

Acquisition of Japanese Negative Polarity Item Licensing by English-speaking Second Language Learners*

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1 Introduction

In language, there are certain lexical items which behave in an interesting fashion; they are sensitive to the polarity of the sentence in which they appear. These items are called either affirmative polarity items or negative polarity items, depending on whether they must appear in affirmative or negative environments. Their full linguistic characteristics are determined beyond the lexical level and restricted at the syntactic and semantic levels, and

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as such, they are of special interest to the field of linguistics. The specifics of how these items are restricted varies between languages, making them particularly relevant for the study of language acquisition. Japanese and English are two such languages which govern negative polarity items in different ways, making the pair an ideal test case for the study of second language acquisition of polarity items. The licensing conditions for Japanese negative polarity items are a subset of the licensing conditions for English negative polarity items, so it is particularly relevant to look for transfer in the second language acquisition of Japanese polarity items by first-language English speakers.

2 Literature Review

2.1 Negative Polarity Items

Negative polarity items (NPIs) are a subset of polarity sensitive items, which are lexical items sensitive to the affirmation or negation of a sentence. NPIs must occur within the scope of negation. However, what exactly it means to be ‘within the scope of negation’ varies crosslinguistically, and is the subject of much debate even within English.

One main analysis of English NPIs comes from Ladusaw (1980), who put forth a theory of licensing through downward entailment.¹ Downward entailing environments are those in which a logical entailment is validated from a set-denoting expression to its subset-denoting expression. For instance, (2) must be true if (1) is true, but the opposite is not the case; note that, between (1) and (2) where the minimal difference is the set-subset relation between the two nouns, ‘man’ in (1) (set) and ‘tall man’ in (2) (subset), an entailment is validated from (2) containing the subset-denoting noun ‘tall man’ to (1) containing the set-denoting noun ‘man’.

- (1) No man walked.
- (2) No tall man walked.

The above example of downward entailment involves a sentence with an overtly negative operator, ‘no.’ However, there can be ‘covertly’ negative downward entailing environments as well. For instance, English NPIs are licensed by yes/no question sentences and by certain semantically negative phrases like ‘rarely’ and ‘to be surprised.’ This is demonstrated below with the NPI ‘ever’ in overt negation, a yes/no question, a semantically negative

¹ The exact nature of English NPI licensing is under debate, with Ladusaw’s theory of licensing through downward entailment being only one of several (cf. Giannakidou 2006). This theoretical debate is outside of the scope of the present study.

environment, and unlicensed in an upward entailing environment, respectively.

- (3) I have not ever been there.
- (4) Have you ever been there?
- (5) I am surprised that you have ever been there.
- (6) *I have ever been there.

Japanese NPIs work differently, having much stricter limitations on the environments in which they can appear. According to Kato (1985), Japanese NPIs can only appear when they are within the same clause as an overtly negative operator. This is demonstrated in (7), with the NPI *sika* ('anything but').

- (7) *Yumiko-wa gyunyu-sika noma-na-katta*
Yumiko-TOP milk-anything but (NPI) drink-NEG-PAST
'Yumiko did not drink anything but milk.'

Additionally, Japanese differs from English in the sense that the majority of its negativity-sensitive items are argued to be not NPIs, but negative concord items (NCIs). NCIs differ from NPIs in that they carry their own inherent negation marker, and so they can appear in positions such as ellipticals that do not overtly express negation (Watanabe 2004). *Sika* is argued by researchers such as Kishimoto (2018) to be a true NPI in Japanese, as it cannot appear alone in ellipticals. For this reason, it mirrors English NPIs to a greater extent than other Japanese negativity-sensitive items, and thus it was chosen as the item at the focus of this study.

In summary, the licensing conditions for Japanese NPIs such as *sika* are a subset of the conditions for English NPIs. English NPIs are licensed by both overtly and covertly negative environments, while Japanese NPIs are only licensed in overtly negative ones. This invites questions as to how English-speaking second language learners of Japanese learn to restrict the set of environments in which they are able to use NPIs such as *sika*.

2.2 Second Language Acquisition of NPIs

Two factors have been of interest in previous studies of second language acquisition of NPIs: transfer, or the influence one's L1 exerts on their L2 (e.g. Schwartz and Sprouse 1994), and metalinguistic knowledge, or one's explicit knowledge about their L2 (Roehr 2007). A series of studies conducted by a group of researchers (Gil and Marsden 2011; Marsden et al. 2018; Gil et al. 2019) looked at the influence of these factors on second language acquisition of the English NPI 'any.' The studies targeted two groups of learners, L1 Arabic and L1 Mandarin Chinese, compared to a target group of L1 English

speakers. All three studies measured this through use of acceptability judgment tasks (AJT).

Arabic and Mandarin Chinese were chosen as the L1s for these three studies because of their own NPI licensing conditions. Arabic NPIs are licensed in essentially the same conditions as English, while Chinese NPIs are licensed in a more restricted set of contexts. Those researchers used these properties to make between-groups predictions regarding transfer, with the L1 Arabic group expected to outperform the L1 Chinese group on structures allowed in their own language. However, this was not borne out. Instead, Gil and Marsden (2011) and Gil et al. (2019) found that both groups performed closest to native English speakers on sentences with NPIs used with overt negation, and that both struggled most with NPIs in covertly negative environments such as questions and lexical semantic negation. Some evidence that was taken in partial support of transfer was within the L1 Chinese group, who performed better on a type of lexical semantic negation that is expressed as overtly negative in Chinese than one that is not.

Results from these studies were similarly inconclusive in regard to the question of metalinguistic knowledge. Marsden et al. (2018) included a question designed to measure metalinguistic knowledge by asking participants directly what the English rule was determining whether ‘any’ could be used. They counted answers correct if participants stated that ‘any’ can be used with negation and questions. Ultimately, only 9 of 86 participants stated a correct rule, with the majority (67 participants) answering that they did not know the rule. As such, they were unable to run analyses looking for correlations between this knowledge and AJT results.

Note that, in these studies, the target L2 grammar is English, and the NPI licensing conditions in learners’ L1 were either identical to (Arabic) or a subset of (Chinese) the target L2 licensing conditions in English. This left open the question of what would occur with a group whose L1 licensing conditions were a superset of their L2. While this poses a potential learnability problem (Inagaki 2011), it also leads to more clear-cut predictions regarding the influence of transfer. In particular, we thought that for L1 English speakers, Japanese, with its straightforward NPI licensing conditions that are taught explicitly to learners as needing to occur with negation, would be an ideal test case. This led us to the following three research questions.

1. Are L1 English, L2 Japanese learners aware of the licensing conditions for Japanese NPI *sika*?
2. What role does L1 transfer play in their judgments about this NPI?
3. What role does metalinguistic knowledge play in their judgments about this NPI?

3 Participants

Two groups of participants were recruited for this study. The test group was an L1 English, L2 Japanese group (n = 9), age 20;1-23;3 (mean 21;4). They were recruited from students enrolled in second- and third-year Japanese classes at U.S. universities. The control group was an L1 Japanese group (n = 9), age 22;3-26;9 (mean 24;5). All participants provided full informed consent and were paid for their participation in the study.

4 Measures

Participants were first given a questionnaire collecting demographic and, for the L1 English group, language background information. After that, three measures were administered in the following order: an AJT looking at participants' judgments of *sika*, a metalinguistic knowledge task designed to test participants' understanding of Japanese NPI licensing conditions, and a proficiency exam adapted from the Japanese Language Proficiency Test (Association of International Education, Japan and The Japan Foundation 2003).

The AJT crossed grammaticality (negated being grammatical vs. affirmative being ungrammatical) and sentence structure (declarative vs. question) for the four target conditions in (8), (9), (10), and (11) below. Sentences were presented in Japanese orthography, with pronunciation guides (*furigana*) above each kanji character.

Negative declarative (Neg-dec-G) [Grammatical in both languages]

- (8) Yuuta-san-wa, sports-o suru-toki, mizu-sika noma-nai
Yuuta-Mr.-TOP, sports-ACC do when, water-*sika* drink-NEG
'Mr. Yuuta doesn't drink anything but water when he plays sports.'

Affirmative declarative (Aff-dec-UG) [Ungrammatical in both]

- (9) *Yumiko-san-wa, yama-ni nobo-tta toki, ki-sika mi-ta
Yumiko-Ms.-TOP, mountain-DAT climb-past when, tree-*sika* see-past
*'When Ms. Yumiko climbed the mountain, she saw anything but trees.'

Negative question (Neg-Q-G) [Grammatical in both]

- (10) Satosi-san-wa, senshū-no nomikai-de, beer-sika noma-na-katta-no
Satosi-Mr.-TOP, last week-GEN get-together-LOC, beer-*sika* drink-NEG-past-QP
'Didn't Mr. Satosi drink anything but beer at last week's gathering?'

Affirmative question (Aff-Q-UG) [Grammatical in only English]

- (11) *Mei-san-wa, game-o suru tameni, pasokon-sika tsukau-no
Mei-Ms.-TOP, video game-ACC do for, computer-*sika* use-QP
'Does Ms. Mei use anything but a computer to play video games?'

There were eight sentences in each target condition, mixed in with an additional forty-eight filler sentences that were either grammatical or targeting ungrammatical constructions not involving NPIs. The affirmative question (Aff-Q-UG) condition in (11) was of crucial interest. Affirmative question sentences in English allow NPIs, due to the covertly negative nature of questions, but Japanese realizations of (11) do not allow NPIs, and result in ungrammatical sentences. This condition thus allows us to directly measure which of the two competing grammars may contribute to participants' acceptability judgment.

While L1 Japanese participants only took the AJT, L2 participants were asked to take a subsequent metalinguistic knowledge task adapted from that in Roehr (2007). This task presented participants with an ungrammatical sentence with the section containing an error underlined, then asked participants to first correct, then explain the error. The item used for target construction *sika* is reproduced below in English glossing. There were also filler questions targeting other ungrammatical constructions that had appeared in the AJT.

- (12) George-san-wa, ocha-to coffee-o mora-tta kedo, coffee-
sika non-da
George-Mr.-TOP, tea-COMP coffee-ACC receive-past but, coffee-
sika drink-past
'Mr. George received tea and coffee, but only drank the tea.'

In order to receive credit for a correct answer on (12), participants were expected to add the negative morpheme correctly to the verb, and to explain this by stating that *sika* could only appear with negation.

The final task administered was a proficiency test adapted from old materials from levels N3 and N4 of the Japanese Language Proficiency Test. Through this, participants were judged to be low-intermediate level learners.

5 Predictions

It was predicted that if participants showed evidence of transfer from their L1, they should incorrectly judge the critical target condition of Aff-Q-UG as grammatical, as its equivalent in English would be grammatical. However, if participants had sufficient metalinguistic knowledge of Japanese NPI licensing, they may correctly judge this condition as ungrammatical instead.

6 Results

6.1 Acceptability Judgment Task

Each participant's AJT ratings were *z*-score transformed following Schütze and Sprouse (2013). Averaged results for each group on the four main target conditions are plotted in Figure 1.

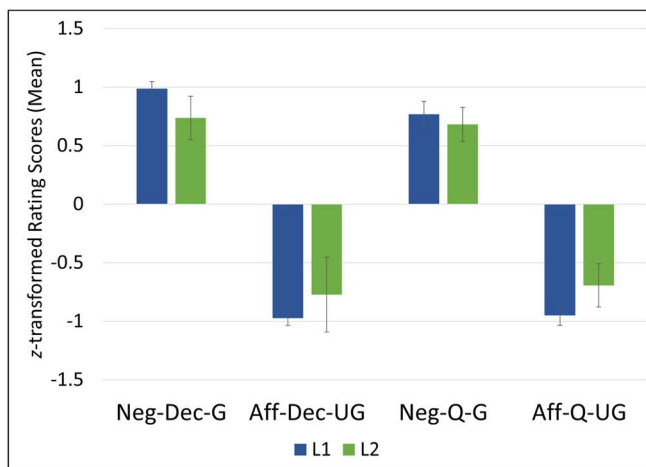


Figure 1. Mean *z*-transformed AJT ratings by group and condition.

A linear mixed effects model crossing Group (L1 or L2), Grammaticality (grammatical/negated or ungrammatical/affirmative), and Structure (declarative or question) yielded main effects of Group ($t = -2.684$, $SE = 0.093$, $p < .01$), Grammaticality ($t = -19.179$, $SE = 0.102$, $p < .001$), and Structure ($t = -2.154$, $SE = 0.102$, $p < .05$). It also yielded a two-way interaction of Group x Grammaticality ($t = 3.52$, $SE = 0.128$, $p < .001$). However, no three-way interaction of Group x Grammaticality x Structure was found. This is crucial, as, if L1 English participants were rating *sika* in affirmative questions specifically as more acceptable than their L1 Japanese counterparts, it was expected to show in the form of a three-way interaction here. This suggests that, while there are differences between the two groups' ratings in the sense that L1 speakers have sharper judgments than do L2, there is no evidence for transfer.

6.2 Metalinguistic Knowledge Task

Participants showed 100% accuracy on the metalinguistic knowledge task questions related to *sika* usage. As such, no further analyses were carried out.

7 Discussion

Our first research question asked if learners were aware of Japanese NPI licensing conditions. Given that they performed qualitatively similarly to their native speaker counterparts, judging grammatical conditions as acceptable and ungrammatical as unacceptable, it seems that they are broadly aware of these licensing conditions.

Our second research question asked what role transfer played in these judgments. Transfer was not observed on the group level in this experiment, although one individual participant did show evidence of it in their judgments of sentences in the Aff-Q-UG condition as grammatical.

Research question three asked what role metalinguistic knowledge played in learners' judgments. Participants showed ceiling metalinguistic knowledge of *sika*, matching their broadly nativelike response pattern in the AJT. This could indicate that metalinguistic knowledge was guiding judgments, but a larger sample with more variability would be needed to make strong conclusions.

In summary, participants in this study showed a qualitatively nativelike understanding of NPI licensing conditions in both their AJT and metalinguistic knowledge task results, with no group evidence of transfer observed. These findings do not align with those of past studies (Gil and Marsden 2011; Marsden et al. 2018; Gil et al. 2019), which found that learners had difficulty judging English NPIs and had very low levels of metalinguistic knowledge about them. One possible reason for this difference between studies is the straightforward nature of Japanese NPI licensing compared to English. Typically, a structure which is more restricted in one's L2 than L1 is thought to pose a learnability problem, since learners must infer through a lack of evidence in the input that this usage is not allowed in the L2 (Inagaki 2001). In this case, though, all participants were classroom learners who had been explicitly taught that *sika* must be used with negation, and their metalinguistic knowledge scores indicate that they retained this explicit knowledge. Since the main test was an AJT in which participants had ample time to consider judgments of each sentence before recording them, this 'textbook' knowledge about *sika* may have masked any tendencies towards transfer from English.

Another possibility lies in the way that *sika* is taught to classroom learners. In the textbooks learners in this study used, it is translated as 'only,' but needing negation, rather than as 'anything but' (Abe Hatasa et al. 2018). This may not have navigated learners to associate *sika* with any one specific English NPI. Due to the common analysis of Japanese as being an NCI-language with only *sika* as an NPI (Kishimoto 2018), we chose not to include other options that may have had more straightforward mapping, but would have belonged to a different class of negativity-sensitive items.

8 Conclusion

This study explored the roles of transfer and metalinguistic knowledge in L1 English, L2 Japanese classroom learners' judgments of the NPI *sika*. It revealed no evidence of transfer, with learners performing in a broadly native-like manner on the AJT, and demonstrating ceiling level metalinguistic knowledge regarding the NPI's licensing conditions. Further research involving a larger sample would be called for to better understand this issue. Ideally, this will also reveal more variability in responses to the metalinguistic knowledge task, allowing for a more detailed look at the relationship between metalinguistic knowledge and judgments on sentences with NPIs.

References

- Abe Hatasa, Y., K. Hatasa, and S. Makino. 2018. *Nakama 2: Japanese Communication, Culture, Context* (3rd ed.). Cengage Learning.
- Association of International Education, Japan, and The Japan Foundation. 2003. *The 2002 Japanese Language Proficiency Test Level 3 and 4 Questions and Correct Answers*. Association of International Education, Japan and The Japan Foundation.
- Giannakidou, A. 2006. Only, Emotive Factives, and the Dual Nature of Polarity Dependency. *Language* 82, 575–603.
- Gil, K., and H. L. Marsden. 2011. L2 Acquisition of Any: Negative Evidence, Negative Implicature and Negative L1 Transfer. In *Selected Proceedings of the Second Language Research Forum 2010* (pp. 29–39). Cascadilla Proceedings Project.
- Gil, K., H. L. Marsden, and M. Whong. 2019. The Meaning of Negation in the Second Language Classroom: Evidence from 'Any.' *Language Teaching Research* 23(2), 218–236.
- Inagaki, S. 2001. Motion Verbs with Goal PPs in the L2 Acquisition of English and Japanese. *Studies in Second Language Acquisition* 23(2), 153–170.
- Kato, Y. 1985. Negative Sentences in Japanese. *Sophia Linguistica* 19. Tokyo: Sophia University.
- Kishimoto, H. 2018. Negation. In Y. Hasegawa (Ed.), *The Cambridge Handbook of Japanese Linguistics* (pp. 300–331). Cambridge University Press.
- Ladusaw, W. A. 1980. *Polarity Sensitivity as Inherent Scope Relations*. Garland Pub.
- Marsden, H., M. Whong, and K. Gil. 2018. What's in the Textbook and What's in the Mind: Polarity Item "Any" in Learner English. *Studies in Second Language Acquisition* 40(1), 91–118.
- Roehr, K. 2007. Metalinguistic Knowledge and Language Ability in University-level L2 Learners. *Applied Linguistics* 29(2), 173–199.
- Schütze, C. T., and J. Sprouse. 2013. Judgment Data. In R. J. Podesva and D. Sharma (Eds.), *Research Methods in Linguistics* (pp. 27–50). Cambridge University Press.

- Schwartz, B. D., and R. A. Sprouse. 1996. L2 Cognitive States and the Full Transfer/Full Access Model. *Second Language Research* 12(1), 40–72.
- Watanabe, A. 2004. The Genesis of Negative Concord: Syntax and Morphology of Negative Doubling. *Linguistic Inquiry* 35(4), 559–612.