conducted. Their English levels can be categorized as low-intermediate according to their teacher. They were classified as Group C.

The control group consisted of 30 native English speakers. All of them were teachers of English at high schools in Shizuoka Prefecture.

4.2 Task

The participants were given a 25-page booklet which included an explanation of the experiment, a pretest and the stimulus sentences. The pretest contained vocabulary and the structures which appeared in the test. There were 15 words in the vocabulary test. The participants were told to translate the English words into Japanese. Only the participants who translated all the words correctly were regarded as suitable participants.

The structure test was a truth value judgment task which is shown in (19) below. It includes the structures used in the stimulus sentences. There were four questions in it. The participants were told to circle 'Yes' on the answer sheet if they thought that the meaning of the stimulus sentence matched the content of the picture. If the stimulus sentence and the picture did not match, the participants were instructed to circle 'No'. Again, only the participants who answered the four questions correctly were qualified as suitable participants. Therefore, although there were originally one hundred three high school students and seventy university students who participated in the experiment, forty-six high school students and seven university students were not determined to be suitable participants.

These questions appeared randomly in the booklet. The experiments were conducted in 2005: for Group A, in September, for Group B, in May, and for Group C, in June.

(19) Structure test

- (i) Ken is taking a bath with Masaru. Ken is washing Masaru.
- (ii) Masaru and Ken are in front of the mirror. Ken is looking at Masaru in the mirror.
- (iii) Masaru and Ken are fighting. Masaru is hitting Ken.
- (iv) Masaru and Ken are talking. Masaru is touching Ken.

4.3 Reflexive and pronoun tests

The test was a truth value judgment task based on pictures, designed to examine the participants' interpretation of English reflexives and pronouns. There are four sentence types: Structure I, II, III and IV, each of which has four independent questions (see (20) below). Thus, there are sixteen stimulus sentences altogether, half containing reflexives and half pronouns. The number of the sentences which match their pictures is the same as the number of those that do not: eight sentences that match and eight sentences that do not.

Two characters, *Ken* and *Masaru* appear in each sentence and picture. There was no mention of other characters either in the sentences or the pictures. The appropriateness and interpretation of the sentences depended on the context provided by the picture. The sentences involved referential antecedents.

- (20) a. Structure I: context suggests that the antecedent is the local subject
Ken is talking with Masaru. Masaru is touching himself.
- b. Structure II: context suggests that the antecedent is not the local subject
Ken is talking with Masaru. *Masaru is touching himself.
- c. Structure III: context suggests that the antecedent is the local subject
Ken is talking with Masaru. *Masaru is touching him.
- d. Structure IV: context suggests that the antecedent is not the local subject
Ken is talking with Masaru. Masaru is touching him.

Because the English pronouns must take antecedents outside of their local domain (ie. the matrix clause), L2 learners are supposed to show that the pronominal versions of the sentences in Structure III do not match the pictures. On the other hand, in Structure IV, since the antecedent for the pronoun is outside the local domain, the pictures and sentences match.

4.4 Hypothesis

In Japanese, both Principle A and B are used. There are three different kinds of reflexives in Japanese, all of them observe local binding. If the beginning learners of English depend on either property of these reflexives, they can get a correct antecedent. Thus, when L2 learners have come to learn the phonetic forms of the English reflexives (*himself /herself/*), they can easily interpret the correct antecedent of the reflexive in spite of the fact that the learners have had very little experience with the English reflexives.

On the other hand, since true pronouns of Japanese are zero pronouns, the L2 learners must learn that there are phonetically-realized pronoun forms in English, and their phonetic forms are varied, for example, 'he /hi:/ - his /hiz/ - him /him/' for the third person singular masculine. Second, *kare* is not a familiar word for Japanese, and it is not equal to the English he. When learners directly translate him as '*kare-wo*', they produce rather unnatural sounding Japanese. In addition, Japanese has a lexical item *zibun*, which is generally considered a reflexive, but it has a long-distance binding feature as well as a local one. There are some cases in which he can be translated as *zibun*. If learners regard *him* as *zibun*, they accept a local NP as the antecedent of *him* as well as the non-local DP.

Thus, although it is not impossible for the Japanese learners to master the properties of the English pronouns, it will take more time for them to acquire the English pronoun systems. If L2 acquisition starts from L1 values, Japanese learners of English will take more time in learning the interpretations of pronoun forms than those of reflexives. Then, as far as Japanese learners of English are concerned, the following inequality will be formed.

(21) acquisition of reflexive < acquisition of pronoun

5. Results

Results are reported in terms of percent correct for participants' responses for the questions and structures. The results of the Control Group are presented in Table 2 and Figure 1. Table 3 shows the total results of each structure by the experimental groups. Total results of reflexives and pronouns by both control and experimental groups are indicated in Table 4 and Figure 2. An unweighted-Mean ANOVA was conducted.

As can be seen in these tables and figures, the L2 learners easily interpreted the antecedents of the English reflexives, while they had difficulty identifying the antecedents of the pronouns. It was especially difficult for the L2 learners to identify the proper antecedent in Structure IV. This suggests that the L2 learners tend to regard 'John hit him' as if it were 'John hit himself.'

The average percentages for Structure (I) are : Control: 98.3%, Group A: 97.0%, Group B 98.8%, and Group C: 95.2%. The average percentages for Structure (II) are: Control: 97.5%, Group A: 95.8%, Group B: 97.6%, and Group C: 93.4%. The average percentages for Structure (III) are: Control: 96.7%, Group A: 94.6%, Group B: 88.5%, and Group C: 70.6%. The average percentages for Structure (IV) are: Control: 98.3%, Group A: 94.0%, Group B: 61.5%, Group C: 34.6%. The differences between the four groups on Structures (I) and (II) are not significant while the differences between Structures (III) and (IV) are significant ($F=11.05$, $p<0.01$, and $F=39.95$, $p<0.01$, respectively).

Table 2. Results of the control group (n = 30)

Structure	I	II	III	IV
correct	118/120	117/120	116/120	118/120
%	98.3	97.5	96.7	98.3

Table 3. Total results of each structure by the experimental groups (n = 162)

Structure	I	II	III	IV
correct	629/648	620/648	542/648	391/648
%	97.1	95.7	83.6	60.3

Table 4. Total results of reflexives and pronouns by control & experimental groups

	control		experimental	
	reflexive	pronoun	reflexive	pronoun
correct	235/240	234/240	1249/1296	933/1296
%	97.9	97.5	96.4	72.0

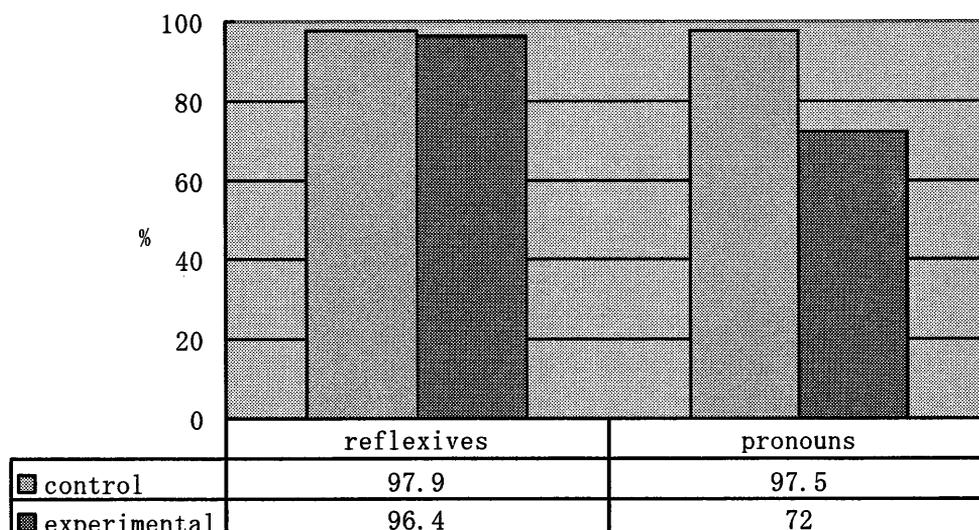


Figure 1. Accuracy scores for control and experimental groups (% correct)

The results of the three groups (Group A, B & C) in Experimental Group are demonstrated in Tables 5, 6, 7 and Figure 2. Table 5 shows the results of Group A, an advanced group. The group attained high levels of accuracy on all structures: Structure I: 97.0%, Structure II: 95.8%, Structure III: 94.6%, and Structure IV: 94.0%. From these results, we can see that the four structures for Group A are almost the same as for the Control Group. The differences between the Control Group and Group A are not significant for any structure. It can be concluded that Japanese learners of English can attain a native-language level when it comes to

the properties of the English pronouns.

Table 6 presents the results of Group B, an intermediate group. The percent correct for each structure is: Structure I: 98.8%, Structure II: 97.6%, Structure III: 88.5%, and Structure IV: 61.5%. We can see that the percent correct for Structure IV among participants in this group is significantly lower than that of the participants in Group A, while the other scores are not very different.

The results from Group C are presented in Table 7. The percent correct for each structure is: Structure I: 95.2%, Structure II: 93.4%, Structure III: 70.6%, and Structure IV: 34.6%. From these results, we demonstrate that the higher the learners' English proficiency, the better they come to correctly understand the proper antecedents of pronouns. It seems that White's (1998) L2 participants were 'advanced' L2 learners who had already acquired native-like representation for the English personal pronouns.

Table 4. Results of Group A (n = 42)

Structure	I	II	III	IV
correct	163/168	161/168	159/168	158/168
%	97.0	95.8	94.6	94.0

Table 5. Results of Group B (n = 63)

Structure	I	II	III	IV
correct	249/252	246/252	223/252	155/252
%	98.8	97.6	88.5	61.5

Table 6. Results of Group C (n = 57)

Structure	I	II	III	IV
correct	217/228	213/228	161/228	79/228
%	95.2	93.4	70.6	34.6

To sum, the following are what we have found in the experiment. First, reflexive interpretation was quite easy for the Japanese learners, even for the beginning learners. Second, pronoun interpretation was difficult, especially when the picture and the stimulus sentence mismatch. These tendencies are quite similar to those found in L1 acquisition research. However, the advanced learners were able to attain a native-like proficiency in the interpretation of pronouns.

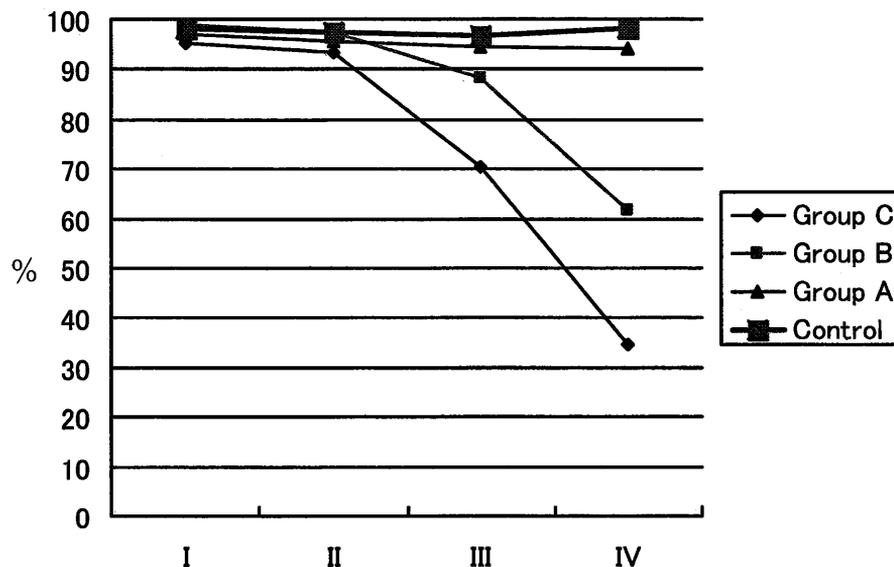


Figure 2. Results of the four groups

6. Summary

Why were the reflexives easy and the pronouns difficult for the Japanese L2 learners to acquire? It appears to be the result of L1 transfer. First, the acquisition of reflexives was quite early considering the fact that the learners had very little exposure to reflexive forms but rather extensive exposure to pronouns. One reason is that the Japanese language has a limited pronoun system. In addition, there is no phonetically realized pronoun form in Japanese.

Finally it seems that White's (1998) Japanese participants would not be classified as 'intermediate level' but rather 'advanced level' based on the criteria used in this research.

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