

ACQUISITION OF SEMANTIC AND PRAGMATIC
MEANING OF THE QUANTIFIER *NANKO-KA*
BY ADULT LEARNERS OF JAPANESE

By

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ABSTRACT

This study investigated how the Japanese quantifier *nanko-ka*, which is one of the counterparts of English *some*, is interpreted by adult learners of Japanese. English *some* has two distinguished meanings: a semantic meaning ‘a certain number of’ and a pragmatic meaning ‘not all.’ According to Slabakova (2010), learners of English tend to interpret *some* more pragmatically than native speakers of English. However, it has not investigated yet whether the Japanese *some* has two different interpretations as well. In addition, Japanese *some*, *nanko-ka*, is morphologically more complicated than English *some*, and it is not likely to be directly explained in a Japanese foreign language classroom teaching. Considering these facts, this study examined (i) whether learners of Japanese can associate *nanko-ka* as a counterpart of English *some*, and (ii) if so, whether learners of Japanese can interpret *nanko-ka* in a native-like way. 20 advanced Japanese learners and 19 Japanese native speakers participated in this study. The main task, providing the pragmatically enriched storyboards was conducted in order to see how *nanko-ka* is interpreted. Besides, one additional task for the learners investigated how well learners could associate *nanko-ka* with *some*, and another additional task for the natives examined whether Japanese *some*, *nanko-ka* has two different interpretations like English *some*. The results showed that the learners tend not to have intuitiveness to associate *nanko-ka* with *some* without direct input of the explanation of *nanko-ka* as a quantifier; however, once they could associate, even learners exhibit the interpretation of *nanko-ka* in a native-like way. Another finding is that Japanese *some*, *nanko-ka* seems not to be interpreted in a same way as the English *some* in terms of its semantic interpretation in a certain discourse context. Additionally, the *nanko-ka*-statement which semantically true but pragmatically infelicitous is interpreted more ambiguous compared to the *some* by not only learners of Japanese but also native speakers of Japanese.

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Chapter 1. Introduction

The present study investigated adults' second language acquisition of the meaning of Japanese quantifier *nanko-ka*, which corresponds to the English quantifier *some* with respect to two distinguished meanings. Specifically, this study focused on the acquisition of adult learners of Japanese whose native language is English.

First, as for the English quantifier *some*, it has been widely examined in the theoretical linguistics regarding its meaning representation. In particular, the English quantifier *some* is ambiguous (e.g., Grice, 1989); it yields two different interpretations depending on the context. Each of the possible interpretations is assumed to be derived at two distinguished linguistic levels, i.e., the semantic level, where the language-internal, semantic meaning of linguistic expressions is derived, and the pragmatic level, which represents the actual interpretation of the utterance of linguistic expressions with respect to the pragmatic contexts.

The semantic meaning of *some* yields the interpretation 'at least one, possibly all.' At the pragmatic level, *some* is interpreted as 'not all', derived as the pragmatic implicature, specifically called *scalar implicature* (detailed discussion will be provided in later section). The research on the acquisition of these two different interpretations of English *some* (i.e., semantic interpretation and pragmatic interpretation) has been an issue of interests; however, although a number of studies have been actively investigated the first language acquisition of the meaning of *some* by children (e.g., Papafragou & Musolino, 2001; Chierchia et al., 1998), less study has been discussed regarding the acquisition of *some* by adult language learners. Moreover, the majority of these acquisition researches focused on English or other Western languages (e.g., Greek in Papafragou & Musolino, 2003; English and Italian in Chierchia et al., 1998); however, the acquisition of Japanese *nanko-ka*, which is one of the equivalents of English *some* has not been

discussed yet. Therefore, I will assume that the Japanese *nanko-ka* is a translation of the English *some* and consider how the meaning of *nanko-ka* will be acquired by adult learners of Japanese, through comparing with the recent study about the second language acquisition of English *some* by Slabakova (2010).

1.1 What is *Some*? – Semantic-Pragmatic Ambiguity

As was discussed in the previous section, the English quantifier *some* is ambiguous (e.g., Grice, 1989); thus has two different meanings: *some* conveys (i) ‘at least one, possibly all’ interpretation at the semantic level and (ii) ‘not all’ interpretation at the pragmatic level, in which the semantic interpretation includes the meaning of ‘all,’ whereas the pragmatic interpretation excludes the meaning of ‘all.’ I will describe each of these interpretations in the following sections.

1.1.1 Semantic Interpretation

Although *some* does not exclude the meaning of ‘all’ at the semantic level, *some* is not interpreted on par with *all* very frequently; thus it may be less intuitive to see that *some* can be actually compatible with *all*. However, there are some specific contexts which highlight the logical meaning of *some*, and therefore bias us towards its semantic, ‘at least one, possibly all’ interpretation: “prediction-making” context and “bet-making” context.

If a statement which contains *some* is provided as a prediction, it illuminates the logical meaning of *some*. Consider the following discourse context:

(1) A boy named Alex decided to give his dog, Laika, three bones. Alex predicted “I think Laika will eat *some* of the bones.” After a while, Alex came back to check Laika, and he found that she had eaten all of the bones that he gave, i.e., three out of three bones.

One could see that Alex’s prediction, i.e., “I think Laika will eat *some* of the bones”, turned out to be still right even though Laika ended up eating *all* of the bones, i.e., three out of three bones. Hence, in such a context, it is easier for one to interpret *some* as ‘at least one, possibly all.’ This means that *some* does logically include the meaning of ‘all’.

Let’s see another example below.

(2) In a math course at the University of Kansas, the math teacher told to his students, “If you come to *some* of the classes 10 minutes before the class starts this semester, I will give you extra credit.” One of the students named Bella wanted to get extra credit so she went to all of the classes 10 minutes earlier throughout the semester.

In the discourse context as in (2), the math teacher made a bet by uttering the statement containing *some*, i.e., “If you come to *some* of the classes 10 minutes before the class starts this semester, I will give you extra credit.” One could see that Bella could still receive extra credit even though she came to all of the classes 10 minutes earlier. Hence, in such a context, *some* tends to be interpreted semantically, where the meaning of *all* is not excluded.

1.1.2 Pragmatic Interpretation

Some is also interpreted as ‘not all,’ in which *all* outcome is pragmatically excluded. See the example below.

(3) Speaker A: Do all of your children like sushi?

Speaker B: *Some* do.

The utterance of Speaker B, i.e., “Some do,” is taken to imply “not all of my children like sushi” in response to Speaker A’s question in this context. The mechanism with respect to why such an interpretation arises can be explained on the basis of the following two concepts; *Grice’s Maxims* and *scalar implicature* (Grice, 1989).

Grice (1989) proposed the *Cooperative Principle* which claims that participants in the conversation must be cooperative in order to make the conversation functionally successful. Particularly, when a conversation occurs, a speaker is expected to offer the best contributions she/he can make with respect to the (i) quality, (ii) quantity, (iii) relation, and (iv) manner of the information that is exchanged in the conversation. Grice further assumed that the Cooperative Principle specifically states the following four maxims, each of which corresponds to the four dimensions which are listed above: Maxim of Quality, Maxim of Quantity, Maxim of Relation, and Maxim of Manner. The Maxim of Quality requires a speaker to make his/her contribution truly and to provide sufficient evidence of the contribution. The Maxim of Relation requires a speaker to keep the conversation relevant to the topic, and the Maxim of Manner requires a speaker to be perspicuous by avoiding obscurity or ambiguity but being brief and orderly. The critically relevant maxim to the interpretation of *some* is the Maxim of Quantity. The maxim requires a speaker to make his/her contribution as informative as required and not to make the

contribution more informative than is necessary. Therefore, when a conversation occurs, the speaker has to give the listener just enough but not too little or too much information.

Now, let me turn to the linguistic characteristics that *some* and *all* share. All the quantifiers, including *some* and *all*, are hypothesized to line up on a certain interpretive scale which denotes the quantity to a different degree. Each quantifier on the scale is called a *scalar term*, and *some* is weaker and less informative than *all* in this interpretive scale regarding the degree of quantity that donates each of the scalar terms logically (e.g., Grice, 1989).

Keeping this in mind let me now go back to the Maxim of Quantity. Recall that this maxim states that a speaker and a listener assume that the speaker should provide just enough but not too much or too little information as a contributor of a functionally successful conversation. The fact Speaker B in (3) chose *some*, which is a weaker and less informative scalar term, rather than *all*, which is a stronger and more informative scalar term, implies that he/she had a right reason for not using the stronger and informative scalar term *all*; consequently, it generates the outcome of a scalar implicature, where *all* should be excluded. By doing so, Speaker A interprets the utterance by Speaker B as in (3) “Some do,” to be compatible with “Some do, but not all” (i.e., some children like sushi but not all of the children like sushi). Therefore, in the context like (3), the interpretation of *some* yields the meaning ‘not all,’ which comes from the hypothesis in the pragmatic theory.

As discussed above, *some* conveys the two different interpretations, ‘at least one, possibly all’ at the semantic level and ‘not all’ at the pragmatic level, depending on the discourse given. Then, how is such an ambiguous meaning of *some* acquired? In the next section, I will

introduce the acquisition of *some* in first language and second language of these two possible interpretations.

1.2 Previous Studies – How is the Knowledge of *Some* Acquired?

When people use or understand the language, there are three different levels on the basis of which linguistics representations of a sentence are judged: (i) whether a sentence is well-structured syntactically, (ii) whether the meaning of a sentence is semantically interpretable, and (iii) whether a sentence can be interpreted naturally with respect to the discourse context. Semantic judgment is associated at the first two levels, whereas the pragmatic judgment is made at the level of the third one, to judge the felicity of the sentence. Regarding the knowledge involved in the interpretation of *some*, requires the pragmatic competence, which is an ability to use and understand the language in a contextually appropriate way (i.e., implicit meaning rather than literal meaning). Individuals make choices depending on the context which contributes to its meaning, thus not only the syntactic/semantic knowledge but also the knowledge based on the context of the utterance is required in the interpretation of *some*. In the following sections, I discuss how well these two different semantic and pragmatic judgments are made in first language acquisition and second language acquisition.

1.2.1 Findings in First Language Acquisition (FLA) Studies

First, let me share the findings of Papafragou & Mosulino (2003) in the study of first language acquisition. They conducted experimental research to investigate how Greek-speaking adults and children interpret ambiguous sentences including *some*. In the experiment, they

utilized a linguistic comprehension task called Truth Value Judgment Task (TVJT) which is typically designed to involve child participants. In this task, the participants were asked to watch a story acted out by an experimenter using toys and props, and another experimenter manipulated a puppet who watched the story along with the participants. The story served as a discourse context in which the participants were expected to make a judgment of the meaning of the statement. At the end of the story, the puppet explained what he thought happened in the story, which served as the stimulus sentence whose meaning was to be judged. Then the participants were asked to judge whether the puppet's utterance was right (i.e., true) or wrong (i.e., false) on the basis of what actually happened in the story.

In Experiment 1, the investigators showed several stories. One example of the stories was as follows: three out of three horses had jumped over the fence, and when the story was over, a puppet stated, "Some of the horses jumped over the fence." The participants were asked to judge whether the puppet's statement matched the context of the story. If the participants answered "Yes," it means that they interpreted the meaning of *some* semantically (i.e., 'at least one, possibly all'). On the other hand, if they answered "No," it suggests that they interpreted the meaning of *some* pragmatically, accessing the 'not all' interpretation. Papafragou & Mosulino found out that although adults rejected the statement over 90%, i.e., adults showed the pragmatic, 'not all' interpretation 90% of the time, children rejected only 12.5%, i.e., they showed the pragmatic, 'not all' interpretation far less than adults did. This means that children preferred to interpret *some* semantically, which includes the meaning of 'all,' even when adults robustly interpreted *some* pragmatically. One possible interpretation is that children may not be able to compute the meaning of *some* as much as adults can, suggesting that children are not yet able to compute the pragmatic meaning flexibly.

However, Experiment 2 revealed that it is actually possible for children to compute the pragmatic implicature in certain circumstances. In Experiment 2, the authors provided a training session before the main experiment, in which the pragmatic interpretation was more salient in the discourse, attempting to bias children to access to the pragmatic interpretation. Interestingly, children increasingly rejected the *some*-statement provided in the context (52.2%), where the *all* outcome was included. Children did not often show the pragmatic interpretation of *some* in Experiment 1, in which there was no training provided; however, they showed pragmatic interpretation of *some* more frequently in Experiment 2 which occurred after the training session. Taken together, they found out that children are not as sensitive as adults about the pragmatic interpretation of *some* since children didn't show pragmatic interpretation as frequently as adults did, even when adults robustly did so. However, children's ability to judge the pragmatic interpretation of *some* could be improved through training.

Chierchia et al.(1998) also conducted the TVJT through adopting the following two modes: one with a “describing” context (Description Mode) and one with a “prediction-making” context (Prediction Mode). The research involved two language groups: English-acquiring children and Italian-acquiring children. In the Description Mode, the story was acted out first, and the puppet described what he thought happened in the story when the story was over. Then the participants were told to judge whether the puppet's description was right or wrong. In the Prediction Mode, the story was paused in the middle, and the puppet predicted what he thought would happen in the story. After the final outcome of the story was shown, the participants were asked to judge whether the puppet's prediction came out to be right with respect to what really happened in the story. Note that the Prediction Mode provides a “prediction-making” context, where the semantic interpretation is illuminated (recall the discussion above and example (3)).

Children in both English and Italian groups showed sensitivity to the semantic meaning of *some*, which is less accessible, to a large extent (over 75% of semantic interpretation in the Description Mode in both groups; 14% of semantic interpretation in the Prediction Mode in the English group and 34% of semantic interpretation in the Prediction Mode in the Italian group).

By taking these studies together, research on first language acquisition of the meaning of *some* suggests that the knowledge of the semantic-pragmatic ambiguity *some* can be acquired by children: particularly, they are i) aware of the fact that *some* could be interpreted on par with *all*, depending on the context and ii) able to compute the pragmatic implicature, which yields the pragmatic ‘not all’ interpretation of *some* when the pragmatics biases them to do so.

Then, how such an ambiguous meaning of *some* is acquired by adult learners? Compared with the studies in first language acquisition, there are actually not many studies that have specifically discussed whether there are two different meanings in *some*. However, since this is the focus of my research, I thoroughly refer to one particular study, Slabakova (2010).

1.2.2 Findings in Second Language Acquisition (SLA) Study

In contrast with first language acquisition, when you observe the acquisition of the second language (L2) learners, different findings are shown. Slabakova (2010) is the first research which directly investigated the second language acquisition of the interpretation of *some*, through conducting two experiments. In Experiment 1, she replicated Noveck’s study (2001) by recruiting four groups of participants: English native speakers, Korean native speakers, and intermediate and advanced learners of English whose native language is Korean. The stimuli that Slabakova used described the universal-knowledge-based ‘fact’ about the world, such as “All

books have pages”; these statements were provided without any contexts. The experimental conditions consisted of four types: True-*all*, False-*all*, Felicitous-*some*, and Infelicitous-*some*, and absurd statements were used as fillers. See the examples below.

- (4) All books have pages. (True)
- (5) Some books have pages. (True/Infelicitous)
- (6) All books have color pictures. (False)
- (7) Some books have color pictures. (True/Felicitous)
- (8) All/Some chairs tell time. (Absurd)

Sentence (4) is semantically true; however, although sentence (5) is also semantically true as *some* does not exclude the meaning of *all* semantically, it is not pragmatically felicitous since all of the books definitely have pages according to our universal knowledge. In contrast, (6) is semantically false since there are books that do not have color pictures in this world, and (7) is semantically true and pragmatically felicitous as well since this *some* excludes the meaning of *all*. The last sentence (8) is a completely absurd sentence. Each of the four experimental conditions, True-*all*, False-*all*, Felicitous-*some*, and Infelicitous-*some* included eight statements for each, and all the participants were asked to answer whether they agree or disagree with each statement. As for the results, in Infelicitous-*some* statements, which were the most critical since they could yield two different interpretations (semantic ‘at least one, possibly all’ interpretation and pragmatic ‘not all’ interpretation), compared to the other three conditions, both groups of learners produced fewer semantic responses (advanced: 39.2%, intermediate: 41.8%) than both native groups of English (55.4%) and Korean (61.2%). Since there was no significant difference between the English native group and Korean native group in any conditions, including the

critical Infelicitous-*some* condition, Slabakova assumed that the mechanism of scalar implicature is similar in these two languages. Additionally, as there was also no difference between the two learners' groups, she suggested that the improvement of this property does not matter on one's proficiency level.

In Experiment 2, Slabakova replicated the Feeney's study (2004); she provided pragmatically enriched context where the *some*-statements were judged based on the presented storyboards. In contrast with Experiment 1, where she did not include any context, in Experiment 2, each stimulus was included in the story boards that have pragmatically enriched context. Each story was about a little girl who was having a conversation with her mother. Statements for each of the scenes were provided with a set of pictures. The basic story plot was that the girl, named Charlotte, found various things such as candies and interacted with two or three out of the three objects, then, when her mother came, Charlotte responded to her mother's questions. The critical point was that Charlotte was trying to conceal the fact from her mother when Charlotte had interacted with all of the objects (e.g., when she had eaten three out of three candies), by using *some* rather than *all* in her response to her mother. This was the critical point in designing Infelicitous-*some* condition, so that the experimenter could explicit either "Yes" or "No" responses, depending on the participants interpretations. The conditions consisted of four types, True-*all*, False-*all*, Felicitous-*some*, and Infelicitous-*some*, depending on the numbers of objects that Charlotte interacted with. (I adapted this basic story plot and condition design to my experiment that will be discussed later.) See the following examples.

(9) I've eaten some of the candies.

In the situation when she ate two out of three candies and said statement (9), it is both semantically true and pragmatically felicitous; thus it is considered as Felicitous-*some* condition. However if she said statement (9) when she ate three out of three candies, it is semantically true but pragmatically infelicitous since in such a situation, she is expected to choose the scalar implicature *all* rather than *some* on the same scalar with respect to Maxim of Quantity of Grice’s Maxims (see the discussion provided in 1.1.2); thus it is considered as Infelicitous-*some* condition. If the participants responded as “Yes” in this situation, it means that they interpreted *some* as a semantic meaning (i.e., ‘at least one, possibly all’) since it does not exclude what really happened in the story (i.e., she ate three out of the three candies). On the other hand, if the participant responded as “No” in the same situation, it means that they interpreted *some* as a pragmatic meaning (i.e., ‘not all’) since it does reflect what really happened in the story (i.e., she ate three out of the three candies). The conditions, example stimulus statements and expected responses are proved in Table 1.

Table 1: *Conditions of Slabakova (2010) Experiment 2*

conditions	numbers of the candies she ate				example stimulus statements	expected response
	1	2	3	total		
True- <i>all</i>	o	o	o	3/3	“I’ve eaten all of the candies.”	“Agree”
False- <i>all</i>	o	o	x	2/3	“I’ve eaten all of the candies.”	“Disagree”
Felicitous- <i>some</i>	o	o	x	2/3	“I’ve eaten some of the candies.”	“Agree”
Infelicitous- <i>some</i>	o	o	o	3/3	“I’ve eaten some of the candies.”	“Agree” – Semantic “Disagree” – Pragmatic

Even though Slabakova did not find significant differences between the native speaker groups and the learner groups in Experiment 1 where there was no context, she discovered a significant difference in pragmatic ‘not all’ interpretation in Infelicitous-*some* condition between native speakers and learners in Experiment 2. Both, advanced learners and intermediate learners groups showed correct responses highly in True-*all*, False-*all*, and Felicitous-*some* conditions (advanced learners and intermediate learners showed 95% and 86% respectively as “Yes” responses for True-*all* condition; they showed 94% and 93% respectively as “No” responses for False-*all* condition; and they showed 98% and 95% respectively as “Yes” responses for Felicitous-*some* condition), just like as they were in Experiment 1. However, the learners performed much less semantically in Infelicitous-*some* condition, compared to the natives (advanced learners and intermediate learners showed 9% and 12.5% of the semantic responses in Infelicitous-*some* condition respectively). This means that the learners produced pragmatic responses more often with the given contexts (91% in the advanced learners; 87.5% in the intermediate learners), compared to their performance without any contexts (60.8% in the advanced learners; 58.2% in the intermediate learners) in Infelicitous-*some* condition; the learners pragmatic responses in Infelicitous-*some* condition was significantly increased in Experiment 2, compared to Experiment 1. In addition, the learners’ pragmatic responses in Experiment 2 (91% and 87.5% for advanced and intermediate learners respectively) were significantly higher than both English-natives (62.5%) and Korean-natives (75%). Based on these results that Experiment 1 and Experiment 2 revealed: different response patterns from the same set of groups and conditions, the potential influence is the acquisition of pragmatic meaning of *some* (i.e., ‘not all’) rather than the semantic one (i.e., ‘at least one, possibly all’), therefore it is important to focus on the role of the pragmatic *some*.

As discussed above, Slabakova (2010) found that L2 learners are more pragmatic than L1 when contexts are given. I will contribute some additional pieces of information about L2 acquisition of *some* through observing the acquisition of *nanko-ka* which is one of the counterparts of English *some*. In the next section, first I will provide the general characteristics of the representation of Japanese quantifiers, then how the quantifiers are treated in the Japanese structure, focusing on the characteristics of the Japanese quantifiers, *nanko-ka*.

Chapter 2. What is *Some* in Japanese? How is *Some* Learned?

It is known that Japanese is a language which does not morphologically mark the number obligatorily. Unlike English, which obligatorily marks the number at the morphological level, Japanese allows bare nouns to appear in sentences. See the examples below.

(10a) *John ate pear.

(10b) John ate a pear.

(10c) John ate pears.

(11a) Jon ga nashi o tabeta.
John NOM pear ACC eat-past

(11b) Jon ga nashi o futa-tsu/ni-ko tabeta.
John NOM pear ACC two-CL eat-past

In English, the sentence which contains a bare noun without any quantifiers as in (10a) is ungrammatical; it requires a determiner, such as an article ('a/an' or 'the') or a plural marker, such as '-s' or '-es,' as in (10b) and (10c). However, in Japanese, the sentence with a bare noun which has no quantifiers is perfectly grammatical as in (11a). Quantifiers in Japanese are optional; they typically appears only in a specific pragmatic context, in which the information about the quantity needs to be specifically mentioned for a certain pragmatic reason in the discourse, such as comparison, as in (11b) (Tsujimura, 2007).

Considering the contrast between Japanese and English in terms of how a quantifier behaves and how a number is marked, the acquisition of the Japanese quantifiers, including *nanko-ka* may not be easy for English-speaking learners of Japanese. This is also supported by

the fact that there are specific grammatical characteristics of one's second language that are lacking in his/her native language. In this study, I will concentrate on the acquisition of the meaning of Japanese *nanko-ka* by giving specific situations.

2.1 *Nanko-ka(-no)*

First, let me note that I received a piece of evidence that the Japanese quantifier *nanko-ka/ikutsu-ka* corresponds to the English *some* from the perspective of an English-native speaker who speaks Japanese in a native-like way. When I asked him how he would say “some candies” in Japanese, he said both “*nanko-ka no ame*” and “*ikutsu-ka no ame*”. In addition, when I asked him how he would say “some pens” in Japanese, he said “*nanbon-ka no pen*”. With respect to his intuition, he could successfully translate, even using the different classifiers appropriately, depending on the modified objects. Therefore, in my current study, I assume that advanced learners could translate the meaning of *nanko-ka* as *some*. Although *ikutsu-ka* is more common to be translated as *some*, and ‘how many’ is introduced as *ikutsu* rather than *nanko* in Japanese textbooks, the classifier *-tsum* must be combined with exceptional pronunciation of each number, which is one of the unintuitive classifiers to be memorized by learners. Additionally, it is used only between the ‘one’ and ‘nine’, and *-ko* takes over after ‘eleven.’ Therefore, I focus only on *nanko* for this study.

In this section, I will discuss the morphological representation of *nanko-ka*, which is one of the counterparts of English *some*. At the morphological level, *nanko-ka* is represented differently from *some*. Japanese *nanko-ka* is represented in a morphologically complex way, while English *some* is a monomorphemic single word. Particularly, Japanese is a language which

contains *numeral classifiers*, i.e., a set of grammatical devices which indicates the quantity of objects, as well as how the objects to be counted are categorized regarding their attributes, such as shapes and functions. *Nanko-ka* is categorized as one of the numerical classifiers, as provided in (12) (see, e.g., Tsujimura, 2007, for discussion).

(12) nan-ko ka (no)
 what-CL question marker (possessive)

It is known that *-ko* is a generic classifier which generally used for inanimate and small objects. However, there are sub-categorizations of other more specific classifiers that are only compatible with a subset of inanimate objects, which are categorized in terms of certain attributes. One example is the shape of the objects; for example, if one needs to numerically classify a banana whose shape is long, he/she should use *-hon* instead of *-ko* for the most natural expression. See the statement (13).

(13) Jon ga banana o ni-**hon** tabeta.
 John NOM banana ACC two-CL eat-past

Therefore, regarding the possible expressions of Japanese *some* which corresponds to the English *some*, there are many variations that depend on the attributes of the object to be naturally quantified.

Now, let me move to a more detailed observation of how *nanko-ka* is morphologically represented. As is shown in (14), it consists of the interrogative word, ‘what,’ a classifier *-ko*, and a question marker *ka*.

(14) **nan-ko ka**
what-CL Q

(15a) Tukue ni **keshigomu** ga **nanko-ka** arimasu.
desk on **erasers** NOM some-CL there are
(There are some **erasers** on the desk.)

(15b) Tukue ni **kami** ga **nanmai-ka** arimasu.
desk on **papers** NOM some-CL there are
(There are some **papers** on the desk.)

(15c) Tukue ni **enpitsu** ga **nanbon-ka** arimasu.
desk on **pencils** NOM some-CL there are
(There are some **pencils** on the desk.)

Recall that *-ko* is used most generally for an inanimate object as is seen in (15a); however, when the modified object is a flat or thin object such as ‘paper,’ you need to use *-mai* instead of *-ko* as in (15b), and when the modified object is a long or cylindrical object, the classifier would be *-hon* as in (15c), whereas in English, it is always the same word, *some*, despite the shape of the object (e.g., Shibatani, 1990).

From a perspective of second language acquisition, selecting the appropriate classifier depending on the category of the object may require additional piece of knowledge which is acquired independently from the knowledge of the meaning of *nanko-ka*, such as a pronunciation (i.e., reading) of the classifier. For example, the classifier *-hon* changes to *-bon* and *-pon*, depending on the numbers which follows the classifier (e.g., ‘one’ requires *-pon* but ‘three’ requires *-bon*); the other generic classifier besides *-ko*, *-tsu*, changes the way of reading the numbers up to 10 (e.g., *ichi* changes to *hito* for ‘one’ and *ni* changes to *futa* for ‘two’). Hence, in

my study, in order to limit my scope for the purpose of the current research, I focus only on *-ko*, as was discussed above.

It should be also noted that *nanko-ka* is optionally co-occur with a possessive marker *-no*, and its presence/absence depends on the position where *nanko-ka* appears with respect to the place of the noun it quantifies.

(16a) Watashi wa **nanko-ka-(no)** ame o tabemashita.
I TOP some candy ACC eat-past

(16b) Watashi wa ame o **nank-ka** tabemashita.
I TOP candy ACC some eat-past

As you see in (16a) and (16b), there are two ways to say “I ate some candies” in Japanese. In English, *some* tends to be followed by the modified object, whereas in Japanese, *nanko-ka* is either followed or preceded by the noun which quantifies; the possessive marker *-no* appears only when *nanko-ka* precedes the noun it quantifies, e.g., *ame* in (16b).

As was discussed above, the presence/absence of the possessor *-no* is determined regarding the sentence structure/word order. For the purpose of this study, I limit my focus on the acquisition of *nanko-ka*, on the basis of the prediction that the knowledge of *-no* needs to be acquired independently from the acquisition of the meaning of *nanko-ka* when it appears in the statement (i.e., you have to know that in the structure, like in (16a), you can have *-no*, while you cannot have *-no* in the structure, like in (16b)). I will discuss how this *nanko-ka* would be explained and taught in foreign language classroom setting.

2.2 How *Nanko-ka* is Explained in Foreign Language Classroom Education

In classroom teaching environments, it may not be common that *nanko-ka*, *some* in English, is explained as a quantifier. As was discussed above, since *nanko-ka* morphologically consists of three components, ‘what + classifier + question marker’, you could speculate that it is likely that each of these morphological components making up *nanko-ka* would be independently taught.

See the examples below.

(17a) **nanko + ka = nanko-ka**

how many Q = some

(17b) **doko + ka = doko-ka**

where Q = somewhere

(17c) **dare + ka = dare-ka**

who Q = someone

(17d) **itsu + ka = itsu-ka**

when Q = sometime

Nan in *nanko* is one of Japanese interrogative words, which means ‘what,’ and *nanko* which is the combination of ‘what’ and a classifier is also an interrogative word, which means ‘how many.’ When you add a question marker *ka* after *nanko*, it functions as a quantifier which means as *some* as in (17a). It is the same as other interrogatives, such as *doko* ‘where,’ *dare* ‘who,’ and *itsu* ‘when’ as in (17b), (17c), and (17d) respectively. Therefore, the sentence structure difference between (18a) and (18b) below is whether there is a question marker *ka* or not, which in fact results in critical difference in terms of the meanings of the whole sentence (see, e.g., Tsujimura, 2007, for discussion).

(18a) **Nanko** ame o tabemashita ka?
how many candy ACC eat-past Q
(**How many** candies did you eat?)

(18b) **Nanko ka** ame o tabemashita ka?
how many Q candy ACC eat-past Q
(Did you eat **some** candies?)

In order to investigate how the classroom teaching explains *nanko-ka* to the learners, I have surveyed the following five textbooks of Japanese language: *Nakama 2* (Hatasa et al., 1999), *Japanese: The Spoken Language* (Jordan & Noda, 1987), *Yookoso* (Tohsaku, 1999), *Situational Functional Japanese Volume 1* (Tsukuba language group, 1991), and *Minna-no Nihongo* (Suriie nettowaaku, 1998). I examined based on the two questions for each textbook: (i) whether *some* is explained, and (ii) whether *some* appears in the glossaries. (See the summary of analysis of the textbooks provided in Appendix H.)

In *Nakama 2*, it states “question words can be combined with other words to form new expressions in Japanese. Indefinite expressions are formed by adding *ka* to a question word. (Nakama 2, p.359)” As is mentioned, in Chapter 9, indefinite pronouns are explained as the structure, ‘question word + ka + (+ particle),’ such as *nani-ka* as *something* and *doko-ka* as *somewhere*. Additionally, in the same chapter, there are example sentences where those indefinite pronouns are used. However, there is no explanation or example of *nanko-ka/ikutsu-ka* as *some*. In the glossaries, in both Japanese-English glossary and English-Japanese glossary, the definition of *nanko-ka/ikutsu-ka* as *some* is not given. There is a definition of *ikutsu* as ‘question word *how many*’ in both glossaries. Considering these facts, it can be predicted that it may not be automatic for learners to associate *nanko-ka/ikutsu-ka* as the quantifier *some* since there is no direct instruction.

In the second textbook, *Japanese: The Spoken Language*, there is no direct explanation of *nanko-ka/ikutsu-ka* as *some* even though classifiers are explained in Chapter 2 and Chapter 8. In the glossaries, as same as in *Nakama 2*, the definition of *nanko-ka/ikutsu-ka* as *some* is not given in neither Japanese-English glossary nor English-Japanese glossary. The only definitions that are given are *ikutsu* as in *how many units?* in both Japanese-English and English-Japanese glossaries, and *how many...?* as ‘*nan + classifier*’ in English-Japanese glossaries. Considering these limited explanations, it can be predicted that it may not be intuitive for learners to associate *nanko-ka/ikutsu-ka* as the quantifier *some* since there is no direct instruction.

In the next textbook, *Yookoso*, as similar to *Nakama 2*, indefinite pronouns are explained as the structure, ‘interrogative + *ka*’ in Chapter 5, by showing the examples, such as *nani-ka* as *something* and *dare-ka* as *someone*. However, there is no example of *nanko-ka/ikutsu-ka*. After the examples are given, *ikutsuka* as a whole chunk, rather than the structure of ‘interrogative + *ka*’ is mentioned as a useful expression by providing an example statement, ‘*nihongo no kotoba o ikutsuka naraimashite*’ as a translation of ‘I learned some Japanese words.’ In the glossaries, unlike other two textbooks above, the definition of *ikutsuka* as *some* is given in both Japanese-English glossary and English-Japanese glossary, in addition to the definition of *ikutsu* as *how many* in the both glossaries. Considering these facts, it can be predicted that it may be possible for learners to associate *nanko-ka/ikutsu-ka* as the quantifier *some* since there is a sentence which includes *ikutsu-ka* and also direct definition of *ikutsu-ka* as *some* in the glossaries.

In the fourth textbook, *Situational Functional Japanese Volume 1*, it is stated that “the combination <question word> + *ka* means *some...* in positive sentences and *any...* in question sentence (Situational Functional Japanese, p.192).” As is mentioned, learners are taught that indefinite pronouns, such as *itsu-ka* ‘sometime’ and *dore-ka* ‘one of them’ are expressed with the

structure, but *nanko-ka/ikutsu-ka* ‘some’ is not explained as one of the structure, like in *Nakama 2* and *Yookoso*. No sentence which includes *ikutsu-ka/nanko-ka* is given either, unlike in *Yookoso*. Additionally, *Situational Functional Japanese* does not include glossary sections. There is no definition of *nanko-ka/ikutsu-ka* as *some* throughout the textbook; however, in Chapter 3, the definition of *ikutsu* as in *how many* is provided by showing an example sentence. Given these facts, it can be predicted that it may not be automatic for learners to know the meaning of *nanko-ka/ikutsu-ka* as *some* because of no direct explanation.

Lastly, in *Minna-no Nihongo*, same as the other three textbooks, *Nakama 2*, *Yookoso*, and *Situational Functional Japanese*, indefinite pronouns are explained as ‘question word + ka.’ However, again *ikutsu-ka/nanko-ka* as *some* is not explained as one of the examples, besides no sentence which includes *ikutsu-ka/nanko-ka* is given. In the glossaries, there is also no definition of *ikutsu-ka/nanko-ka* as *some* in neither Japanese-English nor English-Japanese glossary; the only definition that is given in both glossaries is *ikutsu* as ‘question word *how many*.’ From this evidence, it can be predicted that it may not be intuitive for learners to associate *nanko-ka/ikutsu-ka* as *some*.

In conclusion of the five textbooks survey, none of the textbook describes *nanko-ka/ikutsu-ka* in corresponded to English *some*; instead, it is commonly explained that ‘interrogatives + *ka*’ means ‘*some...*,’ and *ikutsu*, the interrogative without *ka*, is described as *how many*, rather than *nanko-ka/ikutsu-ka* as a whole chunk, unlike other indefinite pronouns. Only one of the five textbooks, *Yookoso*, included the definition of *ikutsu-ka* as *some* in the glossary; however, the other four textbooks didn’t include the definition of *some* even in the glossaries where all of the vocabulary words and expressions are given in the end of the textbooks. Based on this observation, I could speculate that associating the meaning of *nanko-ka* with *some* may not be

intuitive for learners and that only advanced learners would be able to compute *nanko-ka/ikutsu-ka* as *some* when a statement which includes *nanko-ka/ikutsu-ka* is given with using the logic of ‘interrogative + *ka*.’

2.3 Hypothesis of L2 Japanese Performance

As I discussed in the previous section, there seems to be no direct explanation of *nanko-ka* as the correspondence of the English *some*, according to the analysis of textbooks; my observation of the textbooks allowed me to speculate that *nanko-ka* is one of the words which is not intuitive to acquire for learners. This speculation can be supported by some SLA hypotheses. According to the *Input hypothesis* proposed by Krashen (1982, 1985), exposure to *comprehensible input* is necessary in a second language acquisition. He claimed that people acquire language only either through understanding messages or through receiving comprehensible input. Suppose that learners’ current level is i ; learners could move to another stage which is $i + 1$ from i , only through understanding input which contains $i + 1$. Only when the input is understood and there is sufficient input, the grammar is given automatically. Through considering this, for those learners who did not receive any direct input, in other words, learners whose stage is not even i , it is impossible to move to higher stages (i.e., $i+1$) since there is no sufficient input. In addition to this, Swain (1985, 2000) also claimed that learners output is an essential part of the acquisition of process. Through considering the hypothesis and claim, it could be assumed that it is not easy for learners to acquire the meaning of *nanko-ka*, which was not explained directly in instructional settings. In addition, to perform the two different meanings of *nanko-ka* in a native-like way is even more advanced because learners do not even have the fundamental knowledge that *nanko-ka* corresponds to *some* at the semantic level. Therefore, my

hypothesis of this current study is that in the acquisition of *nanko-ka*, second language learners perform less in a native-like way on the meaning of *nanko-ka*, compared with the native speakers of Japanese.

2.4 Research Questions and the Importance of Investigating the Acquisition of Japanese *Some*, *Nanko-ka*

The purpose of my study is to investigate the acquisition of the quantifier *nanko-ka*, one of the Japanese counterparts of English *some*, in second language learning. According to the finding of Slabakova (2010), second language (L2) learners of English interpreted the meaning of *some* more pragmatically, compared to native speakers (L1). In particular, L2 learners tend to interpret the quantifier *some* as the pragmatic ‘not all’ interpretation, but not so much as a semantic meaning, ‘at least one, possibly all’ when the pragmatically enriched context is given (see the discussion provided in 1.2.2). By conducting the current study, I aim to investigate whether L2 learners of Japanese perform similarly to L2 learners of English who were investigated by Slabakova (i.e., whether L2 learners of Japanese also exhibit the pragmatic, ‘not all’ interpretation, compared to L1 Japanese). As was discussed in the previous section, L2 learners of Japanese tended not to receive any direct explanation about *nanko-ka* as *some* even though L2 learners of English is more likely to be taught *some* as a quantifier based on my own experience as a L2 learner of English; thus I predict that L2 learners of Japanese would exhibit non-native-like performance in the different meanings of *some*.

Therefore, research questions are as follows: (i) whether L2 learners of Japanese can associate *nanko-ka* with a counterpart of English *some*, even without any direct explanation in a classroom teaching setting, including textbooks, and (ii) if (i) is true, whether L2 learners of

Japanese have the same interpretations as native speakers of Japanese (i.e., whether L2 learners of Japanese interpret Japanese *nanko-ka* in a native-like way).

The importance of investigating the acquisition of Japanese *some*, *nanko-ka*, is as follows. First, by examining the same aspect, which is the acquisition of the meaning of *some* with respect to the two different target languages, English and Japanese, the findings would be more generalized by expanding the previous study cross-linguistically, with respect to its two different meanings of semantic-pragmatic ambiguous *some*. Second, knowing whether L2 Japanese know the meaning of the *nanko-ka* correctly even without receiving any direct instructions, and also whether they could perform appropriately with their knowledge might give a piece of evidence whether the SLA hypotheses are supported. Since it has yet to be argued by researchers whether there are two different meanings in Japanese *some* (semantic meaning and pragmatic meaning) like English *some*, it provides a piece of information whether there are two different meanings in Japanese *some*, on the basis of L1 Japanese intuitions.

Chapter 3. Experiment

The experiment extends the work of Slabakova (2010) and investigates the acquisition of meaning of *nanko-ka* in Japanese by English-speaking adult learners of Japanese. As I discussed in previous chapter (see the discussion provided in 2.1), one of the counterparts of English *some* could be translated as *nanko-ka* in Japanese. My study was designed to examine whether second language learners of Japanese (L2 Japanese) associate *nanko-ka* with *some*, whether L2 Japanese interpret *nanko-ka* on par with native speakers of Japanese (L1 Japanese), and whether the interpretation of *nanko-ka* of L1 Japanese and L2 Japanese is similar to the interpretation of *some* by native speakers of English (L1 English) and second language learners of English (L2 English) in Slabakova (2010). The study examines the interpretation of L2 Japanese in *nanko-ka*, and also allows me to examine whether there are two meanings for *nanko-ka*: the semantic meaning and the pragmatic meaning, like the English *some*, and if so, whether it is interpreted in the same way.

3.1 Methodology

3.1.1 Participants

The participants consist of two groups: L1 Japanese (n=19) for the control group and advanced L2 Japanese (n=20) for the experimental group. As for the native control group, four of them were full-time graduate students, and another four participants were full-time undergraduate students at the University of Kansas. The rest of them, 12 participants, were Japanese college students who were studying at the university in one-year exchange programs during the data collection period. Data from one of the L1 Japanese, however, was excluded from the analysis because she failed to respond to one of the questions in the target conditions;

thus the data collected from 19 participants were carried forward to the analysis. Regarding the experimental group, all of the L2 Japanese were college students at the University of Kansas in the United States; one of them was a graduate student and the other 18 participants were undergraduate students. During the data collection period, they were all taking the third- or the fourth-year Japanese course at the university, and have been learning Japanese more than two years (average: 4.86 years). At the University of Kansas, both the third- and the fourth-year Japanese students receive 40 hours of instruction per semester. All of the fourth-year Japanese students had taken the third-year Japanese course at the same university and used the textbook called *Situational Functional Japanese* (Tsukuba language group, 1991) which does not explain or teach the meaning of the Japanese word equivalent to English *some* directly (see the discussion provided in 2.2). Most of the third-year Japanese students had taken the second-year Japanese course at the university and used the textbook *Nakama* (Hatasa et al., 2009). Those who did not take the second-year Japanese at the university had taken the equivalent course at a Midwestern community college and used the same textbook, *Nakama*. The third-year Japanese students were at the time using the same textbook that the fourth-year Japanese students had used, *Situational Functional Japanese*, and the fourth-year Japanese students did not use a textbook, rather they read Japanese articles from newspapers and other Japanese books. With respect to whether the direct input to show the association between *nanko-ka* and *some* would have been available in their learning experience, many of the learners did not receive direct explanation in the classroom setting, such as the translation of English *some* is *nanko-ka (-no)*, or that they should convey the WH questions when they want to mention the quantifier *some* based on the observation of the textbook they used. Since the quantity and quality of the direct instruction/input to associate English *some* with Japanese *nanko-ka* is hypothesized to be not

sufficient regardless of the years of learning, I did not make the third-year and the fourth-year students separate to analyze their data.

3.1.2 Materials and Design

I designed my experiment modeling after Experiment 2 in the Slabakova study (2010). Recall that she used a set of storyboards that provided pragmatically enriched contexts with pictures and statements that included the quantifier *some*. (See the discussion in 1.2.2.) Each storyboard is made of a series of four or five pictures (depending on the conditions) which describes an event, along with statements. In each event, a little girl, named Charlotte finds three objects and interacts with two or three out of the three objects, depending on the conditions, while her mother is absent. When her mother appears in front of her, she asks Charlotte what she had done with the objects, and Charlotte then responds to her mother by using a statement which critically contains *some* that serves as a stimulus sentence to be judged. At the end of story, the participants were asked to judge whether they agreed. The experiment consists of four conditions, depending on the statements of Charlotte.

In my storyboard, I fundamentally replicated Slabakova (2010), with some modification which I will discuss later. A little girl was named a Japanese name, *Mitchan*, instead of Charlotte. The basic story plot was directly adopted from Slabakova's experiment. That is, she finds three objects and interacts with two or three of them, when her mother is absent. When her mother appears and asks *Mitchan* what she has done with the things, *Mitchan* responds to her mother by using either *zenbu* "all" or *nanko-ka* "some." This outcome that *Mitchan* states at the end of the story serves as a stimulus statement, including *nanko-ka*. The example storyboard with statements and drawings are provided in Appendix A.

Following Slabakova (2010), the experiment was designed with four conditions: (i) True-*zenbu* (corresponding to Slabakova’s True-*all*), (ii) False-*zenbu* (corresponding to Slabakova’s False-*all*), (iii) Felicitous-*nanko-ka* (corresponding to Slabakova’s Felicitous-*some*), and (iv) Infelicitous-*nanko-ka* (corresponding to Slabakova’s Infelicitous-*some*). (i) True-*zenbu* condition includes the statement with *zenbu* (i.e., *all*) provided as the stimulus sentence (e.g., (*Ame o zenbu tabetano*. “I’ve eaten all of the candies.”) in the situation, in which the girl, *Mitchan*, actually ate three out of the three candies, i.e., her statement is true. (ii) False-*zenbu* condition also involves the statement with *zenbu* which is presented as the stimulus sentence (e.g., (*Ameo zenbu tabetano*. “I’ve eaten all of the candies.”) in the context where *Mitchan* actually ate two out of the three candies, i.e., her statement is false. (iii) Felicitous-*nanko-ka* condition contains the statement with *nanko-ka* presented as a stimulus sentence (e.g., (*Ame o nanko-ka tabetano*. “I’ve eaten some of the candies.”) in the context, in which *Mitchan* ate two out of the three candies, i.e., her statement is pragmatically felicitous. (iv) Infelicitous-*nanko-ka* condition, which is a critical one since this condition possibly yields two different interpretations (i.e., semantic ‘at least one, possibly all’ interpretation and pragmatic ‘not all’ interpretation) in response, depending on how the participants interpret the stimulus sentence. It involves the statement with *nanko-ka* provided as the stimulus sentence (e.g., (*Ame o nanko-ka tabetano*. “I’ve eaten some of the candies.”) in the situation where *Mitchan* ate three out of the three candies, i.e., her statement is shown as semantically true but pragmatically infelicitous (recall that the semantic interpretation of *some* does not exclude *all* out come, but the pragmatic interpretation excludes the meaning of *all*, as was discussed in 1.1.1 and 1.1.2). The expected response for (i) and (iii) is *Hai* “Yes” and for (ii) and (iv) is *Iie* “No.” In (iv), the response of *Hai* shows that the participants interpreted the *nanko-ka* as a semantic meaning, which is inappropriate in this pragmatically

enriched discourse. In contrast, the response of *Iie* shows that they interpreted the *nanko-ka* as a pragmatic meaning, which is appropriate in this discourse. In addition to the four conditions that were described in the previous paragraph, I created fillers that include two different quantifiers, *two* and *three*, in order to prevent the learners figuring out what they were being tested for.

Regarding the fillers, there are four conditions as well: True-*three*

(=*sanko/sanmai/sanbon/sanhai*), False-*three*, True-*two* (=*niko/nimai/nihon/nhai*), and False-*two*.

The story plots are the same as experimental ones. All of the conditions, example stimulus statements and expected responses for both targets and fillers are provided in Table 2.

Table 2: Conditions with example critical statement and expected responses

	conditions	numbers of the candies she ate				example stimulus statements	expected responses
		1	2	3	total		
Targets	True- <i>zenbu</i> (=all)	0	0	0	3/3	“(Ame o) <i>zenbu</i> tabeta no.” “(I’ve eaten <i>all</i> (of the candies).)”	“ <i>Hai</i> (=Yes)”
	False- <i>zenbu</i>	0	0	X	2/3	“(Ame o) <i>zenbu</i> tabeta no.” “(I’ve eaten <i>all</i> (of the candies).)”	“ <i>Iie</i> (=No)”
	Felicitous- <i>nanko-ka</i> (=some)	0	0	X	2/3	“(Ame o) <i>nanko-ka</i> tabeta no.” “(I’ve eaten <i>some</i> (of the candies).)”	“ <i>Hai</i> ”
	Infelicitous- <i>nanko-ka</i>	0	0	0	3/3	“(Ame o) <i>nanko-ka</i> tabeta no.” “(I’ve eaten <i>some</i> (of the candies).)”	“ <i>Hai</i> ”—Semantic “ <i>Iie</i> ”—Pragmatic
Fillers	True- <i>sanko/mai/ho n/hai</i> (=three)	0	0	0	3/3	“(Fuutoo o) <i>sanmaiyabutta</i> no.” “(I’ve torn <i>three</i> (of the envelops).)”	“ <i>Hai</i> ”
	False- <i>sanko/mai/ho n/hai</i>	0	0	X	2/3	“(Fuutoo o) <i>sanmai</i> yabutta no.” “(I’ve torn <i>three</i> (of the envelops).)”	“ <i>Iie</i> ”
	True- <i>niko/mai/ho n/hai</i> (=two)	0	0	X	2/3	“(Fuutoo o) <i>nimaiyabutta</i> no.” “(I’ve torn <i>two</i> (of the envelops).)”	“ <i>Hai</i> ”
	False- <i>niko/mai/ho n/hai</i>	0	0	0	3/3	“(Fuutoo o) <i>nimai</i> yabutta no.” “(I’ve torn <i>two</i> (of the envelops).)”	“ <i>Iie</i> ”

All of the events that are happening in the stories are pragmatically enriched contexts. In other word, the little girl, *Mitchan* is trying to conceal her mischievous behavior from her mother in order not to get scolded. I created four types of booklets which has different order of the

stories, adapting Latin square design. By providing pseudo-randomized four order lists, I could minimize the potential order effect. Each booklet consists of 32 stories in total: 16 target stories and 16 filler stories. Every condition, including fillers, contains four stories for each. Each booklet includes questions about the participants' language background, an example story with instruction, 32 experimental stories (16 target items and 16 filler items), and additional question(s). At the beginning of the each booklet, questionnaire of the language backgrounds were included, and the instruction of how to answer the question at the end of each storyboard was given. The background questionnaire is provided in Appendix C, and the instruction is provided in Appendix D.

The story plot was based on the Slabakova's storyboards in terms of the outline of the stories, each experimental condition, and stimulus statements (see the discussion provided in 1.2.2). However, I used drawings instead of photos to depict the events, so that each situation could be shown more clearly. Additionally, I made four modifications in order to improve the methodology. First, I controlled the stimuli more strictly with respect to the types of the verbs regarding the morphological representation. Slabakova did not control the category of each verb; she used not only simple transitive verbs but also phrasal verbs, such as 'put in' and 'let down.' Therefore, in my study, all of the verbs that I selected for the stimuli were simple transitive verbs which consisted only of one word, avoiding those that have more complex argument structures. Second, in Slabakova's study, some verbs were used just once but some verbs were used as much as four times. I controlled the frequency of the use of each verb as well as each object throughout a session. Each verb appeared twice with a different object, and each object appeared only once. Third, I added fillers, which I described before, in addition to the target stories in order to avoid the participants noticing what was being tested even though Slabakova did not

include any. The category and the frequency of the fillers were controlled to be the same as the target ones; all the verbs of the fillers are simple transitive verbs and appear twice with a different object, and all the objects appeared only once. The last modification that I made is how to ask the participants by adapting a clear and neutral prompt. At the end of each story, Slabakova asked through stating “Do you agree?” in order to avoid the bias either toward the semantic, truth-value judgment or the pragmatic, felicity judgment. However, “Do you agree?” is quite a vague question as there is not only one interpretation of what the participants agree with; it could mean, do you agree with the statement that the girl provided (i.e., what the girl said) rather than, do you agree with the fact that the girl used *some* (instead of *all*). Thus, instead of “Do you agree?” I asked “Did the girl’s description match what happened in this story?” at the end of each story in order to elicit the participants’ judgment of the stimulus sentence itself. By using the word ‘match,’ I did not only avoid any bias which yields semantic or pragmatic interpretation but also focused on judging the statement itself as a description of the outcome.

Beside the storyboard with these modifications, I created two additional tasks: one for L1 Japanese group and the other one for L2 Japanese group. The purpose of the additional task for L1 Japanese was to examine if Japanese *some*, *nanko-ka*, has really two distinguished meanings (semantic ‘at least one, possibly all’ interpretation and pragmatic ‘not all’ interpretation) like English *some*; whether Japanese *nanko-ka* is interpreted semantically by Japanese native speakers in the “prediction-making” context and the “bet-making” context, which the semantic ‘at least one, possibly all’ interpretation tends to be conveyed (see the discussion provided in 1.1.1). In order to investigate this, I showed L1 Japanese the stories with the “prediction-making” context and the “bet-making” context, which included Japanese *nanko-ka*, and asked them to answer *Hai* “Yes” or *Iie* “No” to whether the prediction and the bet match what happened in the

story for each context respectively, after they read the story. In order to avoid the possible effects that participants might judge the *nanko-ka*, based on the *nanko-ka* in the storyboard, I showed them the stories in the separated sheets. Among 19 L1 Japanese participants, seven of them were asked to judge the story in the “prediction-making” context, another six were asked to judge the story in the “bet-making” context, and the rest six were asked to judge both stories in “predicting-making” context and a “bet-making” context.

Regarding the additional task for L2 Japanese, the aim was to examine whether Japanese learners are able to translate Japanese *nanko-ka* into English *some* correctly. Since they were not directly taught *nanko-ka* as one of the translations of *some* in a classroom setting (see the discussion provided in 2.2), I wanted to see if they could compute it with the given context which included not only sentences but also drawings. In order to investigate this, L2 Japanese were asked to translate one whole critical (i.e., Infelicitous-*some* condition) story, which is contained in the booklet as the experimental material, into English. Among 20 L2 Japanese participants, one participant failed to answer one of the questions, so I analyzed 19 participants’ responses for this task. The additional task for L2 Japanese is provided in Appendix E, and the additional task for L1 Japanese is provided in Appendix F.

3.1.3 Stimuli

As was discussed above, I selected *nanko-ka* for the critical experimental condition (see the discussion provided in 2.1). Therefore, I chose the objects which are counted as *-ko*, which is something inanimate, and a small or rounded shape of object for the target stimuli (e.g., *ame* “candy” and *hachiue* “vase”) so that I could avoid the possibility that L2 Japanese might judge the stories while confusing the classifiers. Regarding the verbs, all of them were morphologically

simple transitive verbs which are represented as only one word rather than phrasal (e.g., *taberu* “eat” and *keru* “kick”). Both of the objects and the verbs are morphologically simple and commonly used words. As for the fillers, I chose the objects whose classifiers are *-mai*, which is a thin object (e.g., *futo* “envelop”), *-hon*, which is a slender object (e.g., *koeda* “twig”), and *-hai*, which is liquid inside a cup (e.g., *gyunyu* “milk”) in addition to *-ko*, and regarding the filler verbs, I also used morphologically simple transitive verbs as well. Showing the storyboard, including the clear and exact drawings in addition to the statements, made what is exactly going on in the story clear to the participants. Lastly, in Japanese, since subjects and objects as well as particles are frequently omitted in such obvious situations of what is going on, I omitted those words so that the statements sound natural and not to destruct the participants to answer. I asked several learners whether they could get the meaning of the statements even with the null subject and object, and the learners even in the beginner level exhibited the intended interpretation. This shows that omitting subjects and objects does not affect to the L2 participants’ responses. The stimuli are provided in Appendix G.

3.1.4 Procedure

For the L2 Japanese, the experiment was conducted in the classrooms of the third- or fourth-year Japanese course at the same university as mentioned previously in this chapter. The L1 Japanese were tested individually at a conference room, my office, or a classroom at the university. Each participant, in both groups, received one of the four types of booklets with all the parts of the material. It consisted of drawings and statements for each storyboard as well as the language background questions. There were also instructions of the experiment which showed an example story, and one or two additional question(s) in the end of the booklet. After

responding to all of the storyboards, L2 Japanese were asked to translate one story as the additional question; L1 Japanese were asked to judge the “prediction-making” context and/or “bet-making” context in the separated sheet(s). All of the tasks took approximately 15 to 30 minutes.

3.1.5 Data Analyses

I analyzed the data, having “Yes/No” responses by participants for four conditions (True-*zenbu*, False-*zenbu*, Felicitous-*nanko-ka*, and Infelicitous-*nanko-ka*) as dependent variables, through calculating the mean percentages of the “Yes” responses in each of the four conditions. Participants’ responses in each trial were coded; the responses as “Yes” was coded as “1” and “No” was coded as “0” in each condition for all the 32 trials.

3.2 Results

3.2.1 Overall Results

The average percentages of the “Yes” responses and standard deviations for each condition are summarized in Table 3.

Table 3: Mean percentages of the “Yes” responses and standard deviations for each condition of all L1 and L2

Group	Condition	Mean (%)	SD
L1 Japanese (n=19)	True- <i>zenbu</i>	97.37	.07883
	False- <i>zenbu</i>	1.32	.05735
	Felicitous- <i>nanko-ka</i>	96.05	.12536
	Infelicitous- <i>nanko-ka</i>	30.26	.36873
L2 Japanese (n=20)	True- <i>zenbu</i>	100.00	.00000
	False- <i>zenbu</i>	2.50	.07695
	Felicitous- <i>nanko-ka</i>	60.00	.46169
	Infelicitous- <i>nanko-ka</i>	43.75	.46506

As you can see in Table 3, both groups presented “Yes” responses in True-*zenbu* condition nearly always (97.37% in L1; 100% in L2), and they exhibited “No” responses in False-*zenbu* quite consistently as well (1.32% in L1; 2.250% in L2). This implies that the statement with *zenbu*, which does not yield the semantic-pragmatic ambiguity like *nanko-ka* does, was consistently interpreted at the semantic level across the groups. Interestingly, the two groups showed the significantly different response patterns in Felicitous-*nanko-ka* condition. Even though the L1 Japanese performed “Yes” responses nearly consistently (96.05%), the L2 Japanese exhibited the response only 60.00% of the time. Regarding the Infelicitous-*nanko-ka* condition, on the other hand, both the L1 Japanese and the L2 Japanese presented inconsistent responses, which is 30.26% of “Yes” responses in the L1 Japanese and 43.75% of “Yes” responses in the L2 Japanese.

I conducted a two-way mix-model ANOVA with Group (L1 Japanese vs. L2 Japanese) as a between-subject factor and Condition (True-*zenbu* vs. False-*zenbu* vs. Felicitous-*nanko-ka* vs. Infelicitous-*nanko-ka*) as a within-subject factor. I found a significant main effect of Condition ($F(1.958, 37) = 101.44, p < .001$), while there is no significant main effect of Group ($F(1, 37) = .976, p = .33$). Additionally, the interaction between Group and Condition was significant

($F(1.958, 37) = 6.377, p = .003$), which led me to conduct a post-hoc pair-wise comparisons with the Bonferroni adjustment. (The results of the comparisons were provided in Table 4.) The post hoc pair-wise comparison revealed a significant main effect of Group only in Felicitous-*nanko-ka* Condition ($p = .002$).

Thus, the analysis showed that there was a significant effect between the L1 Japanese and the L2 Japanese in Felicitous-*nanko-ka* condition; even though the L1 Japanese consistently accepted the statements in Felicitous-*nanko-ka* Condition, which is 96.05%, the L2 Japanese accepted the statement only 60.00% of the time in the same condition. This suggests that the L1 Japanese can consistently interpret the pragmatic ‘not all’ interpretation of *nanko-ka*, whereas the L2 Japanese cannot interpret the pragmatic interpretation as frequent as the L1 Japanese do.

Table 4: Results of post-hoc pair-wise comparisons: Test of the Group factor

Dependent variable (Condition)	(I) Group	(J) Group	Mean difference (I-J)	Sig.
True- <i>zenbu</i>	L1 Japanese	L2 Japanese	-.026	.144
False- <i>zenbu</i>	L1 Japanese	L2 Japanese	-.012	.591
Felicitous- <i>nanko-ka</i>	L1 Japanese	L2 Japanese	.361*	.002
Infelicitous- <i>nanko-ka</i>	L1 Japanese	L2 Japanese	-.135	.324

*. The mean difference is significant at the .05 level.

This finding brought me to a question; did L2 Japanese associate Japanese *nanko-ka* with its English counterpart, *some*, successfully? As was discussed above, it is likely that learners fail to associate *nanko-ka* with *some*, given no direct explanation of such an association in the classroom teaching. This led me to speculate that the significantly lower average rate of the

acceptance of felicitous *nanko-ka* statement by L2 Japanese group in my experiment might have been due to a possibility that they were not be able to associate Japanese *nanko-ka* with English *some*. This motivated me to recalculate the mean percentage only from the learners who showed that they could associate *nanko-ka* with *some* successfully. Therefore, I conducted the same ANOVA to examine whether the significant difference that was elicited in Felicitous-*nanko-ka* condition disappears through comparing with the same native group. In the additional task for the L2 Japanese which asked them to translate one Infelicitous-*nanko-ka* condition story into English, only 11 out of 20 L2 Japanese did translate *nanko-ka* to *some* (i.e., another eight L2 Japanese failed to associate *nanko-ka* to *some*, and one didn't give any translation.) Therefore, I made another L2 Japanese group which includes only those 11 participants who successfully translated *nanko-ka* as *some*. Interestingly, there seems to be no correlation between the amount of years the participants spent studying Japanese and that they could translate it accurately. All of their translations of *nanko-ka* are provided in Table 4. The comparison of all the L1 Japanese with the subset of L2 Japanese (i.e., only those who associated *nanko-ka* to *some*) of the average percentages of “Yes” responses and standard deviations for each condition are summarized in Table 5.

Table 5: Translations of *nanko-ka* and the amount of studying Japanese by L2 Japanese

Participants	Translation of <i>nanko-ka</i>	Years of studying
1	‘some’	2.5
2	‘some’	2.5
3	‘not...any of X’	7
4	‘several’	6
5	N/A	4
6	‘some’	4.5
7	‘bunch’	7
8	‘some’	4
9	‘some’	6
10	‘nothing’	5
11	‘some’	1.5
12	‘some’	3
13	‘didn’t’	11
14	‘some’	5
15	‘some’	7.5
16	‘not...anything’	6
17	‘all’	5
18	‘something’	2
19	‘some’	4
20	‘some’	3.7

For example, the participant #11, who has been studying Japanese only for a year and a half, successfully associated *nanko-ka* to *some*; in contrast, participant #13 failed to translate it properly even though he/she studied Japanese for 11 years.

Table 6: Mean percentages of “Yes” responses and standard deviations for each condition of all L1 and partial L2

Group	Condition	Mean (%)	SD
L1 Japanese (n=19)	True-zenbu	97.37	.07883
	False-zenbu	1.32	.05735
	Felicitous- <i>nanko-ka</i>	96.05	.12536
	Infelicitous- <i>nanko-ka</i>	30.26	.36873
L2 Japanese (n=11)	True-zenbu	100.00	.00000
	False-zenbu	0.00	.00000
	Felicitous- <i>nanko-ka</i>	93.18	.22613
	Infelicitous- <i>nanko-ka</i>	50.00	.50000

As can be seen in Table 6, the subset of L2 Japanese exhibited “Yes” responses in True-*zenbu* condition always (100.00%) and presented “No” responses in False-*zenbu* perfectly consistently as well (0.00%). Most importantly, in Felicitous-*nanko-ka* condition, the L2 Japanese showed consistent response almost all the time (93.18%), which has no significant effect compared to the L1 Japanese response in the same condition (96.05%). This means that the subset of the L2 Japanese participants who could associate *nanko-ka* with *some* show the similar interpretation pattern as the L1 Japanese group. Additionally, in Infelicitous-*nanko-ka*, the L2 Japanese performed “Yes” responses 50.00% of the time, which is inconsistent and did not show any significant effect between the average percent of “Yes” responses of the L1 Japanese (30.26%) and that of the L2 Japanese. This means that the subset of the L2 Japanese who could succeed in translation, in terms of associating *nanko-ka* to *some*, showed the same pattern as the L1 Japanese (i.e., consistent responses for True-*zenbu*, False-*zenbu*, and Felicitous-*nanko-ka* but inconsistent responses for Infelicitous-*nanko-ka* condition), which is different from the L2 Japanese group which included all of the participants regardless of their translation performance of *nanko-ka* (i.e., consistent responses for True-*zenbu*, False-*zenbu* but not consistent responses for Felicitous-*nanko-ka* as well as Infelicitous-*nanko-ka*). See the discussion provided above with Table 1.

I conducted the same ANOVA (i.e., a two-way mix-model ANOVA with Group (L1 Japanese vs. the subset of L2 Japanese and Condition) on the dataset from the L1 group and the subset of the L2 group. A significant main effect of Condition was found ($F(1.301, 28) = 116.82$, $p < .001$), while there is no significant effect of Group ($F(1, 28) = 1.073$, $p = .309$). In addition, the interaction between Group and Condition was not significant ($F(1.301, 28) = 1.432$, $p = .247$). That is, the significant difference in “Yes” response percent in Felicitous-*nanko-ka* condition

evaporated when the data from the L2 Japanese who could not associate *nanko-ka* with *some* were excluded from the analysis. This means that even learners, as long as they can associate *nanko-ka* with *some*, may be able to interpret *nanko-ka* pragmatically, as well as native speakers.

Taken together, even though there was a significant effect between the L1 Japanese and all of the L2 Japanese in Felicitous-*nanko-ka* condition, the significance no longer appeared in the comparison of the same L1 Japanese group and those successful subset of the L2 Japanese group in terms of translating *nanko-ka* as *some*. In other words, the performance of associating *nanko-ka* as *some* was corresponding to the performance of interpreting the meaning of *nanko-ka*. In addition to this, for the critical condition, Infelicitous-*nanko-ka*, there is no significant difference between any groups (i.e., the L1 Japanese group vs. all of the L2 Japanese group vs. the successful L2 Japanese group); all of the groups exhibited their responses inconsistently. Therefore, all of the responding patterns of the successful L2 Japanese group were the same as the L1 Japanese (i.e., there is no significant effect in any conditions between the successful L2 Japanese and the L1 Japanese), which suggests that as long as the learners associate *nanko-ka* as *some*, they could perform of interpreting *nanko-ka* as native-like.

3.2.2 Individual Results

As was discussed in the previous section, the response pattern in Infelicitous-*nanko-ka* condition in both groups (i.e., the L1 Japanese group and the L2 Japanese group) showed mixed response (30.26% “Yes” in L1; 43.75% “Yes” in L2), prompting further investigate the reason for such a result. The chance-level average performance elicited from both groups would reflect either (i) all the participants exhibited the chance-level percentage, or (ii) some participants consistently showed “Yes” responses, while others consistently showed “No” responses. In order

to examine which is the actual reason which yields to the results of the change-level group average, I analyzed the data from the individual subjects for each group. The results of the individual participants' responses in Infelicitous-*nanko-ka* condition are provided in Table 7. As is shown, all the three groups, the L1 Japanese, the L2 Japanese, and the subset of the L2 Japanese which includes only those who could associated *nanko-ka* with *some*, were analyzed respectively. For each group, all the participants were analyzed as either (i) they showed pragmatic 'not all' interpretation over 75% of the time (i.e., they interpreted *nanko-ka* pragmatically for three or more times) in the total of four infelicitous-*nanko-ka* stories, (ii) they showed semantic 'at least one, possibly all' interpretation over 75% of the time (i.e., they interpreted *nanko-ka* semantically for three or more times) in the total of four infelicitous-*nanko-ka* stories, or (iii) they showed the pragmatic interpretation 50% of the time and also the semantic interpretation 50% of the time (i.e., they interpreted *nanko-ka* pragmatically twice and semantically twice as well) in the total of four infelicitous-*nanko-ka* stories.

Table 7: Count of the participants based on the response patterns in infelicitous-*nanko-ka* (Ratio)

	Participants who chose pragmatic answers over 75% of the time (Ratio)	Participants who chose semantic answers over 75% of the time (Ratio)	Participants who presented mixed responses (Ratio) (50% semantic answers)
L1 Japanese (n=19)	12 (63.2%)	6 (31.6%)	1 (5.3%)
L2 Japanese (n=20)	11 (55.0%)	8 (40.0%)	1 (5.0%)
L2 Japanese who translated <i>nanko-ka</i> as <i>some</i> (n=11)	5 (45.5%)	5 (45.5%)	1 (9.1%)

As you can see, most of the participants in both of the groups are consistent in their responses (18 out of 19 in the L1 Japanese; 19 out of 20 in the L2 Japanese group; 10 out of 11 in the subset of the L2 Japanese group). This means that most of the participants, including the

natives and learners, those who not only could associate *nanko-ka* with *some* but also those who failed to translate *nanko-ka* as *some*, responded consistently either “Yes” or “No” almost all the times in Infelicitous-*nanko-ka* condition. Even though the patterns between the L1 Japanese and the subset of the L2 Japanese who translated successfully were exactly the same (see the discussion provided in 3.2.1), this individual performance in Infelicitous-*nanko-ka* shows a difference between them. From these results, you can see that some participants consistently showed “Yes” responses, whereas others consistently showed “No” response and this yielded the results of the change-group average. That is, the interpretation would vary, depending on the participants, regardless of if they were natives, learners or had knowledge of the meaning of *nanko-ka*. In other words, Japanese *some*, *nanko-ka* is a very ambiguous element.

3.2.3 Semantic-Pragmatic Ambiguity of the Japanese *Nanko-ka*

Lastly, I will report the results of semantic-pragmatic ambiguity of *nanko-ka* in the contexts, which the semantic ‘at least on, possibly all’ interpretation is tended to be conveyed. Recall that I conducted an additional task for the L1 Japanese as well as for the L2 Japanese (see the discussion provided in 3.1.2). The L1 Japanese were asked to judge the two stories: a story of the “prediction-making” context and a story of the “bet-making” context, which included a *nanko-ka* statement for each, to the question, whether the prediction and the bet match to what happened in the story. For both stories, answering “Yes” means that they interpreted the *nanko-ka*- statements semantically (i.e., ‘at least one, possibly all’ interpretation), which is expected on the basis of the interpretation of the English *some*. The results of the individual participants’ responses for each context are presented in Table 8.

Table 8: Number and percentage of “Pragmatic” and “Semantic” individual responses in “Prediction-making” context and “Bet-making” context

	Number of those who chose pragmatic answers	Number of those who chose semantic answers
L1 Japanese who responded to “prediction-making” context (n=13)	10 (76.9%)	3 (23.1%)
L1 Japanese who responded to “bet-making” context (n=12)	2 (16.7%)	10 (83.3%)

In the “prediction-making” context, 10 out of 13 L1 Japanese responded pragmatically, in other words, they conveyed the meaning of *nanko-ka* as ‘not all’ thus they chose “No.” This is 76.9% of the participants in total, and it shows surprisingly opposite performance to that we predicted as, in general, it is robustly interpreted as a logical meaning (i.e., answered as “Yes”) in the same context with English *some* statement. However, in contrast with it, 10 out of 12 L1 Japanese conveyed *nanko-ka* as a logical meaning (i.e., ‘at least one, possibly all’), in other words, they chose “Yes” in the “bet-making” context. This is consistent with the prediction based on the behavior of English *some*, considering the English *some* interpretations. The two opposite patterns may seem to suggest that Japanese *nanko-ka* may be interpreted differently from English *some*; it seems that *nanko-ka* is interpreted as a semantic meaning ‘at least one, possibly all’ in “bet-making” conditions, whereas it doesn’t seem that *nanko-ka* is interpreted as the same semantic way in “prediction-making” context. However, as it is just a small set of data, more detailed systematic examination is needed.

Chapter 4. Generic Discussions

4.1 Summary of Findings

In conclusion of all the results, noticeable response patterns appeared in Felicitous-*nanko-ka* condition as well as in the Infelicitous-*nanko-ka* condition. First, regarding the Felicitous-*nanko-ka* condition, although the L1 Japanese performed “Yes” responses almost consistently (i.e., showed the ‘not all’ interpretation consistently), which was over 96% of the time, the L2 Japanese did not perform “Yes” responses consistently in the same condition (i.e., showed the ‘not all’ interpretation inconsistently), which was only 60% of the time. This difference was statistically significant ($p = .002$). However, the L2 Japanese who successfully translated *nanko-ka* as *some* exhibited “Yes” responses much more consistently (93.2% of the time), and the significant difference between learners and natives no longer appeared, compared to the L1 Japanese. This implies that the acquisition of the meaning of *nanko-ka* by L2 Japanese is not intuitive without direct input of the instruction in a foreign language classroom setting, but there is a potential for them to do so. Even learners, once they can associate *nanko-ka* with *some*, could interpret the meaning of *nanko-ka* in a native-like way (i.e., they could judge whether they need to convey it to a semantic ‘at least one, possibly all’ interpretation or a pragmatic ‘not all’ interpretation) in the statement which includes *nanko-ka* in the Felicitous-*nanko-ka* condition.

However, in terms of the Infelicitous-*nanko-ka* condition, neither the L2 Japanese group which includes all of the L2 Japanese, nor the subset of the L2 Japanese group which includes only the successful L2 Japanese, showed inconsistent responses, including the L1 Japanese group. The L1 Japanese exhibited “Yes” responses (i.e., ‘at least one, possibly all’ interpretation) 30.3% of the time, the L2 Japanese, including both all of the L2 Japanese and the subset of the L2 Japanese, presented “Yes” responses 43.8% and 50.5% respectively. Even among natives, as

well as successful learners with respect to the association of *nanko-ka* with *some*, their mixed responses suggests that the interpretation of Infelicitous-*nanko-ka* is ambiguous, regardless of whether one can translate *nanko-ka* into *some*.

Now, let me compare the results with the findings in Slabakova (2010) in order to examine how similar or different the pattern are. The percentage of “Yes” responses in my study and her study is provided in Table 9.

Table 9: Mean percentage of “Yes” responses in my study and Slabakova (2010)

	Group	True-zenbu (all)	False-zenbu (all)	Felicitous-nanko-ka (some)	Infelicitous-nanko-ka (some)
My study	L1 Japanese (n=19)	97.4%	1.3%	96.1%	30.3%
	L2 Japanese (n=20)	100%	2.5%	60.0%	43.8%
	L2 Japanese who translated <i>nanko-ka</i> as <i>some</i> (n=11)	100%	0%	93.2%	50.0%
Slabakova (2010)	L1 English (n=20)	96%	1%	98%	37.5%
	L2 Advanced English (n=36)	95%	6%	98%	9%
	L2 Intermediate English (n=20)	86%	7%	95%	12.5%

As you can see in Table 8, both the two L2 Japanese groups in my study and the two L2 English groups in Slabakova (2010) presented “Yes” responses in True-zenbu condition (i.e., True-all in Slabakova’s condition) consistently (100% in both L2 Japanese; 95% in L2 advanced English and 86% in L2 English). Also all of the L2 groups in my study as well as in Slabakova’s study exhibited “Yes” responses in False-zenbu (i.e., False-all) condition quite consistently as well (2.5% in the whole L2 Japanese; 0% in the successful (in terms of translating *nanko-ka*) L2 Japanese; 6% in L2 advanced English and 7% in L2 Intermediate English). Regarding the

Felicitous-*nanko-ka* (i.e., Felicitous-*some*) condition, although the three L2 groups, containing the successful L2 Japanese, L2 advanced English, and L2 intermediate English, exhibited “Yes” responses consistently (93.2% in successful L2 Japanese; 98% in L2 advanced English and 95% in L2 intermediate English), the L2 Japanese, including all the participants, presented “Yes” responses much less (60.0%). This implies that the statement with *nanko-ka* could be more complicated than the statement with *some*. In addition, interestingly, the result in Infelicitous-*nanko-ka* condition in my study showed a completely opposite pattern, compared with the Slabakova’s result in the same condition. In my study, the L1 Japanese exhibited “Yes” responses 30.3% of the time, and all L2 Japanese and successful L2 Japanese exhibited the response 43.8% and 50.0% of the time respectively, the L2 Japanese “Yes” responses being slightly higher than those of L1 Japanese. However, in Slabakova’s results, you can see that the L1 English presented “Yes” responses 37.5%; in contrast, the L2 advanced English and the L2 intermediate English presented the “Yes” response much less than the L1 English (9% in L2 advanced English; 12.5% in L2 intermediate English). This means that in my study, the learners exhibited more semantic ‘at least one, not all’ interpretations than the natives in Infelicitous-*nano-ka* condition; in contrast, Slabakova’s results exhibited that the learners showed more pragmatic ‘not all’ interpretation, compared to the natives in the same condition.

Regarding why my data and Slabakova’s data patterned differently, I speculate the following possible reasons. First, I claim that the change of the prompt question statement made a difference. After each story in the experiment, I asked the participants to answer “Yes” or “No” to the question, “Did *Mitchan*’s description match what happened in this story” instead of the Slabakova’s question statement which is “Do you agree?” By being asked in such a way, which is clearer about what the participants needed to answer, the L1 Japanese and the L2 Japanese

might have judged more properly with respect to the linguistic judgment, what I was examining about, without any bias. In other words, “Do you agree?” is a little vague in terms of there is no specific explanation of ‘what’ the participants are asked to agree with; it could be that participants agree with the statement of what she said rather than the fact that she said used *some* (instead of *all*). On the other hand, “Did *Mitchan*’s description match what happened in this story” is a straightly clear cue for the participants as they know they need to judge if the statement matched to ‘the event that happened in the story,’ instead of agreeing with *Mitchan*’s mischievous behavior.

Another possible reason for the different response pattern is that the acquisition of Japanese *nanko-ka* is less straightforward as a scalar implicature, compared with English *some*, especially for Japanese learners. *Nanko-ka* is a morphologically complex word. In addition, learners tend not to be directly explained or taught the word *nanko-ka* as a quantifier or as a counterpart of English *some*. Because of these reasons, I could speculate that learning the meaning of *nanko-ka* and acquiring the usage of *nanko-ka* is challenging for learners, and it affected the performance of L2 Japanese. I will come back to this point in the following section and discuss it in more detail.

4.2 Pedagogical Implications

By considering the facts that the whole L2 Japanese did not show consistent responses in Felicitous-*nanko-ka* condition, but those L2 Japanese who successfully associated *nanko-ka* with *some* did show the responses as consistent as the L1 Japanese in the same condition, I claim that the presence or the absence of the direct input of the explanation matters. As was discussed above, the whole L2 Japanese “Yes” responses in Felicitous-*nano-ka* condition was significantly

lower than the L1 Japanese “Yes” responses in the same condition; however, the subset of L2 Japanese “Yes” responses in the same condition was significantly increased, which showed no difference compared with the L1 Japanese “Yes” responses. This suggests that the association between not easily associated *nanko-ka* and *some* is not straight forward for learners, and the reason why it is not intuitive might be due to the possible lack of the direct input provided in the classroom teaching that indicates the association between *nanko-ka* and *some*. As was discussed in Chapter 2, the L2 Japanese did not seem to receive direct explanation of *nanko-ka*, (i.e., they didn’t learn *nanko-ka* as a quantifier, which is a counterpart of English *some*) in foreign language classroom settings. This would serve as evidence to support that Japanese teachers should not expect that the students could acquire the meaning of the *nanko-ka* without any direct input or could judge felicitous/infelicitous statements which include *nanko-ka*; when the teacher introduces <interrogative + *ka*>, they at least should show some statements which consist with *nanko-ka* when they introduce other examples of <interrogative + *ka*>, such as *nani-ka*, *doko-ka*, and *dare-ka*.

4.3 Further Issues

I would like to point out two more issues. First, since natives’ interpretation of Infelicitous-*nanko-ka* was not consistent and the learners’ interpretation was not consistent, regardless of whether they could associate *nanko-ka* with *some*, the semantic-pragmatic ambiguity of *nanko-ka* should be examined in more details. Another point is that as native speakers of Japanese did not interpret *nanko-ka* semantically in the “prediction-making” context, where English *some* tends to be interpreted semantically, Japanese *nanko-ka*, as an expression corresponding to the English *some*, calls for further research in order to investigate whether

nanko-ka has two different meanings in the same way as the English *some*. (i.e., In English, both “prediction-making” context and “bet-making” context highlight the semantic ‘at least one, possibly all’ interpretation, but it seems like “prediction-making” context biased listeners to pragmatic ‘not all’ interpretation in Japanese whereas “bet-making” context yields semantic interpretation.) The data that I collected for this aspect is a small data set and not systematically elicited. Therefore, by conducting the more systematic and detailed full designed experiment, I will examine whether Japanese *nanko-ka* is interpreted as ‘at least one, possibly all’ in both “prediction-making” context and “bet-making” context as it is so in English *some*.

4.4 Conclusion

The current study suggested that performance pattern in interpretation of *nanko-ka* by adult learners of Japanese is on similar level to Japanese native speakers (i.e., there is no significant difference in the response pattern between learners and natives) as long as they know the meaning of *nanko-ka* correctly, including the semantic-pragmatic ambiguous interpretation of *nanko-ka*. However, since those learners who did not associate *nanko-ka* with *some* could perform in a native-like way, I claim that the acquisition of *nanko-ka* by adult learners of Japanese is not straightforward; it requires explicit explanation for learners of Japanese. It suggests that the semantic-pragmatic ambiguity of *nanko-ka* may require extra effort for second language learners of Japanese to acquire it, considering the results. The research of the acquisition as well as the interpretation of the equivalent to English *some*, including *nanko-ka* and also others, should be examined in more details in the future.

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Appendix A: Sample Storyboard



みっちゃんが言ったこと(最後の絵の下線部)は、このお話で起きたことと合っていますか？

はい

いいえ



1. Mitchan finds three lamps on the table.
Mitchan is interested in the lamps.



2. Mithan lights the first lamp.



3. Mitchan lights the second lamp.



4. Mitchan lights the third lamp.



5. Mitchan's mom says, "Mitchan, what have you been doing with the lamps?" Mitchan says, "I've lighted some of the lamps."

Did Mitchan's description (the underlined sentence in Picture 5) match what happened in this story?

Yes

No

Appendix B: Conditions with Example Stimulus Statements and Expected Responses

	conditions	numbers of the candies she ate				stimulus statements	expected responses
		1	2	3	total		
Targets	True- <i>zenbu</i> (=all)	O	O	O	3/3	“ <i>Zenbu</i> (ame o) tabeta no.” (“I’ve eaten <i>all</i> (of the candies).”)	“ <i>Hai</i> (=Yes)”
	False- <i>zenbu</i>	O	O	X	2/3	“ <i>Zenbu</i> (ame o) tabeta no.” (“I’ve eaten <i>all</i> (of the candies).”)	“ <i>Iie</i> (=No)”
	Felicitous- <i>nanko-ka</i> (=some)	O	O	X	2/3	“ <i>Nanko-ka</i> (ame o) tabeta no.” (“I’ve eaten <i>some</i> (of the candies).”)	“ <i>Hai</i> ”
	Infelicitous- <i>nanko-ka</i>	O	O	O	3/3	“ <i>Nanko-ka</i> (ame o) tabeta no.” (“I’ve eaten <i>some</i> (of the candies).”)	“ <i>Hai</i> ”—Semantic “ <i>Iie</i> ”—Pragmatic
Fillers	True- <i>sanko/mai/ho</i> <i>n/hai</i> (=three)	O	O	O	3/3	“ <i>Sanmai</i> (futo o) yabutta no.” (“I’ve torn <i>three</i> (of the envelops).”)	“ <i>Hai</i> ”
	False- <i>sanko/mai/ho</i> <i>n/hai</i>	O	O	X	2/3	“ <i>Sanmai</i> (futo o) yabutta no.” (“I’ve torn <i>three</i> (of the envelops).”)	“ <i>Iie</i> ”
	True- <i>niko/mai/ho</i> <i>n/hai</i> (=two)	O	O	X	2/3	“ <i>Nimai</i> (futo o) yabutta no.” (“I’ve torn <i>two</i> (of the envelops).”)	“ <i>Hai</i> ”
	False- <i>niko/mai/ho</i> <i>n/hai</i>	O	O	O	3/3	“ <i>Nimai</i> (futo o) yabutta no.” (“I’ve torn <i>two</i> (of the envelops).”)	“ <i>Iie</i> ”

Appendix C: Language Background Questionnaire

Language background

調査にご協力くださり、ありがとうございます。貴方の言語バックグラウンドに関する以下の質問にお答えください。

- 1: 貴方の母国語は何語ですか? _____
- 2: 何年間英語を学習していますか? _____
- 3: 日本語と英語以外の言語を話せますか? 話せる言語と習得レベル (例: 初級・中級・上級・ネイティブ並) を教えてください。

話せる言語:

レベル:

_____	_____
_____	_____
_____	_____
_____	_____

Thank you so much for your participation. Please answer the following questions regarding your language background.

- 1: What is your native language(s)? _____
- 2: How long have you been learning Japanese? _____
- 3: If you speak any language(s) other than your native language(s) and Japanese, please list them all below and evaluate your fluency level (e.g., beginner, intermediate, advanced, native-like) for each one.

Language:

fluency level:

_____	_____
_____	_____
_____	_____
_____	_____

Appendix D: Instruction

Instruction

You will see stories about Mitchan (みっちゃん). In each of the stories Mitchan finds various things and interacts with them; then her mother comes to her and asks her a question. Please judge whether Mitchan's response to her mother matches (合っているかどうか) what happened in each of the stories.

All of the stories will be shown in Japanese. Please read the following example story.

Example:

 <p>1. みっちゃんはテーブルの上^{うえ}にクラッカーを2枚^{まい}見^みつけました。みっちゃんはクラッカーが大好き^{だいす}です。</p>	 <p>2. みっちゃんは1枚目^{まいめ}のクラッカーを食^たべました。</p>
 <p>3. みっちゃんのお母^{かあ}さんが言^いいました。「みっちゃん、クラッカーどうしたの？」みっちゃんは言^いいました。「<u>1枚食^{まい}べたの。</u>」</p>	

みっちゃんが言^いったこと(最後^{さいご}の絵^えの下線^{かせんぶ}部)は、このお話^{はなし}で起^おきたことと合^あっていますか?

はい

いいえ

In this example, Mitchan ate one cracker. When her mom asked her 「クラッカーどうしたの? (What have you been doing with the crackers?)」, Mitchan said 「1枚食^{まい}べたの。 (I've eaten one cracker.)」 This matches what happened in this story. Therefore, the answer should be 「はい (Yes)」.

If you have any questions, please ask the experimenter.

You will see 32 stories (お話^{はなし}) in total, starting on the next page. Please answer 「はい (Yes)」 or 「いいえ (No)」 for each of the stories.

Appendix E: Additional Task for L2 Japanese

Extra Question

Before you finish, please translate the story below (1 to 5) to English. Please write your translation on the sheet provided on the next page.



1. みっちゃんは食器棚にコップを3個見つけました。
みっちゃんはコップに興味津々です。



2. みっちゃんは1個目のコップを割りました。



3. みっちゃんは2個目のコップを割りました。



4. みっちゃんは3個目のコップを割りました。



5. みっちゃんのお母さんが言いました。「みっちゃん、コップ
どうしたの？」みっちゃんは言いました。「何個か割ったの。」

1.

2.

3.

4.

5.

Appendix F: Additional Tasks for L1 Japanese

1) “Bet-making” context

おまけの質問

(An Additional question)

次のお話を読んで、みっちゃんの予測が正しかったかどうかを判断してください。そして正しかったと思った場合は「はい」、正しくなかったと思った場合は「いいえ」を○で囲んでください。

(Please read the story below and judge whether *Mitchan*'s prediction was correct or not. If you thought her prediction was correct, please circle *Hai* “Yes”; if you thought her prediction was wrong, please circle *Iie* “No.”)

お話 (Story)

みっちゃんは犬を飼っています。名前はペロです。ペロはお腹が空いているようなので、みっちゃんはペロに骨を5個あげました。

みっちゃんは、「ペロは骨を何個か食べるだろうなあ〜。」と予測して、その場を去りました。

しばらくしてみっちゃんに戻って来ると、ペロは骨を全部食べていました。

(*Mitchan* has a dog. Her name is *Pero*. *Pero* seems hungry, so *Mitchan* gave 5 bones to her.

Mitchan predicted “*Pero* would eat some (of the) bones, and she left there.

A while later when *Mitchan* came back, *Pero* ate all (of the) bones.)

みっちゃんの予測は正しかったでしょうか？

(Was *Mitchan*'s predictions correct?)

はい(Yes)

いいえ(No)

2) “Prediction-making” context

おまけの質問

(An additional questions)

次のお話を読み、質問に答えてください。

(Please read the story below and answer the following questions.)

お話 (Story)

ある日、みっちゃんはお散歩をしていました。すると不思議なことに、妖精さんに出会いました。妖精さんはみっちゃんに、「この先のお花畑に宝石を隠してあるの。もし宝石を何個か見つけることができれば、ご褒美に魔法の杖をあげるわ!」と言いました。

そこでみっちゃんはお花畑に行き、一生懸命宝石を捜しました。その結果、みっちゃんは、隠してあった宝石を全部見つけました。

(One day, *Mitchan* is going for a walk. Strangely, she met a fairy. The fairy told *Mitchan* “I cached my jewels in the flower garden along the way. If you could find some of the jewels, I will give you a magic wand as a reward.”

In the result, *Mitchan* found all of the jewels that the fairy had cached.)

質問：この後、みっちゃんのご褒美の魔法の杖をもらえると思いますか？

(Question: After this, do you think *Mitchan* would be able to receive the/a magic wand?)

はい(Yes)

いいえ(No)

Appendix G: Stimuli (targets and fillers)

Targets <“ko”> (<i>nanko-ka, zenbu</i>)		Fillers <“mai” “hon” “hai” “ko”> (<i>sanmai/hon/hai/ko, nimai/hon/hai/ko</i>)	
食べる-あめ <small>た</small>	取る-トマト <small>と</small>	むく-オレンジ	飲む-ミルク <small>の</small>
食べる-チョコレート <small>た</small>	取る-いちご <small>と</small>	むく-バナナ	飲む-ジュース <small>の</small>
割る-コップ <small>わ</small>	点ける-ランタン <small>つ</small>	落とす-フォーク <small>お</small>	摘む-タンポポ <small>つ</small>
割る-お茶碗 <small>わ</small> <small>ちやわん</small>	点ける-ランプ <small>つ</small>	落とす-お皿 <small>お</small> <small>さら</small>	摘む-チューリップ <small>つ</small>
噛む-ぬいぐるみ <small>か</small>	倒す-鉢植え <small>たお</small> <small>はちう</small>	破る-新聞紙 <small>やぶ</small> <small>しんぶんし</small>	汚す-シャツ <small>よご</small>
噛む-人形 <small>か</small> <small>にんぎよう</small>	倒す-花瓶 <small>たお</small> <small>かびん</small>	破る-手紙 <small>やぶ</small> <small>てがみ</small>	汚す-タオル <small>よご</small>
開ける-箱 <small>あ</small> <small>はこ</small>	壊す-ミニカー <small>こわ</small>	折る-つまようじ <small>お</small>	かじる-ドーナツ
開ける-かばん <small>あ</small>	壊す-ロボット <small>こわ</small>	折る-小枝 <small>お</small> <small>こえだ</small>	かじる-りんご

Targets <“ko”> (<i>some, all</i>)		Fillers <“mai” “hon” “hai” “ko”> (<i>three, two</i>)	
Eat-Candy	Take-Tomato	Peel-Orange	Drink-Milk
Eat-Chocolate	Take-Strawberry	Peel-Banana	Drink-Juice
Break-Cup	Light-Lantern	Drop-Fork	Pick-Dandelion
Break-Bowl	Light-Lamp	Drop-Plate	Pick-Tulip
Rip-Teddy bear	Kick-Plant	Tear-Newspaper	Dirty-Shirt
Rip-Doll	Kick-Vase	Tear-Letter	Dirty-Towel
Open-Box	Break-Mini car	Snap-Toothpick	Bite-Donut
Open-Bag	Break-Robot	Snap-Twig	Bite-Apple

Appendix H: Textbook Analysis

Textbook	Is <i>some</i> explained?	Does <i>some</i> appear in the glossaries?
<i>Nakama 2</i>	<p>NO</p> <p>In Chapter 9, other indefinite pronouns are explained as: <question word + <i>ka</i> (+ particle) + affirmative></p> <p><i>nani</i> + <i>ka</i> = <i>nanika</i> ‘something’</p> <p><i>doko</i> + <i>ka</i> = <i>dokoka</i> ‘somewhere’</p> <p><i>dare</i> + <i>ka</i> = <i>dareka</i> ‘someone’</p> <p><i>itsu</i> + <i>ka</i> = <i>itsuka</i> ‘sometime’</p> <p>No explanation/example of <i>nanko/ikutsu</i> + <i>ka</i> = ‘some’</p>	<p>NO</p> <p>Only definition of :</p> <p><<i>ikutsu</i> = question word <i>how many</i>></p> <p>(Jap-Eng)</p> <p><question word <i>how many</i> = <i>ikutsu</i>></p> <p>(Eng-Jap)</p>
<i>Japanese: The Spoken Language</i>	<p>NO</p> <p>In Chapter 3 and 8, classifiers are introduced but <i>nanko-ka/ikutsu-ka</i> is not explained</p>	<p>NO</p> <p>Only definition of :</p> <p><<i>ikutsu</i> = <i>how many unit?</i>></p> <p>(Jap-Eng)</p> <p><<i>how many unit?</i> = <i>ikutsu</i>></p> <p><<i>how many...?</i> = <i>nan</i> + classifier></p> <p>(Eng-Jap)</p>
<i>Yookoso</i>	<p>NO</p> <p>In Chapter 5, other indefinite pronouns explained as:</p> <p><interrogative + <i>ka</i>></p> <p><i>nani</i> + <i>ka</i> = <i>nanika</i> ‘something’</p> <p><i>dare</i> + <i>ka</i> = <i>dareka</i> ‘someone’</p> <p><i>itsu</i> + <i>ka</i> = <i>itsuka</i> ‘sometime’</p> <p><i>doko</i> + <i>ka</i> = <i>dokoka</i> ‘somewhere’</p> <p><i>dore</i> + <i>ka</i> = <i>doreka</i> ‘one of them’</p> <p><i>dochira</i> + <i>ka</i> = <i>dochiraka</i> ‘either of two’</p>	<p>YES</p> <p>Definition of:</p> <p><<i>ikutsuka</i> = <i>some, several</i>></p> <p>(Jap-Eng)</p> <p><<i>some</i> = <i>ikutsuka</i>></p> <p>(Eng-Jap)</p> <p>Also definition of:</p> <p><<i>ikutsu</i> = <i>how many</i>></p> <p>(Jap-Eng)</p>

	<p>As a useful expression formed by combining interrogative with <i>ka</i>, one example sentence is given:</p> <p><i>ikutsuka</i> ‘some (number of), several’</p> <p><i>Nihongo no kotoba o ikutsuka naraimashita.</i></p> <p>‘I learned some Japanese words.’</p>	<p><<i>how many = ikutsu</i>></p> <p>(Eng-Jap)</p>
<p><i>Situational</i> <i>Functional</i> <i>Japanese</i> <i>Volume 1</i></p>	<p>NO</p> <p>In Chapter 5, other indefinite pronouns are explained as: <question word + <i>ka</i>></p> <p><i>nani + ka = nanika</i> ‘something’</p> <p><i>dare + ka = dareka</i> ‘someone’</p> <p><i>doko + ka = dokoka</i> ‘somewhere’</p> <p><i>itsu + ka = itsuka</i> ‘sometime’</p> <p><i>dore + ka = doreka</i> ‘one of them’</p> <p><i>dochira + ka = dochiraka</i> ‘either of two’</p> <p>No explanation/example of <i>nanko/ikutsu + ka =</i> ‘some’</p>	<p>NO (There is no glossary section)</p> <p>In Chapter 3, a vocabulary word is defined as:</p> <p><<i>ikutsu = how many?</i>></p>
<p><i>Minna-no</i> <i>Nihongo</i></p>	<p>NO</p> <p>In Chapter 13, other indefinite pronouns are explained as: <question word + <i>ka</i>></p> <p><i>nani + ka = nanika</i> ‘something’</p> <p><i>dare + ka = dareka</i> ‘someone’</p> <p><i>doko + ka = dokoka</i> ‘somewhere’</p> <p><i>itsu + ka = itsuka</i> ‘sometime’</p> <p><i>dore + ka = doreka</i> ‘one of them’</p> <p><i>dochira + ka = dochiraka</i> ‘either of two’</p> <p>No explanation/example of <i>nanko/ikutsu + ka =</i> ‘some’</p>	<p>NO</p> <p>Only definition of:</p> <p><<i>ikutsu = question word how many</i>></p> <p>(Jap-Eng)</p> <p><question word <i>how many = ikutsu</i>></p> <p>(Eng-Jap)</p>