

Is the Dog ‘Frightened’ or ‘Frightening’? Psych Adjectives in L2 English by Speakers of Japanese and Spanish

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1. Introduction

Previous studies have shown that second language (L2) learners of various first language (L1) backgrounds have difficulty with psych(ological) verbs. In particular, psych verbs with a subject NP bearing a Theme role, as in (1b), cause more trouble than those with a subject NP bearing an Experiencer role as in (1a) (Chen, 1996; Juffs, 1996; Sato, 2003; White et al., 1998).

- (1) a. Tom fears the dog. (Experiencer Subject (ES))
b. The dog frightened Tom. (Experiencer Object (EO))

Both (1a) and (1b) involve two NPs, *Tom* and *the dog*, but the difference between them lies in the positions where these NPs appear. That is, *Tom* in (1a) is the subject while *Tom* in (1b) is the object of the sentence, whereas *the dog* is the object in (1a) but the subject in (1b). In this paper, we refer to psych verbs as in (1a) as “Experiencer Subject (ES)” type and those as in (1b) “Experiencer Object (EO)” type, following Pesetsky (1995) and White et al. (1998). As these examples indicate, the mapping of arguments of psych verbs onto syntactic positions appears to be arbitrary, and the distinction is expected to pose a difficulty for learners. However, previous studies have shown that L2 learners have more problems with EO psych verbs, which has in fact been taken as evidence that the mapping of arguments to grammatical positions in L2 learners’ grammars is not arbitrary but rather observes universal principles such as the Uniformity of Theta Assignment Hypotheses (UTAH, Baker, 1988) and the Thematic Hierarchy (e.g., Grimshaw, 1990). That is, according to the UTAH, L2 learners project the argument that is higher in the thematic hierarchy, i.e., Experiencer, onto the higher position in syntax, and the argument that is lower in the hierarchy, i.e., Theme, onto the lower position. Thus, it is the EO type rather than the ES type that would be problematic if psych verbs were to cause any problems.

Expanding on the previous studies of psych verbs in L2 acquisition, we investigate the acquisition of English psych adjectives, such as *disappointed* and *disappointing*, in the present study. There are two types of psych adjectives corresponding to the two types of psych verbs; namely, ES and EO types. There has been little research on the L2 acquisition of psych adjectives, as far as we are aware. Chen (1996) and Sato (2003) report that EO type psych adjectives (2b) cause more difficulty for L2 learners of English than ES type psych adjectives (2a).

- (2) a. Susan was disappointed (with the book). (Experiencer Subject (ES))
b. The book was disappointing (to Susan). (Experiencer Object (EO))

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As these examples show, *Susan*, the Experiencer, in the subject of *-ed* adjectives (2a, thus ES type) is in the prepositional object of *-ing* adjectives (2b, thus EO type). According to Chen (1996), psych verbs and psych adjectives of the EO type involve a zero causative morpheme, whereas psych verbs and psych adjectives of the ES type do not.¹ On the surface, this zero CAUS is invisible, as it is not phonetically realized. Consequently, the zero causative morpheme of the EO type predicates is claimed to be problematic for L2 learners.

In this paper, we examine how the arguments of psych adjectives, namely Experiencer and Theme, are represented in the L2 grammar of Japanese-speaking and Spanish-speaking learners of English, especially when morphological properties associated with psych adjectives differ in the L1 and L2. The rest of this paper is organized as follows: psych adjectives in Japanese and Spanish are presented in section two, followed by a brief review of two previous studies in this area. Research questions and hypotheses are presented in section three, and the present experimental study is outlined in section four. The results of the study are presented in section five. Finally, section six includes a discussion and concluding remarks.

2. Psych Adjectives in Japanese and Spanish

In the present study, we focus on two types of psych adjectives: one marked with *-ed* modifying the experiencer NP (3a), and the other marked with *-ing* modifying the theme NP (3b).

- (3) a. The dog is frightened. (ES)
 b. The dog is frightening. (EO)

In the example (3a), it is the ‘dog’ that is frightened, whereas in (3b), it is someone else that is frightened by the ‘dog.’ De Chene (1997) claims that some Japanese psych adjectives are ambiguous between the ES (*-ed*) type and the EO (*-ing*) type. He further argues that it may be difficult for Japanese learners to interpret English psych adjectives because some Japanese psych adjectives encode two distinct meanings with the same form, as shown in the Japanese examples with *kowai* ‘frighten-*ing/-ed*’ and *taikutsu-shita* ‘bor(e)-*ing/-ed*’ in (4) (De Chene, 1997, pp. 14-15).

- (4) a. Ano ko ga kenka no tabi ni kowa(i)ku-naru
 no wa tashikada
 That kid-Nom fight-Gen every time frighten-*ing/frighten-ed*-become-Nom-Top
 certain
 ‘It is undeniable that the kid gets frighten-*ing/-ed* every time there is a fight.’
 b. Ano kooshi wa taikutsu-shita yo/yoda.
 That lecturer-Top bor(e)-*ing/-ed* Fin/seem
 ‘The lecturer was boring. / It seems that the lecturer was bored.’

The examples in (4a, b) are ambiguous; (4a) can mean the boy gets frightened or the boy gets frightening, and (4b) can mean the lecturer was boring or the lecturer was bored. In such situations, the question arises whether there should be any L1 effects. In English, the two types of psych adjectives are distinct, marked morphologically, with *-ed* or *-ing*, whereas in Japanese there are no morphological markers distinguishing the two types.

The examples in (5) are the *-ed* type, while those in (6) are the *-ing* type in English, Spanish and Japanese.

- (5) a. The woman is embarrassed. (English)
 b. La mujer está avergonzada. (Spanish)
 c. Sono josei wa hazukashii. (Japanese)

¹ Briefly, Chen (1996) argues that this zero causative morpheme CAUS changes the argument structure of the root of the verb to which it is affixed by means of adding the theta role of Causer and that the CAUS is responsible for the syntactic properties of psych EO verbs including the T/SM (Target/Subject Matter) restriction (**The movie is disappointing to John about his performance*) and backwards binding (*The movie about himself is disappointing to John*). See Chen (1996) for the details of her analyses.

- (6) a. The woman is embarrassing. (English)
 b. La mujer es avergonzante. (Spanish)
 c. Sono josei wa hazukashii. (Japanese)

As we can see, psych adjectives in Spanish behave similarly to English. That is, two types of adjectives are marked with different morphology. However, “*sono josei wa hazukashii*,” in Japanese is ambiguous; as it can mean “*the woman is embarrassed*” and “*the woman is embarrassing*.”

It has been claimed that morphology plays a role in L2 acquisition, especially when zero morphology is involved, including the intransitive/transitive alternation in L2 English; e.g., “*John broke the window*” vs. “*The window broke*” (e.g., Matsunaga, 2002; Montrul, 2000). Thus, it can be predicted that Japanese learners of English may have difficulty in acquiring the distinction between these two adjective types in English. In addition, as noted by Chen (1996), there is another issue that needs to be considered. That is, when psych adjectives take two animate arguments (e.g., “*Susan is disappointed with Bill*”), this may create potential confusions for learners. In other words, they may not know which argument to choose as the Experiencer since both are animate. These issues are also explored in the present study.

3. Previous Studies

3.1. Chen (1996)

Chen (1996) conducted an experimental study with L1 Chinese and L1 French learners of English. The L1 Chinese group included 101 university students in China, consisting of three proficiency groups (low, intermediate, and high). The L1 French group had 35 learners in two proficiency levels (low and intermediate); they were enrolled in the English summer school at a university in Canada. A multiple-choice task and a grammaticality judgment task were designed to test L2 learners’ judgments on the grammaticality of psych predicates including *-ed* and *-ing* adjectives derived from six EO verbs: *amuse*, *annoy*, *fascinate*, *frustrate*, *please*, and *terrify*.²

Results of the multiple-choice task showed that the learners were generally quite accurate and that only the intermediate-level Chinese learners performed significantly better on *-ed* adjectives than on *-ing* adjectives. It was also found that the low- and intermediate-level Chinese learners had more difficulty with *-ing* adjectives taking an animate subject than with those taking an inanimate subject. Results of the grammaticality judgment task revealed that the *-ed* adjectives were not problematic for learners, as predicted, and that only the low-level Chinese and the low-level French learners were significantly less accurate than the native speakers. Along with the results of test sentences with *-ing* adjectives, Chen argued that the learners overall had more difficulty with *-ing* adjectives than with *-ed* adjectives.

3.2. Sato (2003)

Sato (2003) also administered a grammaticality judgment task with psych adjectives to five different proficiency levels of learners, from low to advanced, each including 10 L2 learners, and 10 native speakers of English.³ She used both *-ed* and *-ing* psych adjectives derived from five EO verbs: *disappoint*, *excite*, *frighten*, *interest*, and *surprise*. Learners were presented with an introductory sentence providing a context then a set of eight sentences with psych adjectives and verbs; then they were asked to judge grammaticality of each sentence in the set using a 3-point scale: -1, 0, and +1.

There were 4 sentence types in the set of 8 sentences including psych adjectives, as shown in (7).

² These two tasks included a number of other structures with psych verbs and psych adjectives, but we only discuss the results of sentence types with psych adjectives exemplified in (2a) and (2b).

³ Sato (2003) also administered a sentence completion task, which only included ES (*-ed*) type psych adjectives. We will not discuss the results here.

- (7) Mary took an examination.
- a. She was disappointed with the result.
 - b. The result was disappointing.
 - c. *The result was disappointed her.
 - d. *She was disappointing with the result.

Based on the results she obtained, Sato claimed that *-ed* adjectives were easiest to judge as grammatical (7a) while the *-ing* adjectives were most difficult to accept (7b) by the learners. Except the high-level learners, the learners failed to accept the sentences such as (7b), the mean scores falling below zero. The learners were also inaccurate in rejecting the ungrammatical sentences (7c, 7d); in particular, low and low-intermediate learners failed to reject them.

It should be noted that the issue of animacy was not considered in Sato (2003) and that the Experiencer was always animate whereas the Theme was always inanimate in her test sentences. In addition, the design of the task needs to be improved. Given a set of eight sentences that look quite similar on surface, as shown in (7), it is possible that learners only look at the structure of the sentences, comparing each other, and make their judgments without thinking about the meaning of each sentence. We thus decided to improve the methodology of the tasks and designed our experiments.

4. Research Questions and Hypotheses

Our research questions are as follows: (I) Which type of psych adjectives, i.e., EO type (*-ing*) or ES type (*-ed*), is more difficult for Japanese and Spanish learners of English?; (II) Is there any effect of L1 morphological properties on the acquisition of English psych adjectives? That is, would it be the Japanese-speaking learners who observe more difficulty as L1 Japanese psych adjectives behave differently from L2 English?

As described above, previous studies have shown that learners of English had more difficulty with EO type (*-ing*) psych adjectives than ES type (*-ed*) adjectives (Chen, 1996; Sato, 2003). If the learners were guided by universal principles, we predict that L2 learners would have more difficulty with EO type than ES type psych adjectives. However, if morphological properties in the L1 may affect L2 acquisition, we predict that Japanese-speaking learners, but not Spanish-speaking learners, would have problems in both types of adjectives. In the present experiment, we focus on the psych adjectives whose corresponding adjectives in Japanese are ambiguous between *-ed* and *-ing* types. Even though L1 Japanese does not differentiate between the two meanings morphologically, L2 English does so with overt morphology.

5. Methodology

5.1. Participants

We had 70 Japanese and 36 Spanish learners of English and a control group of 15 English native speakers (NS). Japanese speakers were classified into two proficiency levels: The Low group was composed of high school students, and High-Intermediate of university students. They were tested in Japan. Spanish speakers were also university students and they were tested in Spain. The university students, but not high school students, all took the cloze test. Based on the score, Japanese (JP)-speaking learners were divided into two proficiency levels, Low (high school students only) and High-Intermediate (High-I), and Spanish (SP)-speaking learners were divided into High-Intermediate (High-I) and Advanced (Adv.).

Table 1 gives background information of the four groups of learners: their proficiency scores, mean age, mean age of exposure to English, and mean length of study.

Table 1
Background Information of the Learners

Group		JP Low	JP High-I	SP High-I	SP Adv.
Number of Participants		42	28	20	16
Cloze Test	Mean Score	—	24.39	27.45	35.19
	SD	—	2.77	3.38	1.97
	Range	—	20–30	20–31	32–38
Age	Mean (yrs)	17.00	20.36	22.42	22.81
	SD	0.00	1.16	4.56	5.11
	Range	17	20–26	19–37	19–34
Age of exposure	Mean (yrs)	11.73	11.15	7.50	7.06
	SD	1.34	1.79	3.17	2.54
	Range	6–13	6–13	4–16	2–13
Length of study	Mean (yrs)	5.27	9.22	15.16	15.75
	SD	1.34	2.14	5.55	3.77
	Range	4–11	7–14	7–31	9–23

5.2. Tasks and Materials

We conducted two tasks: a Picture Matching Task and an Acceptability Judgment Task. Unfortunately, Spanish learners only took the Picture Matching Task, due to time constraints. In both tasks, all arguments were animate. The tasks included four pairs (*-ed* & *-ing*) of psych adjectives based on four EO psych verbs: *bore*, *disappoint*, *embarrass*, and *frighten*.

First, in the Picture Matching Task, participants were presented with a sentence including a psych adjective and a picture beneath the sentence. They were asked to indicate whether the sentence given matches the situation described in the picture, by circling True or False. A choice of ‘don’t know (DK)’ was also given and they were told to circle DK only when they were unable to judge. Figure 1 shows four examples of the Picture Matching Task with a pair of psych adjectives: *frightened* and *frightening*. For the examples (i) and (ii), the expected answer was ‘True’, and for the examples (iii) and (iv), the expected answer was ‘False’. It should be noted that the same picture was used twice, i.e., appropriate and inappropriate combinations ((i) & (iv), (ii) & (iii)).

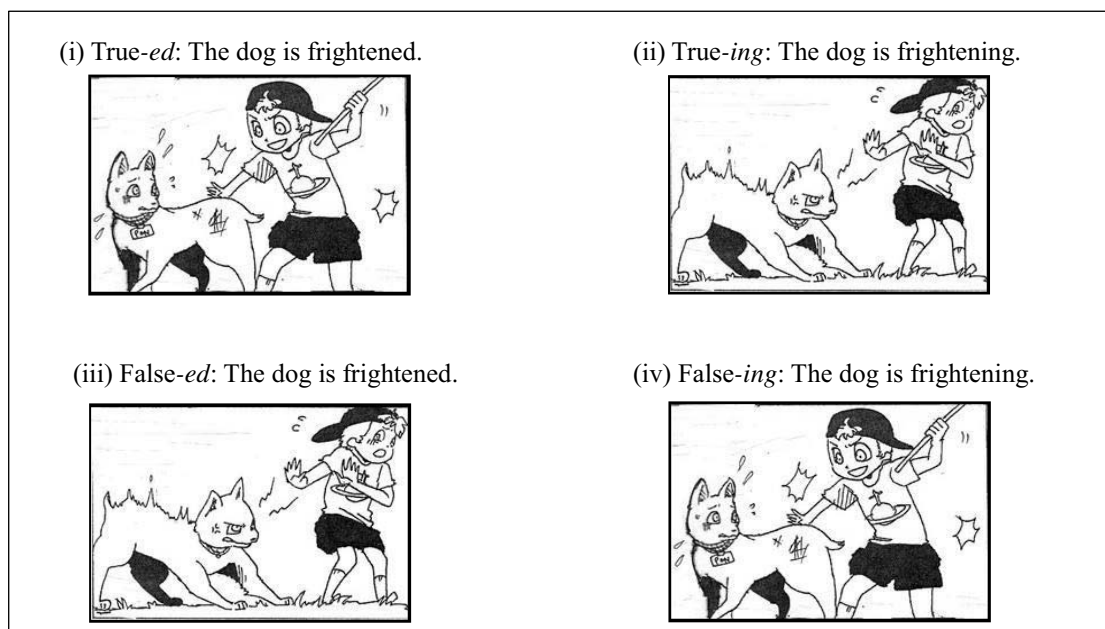


Figure 1. Samples of the Picture Matching Task.

The Acceptability Judgment Task included 16 dialogues including the same four pairs of psych adjectives. Learners were asked to judge whether or not the underlined sentence in each dialogue was natural or unnatural. Again, a choice of don't know (DK) was included. Samples from the Acceptability Judgment Task are given in Table 2.

Table 2

Samples of the Acceptability Judgment Task

Type	Sample
(i) Natural- <i>ed</i>	A: I have to go... I should help my friend. <u>She is frightened.</u> B: What's wrong? A: I heard that she saw cockroaches in her room.
(ii) Natural- <i>ing</i>	A: I saw a man last night. <u>He was frightening.</u> B: Really? Where did you see him? A: On <i>Takeshita</i> Street. He had a knife.
(iii) Unnatural- <i>ed</i>	A: I saw a man last night. <u>He was frightened.</u> B: Really? Where did you see him? A: He was carrying a knife and chasing people.
(iv) Unnatural- <i>ing</i>	A: I have to go... I should help my friend. <u>She is frightening.</u> B: What's wrong? A: I heard that she saw cockroaches in her room.

There were 16 sentences to judge, including 8 *-ed* adjectives and 8 *-ing* adjectives, and there were equal numbers of 'Natural' and 'Unnatural' sentences.⁴ For example, for a pair of *frightened* and *frightening*, each form was tested twice, one time as 'Natural' and the other as 'Unnatural'. For example, (i) "*She*

⁴ Due to an unexpected error in test sentences, one item (U-boring) was removed from the analysis below. This made the number of items in each sentence type uneven in the Acceptability Judgment (AJ) Task, and since only JP groups took the task, we decided not to conduct individual analyses for the results of the AJ Task.

is frightened” and (ii) “He was frightening” are ‘Natural’ in Table 2, and (iii) “He was frightened” and (iv) “She is frightening” are ‘Unnatural’.

6. Results

6.1. Results of the Picture Matching Task

Figure 2 presents overall results of the Picture Matching Task in terms of the mean acceptance rates (i.e., circling ‘True’) on the 4 sentence types, T(rue)-*ing*, T(rue)-*ed*, F(false)-*ing* and F(false)-*ed*, for each participant group. The ‘don’t know’ choices were scored as inaccurate. NS controls responded as was expected, accepting T-*ed* at 93% and T-*ing* at 81%⁵ of the time and rejecting both F-*ed* at 96% and F-*ing* at 91% of the time. As for the four learner groups, they behaved in a similar manner on -*ed* psych adjectives; i.e., they accepted T-*ed* about 82–98% and F-*ed* about 3–13% of the time, correctly differentiating between the two types. The four groups, however, behaved differently on -*ing* psych adjectives. Except for the SP Advanced group, the three learner groups behaved much less accurately on the -*ing* type. They failed to accept T-*ing* and incorrectly accepted F-*ing*. The JP Low group accepted T-*ing* at 48% and F-*ing* 48% of the time, JP High-I group accepted T-*ing* at 36% and F-*ing* at 54% of the time, SP High-I group accepted T-*ing* at 33% and F-*ing* at 52% of the time, and only the SP Advanced group differentiated between the two types, accepting T-*ing* at 75% but accepting F-*ing* only at 21% of the time.

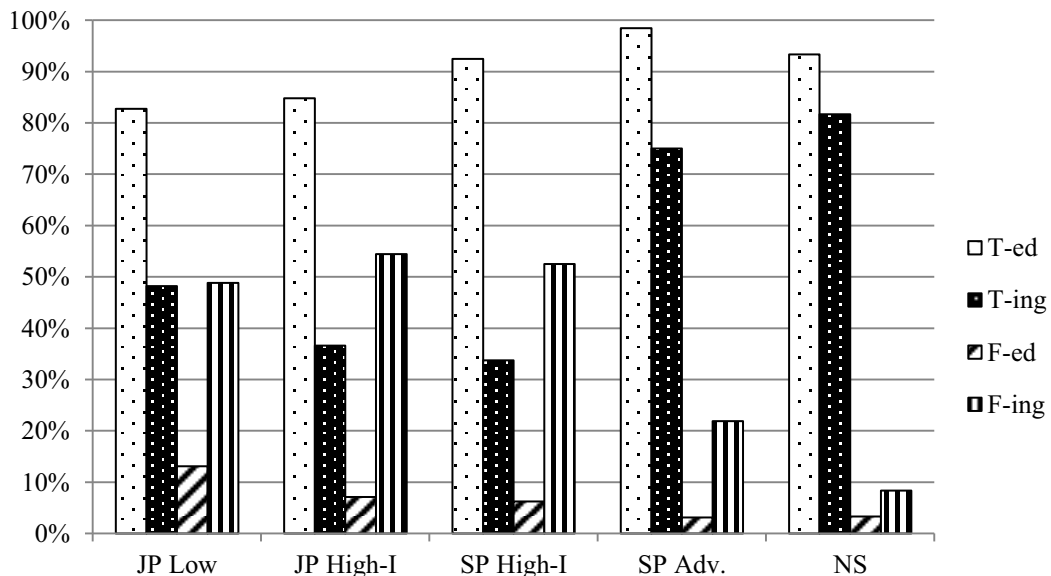


Figure 2. Acceptance Rates of the Picture Matching Task.

Two-way repeated measures ANOVAs on the “True” sentences revealed that there were statistically significant effects for Sentence Type ($F(1, 116) = 160.99, p < .0001$), for Group ($F(4, 116) = 16.34, p < .0001$), and for Interaction ($F(4, 116) = 7.94, p < .0001$). On the “False” sentences, there were also statistically significant effects for Sentence Type ($F(1, 116) = 133.97, p < .0001$), for Group ($F(4, 116) = 14.78, p < .0001$), and for Interaction ($F(4, 116) = 8.33, p < .0001$). Post-hoc Tukey-Kramer HSD tests revealed that the NS and SP Advanced groups behaved in a similar manner but that the rest of the learner groups (i.e., JP Low, JP High-I, SP High-I) all differed significantly from the NS and SP Advanced groups on every sentence type ($p < 0.01$). Significant differences were also

⁵ One of the reviewers pointed out that the accuracy rate for T-*ing* was low for native speakers of English. In fact, their acceptance of one test item of T-*ing* with ‘embarrassing’ was very low (57%) where four NSs rejected it and three NSs chose DK (‘don’t know’), suggesting some unnaturalness with this test item. If we remove this test item, the accuracy rate becomes 91.1%.

found among all types for each group, except for the results of the JP Low group on T-*ing* vs. F-*ing*. Thus, the JP Low group failed to differentiate T-*ing* and F-*ing* and that both JP High-I and SP High-I groups accepted F-*ing* more than T-*ing*, suggesting difficulty with the -*ing* psych adjective for both Japanese and Spanish learners.

Individual analyses were further conducted on each learner's consistent performance on the two types of psych adjectives. Consistency was determined as being accurate on 6 or more of the 8 items with each type. That is, accepting T-*ed* and rejecting F-*ed*, or/and accepting T-*ing* and rejecting F-*ing* (i.e., 75% accuracy for each type). Table 3 summarizes the individual results: Columns (i) (ii) and (iii) show the number and percentages of participants who consistently gave correct responses to the -*ed* type (i), to the -*ing* type (ii), and to both the -*ed* and -*ing* (iii) psych adjectives, respectively.

Table 3

Number of Participants Who Were Accurate Consistently (PM Task)

Group	(i) - <i>ed</i>	(ii) - <i>ing</i>	(iii) both
JP Low (n=42)	35 (83.3%)	12 (28.6%)	11 (26.2%)
JP High-I (n=28)	23 (82.1%)	5 (17.9%)	5 (17.9%)
SP High-I (n=20)	18 (90.0%)	4 (20.0%)	4 (20.0%)
SP Adv. (n=16)	16 (100%)	10 (62.5%)	10 (62.5%)
NS (n=15)	13 (86.7%)	11 (73.3%)	9 (60.0%)

As can be seen in Table 3, there were more learners who were accurate on the -*ed* adjectives than on the -*ing* adjectives in each group, confirming the group results reported above. It is important to note that all the four learner groups included high percentages (more than 82%) of individuals who gave correct answers consistently on the -*ed* psych adjectives (i). In contrast, there were much fewer learners who were accurate on the -*ing* psych adjectives: the SP Advanced (62.5%), the SP High-I (20.0%), the JP High-I (17.9%), and the JP Low (28.6%) groups. Nevertheless, in the SP Advanced group, more than half of the learners were accurate on both types of psych adjectives, and four learners in the SP High-I group, five learners in the JP High-I group, and eleven learners in the JP Low group were consistent on both -*ed* and -*ing* types. In sum, individual results also show that the learners had more difficulty with the -*ing* psych adjectives (EO) than with the -*ed* psych adjectives (ES) but that it is possible for some learners to acquire both types of psych adjectives.

6.2. Results of the Acceptability Judgment Task

Figure 3 presents overall results of the Acceptability Judgment Task in terms of the mean acceptance rates on the four sentence types, N(atural)-*ed*, N(atural)-*ing*, U(nnatural)-*ed* and U(nnatural)-*ing*, for Jap-Low, Jap-High-I, and NS groups. Recall that only the Japanese learners responded to this task, and we only report on their overall results in this section. The 'don't know' choices were scored as inaccurate. The NSs in general behaved as was expected, accepting the Natural and rejecting Unnatural contexts. The two JP learner groups generally showed the tendency to accept Natural and reject Unnatural sentences, but their rejection of Unnatural sentences was not very strong. That is, they accepted N-*ed* at 68–72% and N-*ing* at 60–72% of the time; they accepted U-*ed* 43–51% and U-*ing* 35–36% of the time. For this task, their acceptance of unnatural -*ed* type appears to be higher than the Unnatural -*ing* type, but the difference turned out not to be significant.

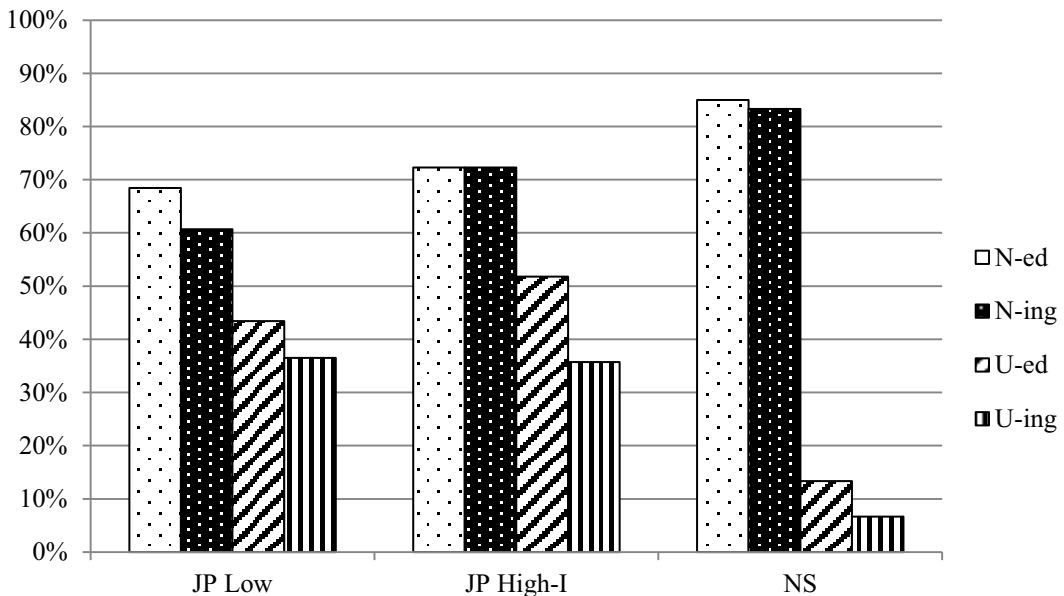


Figure 3. Acceptance Rates of the Acceptability Judgment Task.

Two-way repeated measures ANOVAs on the “Natural” sentences revealed that there were statistically significant effects for Group ($F(2, 82) = 8.577, p = .0002$), but no significant effects were found for Sentence Type ($F(1, 82) = 0.689, p = .4069$) and for Interaction ($F(2, 82) = 0.548, p = .5783$). On the “Unnatural” sentences, there were statistically significant effects for Group ($F(2, 82) = 19.782, p < .0001$) and for Sentence Type ($F(1, 82) = 5.531, p = .0190$), but no significant effects were found for Interaction ($F(2, 82) = 0.630, p = .5331$). According to the Post-hoc Tukey-Kramer HSD tests, significant differences were found between the native English and JP Low groups on all four contexts. The JP High-I learners performed differently from the NSs on Unnatural contexts only, observing some progress in the acquisition of psych adjectives in Natural contexts as their proficiency progresses. Finally, each group responded in a similar manner on the *-ed* vs. *-ing* types in Natural contexts on one hand and in Unnatural contexts on the other, suggesting that they did not observe any contrast between the two types of psych adjectives on this task.

7. Discussion and Conclusion

The purpose of our study was to investigate which of the two types of psych adjectives, i.e., the *-ed* type (ES) or the *-ing* type (EO), would be more difficult for Japanese and Spanish learners of English to acquire. Overall results from the Picture Matching Task indicate that except for the SP Advanced group, both Japanese and Spanish learners had problems with the *-ing* type (EO), which confirms our Hypothesis I. Individual analyses further proves that this was the case. The SP High-I, JP High-I, and JP Low groups all behaved less consistently on the *-ing* type than the *-ed* type, suggesting they were affected more by the Thematic Hierarchy than L1 morphological properties. Since both Spanish and Japanese learners made errors, there was not very clear evidence for Hypothesis II, i.e., Japanese speakers have more problems with English psych adjectives than Spanish speakers.

The overall results of the two Spanish groups showed some development in learners’ performance, i.e., the SP advanced learners behaved more accurately than the SP High-I learners, even though such progress was not evident among the JP learners. The results were consistent with the previous findings, and it can be argued that learners are guided by universal principles so that more marked, derived structure, i.e., the *-ing* type (EO) psych adjectives, would be more difficult for L2 learners but it can be acquired.

It should be noted that one of the reviewers pointed out that frequency of the two types of psych adjectives in the L2 input should be considered. That is, *-ed* psych adjectives may be more frequently used by the learners themselves with “I” as the subject, and such frequency may have caused learners to acquire the *-ed* type better than the *-ing* type. We agree that frequency of each psych adjective or verb in the input may play an important role in L2 acquisition. When we examined the four psych adjectives we used in the present study in the British National Corpus, we found that there were slightly more *-ed* than *-ing* psych adjectives (1477 data with *bored*, 2159 with *disappointed*, 1387 with *embarrassed*, and 2533 with *frightened* versus 1659 data with *boring*, 995 with *disappointing*, 1052 with *embarrassing*, and 1002 with *frightening*) but that frequency varies depending on the verb (e.g., more use with *boring* than with *bored*). In addition, it has been observed that there are far more EO type psych verbs than ES type psych verbs in English (De Chene, 1997, p. 11). Therefore, frequency itself cannot explain our results fully and further studies with a variety of psych adjectives are required.⁶

We expected some L1 effects of morphology in L2 acquisition of psych adjectives. Recall that Japanese psych adjectives are ambiguous between the two types of psych adjectives, as there are no morphological markers distinguishing the two types (e.g., *taikutsu-shita* ‘bored/boring’). It should be noted that we did not observe any clear evidence for L1 transfer in this respect. However, as discussed above, a number of previous studies have pointed out L1 effects of morphology. For example, Spanish exhibits psych verbs with dative case (e.g., *A Juan le gusta Maria* ‘Juan likes Maria’) in addition to ES and EO types, and Montrul (1998) tested this third type of psych verb with French-speaking and English-speaking learners of Spanish for three times over a period of eight months. French behaves similarly to Spanish as it exhibits the third type of psych verb whereas English lacks it. It was found that both groups observed the Thematic Hierarchy interpreting experiencers as subjects, but that the English group experienced greater difficulty and showed slower development, suggesting L1 effects. Thus, it is possible that universal principles and L1 effects were both at play in our study as well. Lower accuracy rates of the JP-Low group’s behavior may be explained better if we consider both factors; that is, they were affected by universal principles and L1 morphological properties (i.e., zero morphology distinguishing the EO and ES types), and showed difficulty with EO type psych adjectives in English.

Lastly, it may be argued that L2 acquisition of English psych adjectives should be easier than L2 acquisition of Japanese psych adjectives as the contrast is marked morphologically in English (and Spanish), but not in Japanese.⁷ Once Japanese-speaking learners of English notice morphological properties in the L2, they should be able to acquire the two types of psych adjectives overcoming the possible L1 transfer effects. As it has been claimed that the acquisition of zero morphology is difficult for L2 learners (Chen, 1996; Montrul, 2000), it should be of great interest to examine a reverse situation of the present study; i.e., L2 acquisition of Japanese by English and Spanish speakers.

References

- Baker, Mark. (1988). *Incorporation: A theory of grammatical function changing*. Chicago: Chicago University Press.
- Chen, Dongdong. (1996). L2 acquisition of English psych predicates by native speakers of Chinese and French (Doctoral dissertation). Retrieved from <http://digitool.library.mcgill.ca/>
- De Chene, Brente. (1997). *Eibumpo no sai-hakken* [Rediscovering English grammar]. Tokyo: Kenkyusha.
- Grimshaw, Jane. (1990). *Argument structure*. Cambridge, Mass: MIT Press.
- Juffs, Alan. (1996). *Learnability and the lexicon*. Amsterdam: John Benjamins.

⁶ It should be noted that, as far as we have examined, the semantic difference between the *-ed* type and the *-ing* type is not always explicitly taught in classroom. It appears that psych adjectives are often taught in phrases such as ‘...be interested in...’, ‘...be surprised at ...’, ‘...be interesting to ...’, and ‘...be surprising to ...’, focusing on the animacy of the grammatical subject.

⁷ In fact, it could be argued that the reverse case is true; i.e., it would be easier for learners of Japanese to acquire since there is no morphological difference. As previous studies report that morphology cause enhanced difficulty to L2 learners, functional morphology may be the bottleneck to successful L2 acquisition, as claimed by the ‘Bottleneck Hypothesis’ (Slabakova, 2008). We are grateful to Neal Snape for bringing up this issue and discussion.

- Matsunaga, Keiko. (2002). L2 acquisition of causatives by Spanish, Chinese and Japanese speakers: A modular view of transfer. In Otsu, Yukio. (Ed.), *The proceedings of the Third Tokyo Conference on Psycholinguistics*. (pp. 261–282). Tokyo: Hituzi Syobo.
- Montrul, Silvina. (1997). Transitivity alternations in second language acquisition: A crosslinguistic study of English, Spanish and Turkish (Doctoral dissertation). Retrieved from <http://digitool.library.mcgill.ca/>
- Montrul, Silvina. (1998). The L2 acquisition of dative experiencer subjects. *Second Language Research*, 14, 27–61.
- Montrul, Silvina. (2000). Transitivity alternations in L2 acquisition. *Studies in Second Language Acquisition*, 22, 229–273.
- Pesetsky, David. (1995). *Zero syntax: Experiencers and cascades*. Cambridge, Mass: MIT Press.
- Sato, Yasuko. (2003). Japanese learners' linking problems with English psych verbs. *Reading Working Papers in Linguistics*, 7, 125–144.
- Slabakova, Roumyana. (2008). *Meaning in the second language*. Berlin: Mouton de Gruyter.
- White, Lydia., Brown, Cynthia., Bruhn-Garavito, Joyce., Chen, Dongdong., Hirakawa, Makiko., & Montrul, Silvina. (1998). Psych verbs in second language acquisition. In Klein, Elaine. & Martohardjono, Gita. (Eds.), *The development of second language grammars: A generative approach*. (pp. 171–196). Amsterdam: John Benjamins.

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