Interpretation of Secondary Predicates by L1 and L2 Acquisition of Japanese

Sayaka Suzuki

Graduate School of Language and Culture, Osaka University

This study reports the experimental data dealing with differences of the acquisition sequence of Japanese secondary depictive predicates and affectedness of Japanese verbs between Japanese speaking young children (L1 acquisition) and Mandarin Chinese speaking adults learning Japanese (L2 acquisition). The results support Schwartz and Sprouse's (1996) and Eubank's (1996) hypothesis that L2 grammar is derived from learners' L1 grammar at an early stage of L2 acquisition.

1 Introduction

Affected-theme transitives, such as *warau* (laugh) in (1b), but not non-affected-theme transitives, such as *naraberu* (display) in (2b), appear in an "Intransitive resultative" construction in Japanese as (1b) and (2b) show.

(1) **non-affected-theme transitive**

    a. Taro-ga   Jiro-o   waratta.   b.* Jiro-ga warat-te aru.

      Taro-Nom Jiro-Acc laughed   Jiro-Nom laughed be

      'Taro laughed at Jiro.'   'Jiro is laughed.'

(2) **affected-theme transitive**

    a. Taro-ga   ningyo-o narabeta.   b. Ningyo-ga narabe-te aru.

      Taro-Nom dolls-Acc displayed   dolls-Nom displayed be

      'Taro displayed dolls.'   'Dolls are displayed.'

Another unique feature of affectedness of verbs can be seen with a secondary depictive predicate (henceforth SDP). Japanese SDPs have the form 'NP+de'. (3) is a typical Japanese SDP example.

(3) **Taro-ga**   Jiro-o   **hadasi-de**   waratta.

   Taro-Nom Jiro-Acc barefoot-state   laughed

   'Taro laughed at Jiro barefoot.'

In (3), the verb *waratta* (laughed) is a non-affected-theme transitive, and *hadasi-de* (barefoot) is only predicated of the subject. This phrase, however, can be predicated of the direct object as well when it appears with an affected-theme transitive as in (4) the verb *narabeta* (displayed) which is an affected-theme transitive.

(4) **Hanako-ga   ningyo-o   hadasi-de**   narabeta.
    Hanako-Nom   doll-Acc   barefoot-state   displayed
    'Hanako displayed dolls   barefoot.'

Assuming different syntactic positions for affected-theme and non-affected-theme objects in a VP structure, Koizumi (1994), which will be introduced in the next section, explains the contrast between (3) and (4) with his Principle of Predication. Assuming the existence of this principle, this study will investigate the following questions.

(5) Research Questions

1) Do L1 acquisition (Japanese speaking young children) and L2 acquisition (Mandarin Chinese speaking adults) have the same acquisition sequence with respect to Japanese SDPs and affectedness of Japanese verbs?

2) If they have a different sequence, does 'L1 transfer' exist in L2 acquisition?

2 Japanese and Chinese secondary depictive predicates

2.1 Secondary depictive predicates in Japanese

Koizumi (1994) suggests that an SDP must be m-commanded by its antecedent.

(6) a. **Taro-ga   hadasi-de**   hon-o   yonda.
    Taro-nom barefoot-state   book-Acc   read
    'Taro read the book barefoot.'
  b. * [$_{NP1}$ [$_{NP2}$ **Taro**] no   kuruma] ga   **hadasi-de**   kowareta.
          Taro – Gen   car – Nom barefoot-state   broke
    'Taro's car broke barefoot.'

In (6a), there is no intervening category between the SDP and the antecedent *Taro*. Thus the antecedent can m-command the SDP, and it is grammatical. On the other hand, in (6b), the antecedent of the SDP, *Taro*, is embedded in NP$_1$ which prevents the antecedent from m-commanding the SDP, thus it is ungrammatical. Therefore, an SDP must be at least m-commanded by its antecedent. (7), however, seems not to satisfy the m-command requirement, yet it is grammatical.

(7) ***Nama-de$_i$*** Taro-ga   ***katuo-o*** t_i tabeta.
      raw-state   Taro-Nom bonito-Acc   ate
      'Taro ate the bonito raw.'

In (7), the SDP is not m-commanded by its antecedent in S-structure. The grammaticality of this sentence, therefore, indicates that SDPs are scrambled to the sentence-initial position, leaving a trace in their original position. Thereby, *katuo* and the trace of *nama-de* hold the m-command relation, and the sentence is grammatical.   The m-command condition, however, cannot explain the ungrammaticality of (8b).

(8) a. Taro-ga [$_{CP}$ ***Jiro-ga   hadasi-de***   katuo-o   tabeta]   to   itta.
        Taro-Nom Jiro-Nom barefoot-state bonito-Acc   ate   that said
        'Taro said that Jiro ate the bonito barefoot.'
    b. ****hadasi-de$_i$***   Taro-ga [$_{NP}$[$_{CP}$ ***Jiro-ga*** t_i katuo-o   tabeta] resutoran-o] sitteiru.
        barefoot-state Taro-Nom   Jiro-Nom   bonito-Acc ate   restaurant-Acc know
        'Taro knows the restaurant where Jiro ate the bonito barefoot.'

In (8a), the m-command condition is satisfied within the CP. In (8b), the SDP is predicated of the NP *Jiro* in the complex NP.   It is m-commanding the trace. However, there are two barriers between the moved SDP and its antecedent, so it violates the Subjacency condition, and the sentence is ungrammatical. Hence, the ungrammaticality of (8b) is due to a syntactic reason independent of the m-command condition.
        On the basis of this condition and others, Koizumi proposes the Principle of Predication, which is a UG principle which governs predication relations in natural languages.

   ### 2.2 Principle of predication
        The Principle of Predication (henceforth POP) consists of the antecedent government requirement and the head government requirement.

(9) Principle of Predication
a. the NP or its trace is an ANTECEDENT POSITION of the XP at LF, and
b. the XP is c-governed by a zero-level category at D-structure
(10) A syntactic position (such as Spec or Complement position) is qualified as an antecedent position of an XP iff it c-governs the XP at D-structure.

                                                                        (Koizumi 1994:48)

Under this definition, condition (9a) meets the antecedent government requirement and condition (9b) meets the head government requirement. Koizumi claims that these two requirements define the syntactic relation between a predicate and its antecedent.

The next subsection will explain the detail of the observation in Section 1 with the framework of Koizumi's POP.

2.3 Secondary depictive predicates and theme-transitives and non-theme transitives

As we have seen in (3) and (4), which are repeated below, there is a contrast between affected themes and non-affected-themes regarding their interpretation of SDPs.

(11 = (3)) ***Taro-ga***   Jiro-o   ***hadasi-de***   warat-ta.
　　　　Taro-Nom Jiro-Acc   barefoot-state   laughed
　　　　'Taro laughed at Jiro barefoot.'
(12=(4)) ***Hanako-ga   ningyo-o   hadasi-de***   narabe-ta.
　　　　Hanako-Nom doll-Acc   barefoot-state   displayed
　　　　'Hanako displayed dolls barefoot.'

As (11) indicates, *hadasi-de* cannot be predicated of the direct object, while (12) can. To account for this contrast, Koizumi (1994) suggests that a non-affected-theme object is generated in a position where it cannot satisfy the POP, and gives the following VP structure (13) below.

(13)

```
                                    VP
                               ╱        ╲
indirect object →        NP-ni          V'
                                      ╱      ╲
                                    VP          V₂
                                 ╱     ╲          │
non-affected-theme →       NP-o       V'          e
                                    ╱    ╲
affected-theme →           NP-o   SDP    V₁
```
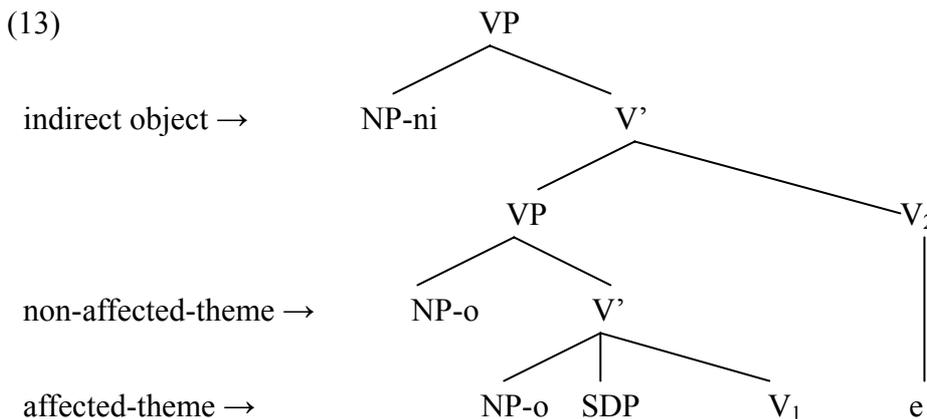
(V' is a minimality barrier)

In this VP structure, the SDP is a sister of the V_1 and the affected-theme object can c-govern it. Thus the SDP satisfies the POP requirement. On the other hand, the non-affected-theme object cannot c-govern the SDP because of the minimality barrier V'. This explains why the object of a non-affected-theme transitive cannot be the antecedent of an SDP.

2.4 Secondary depictive predicates in Mandarin Chinese

In contrast to Japanese SDPs, however, so-called SDPs in Mandarin Chinese, cannot be predicated of direct objects even if they are affected-theme objects. Let us consider (14) and (15).

(14) ***Akiu hulihutu*** de mai-leyi bao shipin.
     Akiu muddled de buy-PRF one package food
     'Akiu bought a package of food muddled.'

(15) *Akiu ***rere*** de   he-leyi ***wan tang***.
      Akiu hot de drink-PRF one bowl soup
      'Akiu drank a bowl of soup hot.'

Example (14) has a subject-oriented reading.(15), however, cannot have an object-oriented reading according to my informants. Therefore, in this study, SDPs in Mandarin Chinese are treated as follows.

(16) SDPs are only predicated of subjects in Mandarin Chinese.

That is, SDPs in Mandarin Chinese are adverbial. This property is quite crucial when we consider whether L1 transfer plays any role in acquiring Japanese as a foreign language because Japanese SDPs can be predicated of direct objects when the verb is an affected-theme transitive.

3 Acquisition of SDPs

We now turn to previous studies about acquisition of SDPs by young children and adult L2 learners.

3.1 Acquisition of secondary depictive predicates by English speaking children and Japanese speaking children

For the comparison with L2 acquisition later, let us consider the observation that both Japanese and English speaking children do not acquire properties of SDPs by the age of four.

3.1.1 Acquisition of secondary depictive predicates by English speaking children

Koizumi (1996) checked utterances by an English speaking child in the CHILDES database (Adam 2;3 – 4;10). However, there were not any usages of SDPs.

This finding leads to the prediction that it is not unnatural that properties of SDPs are acquired after the age of four in English.

3.1.2 Acquisition of secondary depictive predicates by Japanese speaking children

Suzuki (2000) examined acquisition of SDPs and floating quantifiers (on the assumption that floating quantifiers are also SDPs) by twenty-nine Japanese speaking children (age range 3;4 – 6;2) with a particular attention to the POP (Koizumi 1994). Table 1 presents the results of the experiment. The results show that only the antecedent-government requirement was active in the age of six (Both the antecedent government requirement and the head government requirement were active regarding floating quantifiers). However, the three, four and five year olds had not acquired both of the requirements of the POP yet. This is consistent with Koizumi's (1996) finding.

Table 1: Acquisition of POP in SDPs (results from Suzuki, 2000) *: no* displays that the children have not acquired the condition yet. *yes* displays that the children have already acquired the condition.

mean age	3;4	4;4	5;6	6;2
head-government	no	no	no	no
antecedent-government	no	no	no	yes

3.2 Acquisition of English secondary depictive predicates by Mandarin Chinese speaking L2-learners

As to SDPs in L2 acquisition, Shi (2001) examined acquisition of English depictive and resultative constructions by Mandarin Chinese speaking L2 learners and commented as follows:

This study intends to show that CCH (= L1 transfer) is a unique L2 learning mechanism, not a strategy, nor a process (cf. Odlin, 1994). ….It impedes adult L_2 speakers from attending to the minute semantic properties and subsequently syntactically relevant argument structures associated with L_2 predicates. (p. 11)

The results led to the conclusion that L1 grammar had effects on adult L2 learners. Therefore, our finding in this study will also present the same results on the acquisition of Japanese SDPs by L2 learners.

4 Experiment

Based on previous studies that were mentioned above, I will set up hypotheses about acquisition of Japanese SDPs by Mandarin Chinese speaking adults learning Japanese.

4.1 Hypotheses

L2 learners use their L1 grammar in an early stage of L2 acquisition (Schwartz and Sprouse (1996), Eubank (1996)), and SDPs in Mandarin Chinese are always predicated of subjects according to my informants. Then, the following can be expected as the results of this experiment.

(17) Hypotheses

1) Mandarin Chinese students attending a Japanese preparatory course and first year undergraduate course prefer subject-oriented readings because they have not acquired Japanese SDPs yet.

2) Accordingly, they cannot distinguish the affectedness of Japanese verbs when they appear with SDPs.

3) On the other hand, Mandarin Chinese students attending graduate school have already acquired properties of Japanese SDPs.

4) Consequently, they can distinguish the affectedness of Japanese verbs.

4.2 Methodology

4.2.1 Subjects   native speakers of Mandarin Chinese studying in Japan

The subjects were all native speakers of Mandarin Chinese studying in Japan. They were divided into two groups depending on their Japanese level. Six native speakers of Japanese were included as a control group.

(18) The groups of subjects are as follows:

Group A: Five preparatory course students and two first year undergraduate students were tested as elementary learners.

Group B: Ten graduate school students were tested as advanced learners.

Group C: Six native speakers of Japanese, who are graduate school students, were also tested as a control group.

4.2.2 Procedures

A Truth Value Judgment Task was used to test the subjects. A written questionnaire with target sentences and pictures was provided to each of the subjects.

4.2.3 Materials (the sentence types and the actual examples)

Two sentences for determining if the subjects know the meaning of *hadaka-de* (naked) and *hadasi-de* (barefoot), and ten target sentences were provided. Table 2 shows the sentence types and the number of Target Sentences.

Table 2: The Sentence Types and the Number of Target Sentences

Target Sentence Types	n
non-affected-theme	3
affected-theme	3
POP: antecedent government	2
POP: head government	2

(18) to (21) are examples of the actual test sentences and the pictures.

(18) non-affected-theme

Otosan-ga   kodomo-o   hadaka-de   okotteimasuka.

father-Nom children-Acc naked-state   is scolding

'Is the father scolding his children naked?'
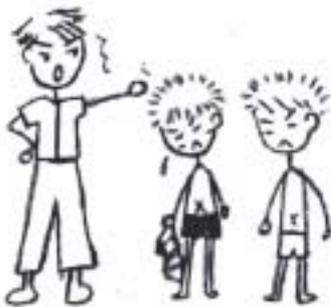
Figure 1: A Picture for Non-affected-theme Transitive Test

okoru (scold) is a non-affected-theme transitive. Therefore, the subject *otosan* should be naked. In this picture, however, the children are naked. Thus, the expected answer is 'no'.

(19) affected-theme

Sensei-wa   kodomo-o   hadasi-de   narabeteimasuka.

teacher-Nom children-Acc   barefoot-state   is lining up

'Is the teacher lining up her students barefoot?'

Figure 2: A Picture for Affected-theme Transitive Test

Since *naraberu* (line up) is an affected-theme transitive, it can be predicated of the direct object *kodomo*. The direct object in this picture is barefooted. Thus this sentence should be accepted.

(20) the antecedent government requirement

    Otokonoko-no-otosan-wa   hadasi-de   hasitteimasuka.

    boy -   Gen father- Nom   barefoot-state   is running

    'Is the father of the boy running barefoot?'

Figure 3: A Picture for the Antecedent Government Requirement Test

In the sentence above, *otosan* (the father), not *otokonoko* (the boy), is the possible antecedent of *hadasi-de* (barefoot). This is because *otokonoko* is embedded in *otokonoko-no-otosan-wa* (the father of the boy) that prevents *otokonoko* from m-commanding *hadasi-de*. Therefore, this test sentence has to be answered in the negative.

(21) the head government requirement

    Otokonoko-wa onnanoko-ni   hadasi-de   hana-o   ageteimasuka.

      boy –Nom   girl - Dat   barefoot-state   flower –Acc   is giving

   'Is the boy giving flowers to the girls barefoot?'
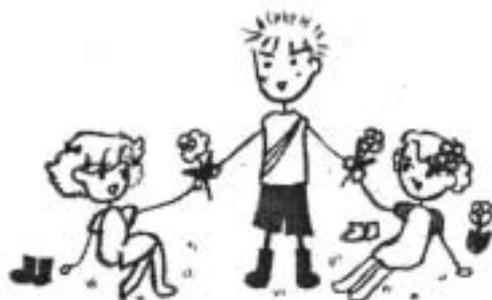
Figure 4: A Picture for the Head Government Requirement Test

As we have seen in the VP structure (13), an indirect object cannot be the antecedent of an SDP, because it is in the VP Spec and a minimality barrier V' exists between the zero-level category and an indirect object and it cannot satisfy POP. In this picture, the indirect object *onnanoko* (the girls) is barefoot, thus the answer should be 'no'.

4.2.4 Results

Table 3 and 4 summarize the results of this experiment.   For the analysis, a two tailed t-test analysis was utilized (a significance level; $p < .05$).

Table 3: The Percentage of Correct Responses by L2 learners about Japanese SDPs

Group	A	B	C
n	7	10	6
affected-theme transitive			
dasu (let them out)	43	60	100
ireru (let them in)	100	80	100
naraberu (line up)	43	50	83
non-affected-theme transitive			
sawaru (touch)	71.4	90	100
warau (laugh)	43	90	100
okoru (scold)	71.4	70	100
head-government			
ageru (give)	86	60	100
miseru (show)	71.4	90	100
antecedent-government			
hasiru (run)	100	100	100
neru (sleep)	100	100	100

Table 3 shows the percentage of correct responses. Before discussing the results, let us consider one question, which is related to the response pattern in Group A. The percentage of *ireru* (let them in) is 100% while the percentage of the other two verbs is 43%. The cause that led to 100% may be in the picture. (22) is the actual test sentence and the picture of this problematic target sentence.

(22) Okasan-wa   kodomo -o   hadasi-de   ireteimasuka.
      mother- Nom children -Acc barefoot-state   let them in
      'Is the mother making the children enter the house barefoot?'

Figure 5: The Picture that Showed a Problematic Result

As indicated in this picture, the lower part of the mother's body is behind the wall and only the boys are barefoot. Consequently, the subjects might have been induced to answer 'yes' to this target sentence.

Table 4 summarizes the words which showed significant differences among the groups with respect to affectedness of verbs.   These results revealed that Group A significantly had an inclination to reject object-oriented readings

Table 4: Words Which Showed Significant Differences : A= Group A, B= Group B, C= Group C

Group	words
A X B	warau
A X C	dasu, naraberu, warau
B X C	dasu, ageru

5 Discussion

Given the results in the previous section, I will discuss four crucial points that are related to the POP.

5.1 L2 acquisition by Group A

The results by Group A provided unique patterns of answers regarding affectedness of verbs and the POP requirement.

1) **affected-theme transitive**: Group A subjects tended to reject object-oriented readings and preferred subject-oriented readings as we have found out in the results. This is a typical property of Mandarin Chinese SDPs; namely they are predicated only of subjects. Therefore, it is very likely that L1 transfer has led to this result.

2) **non-affected-theme transitive**: The subjects were more successful in answering on the non-affected-theme transitives than the affected-theme transitives. However, considering that non-affected-theme transitives in Japanese allow only subject-oriented readings and SDPs in Mandarin Chinese also allow only subject-oriented readings, it is not surprising that they could give correct answers, but for the wrong reason.

3) **the head government requirement:** Since they prefer subject-oriented readings as discussed in 1) above, it is possible to give a correct answer only if they check whether the subject is 'barefoot' or not in the picture. Therefore, we can understand why they could give a correct answer to this question although they failed to answer the questions for affectedness of verbs.

4) **the antecedent government requirement**: It is possible for the subjects to give a correct answer if they have already acquired the c-command requirement because their SDPs in Japanese are adverbial and adverbs also need to c-command their antecedent. Moreover, the affectedness of verbs does not influence this type of target sentence. Thereby, they could give correct answers to these questions although they had not acquired affectedness of verbs.

To sum up, these results are naturally and also correctly predicted by L1 transfer, which gives a clue to understanding the patterns of answers given by the Group A subjects. This amounts to saying that Japanese SDPs in the L2 learners have an adverbial property.

If the results are due to L1 transfer as we have suggested above, the acquisition sequences between L1 and L2 are predicted to be different. In the rest of this study, I will show that this prediction is borne out.

5.2 Difference between L1 and L2 acquisition

In 5.2.1, first, I will explain the detail of Suzuki (2000), which was introduced in 3.1.2, to discuss the contrast between L1 and L2 acquisition. Then in 5.2.2, I will argue that L1 and L2 acquisition have different acquisition sequences.

5.2.1 Acquisition of the POP by the Japanese young children

Table 5 shows the results of the young Japanese children in Suzuki (2000). The data for twenty-nine children was collected using a Truth Value Judgment Task.

Suzuki (2000) found out that from three to five years old, the children failed to obey both the antecedent government requirement and the head government requirement, and the six-year-old children obeyed only the antecedent government requirement.

These findings suggest that all properties of SDPs are acquired after six years of age because even the six years olds could give adult-like interpretations only on the antecedent government requirement. However, they had already acquired the POP requirement in floating quantifiers as mentioned in Section 3. Then, what makes them differ from adults' interpretations? Considering the fact that they had already acquired the POP, their VP structure itself is the same as adults. Therefore, the problem may be the position of where a non-affected-theme object appears. There is a possibility that a non-affected-theme object satisfies the POP requirement somewhere in a VP structure. Under my theoretical assumptions, then, the suggestion that a non-affected-theme object may appear in the same position with an affected-theme object provides a reasonable answer to this question. That is, both an affected-theme object and a non-affected-theme object are sisters of a verb. An affected-theme object and a non-affected-theme object might be in the same position in their VP structure and satisfy the POP requirement in six year olds.

Table 5: The Percentage of Correct Responses by Japanese Young Children about SDPs
(two-tailed t-test for the analysis, p<.05)

mean age	3;4	4;4	5;6	6;2
n	**6**	**10**	**10**	**3**
affected-theme transitive				
kaku(draw)	66.6	80	80	100
katazukeru(put away)	100	90	100	100
arau(wash)	83.3	80	70	66.6
kaku(draw)	100	80	80	66.6
non-affected-theme transitive				
oikakeru(chase)	0	0	20	0
oikakeru(chase)	33.3	10	20	0
kaburu(wear)	83.3	50	20	33.3
dakkosuru(carry)	100	100	70	33.3
head-government				
miseru(show)	16.6	0	100	100
ageru(give)	16.6	20	30	0
antecedent-government				
warau(laugh)	16.6	30	60	66.6
warau(laugh)	50	20	40	33.3

5.2.2 Comparison between L2 acquisition and L1 acquisition

Let us, in turn, make a comparison between L2 acquisition and L1 acquisition based on the discussion in 5.1 and 5.2.1.

The young children failed to answer the POP questions. And they tended to admit the subject-oriented reading regardless of the affectedness of verbs. On the other hand, the L2 learners seemingly succeeded in answering the POP questions. They, however, failed to identify affectedness of Japanese verbs, and they preferred object-oriented readings. This contrast indicates that L2 does not develop in the same way as L1. This is an expected result and indirectly supports the analysis by L1 transfer.

6 Conclusion

In this study, the experiments regarding the difference of acquisition sequences of Japanese SDPs in L1 and L2 were conducted based on Koizumi (1994). The results of the experiments revealed that there was a distinct difference between L1 and L2 acquisition

sequences. It supports Schwartz and Sprouse's (1996) and Eubank's (1996) hypothesis that L2 learners use their L1 grammar at an early stage of L2 acquisition.

References

Eubank, L. (1996). Negation in early German-English interlanguage: More valueless features in the L2 initial state. *Second Language Research, 12*, 73-106.

Koizumi, M. (1994). Secondary predicates. *Journal of East Asian Linguistics, 3*, 25 -79.

Koizumi, N. (1996). The Stage-level representation and the peculiar status of depictive predicates. *English Linguistics, 13*, 121-139.

Odlin, T. (1994). Transferebility and lexical restructuring. In C. A. Blackshire-Belay(Ed.), *Current Issues in Second Language Acquisition and Development*. Lanham, Maryland: University Press of America, 29-45.

Schwartz, B. and Sprouse, R. (1996). L2 cognitive states and the Full Transfer/Full Access model. *Second Language Research, 12*, 40-72.

Shi, E. (2001). The canonical argument structure constraint in SLA. Acquisition of verbs in depictive and resultatives. A paper presented at American Association for Applied Linguistics Conference.

Suzuki, S. (2000). *Acquisition of Japanese secondary predicates by Japanese children.* Unpublished Master's thesis, Osaka University, Osaka, Japan.