The effect of L1 in L2 acquisition of argument structure

——With special reference to psych adjectives——

Yasuko Sato

1. Introduction

This paper investigates the acquisition of argument structure in cases where mapping of semantic roles to syntax is complex, and where morphological marking is different between Japanese and English. Both factors are expected to cause problems for Japanese learners of English. The target item is psychological adjectives that are derived from psychological verbs (henceforth, psych verbs) such as boring and bored in (1 a) and (1 b) respectively.

(1) The students did not like their new teacher.
   a. The teacher was boring.
   b. The students were bored.

Previous studies have found that causative psych verbs with Theme as Subject (e.g. bore) cause learning problems (Chen, 1996; Juffs, 1996; Montrul, 2001; Sato, 2002, 2003; White et al., 1999). The present study focuses on Japanese learners of English and examines the learners’ actual states of acquisition by conducting an experiment.

2. The theoretical background

2.1. Learning problems with psych verbs

Psych verbs have two types: Experience Subject verbs (SE verbs) as in (2 a) and Experiencer Object verbs (OE verbs) as in (2 b).

(2) a. John liked the piano concert.
   b. The piano concert pleased John.

As the examples above indicate, the mapping of arguments to syntactic positions seems arbitrary and
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raises problems for the Thematic Hierarchy in (3) and the Uniformity of Theta Assignment Hypothesis (henceforth, UTAH) proposed by Baker (1988) as in (4).

(3)  (Agent (Experiencer (Goal/Source/Location (Theme))))

Grimshaw (1990: 8)

(4)  The Uniformity of Theta Assignment Hypothesis (UTAH)

Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure.

Baker (1988: 46)

In a thematic hierarchy, an argument with a particular semantic role is linked to a particular structural position. According to the Thematic Hierarchy proposed by Grimshaw in (3), an argument with Agent role is linked to a position higher than an argument with Experiencer role, which in turn is higher than arguments with roles of Goal, Source, or Location, which in turn are higher than an argument with the role of Theme. With regard to SE verbs, the Experiencer is always higher than the Theme in the hierarchy. So there is no linking problem with them. However, OE verbs with the Theme as Subject (e.g. bore, please, etc.) violate the hierarchy in that the Experiencer is lower than the Theme. This peculiar property of OE verbs poses a problem to the UTAH in which thematic roles and grammatical functions are uniformly connected at the D-structure. The pair of sentences in (2) shares the same semantic roles but has different syntactic representations and hence violates the UTAH.

Another problem for learners is morphological differences of psych predicates between English and Japanese. Languages differ in how argument structure alternation is marked morphologically. English does not mark argument structure alternation morphologically overtly as in (5 b) and (6 b) while Japanese does, as the causative morphology $-ase-$ in (6 a) shows.

(5)  a. Mary ga jishin o kowaga-tta

Mary NOM earthquake ACC fear-PAST

b. ‘Mary feared an earthquake.’

(6)  a. Jishin ga Mary o kowagar-ase-ta

earthquake NOM Mary ACC be frightened-CAUSE-PAST

b. ‘An earthquake frightened Mary.’
Without the causative morphology, the sentence is ungrammatical as in (7a).

(7) a.* Jishin ga Mary o kowaga-tta
    earthquake NOM Mary ACC fear-PAST

b. (Intended: ‘An earthquake frightened Mary.’)

The morphological difference between the two languages is expected to cause problems for Japanese learners.

2. 2. Psych adjectives in English and Japanese

There are two types of psych adjectives that are derived from OE verbs: -ing psych adjectives and -ed psych adjectives. We will regard -ed and -ing forms of OE verbs as adjectives:\n
(i) They can be preceded by emphatic modifiers such as very and more.
    e.g. He was more excited than anyone else and continually cracked jokes. (BNC)

(ii) They can function as prenominal modifiers.
    e.g. He looked over the estate agent’s shoulder at the surprised face of the Englishman. (BNC)

(iii) They can be a complement to verbs such as seem, look and remain.
    e.g. She didn’t look frightened, but neither did she look as though she was faking anything. (BNC)

(iv) They can co-occur with adjectives.
    e.g. I was bored and lonely; they were suffering from compassion fatigue. (BNC)

(v) They can be combined with the affixes attaching to adjectival roots such as un-, and -ly. (e.g. excitedly, unsurprising, interestingly)
    e.g. Squirrels chattering excitedly in the branches above. (LDOCE)

Pairs of -ed and -ing psych adjectives have been treated similarly to SE and OE verb (e.g. Roberts 1989; Nakajima 1993). That is, OE verbs and -ing adjectives belong to one group and SE verbs and -ed adjectives belong to another group.

The morphology attaching to Japanese psych verbs that correspond to English -ed psych adjec-
tives is -te-i-ru, which is a combination of te, marking the continuative form of the verb, i, the stem form of a verb of animate existence be, and ru, a present (or non-past) marker in Japanese. We should note that -te-i-ru denotes not only resultative state meaning such as mental states expressed by psych verbs, but action-in-progress meaning. When -te-i-ru is attached to action verbs as in (8 a) and (9 a), it denotes action-in-progress meaning and when it is attached to stative verbs, a resultative state reading is obtained, as in (10 a) and (11 a).

(8) a. Mary ga arui - te - i - ru.
   Mary NOM walk - ASP - be - PRES
   b. ‘Mary is walking.’

(9) a. Mary ga tegami o kai - te - i - ru
   Mary NOM letter ACC write - ASP - be - PRES
   b. ‘Mary is writing a letter.’

(10) a. Terebi ga tsui - te - i - ru
    TV NOM be turned - ASP - be - PRES
    b. ‘The TV (was turned on and it) is on.’
    c. *‘The TV is being turned on.’

(11) a. Mary ga taikutsushi - te - i - ru.
    Mary NOM be bored - ASP - be - PRES
    b. ‘Mary is bored.’
    c. *‘Mary is boring.’ (Intended: ‘Mary is bored.’)

In English be + -ing is used to express the meaning of action in progress, as in (8 b) and (9 b), and it cannot be used to denote resultative state as (10 c) and (11 c) indicate. Because, in Japanese, the morphology, -te-i-ru, which means action in progress, can also be used to express the meaning of resultative state, Japanese learners of English are expected to mistake Mary is surprising for Mary is surprised. Many errors such as (11 c) were obtained in the corpus data in Sato (2005), which will be discussed below.
3. The use of OE predicates by Japanese learners of English

The error data given below provides initial confirmation that learners’ errors do indeed occur with psych predicates. The data is taken from a large computerised database, the Longman Learner's Corpus, which contains samples of written English produced by native speakers of various languages. Twenty-two OE verbs were extracted from the corpus. They are as follows:

OE verbs: amaze, amuse, annoy, bore, bother, concern, confuse, convince, delight, disappoint, embarrass, excite, frighten, frustrate, impress, irritate, please, puzzle, satisfy, trouble, upset, worry

The examples of OE verbs obtained from the corpus are classified according to the following four types (i) – (iv):

(i) Adjectival passives: e.g. Mary is frightened of a dog.
(ii) Transitive sentences: e.g. A dog frightens Mary.
(iii) Periphrastic make causatives: e.g. A dog makes Mary frightened.
(iv) -ing psych adjectives: e.g. A dog is frightening to Mary.

Table 1 presents the frequency and percentage of OE verbs by semantic role of the subject. The figures show the number of sentences in which each verb appeared. In total, 1116 sentences of OE verbs were extracted. The table illustrates that the number of sentences with Experiencer subject accounts for 77.6% of all the examples and is much larger than that of sentences with Theme subject (22.4%).

<table>
<thead>
<tr>
<th>Sentence type</th>
<th>Subject</th>
<th>Experiencer</th>
<th>Theme</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) adjectival passives</td>
<td></td>
<td>812(97.0%)</td>
<td>25(3.0%)</td>
<td>837(100%)</td>
</tr>
<tr>
<td>(ii) transitive sentences</td>
<td></td>
<td>*31(28.7%)</td>
<td>77(71.3%)</td>
<td>108(100%)</td>
</tr>
<tr>
<td>(iii) make causatives</td>
<td></td>
<td>0(0%)</td>
<td>16(100%)</td>
<td>16(100%)</td>
</tr>
<tr>
<td>(iv) -ing adjectives</td>
<td></td>
<td>*23(14.9%)</td>
<td>132(85.1%)</td>
<td>155(100%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>866(77.6%)</td>
<td>250(22.4%)</td>
<td>1116(100%)</td>
</tr>
</tbody>
</table>
As the sentence types (ii) and (iv) cannot have Experiencer subjects, the figures in the two sentence types with Experiencer subject are all errors. 28.7% of transitive sentences and 14.9% of -ing adjectives have Experiencer subject: the learners wrongly assigned the Experiencer to the subject position in the sentence types. Some of the errors are as follows:

(12) *I was boring in the train. (18314ell)*
(13) *I am exciting to hear your wedding. (2262in4)
(14) *I am always embarrassing to think such a thing. (18803pi5)
(15) *I felt frightening. (7992ui2)

With regard to -ed adjectives, linking error accounted for 3% (25 out of 837 occurrences): Theme was wrongly assigned to the subject position as follows:

(16) *Pachinko is excited. (20336ell)
(17) *The reports from the police were not satisfied. (8075ui2)

The errors above show that passive morphology be -ed is wrongly used with the Theme subject. Japanese learners fail to recognise that -ing adjectives, not -ed adjectives assign the Theme to the subject. Smaller errors in which the Theme was wrongly linked to the subject suggest that -ing adjectives are more difficult than -ed adjectives for Japanese learners. In order to investigate why -ing adjectives are problematic and how they are acquired by Japanese learners of English, an experiment was designed.

4. The experiment

This experiment designed to test whether -ing psych adjectives would be more problematic than -ed psych adjectives for Japanese learners of English. Sato (2002, 2003) showed that -ing adjectives (e.g. The result was disappointing) were more problematic than -ed adjectives (e.g. She was disappointed with the result). However, in Sato (2002, 2003), the subject of the test sentences with -ing adjectives was inanimate. In order to control for the possible effect of animacy, this experiment used an animate Theme, such as Mary is boring.
4. 1. Research question and hypothesis

In this experiment, a forced-choice format was used to test learners’ knowledge of argument structure of psych adjectives. Based on the discussion given above, the following research question and hypothesis were established in relation to the experiment.

Research questions
1. Are -ing psych adjectives more difficult than -ed psych adjectives in predicative use for Japanese learners of English?
2. Are -ing psych adjectives more difficult than -ed psych adjectives in attributive use for Japanese learners of English?

Hypothesis

-Ing psych adjectives will be more problematic than -ed psych adjectives both in predicative and attributive use for Japanese learners in that -ing psych adjectives follow the non-canonical linking by which the Theme is assigned to the subject.

4. 2. Subjects

80 Japanese learners of English participated in this experiment. They were third year university students in Osaka and were divided into four proficiency groups from intermediate to advanced according to their scores on TOEIC. The differences between the scores of the four groups on TOEIC were significantly different from each other (p<.0001). Each group had 20 subjects. Table 2 shows the mean scores and standard deviations on TOEIC for each group.

Table 2  The mean scores and standard deviations on TOEIC for each proficiency group

<table>
<thead>
<tr>
<th>Group(n = 20)</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate</td>
<td>478.23</td>
<td>25.71</td>
</tr>
<tr>
<td>High-intermediate</td>
<td>562.51</td>
<td>23.18</td>
</tr>
<tr>
<td>High</td>
<td>659.38</td>
<td>27.63</td>
</tr>
<tr>
<td>Advanced</td>
<td>752.39</td>
<td>33.95</td>
</tr>
</tbody>
</table>

4. 3. Pre-test

A pre-test was conducted, before the main test, to test whether the learners would know the difference between meanings denoted by -ing and -ed forms followed by a noun. In the pre-test, the subjects were shown a picture in which something is in a certain state and asked to choose an appro-
appropriate form from the two choices, -ing and -ed to fit the situation depicted in the picture. For example, when a picture in which something is in a state (e.g. The door is closed) was given to the learners, they were expected to choose the -ed form such as in closed door, not closing door. When a picture depicting an action in progress (e.g. Water is boiling) is shown, they were expected to choose the -ing form such as in boiling water, not boiled water. A picture depicting either a resultative state or an action in progress was presented for -ing and -ed forms of a verb. An example of the test items is as follows:

   e.g. (a) closed door   (b) closing door

If they chose an appropriate form, they were given 1 point. If they got more than 7 points, they were allowed to participate in the experiment. In other words, the subjects whose scores were below 7 were excluded from the experiment. In the pre-test, no one was excluded from the experiment.

5. Results

In the experiment, a forced-choice format in which learners were asked to identify the more appropriate form (the -ing form or the -ed form) considering a context for the target sentence was used. The experiment consisted of tests 1 and 2 in which predicative and attributive use of psych adjectives were tested respectively.

5.1. Group results

Table 3 shows the mean accuracy scores and percentages on the 4 adjective types for each proficiency group.

A repeated measures two-way ANOVA was run on the means for the 4 adjective types. It yielded statistically significant effects for group \((F(3,76)=34.765, p<.0001)\) and psych adjectives \((F(3,228)=7.728, p<.0001)\). However, there was no significant interaction between adjectives and learner group \((F(9,228)=1.030, p=.4167)\). A post-hoc test (Scheffe test, \(p<.05\)) revealed that all the groups were significantly different from each other with the exception that the difference between
the intermediate group and the high-intermediate group was not significant ($p = .3303$). A post-hoc test (Scheffe test, $p < .05$) showed that -ing adjectives were significantly more difficult than -ed adjectives. However, a significant difference was observed only in the predicative use, not in attributive use ($p = .9260$). Figure 1 presents the mean accuracy percentages on 4 adjective types for each proficiency group. As the figure shows, -ing adjectives in predicative use were more difficult than those in attributive use. However, in the case of attributive use, the learners did not respond to both -ed and -ing adjectives significantly differently, which indicates that -ing adjectives did not cause more problems than -ed adjectives for the learners.

![Figure 1. The mean accuracy percentages on 4 adjective types for each proficiency group](image)

Table 3  The mean accuracy scores and percentages for each adjective type and proficiency group

<table>
<thead>
<tr>
<th>Group</th>
<th>Predicative use</th>
<th>Attributive use</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-ing (n=10)</td>
<td>-ed (n=10)</td>
<td></td>
</tr>
<tr>
<td>Intermediate (n=20)</td>
<td>0.515 (51.5%)</td>
<td>0.640 (64.0%)</td>
<td>0.610 (61%)</td>
</tr>
<tr>
<td>High-Intermediate (n=20)</td>
<td>0.620 (62.0%)</td>
<td>0.710 (71.0%)</td>
<td>0.683 (68.3%)</td>
</tr>
<tr>
<td>High (n=20)</td>
<td>0.770 (77.0%)</td>
<td>0.885 (88.5%)</td>
<td>0.852 (85.2%)</td>
</tr>
<tr>
<td>Advanced (n=20)</td>
<td>0.960 (96.0%)</td>
<td>0.965 (96.5%)</td>
<td>0.975 (97.5%)</td>
</tr>
<tr>
<td>Mean</td>
<td>0.716 (71.6%)</td>
<td>0.800 (80.0%)</td>
<td>0.780 (78.0%)</td>
</tr>
</tbody>
</table>

To sum up, the L2 groups showed that -ing adjectives were more problematic than -ed adjectives in the case of predicative use, as hypothesised. In contrast, our prediction was not born out with
respect to attributive use: the learners did not show significantly different behaviour toward both types of adjectives in the attributive use.

The data obtained from the experiment tells us that the learners knew that -ed psych adjectives assign the Experiencer to the subject position and pre-modify the Experiencer and also -ing psych adjectives pre-modify the Theme.

5.2 Individual results

The results in the experiment made it clear that the predicative use of -ing was the most problematic among four types of psych adjectives. With regard to the attributive use of -ing and -ed psych adjectives, they were not significantly different from each other. However, as Table 2 indicates, the mean accuracy percentage in the L2 groups for attributive -ing psych adjectives (81.0%) was slightly higher than attributive -ed psych adjectives (79.5%). This was due to high-intermediate and high groups’ better performance on attributive -ing psych adjectives than attributive -ed psych adjectives, as shown in Figure 1.

In order to see whether the individual results conform to the group results, an individual analysis
was conducted. The performance of an individual subject was divided into four acquisition patterns (A) – (D), as follows: (A) if a learner performed at 70% or over on both -ing and -ed adjectives, it was considered that the learner had knowledge of both types of adjectives; (B) if a learner performed at 70% or over on -ed adjectives but not -ing adjectives, it was considered that the learner had knowledge of -ed adjectives; (C) if a learner performed at 70% or over on -ing adjectives but not -ed adjectives, it was considered that the learner had knowledge of -ing adjectives; and (D) if a learner’s accuracy was below 70% on both types of adjectives, it was considered that the learner did not have knowledge of either type of adjectives.

Tables 4 and 5 report the number of subjects in performance subgroups (A) – (D) for each proficiency group in predicative use and attributive use respectively.

### Table 4 The number of subjects in performance subgroups (A) – (D) for each proficiency group (predicative use)

<table>
<thead>
<tr>
<th>Group</th>
<th>Acquisition pattern</th>
<th>(A) -ed and -ing acquired</th>
<th>(B) -ed acquired but -ing not acquired</th>
<th>(C) -ing acquired but -ed not acquired</th>
<th>(D) -ing and -ed not acquired</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate</td>
<td>4(20%)</td>
<td>6(30%)</td>
<td>3(15%)</td>
<td>7(35%)</td>
<td>20(100%)</td>
<td></td>
</tr>
<tr>
<td>High-intermediate</td>
<td>6(30%)</td>
<td>5(25%)</td>
<td>1(5%)</td>
<td>8(40%)</td>
<td>20(100%)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>15(75%)</td>
<td>4(20%)</td>
<td>1(5%)</td>
<td>0(0%)</td>
<td>20(100%)</td>
<td></td>
</tr>
<tr>
<td>Advanced</td>
<td>20(100%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>20(100%)</td>
<td></td>
</tr>
</tbody>
</table>

### Table 5 The number of subjects in performance subgroups (A) – (D) for each proficiency group (attributive use)

<table>
<thead>
<tr>
<th>Group</th>
<th>Acquisition pattern</th>
<th>(A) -ed and -ing acquired</th>
<th>(B) -ed acquired but -ing not acquired</th>
<th>(C) -ing acquired but -ed not acquired</th>
<th>(D) -ing and -ed not acquired</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate</td>
<td>6(30%)</td>
<td>6(30%)</td>
<td>0(0%)</td>
<td>8(40%)</td>
<td>20(100%)</td>
<td></td>
</tr>
<tr>
<td>High-intermediate</td>
<td>9(45%)</td>
<td>1(5%)</td>
<td>5(25%)</td>
<td>5(25%)</td>
<td>20(100%)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>17(85%)</td>
<td>0(0%)</td>
<td>3(15%)</td>
<td>0(0%)</td>
<td>20(100%)</td>
<td></td>
</tr>
<tr>
<td>Advanced</td>
<td>20(100%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>20(100%)</td>
<td></td>
</tr>
</tbody>
</table>

In Tables 4 and 5, the acquisition pattern (A) shows the subjects who have acquired both types of psych adjectives, and (B) and (C) indicates those who have acquired only -ed adjectives and only -ing adjectives, respectively. The last pattern (D) illustrates the subjects who have acquired neither of psych adjectives.

Figures 3 and 4 present a graphic display of the acquisition patterns by group in predicative use.
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and attributive use respectively. With regard to predicative use, Figure 3 shows that the individual analysis conformed to the group analysis. As the percentages of learners categorised in the group (B) show, the number of subjects who have acquired -ed adjectives but not -ing adjectives becomes smaller with increasing proficiency.

Figure 3. The percentages of subjects in performance subgroups (A) − (D) for each proficiency group (predicative use)

Figure 4. The percentages of subjects in performance subgroups (A) − (D) for each proficiency group (attributive use)
Turning now to the result of attributive use, the group result of attributive use of psych adjectives indicated that -ing adjectives did not cause more problems than -ed adjectives for the learners, especially for high and high-intermediate groups. Figure 4 clearly shows that the individual result conforms to the group result. As for high-intermediate and high groups, the number of subjects who acquired only -ing adjectives was larger than that of those who acquired only -ed adjectives. This result suggests that -ing adjectives did not cause more problems than -ed adjectives for the learners at the higher levels of acquisition. In particular, as regards the high group, there were no subjects who acquired neither of psych adjectives. So, only -ed adjectives were problematic for them. With regard to intermediate learners, no subjects acquired only -ing, but 30% of the subjects acquired -ed but not -ing adjectives. In other words, -ing adjectives were more problematic than -ed adjectives not only in predicative but also in attributive use for intermediate learners.

5.3. Item analysis

An individual item analysis was conducted to investigate whether errors are potentially linked to difficulty with particular lexical items or whether L2 learners treat adjectives in a uniform way. In this analysis, the scores of the advanced group were excluded because their accuracy percentages on all the test items were very high. The mean accuracy percentages on four types of psych adjectives for each item are presented in Table 6.

<table>
<thead>
<tr>
<th>Verb</th>
<th>Predicative use</th>
<th>Attributive use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-ing (n=60)</td>
<td>-ed (n=60)</td>
</tr>
<tr>
<td>annoy</td>
<td>65%</td>
<td>73%</td>
</tr>
<tr>
<td>bore</td>
<td>66%</td>
<td>61%</td>
</tr>
<tr>
<td>disappoint</td>
<td>81%</td>
<td>81%</td>
</tr>
<tr>
<td>fascinate</td>
<td>73%</td>
<td>81%</td>
</tr>
<tr>
<td>frighten</td>
<td>46%</td>
<td>71%</td>
</tr>
<tr>
<td>horrify</td>
<td>46%</td>
<td>61%</td>
</tr>
<tr>
<td>interest</td>
<td>81%</td>
<td>83%</td>
</tr>
<tr>
<td>irritate</td>
<td>48%</td>
<td>70%</td>
</tr>
<tr>
<td>surprise</td>
<td>68%</td>
<td>86%</td>
</tr>
<tr>
<td>tire</td>
<td>50%</td>
<td>85%</td>
</tr>
<tr>
<td>Total</td>
<td>62%</td>
<td>75%</td>
</tr>
</tbody>
</table>
Figures 5 and 6 represent the mean accuracy percentages on the four types of psych adjectives in predicative and attributive use for each item, respectively. Figure 5 shows that -ed adjectives had a higher accuracy percentage rate than -ing adjectives, except for the verb bore as regards predicative use. There seem to be problems with specific lexical items. There are four verbs with a rate of -ing form around 50%: frighten (46%), horrify (46%), irritate (48%) and tire (50%).

Figure 6, showing percentage rates of attributive use, indicates that there was no variation of percentage rate for 7 out of the 10 items, i.e. with the exception of annoy, bore and interest. As regards these three items, -ing adjectives had a higher percentage rate than -ed adjectives. Figures 5 and 6 indicated that boring was less problematic than bored for the learners. This result might reflect the input frequency the learners receive. The data from the Longman Learner’s corpus, which is argued in the section 3, gives evidence supporting this tendency. The table 7 shows that a small number of psych adjectives were used with low frequency by Japanese learners but only boring and exciting were frequently used\(^{10}\).
6. Discussion and Conclusion

The data obtained from the experiment showed that the learners performed worse on -ing adjectives than -ed adjectives in the case of predicative use. The learners’ performance on -ing adjectives in the predicative use was significantly worse than -ed psych adjectives. Thus, our prediction that Japanese learners had difficulty in linking Theme to the subject position was confirmed. However, -ing psych adjectives were not significantly more difficult than -ed psych adjectives in the case of attributive use, contrary to our prediction.

One of possible explanations for the learners’ poor performance on -ing adjectives in predicative use is the effect of L1. The expression denoting action in progress is also used to express resultative state in Japanese, as we saw in the section 2.2. The association between the -te-i-ru and -ing forms may be strong enough to allow learners to produce errors such as *Mary is surprising intending that Mary is surprised.

In addition to this explanation, one possible way to account for this result can be found in the

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Yasuko SATO

Table 7 Rates of correct and incorrect usage of -ing adjectives for each item

<table>
<thead>
<tr>
<th>Verb</th>
<th>Correct use</th>
<th>Incorrect use</th>
</tr>
</thead>
<tbody>
<tr>
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Token (%) 132 (85.2%) 23 (14.8%)
The effect of L1 in L2 acquisition of argument structure

form of -ing. The learners might have wrongly interpreted -ing sentences such as The passenger is annoying as The passenger is now in the process of annoying someone. As the sentence lacks an object, the learners rejected it as an inappropriate sentence. This tendency was especially observed in the case in which a test sentence had only one argument, as in (18) and (19).

(18) John always talks about himself for hours at a party.  
    John was (a) irritated.  
    (b) irritating.

(19) It was reported that a bear came down to this town.  
    A bear was (a) horrified.  
    (b) horrifying.

The learners might have thought that the object in these sentences was missing. The form be + -ing does not appear in the attributive use as in a surprising guest, so -ing adjectives may not have caused a problem.

We have seen that the learners had more problems with -ing adjectives in the predicative use than those in the attributive use. Only intermediate learners had problems with -ing adjectives both in predicative and attributive use. The experiment indicated that the effect of overt morphology of be -ing affected Japanese learners adversely and that the learners had problems with mapping the theme onto the subject, especially in predicative use of -ing adjectives.

Notes

1) In order to control for possible morphological effects in the acquisition of psych adjectives, those without morphological markers or with morphological markers other than -ed and -ing (e.g. fearful, satisfactory, troublesome, etc.) are not discussed.

2) There are various versions of the Thematic Hierarchy (e.g. Jackendoff 1972). They differ from each other with regard to labels and types of semantic roles that are included. We adopt Grimshaw’s (1990) version because it includes the Experiencer.

3) The particle ga is a nominative case particle but another particle wa marking a topic can be used in a case where ga is used. The differences between the two particles have been discussed (e.g. Kuno 1973). Having admitted that these two particles differ semantically and structurally, we use ga as a nominative case particle.

4) The criteria used for assigning -ing and -ed participle forms to adjectives are based on Biber et al. (1999).

5) Simple Search of the British National Corpus. Http://sara.natcorp.ox.ac.uk/lookup.html

8) The data are taken from various kinds of contexts including examinations such as the Cambridge proficiency examination, class work, homework, authentic letters and so on.
9) The coding numbers in parentheses appearing at the end of the sentences refer to original essays in the Longman Learner’s Corpus from which sentences were extracted.
10) In Juffs’ (1998) analysis of a popular textbook for ESL, it is reported that interesting, exciting and boring appeared with the high frequency in the textbook Interchange.

References

Appendix

Examples of one set of test sentences (e.g. *bore*)

〈Predicative use〉

(1) The students did not like their new teacher.
   The teacher was (a) bored.
   (b) boring.

(2) The students did not like their new teacher.
   The students were (a) bored.
   (b) boring.

〈Attributive use〉

(3) The students did not like their new teacher.
   The teacher was (a) a bored person.
   (b) a boring person.

(4) The students did not like their new teacher.
   (a) The bored students did not listen to him.
   (b) The boring students did not listen to him.