THE SEMANTICS AND PRAGMATICS OF

JAPANESE FOCUS PARTICLES

by

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To my mother

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ACC	accusative
CL	classifier
COMP	complement
CONJ	conjunctive
CONT	contrastive
DM	discourse marker
NEG	negative
NOM	nominative
NONPAST	nonpast tense
PAST	past tense
PERF	perfect
PROG	progressive
Q	question
TOP	topic

Abstract

Japanese has a rich set of focus particles, several exclusive and additive particles, and, in addition, contrastive particles. This thesis provides a formal description of the meanings of Japanese focus particles and addresses two general questions: 'What kinds concepts do Japanese focus particles express?' and 'Why does Japanese have a larger inventory of focus particles than English?'

Focus particles are typically classified into exclusive particles like *only*, non-scalar additive particles like *also*, and scalar additive particles like *even*. In addition to such particles, Japanese form class of focus particles includes contrastive particles. One of the most general semantic properties of focus particles is to relate the new proposition containing the focused constituent with contextually available propositions containing alternatives. For exclusive particles, propositions containing alternatives are excluded from the set of true propositions. For additive particles, propositions containing alternatives are part of the set of true propositions. Scalar additive particles further impose an ordering between the newly introduced proposition and propositions in the context based on the relative likelihood or informativeness of propositions.

As an answer to the first question, 'What kinds concepts do Japanese focus particles express?', this thesis shows that in addition to the kinds of concepts expressed by exclusive, non-scalar and scalar additive particles, Japanese contrastive particles express the notion of relevance. For contrastive particles, the speaker does not comment on whether or not propositions containing alternatives are part of the set of true propositions. Instead, what contrastive particles express is the relative relevance of the newly introduced proposition and propositions in the context.

As an answer to the second question, 'Why does Japanese have a larger inventory of focus particles than English?', this thesis shows that, first, the meanings of some Japanese focus particles are more restricted than those of their English counterparts. For example, for one Japanese scalar additive particle, *-made*, the contextually available proposition containing an alternative has to be presupposed while for *even*, it can be either inferred from the newly introduced proposition or presupposed. The second reason for the larger inventory of Japanese focus particles is that aside from the common semantic function of focus particles which is to relate the new proposition and structurally related propositions in the context, the meanings of some Japanese focus particles involve a third contextual proposition. For example, contexts in which one Japanese exclusive particle, *-shika*, is acceptable, are characterized by the presence of a proposition which does not hold in the context. The meanings of contrastive particles also involve a third contextual proposition because to evaluate the relative relevance between two propositions, not only two propositions but also a third proposition with respect to which the relative relevance of the two propositions is evaluated, are necessary.

By investigating in detail the semantic properties of each of Japanese exclusive, scalar additive, and contrastive particles, this study expands our understanding of what focus particles can express.

CHAPTER 1

INTRODUCTION

This dissertation discusses the meanings of Japanese focus particles, which correspond to items like *only*, *also*, and *even* in English. Although the number of focus particles in a language is relatively small compared to other classes of lexical items, Japanese has a larger inventory of focus particles than languages like English. The main purpose of the dissertation is to provide formal descriptions of Japanese focus particles. I address two closely related questions. The first question is what kinds of concepts Japanese focus particles express. One of the most general properties of focus particles is to relate a proposition which is newly introduced by the sentence containing a focus particle and propositions available in the context. Traditionally, focus particles are classified into two subclasses, additive and exclusive particles (König 1999). For exclusive particles, propositions containing entities evoked as alternatives to the constituent marked with a particle are excluded from the set of true propositions, and for additive particles, propositions containing entities evoked as alternatives to the focused constituent are part of the set of true propositions. For (1.1), there is no individual to substitute for the constituent marked by the exclusive particles *only*, Yuna: there is no one other than Yuna who came.

(1.1) *Only Yuna came.*

For (1.2), there is at least one individual to substitute for the constituent marked by the additive particle *also*, Yuna: there is at least one individual other than Yuna who came.

(1.2) *Yuna also came.*

In addition to specifying whether there are certain entities in the context, scalar additive particles restrict the relationship between a new proposition and propositions in the context in terms of the notion of likelihood. Newly introduced propositions expressed by sentences containing scalar additive particles are less likely to be true than propositions already in the context. In addition, some Japanese particles restrict the relationship between a new proposition and propositions in the context in terms of the notion of relevance. Relevance differs from likelihood in that while relative likelihood is evaluated by comparing two propositions, relative relevance is evaluated by the relationship between two propositions to be compared and the third proposition with respect to which their relevance is assessed.

The second question I address in this thesis, which is closely related to the first question, is why Japanese has a larger inventory of focus particles than English. One answer is that Japanese has an additional class of focus particles, contrastive particles, which are not either additive or exclusive. The semantic function of Japanese contrastive particles is to express how relevant certain propositions are in particular contexts. Another reason of the larger inventory of Japanese focus particles is that Japanese has several additive, exclusive, and contrastive focus particles.

1.1 PROBLEMS DISCUSSED IN THE DISSERTATION

In this dissertation, I provide formal descriptions of the meanings of each of the Japanese focus particles in table 1.1 that is not in parentheses.

Exclusive particles	*-shika*, *-dake*, *-bakari*
(Scalar) Additive particles	(*-mo*)
Scalar additive particles	*-sae*, *-desae*, *-made,* (*-sura*)
Contrastive particles	*-nado*, (*-nanka, -nante*), *-koso*, (*-wa*)

Table 1.1: Japanese focus particles

I do not discuss the (scalar) additive particle *-mo* or the contrastive particle *-wa* in this dissertation because these two particles have been discussed most intensively. I do not discuss the scalar additive particle *-sura* because the particle sounds old and is no longer used frequently. *-nanka* and *-nante* are conversational variants of the contrastive particle *-nado*. Although there are some clear differences among the three particles, I do not discuss those differences in this dissertation. In the following, I list general issues pertaining to each of the exclusive, scalar additive, and contrastive particles, which I address in the following chapters.

1.1.1 EXCLUSIVE PARTICLES

One property which distinguishes the Japanese exclusive particle -*shika* from other exclusive particles is that -*shika* obligatorily co-occurs with the negative verbal suffix -*na*. Although the negative verbal suffix –*na*, which otherwise functions as regular negative operator, does not seem to behave like a regular negative operators when it co-occurs with -*shika*.

(a) Is the negative verbal suffix co-occurring with -*shika* regular logical negation?

(b) What is the difference between -*shika* and -*dake*? How is the negative contextual meaning characteristic of -*shika* encoded in its meaning?

I answer NO to the 1st question and propose that in addition to the regular exclusive propositions as described in (1.3b) and (1.3c) for (1.3a), -*shika* encodes another contextual proposition in (1.4).

(1.3) a. *Miho-shika ko-na-katta.*
Miho-SHIKA come-NEG-PAST
'Only Miho came.'

b. Miho came

c. No one other than Miho came

(1.4) A contextually determined proposition Q does not hold when (1.3b) and (1.3c) are true.

-shika in (1.3a) expresses that the fact that Miho's coming and no one else's coming is not sufficient for a contextually determined proposition to be true.

1.1.2 SCALAR ADDITIVE PARTICLES

-sae, which otherwise corresponds to English *even*, means *at least* in the antecedents of conditionals. I first examine the meaning of *even* and *at least* and discuss whether the meaning of *-sae* is ambiguous between *even* and *at least* or the two interpretations can be covered by one meaning.

(a) Is the meaning of *-sae* ambiguous between its use in antecedents of conditionals and its use in other environments?

-sae and *-desae* have two different interpretations in what Fauconnier (1979) calls implication reversing environments such as negative sentences, conditionals etc. For example, in conditionals, *-desae* has the two interpretations in (1.5).

(1.5) a. *Muzukashii* *mondai-desae* *toke* *ba* *tani-ga*
difficult question-DESAE solve if credit-ACC
mora-e-ru.
receive-can-NONPAST
'If one even solves a difficult question, she can receive a credit.'

b. *Kantanna* *mondai-desae* *toke* *ba* *tani-ga*
easy question-DESAE solve if credit-ACC
mora-e-ru.
receive-can-NONPAST
'If one even solves an easy question, she can receive a credit.'

In (1.5a), *-desae* is under the scope of the conditional while in (1.5b), it scopes over the conditional. *-sae* and *-desae* differ in what implication reversing environments they scope over. I semantically classify the different environments which *-sae* and *-desae* scope over and discuss why they behave differently in those environments. I, thus, ask the second following question:

(b) Why do *-sae* and *-desae* differ in what implication reversing environments they scope over?

Finally, in contrast to English *even* or other Japanese scalar additive particles, *-made* does not scope over implication reversing environments except for negative sentences. Even when occurring in negative sentences, *-made* can be under the scope of negation. (1.6) for example can mean that she did not solve a difficult question although she solved less difficult questions.

(1.6) *Muzukashii* *mondai-made* *toka-na-katta.*
Difficult question-MADE solve-NEG-PAST
'It is not the case that she even solved a difficult question.'

I will discuss why *-made* resists scoping over most of implication reversing environments and ask the following question.

(c) Why does *-made* rarely scope over implication reversing environments?

1.1.3 CONTRASTIVE PARTICLES

A sentence containing *-nado* has two different and seemingly conflicting interpretations. Propositions denoted by sentences containing *-nado* are surprising or are expected, depending on the context. I examine the interaction between the meaning of *-nado* and the information structure of sentences containing *-nado*. I claim that when what *-nado* focuses on and the information structure focus are the same constituent, the propositions expressed by the sentence are surprising while when the information structure is the whole sentence, the propositions expressed by the sentences are marked as expected. I, then, answer the following question.

(a) Why does *nado* have two seemingly conflicting interpretations?

It has been known that *-koso* when occurring in adversative clauses, seems to have a different interpretation from its interpretation in other environments. Propositions denoted by clauses containing *-koso* are usually relevant in the context but adversative clauses containing *-koso* do not seem to be relevant. I discuss the meaning of *-koso* and the semantic function of adversative clauses and explain the special interpretation of *-koso* in adversative clauses without assuming that *-koso* is ambiguous. I thus answer the following question.

(b) Why does the meaning of *koso* seem to be cancelled when it appears in adversative clauses?

1.2 OVERVIEW OF FOCUS PARTICLES

In this section, I provide an overview of each Japanese focus particle which I discuss in the dissertation before providing more detailed discussions in the following chapters. König (1999) classifies focus particles into two classes, exclusive and additive particles. Additive particles are further classified into non-scalar and scalar additive particles. Exclusive particles such as *only* express two propositions. For example, (1.7) entails the truth of what is called the prejacent in (1.8a) and the asserted proposition in (1.8b).

(1.7) *Only John came.*

(1.8) a. Prejacent: John came

b. Assertion: No individuals other than John came

Additive particles, on the other hand, ensures the truth of what Kay (1990) calls the text and context propositions. (1.9), in which the non-scalar additive particle *also* occurs, entails the truth of the text proposition in (1.10a) and the context proposition in (1.10b).

(1.9) *John also came.*

(1.10) a. Text proposition: John came

b. Context proposition: Other individuals than John came

Similarly to non-scalar additive particles, scalar additive particles such as *even* ensure the truth of the text and context propositions.[1] What characterizes scalar additive particles is the specification of an ordering between the text and context propositions. For example, (1.11) expresses the three propositions in (1.12). The scalar additive particle *even* introduces a scale of "likelihood" and places the text proposition in (1.12a) lower on the scale than the context proposition in (1.12b). Bach (1999) and Potts (2005) call the scalar meaning of *even* in (1.12c) its secondary meaning.

(1.11) *John even solved a difficult question.*

(1.12) a. T(ext proposition): John solved a difficult question

b. C(ontext proposition): John solved a less difficult question

c. Secondary meaning: T is less likely to be true than C

When the scalar additive particle *even* occurs in negative sentences, the orientation of the implication is reversed. For example, the secondary meaning of (1.13) is (1.14c).

(1.13) *John didn't even solve an easy question.*

(1.14) a. T(ext proposition): John did not solve an easy question

b. C(ontext proposition): John did not solve a less easy question

c. T is less likely to be true than C

[1] The context proposition is not necessarily true in the actual world. However, even when the context proposition is not true in the actual world, it can be (pragmatically) inferred from the text proposition and is true in at least some possible worlds.

For the affirmative sentence in (1.11), the direction of the implication is from a difficult question to an easy question: if one solves a difficult question, one probably solved an easy question too. For the negative sentence in (1.13), the direction of the implication is reversed and it is from an easy question to a difficult question: if one did not solve an easy question, she probably did not solve a difficult question either. For (1.13), *even* scopes over the negation in that the text and context propositions both contain a negation. (1.13) means that John's not coming is less likely than other individuals' not coming or John's coming is more likely than other individuals' coming. I call the secondary meaning of *even* in negative sentences the scale reversing interpretation, following Israel (2002).

In addition to exclusive and additive particles, Japanese has another kind of focus particle, which I call contrastive particles. In contrast to exclusive particles and additive particles, which specify the truth or falsity of the context proposition, contrastive particles evoke alternatives without specifying the truth or falsity of the context propositions. In alternative semantics, the function of focus is to evoke alternatives to the focused constituent. Rooth (1985) characterizes this function by proposing another semantic value than the ordinary semantic value. For example, (1.16a) and (1.16b) are the ordinary semantic value and focus value of (1.15), respectively.

(1.15) *Yuna wants* [*green tea*]$_F$.

(1.16) a. $\| p \|^0$ = Yuna wants green tea.

b. $\| p \|^F$ = the set of proposition of the form "Yuna wants x"

The function of the focus in (1.15) is to evoke alternatives to substitute the variable in the propositional function "Yuna wants x". Exclusive and additive particles are defined by whether there are alternatives to $\| p \|^0$: there is no alternatives for exclusive particles and there is at least one alternatives for additive particles. For contrastive particles, the speaker does not commit on if there is an alternative. For example, for (1.17), in which the contrastive particle *-nado* occurs, the truth condition of the context proposition in (1.17b) is not specified. That is, (1.17) can be uttered without committing to the truth or falsity of (1.17b). The semantic contribution of contrastive particles is not to specify the truth of (1.17b), but relate (1.17a) and (1.17b) by the notion of relevance.

(1.17) *Yuka-nado* *ki-ta.*
Yuka-NADO come-PAST
'Yuka came.'

a. Text proposition: Yuka came

b. Context proposition: Someone else came

1.3 SEMANTIC PROPERTIES OF FOCUS PARTICLES

1.3.1 FOCUS AND SCOPE

The main semantic function of focus particles is to evaluate the text proposition containing the focused constituent with respect to other contextually available context propositions containing alternatives. For example, in (1.18), the focused constituent is *broccoli* and alternatives to the focused constituent are other vegetables.

(1.18) *She even likes broccoli.*

a. T(ext proposition): she likes broccoli

b. C(ontext proposition): she likes other vegetables

c. T is less likely to be true than C

The text proposition in (1.18a) is evaluated with respect to the context proposition in (1.18b) in the way specified in (1.18c). (1.18) means that it is less likely that she likes broccoli than that she likes other vegetables. To describe the meanings of focus particles, two notions, focus and scope, are necessary. Focus targets a constituent in a proposition and contextually available alternatives to the focused constituent are evoked. Scope, on the other hand, specifies the range of the text and context propositions. The scope can be the proposition denoted by the whole sentence or it can be an embedded proposition. The interpretations of focus particles differ depending on which constituents in sentences they focus on and which propositions they scope over. In this section, I show how focus and scope influence the meaning of focus particles.

1.3.1.1 FOCUS

Sentences containing a focus particle are interpreted according to the position of their focus. The structures of (1.19a) and (1.19b) are the same except for the position of stress. The capitalized constituents indicate the positions of the stress and stress indicates the focus of the sentences.

(1.19) a. *FRED also bought a new car.*

b. *Fred also bought a NEW CAR.*

(König 1999: 29)

(1.19a), in which *also* focuses on the subject *Fred*, means that Fred bought a new car and there are other individuals than Fred who bought a new car. (1.19b), in which *also* focuses on *new car*, on the other hand, means that Fred bought a new car and there are other things than a new car which Fred bought. In situations in which Fred bought a new car and no one else bought a new car, (1.19a) is false but (1.19b) can be true while in situations in which Fred bought a new car and nothing other than a new car, (1.19a) can be true but (1.19b) is false. The truth conditions of (1.19a) and (1.19b) differ depending on the position of the focus.

According to Rooth (1985), the semantic function of focus is to evoke contextually available alternatives and signals that the alternatives are under consideration. The focus, which is under consideration, is considered to be new information while the rest of a sentence is considered to be old information. This distinction between new and old information is often illustrated by question-answer pairs. In (1.20), the focused constituents in (1.20b) and (1.20d) are new information since they provide information which the questions in (1.20a) and (1.20c) asked for.

(1.20) a. *Who did John introduce Bill to?*

b. *John introduced Bill to SUE.*

c. *Who did John introduce to Sue?*

d. *John introduced BILL to Sue.*

(Rooth 1985: 11)

Rooth (1985) suggests that one of the functions of focus in questions is to introduce alternatives into a discourse and the function of focus in an answer is to signal that alternatives are under consideration. To capture the function of the focused component of a sentence, Rooth (1985) defines how to generate alternatives or what he calls p-sets, as in (1.21). In the definition, *a* is a constituents of a sentence, *a'* is the semantic denotation of *a*, and *a"* is p-set of *a*.

(1.21) Recursive definition of p-sets

a" is

(a) The set of objects in the model matching **a'** in type, if **a** bears the feature F.

(b) the unit set **a'**, if **a** is a non-focused non-complex phrase

(c) the set of objects which can be obtained by picking one element from each of the p-sets corresponding to the component phrases of **a**, and applying the semantic rule for **a** to this sequence of elements, if **a** is a non-focused complex phrase.

(Rooth 1985: 14)

For example, for (1.20b), since only *Sue* bears the focus feature F, the p-set of *Sue* is a set of individuals and the p-sets of the rest of the components are normal semantic denotations of each constituent. The p-set of the sentence, therefore, is represented as (1.22).

(1.22) the set of propositions of the form "introduce' (b, y)"

The p-set is a set of individuals which fill the propositional function 'introduce (b, y)'. b is the denotation of *Bill* and y is a variable whose type is individual e. The semantic function of the focused phrase in (1.20b) is to signal that the p-set in (1.22) is under consideration.

The meanings of focus particles interact with the focus of a sentence. For (1.19a), the p-set in (1.23) is under consideration.

(1.23) the set of propositions of the form "bought' (a new car) (y)"

For (1.19a), the text proposition and context proposition are (1.24a) and (1.24b), respectively.

(1.24) a. Text proposition: Fred bought a new car

b. Context proposition: Someone else bought a new car

The propositional function obtained by abstracting the focused constituent from a sentence without a particle is called the 'presupposition' skeleton in Rooth (1985). The presupposition skeleton for (1.19a) is (1.25).

(1.25) λx (x bought a new car)

The text proposition and context proposition are obtained by filling the variable of the presupposition skeleton with the focused constituent and alternatives in the p-set, respectively. The focus particle *also* specifies the relationship between the text proposition and the context proposition that the text proposition is true and there is at least one context proposition which is true. (1.19a) means that Fred bought a new car and someone else bought a new car.

1.3.1.2 SCOPE

In (1.19a) and (1.19b) in the previous section, the whole sentences are relevant to determine the text and context propositions. The text and context propositions for (1.19a) and (1.19b) are shown in (1.26a) and (1.26b), respectively.

(1.26) a. Text proposition: Fred bought a new car
Context proposition: Someone else bought a new car

b. Text proposition: Fred bought a new car
Context proposition: Fred bought something else

However, the text and context propositions are not always constructed from the whole sentences containing focus particles. When a focus particle occurs in an embedded clause as shown in (1.27), there are more than one way to choose the text and context proposition.

(1.27) *I don't think that she even wrote five pages.*

If the text and context propositions are chosen on the basis of the proposition expressed by the whole sentence, the meaning contributed by *even* is illustrated as in (1.28) while if the text and context propositions are chosen on the basis of the proposition expressed by the embedded clause, the meaning contributed by *even* is represented as (1.29).

(1.28) a. T(ext proposition): I don't think that she wrote five pages

b. C(ontext proposition): I don't think that she wrote ten pages

c. T is less likely than C(T pragmatically entails C)

(1.29) a. T(ext proposition): She wrote five pages

b. C(ontext proposition): She wrote one page

c. T is less likely than C(T pragmatically entails C)

Suppose a situation in which writing less is easier and therefore more likely. For the interpretation in (1.28), alternatives to five pages are larger than five pages (e.g. ten pages) since otherwise the text and context proposition do not satisfy (1.28c): not thinking that she wrote five pages pragmatically entails not thinking that she wrote ten pages. For the interpretation in (1.29), on the other hand, alternatives to five pages are smaller than five pages (e.g. one page): writing five pages entails writing one page. The parts of sentences which are relevant to determine the text and context propositions are called the scope of a focus particle. The scope of (1.27) for the interpretation in (1.28) and (1.29) are (1.30) and (1.31), respectively.

(1.30) I don't think that she wrote five pages

(1.31) She wrote five pages

(1.27) gives rise to two different interpretations, (1.28) and (1.29), depending on the different scope in (1.30) and (1.31), although the position of the focus is the same for the two interpretations. The focus and scope can be represented as x and P in (1.32), respectively.

(1.32) $\lambda x \lambda P (P (x))$

a. Text proposition: P (f(ocused constituent))

b. Context proposition: P (a(lternatives))

The interpretations in (1.28) and (1.29) are represented as (1.33) and (1.34), respectively.

(1.33) P (x) = I don't think that she wrote x

a. Text proposition: P (f) = I don't think that she wrote five pages

b. Context proposition: P (a) = I don't think that she wrote ten pages

c. P (f) is less likely than P (a)(P (f) pragmatically entails P (a))

(1.34) a. Text proposition: P (f) = She wrote five pages

b. Context proposition: P (a) = She wrote one page

c. P (f) is less likely than P (a) (P (f) pragmatically entails P (a))

(1.35) is another pair of examples which have different interpretations depending on their scopes.

(1.35) a. *She also drinks GREEN TEA very rarely.*

b. *Very rarely does she also drink GREEN TEA.*

(1.35a) means that there is something other than green tea, which she drinks very rarely, and (1.35b) means that it is very rare that she drinks green tea and something else. The text and context propositions for *also* in (1.35a) and (1.35b) are represented as (1.36a) and (1.36b), respectively.

(1.36) a. Text proposition: She drinks green tea very rarely
Context proposition: She drinks something else very rarely

b. Text proposition: She drinks green tea
Context proposition: She drinks something else

In situations in which she often drinks green tea, (1.35a) is false but (1.35b) can be true. The scope of *also* in (1.35a) is that she drinks green tea very rarely and the scope of (1.35b) is that she drinks green tea.

(1.37a) and (1.37b) are Japanese counterparts for (1.35a) and (1.35b), respectively.

(1.37) a. *Kanojyo-wa* *otya-mo* *hotondo* *noma-na-i.*
she-TOP tea-MO almost drink-NEG-NONPAST
'She also drinks GREEN TEA very rarely.'

b. *Kanojyo-wa* *otya-mo* *no-mu* *koto-wa*
she-TOP tea-MO drink-NONPAST COMP-TOP
hotondo *na-i.*
almost NEG-NONPAST
'Very rarely does she also drink GREEN TEA.'
Lit: 'It is very rare that she also drink green tea.'

For (1.37a), the scope of *-mo* is that she drinks green tea very rarely, and for (1.37b), the scope of *-mo* is that she drinks green tea. To exclude 'very rarely' from the scope of *-mo*, the proposition she drinks green tea is subordinated as shown in (1.37b). However, it is not generally true that constituents which are semantically excluded from the scope of focus particles are structurally outside the clauses containing the particles. (1.38), which contains *-made* 'even', has the two different interpretations in (1.39a) and (1.39b).

(1.38) *Otya-made* *noma-na-i.*
green.tea-MADE drink-NEG-NONPAST

(1.39) a. 'She does not even drink green tea'

b. 'It is not the case that she even drinks green tea'

Although negation is not structurally outside the clause containing *-made*(negation and *-made* occur within the same clause), the proposition that she drinks green tea, (1.38) can receive the interpretation in (1.39b), in which negation is outside the scope of *-made*.

1.3.2 SEMANTIC STATUS OF PROPOSITIONS

As discussed in the previous sections, the meanings of sentences containing a focus particle depend on the focus and scope of focus particles. One of the most general semantic functions of focus particles is to evaluate the relationship between the text and context propositions and knowing the focus and scope of the particles is necessary to determine the text and context propositions. Since the meanings of focus particles involve at least a text and context propositions, they are inherently multi propositional. Furthermore, as discussed in the following chapters, some Japanese particles not only specify the relationship between the text and context propositions, but also specify the relationship between these two propositions and another contextually available proposition. To describe the behaviors of the multiple propositions expressed by focus particles and classify those behaviors, it is useful to review the various possible semantic statuses of propositions associated with utterances which have been proposed. English *only*, for example, has two semantic components as shown in (1.40).

(1.40) *Only John came.*

a. Prejacent: John came

b. Assertion: No one except John came

It is generally agreed that neither the assertion nor the prejacent are cancellable, and that the assertion is somehow more prominent than the prejacent. But the semantic status of the two

propositions is controversial. In this section, I briefly introduce various possible ways to classify the multiple propositions expressed by focus particles.

1.3.2.1 PRESUPPOSITIONS

Presuppositions are background assumptions necessary to assess foregrounded information. (1.41), for example, has a presupposition in (1.42).

(1.41) *Joan has stopped drinking wine for breakfast.*

(1.42) Presupposition: Joan used to drink wine for breakfast

(1.42) is a presupposition of (1.41) since one cannot assess whether Joan has stopped drinking wine for breakfast if she has never drunk wine for breakfast. The proposition in (1.42) has to be true for the truth conditions of the sentence in (1.41) to be assessed. One of the properties which characterize presupposition is that they survive under the scope of a negative operator. Strawson (1952), for example, defines presupposition as in (1.43).

(1.43) A statement A presupposes another statement B iff:

(a) if A is true, then B is true.

(b) if A is false, then B is true.

(1.44) is the negative counterpart to (1.41). (1.44) also presupposes (1.42).

(1.44) *Joan has not stopped drinking wine for breakfast.* (Kadmon 2001: 11)

There are other environments which Karttunen (1973) calls presupposition holes, under the scope of which presuppositions survive.[2] Factive verbs and modal operators are examples of presupposition holes. In (1.45) and (1.46), the proposition John has stopped drinking wine is embedded under the factive verb *regret* and the modal operator *it is possible*. (1.45) and (1.46) presuppose (1.42).

(1.45) *Joan regrets that he has stopped drinking wine for breakfast.*

(1.46) *It is possible that Joan stopped drinking wine for breakfast.*

Presuppositions, however, are not only carried by declarative sentences. For example, the question in (1.47) also presupposes (1.42).

(1.47) *Has Joan stopped drinking wine for breakfast?* (Kadmon 2001: 11)

[2] Conventional implicatures such as appositives, as-parentheticals, and non-restrictive relative clauses, behave similarly to presuppositions in that they survive under the scope of operators which act as holes for presupposition projection. In (a), the second sentence is not acceptable because the as-parenthetical is not under the scope of the conditional.

(a) *The press said nothing about Ames. #But if, as the press reported, Ames is a spy, then the FBI is in deep trouble.*
(Potts 2005: 35)

Levinson (1983) characterizes presupposition as background assumptions against which the main import of utterances is to be assessed. The main import of utterances may be to assert, deny or question the truth of some propositions.

One property which distinguishes presuppositions from entailments and is cancellability. As shown in (1.48) and (1.49), the presupposition that he used to drink wine for breakfast is cancellable while the entailment that John does not regret that he has stopped drinking wine is not cancellable.

(1.48) *John doesn't regret that he has stopped drinking wine for breakfast. In fact he never drunk wine for breakfast.*

(1.49) #*John doesn't regret that he has stopped drinking wine for breakfast. In fact he does regret that he stopped drinking wine.*

1.3.2.2 CONVERSATIONAL IMPLICATURES

While presuppositions are properties of certain expressions, conversational implicatures are derived from literal interpretations on the basis of general conversational principles. According to Grice (1969), participants in conversations have a common purpose and are required to make contributions to the common purpose. Grice (1969) calls this requirement of conversations the cooperative principle and proposes more specific maxims under categories such as quantity and quality. There are two maxims under each of the categories of quantity and quality as shown in (1.50) and (1.51).

(1.50) Quality:

1. Make your contribution as informative as is required (for the current purpose of exchange)
2. Do not make your contribution more informative than is required

(Grice 1975: 47)

(1.51) Quantity:

1. Do not say what you believe to be false.
2. Do not say that for which you lack adequate evidence.

(Grice 1975: 47)

Grice (1969) distinguishes what is said from what is conversationally implicated and explains various non-conventional interpretations of utterances by appealing to the maxims. In the conversation between A and B in (1.52), for example, B's utterance that C lives somewhere in the south of Japan conversationally implicates that she is not quite sure where C lives.

(1.52) A: *Where does C live?*

B: *Somewhere in the south of Japan.*

(Grice 1975: 51)

B's answer to A's question should be more informative if she knows the specific place where C lives. One reason why B might only say 'somewhere in the south of Japan' is that she does not

know where C lives.[3] If B knows the specific place where C lives and does not provide the information, her utterance in (1.52) violates the first maxim of quantity that she has to be as informative as is required.

1.3.2.3 CONVENTIONAL IMPLICATURES

In contrast to conversational implicatures, which are derived from literal meanings of utterances via conversational maxims, conventional implicatures are part of the inherent content of certain linguistic expressions. Potts (2005) provides supplements and expressives as in (1.53) and (1.54) as examples of conventional implicatures.

(1.53) Supplements

a. *Lance, a cyclist, is training.*
(nominal appositive) (Potts 2005: 97)

b. *I spent part of every summer until I was ten with my grand-mother, who lived in a working –class suburb of Boston.*
(supplementary relative) (Potts 2005: 6)

[3] Speaker B may know the specific place where C lives and still utter (1.52B). In this case, the speaker knows that a more informative utterance is irrelevant.

(1.54) expressives

a. *Shut that blasted window!*
(expressive attributive adjective) (Potts 2005: 153)

b. *Every Democrat with [a proposal for reform]$_1$ claims [the stupid thing]$_1$ deserves public support.*
(epithet) (Potts 2005: 19)

What characterizes conventional implicature includes independence of truth values and speaker orientedness. At-issue content is regular asserted content or what Grice (1975) calls 'what is said'. Conventional implicatures are secondary entailments in that they don't "express controversial propositions or carry the main theme of a discourse" (Potts 2005: 7). In (1.53a), the proposition that Lance is training is an at-issue content and the proposition that Lance is a cyclist is a conventional implicature. However, although conventional implicatures are useful to better understand at-issue contents, the truth values of conventional implicatures and at-issue contents are evaluated independently of each other. This independence of the truth values between at-issue contents and conventional implicatures is a property which distinguishes conventional implicatures from presuppositions. In (1.53a), for example, the at-issue content that Lance is training and the conventional implicature that Lance is a cyclist, receive a truth value independently of each other. The proposition that Lance is training can be true while the proposition that Lance is a cyclist is false.

Traditionally, the secondary meanings of expressions such as *but* were considered to be conventional implicatures. However, the secondary meaning of *but* does not satisfy Bach's (1999) or Potts' (2005) definition since the secondary meaning is included in what is said when

but is embedded under propositional attitude verbs like *say*. In (1.55), the second sentence is not acceptable after the first sentence.

(1.55) *Marv believes that being huge is a good indicator of agility.*
#Marv said that Shaq is huge but that he is agile.
(Potts 2005: 214)

If the secondary meaning expressed by *but* in (1.56) were what the speaker of (1.55) believes, the second sentence in (1.55) should be acceptable.

(1.56) There is a certain contrast between being huge and being agile.

The unacceptability of the second sentence in (1.55) indicates that the secondary meaning of *but* is not what the speaker believes but it is what the referent of the subject of *believe* believes. Potts (2005) argues that conventional implicatures are propositions that always take the widest scope and are speaker oriented. In (1.57), the appositive, *a confirmed psychopath* is embedded under the propositional attitude verb *believe*.

(1.57) *Sheila believes that Chuck, a confirmed psychopath, is fit to watch the kids.*
(Potts 2005: 214)

(1.57) does not mean that the Sheila believes that Chuck is a confirmed psychopath but it means that the speaker of the sentence believes that Chuck is a confirmed psychopath.

1.3.2.4 SECONDARY MEANINGS

The English adversative connective *but* has two semantic components. The sentence (1.58), for example, expresses the two propositions in (1.59a) and (1.59b).

(1.58) *Shaq is huge, but he is agile.* (Bach 1999: 327)

(1.59) a. Shaq is huge and he is agile

b. There is a certain contrast between being huge and being agile (Bach 1999: 347)

Bach (1999) discusses the status of the two propositions of *but* and argues that although (1.59a) is more prominent than (1.59b), there seems to be no reason to assume that (1.59b) is not at-issue content. *But* is multidimensional and the two propositions are both at-issue content. According to Bach (1999), (1.59b) is not a conventional implicature since it can be under the scope of propositional attitude verbs such as *say*. Bach's (1999) argument is based on Grice's (1969) definition of conventional implicatures according to which conventional implicatures are not 'what is said'. Since in (1.60), the proposition in (1.59b) is under the scope of *say* and considered to be what is said by the referent of *she*, it is not a conventional implicature.

(1.60) *She said that Shaq is huge but he is agile.*

1.3.2.5 ASSERTORICALLY INERT PROPOSITIONS

Horn (2002) discusses the semantic status of the asserted proposition and prejacent expressed by *only* and argues that the prejacent is assertorically inert. (1.61) is the definition of assertion, in Stalnaker's (1978).

(1.61) a potentially controversial move to reduce the context set – the set of possible worlds constituting the "live options" – or equivalently a proposal to add the context of what is asserted to the common ground. (Horn 2002: 62)

Based on the definition in (1.61), Horn (2002) defines the notion of assertoric inertness as in (1.62).

(1.62) Semantically entailed material that is outside the scope of the asserted, and hence potentially controversial, aspect of utterance meaning counts as ASSERTORICALLY INERT and hence as effectively transparent to NPI-licensing and related diagnostics of scalar orientation. (Horn 2002: 62)

Only licenses Negative polarity item(NPI)s as shown in (1.63) since the prejacent of *only* is assertorically inert. While the prejacent is not downward entailing as (1.64a) does not entail (1.65a), the assertion is downward entailing as (1.64b) entails (1.65b). Only the assertion, which is downward entailing, is relevant for NPI licensing and the prejacent is transparent to NPI licensing.

(1.63) *Only John ever suspected David Alexander.* (Horn 2002: 72)

(1.64) a. Prejacent: John suspected David Alexander

b. Assertion: No one other than John suspected David Alexander

(1.65) a. John suspected David Alexander of eating his food

b. No one other than John suspected David Alexander of eating his food

(1.66) is another piece of evidence to support the assertoric inertness of the prejacent.

(1.66) *I just discovered that only home loans are tax-deductible.* (Horn 2002: 73)

According to Horn (2002), in (1.66), the prejacent that home loans are tax-deductible is not in the scope of the factive *discover* and what the speaker discovered is only the proposition that nothing other than home loans are deductible. What is under the scope of the factive is the asserted proposition and the assertorically inert prejacent is outside the scope of the factive.

1.3.2.6 IMPLICITURES

Bach (1994) proposes that conventional implicitures are what fills a gap between literal meanings and conversational implicatures. Conventional implicitures are ways of understanding what the speaker means by elaborating or expanding the literal meanings of utterances. There are two kinds of implicitures, completion and expansion. In completion, conceptually incomplete propositions are elaborated so that truth conditions of sentences can be evaluated. (1.67) and

(1.68) are examples of completion. For the truth condition of (1.67) and (1.68) to be evaluated, the constituents in the brackets are necessary.

(1.67) *Mutual knowledge is relevant.* [*to communication*] (Bach 1994: 128)

(1.68) *The princess is late.* [*for the party*] (Bach 1994: 128)

In expansion, on the other hand, already completed propositions are elaborated so that what the speaker means is fully understood. The sentences in (1.69) and (1.70) without the constituents in the curly brackets already express conceptually complete propositions.

(1.69) *You're not going to die. {from this cut}* (Bach 1994: 135)

(1.70) *I have eaten breakfast. {today}* (Bach 1994: 134)

However, to fully understand what the speaker of (1.69) or (1.70) means, the constituents in the curly brackets are necessary.

1.4 GENERAL PROPERTIES OF JAPANESE FOCUS PARTICLES

In the dissertation, I mainly discuss the semantics and pragmatics of Japanese focus particles. Although I do not discuss other linguistic properties than semantics and pragmatics, it should be noted that Japanese focus particles behave quite differently form English focus

particles in other respects. In the following sections, I briefly discuss phonological and syntactic properties of Japanese focus particles.

1.4.1 MORPHO-PHONOLOGICAL PROPERTIES

Japanese focus particles are suffixes/clitics in contrast to English focus particles, which are independent words. Although Japanese focus particles have their own accent patterns when they occur without a focused constituent or they are stressed as shown in (1.71) and (1.72), they lose their accent pattern and follow the tone melody of their host when they are suffixed.

(1.71) *Shika/made-o* *jisyo-de* *shirabe-ta.*
HL HL
SHIKA/MADE-ACC dictionary-with look.up-PAST
'I looked up 'shika'/'made' in a dictionary.'

(1.72) A: *Yuka-mo* *ki-ta-no.*
Yuka-also come-PAST-Q
'Did Yuka also come?'

B: *Uun,* *Yuka-shika* *ko-na-katta.*
HL
no Yuka-SHIKA come-NEG-PAST
'No, only Yuka came.'

In (1.71), *-shika* or *-made* occurs without its host, and they have their inherent accent pattern HL. In (1.72), what is negated by the speaker B, is not the primary meaning that Yuka came, but the

presupposition that someone else came. When a presupposition is cancelled, the particle is stressed. *-shika* has the accent pattern HL when stressed.

Since Japanese particles are suffixes/clitics, they lose their inherent accent pattern when they are suffixed to a constituent which they focus on. Accent patterns of focus particles vary depending on syntactic categories of constituents to which they are suffixed. When, for example, focus particles are suffixed to a noun, they follow the tone melody of Japanese nouns. Japanese nouns are classified into two types, unaccented and accented, as shown in (1.73).

(1.73)

	Unaccented	initial -accented	second -accented	third -accented	fourth -accented
1.	e-ga L H	e'-ga H L			
	'handle-Nom'	'picture-Nom'			
2.	hashi(-ga) L H H	ha'shi(-ga) H L L	hashi'(-ga) L H L		
	'edge-Nom'	'chopstick -Nom'	'bridge-Nom'		
3.	sakura(-ga) L H H H	ka'rasu(-ga) H L L L	koko'ro(-ga) L H L L	otoko'(-ga) LHH L	
	'cherry-Nom'	'crow-Nom'	'heart-Nom'	'man-Nom'	
4.	kamigata(-ga) L H H H H	se'kitan(-ga) H L LL L	asa'gao(-ga) LH L L L	aozo'ra(-ga) LHHL L	kaminari'(-ga) L H H H L
	'hair style -Nom'	'coal-Nom'	'morning -glory-Nom'	'blue sky -Nom'	'thunder-Nom'

(Haraguchi 1999: 6)

The tone melody of Japanese nouns is HL with initial lowering in (1.74).

(1.74) Dissimilation (Tokyo Japanese)

#H H → L H

(Haraguchi 1999: 7)

For example, the initial lowering applies to *asagao* 'morning glory' as in (1.75).

(1.75) HHLLL → LHLLL
asa'gao(-ga)

The Japanese particle *-made*, when suffixed to a noun, loses its own HL accent pattern according to the tone melody of a constituent which it focuses on unless keeping its accent pattern happens to follow the tone melody HL, as shown in (1.76).

(1.76) a. sakura-ma'de
LHH HL
"cherry"-even

b. otoko'-made
LHH LL
"man"-even

c. koko'ro-made
LHL LL
"heart"-even

d. ka'rasu-made
HLL LL
"crow"-even

(Haraguchi 1999: 8)

In (1.76), *-made* is suffixed to an unaccented, initial-accented, second-accented and third-accented nouns. In (1.76b), (1.76c), and (1.76d), in which *-made* is suffixed to accented nouns, it

loses its own accent pattern HL and the accent pattern becomes LL to follow the tone melody HL of Japanese nouns. In (1.76a), in which *-made* is suffixed to an unaccented noun, *-made* keeps its own accent pattern HL since it does not conflict with the tone melody of Japanese nouns.

Similarly to nouns, Japanese verbs have the tone melody HL as shown in (1.77).

(1.77) Verbal classes in Tokyo Japanese:

		Unaccented		Accented		
(I)	a.	ur-u LH	'sell'	ka't-u HL	'win'	consonant-ending verb
	b.	ki-ru LH	'wear'	mi'-ru HL	'see'	vowel-ending verb
(II)	a.	susum-u LHH	'advance'	kaku's-u LHL	'hide'	consonant-ending verb
	b.	kari-ru LHH	'borrow'	tate'-ru LHL	'build'	vowel-ending verb
(III)	a.	utaga-u LHHH	'doubt'	yoroko'b-u LHHL	'be glad'	consonant-ending verb
	b.	narabe-ru LHHH	'line up'	kakure'-ru LHHL	'hide'	vowel-ending verb

(Haraguchi 1999: 10)

When *-made* is suffixed to verbs, it loses its own accent pattern HL so that a phrase consisting of a verb and *-made* follows the tone melody as shown in (1.78).

(1.78)	a.	wur-u-made	ka't-u-made
		LHHH	HLLL
		'even sell'	'even win'

-*made* loses its own accent pattern HL and the accent pattern becomes HH when suffixed to an unaccented verb and becomes LL when suffixed to accented verbs, as shown in (1.78).

When -*made* is suffixed to an unaccented noun, it keeps it own accent pattern since keeping its own accent does not conflict with the HL tone melody of Japanese nouns although the suffixed phrase becomes accented due to the HL pattern of -*made*. When -*made* is suffixed to an unaccented verb, on the other hand, -*made* loses its own accent pattern and keeps the suffixed phrase unaccented. In either case, the HL tone pattern of Japanese nouns and verbs is kept. While -*made* keeps its own accent pattern when suffixed to an unaccented noun and makes the suffixed phrase accented, -*made* loses its own accent pattern when suffixed to an unaccented verb and keeps the suffixed phrase unaccented.

Japanese adjectives also have the HL tone melody and are classified into unaccented and accented adjectives, as shown in (1.79).

(1.79) Adjectival classes in Tokyo Japanese:

	Unaccented		Accented	
a.	aka-i LHH	‘red’	siro’-i LHL	‘white’
b.	tumeta-i LHHH	‘cold’	tanosi’-i LHHL	‘happy’
c.	namanuru-i LHHHH	‘lukewarm’	omosiro’-i LHHHL	‘interesting’

(Haraguchi 1999: 13)

When the focus particle *-shika* or *-made* is suffixed to adjectives, adjectives take the preverbal forms in (1.80b).

(1.80)

a.	tumeta-i LHHH	‘cold’	tanosi’-i LHHL	‘happy’
Preverbal				
b.	tumeta-ku LHHH		tano’si-ku LHLL	

(Haraguchi 1999: 13)

As in the case in which they are suffixed to verbs, *-shika* and *-made* lose their own accent pattern and follow the HL tone pattern of adjectives as exemplified in (1.81).

(1.81)	tumeta-ku-shika/made	tano'si-ku-shika/made
	LHHH HH	LHLLLL
	'only/even cold'	'only/even interesting'

1.4.2 ASSOCIATION WITH FOCUS

The meanings of sentences containing a focus particle depend on what constituent a focus particle is associated with in the sentences. The constituent which is associated with a focus particle is called the focus. For example, sentences (1.82b) and (1.83b) have the same form but have different meanings due to the position of the focus.

(1.82) a. *John bought all kinds of things.*

b. *No, he only bought A BOOK.*

(1.83) a. *John did all kinds of things.*

b. *No, he only BOUGHT A BOOK.*

(König 1999: 13)

The capitalized constituents are the focus of the sentences. In (1.82b), the focus is on *a book*, and in (1.83b), the focus is on *bought a book*. (1.82b) and (1.83b) are appropriate responses to (1.82a) and (1.83a), respectively.

English focus particles, such as *only*, *also*, and *even*, can occur at various positions in a sentence. However, there are restrictions regarding the relationship between the position of a

focus particle and which focused constituent is associated with a particle. For example, when a particle precedes the subject, it can only focus on the subject or part of it, as shown in (1.84).

(1.84) a. *Even/only FRED gave a present to Mary.*

b. **Even/only Fred gave a present to MARY.*

(König 1999: 21)

When a particle occurs in sentence final position, it can focus on any item except for the auxiliary verb as shown in (1.85).

(1.85) a. *Your SUGGESTING it to Doris was stupid, even.*

b. *FRED could have bought a bike, even.*

(König 1999: 22)

When the focus particle is inside a complex auxiliary phrase, it can be associated with any element including the subject as shown in (1.86).

(1.86) a. *FRED may even have given a present to Mary.*

b. *Fred may even have given a PRESENT to Mary.*

c. *FRED may even have given a present to MARY.*

(König 1999: 22)

However, a particle which follows the main verb or follows its focus inside a clause, can only be associated with an adjacent constituent, as shown in (1.87) and (1.88).

(1.87) a. *Fred may have given even a PRESENT to Mary.*

b. **Fred may have given even a present to MARY.*

c. *Fred may have given a present even to MARY.*

(König 1999: 22)

(1.88) a. *FRED, even, may have given a present to Mary.*

b. *TEN WORKERS only reported sick yesterday.*

(König 1999: 22)

Usually, Japanese focus particles are associated with the constituent to which they are suffixed. In (1.89), the focus particle *-dake* is suffixed to the subject, direct object, numeral quantifier, postpositional phrase, adverb, and its associated focus is what it is suffixed to.

(1.89) a. *YUKA-dake* *ku-ru.*
Yuka-only come-NONPAST
'Only Yuka comes.'

b. *Yuka-ga* *RINGO-dake* *tabe-ta.*
Yuka-NOM apple-only eat-PAST
'Yuka ate only apples.'

c. *Yuka-ga* *ringo-o* *HITOTSU-dake* *tabe-ta.*
Yuka-NOM apple-ACC one-only eat-PAST
'Yuka ate only one apple.'

d. *Yuka-ga* *TOSYOKAN-NI-dake* *i-tta.*
Yuka-NOM library-to-only go-PAST
'Yuka went only to the library.'

e. *Yuka-ga* *YUKKURITO-dake* *hashi-tta.*
Yuka-NOM slowly-only run-PAST
'Yuka ran only slowly.'

But, when the particle *-dake* is suffixed to the main verb, it can focus on any constituent in a sentence as shown in (1.90).

(1.90) a. *YUKA-ga* *barentaindee-ni* *Takuya-ni* *tyokoreeto-o*
Yuka-NOM valentine's.day-on Takuya-to chocolate-ACC
hitotsu age-ta-dake-da.
one give-PAST-NONPAST

'Only Yuka gave a chocolate to Takuya on Valentine's day.'

b. *Yuka-ga* *BARENTAINDEE-ni* *Takuya-ni* *tyokoreeto-o* *hitotsu* *age-ta-dake-da.*

c. *Yuka-ga* *barentaindee-ni* *TAKUYA-ni* *tyokoreeto-o* *hitotsu* *age-ta-dake-da.*

d. *Yuka-ga* *barentaindee-ni* *Takuya-ni* *TYOKOREETO-o* *hitotsu age-ta-dake-da.*

e. *Yuka-ga* *barentaindee-ni* *Takuya-ni* *tyokoreeto-o* *HITOTU* *age-ta-dake-da.*

f. *Yuka-ga* *barentaindee-ni* *Takuya-ni* *tyokoreeto-o* *hitotsu* *AGE-TA-dake-da.*

For example, (1.90a) can be followed by (1.91).

(1.91) *Mari-wa* *age-te-na-i.*
Mari-CONT give-PERF-NEG-NONPAST

'Mari didn't give (him a chocolate).'

However, the focus particle *-mo*, when suffixed to the main verb, does not seem to be able to focus on the subject as shown in (1.92) although it can focus on any other constituent.

(1.92) *#YUKA-ga* *age-mo-shi-ta.*
Yuka-NOM give-also-do-PAST

Intended: 'Yuka also gave it.'

Basically, Japanese focus particles focus on the constituent to which they are suffixed. However, when suffixed to the main verb, Japanese focus particles can focus on various constituents in sentences.

1.5 STRUCTURE OF THE DISSERTATION

In the following chapters, I discuss the issues introduced in section 1.1 by examining constructed and attested examples[4]. Chapter 2 discusses the exclusive particles *-shika*, *-dake* and *-bakari*, chapter 3 discusses the scalar additive particles *-sae*, *-desae* and *-made*, and chapter 4 discusses the contrastive particles, *-nado* and *-koso*. In chapter 2, I, first, show that the negative suffix co-occurring with *-shika* is not ordinary propositional negation. Secondly, I characterize the 'negative' contexts in which *-shika* is appropriate by its secondary meaning. I also briefly discuss semantic properties which distinguishe *-bakari* from *-shika* and *-dake*. In chapter 3, I, first, describe the difference between *-sae* and *-desae* in antecedents of conditionals, and account for their difference by the secondary meaning of *-desae*. I also discuss the behavior of *-sae* and *-desae* in other implication reversing environments than antecedents of conditionals. Secondly, I characterize the semantic status of the context proposition expressed by sentences containing *-made* and account for why *-made* can be under the scope of negation in simple negative sentences. In chapter 4, I characterize the secondary meanings of *-nado* and *-koso* by the notion of relevance. Chapter 5 summarizes the dissertation.

[4] I checked with native speakers when I was not confident in my intuition about examples whether they were constructed or attested.

CHAPTER 2

JAPANESE EXCLUSIVE PARTICLES

2.1 EXCLUSIVE PARTICLE -*SHIKA*

Japanese has two exclusive particles -*shika* and -*dake*, which are roughly equivalent to English *only*. On difference between -*shika* and -*dake* is that -*shika* must co-occur with the negative verbal suffix –*na*.[5] The particle -*shika* is interesting because although it must co-occur with the negative verbal suffix –*na*, in contrast to -*dake* or English *only*, which do not require negation, the negation co-occurring with -*shika* does not seem to have the properties of an ordinary negation. (2.1) through (2.3) illustrate -*shika*'s requirement of co-occurring with the negative verbal suffix –*na*. (2.1a), in which -*shika* occurs without the negative verbal suffix, is not grammatical. -*dake*, on the other hand, can occur in either positive or negative sentences as shown in (2.2). Since -*shika* co-occurs with the negative verbal suffix and cannot occur with another negative morpheme in the same clause, a sentence containing -*shika* has to be negated from outside of the clause as shown in (2.1c).

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[5] There are some exceptions like (a) although such examples are infrequent.

(a) *Otya-shika iya.*
green.tea-SHIKA hate
'I only like green tea.'

Examples like (a) are not productive and *kirai* 'hate' requires negation when it appears with -*shika* as shown in (b).

(b) a. **Otya-shika kirai.*
green.tea-SHIKA hate

b. *Otya-shika kiraijya-na-i.*
green.tea-SHIKA hate-NEG-NONPAST
'I only hate green tea.'

(2.1) a. **Yuka-shika ki-ta.*
Yuka-SHIKA come-PAST

b. *Yuka-shika ko-na-katta.*
Yuka-SHIKA come-NEG-PAST
'Only Yuka came.'

c. *Yuka-shika ko-na-katta n jyana-i.*
Yuka-SHIKA come-NEG-PAST COMP NEG-NONPAST
'It's not the case that only Yuka came.'

(2.2) a. *Yuka-dake ki-ta.*
Yuka-DAKE come-PAST
'Only Yuka came.'

b. *Yuka-dake ko-na-katta.*
Yuka-DAKE come-NEG-PAST
'Only Yuka didn't come.'

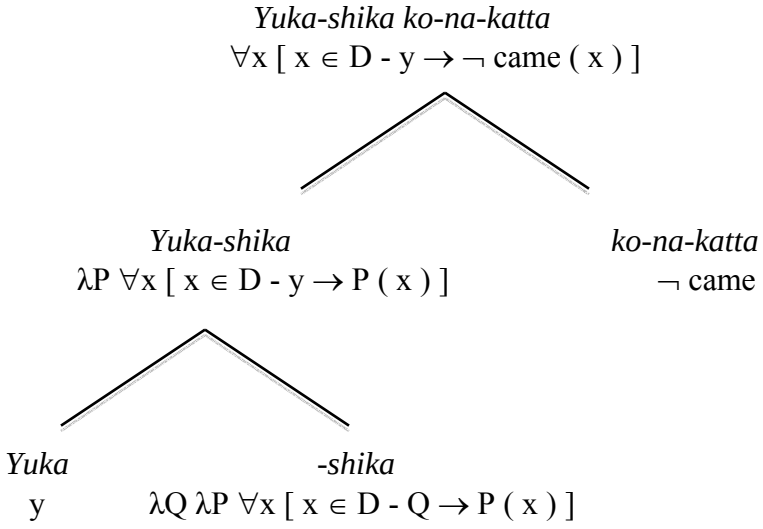
Sentences containing an exclusive particle like the English translation in (2.1b) express two propositions. (2.1b) expresses the proposition that Yuka came, which is traditionally called the prejacent, and the proposition that no one other than Yuka came or that everyone except Yuka did not come, which I call the exceptive proposition. Usually, the polarity of sentences containing an exclusive particle is the same as that of their prejacents, as shown in the English translation in (2.1b): the polarity of the sentence *Only John came*, and the prejacent that John came, is positive. However, the polarity of sentences containing *-shika* is opposite to that of the prejacents. The polarity of sentence (2.1b) *Yuka-shika co-na-katta* is negative while that of the prejacent is positive. Because of the presence of the negative verbal suffix, Japanese speakers have an intuition that contexts in which *-shika* is appropriate, express some kind of negativity.

Usually if there is a negation in a sentence, the semantic representation of the sentence is expected to contain a negation. However, if one assumes that the *-shika* suffixed phrase *Yuka-shika* corresponds to the exclusive phrase *only Yuka*, the rest of the sentence, *ko-na-katta* does not seem to be explained straightforwardly: the analysis that *ko-na-katta* means *came*, leaves the presence of the negative verbal suffix unexplained. It seems therefore more natural to suppose that the *-shika* suffixed phrase, *Yuka-shika* in (2.1b), is an exceptive phrase, *everyone except Yuka*, and *ko-na-katta* means *did not come*. This is one motivation for Yoshimura's (2006) proposal that *-shika* is a universal NPI/exceptive marker like English *everyone except*. According to the exceptive analysis, in (2.3), *Yuka-shika* subtracts Yuka from individuals in the domain of a discourse, and the negative verbal suffix is compositionally explained as shown in (2.4).

(2.3) *Yuka-shika ko-na-katta.*
Yuka-SHIKA come-NEG-PAST

a. 'Only Yuka came.'
b. 'Everyone except Yuka didn't came.'

(2.4)



However, there are several difficulties with the exceptive analysis of *-shika*. I discuss them below and argue that the negative verbal suffix co-occurring with *-shika* is not an ordinary negation and that *-shika* is an exclusive particle as it has been traditionally assumed.

In order to explain the presence of the negative verbal suffix, which seems semantically unnecessary in the exclusive analysis of *-shika*, I propose a multi-dimensional meaning for *-shika*. I claim that *-shika* expresses two propositions, namely, the primary exclusive proposition, which consist of the prejacent and exceptive propositions, and the secondary negative proposition. The primary meaning of *-shika* is the standard exclusive meaning ((2.5a) for (2.1b)). The secondary meaning is a contextual 'negative' meaning associated with *-shika*. I informally define this secondary meaning as (2.5b).

(2.5) a. Yuka came and there is nobody other than Yuka who came

b. Yuka's coming entails that a contextually determined proposition Q does not hold

The negative verbal suffix *–na* does not contribute to the primary exclusive meaning, but is necessary to encode the secondary negative meaning. I propose that as Bach (1999) and Potts (2005) propose for the secondary meanings of English *even* or *but*, the secondary meaning of *-shika* is represented in a different semantic dimension from its primary meaning.

I model the secondary meaning by attributing it to the negative verbal suffix co-occurring with *-shika*. *-shika* itself encodes the exclusive meaning as English *only*. The semantics of the negative verbal suffix is flagged when it co-occurs with *-shika* to express the contextual secondary meaning.[6]

[6] I model the meaning of *-shika* by means of a multi-dimensional approach to meaning as proposed by Karttunen and Peters (1979), Bach (1999), or Potts (2005).

2.1.1 EXCLUSIVE OR EXCEPTIVE?

As mentioned in the introduction, although *-shika* is traditionally considered to be an exclusive marker like English *only*, it must co-occur with the negative verbal suffix *–na* and it seems compositionally more straightforward to assume that it is an exceptive particle like English *everyone except*. However, there are some semantic properties of *-shika* which seem inexplicable if one assumes that *-shika* is an exceptive particle. In this section, after briefly reviewing discussions about the semantic status of the prejacent and exceptive proposition of *only*, and compare them with those of exceptive markers, I compare the semantic properties of the negative suffix co-occurring with *-shika* and ordinary uses of the negative suffix. I argue that the negative suffix co-occurring with *-shika* lacks the semantic properties characteristic of ordinary negation and *-shika* is semantically identical to the exclusive particle *-dake*.

2.1.1.1 PREJACENT AND EXCEPTIVE PROPOSITIONS

Exclusive particles like *only* and exceptive particles like *everyone except* express both a prejacent and exceptive proposition. For example, (2.6a) expresses the prejacent 'John came' in (2.6b) and the exceptive proposition 'Nobody except John came' in (2.6c).

(2.6) a. *Only John came.*

b. Prejacent: John came

c. Exceptive proposition: Everyone except John did not come

There have been various proposals about the semantic status of the prejacent expressed by *only*: whether they are presupposition or entailment, or just conversational implicature (Horn 1996, Atlas 1996). However, although the discussion about the status of the prejacent is still controversial, there seems to be an agreement that both the prejacent and exceptive proposition are entailed by a sentence containing *only*. In this section, I briefly review Horn's (2002) proposal about the semantic status of the two propositions expressed by *only*.

Horn (2002) argues that the two propositions expressed by *only* do not have equal semantic status, and proposes that the prejacent expressed by *only*, although it is an entailment, is assertorically inert. The sentences in (2.7) show that the prejacent can be suspended while the exceptive proposition cannot. (2.7a) in which the prejacent is suspended with a modal operator, is at least marginally acceptable while (2.7b), in which the exceptive proposition is suspended, is not acceptable.

(2.7) a. (#)*Only Ann will pay her taxes on time, and maybe even she won't.*

b. *#Only Ann will pay her taxes on time, {and/but} maybe someone else did.*

(Horn 2002: 70)

However, although the prejacent can be suspended with a modal operator, a simple cancellation of the prejacent without a modal operator is not acceptable, as shown in (2.8).

(2.8) *#I love only you, but I don't love you either.*

Horn (2002) claims that both the prejacent and exceptive proposition are entailed to explain the uncancellability of the prejacent without a modal operator, and also claims that the prejacent is weakly asserted or, in his term, assertorically inert to explain the suspendability of the prejacent when a modal operator is present.

More recently, Ippolito (2007) argues that the prejacent is a conversational implicature. However, it seems to be generally accepted that the prejacent is not cancellable: Horn (2002) argues that the prejacent is an entailment although it is assertorically inert, and Ippolito (2007) argues that although the prejacent is derived conversationally, it is not cancellable because of a pragmatic constraint.

Exceptive particles like *everyone except* also express two propositions corresponding to the prejacent and exceptive proposition. (2.9) expresses (2.10a) and (2.10b).

(2.9) *Everyone except John didn't come.*

(2.10) a. came (j)

b. $\forall x ((x \in D - John) \rightarrow \neg$ came (x))

As Moltmann (1995) claims, the proposition corresponding to the prejacent does not seem to be cancellable. In (2.11) the prejacent expressed by the first sentence contradicts the second sentence, and the sentence is not acceptable.

(2.11) *#Everyone except Yuka didn't come, but actually Yuka didn't come either*.

As mentioned above, the prejacent expressed by *only* is not cancellable either as shown in (2.12).

(2.12) *#Only Yuka came, but actually Yuka didn't come either.*

The difference between (2.11) and (2.12) is very subtle although if one is forced to choose the better one, one would probably choose (2.11). However, there is a clear difference between the first sentences in (2.9) and (2.13): (2.9) contains an overt negation while (2.13) does not.

(2.13) *Only Yuka came.*

One thing which no one would doubt is that the negation in (2.9) is ordinary logical negation, and it scopes over P (x) in (2.14).

(2.14) $\lambda P \quad x ((x \in D - John) \rightarrow \neg P (x))$

It sounds obvious that a negative morpheme functions as ordinary logical negation. However, this seems important when examining the semantic properties of the negative suffix co-occurring with *-shika*.

In addition to *-shika*, Japanese has the particle *igai*, which also expresses a prejacent and an exceptive proposition, when occurring with negation as shown in (2.15).

(2.15) *Yuka-igai* *ko-na-katta.*
Yuka-IGAI come-NEG-PAST
'Everyone other than Yuka didn't come.'

(2.16) *Yuka-shika* *co-na-katta.*
Yuka-SHIKA come-NEG-PAST
'Only Yuka came.'

(2.15) and (2.16) contain the same negative verbal suffix *–na*. However, the negative suffix occurring with *igai* is an ordinary logical negation while the negative suffix co-occurring with -*shika* is not. I discuss the difference between the two kinds of the negative suffix in the following sections.

2.1.1.2 NEGATIVE VERBAL SUFFIX CO-OCCURRING WITH -*SHIKA*

-*shika* is traditionally treated as an exclusive marker such as English *only*. However, as mentioned above, what is interesting about -*shika* is that it obligatorily co-occurs with the negative morpheme *–na*, as shown in (2.17).

(2.17) *Daisuke-shika* *ko-na-katta.*
Daisuke-SHIKA come-NEG-PAST
a. 'Only Daisuke came.'
b. 'Everyone except Daisuke did not come.' (Yoshimura 2006)

Sentence (2.17), although it contains the negative verbal suffix *–na*, does not mean that 'only Daisuke did not come'; it means that 'only Daisuke came'. If -*shika* means 'only' and (2.17a) is the correct translation of sentence (2.17), the negative verbal suffix *–na* does not seem to contribute to the meaning of sentences in which -*shika* occurs. Because of the presence of the negative suffix,

there have been proposals which argue against the traditional assumption that *-shika* is an exclusive particle. One of the analyses of the occurrence of the negative verbal suffix *–na* with *-shika* that has been proposed is Yoshimura (2006), who argues that *-shika* is an exceptive marker like English's *everyone except*. In her analysis, the sentence (2.17) means (2.17b); the *-shika* suffixed phrase *Daisuke-shika*, and the negated predicate *ko-na-katta*, correspond to *everyone except Daisuke* and *did not come*, respectively, and the negative morpheme *–na* has a straightforward compositional interpretation.

Yoshimura (2006)'s analysis seems to explain the semantics of *-shika* and the presence of the negative verbal suffix *–na* straightforwardly. However, there are several semantic properties which cannot be explained if one assumes that the negative verbal suffix co-occurring with *-shika* participates in the meaning of the sentence as an ordinary negation. In the following sections, I first show that the semantic properties of *-shika* which Yoshimura (2006) presents as evidence to argue that *-shika* is an exceptive particle, are not only properties of *-shika*, but also properties of the exclusive particle *-dake*. After that, I discuss the behavior of the negative verbal suffix co-occurring with *-shika* with respect to downward entailments and NPI licensing, and show that the negative suffix does not behave like ordinary negation.

2.1.1.2.1 THREE PROPERTIES OF EXCEPTIVE MARKERS

Before examining the semantic properties which of *-shika*, let us look at three semantic properties of exceptive markers discussed in Moltmann (1995), which Yoshimura (2006) also refers to, to argue that *-shika* is an exceptive particle.

Moltmann (1995) lists three semantic properties which characterize exceptive markers like *everyone except*. First, there is a restriction about what kinds of quantifiers exceptive markers can associate with. According to the constraint in (2.18), which Moltmann (1995) calls the quantifier constraint, exceptive markers can only associate with universal or negative universal quantifiers, but not with non-universal quantifiers such as *most*, *few*, or cardinal quantifiers. *Except* has this property, as shown in (2.19).

(2.18) The quantifier constraint

> The NP that an exception phrase associates with must denote a universal or negative universal quantifier.
> (Moltmann 1995: 227)

(2.19) *Every boy/all boys/No boy/#Most boys/#A lot of boys/#Three boys/#At least three boys/#Few boys but/except John came.*
(Moltmann 1995: 227)

Neither *-shika* nor *igai* seem to follow this constraint. *-shika* cannot associate with any quantifier including universal quantifiers as shown in (2.20), and *igai* can associate with both universal and non-universal quantifiers as shown in (2.21).

(2.20)

Yuka-shika	*#subeteno*	*otokonoko/*	*#hotondono*	*otokonoko/*
Yuka-SHIKA	all	boy	most	boy
#takusanno	*otokonoko/*	*#sanninno*	*otokonoko/*	*-ga*
many	boy	three	boy	NOM
ko-na-katta.				
come-NEG- PAST				

(2.21) *Yuka-igai* *subeteno* *otokonoko/* *hotondono* *otokonoko/*
Yuka-IGAI all boy most boy
takusanno *otokonoko/* *sanninno* *otokonoko/* *-ga*
many boy three boy NOM
ko-na-katta.
come-NEG- PAST
'All/Most/Many/Three boys other than Yuka didn't come.

Similarly to *igai*, English *other than* can occur with both universal and non-universal quantifiers.

(2.22) *All/Some/Three/Most boys other than John came.*

The second constraint discussed in Moltmann (1995) is the Condition of Inclusion in (2.23).

(2.23) The Condition of Inclusion

The exceptions must belong to the restriction of the associated quantifier.

(Moltmann 1995: 226)

The exceptions specified by an exceptive phrase have to be included in the restriction of the associated universal quantifier. In (2.24), for example, the exception, John, is a member of the restriction of the quantifier *every boy*.

(2.24) *Every boy except John came.*

The exception suffixed with *-shika* or *igai*, also has to belong to the restriction of the associated universal quantifier. (2.25) and (2.27) are acceptable because carrots belong to vegetables, but (2.26) or (2.28) is not acceptable because chocolates do not belong to vegetables.

(2.25) *John-wa* *ninjin-shika* *yasai-o* *tabe-naka-tta.*
John-TOP carrot-SHIKA vegie-ACC eat-NEG-PAST
'Among vegetable, John ate only carrots.'

(2.26) #*John-wa* *tyokoreeto-shika* *yasai-o* *tabe-naka-tta.*
John-TOP chocolate-SHIKA vegie-ACC eat-NEG-PAST
#'Among vegetable, John ate only chocolates.'

(2.27) *John-wa* *ninjin-igai* *yasai-o* *tabe-naka-tta.*
John-TOP carrot-IGAI vegie-ACC eat-NEG-PAST
'John didn't eat any/every vegetables but carrots.'

(2.28) #*John-wa* *tyokoreeto-igai* *yasai* *tabe-naka-tta.*
John-TOP chocolate-IGAI vegie-ACC eat-NEG-PAST
#'John didn't eat any/every vegetables but chocolates.'

Finally, exceptives are characterized by a semantic property called the negative condition[7] as shown in (2.29). An exceptive phrase is used to convey an exception to a general rule, and the proposition about the exception has to have the opposite polarity to the proposition about nonexceptions.

[7] For some speakers, the negative condition is too strong. For example, (a) is better than (b).
(a) (#)Everyone except Emma didn't come, and Emma didn't come, either.
(b) #Only Emma came, and Emma didn't come, either.

(2.29) The negative condition

> Applying the predicate to the exceptions yields the opposite truth value from applying the predicate to nonexceptions.
> (Moltmann 1995: 226)

In (2.30a), for example, the polarity of the truth value of the proposition about the exception has to be negative (i.e. John did not come), because the polarity of the proposition about the nonexceptions is positive, and in (2.30b), the polarity of the truth value of the proposition about the exception is positive because the polarity of the proposition about the nonexceptions is negative.

(2.30) a. *Every boy except John came.*

b. *No boy except John came.*

Another English expression, *other than*, which expresses a similar meaning to that of *except* in that sentences containing both expressions express propositions about exceptions, does not satisfy the Negative Condition. In (2.31), the proposition about the exception has the same polarity as the proposition about nonexceptions.

(2.31) *John came and everybody other than John came.*

-shika is similar to *except*, and follows the negative condition, while *igai* does not follow the negative condition as shown in (2.32) and (2.33).

(2.32) *#Yuka-shika* *ko-na-katta-shi* *Yuka-mo* *ko-na-katta.*
Yuka-SHIKA come-NEG-PAST-and Yuka-also come-NEG-PAST
#'Only Yuka came and Yuka didn't come either.'

(2.33) *Yuka-igai* *ko-na-katta-shi* *Yuka-mo* *ko-na-katta.*
Yuka-IGAI come-NEG-PAST-and Yuka-also come-NEG-PAST
'Everybody other than Yuka didn't come, and Yuka didn't come, either.'

To summarize, *-shika* has two of the three properties which characterize exceptive markers, and *igai* has one of the three properties. It seems that *-shika* behaves more like exceptive markers than *igai*, and this is what Yoshimura (2006) argues.

	The Quantifier Constraint	The Condition of Inclusion	The Negative Condition
except	√	√	√
other than	*	√	*
only	n.a.	n.a.	√
igai	*	√	*
-shika	*	√	√
-dake	*	√	√

Table 2.1: Three properties of exceptive markers[8]

[8] n.a. in indicates that there is no construction for *only* like (2.25) for *-shika* or (2.35) for *-dake*, in which the restriction of the denotation of the focused constituent is explicitly introduced.

However, *-dake*, which is considered to be an exclusive particle, behaves similarly to *-shika*: *-dake* does not follow the Quantifier Constraint as shown in (2.34), and follows the Condition of Inclusion and the Negative Condition, as shown in (2.35)-(2.37).

(2.34) *Yuka-dake* *#subeteno* *otokonoko/* *#hotondono* *otokonoko/*
Yuka-DAKE all boy most boy
#takusanno *otokonoko/* *#sanninno* *otokonoko/* *-ga*
many boy three boy NOM
k-ta.
come-PAST

(2.35) *John-wa* *ninjin-dake* *yasai-o* *tabe-ta.*
John-TOP carrot-DAKE vegie-ACC eat-PAST
'Among vegetable, John ate only carrots.'

(2.36) *#John-wa* *tyokoreeto-dake* *yasai-o* *tabe-ta.*
John-TOP chocolate-DAKE vegie-ACC eat-PAST
#'Among vegetable, John ate only chocolates.'

(2.37) *#Yuka-dake* *ki-ta-shi* *Yuka-mo* *ko-na-katta.*
Yuka-DAKE come-PAST-and Yuka-also come-NEG-PAST
#'Only Yuka came and Yuka didn't come either.'

If one claims that *-shika* is an exceptive particle because it satisfies two of the three conditions in Moltmann (1995), one should also claim that *-dake* is an exceptive particle, which does not seem to be the case because *-dake* does not require negation to express the exceptive proposition and prejacent like *only*. The only reason why one would claim that *-shika* is an exceptive particle is

the presence of the negative verbal suffix since *-shika* and *-dake* behave similarly with respect to the properties discussed in Moltmann (1995). The negative suffix co-occurring with *-shika*, however, does not seem to have the same semantic function as ordinary logical negation, as I show in the next section.

2.1.1.2.2 SEMANTIC PROPERTIES OF NEGATION

In the previous section, I concluded that *-shika* and *-dake* behave similarly with respect to the criteria discussed in Moltmann (1995) and therefore it is not clear whether *-shika* is an exceptive marker. In this section, I examine two semantic properties, namely downward entailments and NPI licensing and argue that the negative suffix co-occurring with *-shika* is not an ordinary negation.

2.1.1.2.2.1 DOWNWARD ENTAILMENTS

One difference between the negative suffix co-occurring with *-shika* and the ordinary use of the negative suffix concerns entailment patterns. Negation is an operator which makes a sentence downward entailing with respect to the VP. For example, (2.38a) entails (2.38b), whose VP denotes a subset of the denotation of the VP in (2.38a).

(2.38) a. *Emma didn't come.*

b. *Emma didn't come late.*

Because of this semantic property of negation, when sentences containing *except* or *other than* contain a negation, the sentences are downward entailing. (2.39a), for example, entails (2.39b).

(2.39) a. *Everyone except/other than Daisuke didn't come.*

b. *Everyone except/other than Daisuke didn't come late.*

Japanese *igai* is also downward entailing. When sentence (2.40a) is true, (2.40b) is also always true.

(2.40) a. *Daisuke-igai* *ko-na-katta.*
Daisuke-except come-NEG-PAST
'Everyone except Daisuke didn't come.'

b. *Daisuke-igai* *okurete* *ko-na-katta.*
Daisuke-except late come-NEG-PAST
'Everyone except Daisuke didn't come late.'

If the negative suffix co-occurring with *-shika* functions as an ordinary negation, one expects that sentences containing *-shika* are downward entailing. However, this is not the case. (2.41a) does not entail (2.41b).

(2.41) a. *Daisuke-shika* *ko-na-katta.*
Daisuke-SHIKA come-NEG-PAST
'Only Daisuke came.' or 'Everyone except Daisuke didn't come.'
(Yoshimura 2006)

b. *Daisuke-shika* *okurete* *ko-na-katta.*
Daisuke-SHIKA late come-NEG-PAST
'Only Daisuke came late.' or 'Everyone except Daisuke didn't come late.' (Yoshimura 2006)

Exclusive markers such as English *only* and Japanese *-dake* behave similarly to *-shika* and sentences containing them are not downward entailing. (2.42a) and (2.43a) do not entail (2.42b) and (2.43b), respectively.

(2.42) a. *Only Daisuke came.*

b. *Only Daisuke came late.*

(2.43) a. *Daisuke-dake* *ki-ta.*
Daisuke-DAKE come-PAST
'Only Daisuke came.'

b. *Daisuke-dake* *okureteki-ta.*
Daisuke-DAKE late come-PAST
'Only Daisuke came late.'

The negative suffix co-occurring with *-shika*, which otherwise functions as regular negation, does not seem to function as an ordinary negation. In contrast to sentences containing *except*, *other than*, or *igai*, sentences containing *-shika* and the co-occurring negative suffix, are not downward entailing. Although *-shika* must co-occur with the negative suffix, sentences

containing -*shika* behave similarly to sentences containing exclusive particles such as *only* and -*dake*.

2.1.1.2.2.2 NPI LICENSING

In this section, I discuss the negative polarity item (NPI) licensing property of the negative suffix co-occurring with -*shika*. But before comparing the NPI licensing properties of the negative suffix co-occurring with -*shika* and the ordinary use of the negative suffix, it should be noted that Japanese NPIs such as *nanimo* 'anything' can only be licensed by propositional negation. In other words, only an antimorphic operator in the classification proposed by Zwarts (1993), can license Japanese NPIs. For example, while *nanimo* is licensed in negative sentences, as shown in (2.44a), in questions and antecedents of conditionals, where English NPIs are licensed as shown in (2.45), Japanese NPIs are not acceptable as shown in (2.44b) and (2.44c).

(2.44) a. *Yuka-wa* *nanimo* *tabe-na-katta.*
Yuka-TOP anything eat-NEG-PAST
'Yuka didn't eat anything.'

b. *#Daremo* *nanimo* *ijyou-ni* *kizui-ta-ra*
anyone anything unusual-to notice-PAST-if
keisatu-ni *sirasete-kudasai.*
police-to report-please
Intended: 'If anyone notices anything unusual, please report to the police.'

c. *#Daremo* *mou* *kotae-ga* *wakarimasi-ta-ka?*
anyone already answer-NOM figure.out-PAST-Q
Intended: 'Has anyone already figured out the answer?'

(2.45) a. *If anyone notices anything unusual, it should be reported to the campus police.*

b. *Has anyone already figured out the answer?*

As one can expect, *igai*, when occurring with the negative suffix can license an NPI, as shown in (2.46). This is because the negative suffix in (2.46) functions as an ordinary negation.

(2.46) *Daisuke-igai* *nanimo* *tabe-na-katta.*
Daisuke-except anything eat-NEG-PAST
'Everyone except Daisuke didn't eat at all.'

If the negative suffix co-occurring with *-shika* is an ordinary negation, it should license NPIs like the negative suffix in (2.44a) and (2.46). However, (2.47), in which *nanimo* occurs is not acceptable.

(2.47) *#Daisuke-shika* *nanimo* *tabe-na-katta.*
Daisuke-SHIKA anything eat-NEG-PAST

The Japanese exclusive particle *-dake* cannot license the NPI *nanimo*, either, as shown in (2.48).

(2.48) *#Daisuke-dake* *nanimo* *tabe-ta.*
Daisuke-DAKE anything eat-PAST

Although the negative suffix co-occurring with *-shika* can otherwise licenses NPIs, it does not license NPIs in sentences containing *-shika*. *-shika* with the negative suffix behaves similarly to -

dake with respect to NPI licensing: neither -*shika* with the negative suffix nor -*dake* licenses NPIs.

One can wonder why the exceptive component of -*shika* or that of the exclusive particle -*dake*, which contains a negation in their logical translation, does not license the NPI. This is because these logical translations also contain a prejacent proposition in their meaning, which does not contain negation. Since negation only scopes over one of the two semantic components, it is not sufficient to license the NPI.

Before closing this section, I should point out that in contrast to -*shika* and -*dake*, *only* can license NPIs like *any* as shown in (2.49). The inability of -*shika* and -*dake* to license NPIs is not due to their exclusive meaning, but to the particular properties of Japanese NPIs (they can only be licensed by an antimorphic operator) because *only*, and -*shika* and -*dake* have the same exclusive meaning.

(2.49) *Only his sister will expect him to write any more novels.*
(Horn 2006)

In this section, I examined the behaviors of the negative suffix co-occurring with -*shika*. Although -*shika* must co-occur with negation, the sentences in which it occurs are not downward entailing just like sentences that contain exclusive particles *only* and -*dake*, while the negative suffix occurring that co-occur with *igai* is downward entailing. With respect to NPI licensing, the negative suffix with -*shika* behaves also like the exclusive particle -*dake*, and cannot license NPIs, while the negative suffix with *igai* can license NPIs. I conclude that -*shika* is an exclusive particle based on the fact that the negative suffix co-occurring with -*shika* does not function as an ordinary negation. -*shika* behaves exactly the same way as the exclusive particle -*dake* in terms

of the three constraints of exceptive markers discussed in the previous section as well as with respect to downward entailments and NPI licensing discussed in this section.

2.1.2 CONTEXTUAL MEANING OF *-SHIKA*

I have shown that *-shika* is not an exceptive marker. However, if I assume that *-shika* is an exclusive marker and corresponds to *only*, the presence of the negative verbal suffix *–na* does not seem to have any semantic contribution to the exclusive meaning of the sentence containing *-shika*. For example, the Japanese sentence in (2.50b) contains a negative verbal suffix while the English translation does not contain a negation.

(2.50) *Yuka-shika ko-na-katta.*
Yuka-SHIKA come-NEG-PAST
'Only Yuka came.'

Probably because of the co-occurrence of the negative verbal suffix, Japanese speakers have the intuition that contexts in which *-shika* is appropriate are more negative than contexts in which another exclusive particle *-dake*, which does not require the negative verbal suffix, occurs. There have been several discussions about the differences between *-shika* and *-dake*, and Kuno (1999), for example, argues that the exceptive proposition is contextually more prominent for *-shika* than *-dake*. In this section, after briefly reviewing Kuno (1999)'s proposal, I characterize the contextual meaning of *-shika*.

2.1.2.1 KUNO (1999)

Kuno (1999) suggests that *-shika* and *-dake* introduce two propositions with distinct assertoric status. According to Kuno (1999), a sentence in which *-shika* occurs primarily asserts the exceptive proposition or what Kuno (1999) calls the negative proposition, and secondarily asserts the prejacent, or what Kuno (1999) calls the affirmative proposition, while a sentence in which *-dake* occurs primarily asserts the affirmative proposition and secondarily asserts the negative proposition although what he means by 'primarily' and 'secondarily' is not clear. (2.52) is the definition of the affirmative and negative proposition, and (2.53) is the meanings of *-shika* and *-dake*.

(2.51) a.

Eigo	*to*	*huransugo*	*dake*	*hanas-e-ru.*
English	and	French	only	speak-can-Pr.

'I can speak only English and French.'

b.

Eigo	*to*	*huransugo*	*shika*	*hanas-e-na-i.*
English	and	French	only	speak-can-Neg-Pr.

'I can speak only English and French.'

(2.52) Propositions associated with the "W X-dake Y" and "W X-shika Y-nai" Constructions

A. Affirmative Proposition: WXY

Eg. The affirmative proposition of (1a, b) = "I can speak English and French."

B. Negative Proposition: not(WZY)

where Z = {V-X}, V being the set of elements under discussion.

Eg. The negative proposition of (1a, b) = "I cannot speak any other language."

(Kuno 1999: 147)

(2.53) The semantics of the *Dake* and *Shika* constructions

> *Dake* primarily asserts its affirmative proposition, and only secondarily asserts its negative proposition.
> *Shika* primarily asserts its negative proposition, and only secondarily asserts its affirmative proposition.
> (Kuno 1999: 148)

As shown in the definition in (2.52) and (2.53), the meanings of *-dake* and *-shika* are represented by means of English translations. According to Kuno (1999), when *-shika* is acceptable, the clause in which *-shika* occurs can be replaced with the negative proposition in the English translation, while when *-dake* is acceptable, the clause in which *-dake* occurs can be replaced with the affirmative proposition in the English translation. Following (2.54), (2.55a), in which *-dake* occurs, is acceptable, but (2.55b), in which *-shika* occurs, is not acceptable. And, indeed, the English translation that in order to make an around-the-world trip, it is all right if you can speak English and French, is natural.

(2.54)

Sekai-ryokoo	*o*	*su-ru*	*no*	*ni-wa,*
world-trip		do-Pr.	to	for

'In order to make an around-the-world trip,'

(2.55) a. *eigo* *to* *huransugo* *dake* *(o)* *hanas-e-reba* *yo-i.*
English and French only speak-can-if good-Pr.
'it is all right if you can speak only English and French.'

b. **eigo* *to* *huransugo* *shika* *hanas-e-nake-reba* *yo-i.*
English and French only speak-can-Neg-if good-Pr.
'it is all right if you can speak only English and French.'
(Kuno 1999: 147)

(2.55b), in which *-shika* occurs, is not acceptable and, conversely, the English translation with the negative proposition that it is all right if you cannot speak any other languages than English and French, is not natural.

In Kuno's (1999) analysis, in contexts in which *-shika* is appropriate, a sentence containing *-shika*, can be replaced with its negative proposition in its English translation. For example, sentence (2.56) can be replaced with the negative proposition in (2.57b). However, as shown in previous sections, (2.56) entails not only (2.57b) but also (2.57a).

(2.56) *Eigo* *to* *huransugo* *shika* *hanas-e-na-i.*
English and French only speak-can-Neg-Pr.
'I can speak only English and French.'

(2.57) a. I can speak English and French.

b. I cannot speak any other language.

Kuno's (1999) analysis, which seems to say that to characterize appropriate contexts for *-shika*, only the negative proposition is relevant, does not seem to correctly describe the meaning of *-shika*.

2.1.2.2 NEGATIVE MEANING OF *-SHIKA*

As discussed in Kuno (1999), the two Japanese exclusive particles, *-shika* and *-dake*, differ in the contexts in which they occur. (2.58) and (2.59) are examples which show that contexts in which *-shika* and *-dake* are acceptable, are different.

(2.58) *Hottokeeki-o tukuri-ta-katta-n-dakedo,*
pancake-ACC make-want-PAST-COMP-although
'Although I wanted to make pancakes,'

a. *hutatu-shika tamago-o kawa-na-katta.*
two-SHIKA egg-ACC buy-NEG-PAST
'I only bought two eggs.'

b. (#)*hutatu-dake tamago-o kat-ta.*
two-DAKE egg-ACC buy-PAST
'I only bought two eggs.'

(2.59) *Hottokeeki-ga tukur-e-ru-youni,*
pancake-NOM make-can-NONPAST-in.order.to
'In order to make pancakes,'

a. *#hutatu-shika tamago-o kawa-na-katta.*
two-SHIKA egg-ACC buy-NEG-PAST
'I only bought two eggs.'

b. *hutatu-dake tamago-o kat-ta.*
two-DAKE egg-ACC buy-PAST
'I only bought two eggs.'

In the situation described in (2.58), in which -*shika* is more natural than -*dake*, the speaker believes that buying only two eggs is not sufficient to make pancakes. In the situation described in (2.59), in which -*dake* is more natural than -*shika*, the speaker believes that buying only two eggs is sufficient to make pancakes. (2.60) characterizes the mutual ground compatible with (2.58).

(2.60) Buying two eggs and no more implies that one cannot make pancakes

More generally, in contexts in which -*shika* is appropriate, there is a contextually determined proposition which does not hold. The contextually determined proposition for (2.58) is that one can make pancakes in (2.61), which should have held if she bought more than two eggs but does not hold since she bought two eggs and no more.

(2.61) One can make pancakes

(2.62) is an attested examples of -*shika* from a newspaper. In (2.62), in which -*shika* occurs, a contextually determined proposition is that research on microorganisms is not interesting in (2.63).

(2.62) *翠星高校は白山市にあり、生徒全員が農業クラブ員。出口さんは総合グリーン科学科で微生物を学んでいる。「イースト菌、こうじカビなど人の役に立つものもあれば、健康を害するものもある。それでもまだ全体の１％しか分かっていないところに興味がある。大学に進んで、さらに研究したい」と話す。*（毎日新聞: 2009 年 12 月 15 日）

The high school is located in Shirayama city, and all students at the high school belong to the agriculture club. She studies microorganisms. She said 'some microorganisms such as yeast fungus and aspergillus, are useful for humans, but others are harmful. It is interesting because we know ***only*** 1% of all microorganisms. I will go to a college and continue the research.' (Mainichi Shinbun: 12/15/2009)

(2.63) Contextually determined proposition Q

: Research on microorganisms is not interesting

What the context described in (2.62) expresses is the negation of the contextually determined proposition that research on microorganisms is interesting. If we already know more about microorganisms, research about microorganisms might not be interesting, but the fact that we know 1% of microorganisms and no more implies that research on microorganisms is interesting. The proposition that research on microorganisms is interesting is explicitly stated in the text, and would be one of the more salient candidates for a contextually determined proposition. However, this does not mean that this proposition is the only candidate for a contextually determined proposition. For example, there are other possible propositions such as those in (2.64), which would not hold when we know only 1% of microorganisms. These propositions are not clearly stated in the text, but the person who reads the text, could infer that these propositions do not hold.

(2.64) a. There are many researchers who work on microorganisms

b. Microorganisms is a popular research area

c. Much researche has been done on microorganisms

d. There are not many questions about microorganisms

Although the causal link might not look very clear between the exclusive proposition that we know only 1% of microorganisms and the proposition that research on microorganisms is interesting, one can think of propositions such as those in (2.64) and let them mediate the two propositions in the texts, as shown in (2.65).

(2.65) We know only 1% of microorganisms

> Not much researches has been done on microorganisms

> There are many questions about microorganisms

> Research on microorganisms is interesting

It can be the case that there is one very salient contextually determined proposition in a text that the sentence containing *-shika* contradicts, but when one cannot find a good proposition in the text, one can infer the proposition.

In contexts in which *-dake* is acceptable, on the other hand, there might be such a contextually determined proposition which does not hold, but it is not required that there be one.[9] In (2.59), the speaker would be able to make pancakes if she bought more than two eggs, but she can still make pancakes even when she bought two eggs and no more.

[9] There are contexts in which *-shika* is more appropriate, contexts in which *-dake* is more appropriate, and contexts in which both *-shika* and *-dake* are appropriate. I will leave it to future research to properly distinguish those three kinds of contexts.

In the attested example in (2.66), in which *-dake* occurs, there does not seem to be a contextually determined proposition which does not hold.

(2.66) *また、住宅棟が多いので、広い中庭を囲み、部外者が入ってこない安全な遊び場も確保しやすい。これは、小さな子供を育てる時に有利だ。今の世の中、幼児**だけ**を遊びに出して安心していられるのは、そのような中庭だけではないかと思える。*（毎日新聞: 2009 年 1 月 28 日）

> And, there are many residential buildings, and it is relatively easy to find a safe space which is surrounded by buildings and outsiders cannot enter. This is an advantage when you have small children. It is only a place like this where we can let ***only*** children to play without having to be concerned.
> (Mainichi Shinbun: 1/28/2009)

For example, the proposition in (2.67a) would hold when the restrictive proposition in (2.67b) does not hold: children are safe if, for example, they play with their parents.

(2.67) a. Children are safe

b. One lets no one else play with children

However, the proposition in (2.67a) that children are safe still holds even when the restrictive proposition in (2.67b) holds. Children are safe if they play alone, and they are still safe if they play with their parents.

To characterize the meaning expressed by *-shika*, I assume two propositions, namely, the primary exclusive proposition and the secondary negative proposition. The primary exclusive proposition is the standard exclusive meaning expressed by exclusive markers such as *only*, which consists of a prejacent and exceptive proposition, as shown in (2.68a). (2.68b) is the

secondary negative proposition, which distinguishes *-shika* from *-dake*. I call the meaning in (2.68b) the secondary negative proposition because the semantic status of the proposition is similar to the secondary meanings of English *even* or *but*, which are discussed in Bach (1999) and Potts (2005). I will discuss the semantic status of the secondary negative proposition in section 2.1.3.

(2.68) a. Primary exclusive proposition: $P(f) \wedge \forall x (x \neq f \rightarrow \neg P(x))$

b. Secondary negative proposition:
$(P(f) \wedge \forall x (x \neq f \rightarrow \neg P(x))) \rightarrow \neg Q$

Q is a contextually determined proposition. The secondary negative proposition says that if the primary exclusive proposition holds, the contextually determined proposition does not.

One may wonder if the secondary meaning is always trivially true since there is always some proposition which is true. For example, in the context described in (2.62), the proposition that the high school has an agriculture club is true and the secondary meaning is true for the contextually available proposition Q in (2.69).

(2.69) Q: The high school does not have an agriculture club

However, such propositions as (2.69), which are false regardless of the truth or falsity of the primary exclusive proposition, are excluded by a conversational implicature of (2.68b). (2.68b) conversationally implicates (2.70) since otherwise the consequent is always true regardless of the truth condition of the antecedent and the conditional is not informative. The secondary meaning of *shika* conversationally implicates that if the primary exclusive proposition consisting of the

prejacent and asserted propositions, does not hold, the contextual proposition Q can be true: If there is more than what is denoted by the focused constituent, Q can be true.

(2.70) Conversational implicature: $\neg\ (\ P\ (\ f\ ) \wedge \forall x\ (\ x \neq f \rightarrow \neg\ P\ (\ x\ )\ )\ ) \rightarrow\ \Diamond\ Q$

For example, the secondary meaning contributed by *shika* in (2.62) is (a), and (a) conversationally implicates (b): the proposition that we know more than 1% of microorganisms, implicates that it is possible that research on microorganisms is not interesting.

(2.71) Secondary meaning:

We know 1% of microorganisms and no more
$\rightarrow \neg$ (Research on microorganism is not interesting)

(2.72) Conversational implicature:

We know more than 1% of microorganisms
$\rightarrow \Diamond$ (Research on microorganisms is not interesting)

Propositions like (2.63) repeated in (2.73), are appropriate for Q since if the primary exclusive meaning in (2.74) is false and we know a lot about microorganism, (2.73) could be true.

(2.73) Research on microorganisms is not interesting

(2.74) We know 1% of microorganism and no more

However, the proposition in (2.69) is always true regardless of the truth or falsity of (2.74) and thus contradicts the conversational implicature in (2.72). Propositions like (2.69) are not chosen as Q in the context described by (2.62) because they are conversationally inappropriate.

2.1.2.3 CORPUS STUDY

I claim that in contexts in which *-shika* is acceptable, there is a contextually determined proposition which does not hold. Thus, (2.75) expresses the secondary negative proposition in (2.76), in which Q is a contextually determined proposition.

(2.75) *Yuka-shika* *co-na-katta.*
Yuka-SHIKA come-NAG-PAST
'Only Yuka came.'

(2.76) $(\text{came} (\text{Yuka}) \wedge \forall x (x \neq \text{Yuka} \rightarrow \neg \text{came} (x))) \rightarrow \neg Q$

(2.76) means that Yuka's coming implies that a contextually determined proposition Q does not hold. To support our claim, I conducted a corpus study of *-shika*. We sampled one hundred example discourses in which *-shika* occurs from two Japanese newspapers called the Mainichi Shinbun and Nikkei Shinbun. We searched through the website of the newspapers randomly in the sense that we did not choose examples on the basis of their contents. However, we excluded some examples which we found were difficult to translate to English. We picked up one hundred discourses in which *-shika* occurs and *-dake*, if replaced with *-shika*, would not natural. We examined these one hundred discourses and confirmed that there is always a contextually

determined proposition which does not hold. In (2.77) and (2.79), for example, a contextually determined proposition is (2.78) and (2.80), respectively.

(2.77) *世界保健機関（ＷＨＯ）は 24 日、新型インフルエンザ用ワクチンの世界全体の生産能力が５月に想定していた年 50 億本より４割少ない 30 億本にとどまると発表した。世界各国のワクチンメーカーから聞き取り調査し、ＷＨＯが集計した。新型用ワクチンの生産は季節性インフルエンザ用より難しいのが原因で、ＷＨＯは「世界人口の半分以下に<u>しか</u>行きわたらない」と懸念している。*(日経新聞: 2009 年 9 月 27 日)

The WHO announced that the production of the vaccine for H1N1 influenza will total 3 billions, which is 40% less than previously assumed according to a survey of the world's vaccine makers. This is because the new vaccine is more difficult to produce than vaccines for seasonal influenza, and the WHO is concerned that ***<u>only</u>*** half of the world population would receive the vaccines. (Nikkei Shinbun: 09/27/2009)

(2.78) Q: H1N1 vaccine production is sufficient

(2.79) *しかし河村市長が１１月２５日、名古屋市より小さな規模で運営している「静岡がんセンター」を視察したところ、２００～２５０人<u>しか</u>患者を受け入れる能力がなく、名古屋に当てはめると、受け入れ可能な患者数は４００人となることが分かったという。この場合、２０年間の赤字が１３４億円（年６・７億円）に達し、想定していた１８億円を大きく上回るとしている。*(毎日新聞: 2009 年 12 月 1 日)

The mayor visited the Shizuoka cancer center, which is smaller than the center in Nagoya, and found that it ***<u>only</u>*** accepts 200~250 patients. If this number is applied to the center in Nagoya, the number of patients which it can accept would be 400. If this prediction is correct, the deficit in the next 20 years will total 134 billion yens, and this is much larger than 18 billion yens, which was the previous estimate. (Mainichi Shinbun: 12/01/2009)

(2.80) Q: The deficit estimate is accurate

(The revenue is enough)

In (2.77), the proposition that H1N1 vaccine production is sufficient does not hold in a situation in which half of the world population and no more, receives the vaccines. In (2.79), the proposition that the deficit estimate is accurate does not hold in a situation in which the cancer center accepts 200-250 patients and no more. The causal relationship between the exclusive proposition that the center accept 200~250 patients and the proposition that the deficit estimate is not accurate, is not as direct as the one in (2.77) between the exclusive proposition that half of the world population and no more, receives the vaccines, and the proposition that H1N1 vaccine production is not sufficient. However, one can easily infer that if the hospital accepts less patients, then revenue decreases, and as a result, the deficit becomes larger. The contextually determined proposition which does not hold is that the revenue is sufficient although this is not explicitly stated in the text.

2.1.3 MULTI-DIMENSIONALITY OF THE MEANING OF *-SHIKA*

I have characterized contexts in which *-shika* is acceptable as a result of its secondary negative proposition, and supported the claim by conducting a corpus study. The secondary negative proposition, however, does not seem to have the same semantic status as the primary exclusive proposition. Recently, there has been a flurry of terms introduced to characterize the semantic status of propositions expressed by sentences: the old entailments, conversational implicatures, but also implicitures (Bach 1994), conventional implicatures (in the sense of Potts 2005), secondary meanings (Bach 2000, Potts 2005), assertorically inert propositions (Horn 2006). I claim that the secondary negative proposition expressed by *-shika* is akin to the secondary meaning expressed by English *but* or *even* in the sense of Bach and Potts.

Traditionally, the meanings of *but* and *even* in (2.81c) and (2.82c), respectively, are considered to be conventional implicatures.

(2.81) a. *Shaq is huge but he is agile.* (Bach 1999: 327)

b. primary entailment: huge (shaq) $\wedge$ agile (shaq)

c. secondary meaning: Gx [huge (x) $\rightarrow \neg$ agile (x)]

(2.82) a. *Even Emma came.*

b. primary entailment: came (emma) $\wedge \exists$x (x $\neq$ emma $\wedge$ came (x))

c. secondary meaning: it is less likely that Emma comes than other individuals

They are implicatures because they are not part of 'what is said' and the falsity of their meanings do not affect the primary purpose of an utterance, and they are conventional meanings because they are not conversationally derived from another meaning but attributed to specific lexical items. Bach (1999), however, argues that the meanings in (2.81c) and (2.82c) are part of 'what is said' because these meanings can be under the scope of propositional attitude verbs like *say*. Potts (2005) re-defines conventional implicatures, and lists supplements and expressives, which are never under the scope of propositional attitude verbs, as examples of conventional implicatures. Potts (2005) distinguishes the meanings of *but* and *even* in (2.81c) and (2.82c) from conventional implicatures, and calls them the secondary meanings.

In this section, I examine five semantic properties, scope over presupposition holes, independence of truth value, non-cancellability, anti-backgounding, and non-widest scope, and

argue that the secondary negative proposition of *-shika* is similar to the secondary meaning of *even* or *but*.

2.1.3.1 PRESUPPOSITION HOLES

Strawson (1950) defines presuppositions as shown in (2.83), based on the intuition that presuppositions are background assumptions for foreground assertions.

(2.83) A statement A presupposes another statement B iff:

(a) if A is true, then B is true

(b) if A is false, then B is true

(c) if B is false, the truth of A is undefined

Strawson (1950) distinguishes an expression from a use of an expression. For example, the expression *the king of France* in (2.84) just provides general directions to refer to a unique individual and it is a use of the expression with which one actually refers to a unique individual. The expression *the king of France* is significant even if there is no king of France in that the expression guides one to refer to an individual but for a sentence containing the expression to be true or false, the referent of the expression has to be identified by a use of the expression.

(2.84) *The king of France is wise.*

If presuppositions such as an identification of the referent of a definite expression, are not satisfied, sentences are neither true nor false as specified in (2.83c). It follows from the definition in (2.83) that even if the negation of a statement A is true, a presupposition B is true. This property that presuppositions of a sentence survive in the corresponding negative sentence is used as a test for identifying presuppositions. Other environments in which presuppositions survive, such as antecedents of conditionals, modal contexts, and questions, are called presupposition holes. The secondary meaning of *even* or *but* escape from the scope of these presupposition holes. For example, what is negated in (2.85) is not the secondary meaning in (2.86c), but the primary entailment in (2.86b).

(2.85) *It is not the case that Shaq is huge but he is agile.*

(2.86) a. *Shaq is huge but he is agile.* (Bach 1999: 327)

b. primary entailment: huge (shaq) $\wedge$ agile (shaq)

c. secondary meaning: Gx [huge (x) $\rightarrow \neg$ agile (x)]

Similarly, the secondary meaning in (2.86c) survives in antecedents of conditionals, modal contexts, and questions, as shown in (2.87a) – (2.87c).

(2.87) a. *If Shaq is huge but he is agile, he could be a basketball player.*

b. *It might be the case that Shaq is huge but he is agile.*

c. *Is it the case that Shaq is huge but he is agile?*

The secondary negative proposition of *-shika* also escapes from the scope of presupposition holes. What is under the scope of negation, question, modal and conditional operators in (2.88b), (2.89a), (2.90a) and (2.91a), respectively, are the primary exclusive proposition: the secondary negative proposition escapes from the scope of these operators. In (2.88b), for example, what is negated is not the secondary negative proposition but the primary exclusive proposition. The secondary negative proposition that drinking milk and nothing other than milk is not sufficient, is the same in (2.88b) and in the corresponding affirmative sentence in (2.88a).

(2.88) a. *Miruku-shika noma-na-katta.*
milk-SHIKA drink-NEG-PAST
'S/he drunk only milk'

b. *Miruku-shika noma-na-katta wake-jyana-i.*
milk-SHIKA drink-NEG-PAST COMP-NEG-NONPAST
'It's not the case that s/he drunk only milk'

For the question in (2.89a), the answer in (2.89b), which mentions the primary exclusive proposition, is acceptable but (2.89c), which mentions the secondary negative proposition, is not acceptable.

(2.89) a. *Miruku-shika noma-na-katta-no?*
milk-SHIKA drink-NEG-PAST-Q
'Did you drink only milk?'

b. *Un, miruku-shika noma-na-katta.*
yes milk-SHIKA drink-NEG-PAST
'Yes, I only drunk milk.'

c. #*Un, tari-na-katta.*
yes enough-NEG-PAST
'Yes, it was not enough.'

In (2.88a) and (2.89b), what may be true, and what is the condition for the consequent to be true, respectively, is the primary exclusive proposition. As a continuation of (2.88a) and (2.89a), (2.90b) and (2.91b) are acceptable, but (2.90c) and (2.91c) are not acceptable, respectively.

(2.90) a. *Miruku-shika noma-na-katta no kamoshirena-i.*
milk-SHIKA drink-NEG-PAST COMP may-NONPAST
'S/he may have drunk only milk.'

b. *Otya-mo non-da kamoshirena-i.*
green.tea-also drink-PAST may-NONPAST
'S/he may also have drunk green tea.'

c. #*Jyuubun-datta kamoshirena-i*
enough-PAST may-NONPAST
'It may have been enough.'

(2.91) a. *Miruku-shika noma-na-katta-ra onakagasuku.*
milk-SHIKA drink-NEG-PAST-if hungry
'If you drink only milk, you will get hungry.'

b. *Hokaninanika tabe-reba daijyoubuda.*
Other something eat-if fine
'If you eat something else, you will be fine.'

c. #*Jyuubun-datta-ra daijyoubuda.*
Enough-PAST-if fine
'If it's enough, you will be fine.'

The fact that the secondary negative proposition is not under the scope of presupposition holes suggest that it is not a primary asserted content, or what Potts (2005) calls at-issue content, because primary asserted contents are what these operators take as semantic arguments.

2.1.3.2 INDEPENDENCE OF TRUTH VALUES

Secondary meanings and presuppositions, although they both escape from the scope of presupposition holes, differ in their relationship with at-issue entailments. Potts (2005) characterizes at-issue entailments as controversial propositions or the main theme of a discourse. The proposition in (2.92b) and (2.92c) are both at-issue entailments of the utterance in (2.92a). However, although (2.92b) and (2.92c) are at-issue entailments, there are differences between the semantic status of the two as I am discussing in this section, and Potts (2005) calls (2.92b) the primary entailment and (2.92c) the secondary entailment.

(2.92) a. *Shaq is huge but he is agile.* (Bach 1999: 327)

b. primary entailment: huge (shaq) $\wedge$ agile (shaq)

c. secondary(ancillary) entailment: Gx [huge (x) $\rightarrow \neg$ agile (x)]

Presuppositions are not the primary purpose of an utterance, but background assumptions for at-issue meanings; if a presupposition is false, the truth value of the at-issue proposition is undefined. There is no such dependency between the primary proposition and a secondary proposition, and truth or falsity of a secondary proposition does not affect the truth value of the primary proposition. In (2.93), speaker B agrees with the primary proposition conveyed by A's utterance, but disagrees with its secondary proposition.[10]

(2.93) A: *Shaq is huge but he is agile.*

B: *Yes, but being huge doesn't necessarily indicate being not agile.*

B's utterance indicates that the primary proposition and secondary propositions conveyed by *but* can be independently assigned truth values. The independence of the primary and secondary propositions' truth values is one of the reasons why we need a multi-dimensional analysis to represent secondary meaning. The two meanings cannot be represented as a conjunction of the two meanings since otherwise each of the two propositions must be true in order for a sentence

[10] The examples in (2.91) show that speaker B can agree with speaker A's utterance without agreeing with the secondary meaning expressed by the utterance. If both sentences in (a) are uttered by the same speaker, on the other hand, the speaker seems to contradict herself.

(a) A: *Shaq is huge but he is agile.*

A: *#But being huge doesn't necessarily indicate being not agile.*

to be uttered. They need to be assigned to separate semantic dimensions because the truth value of the primary and secondary propositions are assigned independently.

Similarly to the relationship between the primary and secondary propositions expressed by sentences containing *but*, there is no dependency between the primary exclusive proposition and secondary negative proposition expressed by sentences containing *-shika*. The falsity of the secondary negative proposition does not affect the truth of the primary exclusive proposition. In (2.94), speaker A expresses the primary meaning that she has two As and no more, and the secondary meaning that two As are not sufficient for a contextually available proposition Q to hold.

(2.94) A: *A-wa hutatu-shika to-re-na-katta.*
A-TOPtwo-SHIKA get-can-NEG-PAST
'I could get only two As.'

B: *Un, demo, hutatu tor-eba jyuubunn-da-yo.*
yes but two get-if enough-NONPAST-DM
'Yes, but it's enough to get two As.'

Speaker B replies to A's utterance by *un* 'yes' and agrees with the primary exclusive proposition, but at the same time disagrees with the secondary proposition. Since (2.94) is a created example and there is no specific context, I assume a general proposition that two As is enough, as a proposition which does not hold. Speaker A expresses the negation of the proposition that it is not enough, by using *-shika*, and Speaker B disagrees with speaker A. The primary proposition and secondary propositions conveyed by sentences containing *-shika* are considered to be separable, and one can, for example, as shown in (2.94), agree with the primary proposition and disagree with the secondary proposition at the same time.

2.1.3.3 CANCELLABILITY

Another property which distinguishes secondary meanings from presuppositions is cancelability. Presuppositions can be cancelled by what Horn calls metalinguistic negation while secondary meanings are not cancellable even via metalinguistic negation. In (2.95), the presupposition that there is a king of France is cancelled. The secondary propostion expressed by *but* in (2.96), on the other hand, cannot be cancelled by negation.

(2.95) *The king of France is not wise – there is no king of France!*

(2.96) *#It's not the case that Shaq is huge but he is agile – Being huge does not necessarily indicate being not agile.*

Similarly, the secondary proposition expressed by sentences containing *-shika* is not cancellable. The negation in (2.97) can negate the primary proposition, but it cannot negate the secondary proposition.

(2.97) *A-ga* *hutatsu-shika* *tore-na-katta-n-jyanai-yo.*
A-NOM two-SHIKA get-NEG-PAST-COMP-NEG-DM
'It's not the case that I could get only two As.'

a. *mittu* *tot-ta-n-da-yo.*
Three get-PAST-COMP-NONPAST-DM
'I got three As.'

b. *#hutatsu-de* *jyuubunna-n-da-yo.*
Two-with enough-COMP-NONPAST-DM
'Two As are enough.'

(2.97a), which entails the negation of the primary proposition, is acceptable, but (2.97b), which entails the negation of the secondary proposition, is not acceptable.

2.1.3.4 ANTI-BACKGROUNDING

The semantic properties examined in the previous sections are not typical of secondary meanings, but also of conventional implicatures. Both secondary meanings and conventional implicatures escape from the scope of presupposition holes, are assigned truth values independently of that of the primary meanings, and are not cancellable. One semantic property which distinguishes secondary meanings from conventional implicatures is whether they are shared between the speaker and listeners.

Conventional implicatures introduce new information although the information is not the primary purpose of an utterance. In (2.98), the conventional implicature expressed by the appositive that wolf urine is sprayed along roads to keep elk away, is new information and not expected to be shared between the speaker and listener.

(2.98) *Sweden may export synthetic wolf urine –sprayed along roads to keep elk away- to Kuwait for use against camels.* (Potts 2005: 33)

(2.99) also shows that conventional implicatures introduce new information.

(2.99) *Lance Armstrong survived cancer.*

a. *#When reporters interview Lance, a cancer survivor, he often talks about the disease.*

b. *And most riders know that Lance Armstrong is a cancer survivor.*

(Potts 2005: 36)

In (2.99a), the supplement in the second sentence sounds redundant because the semantic function of conventional implicatures is to introduce new information, and the proposition expressed by the supplement provides the same information as the previous sentence. In (2.99b), the second sentence does not sound redundant because the information expressed by the first sentence serves as a presupposition of the second sentence.

It is intuitively very difficult to decide whether the secondary negative proposition expressed by sentences containing *-shika* is shared between the speaker and listeners, or it is new information. In the following conversation, it is not clear if the secondary proposition expressed by B's response is shared between the speaker and listener. In (2.100), speaker B expresses that two eggs is not sufficient with a sentence containing *-shika*.

(2.100) A: *Tamago* *ikutsu* *ka-tta?*
egg how.many buy-PAST
'How many eggs did you buy?'

B: *Hutatsu-shika* *kawa-na-katta.*
two-shika buy-NEG-PAST
'I bought only two eggs.'

A: *Daijyoubu,* *hutatsu* *a-r-eba* *jyuubunn-da-yo.*
ok two have-NONPAST-if enough-NONPAST-DM
'It's ok, two is enough.'

The secondary meaning of *-shika* in B's utterance that buying two eggs is not sufficient appears to be new information to speaker A, who says that two eggs are enough. However, we could also say that speaker B assumes the secondary negative proposition is shared. It is thus not clear whether the secondary negative proposition associated with an occurrence of *-shika* must be part of the common ground. This difficulty also holds for the secondary meanings of English *even* or *but*. In (2.101), although the speaker B disagrees with speaker A about the secondary meaning of *but*, one could say that speaker A just assumed that it is shared information.

(2.101) A: *Shaq is huge but he is agile.*

B: *Well, most basketball players are huge and agile.*

It is not clear whether the secondary meaning of *but* is shared between the speaker and listeners.

2.1.3.5 WIDEST SCOPE

Finally, there is another difference between secondary meanings and conventional implicatures. Conventional implicatures by default take widest scope and are speaker-oriented although in some contexts which explicitly dissociate the speaker from the proposition, conventional implicatures can be non-speaker-oriented; see Harris and Potts (2009). Conventional implicatures cannot, for example, be under the scope of propositional attitude verbs such as *say*, which are known to be plugs for presuppositions. Propositional attitude verbs like *say*, which prevent the inheritance of a presupposition conveyed by their complement, cannot block conventional implicatures. In (2.102), the presupposition due to the presence of *realize*, namely, that it was raining, disappears since the clause containing *realize* occurs as a complement of *say*. In (2.102), the presupposition introduced by the verb *realize*, that it was raining, is cancellable as the sentences in the parenthesis show.

(2.102) *Ed said that Sue realized that it was raining. (Later, we found out that Ed's report was wrong. Sue can't have realized it was raining, because it wasn't.)*
(Potts 2005: 36)

However, in (2.103), the conventional implicature that Sue predicted that it is raining is expressed by the as-parenthetical in the complement clause of *say*, and is not cancelable. This is why the second sentence is not acceptable as a continuation.

(2.103) *Ed says that, as Sue predicted, it is raining. #But in fact, Sue didn't predict rain.*
(Potts 2005: 36)

In contrast to conventional implicatures, secondary meanings do not always take the widest scope. In (2.104), the secondary meaning of *but* is under the scope of *say*.

(2.104) *Ed said that Shaq is huge but he is agile. But I think hugeness is not necessarily an indicator of not being agile.*

The secondary meaning is what Ed believes, but not what the speaker believes. The secondary meaning associated with *-shika* behaves like that of *but*, and does not always have scope over a propositional attitude verb. Let us suppose that (2.105) is an utterance in a conversation about how many publications are needed to apply for a promotion.

(2.105) a. *Sensei-wa* *ronbunn-o* *itutu-shika*
teacher-TOP article-ACC five-SHIKA
happyounasara-na-katta *to* *ossya-tei-ta-yo.*
publish(honorific)-NEG-PAST COMP say-PERF-PAST-DM
'The teacher said that she published only five articles.'

b. *Itutu-mo* *sure-ba* *jyuubun-da-yone.*
five-as.much.as do-if enough-NONPAST-DM
'Publishing five articles is enough, isn't it?'

In (2.105a), the secondary meaning of *-shika* that the teacher cannot apply for a promotion, is not necessarily the belief held by the speaker. The speaker uttering (2.105a) can continue the utterance by saying (2.105b). In the sequence in (2.105), the secondary meaning is relativized to the teacher, and not correct for the speaker.

2.1.3.6 SECONDARY MEANINGS

Bach (1999) and Potts (2005) argue, based on Grice's (1975) definition of conventional implicatures, that the secondary meaning of expressions such as *but* and *even* is not a conventional implicature. According to Grice (1975), conventional implicatures are not part of 'what is said'. However, the secondary meanings of *but* and *even* can be under the propositional attitude verb *say* and can therefore be considered to be part of 'what is said'. As shown in the previous sections, the secondary negative proposition associated with *-shika* satisfies every criterion in Potts' (2005) definition of conventional implicatures except for non-widest scope as shown in Table 2.2. The secondary negative proposition expressed by sentences containing *-shika* has the same semantic properties as the secondary meanings of *but* and *even*.

	Presupposition holes	Truth dependence	Cancelability	Anti-back grounding	Widest scope
At-issue content	Narrow scope	n.a.	Yes	Yes	No
Presupposition	Wide scope	Yes	Yes	No	No
Conventional implicature	Wide scope	No	No	Yes	Yes
-shika's negative proposition	Wide scope	No	No	Yes	No

Table 2.2: Summary of the properties associated with different types of semantic information

2.2 *-BAKARI*

In addition to *-shika* and *-dake*, Japanese has another exclusive particle *-bakari*. *-bakari* always express some kind of 'plurality' of what it focuses on, in contrast to *-shika* and *-dake*, which do not have such a restriction. When -bakari appears in existential statements and focuses on a noun, the sentences express the existence of more than one entity. For example, (2.106a) is acceptable only when there were more than one lion

(2.106) a. *Raion-bakari imashi-ta.*
lion-BAKARI be-PAST
'There were only lions.'

b. *Raion-shika ima-sen-deshita.*
lion-SHIKA be-NEG-PAST
'There was only a lion/There were only lions.'

c. *Raion-dake imashi-ta.*
lion-DAKE be-PAST
'There was only a lion/There were only lions.'

When *-bakari* appears in sentences which denote events or states, the sentences express that the events or states happens repeatedly. (2.107) is acceptable only when she goes to the library repeatedly and (2.108) is acceptable only when she has been in the library on more than one occasion.

(2.107) *Tosyokan-bakari-(ni) ik-u.*
library-BAKARI-(to) go-NONPAST
'She only goes to the library.'

(2.108) *Tosyokan-bakari-ni i-ru.*
library-BAKARI-to be-NONPAST
'She is only in the library.'

-bakari is not acceptable in generic statements like (2.109) since states described by generic statements are not considered to happen repeatedly.

(2.109) *#Hito-bakari-ga gengo-o hanas-u.*
human-BAKARI-NOM language-ACCspeak-NONPAST
'Only human speaks languages'

There is a use of *-bakari*, which Sawada (2007) calls the aspectual use of *-bakari*. When *-bakari* focuses on verb forms which express non-past tense or past tense, it has interpretations in (2.110) and (2.111).

(2.110) *Syuppatsusu-ru-bakari-da.*
leave-NONPAST-BAKARI-NONPAST
'What I have to do is only to leave.'

(2.111) *Toutyakushi-ta-bakari-da.*
arrive-PAST-BAKARI-NONPAST
'I have just arrived.'

For the interpretations in (2.110) and (2.111), alternatives are searched along the temporal axis. For (2.110), there is nothing which the speaker has done between the utterance time and the time of arriving. (2.112a) is completely natural but (2.112b) is less natural than (2.112a) since the event of replying to an email is more natural as what temporary follows the event of receiving an email than talking on the phone.

(2.112) a. *Meeru-o* *uketo-tta-bakari* *de*
email-ACC receive-PAST-BAKARI and
hensinsi-te-wa-na-i
reply-PERF-CONT-NEG-NONPAST
'I have just received an email but I haven't replied.'

b. #*Meeru-o* *uketo-tta-bakari* *de* *denwa-de*
email-ACC receive-PAST-BAKARI and phone-by
hanashi-te-wa-na-i.
speak-PERF-CONT-NEG-NONPAST
'I only received an email and I haven't talked on the phone.'

(2.113) in which *-dake* is substituted for *-bakari* in (2.112b) is natural since for *-dake* there is no such restriction that the text proposition temporary precedes the context propositions.

(2.113) *Meeru-wo* *uketo-tta-dake* *de* *denwa-de*
email-ACC receive-PAST-DAKE and phone-by
hanashi-te-wa-nai.
speak-PERF-CONT-NEG-NONPAST
'I only received an email and I haven't talked on the phone.'

The aspectual use of *-bakari* does not seem to express any 'plural' interpretation. *-bakari* is ambiguous, and the use of *-bakari* which expresses 'plurality' and the aspectual use of *-bakari* are two distinct *-bakari*s.

2.3 CONCLUSION

The Japanese exclusive particle -*shika* must co-occur with a negated verb. But the negation does not seem to contribute to its meaning, at least according to a `traditional' exclusive particle analysis of -*shika*. Although Yoshimura's analysis of -*shika* as an exceptive marker explains the presence of the negative verbal suffix –*na,* there are several difficulties on her analysis. The three semantic properties of exceptive markers discussed in Moltmann (1995) are not sufficient to conclude that -*shika* is an exceptive marker and the negative verbal suffix -*na* co-occurring with -*shika* does not behave like regular logical negation with respect to semantic properties such as downward entailments and NPI licensing. Based on the previous proposals such as Kuno (1999) that -*shika* expresses some negative meaning, I hypothesize that -*shika* introduces both a primary meaning (similar to that of English *only* and Japanese -*dake*) and a secondary meaning (that the exclusive proposition `implies' that some contextually determined proposition is false). The secondary meaning is the source of the intuition that -*shika* is acceptable in more negative context than -*dake*.

Another exclusive particle -*bakari* expresses some kind of plurality of entities or propositions under its scope. However, -*bakari* when suffixed to non past tense and past tense verb forms has interpretations that do not seem to express any kind of plurality. -*bakari* is ambiguous between the use which expresses plurality and a use which does not express plurality.

CHAPTER 3

JAPANESE SCALAR ADDITIVE PARTICLES

3.1 INTRODUCTION

In this chapter, I discuss Japanese scalar additive particles, especially their behaviors in what Fauconnier (1979) calls implication reversing environments such as negative sentences, conditionals, etc. What is interesting about Japanese scalar additive particles is that each particle is acceptable in different implication reversing environments in contrast to English *even*, which is acceptable in any implication reversing environments. Another interesting property is that Japanese scalar additive particles have different interpretations from that of *even* in certain implication reversing environments.

3.1.1 GENERAL PROPERTIES OF SCALAR ADDITIVE PARTICLES

There are two subclasses of additive particles, non-scalar additive particles and scalar additive particles. While non-scalar additive particles such as *also* express two propositions, as in (3.1a) and (3.1b), scalar additive particles such as *even* expresses another proposition, as in (3.2c)[11].

[11] (3.2c) may not be sufficient to characterize the implication introduced by sentences containing *even*. For example, in contast to (a), (b) seems to not only implicate that solving a difficult question is less likely than solving a less difficult question, but to also implicate that solving a difficult question is beyond some standard set in the context.
(a) Emma solved a difficult question.
(b) Emma even solved a difficult question.
This implication can be characterized, for example, as in (c) and (d) by means of a contextual proposition S, which describes a situation that exceeds a contextual standard.

(3.1) also (P (f))

a. Text proposition: P (f)

b. Context proposition: P (a)

(3.2) even (P (f))

a. T(ext proposition): P (f)

b. C(ontext proposition): P (a)

c. T is less likely to be true than C(T pragmatically entails C)

Also means that the text proposition obtained by filling the propositional function λx P (x) with the focused constituent and the context proposition obtained by filling the propositional function with a contextually available alternative, are both true. *Even* expresses the same propositions as *also* but it further specifies a scalar relation between the text and context propositions. *Even*'s text proposition is located lower than its context proposition on a scale of likelihood. (3.3) and (3.4) are examples of *also* and *even*, respectively.

(c) Text proposition: Emma solved a difficult question > S

(d) Context proposition: Emma solved a less difficult question > ¬ S

It is also possible to define the secondary meaning as: The text proposition is the least likely to be true. Situations which are the least likely to be true exceed a standard.

(3.3) *Emma also came.*

a. Text proposition: Emma came

b. Context proposition: Someone else came

(3.4) *Even Emma came.*

a. Text proposition: Emma came

b. Context proposition: Someone else came

c. Emma's coming is less likely than someone else's coming
(Emma's coming pragmatically entails someone else's coming)

As discussed in the previous chapter, the semantic status of the proposition in (3.2c) is a secondary meaning. Although (3.2c) has most of semantic properties characteristic to conventional implicatures, it does not have speaker orientedness. (3.2c) is claimed to be included in 'what is said' and therefore propositions expressed by sentences containing *even* is not what the speaker believes but what the referent of the subject believes when *even* is embedded under propositional attitude verbs like *say*. In (3.5), the person who believes that Emma's coming is less likely than someone else's coming is the person referred to by the subject *she*.

(3.5) *She said that even Emma came.*

The semantic status of the context proposition in (3.1b) and (3.2b) is claimed to be presupposition; cf. among others Karttunnen and Peters (1979), König (1991). König (1991) describes a presupposition of sentences containing additive particles as in (3.6).

(3.6) Additive particles trigger the presupposition that there is an alternative value under consideration that satisfies the open sentence in the scope of the particle.
(König 1991: 55)

(3.7a) is not acceptable while (3.7b) is not acceptable because of the presupposition described in (3.6).

(3.7) a. *#Maybe nobody else distributed leaflets, but John distributed leaflets too/as well.*

b. *Fred distributed leaflets, but John distributed leaflets too/as well.*

(König 1991: 55)

Gazdar's (1979) proposal also predicts that the context proposition expressed by *even* is a presupposition. According to Gazdar (1979), propositions expressed by utterances are introduced to contexts in a specific order specified in (3.8).

(3.8) 1. the entailment of the uttered sentence S

2. the clausal conversational implicatures of S

3. the scalar conversational implicature of S

4. the presuppositions of S

A new proposition is introduced only when it is consistent with propositions already in a context. For example, conditionals clausally implicate (3.9).

(3.9) A sentence of the form if *p then q* or *p or q* will clausally implicate { P*p*, P~ *p*, P *q*, P~ *q* } (where Pp is to be read 'It is consistent with all the speaker knows that p')

Since presuppositions are introduced after conversational implicatures, if a context proposition is not consistent with a clausal implicature, it is cancelled. (3.10) is an example in which a context proposition is cancelled by a conversational implicature.

(3.10) *If Emma comes, even John comes.*

Since (3.10) conversationally implicates that it is possible that Emma comes or that Emma does not come, although its consequent usually presupposes the context proposition that Emma comes, this presupposition is cancelled by the conversational implicature. The context proposition expressed by *even* is not a conventional implicature or secondary meaning since it is cancellable.

3.1.2 JAPANESE SCALAR ADDITIVE PARTICLES

Japanese has three scalar additive particles, *-sae*, *-desae*, and *-made*. The three particles express what English *even* expresses in positive sentences. Each of the sentences in (3.11) expresses the three propositions in (3.12).

(3.11) a. *Yuka-sae* *ki-ta.*
Yuka-SAE come-PAST
'Even Yuka came.'

b. *Yuka-desae* *ki-ta.*
Yuka-DESAE come-PAST
'Even Yuka came.'

c. *Yuka-made* *ki-ta.*
Yuka-MADE come-PAST
'Even Yuka came.'

(3.12) a. Text proposition: came (Yuka)

b. Context proposition: $\exists x$ ($x \neq$ Yuka $\wedge$ came (x))

c. It is less likely (came (Yuka)) than (came (alternatives))

The sentences in (3.11) mean that Yuka came, that there is at least one individual other than Yuka who came, and that it is less likely that Yuka comes than other individuals. The three particles *-sae*, *-desae*, and *-made* also correspond to *even* in negative sentences. Each of the three sentences in (3.13) expresses the three propositions in (3.14).

(3.13) a. *Yuka-sae* *ko-na-katta.*
Yuka-SAE come-NEG-PAST
'Even Yuka didn't come.'

b. *Yuka-desae* *ko-na-katta.*
Yuka-DESAE come-NEG-PAST
'Even Yuka didn't come.'

c. *Yuka-made* *ko-na-katta.*
Yuka-MADE come-NEG-PAST
'Even Yuka didn't come.'

(3.14) a. Text proposition: ¬ came (Yuka)

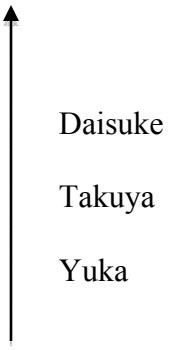
b. Context proposition: ∃x (x ≠ Yuka ∧ ¬ came (x))

c. It is less likely (¬ came (Yuka)) than (¬ came (alternatives))

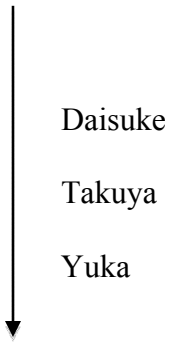
(It is more likely (came (Yuka)) than (came (alternatives)))

The scalar additive particles in (3.13) scope over negation and each sentence in (3.13) means that Yuka did not come, that there is at least one individual other than Yuka, who did not come, and that it is less likely that Yuka did not come than other individuals. I call the proposition in (3.12c) the basic interpretation, and the proposition in (3.14c) the scale reversing interpretation, following Israel (2002). The interpretation in (3.14c) is called the scale reversing interpretation since the implication expressed by (3.13) is reversed from the implication expressed by the proposition under the scope of negative operator. (3.15a) and (3.15a) illustrates the implications expressed by (3.13) and (3.11), respectively.

(3.15) a. Even Yuka didn't come



b. Even Yuka came



For (3.13), Yuka is more likely to come than Takuya and Daisuke. The implication is from the proposition that Yuka did not come to the proposition that Daisuke did not come: if Yuka did not come, Daisuke did not come either. For (3.11), on the other hand, the implication is from Daisuke to Yuka: if Daisuke comes, then Yuka comes also.

There are other environments than negative sentences in which the scale is reversed. For example, implications expressed by conditionals are reversed from scales introduced by their antecedents. For the conditional in (3.16), the implication is from easy questions to difficult questions: (3.17a) pragmatically entails (3.17b). For the antecedent of (3.16), on the other hand, the implication is from difficult questions to easy questions: (3.18b) pragmatically entails (3.18a).

(3.16) *If she solves an easy question, I would be surprised.*

(3.17) a. If she solves an easy question, I would be surprised

b. If she solves a difficult question, I would be surprised

(3.18) a. She solves an easy question

b. She solves a difficult question

In addition to negative sentences and antecedents of conditionals, environments such as questions, *before*-clauses, restrictions of universal quantifiers, etc., which Fauconnier (1979) calls implication reversing environments, license the scale reversing interpretations of scalar additive particles in English and Japanese. Fauconnier (1979) defines implication reversing environments as in (3.19).

(3.19) if R (x_1) $\Rightarrow$ R (x_2)

then U R (x_2) V $\Rightarrow$ U R (x_1) V

(Fauconnier 1979: 294)

In (3.19), U_V is an implication reversing environment. As shown above, conditionals in (3.16) satisfies the definition in (3.19), as shown in (3.20). R (x), x_1 and x_2 in (3.20) are shown in (3.21).

(3.20) if she solves (difficult q) $\Rightarrow$ she solves (easy q)

then (if she solves (easy q) $\rightarrow$ I would be surprised)

$\Rightarrow$ (if she solves (difficult q) $\rightarrow$ I would be surprised)

(3.21) R (x) = she solve x

U_V = if _ I would be surprised

x_1 = difficult question

x_2 = easy question

In addition to the typical interpretation of (3.16), *even* in antecedents of conditionals has another interpretation. For example, while the meaning of *even* in (3.16) is represented as in (3.22), the meaning of *even* in (3.23) is represented as in (3.24).

(3.22) even (*If she solves an easy question, I would be surprised*):

It is less likely (*If she even solves an easy question, I would be surprised*) than (*If she even solves a difficult question, I would be surprised*)

(3.23) *If she even solves a difficult question, I would be surprised.*

(3.24) if even (*she even solves a difficult question*) then I would be surprised:

It is less likely (*she even solves a difficult question*) than (*she even solves an easy question*)

For (3.17), *even* scopes over the conditional, as shown in (3.22) but for (3.23), *even* only scopes over the antecedent. As I briefly mentioned above, I call the interpretation of *even* which scopes over an implication reversing interpretation such as (3.22) the scale reversing interpretation and the interpretation of *even* which does not involve an implication reversing environment in its scope such as (3.24) the basic interpretation.

The focus of this chapter is behaviors of the Japanese three scalar additive particles in implication reversing environments. For example, only -*made* can be under the scope of negation and only -*desae* scopes over conditionals. In this chapter, I discuss which implication reversing environments each of the three Japanese scalar additive particles scopes over and why their interpretations in scale reversing environments differ.

Another thing which I discuss is the behavior of -*sae* in antecedents of conditionals. -*sae*, which otherwise corresponds to *even*, means *at least* when occurring in antecedents of conditionals, as shown in (3.25).

(3.25) *JPN101-de* *C-sae* *to* *reba* *raigakki* *JPN102-ga*
JPN101-for C-SAE receive if next.semester JPN102-NOM
to-re-ru.
take-can-NONPAST
'If you at least receive a C on JPN101, you could take JPN102 next semester.'

I will compare the meanings of *even* and *at least* in antecedents of conditionals, and examine whether the interpretations of *-sae* in antecedents of conditionals and other environments involve one meaning or two distinct meanings.

3.2 SCALE REVERSING INTERPRETATIONS OF *-SAE*, *-DESAE*, AND *-MADE*

The purpose of this section is to show why implication reversing environments are relevant to discuss scalar additive particles. As I briefly introduced in the previous section, Japanese three scalar additive particles differ in which implication reversing environments they scope over. In the following sections, I examine semantic properties of implication reversing environments and how the three particles behave differently in implication reversing environments. First, I review Fauconnier's (1979) analysis on what he calls quantified reading of superlatives and NPIs. Fauconnier proposes that environments such as negative sentences, conditionals, etc., which he refers to as implication reversing environments have common properties. Next, I summarize Israel's (2001) proposal on two different kinds of NPIs, emphatic and attenuating NPIs. Israel (2001) proposes that emphatic NPIs, which inherently denote a low scalar value, express highly informative propositions in implication reversing environments. It is not surprising that the distributions of quantified reading of superlatives or NPIs, and scalar additive particles under scale reversing interpretations are similar, given the similarity of the

semantic functions between them. Finally, I describe which implication reversing environments the three Japanese scalar additive particles scope over. *-made* scopes over only limited implication reversing environments, *-desae* scopes over almost all implication reversing environments and *-sae* is in between.

3.2.1 DIFFERENCES AMONG *-SAE, -DESAE,* AND *-MADE*

As shown in the introduction, *-sae*, *-desae*, and *-made* roughly correspond to *even*. *-sae*, *-desae*, and *-made* in the sentences in (3.26) have the interpretation that it is less likely that Yuka comes than other individuals, while in (3.27) the three particles scope over negation and receive a scale reversing interpretation that it is more likely that Yuka comes than other individuals.

(3.26) *Yuka-sae/desae/made* *ki-ta.*
Yuka-SAE/DESAE/MADE come-PAST
'Even Yuka came.'

(3.27) *Yuka-sae/desae/made* *ko-na-katta.*
Yuka-SAE/DESAE/MADE come-NEG-PAST
'Even Yuka didn't come.'

The three scalar additive particles differ in which implication reversing environments they scope over. For example, in questions, only *-desae* receives a scale reversing interpretation.

(3.28) a. *#Kantanna* *mondai-sae* *deki-ta-no.*
easy question-SAE do-PAST-Q
'Did you even solve an easy question?'

b. *Kantanna* *mondai-desae* *deki-ta-no.*
easy question-DESAE do-PAST-Q
'Did you even solve an easy question?'

c. *#Kantanna* *mondai-made* *deki-ta-no.*
easy question-MADE do-PAST-Q
'Did you even solve an easy question?'

In (3.28a) and (3.28c), in which *-sae* and *-made* occur, scale reversing interpretations are not available and the sentences must receive basic interpretations that an easy question is less likely to be solved than other questions although it is an unusual situation. In (3.28), # indicates that the sentence does not have a scale reversing interpretation.

-made behave differently from *-sae* and *-desae* and it can receive a basic interpretation even in negative sentences. (3.29a), in which *-made* occurs, receives not only a scale reversing interpretation in (3.30a) but also a basic interpretation in (3.30b). For (3.29a) under the interpretation in (3.30b), *-made* is under the scope of negation although *-made* and negation occur in the same clause.

(3.29) a. *Yuka-made* *ko-na-katta.*
Yuka-MADE come-NEG-PAST
'Even Yuka didn't come.'

b. *Yuka-sae/desae* *ko-na-katta.*
Yuka-SAE/DESAE come-NEG-PAST
'Even Yuka didn't come.'

(3.30) a. Scale reversing: ‘Even Yuka didn’t come.’

b Basic: ‘Yuka, who is less likely to come, didn’t come.’
‘That she can solve even a difficult question is not true/the case’

-sae, *-desae*, and *even* in negative sentences always scope over negation and receive scale reversing interpretation. However, when *-made* occurs in negative sentences, it can be under the scope of negation. (3.29a) expresses either the scale reversing interpretation that it is more likely that Yuka comes or the scale preserving interpretation that it is less likely that Yuka comes.

3.2.2 FAUCONNIER (1979)

As I mentioned in the introduction, scale reversing interpretations arise in various environments. Fauconnier (1979) discusses superlatives with quantified readings and explains their distributions by what he calls implication reversing environments. Fauconnier also briefly mentions that the NPI *ever* seems to receive similar interpretations as superlatives with quantified readings. In this section, I introduce Fauconnier’s definition of implication reversing environments and show what kind of interpretations superlative and *ever* receive in implication reversing environments.

Fauconnier (1979) introduces various environments in which superlatives produce quantified readings. It is not very clear what Fauconnier (1979) means by quantified readings but quantified readings seem to correspond to an existential interpretation of NPI *any*. Kadmon and Landman (1993), for example, propose that *any* behaves like existential quantifiers in implication reversing environments. In environments in which quantified readings are available,

sentences containing a superlative pragmatically entail sentences in which the superlative is replaced with any randomly picked alternative. For example, in (3.31a), a superlative occurs in a negative sentence and the sentence is interpreted as (3.31b). (3.31a) and (3.31b) mean that Max cannot solve any randomly picked problem.

(3.31) a. *Max cannot solve the simplest problem.*

b. *Max cannot solve any problem.*

(Fauconnier 1979: 291)

The corresponding positive sentence does not produce a quantified reading.

(3.32) a. *Max can solve the simplest problem.* (Fauconnier 1979: 291)

b. *Max can solve any problem.*

(3.32a) does not mean (3.32b), in which the superlative is replaced with *any*. Even if one can solve the simplest problem, it does not follow that she can solve any randomly picked problem; she might not be able to solve less simple problems. In addition to negative sentences, Fauconnier (1979) lists environments in (3.33a) – (3.33h) in which superlatives produce quantified readings. In (3.33a) – (3.33h), the sentences in (aa)-(ha) have the same interpretations as sentences in (ab),-(hb) in which superlatives are replaced with *any*. For example, the conditionals in (3.33ea) and (3.33eb) means that the speaker will be surprised if Max can solve any randomly picked problem.

(3.33) a. negation

aa. *Max cannot solve the simplest problem.*

ab. *Max cannot solve any problem.*

b. negative matrix

ba. *You can't convince me that Max can solve the simplest problem.*

bb. *You can't convince me that Max can solve any problem.*

c. too…too

ca. *Max is too proud to accept the slightest criticism.*

cb. *Max is too proud to accept any criticism.*

d. before

da. *He was executed before he could show the slightest sign of repentance.*

db. *He was executed before he could show any sign of repentance.*

e. if clause

ea. *I'll be surprised if Max can solve the simplest problem.*

eb. *I'll be surprised if Max can solve any problem.*

f. universals

fa. *Anybody who can solve the simplest problem is fit for this job.*

fb. *Anybody who can solve any problem is fit for this job.*

g. questions

ga. *Did Max solve the simplest problem?*

gb. *Did Max solve any problem?*

h. only/first

ha. *Max was the only/first one to show the faintest sign of repentance.*

hb. *Max was the only/first one to show any sign of repentance.*

(Fauconnier 1979: 292)

According to Fauconnier (1979), those environments reverse the implications or, in other words, reverse the orientation of scales. (3.34) is the definition of implication reversing environments U _ V. The definition says that the direction of the implication of certain propositions is reversed when they occur in implication reversing environments.

(3.34) if $R (x_1) \Rightarrow R (x_2)$

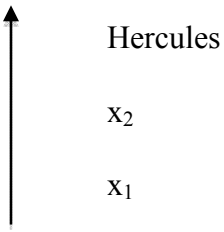
then $U R (x_2) V \Rightarrow U R (x_1) V$

(Fauconnier 1979: 294)

Let us look at the proposition in (3.35) and the scale associated with it in (3.36).

(3.35) R (x) = ‘x works’

(3.36)



The scale in (3.36) indicates that Hercules is the hardest working individual. The direction of implication is from x_1 to x_2 as shown in (3.37) since if a less hard working individual works, it implies that a more hard working individual also works. It should be noted that the implication in (3.37) is not logical but pragmatic. We usually implicate (3.37) but the implication sometimes does not hold: less hard working individuals sometimes work harder than hard working individuals.

(3.37) x_1 works $\Rightarrow$ x_2 works

(3.38) is an example of implication reversing environments.

(3.38) T (x) = Max works more than ___ (Fauconnier 1979: 295)

(3.38) is an implication reversing environment since for (3.35), we have the implication in (3.37) and for (3.38), we have (3.39). The direction of implications in (3.37) and (3.39) are reversed form each other: for (3.37) the implication is from x_1 to x_2, but for (3.39) it is from x_2 to x_1.

(3.39) Max works more than x_2 works $\Rightarrow$ Max works more than x_1 works

In addition to superlatives with quantified readings, implication reversing environments are also relevant for the distributions of NPIs. Fauconnier (1979) mentions that implication reversing environments license the NPI *ever*, as shown in (3.40). More recently, Israel (1998) classifies the uses of *ever* into three types and calls *ever* in implication reversing environments existential *ever*. Both existential *ever* and NPI *any* are existential operators whose distributions are restricted in implication reversing environments. (3.40a), for example, means that Max does not work at any randomly picked period of time.

(3.40) negation

a. *Max doesn't **ever** work.*

negative matrix

b. *You can't convince me that Max **ever** work.*

too…too

c. *Max is too lazy to **ever** work.*

before

d. *Before he **ever** works, Alex will try all other means of surviving.*

if clause

e. *If Max **ever** works he will be rewarded.*

universals

f. *Anybody who has **ever** worked enjoys doing nothing.*

questions

g. *Did Max **ever** work?*

only/first

h. *Max was the only/first one to **ever** work for Rockefeller.*

(Fauconnier 1979: 293)

3.2.3 ISRAEL (2001)

As shown in the previous section, the NPI *ever* is licensed in implication reversing environments defined by Fauconnier (1979). More recently, Israel (2001) discusses the semantic functions of NPIs and argues that propositions expressed by sentences containing NPIs are either highly informative or weakly informative.

Israel (2001) classifies polarity items in terms of its scalar points and its rhetorical properties. Polarity items describe either high or low scale and have either an emphatic or attenuating rhetorical effect. For example, in (3.41), the NPIs, *a wink*, *the least bit* and *budge an inch* denote low scalar points and the sentences express an emphatic or highly informative proposition. In (3.42), on the other hand, the NPIs, *much*, *all that* and *long* denote high scalar points and the sentences express attenuating or weakly informative propositions.

(3.41) a. *I didn't sleep a wink.*

b. *We are not the least bit amused.*

c. *She didn't budge an inch.*

(Israel 2001: 302)

(3.42) a. *She didn't sleep much.*

b. *He's not all that clever.*

c. *This won't take long.*

(Israel 2001: 302)

In (3.41), the emphatic NPIs are licensed by a negation. However, similar to superlatives under quantified readings, negative sentences are just one of environments which license NPIs and other implication reversing environments such as antecedents of conditionals, the scope of an interrogative, restriction of a universal quantifier, and the standard of a comparative, also license emphatic NPIs, as shown in (3.43a)–(3.43d). In all these environments, the direction of implications are from a low scalar value to a high scalar value. In (3.43a), for example, if you show a larger degree of nervousness, then sky-diving will also be skipped.

(3.43) a. *If you're the least bit nervous we can skip the sky-diving.*

b. *Is Monica the least bit worried about the investigation?*

c. *Anyone who is the least bit interested in verbal periphrasis will want to read this book.*

d. *I'd sooner die than make you the least bit uncomfortable.*

(Israel 2001: 298)

Scalar additive particles behave like emphatic NPIs in implication reversing environments. Emphatic NPIs denote a low scalar value and sentence containing them are highly informative. For example, (3.44) expresses an informative proposition in that the text proposition that Yuka did not come pragmatically entails a context proposition that someone else did not come. This indicates that the proposition that Yuka came, which is under the scope of negation in the text proposition, is entailed by the proposition under the scope of negation in the context proposition that someone else came. If informativeness is defined as more informative propositions pragmatically entail less informative propositions, the proposition that Yuka came is less informative than the proposition that someone else came.

(3.44) *Even Yuka didn't come.*

Negation in (3.44) scopes over this less informative proposition and the sentence expresses an informative proposition. Given the similarity between the semantic function of *even* and emphatic NPIs, it is natural to expect that *even* under scale reversing interpretations, occurs in similar environments as emphatic NPIs.

It should be noted, however, that *even* does not have to take a less informative semantic argument. In contrast to emphatic NPIs in (3.41), which denote a low scalar value and have to be in the scope of negation, *even* can express informative sentences without negation as shown in (3.45).

(3.45) *Even Yuka came.*

NPIs are specified for both a scalar and rhetorical property while *even* is only specified for a rhetorical property.

3.2.4 *-SAE, -DESAE* AND *-MADE* IN THE IMPLICATION REVERSING ENVIRONMENTS

As shown in previous sections, implication reversing environments license superlatives with quantified readings and emphatic NPIs such as *ever*. Fauconnier (1979) notes that *even* has a similar semantic function as superlatives and indicates the end point of a scale since (3.47) seem to have a quantified reading as (3.46) and (3.48).

(3.46) *Max cannot solve the simplest problem.*

(3.47) *Max cannot solve even a simple problem.*

(3.48) *Max cannot solve any problem.*

This observation appears to be correct and implication reversing environments are also relevant for characterizing the distributions of *even* under scale reversing interpretations. *Even* scopes over implication reversing environments and receives scale reversing interpretations as shown in (3.49).

(3.49) negation

a. *Max doesn't **even** work.*

negative matrix

b. *You can't convince me that Max **even** work.*

too…too

c. *Max is too lazy to **even** work.*

before

d. *Before he **even** works, Alex will try all other means of surviving.*

if clause

e. *If Max **even** works he will be rewarded.*

universals

f. *Anybody who has **even** worked enjoys doing nothing.*

questions

g. *Did Max **even** work?*

only/first

h. *Max was the only/first one to **even** work for Rockefeller.*

For example, in (3.49a), *even* scopes over negation and has the interpretation that it is less likely that Max does not work than that he does not do other things.

One may make a prediction that Japanese three scalar additive particles *-sae*, *-desae* and *-made*, which express the same text and context proposition and secondary meaning as *even* also scope over implication reversing environments. However, Japanese scalar additive particles vary in what implication reversing environments they scope over. In the following examples, # indicates that particles cannot scope over an implication reversing environment: they can be under the scope of that environment.

(3.50) *negative sentences*:

a. *Kantanna* *mondai-sae/de-sae/(#)made*
easy question-SAE/DESAE/MADE
tok-e-na-i.
solve-can-NEG-NONPAST
'She cannot even solve an easy question.'

negative matrix:

b. *Kantanna* *mondai-sae/de-sae/#made* *tok-e-ru*
easy question-SAE/DESAE/MADE solve-can-NONPAST
to-wa *omowa-na-i.*
COMP-TOP think-NEG-NONPAST

'I don't think that she can even solve an easy question.'

negative matrix (if-complement):

c. *Kantanna* *mondai-sae/desae/#made*
easy question-SAE/DESAE/MADE
tok-e-ru-kadouka *wakara-na-i.*
solve-can-NONPAST-if know-NEG-NONPAST

'I don't know if she can even solve an easy question.'

too…too:

d. *Kantanna* *mondai-sae/desae/#made* *toku-ni-wa*
easy question-SAE/DESAE/MADE solve-to-TOP
jikan-ga *nasa-sugi-ru.*
time-NOM not.have-too-NONPAST

'It's too short to even solve an easy question.'

before:

e. *Kantanna* *mondai-sae/desae/#made* *tok-u*
easy question-SAE/DESAE/MADE solve-NONPAST
maeni *shiken-ga* *owat-ta.*
before exam-NOM finish-PAST

'The exam was finished before I even solved an easy question.'

complements of surprise:

f. *Kantanna* *mondai-#sae/desae/#made* *toi-ta*
easy question-SAE/DESAE/MADE solve-PAST
to-wa *odoroi-ta.*
COMP-TOP be.surprised-PAST

'I was surprised that (s/he) even solved an easy question.'

universal statements:

g. *Hidoi* *essei-#sae/desae/#made* *kai-ta* *hito-wa*
terrible essay-SAE/DESAE/MADE write-PAST person-TOP
daredemo *syougakukin-ga* *moraeru.*
anyone scholarship-NOM receive-can

'Anyone who even writes a terrible essay can receive a scholarship.'

questions:

h. *Kantanna* *mondai-#sae/desae/#made*
easy question-SAE/DESAE/MADE
tok-e-ru-no.
solve-can-NONPAST-Q

'Can you even solve an easy question?'

only, first:

i. *Kantanna* *mondai-#sae/desae/#made* *toi-ta*
easy question-SAE/DESAE/MADE solve-PAST
no-wa *Takuya-dake-datta.*
COMP-TOP Takuya-only-PAST

'It was only Takuya who even solved an easy question.'

If-clauses:

j. *Takuya-ga kantanna mondai-sae/desae/#made*
Takuya-NOM easy problem-SAE/DESAE/MADE
tok-e-ta ra odoroki-da.
solve-can-PAST if be.surprised-NONPAST

'I would be surprised if Takuya can at least/even solve an easy question.'

I will discuss the difference among the three scalar additive particles in implication reversing environments in section 3.4. However, before the discussion of the three particles in implication reversing environments, I will discuss the behavior of *-sae* in antecedents of conditionals in the next section. As I briefly mentioned in the introduction, *-sae* when it occurs in antecedents of conditionals, seems to correspond to *at least* but not *even*. I will discuss why *-sae* receives an interpretation distinct from the one which *even* receives in antecedents of conditionals.

3.3 -*SAE* IN ANTECEDENTS OF CONDITIONALS

In this section, I discuss *-sae* in antecedents of conditionals. As described in previous sections, although both *-sae* and *-desae* scope over conditionals, *-sae* and *-desae* mean *at least* and *even* in this environment, respectively as shown in (3.51).

(3.51) *JPN101-de C-sae/desae to reba raigakki JPN102-ga*
JPN101-for C-SAE receive if next.semester JPN102-NOM
to-re-ru.
take-can-NONPAST

'If you at least/even receive a C on JPN101, you could take JPN102 next semester.'

In (3.51), *-sae…ba* does not correspond to either English *if…even* or *even if* constructions but it is similar to *if …at least* or *as long as*. In the following sections, first, I describe the differences between English *if…even* and *even if* constructions and show that *-sae…ba* construction is different from either *if…even* or *even if* construction. Secondly, I discuss the difference between *if…even* and *if…at least* constructions and argue that *-sae* when occurring in antecedents of conditionals is similar to *if…at least*. However, although *-sae* and *even* in antecedents of conditionals appear to be different at least if one considers the English translations of the relevant Japanese examples, it does not necessarily indicate that *-sae* is ambiguous. I propose that *-sae* has only one meaning and argue that the reason why *-sae* means *at least* in antecedents of conditionals is that *-sae* retains a conversationally implicated meaning of conditionals.

3.3.1 *IF…EVEN* AND *EVEN IF* CONSTRUCTIONS

Before looking at the meaning of *-sae* in antecedents of conditionals, I review König's (1991) discussion about the meanings of *if…even* and *even if* constructions to compare *-sae...ba* 'if…-SAE' with these two constructions. The difference between the two constructions is that in *if…even* constructions, *even* focuses on a constituent in a proposition and evokes alternatives to the constituent while in *even if* constructions, *even* focuses on the antecedent and evokes one alternative, namely the antecedent's polar opposite proposition.

3.3.1.1 *IF…EVEN*

In *if…even* constructions in which *even* has scale reversing interpretations, *even* scopes over the whole conditionals and focuses on a constituent in the antecedents. (3.52), for example, expresses the three propositions in (3.53).

(3.52) *There's a hurricane down south. The weathermen say we're safe but **if** it **even** thinks of heading north, we run for shelter.* (British National Corpus: BNC)

(3.53) a. T(ext conditional): if it thinks of heading north, we run for shelter

b. C(ontext conditional): if it heads north, we run for shelter

c. Secondary meaning: T is less likely to be true than C

Even in (3.52) focuses on *think of heading north* and it evokes alternatives such as *head north*. (3.52) expresses the secondary meaning that it is less likely for us to run for shelter when a hurricane thinks of heading north than when it actually heads north.

(3.54) is another example of *even* in antecedents of conditionals.

(3.54) ***If** she **even** fried an egg, she directed upon it the beam of her concentration, almost praying it would not break.* (BNC)

As (3.52), *even* scopes over the entire conditional and focuses on a constituent in the antecedent *fried an egg*. (3.54) expresses the three propositions in (3.55).

(3.55) a. T(ext proposition):

If she fried an egg, she directed upon it the beam of her concentration

b. C(ontext proposition): If she does more important things, she directed upon it the beam of her concentration

c. T is less likely to be true than C

(3.54) expresses the secondary meaning that it it less likely that she directs the beam of her concentration upon it when she fries an egg than when she does more important things.

In examples like (3.52) and (3.54), *even* scopes over the entire conditional and the focus is a constituent in the antecedent. Sentences like (3.52) and (3.54) express the secondary meaning that the conditional with the focused item is less likely to be true than the context conditionals, in which the focused item is replaced with alternatives. For the sentence (3.52), the focused item and an alternative item are (3.56a) and (3.56b), respectively.

(3.56) a. f(ocus): thinking of heading north

b. a(lternative): heading north

The whole conditional in (3.52) is less likely to be true than an alternative conditional as shown in (3.57).

(3.57) Less likely

P (f) → Q: Running for shelter when a hurricane thinks of heading north

P (a) → Q: Running for shelter when a hurricane is heading north

In *if ..even* constructions, the text conditional is ranked higher than the context conditionals on the scale of unlikelihood. The use of *even* in *if ..even* constructions is described in (3.58).

(3.58) even (P (f) → Q):

a. T(ext proposition): P (f) → Q

b. C(ontext proposition): P (a) → Q

c. T is less likely to be true than C

3.3.1.2 *EVEN IF*

In *even if* constructions, *even* scopes over the entire conditionals and focus on the proposition expressed by the antecedent. (3.59), for example, expresses the three propositions in (3.60).

(3.59) ***Even if*** *you are under an umbrella, you (could still) get sunburnt.* (BNC)

(3.60) a. T(ext conditional): if you are under an umbrella, you (can) get sunburnt

b. C(ontext conditional):
if you are not under an umbrella, you (can) get sunburnt

c. T is less likely to be true than C

In (3.59), *even* focuses on the antecedent that you are under an umbrella and its alternative is the negative counterpart that you are not under an umbrella. *Even* in (3.59) focuses not on a constituent but on the entire proposition. This type of focus is referred to as verum focus. (3.59) expresses the secondary meaning that it is less likely that you get sunburned when you are under an umbrella than when you are not under an umbrella.

The meaning of *even* in *even if* constructions is represented in (3.61)

(3.61) a. T(ext proposition): $P \rightarrow Q$

b. C(ontext proposition): $\neg P \rightarrow Q$

c. T is less likely to be true than C

P and Q in (3.60) are (3.62a) and (3.62b) respectively.

(3.62) a. P: *you are under an umbrella*

b. Q: *you get sunburnt*

For *even if* constructions, the antecedent of the context conditional has the opposite polarity to the antecedent of the text proposition. The whole conditional is less likely to be true than the context conditional as illustrated in (3.63).

(3.63) Less likely

$P(f) \rightarrow Q$

$\neg P(a) \rightarrow Q$

3.3.2 JAPANESE -*SAE…-BA* AND ENGLISH *EVEN IF* AND *IF …EVEN*

In this section, I show that -*sae…ba* constructions, which are translated as 'if…at least' are different from either *even if* or *if…even* constructions. -*sae…ba* is different from *even if* since the context conditionals, whose antecedent is the negative counterpart of that of the text conditional, does not seem to be true for -*sae…ba* constructions. -*sae…ba* is different from *if …even* constructions, either since -*sae…ba* does not express an expectation which *even if* and *if…even* express. I claim that for *even if* and *if…even*, there is an expectation that when the consequent is true, the antecedent is usually false while for -*sae…ba*, there is no such expectation. Finally, I also claim that -*sae…ba*, although it is sometimes translated as 'if…only', is different form *if…only*.

3.3.2.1 -*SAE…-BA* IS DIFFERENT FROM *EVEN IF*

-*sae…-ba* constructions cannot be analyzed as *even if* constructions. As shown above, for *even if* constructions, the antecedents of context conditionals have the opposite polarity than the antecedents of the text propositions, as shown in (3.64).

(3.64) a. Text conditional: $P \rightarrow Q$

b. Context conditional: $\neg P \rightarrow Q$

However, (3.64b) is not part of what is expressed by *-sae…ba* constructions such as (3.65)-(3.67). In the examples, the consequents would not be true under the condition expressed by the negative counterpart of the antecedent of the text proposition.

(3.65) *Konna sinpuruna tyousyoku datte oisii omisosiru-sae*
such simple breakfast even.if tasty miso.soup-SAE
are ba watasi-wa tottemo siawase,
have if I-TOP very happy

'Even if it is such a simple breakfast, if I have at least a good miso-soup, I'm happy.'

(3.66) *Kore-sae are ba nemu-re-ru toiu no-wa*
this-SAE have if sleep-can-NONPAST that thing-TOP
huminsyouno hito ni-wa daiji-desu.
insomnia person to-TOPimportant-NONPAST

'The belief that if you at least have it(a medication), you will be able to sleep, is important for people suffering from insomnia.'

(3.67) *Wakuchin-sae are ba inochi-ga tasuka-ru*
vaccine-SAE have if life-NOM be.helped-NONPAST
kodomotachi-wa sekai-de ichinichi-ni yaku children-TOP
world-in a.day-in about
rokusennin-ni-mo tassu-ru.
six.thousand.people-to-even reach-NONPAST

'The number of children, who could be saved as long as they receive vaccines(if they at least receive vaccines), reaches even 6000.'

For (3.65), the antecedent of the conditional expresses the minimum requirement for the speaker to be happy. The speaker is happy if she has a good miso-soup although there could be better situation in which she is happier. If the speaker does not have a good miso-soup, she is probably not happy. Similarly, for (3.66), having a medication is the minimum requirement for one to be able to sleep and if one who suffers from insomnia does not have a medication, she probably cannot sleep. For (3.67), if the children do not receive vaccines, which are the minimum requirement to save them, children probably cannot be saved. (3.65)-(3.67) show that (3.64b) is not the alternative evoked by *-sae…ba* constructions.

One might wonder how Japanese expresses what *even if* constructions such as (3.68) express. The sentence in (3.69) corresponds to (3.68).

(3.68) *Even if you get a bad grade, you can receive a scholarship by writhing a good essay.*

(3.69) *Warui seiseki-o tot-te-mo syougakukin-ga*
bad grade-ACC get-CONJ-MOscolarship-NOM
mora-e-ru.
receive-can-NONPAST
'Even if you get a bad grade, you can receive a scholarship.'

To expresses the meaning of (3.68), Japanese uses another particle *-mo*, as shown in (3.69).

3.3.2.2 *EVEN* AND *AT LEAST* IN ANTECEDENTS OF CONDITIONALS

As mentioned above, *-sae* in antecedents of conditionals appears to mean *at least* rather than *even*. The difference between English *even* and *-sae* in antecedents of conditionals is that for

even, there is an expectation that the antecedent is false when the consequent is true while there is no such expectation for -*sae*. In the following sections, after looking at the difference between *even* and *at least*, which seems less clear than we intuitively may think, I compare *even* and -*sae* in antecedents of conditionals and argue that -*sae* has a similar interpretation as *at least*.

3.3.2.2.1 DIFFERENCE BETWEEN *IF…AT LEAST* AND *IF …EVEN*

Conditionals in which *even* and *at least* occur in the antecedents pragmatically entail context conditionals. In both in (3.70) and (3.71), if one gets a C, one would receive a scholarship and if one gets a better grade than a C, one would also receive a scholarship.

(3.70) *If you even get a C, you would receive a scholarship.*

(3.71) *If you at least get a C, you would receive a scholarship.*

There is, however, a difference between contexts in which *even* and *at least* are appropriate. Let us look at (3.72) and (3.73).

(3.72) a. *If you even write a bad essay, you would receive a scholarship.*

b. *#If you even write a good essay, you would receive a scholarship.*

(3.73) a. *#If you at least write a bad essay, you would receive a scholarship.*

b. *If you at least write a good essay, you would receive a scholarship.*

Conditionals with *even* in the antecedents seem to express situations which are unlikely to happen. For a conditional containing *even* in the antecedent, one expects that the conditional is false, while there is no such expectation for conditionals containing *at least* in the antecedents. (3.72a) is acceptable since it is expected that if one writes a bad essay, one usually does not receive a scholarship. The meaning of conditionals in which *even* occurs in the antecedents is described as in (3.74).

(3.74) a. Even (P (f) $\rightarrow$ Q):
It is less likely for (P (f) $\rightarrow$ Q) to be true than (P (a) $\rightarrow$ Q)

b. It is expected P (f) $\rightarrow \neg$ Q

Because of the expectation in (3.74b), (3.72b) sounds unnatural. One expects to receive a scholarship if one writes a good essay.

(3.73a) is not acceptable since conditionals in which *at least* occurs in the antecedents, do not have the expectation in (3.74b). The antecedents in (3.73) just indicate the minimum sufficient condition for the consequent to be true. It is more natural that the minimum sufficient condition to receive a scholarship is to write a good essay than to write a bad essay. The unacceptability of (3.73a) comes from knowledge of the world that writing a bad essay would typically not be the minimum sufficient condition for receiving a scholarship.

(3.75) and (3.76) further illustrate the difference between *even* and *at least*. What is discussed in (3.75) and (3.76) are how many oranges are enough to get the necessary amount of vitamin C for a day. *Even* is not natural when it focuses on a relatively large amount such as three glasses of orange juice as shown in (3.75a) while it is natural when it focuses on a small

amount such as half a glass of orange juice as shown in (3.75b). *At least* in the antecedent of a conditional, on the other hand, is natural when it focuses on either a small amount or large amount as shown in (3.76).

(3.75) a. *# If you even drink three glasses of orange juice, you can get the vitamin C necessary for a day.*

b. *If you even drink half a glass of orange juice, you can get the vitamin C necessary for a day.*

(3.76) a. *If you at least drink three glasses of orange juice, you can get the vitamin C necessary for a day.*

b. *If you at least drink half a glass of orange juice, you can get the vitamin C necessary for a day.*

We usually believe that the more orange juice one drinks, the more likely it is that one gets the vitamin C necessary for a day. This world knowledge conflicts with the expectation in (3.74b) if the amount of orange juice is large. For the expectation in (3.74b) to be satisfied, the amount of orange juice one drinks to get enough vitamin for a day should be small such as half a glass in (3.75b).

One might wonder what is the semantic status of the expectation in (3.74b). Rullmann and Nakanishi (forthcoming) argue that the difference between *even* and *at least* in implication reversing environments is that what is focused on by *even* is the lowest value on a scale but what is focused on by *at least* is not. For example, (3.77a), in which *even* occurs, has numbers larger

than two like three, four… as alternatives while (3.77b), in which *at least* occurs, has not only the number larger than two but also numbers smaller than two like zero and one as alternatives.

(3.77) a. *Did you answer even two questions?*
Two < three < four < …

b. *Did you answer at least two questions?*
zero < one < two…

Rullmann and Nakanishi's analysis appears to be correct. After (3.78), (3.79a) is not completely natural but (3.79b) seems to be acceptable. (3.79a) is not acceptable since it excludes one from alternatives while (3.79b) is acceptable since it has one as an alternative.

(3.78) *I know you answered one question, but…*

(3.79) a. *#Did you answer even two questions?*

b. *Did you answer at least two questions?*

According to Rullmann and Nakanishi, in (3.80), alternatives to getting a C is getting a better grade than a C.

(3.80) *If you even get a C, you would receive a scholarship.*

Consequently, the consequent in (3.80) is true for any alternatives. It is conversationally implicated that conditionals whose consequents are true for any alternative are unlikely to be true

since otherwise the conditionals are not informative. Geis and Zwicky (1971) propose the principle in (3.81), which is refered to as Conditional Perfection(CP).

(3.81) A sentence of the form $X \supset Y$ invites an inference of the form $\sim X \supset \sim Y$.

(3.82), for example, usually invites an inference that if John does not lean any further, he will not fall.

(3.82) *If John leans out of that window any further, he'll fall.*

For (3.82), X and Y is (3.83a) and (3.83b), respectively.

(3.83) a. Worlds in which John leans

b. Worlds in John falls

Situations described by conditionals containing *even* in the antecedents like (3.80) do not satisfy CP since according to Rullmann and Nakanishi, the scalar value of the focused constituent is lowest in a given context. Conditionals which do not satisfy CP are not informative and this is why conditionals such as (3.80) conversationally implicate (3.84). Without this conversationally implicated meaning, (3.80) is no more informative than (3.85).

(3.84) *If you get a C, usually you will not receive scholarship.*

(3.85) *You receive a scholarship regardless of your grade.*

The conversationally implicated meaning in (3.84) serves as CP of the context proposition in (3.86b).

(3.86) *If you even get a C, you would receive a scholarship.*

a. Text proposition: If you get a C, you would receive a scholarship

b. Context proposition:
If you get a better grade than C, you would receive a scholarship

If the conditional in (3.80) does not have the conversationally implicated meaning in (3.84), it just expresses (3.85) and there is not reason to use a conditional to express the situation. However, because of the conversationally implicated meaning in (3.85), the context proposition in (3.86b) satisfies CP in most of possible worlds and (3.80) is informative as a conditional since its context proposition satisfy CP and there are situations in which its consequent is false at least in possible worlds. The expectation in (3.74b) is a conversational implicature from the restriction *even* imposes on alternatives to make conditionals informative.

3.3.2.2.2 *-SAE…-BA* IS DIFFERENT FROM *IF…EVEN*

I compared *even* and *at least* in the antecedents of conditionals and described the difference between the two as follows. In (3.87) and (3.88), *even* has only better grades than C as

its alternatives while *at least* has both better and worse grades than C, following Rullman and Nakanishi (forthcoming).

(3.87) *If one even gets C on JPN101, she would be able to take JPN102 next semester.*

(3.88) *If one at least gets C on JPN101, she would be able to take JPN102 next semester.*

As discussed in the previous section, this restriction on alternatives conversationally implicates that it is expected that when the antecedent is true, the consequent is usually false as shown in (3.89b).

(3.89) a. Even (P (f) $\rightarrow$ Q):
It is less likely for (P (f) $\rightarrow$ Q) to be true than (P (a) $\rightarrow$ Q)

b. Conversationally implicature: (It is expected P (f) $\rightarrow \neg$Q)

This conversational implicature seems to be what distinguishes *-sae* from *even*. In (3.90), in which *-sae* occurs, for example, receiving vaccines is usually considered sufficient to save children.

(3.90) *Wakuchin-sae are ba inochi-ga tasuka-ru*
vaccine-SAE have if life-NOM be.helped-NONPAST
kodomotachi-wa sekai-de ichinichi-ni yaku
children-TOP world-in a.day-in about
rokusennninn-ni-mo tassu-ru.
six.thousand.people-to-even reach-NONPAST
'The number of children, who could be saved as long as they receive vaccines(if they can at least receive vaccines), reaches even 6000.'

If -*sae* corresponds to *even* in antecedents of conditionals, there should be an expectation that vaccines usually do not save children, which does not accord with our world knowledge. Examples like (3.90) show that -*sae* in antecedents of conditionals corresponds to *at least* but not to *even*.

3.3.2.3 -*SAE* AND -*DAKE*

I have mentioned that -*sae* when occurring in antecedents of conditionals means *at least*. However, -*sae* in antecedents of conditionals, is sometimes translated as *only*. (3.91a), in which -*sae* occurs and (3.91b), in which -*dake* 'only' occurs, seem to receive the same interpretation.

(3.91) a. *Essei-sae kake-ba syougakukin-ga*
essay-SAE write-if scholarship-NOM
mora-e-ru.
receive-can-NONPAST
'If you write at least/only an essay, you can receive a scholarship.'

b. *Essei-dake kake-ba syougakukin-ga*
essay-DAKE write-if scholarship-NOM
mora-e-ru.
receive-can-NONPAST
'If you write only an essay, you can receive a scholarship.'

However, -*sae* and -*dake* in (3.92) and (3.93), are not completely equivalent.

(3.92) *Ringo-sae* *tabere-ba* *ii.*
organic.food-SAE put-if good
'It's good if you at least eat apples.'

(3.93) *Ringo-dake* *tabere-ba* *ii.*
organic.food-DAKE put-if good
'It's good if you only eat apples.'

(3.92), in which -*sae* occurs, means eating apples is a minimum requirement for the consequent to be true. (3.93), in which -*dake* occurs, also has this interpretation but the sentence has another interpretation that one must not eat any other foods for the consequent to be true. For (3.92), there would always be other possibilities, for example, eating apples and oranges for the consequent to be true and the sentence does not mean that one must not eat other foods than apples. -*sae* and -*dake* in antecedents of conditionals are not completely equivalent and -*sae* is closer to *at least* in antecedents of conditionals than *only*.

3.3.3 HOW TO EXPRESS *IF …EVEN* IN JAPANESE

I have shown that -*sae* means *at least* in antecedents of conditionals and it means *even* in other environments. What is not clear yet is whether -*sae* is ambiguous between its interpretations in antecedents of conditionals and other environments or -*sae* has one meaning in both kinds of environments. I argue that there is only one meaning for -*sae* and the reason why -*sae* looks different from *even* is that as Rullman and Nakanishi (forthcoming) points out, there are two different ways of choosing alternatives.

As I discussed in previous sections, the meaning of *if…even* structures is as described in (3.93)

(3.93) Even (P (f) → Q):

a. It is less likely for (P (f) → Q) to be true than (P (a) → Q)

b. Conversationally implicature: (It is expected P (f) → ¬Q)

-sae…ba constructions are different from *if…even* since *-sae…ba* does not have the constraint in (3.93b). One might wonder how Japanese expresses what *if…even* expresses. Japanese needs another particle *-desae* to express the same interpretation as *even* in antecedents of conditionals. (3.94) is not acceptable since *-sae* does not have the expectation in (3.93b) but (3.95), in which *-desae* is replaced with *-sae* is acceptable.

(3.94) *#Hidoi* *essai-sae* *kake* *ba* *syougakukinn-ga*
terrible essay-SAE write if scholarship-NOM
mora-e-ru.
receive-can-NONPAST
'If you at least write a bad essay, you could receive a scholarship.'

(3.95) *Hidoi* *essai-desae* *kake* *ba* *syougakukinn-ga*
terrible essay-DESAE write if scholarship-NOM
mora-e-ru.
receive-can-NONPAST
'If you even write a bad essay, you could receive a scholarship.'

(3.95) is acceptable since *-desae* is similar to *even* and conversationally implicates that if one writes a terrible essay, she usually would not receive a scholarship. One may wonder why only -

sae, which is otherwise semantically the same as *even* and *-desae*, retains a conversationally implicated meaning. I will discuss the meaning of *-desae* and *-sae* and compare them with *even* in the following section.

3.4 *-SAE* AND *-DESAE* IN IMPLICATION REVERSING ENVIRONMENTS

As I mentioned in section 3.2, *-sae* and *-desae* differ in what implication reversing environments they scope over. Both *-sae* and *-desae* scope over environments such as negative sentences, *without* clause, etc. and only *-desae* scope over environments such as questions, universal statements, etc. *-sae* scopes over conditionals, but it does not mean *even* then but *at least*. Table 3.1 summarizes the scope of *-sae*/*desae* in implication reversing environments.

	-sae	*-desae*
clausemate negation, *before clauses*	wide scope	wide scope
matrix negation	wide/narrow scope	wide/narrow scope
conditionals	wide/narrow scope	wide/narrow scope
questions	narrow scope	wide/narrow scope
universal statements, *only/first*	narrow scope	wide/narrow scope

Table 3.1: *-sae* and *-desae* in implication reversing environments

3.4.1 -*SAE* IN IMPLICATION REVERSING ENVIRONMENTS

3.4.1.1 -*SAE* IN NEGATIVE SENTENCES, NEGATIVE MATRIX AND *BEFORE* CLAUSES

As shown in (3.96) through (3.98), -*sae* must scope over clausemate negation, matrix negation structurally embedding -*sae*, and *before* clauses. # in the (b) sentences indicates that -*sae* is infelicitous when under the scope of clausemate negation, matrix negation, clause or *before* clause.

(3.96) *negative sentences*:

a. *Kantanna* *mondai-sae* *tok-e-na-i.*
easy question-SAE solve-can-NEG-NONPAST
'She cannot even solve an easy question.'

b. #*Muzukashii* *mondai-sae* *tok-e-na-i.*
difficult question-SAE solve-can-NEG-NONPAST
#'She cannot even solve a difficult question.'

(3.97) *negative matrix*:

a. *Kantanna* *mondai-sae* *tok-e-ru*
easy question-SAE solve-can-NONPAST
to-wa *omowa-na-i.*
COMP-TOP think-NEG-NONPAST
'I don't think that she can even solve an easy question.'

b. *Muzukashii* *mondai-sae* *tok-e-ru*
difficult question-SAE solve-can-NONPAST
to-wa *omowa-na-i.*
COMP-TOP think-NEG-NONPAST
'I don't think that she can even solve a difficult question.'

(3.98) *before*:

a. *Kantanna* *mondai-sae* *tok-u*
easy question-SAE solve-NONPAST
maeni *shiken-ga* *owat-ta.*
before exam-NOM finish-PAST

'The exam was finished before I even solved an easy question.'

b. #*Muzukashii* *mondai-sae* *tok-u*
difficult question-SAE solve-NONPAST
maeni *shiken-ga* *owat-ta.*
before exam-NOM finish-PAST

#'The exam was finished before I even solved a difficult question.'

For example, if *-sae* had narrow scope with respect to negation, (3.96b) or (3.98b) would express the three propositions in (3.99). However, (3.96b) or (3.98b) does not receive the interpretation in (3.99).

(3.99) ¬ -sae (P (f))

a. Negated text proposition : She cannot solve a difficult question
(T(ext proposition): She can solve a difficult question)

b. C(ontext proposition): She can solve a less difficult question

c. T is less likely than C

-sae in negative sentences cannot be under the scope of negation while *-sae* can be under the scope of matrix clause negation. I propose that negation which is under the scope of *-sae* in negative sentences and negation which scopes over *-sae* in negative matrix clauses are two uses

of the negative operator, which Horn (1985) refers to as descriptive and metalinguistic negations. The difference between the two uses of negation is that while descriptive negation negates a proposition, metalinguistics negation objects to various aspects of a previous utterance.

The negative operator in negative sentences and negative matrix clauses seem to correspond to descriptive and metalinguistic negation, respectively. For example, the negative sentence in (3.100b) is appropriate to answer the question in (3.100a) while the negative matrix sentence in (3.101c) is appropriate to answer the question in (3.101a). (3.100a) asks who did not come and (3.100b) asserts the negative proposition that Yuna did not come. (3.101a), on the other hand, seeks confirmation that Yuna came and (3.101b) negates the affirmative proposition that Yuna came, which has already been introduced by (3.101a).

(3.100) a. *Dare-ga* *ko-na-katta-no.*
who-NOM come-NEG-PAST-Q
'Who did not come?'

b. *Yuna-ga* *ko-na-katta.*
Yuna-NOM come-NEG-PAST
'Yuna didn't come'

c. *#Yuna-ga* *ki-ta-to* *omowa-na-i.*
Yuna-NOM come-PAST-COMP think-NEG-PAST
'I don't think Yuna came.'

(3.101) a. *Yuna-ga* *ki-ta-n-da-yone.*
Yuna-NOM come-PAST-COMP-COPULA-DM
'Yuna came, didn't she?'

b. #*Yuna-ga* *ko-na-katta.*
Yuna-NOM come-NEG-PAST
'Yuna didn't come'

c. *Yuna-ga* *ki-ta-to* *omowa-na-i.*
Yuna-NOM come-PAST-COMP think-NEG-PAST
'I don't think Yuna came.'

-*sae* which is structurally embedded under matrix clause negation can be under the scope of negation since (3.102), which is embedded in (3.97b) is already in a context and the interpretation described in (3.103) is already evoked in the context. In (3.97b), only the text proposition in (3.103) is negated by the metalinguistic matrix negation.

(3.102) She can even solve a difficult question.

(3.103) a. T(ext proposition): She can solve a difficult question

b. C(ontext proposition): She can solve a less difficult question

c. T is less likely than C

-*sae* cannot be under the scope of clausemate negation since clausemate negation is descriptive and is not used to just object to part of a previous utterance. For (3.96a), the text proposition is negated and based on the negative proposition, the context proposition in (3.104b) is inferred and the secondary meaning in (3.104c) is interpreted.

(3.104) a. T(ext proposition): She cannot solve an easy question

b. C(ontext proposition): She cannot solve a less easy question

c. T is less likely than C

What is still not explained is why *-sae* can scope over negation in negative matrix clauses. As shown above, matrix negation is metalinguistic for the embedded proposition. However, it is descriptive for the proposition denoted by the matrix clause. In (3.105), the proposition denoted by the matrix clause in (3.106) is negated and the context proposition in (3.107b) is inferred from the negated proposition in (3.107a).

(3.105) *Kantanna* *mondai-sae* *tok-e-ru* *to*
easy question-SAE solve-can-NONPAST COMP
omowa-na-i.
think-NEG-NONPAST
'I don't think that she can even solve an easy question.'

(3.106) I think that she solved an easy question.

(3.107) a. Text proposition: I don't think that she solved an easy question

b. Context proposition: I don't think that she solved less easy question

c. Secondary meaning: T is less likely to be true than C

The interpretation in (3.107) is similar to the interpretation in (3.104) when *-sae* scopes over negation in that the direction of an entailment is from easy question to less easy question: not

being able to solve an easy question pragmatically entails not being able to solve a less easy question and not thinking that one can solve an easy question pragmatically entails not thinking that one can solve a less easy question.

3.4.1.2 -*SAE* IN CONDITIONALS

-*sae* can either scope over or be under the scope of conditionals. (3.108a) and (3.108b) are examples of -*sae* scoping over conditionals and being under the scope of conditionals, respectively.

(3.108) a. *JPN101-de* *C-sae* *to* *reba* *raigakki* *JPN102-ga*
JPN101-for C-SAE receive if next.semester JPN102-NOM
to-re-ru.
take-can-NONPAST
'If you at least receive a C on JPN101, you could take JPN102 next semester.'

b. *Muzukashii* *mondai-sae* *toi-ta* *nonara*
difficult question-SAE aolve-PAST if
seiseki-ga *ii* *hazu-da.*
grade-NOM good should-NONPAST
'If you even solved a difficult question, your grade should be good.'

The meaning contributed by -*sae* when it scopes over conditional is represented as (3.109).

(3.109)-sae (P (f))

a. T(ext proposition):
   P (f) = If you receive a C on JPN101, you could take JPN102 next semester

b. C(ontext proposition):
   P (a) = If you receive a better grade than C on JPN101, you could take JPN102 next semester

c. T is less likely than C (T pragmatically entails C)

The text proposition in (3.109a) and context proposition in (3.109b) satisfy (3.109c) since (3.109a) pragmatically entails (3.109b). If one can take JPN102, when one receives a C on JPN101, one can also take JPN102, when one receives a better grade than C such as A or B.

As discussed in the previous sections, *-sae* when it scopes over only the antecedent of conditionals means *at least* but not *even*, as shown in (3.108). According to Rillmann and Nakanishi (forthcoming), when *even* scopes over the antecedent of conditionals, smaller values than the focused value are excluded from alternatives. This constraint gives rise to a conversational implicature that when antecedents are true, the consequents are usually false. For *at least* or *-sae*, there is no such constraint and smaller values than the focused value are also taken as alternatives. For example, for (3.110), alternatives are grades better than C such as { A, B } and for (3.108a), in which *-sae* occurs, alternatives are grades better and worse than C such as { A, B, D, F }.

(3.110)*If you even receive a C on JPN101, you can take JPN102 next semester.*

I propose that the difference between *-sae* and *even* in antecedents of conditionals is that while conditionals containing *-sae* retains what Geis and Zwicky refer to as conditional perfection, for *even*, conditional perfection is cancelled. Geis and Zwicky propose the principle of conditional perfection in (3.111).

(3.111) A sentence of the form X ⊃ Y invites an inference of the form ~ X ⊃ ~ Y.

According to (3.111), (3.112), which is the text proposition of (3.108a), invites the inference in (3.113).

(3.112) *JPN101-de* *D-sae* *to* *reba* *raigakki* *JPN102-ga*
JPN101-for D-SAE receive if next.semester JPN102-NOM
to-re-ru.
take-can-NONPAST
'If you receive a C on JPN101, you can take JPN102 next semester.'

(3.113) *JPN101-de* *C-o* *tora-na* *kereba* *raigakki*
JPN101-for C-ACC receive-NEG if next.semester
JPN102-ga *to-re-ru.*
JPN102-NOM take-can-NONPAST
'If you don't receive a C on JPN101, you cannot take JPN102 next semester.'

The inference in (3.113) seems to be a conversational implicature. Uttering (3.112) instead of a more informative sentence such as (3.114) indicates that the speaker does not know whether (3.114) is true since otherwise she would violate a conversational principle.

(3.114) *JPN101-de* *D-sae* *to* *reba* *raigakki* *JPN102-ga*
JPN101-for D-SAE receive if next.semester JPN102-NOM
to-re-ru.
take-can-NONPAST

'If you receive a D on JPN101, you can take JPN102 next semester.'

-sae retains the conversational implicature in (3.113) and scalar values lower and higher than the focused constituent are taken into consideration. For *even*, on the other hand, the conversational implicature is cancelled and scalar values lower than that of the focused constituent are not taken into consideration. (3.115)-(3.118) show the difference between *-sae* and *even*.

(3.115) A: *Dou* *shi-ta* *ra* *JPN102-ga* *tor-e-ru-no.*
how do-PAST if JPN102-NOM take-can-NONPAST-Q

'What do I have to do to take JPN102?'

B: *JPN101-de* *C-sae* *to* *reba* *raigakki*
JPN101-for C-SAE receive if next.semester
JPN102-ga *to-re-ru-yo.*
JPN102-NOM take-can-NONPAST

'If you at least receive a C on JPN101, you can take JPN102 next semester.'

(3.116) A: *What do I have to do to take JPN102?*

B: *If you at least receive a C for JPN101, you can take JPN102 next semester.*

(3.117) A: *What do I have to do to take JPN102?*

B: *#If you even receive a C for JPN101, you can take JPN102 next semester.*

(3.118) A: *Can I take JPN102 next semester if I receive a B for JPN101?*

B: *If you even receive a C for JPN101, you can take JPN102 next semester.*

To the questions in (3.115A), (3.116A) and (3.117A), (3.115B) and (3.116B), in which *-sae* and *at least* occur, respectively, are appropriate while (3.117B), in which *even* occurs, is not appropriate. The speaker of (3.115A), (3.116A) or (3.117A) does not have any strong bias about what grade is sufficient to take JPN102 next semester and takes better and worse grades than a C into consideration. In such contexts, *-sae* and *at least* are appropriate and both the proposition that taking a C or better grade is sufficient and that taking a worse grade than a C is not sufficient are relevant. (3.117B), on the other hand, is not an appropriate answer to (3.117A) since (3.117B), in which *even* occurs, only takes better grades than a C into consideration while the speaker of (3.117A) does not exclude the possibility that a grade worse than a C could be sufficient to take JPN102. But, (3.118B) is an appropriate answer to (3.118A), in which the grade B has been introduced.

One may wonder why *-sae*, but not *even* allows conditional perfection. Japanese has another scalar additive particle *-desae*, which has the same interpretation as *even* in antecedents of conditionals. *-desae*, which is semantically related to *-sae*, prevents *-sae* from receiving the same interpretation because *-desae*'s secondary meaning is more restricted than *-sae*'s. I will come back to this issue again when I discuss the meaning of *-desae*.

-sae can also be under the scope of conditional operators although it means "at least" in this environments. (3.119) is an example of *-sae* under the scope of conditional operators.

(3.119) *Muzukashii* *mondai-sae* *toi-ta* *nonara*
difficult question-SAE aolve-PAST if
seiseki-ga *ii* *hazu-da.*
grade-NOM good should-NONPAST
'If you even solved a difficult question, your grade should be good.'

The meaning contributed by *-sae* in (3.119) is (3.120).

(3.120) -sae (P (f)) → Q

a. T(ext proposition):
P (f) = one solved a difficult question

b. C(ontext proposition):
P (a) = one solved a less difficult question

c. T is less likely than C (T pragmatically entails C)

The text proposition in (3.120a) and context proposition in (3.120b) satisfy (3.120c).

3.4.1.3 *-SAE* IN UNIVERSAL STATEMENTS AND CLEFT SENTENCES WITH *ONLY/FIRST*

-sae cannot scope over universal statements and cleft sentences with a noun headed by *only*/*first* as shown in (3.121) and (3.122), respectively. I speculate that *-sae* cannot scope over universal statements and cleft sentences with *only*/*first* since the existential presuppositions of the context propositions are not satisfied and as a result, the secondary meaning does not hold.

(3.121) *universal statements*:

ip-peeji-#sae/desae	*kai-ta*	*hito-wa*
one-page-SAE/DESAE	write-PAST	person-TOP
daredemo	*tensuu-ga*	*mora-e-ru.*
anyone	credit-NOM	receive-can-NONPAST

'Anyone who even write one page can receive a credit.'

(3.122) *only, first*:

Kantanna	*mondai-#sae/desae*	*toi-ta*
easy	question-SAE/DESAE	solve-PAST
no-wa	*Takuya-dake-datta.*	
COMP-TOP	Takuya-only-PAST	

'It was only Takuya who even solved an easy question.'

If *-sae* scoped over cleft sentences, the meaning contributed by *-sae* would be as informally stated in (3.123).

(3.123) -sae (P (f))

a. T(ext proposition):
   P (f) = It was only Takuya who solved an easy question

b. C(ontext proposition):
   P (a) = It was only Takuya who solved a less easy question

c. T is less likely than C (T pragmatically entails C)

It seems that (3.123a) pragmatically entails (3.123b). However, for (3.123a) to entail (3.123b), the existential presupposition of (3.123b) that there is an individual who solved a less easy question, has to be satisfied. Strictly speaking, environments such as (3.121) and (3.122) do not satisfy (3.123c) unless the existential presupposition is satisfied. Usually, the context proposition is pragmatically inferred from the text proposition since the text proposition is less likely to be true. However, the context proposition in (3.123b) is not necessarily true when the text proposition is true since whether Takuya solved a less easy question is not inferable from the proposition Takuya solved an easy question in the text proposition: the proposition that Takuya solved an easy question does not pragmatically entail the proposition that Takuya solved a less easy question. *-sae* can scope over other implication reversing environments but cannot scopes over environments in (3.121) and (3.122) because existential presuppositions of the context propositions is not necessarily satisfied and therefore the text proposition does not necessarily pragmatically entail the context proposition. One may wonder again why *even* which otherwise behaves similarly to *-sae* can be under the universal quantifier and cleft operator. I will discuss this issue in the next section.

3.4.2 *-DESAE* IN IMPLICATION REVERSING INTERPRETATIONS

As shown above, *-desae* behave differently from *-sae* in implication reversing environments. I propose that the secondary meaning of *-desae* is not just more informative than the context proposition but is too informative to be relevant in the context.

3.4.2.1 MEANING OF *-DESAE*

While *-desae* behaves differently from *-sae* in implication reversing environments, they do not seem to be different from each other in simple declarative sentences. However, although the difference is subtle, when (3.124), which contains *-sae*, is compared with (3.125), which contains *-desae*, (3.125) sounds more emphatic than (3.124).

(3.124) *Muzukashii* *mondai-sae* *toi-ta.*
difficult question-SAE solve-PAST
'She even solved a difficult question.'

(3.125) *Muzukashii* *mondai-desae* *toi-ta.*
difficult question-DESAE solve-PAST
'She even solved a difficult question.'

I propose that (3.126) and (3.127) are the meaning of *-sae* and *-desae*, respectively.

(3.126)a. T(ext proposition): she solved a difficult question

b. C(ontext proposition): she solved a less difficult question

c. T is more informative than C

(3.127)a. T(ext proposition): she solved a difficult question

b. C(ontext proposition): she solved a less difficult question

c. T is more informative than C

d. T is too informative to be relevant

The context proposition expressed by *-desae* is too informative to be relevant in the given context, as specified in (3.127d). (3.125), which expresses an irrelevant text proposition sounds more emphatic than (3.124) since uttering irrelevant propositions are usually surprising. I use Sperber and Wilson's (1986) definition of relevance to model the secondary meaning in (3.127d). According to Sperber and Wilson, when a proposition is relevant, one infers another proposition from the relevant proposition. I redefine the secondary meaning in (3.127d) as (3.128). In contexts in which *-desae* is appropriate, the text proposition is irrelevant and there is no proposition which is inferable from the text proposition as specified in (3.128a). There is, however, some inferable proposition from a less informative context proposition as specified in (3.128b).

(3.128)a. Text proposition >(infers) ∅

b. Context proposition > P

Let us look at examples from newspaper and see in what contexts *-desae* is appropriate. The newspaper article in (3.129) is about a great soccer player.[12] The soccer player left the club but supporters of the club wanted to make the player's number a retired number although in the

[12] *Sae* can be substituted for *desae* in (3.129) and (3.131), since, the text proposition expressed by *sae* can be either relevant or irrelevant.

league which the club belongs to, it is not allowed to make any player's number a retired number. In this context, one would infer that a number is assigned to another player from the context proposition in (3.130a). However, there is no inferable proposition from the text proposition in (3.130b), and therefore the text proposition is irrelevant because people wanted to make the soccer player's number a retired number but it was not allowed in the league. This article concludes with a question 'Who should wear the number(if the number must be assigned to some player)?', which indicate that there was no solution yet.

(3.129) *育ってきたクラブを離れ、ラウールはキャリアの晩年をドイツで過ごすことを選んだ。すでにシャルケのファンには、トレードマークであるチップキックでゴールを決めて、いまだ輝きは色あせていないことを証明した。ボックスの外から完璧な力加減で浮かされたボールは、バイエルン・ミュンヘンのＧＫの頭上をふわりと越えてネットを揺らした*

ラウールはシャルケでも背番号７を着け続けているが、マドリーでのその番号は空いたままだ。

ラウールの旅立ちにより、スペインの首都には憂鬱な雰囲気が漂っており、ある者はマドリスモのシンボルを永久なものとするために、偉大なるキャプテンの背番号を永久欠番とすべきだと声を上げた。しかし、リーガでは１から２５までの背番号を使用せねばならず、いかに歴史的なシンボル<u>でさえ</u>、欠番にすることは許されない。誰かが来季にはラウールの背番号を引き継がねばならず、そのためにここで一つの疑問が浮かび上がってくる。誰がレアル･マドリーの背番号７を背負うべきなのか、と。（朝日新聞: 2010 年 8 月 8 日）

Raul chose to leave a club in which he grew up and spend the rest of his career in Germany. He already proved to Schalke fans that he is still a good player by scoring a goal. A perfectly controlled ball arched softly over Bayern München's goal keeper and got into the back of the net.

Raul wears the uniform number 7 at Schalke but the number 7 has not been assigned to anyone at Real Madrid yet.

After Raul left, the capital of Spain has looked depressed and some people suggested that the number 7 of the great captain should become a retired number to respect him for good. But in the league, teams have to use the numbers from 1 to 25 and it is not allowed to make ***even*** a historical symbol's number a retired number. Some player has to take over Raul's number and a question comes out. Who should wear the number 7 of Real Madrid? (Asahi Shinbun: 8/8/2008)

(3.130)a. it is not allowed to make a less good player's number a retired number
→ another player is assigned the number

b. it is not allowed to make a historical symbol's number a retired number
→ ∅

(3.131) is another example of *-desae*. (3.131) is about the problem of melting glaciers. A lake is going to burst out because of the increasing water level caused by melting glaciers. In this context, one infers from the context proposition in (3.132a) that the problem has to be dealt with. However, one does not infer any proposition from the text proposition in (3.132b) since there is nothing discussed about smaller glaciers in the article. One may wonder why it is not inferred from (3.132b) that the problem about the smaller glaciers should also be dealt with. However, the problems about the smaller glaciers should have already been solved since it happened in the past, in 1994 according to the article. The purpose of mentioning smaller glaciers is just to emphasize the significance of the problem about larger glaciers.

(3.131) *世界最高峰のエベレストを有するヒマラヤ山系で、地球温暖化の「余波」が広がっている。山岳氷河が解けて生まれた氷河湖が水かさを増し、決壊の恐れが高まっているからだ。ヒマラヤの氷河はインド、中国など世界の４分の１に及ぶ人々の生活を支える水源でもあり、融解が進めば渇水など地球規模の影響が広がりかねない。*

「危険なのはわかった。知りたいのは解決策だ」

エベレストのふもと、標高４４００メートルにあるディンボチェ村の青年団員、ロプサン・シェルパさん（２９）がまくし立てた。村の北東約６キロにある氷河湖「イムジャ・ツォ」について聞いたときのことだ。

５０年前まで地図に存在しなかったイムジャ・ツォ。融解による氷河末端の後退とともに広がり、長さ２キロメートル以上、幅０・９キロ、深さ約９０メートルの湖になった。世界中の研究者が決壊の危険性を訴える一方、村民はそのやり方に困惑している。調査に訪れても結果は公表されず、村にも立ち寄らないからだ。「危険」という情報だけが独り歩きし、学校や病院の建設計画を中断した地域もある。

１９９４年、ブータンで氷河湖決壊による洪水で２１人が死亡。小さい氷河湖でさえ、決壊すれば地域のインフラに被害を与えることは証明済みだ。

「問題解決のためならどんな手助けもいとわない」とロプサンさん。村には長年氷河湖を観察してきた自負がある。村民と連携した研究や対策が望みだ。
(産經新聞: 2010 年 5 月 25 日)

Impacts of the global warming have spread through the Himalayas which have world's highest mountain Everest. A glacier lake which was produced by melting mountainous glacier has risen and is going to burst out. Glaciers of Himalayas are source of water for people in India and China, which makes up one fourth of the world population, and if the melting of glaciers progresses, it affects our life globally.

A resident of a village at the foot of Everest said, 'We know it's dangerous, let us know the solution.' when we asked him about a glacier lake called Imja Tsho, which is located six kilo north west from his village.

Imja Tsho didn't exist on maps until fifty years ago. As edges of glaciers receded, it has become a lake whose length is two kilo, width is 0.9 kilo and depth is about 90 meter. While researchers from all over the world pointed out the danger that the lake would burst out, residents in the village are confused. Results of research have not been opened to public and researchers do not visit the village. Because of the information that it is 'dangerous', in some areas, constructions of schools and hospitals have been postponed.

In 1994, a glacier in Bhutan burst out and 21 people were killed. It has been proved that ***even*** small glaciers affect infrastructures of the areas.

He said 'We will do everything we can do to solve the problem.' They are confident in their knowledge about the glaciers which they have seen for long time. It would be better for residents in the village and researchers work together to solve the problem. (Sankei Shinbun: 5/25/2010)

(3.132)a. larger glaciers affect infrastructures of the areas
→ we have to find solutions

b. small glaciers affect infrastructures of the areas
→ ∅

3.4.2.2 -*DESAE* IN NEGATIVE SENTENCES, NEGATIVE MATRIX CLAUSES AND *BEFORE* CLAUSES

As shown in (3.133)-(3.135), -*desae* must scope over negation, matrix negation structurally embedding -*desae* and *before* clause operators and cannot be under the scope of these operators. # in the (b) sentences indicate that -*desae* cannot felicitously be under the scope of negative sentences, matrix negation or *before* clause.

negative sentences:

(3.133)a. *Kantanna* *mondai-desae* *tok-e-na-i.*
easy question-DESAE solve-can-NEG-NONPAST
'She cannot even solve an easy question.'

b. #*Muzukashii* *mondai-desae* *tok-e-na-i.*
difficult question-DESAE solve-can-NEG-NONPAST

(3.134) *negative matrix*:

a. *Kantanna* *mondai-desae* *tok-e-ru*
easy question-DESAE solve-can-NONPAST
to-wa *omowa-na-i.*
COMP-TOP think-NEG-NONPAST

'I don't think that she can even solve an easy question.'

b. #*Muzukashii* *mondai-desae* *tok-e-ru*
difficult question-DESAE solve-can-NONPAST
to-wa *omowa-na-i.*
COMP-TOP think-NEG-NONPAST

(3.135) *before*:

a. *Kantanna* *mondai-desae* *tok-u*
easy question-DESAE solve-NONPAST
maeni *shiken-ga* *owat-ta.*
before exam-NOM finish-PAST

'The exam was finished before I even solved an easy question.'

b. #*Muzukashii* *mondai-desae* *tok-u*
difficult question-DESAE solve-NONPAST
maeni *shiken-ga* *owat-ta.*
before exam-NOM finish-PAST

The meaning contributed by *-desae* in (3.133a), where it scopes over negation is (3.136).

(3.136) -desae (¬ P)

a. T(ext proposition): she cannot solve an easy question

b. C(ontext proposition): she cannot solve a less easy question

c. T is more informative than C (T pragmatically entails C)

d. T is too informative to be relevant

The text proposition in (3.136a) is more informative than the context proposition since the text proposition pragmatically entails the context proposition. If one cannot solve an easy question, it is usually inferred that she cannot solve a less easy question either.

The behaviors of *-desae* in (3.133) through (3.135) are explained similarly as the case of *-sae*. In negative sentences, *-desae* cannot be under the scope of negation since the negation is descriptive negation while in negative matrix clauses, *-desae* can be under the scope of negation since the negation is metalinguistic and the embedded proposition is already in the context with the interpretation in (3.137).

(3.137)-desae (P)

a. T(ext proposition): she can solve a difficult question

b. C(ontext proposition): she can solve a less difficult question

c. T is more informative than C (T pragmatically entails C)

d. T is too informative to be relevant

3.4.2.3 -*DESAE* IN CONDITIONALS

As shown in (3.138), *-desae* has two interpretations. *-desae* scopes over the conditional operator in (3.138a) and it is under the scope of the conditional operator in (3.138b).

(3.138)a. *Kantanna* *mondai-desae* *tok-eba* *ii* *seiseki-ga*
easy question-DESAE solve-if good grade-NOM
to-re-ru.
receive-can-NONPAST

'If you even solve an easy question, you will receive a good grade.'

b. *Muzukashii* *mondai-desae* *tok-eba* *ii* *seiseki-ga*
difficult question-DESAE solve-if good grade-NOM
to-re-ru.
receive-can-NONPAST

'If you even solve a difficult question, you will receive a good grade.'

The interpretation of *-desae* in (3.138b), which is under the scope of the conditional operator, is (3.139).

(3.139)-desae (P) → Q

a. T(ext proposition): one solves a difficult question

b. C(ontext proposition): one solves a less difficult question

c. T is more informative than C (T pragmatically entails C)

d. T is too informative to be relevant

The text proposition in (3.139a) and context proposition in (3.139b) satisfy (3.139c) since one who solves a difficult question usually solves a less difficult question.

-desae can scope over conditionals such as the one in (3.138a). The interpretation of *-desae* in (3.138a) is (3.140).

(3.140)-desae (P → Q)

a. T(ext proposition):
   If you solve an easy question, you will receive a good grade.

b. C(ontext proposition):
   If you solve a less easy question, you will receive a good grade.

c. T is more informative than C (T pragmatically entails C)

d. T is too informative to be relevant

The text proposition in (3.140a) and context proposition in (3.140b) satisfies (3.140c) since if one who solves an easy question receives a good grade, it is usually inferred that one who solves a less easy question also receive a good grade. As shown in the previous section, *-sae* also scopes over conditionals. However, while *-sae* means 'at least', *-desae* means 'even' in antecedents of conditionals. As specified in (3.140d), the text proposition over which *-desae* scope is too informative to be relevant in the context. For example, the speaker of (3.138a) may be confident in her ability to solve less easy questions and the proposition that one who solves an easy question will receive a good grade is too informative to be relevant for her. Usually, the conditional in (3.141) invites the conversational implicature in (3.142).

(3.141) *Kantanna* *mondai-o* *tok-eba* *ii* *seiseki-ga*
easy question-ACC solve-if good grade-NOM
to-re-ru.
receive-can-NONPAST
'If you solve an easy question, you will receive a good grade.'

(3.142) *Kantanna* *mondai-o* *tok-na-kereba* *ii* *seiseki-ga*
easy question-ACC solve-NEG-if good grade-NOM
to-re-na-i.
receive-can-NEG-NONPAST
'If you do not solve an easy question, you will not receive a good grade.'

However, the conditional in (3.138a), which contains *-desae* cancels the conversationally implicated meaning (3.142). In contexts in which (3.138a) is appropriate, the text proposition in (3a) is too informative. For example, as described above, in a context in which (3.138a) is appropriate, one is confident in one's ability to solve a less easy question. Since the text proposition in (3.140a) is not relevant for one who is so confident, the conversational implicature in (3.142) is not relevant for her, either and is cancelled. The difference between *-sae* and *-desae* in antecedents of conditionals is that for *-sae*, the conversational implicature in (3.142) is retained while for *-desae*, the conversational implicature in (3.142) is cancelled due to the meaning in (3.140d).

As shown above, *-desae* has the same interpretation as *even* in antecedents of conditionals because of the secondary meaning in (3.140d). One may wonder why *even* which does not have the secondary meaning in (3.140d) receives the same interpretation as *-desae* in antecedents of conditionals. I argued that if the text proposition is irrelevant as specified in (3.140d), the particle is interpreted as 'even' and if it is relevant, the particle is interpreted as 'at least'. It is natural to predict that *-sae* and *even*, which behave similarly in that the text proposition can be either irrelevant or relevant, would be ambiguous between 'even' and 'at least' in antecedents of conditionals. I propose that the reason why *-sae* means 'at least' in antecedents of conditionals is the existence of *-desae*, which means 'even' in antecedents of conditionals. *-sae* is conventionalized to mean 'at least' in antecedents of conditionals because Japanese has -

desae, which prevents -*sae* from receiving the same interpretation while *even* is conventionalized to mean 'even' in antecedents of conditionals because English lacks '-desae' as illustrated in (3.143)[13].

(3.143) a. -*sae* -*desae*

Text proposition Text proposition

Irrelevant ~~'even'~~ ⇐ Irrelevant 'even'

Relevant 'at least'

b. *even* ∅

Text proposition

Irrelevant 'even'

Relevant ~~'at least'~~

It is not clear why particles like *even* are interpreted as 'even' in the antecedent of conditionals when there is no counterpart like -*desae*. In English, it may be because English has *at least*. Japanese also has an expression corresponding to *at least*, *sukunakutomo*. However, the expression is not a suffix as other Japanese focus particles and its literal translation is 'even if it is a small amount'.

3.4.2.4 -*DESAE* IN UNIVERSAL STATEMENTS AND CLEFT SENTENCES WITH *ONLY*/*FIRST*

-*desae* can either scope over or be in the scope of a universal quantifier and cleft operator containing *only*/*first*. In (3.144a) and (3.145a), -*desae* scopes over the universal quantifier and

[13] Historically, *desae* is composed of the conjunctive particle *de* and *sae*. I leave it to future research to examine the historical development of the meaning of *desae*.

cleft operator containing *only*/*first*, and in (3.144b) and (3.145b), *-desae* is under the scope of these operators.

(3.144) *universal statements*:

a. *Ip-peeji-desae* *kai-ta* *hito-wa*
one-page-DESAE write-PAST person-TOP
daredemo *tensuu-ga* *mora-e-ru.*
anyone credit-NOM receive-can-NONPAST

'Anyone who even write one page can receive a credit.'

b. *Jyup-peeji-desae* *kai-ta* *hito-wa*
ten-page-DESAE write-PAST person-TOP
daredemo *tensuu-ga* *mora-e-ru.*
anyone credit-NOM receive-can-NONPAST

'Anyone who even write ten pages can receive a credit.'

(3.145) *only, first*:

a. *Kantanna* *mondai-desae* *toi-ta* *no-wa*
easy question-DESAE solve-PAST COMP-TOP
Takuya-dake-datta.
Takuya-only PAST

'It was only Takuya who even solved an easy question.'

b. *Muzukashii* *mondai-desae* *toi-ta* *no-wa*
difficult question-DESAE solve-PAST COMP-TOP
Takuya-dake-datta.
Takuya-only PAST

'It was only Takuya who even solved a difficult question.'

The interpretation of *-desae* in (3.144b), which is under the scope of the universal quantifier is (3.146).

(3.146) δ -desae (P)

a. T(ext proposition): one writes ten page

b. C(ontext proposition): one writes less than ten page

c. T is more informative than C (T pragmatically entails C)

d. T is too informative to be relevant

The text proposition in (3.146a) and context proposition in (3.146b) satisfy (3.146c) since writing ten pages entails writing less than ten pages. (3.147) is the interpretation of *-desae* in (3.144a), which scopes over the universal statement.

(3.147) -desae δ (P)

a. T(ext proposition):
Anyone who write one page can receive a credit

b. C(ontext proposition):
Anyone who write more than one page can receive a credit

c. T is more informative than C (T pragmatically entails C)

d. T is too informative to be relevant

In section 3.4.1.3, I proposed that *-sae* cannot scope over the universal quantifier or cleft operator with *only*/*first* since existential presuppositions are not satisfied. Sentences such as (3.144a) and (3.145a) do not suffer from existential presupposition failures since the text proposition of *-desae* is too informative to be relevant in the context. For example, in a context in

which (3.144a) is appropriate, one has already written more than one page and whether one who writes one page would receive a good credit or not is not relevant for her. In this context, since one has already written more than one page, the existential presupposition of the context proposition in (3.146b) that there is someone who writes more than one page is satisfied. *-desae* escapes from presupposition failures and can scope over the universal quantifier or cleft operator with *only*/*first* because of the meaning in (3.147d). It is worth noting that some propose that there is no existential presupposition for universal statements. For example, (3.148b) is not completely unacceptable after (3.148a).

(3.148) a. *Anyone who even wrote one page can received a credit…*

b. (#)*although there was no one who wrote one page.*

However, there seem to be an existential presupposition for cleft sentences since (3.149b) is not acceptable after (3.149a).

(3.149) a. *It was only Takuya who even solved an easy question…*

b. *#although there was no one who solved an easy question.*

Although the existential presupposition is more easily cancellable for universal statements than cleft sentences, usually, there is assumed to be existential presuppositions for both constructions.

The reason why *even* can scope over the universal quantifier or cleft operator is similar to the reason why *even* is not ambiguous in antecedents of conditionals. *Even* is not specified about whether the text proposition is relevant or irrelevant and one may predict that *even* behaves like -

sae. However, *even* does not have a counterpart like -*desae* for -*sae* and it is conventionalized to scope over the universal quantifier or cleft operator.

3.5 -*MADE*

In this section, I discuss the scalar additive particle -*made*. -*made* rarely scopes over implication reversing environments. -*made* only scopes over negation and even in negative sentences, it can be under the scope of negation. I propose that the context proposition expressed by -*made* is presupposed more strictly than the context proposition expressed by -*sae* or *even*. It is because of this presuppositional status of the context proposition, I claim, that -*made* rarely scopes over implication reversing environments.

3.5.1 NO INFERENCE FROM THE TEXT PROPOSITION TO THE CONTEXT PROPOSITIONS

-*made* is a scalar additive particle similar to *even* as shown in (3.150).

(3.150) *Yuka-made* *ki-ta*.
Yuka-MADE come-PAST
'Even Yuka came.'

However, -*made* is not completely natural in (3.151), in contrast to -*sae* or *even* in the English translation.

(3.151) *Syosen-no* *aite-no* *koukou-ni-#made/sae* *yabureteshimat-ta.*
First.game opponent-of high.school-to-MADE/SAE lose-PAST
'They even lost to the opponent high school at the first game in the tournament.'
(Numata 2000: 179)

(3.151) expresses the propositions in (3.152).

(3.152) a. T(ext proposition): They lost at the first game

b. C(ontext proposition): They lost to other teams than the first team

c. T is less likely to be true than C

According to Numata (2000), for -*made* to be acceptable, the context proposition in (3.152b) has to be true in the actual world. -*made* is not acceptable in (3.151) since they cannot loose to other teams or they cannot even play games against any other teams in the actual world when they loose the first game in a tournament. -*sae* (or *even*) is acceptable in (3.151) since their context propositions do not have to be true in the actual world. One can infer from the text proposition that the high school team would lose to other teams since usually, the first team is the least likely team to lose to. -*sae* or *even* is acceptable as long as the context proposition is true in some possible worlds.

However, Numata's (2000) observation does not explain examples like (3.153) in which -*made* occurs in an implication reversing environment.

(3.153) *Kantanna* *mondai-sae/#made* *tok-u*
easy question-SAE/DESAE/MADE solve-NONPAST
maeni *shiken-ga* *owat-ta.*
before exam-NOM finish-PAST

'The exam was finished before I even solved an easy question.'

In situation described by (3.153), the context proposition in (3.154b) is true in the actual world. However, in spite of the fact that the context proposition is true in the actual world, *-made* is not acceptable in (3.153).

(3.154) -sae (P (f)) :

a. T(ext proposition):
The exam was finished before I solved an easy question

b. C(ontext proposition):
The exam was finished before I solved a less easy question

c. T is less likely to be true than C

I propose that the context proposition expressed by *-made* in (3.155b) is presupposed more strictly than *-sae* or *even*.

(3.155) -made (P (f))

a. T(ext proposition): P (f)

b. Presupposed C(ontext proposition): P (a)

c. T is less likely to be true than C

For example, the meaning contributed by *-made* in (3.156) is (3.157).

(3.156) *Muzukashii* *mondai-made* *toi-ta.*
difficult question-MADE solve-PAST
'She even solved a difficult question.'

(3.157) a. T(ext proposition): she solved a difficult question

b. Presupposed C(ontext proposition): she solved a less difficult question

c. T is less likely to be true than C

The difference between *-made* and *-sae* or *even* is that the context proposition expressed by *-made* must be presupposed while the context proposition expressed by *-sae* can be inferred from the text proposition without being presupposed. The meaning contributed by *-sae* or *even* in the English translation in (3.158) is (3.159).

(3.158) *Muzukashii* *mondai-sae* *toi-ta.*
difficult question-SAE solve-PAST
'She even solved a difficult question.'

(3.159) a. T(ext proposition): She solved a difficult question

b. Inferable C(ontext proposition): She solved a less difficult question

c. T is less likely to be true than C

Traditionally, the context proposition in (3.159b) is regarded as a presupposition. However, even if the context proposition is not introduced in the previous discourse, the context proposition that she solved a less difficult question can be inferred from the text proposition that she solved a difficult question. The difference between (3.156) and (3.158) is that while the context proposition can be inferred from the text proposition for (3.158), the context proposition cannot just be inferred from the text proposition for (3.156).

The unacceptability of (3.151) and (3.153) is explained by the meaning of *-made* in (3.155). *-made* is not acceptable in (3.151) since the context proposition is not presupposed. The meaning of *-made* in (3.153) and *even* in the English translation in (3.153) are (3.160) and (3.161), respectively.

(3.160) -made ((P (f))) :

a. T(ext proposition):
   The exam was finished before I solved an easy question

b. Presupposed C(ontext proposition):
   The exam was finished before I solved a less easy question

c. T is less likely to be true than C

(3.161) even ((P (f))) :

a. T(ext proposition): The exam was finished before I solved an easy question

b. Inferable C(ontext proposition): The exam was finished before I solved a less easy question

c. T is less likely to be true than C

In the situation described by the English translation in (3.153), usually, the context proposition in (3.161b) is inferred from the text proposition in (3.161a) since although different students have different strategies, usually, one solves easy questions before solving difficult questions and not being able to solve an easy question indicates that one is unlikely to even attempt to solve a less easy question. *-made* is not acceptable in such contexts. Since the context proposition expressed by *-made* is presupposed, it is not sufficient for *-made* to be acceptable that the context proposition is inferred from the text proposition. (3.153) becomes better in contexts in which the speaker attempted to solve a less easy question and found that she could not solve it. The context proposition expressed by *-made* must be presupposed without being inferred from the text proposition: the context proposition is confirmed independently of the text proposition. For *-made* in (3.153) to be acceptable, (3.162b) is not just inferred from (3.162a) but is confirmed independently of (3.162a).

(3.162) -made ((P (f))) :

a. T(ext proposition):
The exam was finished before I solved an easy question

b. Presupposed C(ontext proposition):
The exam was finished before I solved a less easy question

c. T is less likely to be true than C

As mentioned in section 3.2.4, *-made* is less natural than *-sae* or *-desae* in negative sentences or complement clauses of negative matrix clauses, as shown in (3.163) and (3.164).

(3.163) *Kantanna* *mondai-sae/de-sae/(#)made* *tok-e-na-i.*
easy question-SAE/DESAE/MADE solve-can-NEG-NONPAST
'She cannot even solve an easy question.'

(3.164) *Kantanna* *mondai-sae/de-sae/(#)made* *tok-e-ru*
easy question-SAE/DESAE/MADE solve-can-NONPAST
to-wa *omowa-na-i.*
COMP-TOP think-NEG-NONPAST
'I don't think that she can even solve an easy question.'

The text and context propositions of *-made* in (3.163) and (3.164) are (3.165) and (3.166), respectively.

(3.165) a. Text proposition: she cannot solve an easy question

b. Context proposition: she cannot solve a less easy question

(3.166) a. Text proposition: I don't think that she can solve an easy question

b. Context proposition: I don't think that she can solve a less easy question

For *-made* to be acceptable in (3.163) and (3.164), the context propositions in (3.165b) and (3.166b) have to be confirmed independently of the text propositions in (3.165a) and (3.166b) while there is no such restriction for *sae* or *-desae*. (3.163) is acceptable only when (3.165b) is confirmed independently of (3.165a) by, for example, actually looking at her trying to solve a less easy question but not being able to solve it and it is already presupposed in the context that he did not solve a less easy question. Just inferring (3.165b) from the text proposition in (3.165a) is not sufficient for (3.163) to be acceptable. *-made* in (3.163) and (3.164) is acceptable but contexts in which *-made* is acceptable is more restricted than those in which *-sae* and *-desae* are acceptable.

3.5.2 *-MADE* IN SIMPLE NEGATIVE SENTENCES

-made has an interpretation in negative sentences, which other Japanese scalar additive particles or English *even* do not have. In addition to (3.168a), (3.167) has the interpretation in (3.168b).

(3.167)	*Muzukashii*	*mondai-made*	*toka-na-i.*
	difficult	question-MADE	solve-NEG-NONPAST

(3.168)a. ‘She doesn’t even solve a difficult question.’

b. ‘That she can solve even a difficult question is not true/the case’

In the interpretation in (3.168b), *-made* is under the scope of negation and the meaning contributed by *-made* is represented as (3.169).

(3.169)¬ -made (P (f))

a. Negated text proposition ¬ P (f): ¬ she solves a difficult question

b. T(ext proposition) P (f): she solves a difficult question

c. C(ontext proposition) P (a): she solves a less difficult question

d. T is less likely than C

The meaning of the corresponding positive sentence in (3.170) is (3.171). For (3.168b), negation only negates the text proposition.

(3.170)*Muzukashii* *mondai-made* *tok-u.*
difficult question-MADE solve-NONPAST
‘She even solves a difficult question.’

(3.171) -made (P (f))

a. T(ext proposition) P (f): she solves a difficult question

b. C(ontext proposition) P (a): she solves a less difficult question

c. T is less likely than C

Usually, for (3.172), one infers the less informative context proposition in (3.173b) from the more informative text proposition in (3.173a): if one solved a difficult question, one usually also solved a less difficult question.

(3.172) *She even solved a difficult question.*

(3.173) a. T(ext proposition) P (f): she solves a difficult question

b. C(ontext proposition) P (a): she solves a less difficult question

c. T is less likely than C

I propose that for *-made*, a more informative proposition is searched for based on the less informative context proposition because the context proposition expressed by *-made* must be presupposed and the truth of the context proposition is assured independently of the text proposition. For (3.167), a more informative proposition in (3.174b) is searched for based on the context proposition in (3.174c). (3.174b) serves as the text proposition and it entails the context proposition.

(3.174)a. Negated text proposition ¬ P (f): she does not solve a difficult question

b. she solves a difficult question

↓

c. C(ontext proposition) P (a): she solves a less difficult question

Even in (3.175) cannot be under the scope of negation since the context proposition in (3.176b) can be inferred from the text proposition in (3.176a) and a more informative proposition cannot be searched for based on the context proposition.

(3.175) *Kantanna* *mondai-sae* *toka-na-katta.*
easy question-SAE solve-NEG-PAST
'She didn't even solve an easy question.'

(3.176)a. T(ext proposition): She did not solve an easy question

b. C(ontext proposition): She did not solve a less easy question

c. T is less likely than C

One may wonder why the context proposition in (3.174c) escapes the scope of negation. If the context proposition is equivalent to (3.177c), the context proposition is already informative and there is no such proposition which can pragmatically entail the context proposition.

(3.177)a. Negated text proposition ¬ P (f): she does not solve a difficult question

b. ?

↓

c. C(ontext proposition) P (a): she does not solve a less difficult question

The context proposition in (3.174c) escapes the scope of negation since if it is under the scope of negation, a more informative proposition cannot be searched for.

3.6 CONCLUSION

Japanese scalar additive particles *-sae*, *-desae* and *-made* behave differently in what Fauconnier (1979) calls implication reversing environments. *-desae* is similar to *even* and scope over any implication reversing environments. *-sae* scopes over implication reversing environments such as negation, *before* clause operator, etc. while it cannot scope over universal quantifier or cleft operator with *only*/*first*, which require an existential presupposition to satisfy the Fauconnier's (1979) definition of implication reversing environments. In antecedents of conditional, *-sae* does not mean 'even' but means 'at least'. Conditionals have a conversationally implicated meaning which other implication reversing environments do not have. *-sae* retains the conversationally implicated meaning and as a consequence, has different interpretations from *-desae* or *even*. I propose that the text proposition expressed by *-desae* is too informative to be relevant. This analysis accounts for the distribution of *-desae* in implication reversing environments and some subtle semantic differences between *-desae* and *-sae*.

The context propositions expressed by *-made* must be presupposed and consequently, the context propositions have to be true in the actual world for positive sentences, and they have to be confirmed independently of the text proposition in negative sentences. This analysis also explains why *-made* can be under the scope of negation in simple negative sentences.

CHAPTER 4

JAPANESE CONTRASTIVE PARTICLES

In this chapter, I discuss Japanese contrastive particles *-nado* and *-koso*. While for exclusive particles, there is no alternative to substitute the focused constituent and for scalar additive particles, there is at least one alternative to substitute the focused constituent, for contrastive particles, the speaker does not commit herself on whether there is such an alternative. What distinguishes *-nado* and *-koso* from another more general contrastive particle *-wa* is that the secondary meanings contributed by *-nado* and *-koso* restrict contexts in which they are appropriate with the notion of relevance. I propose one meaning for each of *-nado* and *-koso*. Although there appear to be different interpretations on sentences containing *-nado* and *-koso* depending on the contexts or linguistic environments in which they appear, those interpretations are not distinct meanings but uses of their meanings.

4.1 CONTRASTIVE PARTICLE *-NADO*

In the following sections, I discuss the meaning of the contrastive particle *-nado*. The text propositions under the scope of *-nado* are perceived as surprising or expected depending on the contexts in which they appear. However, intuitively, the meaning of *-nado* seems to be associated with notions like ‘being irrelevant’ or ‘being unimportant’. I examine whether the ‘surprising’ and ‘expected’ interpretations of *-nado* can be explained by the notion ‘being irrelevant’, which seems intuitively to be part of the meaning of *-nado*. In section 4.1.1, I

describe the meaning of *-nado* by taking the information structure of sentences into consideration. In section 4.1.2, I characterize the perlocutionary effect of sentences containing *-nado*. Finally, in section 4.1.3, I examine the semantic status of the 'surprising/expected' interpretations of *-nado*.

4.1.1 TWO INTERPRETATIONS OF *-NADO*

The secondary meaning of *-nado* appears to have two conflicting interpretations. (4.1a) and (4.2a), for example, means either that Daisuke's coming is surprising or that Daisuke coming is expected depending on contexts.

(4.1) a. *Daisuke-nado(-ga)* *kita.*
Daisuke-NADO come-PAST
(It is surprising to utter) 'Daisuke came.'

b. *Daisuke-nado(-ga)* *ko-na-katta.*
Daisuke-NADO come-NEG-PAST
(It is surprising to utter) 'Daisuke didn't come.'

(4.2) a. *Daisuke-nado(*-ga)* *kita.*
Daisuke-NADO come-PAST
'(Expectedly,) Daisuke came.'

b. *Daisuke-nado(*-ga)* *ko-na-katta.*
Daisuke-NADO come-NEG-PAST
'(Expectedly,) Daisuke didn't come.'

One difference between the surprising interpretations and the expected interpretations is that for the surprising interpretations in (4.1a) and (4.1b), the nominative marker *ga* can be suffixed to

the subject while for the expected interpretations in (4.2a) and (4.2b), the nominative marker must not be suffixed to the subject. Furthermore, if we substitute the subject marker *ga* with the topic marker *-wa*, the acceptability is reversed as shown in (4.3) – (4.6).

(4.3) *Daisuke-nado(*-wa)* *kita.*
Daisuke-NADO come-PAST
(It is surprising to utter) 'Daisuke came.'

(4.4) *Daisuke-nado(*-wa)* *ko-na-katta.*
Daisuke-NADO come-NEG-PAST
(It is surprising to utter) 'Daisuke didn't come.'

(4.5) *Daisuke-nado(-wa)* *kita.*
Daisuke-NADO come-PAST
'(Of course,) Daisuke came.'

(4.6) *Daisuke-nado(-wa)* *ko-na-katta.*
Daisuke-NADO come-NEG-PAST
'(Of course,) Daisuke didn't come.'

For the surprising interpretations in (4.3) and (4.4), the topic marker must not be suffixed to the subject while for the expected interpretations in (4.5) and (4.6), the topic marker can be suffixed to the subject. In the following sections, I discuss the two interpretations of *-nado* in terms of information structure. Given that the Japanese nominative and topic markers mark the focus and topic, respectively, the acceptability of sentences with the nominative and topic marker in (4.1) – (4.6) suggests that the two distinct interpretations are conditioned by the information structure of

sentences in which *-nado* appears. In the following sections, first, I briefly introduce the functions of the Japanese nominative and topic marker. Secondly, after reviewing Rooth's (1997) and Buring's (1997) analyses on how the meanings of focus and contrastive topic are represented in alternative semantics, I provide a formal representation of the meaning of *-nado*.

4.1.1.1 NOMINATIVE MARKER

In Japanese, the nominative marker *ga* marks the focus of sentences (Kuno 1973). According to Rooth (1985), focus signals what is under consideration and divides new information from old information. Halliday (1967), Jackendoff (1972) and Selkirk (1984) share the same view as Rooth (1985). Lambrecht (1994) proposes a similar definition but in his definition, focus is a relation between a focused constituent and a propositional function of which the focused constituent is part. Lambrecht (1994) claims that it is the relation between a focused constituent and a proposition which creates new information and a focused constituent itself is not new information. In (4.7), what is regarded as new information is not the focused constituent *the movie* itself but the focused constituent *the movie* signals that it is new information as an argument of the propositional function *I went to x*.

(4.7) Q: *Where did you go last night?*

A: *I went to the MOVIES.*

(Lambrecht 1994: 209)

In Japanese, focused constituents are morphologically marked by the particle *ga*. In (4.8b), which is an answer to the question in (4.8a), the subject *Yuka* is marked with *ga* since it creates new information as an argument of *x came*. New information is defined for example by Bolinger (1954) as unpredictable or non-recoverable in that it would be least likely to infer without being told. Answers to questions are new information since they are not inferable from contexts.

(4.8) a *Dare-ga* *kimasi-ta-ka.*
Who-NOM come-PAST-Q
'Who came?'

b. *Yuka-ga* *kimashi-ta.*
Yuka-NOM come-PAST
'Yuka came.'

According to Kuno (1973), the Japanese topic marker -*wa*, on the other hand, marks what has already been introduced in a discourse and what sentences are about.[14] In (4.9a), -*wa* signals that *Yuka* has already been introduced in the discourse and the sentence is about her.

(4.9) a. *Yuka-wa* *kimashi-ta-ka.*
Yuka-TOP come-PAST-Q
'Did Yuka come?'

b. *Hai,* *kimashi-ta.*
yes come-PAST
'Yes, she did.'

[14] Whether something is already introduced in the discourse and whether something is what a sentence is about, are two different properties. What a sentence is about has to be already introduced in the discourse, but what is already in the discourse does hot have to be what a sentence is about. It is controversial to what degree the denotation of the constituent marked with -*wa* is being introduced in the discourse or is what the sentences is about (e.g. Hinds 1987, Maynard 1987, Clancy and Downing 1987), as what is marked with -*wa* can be shared knowledge between the speaker and listener and does not have to be explicitly introduced in the discourse.

As shown in (4.7) and (4.9) above, for the surprising interpretations, the constituent which *-nado* focuses on, can be suffixed with *ga*, while for expected interpretations, constituents which *-nado* focuses on, must not be suffixed with *ga*. If the semantic function of the Japanese nominative marker *ga* is to mark the focus of sentences, the difference between the surprising and expected interpretations seems to be related to information structures.

4.1.1.2 FOCUS VALUE AND TOPIC VALUE

Before discussing the meaning of *-nado*, in this section, I review how the focus and what Büring (1999) calls S-topic are represented in alternative semantics. Büring (1999) proposes a semantics of S-topic and explains three uses of S-topic, contrastive topic, partial topic, and purely implicational topic. Krifka (1999) discusses what he refers to as contrastive topic, which is Büring's (1999) partial topic, and proposes a more specific definition than Büring's (1999). Although Krifka (1999) claims that Büring's (1999) more general definition is not sufficient to characterize the difference between contrastive topic and partial topic, I use Büring's (1999) definition for the purpose of the current discussion of the meaning of *-nado*.

Rooth (1997) proposes that sentences which contain a focused constituent, have a focus semantic value in addition to its ordinary semantic value. For example, the sentence (4.10), whose focused constituent is *Bill*, has the ordinary semantic value in (4.11a) and the focus semantic value in (4.11b).

(4.10) *John introduced Bill$_F$ to Sue*.

(4.11) a. $||\text{John introduced Bill}_F \text{ to Sue}||^0 = ||\text{introduce}||$ (John, Bill, Sue)

b. $||\text{John introduced Bill}_F \text{ to Su}||^F$ = the set of the propositions of the form "John introducing y to Sue"

The ordinary semantic value (4.11a) is obtained by a functional application of the three semantic argument, *John*, *Bill* and *Sue* to the predicate *introduce (x, y, z)*. The focus semantic value is a set of propositions which are obtained by replacing the variable *y* at the position of the focus with contextually available alternatives.

(4.12), in which *Sue* is focused, has the same ordinary semantic value as (4.10) but it is distinguished from (4.10) by assigning different focus semantic values.

(4.12) *John introduced Bill to* Sue_F.

The focus semantic value of (4.12) is (4.13).

(4.13) $||\text{John introduced Bill to Sue}_F||^F$ = the set of the propositions of the form "John introducing Bill to z"

In (4.13), the focused constituent is *Sue* and alternatives are evoked for the position at which *Sue* appears.

In addition to the focused constituent, sentences can have S-topic. Büring (1999) claims that S-topic introduces alternatives to each of the alternative propositions in a focus value. (4.14) is an example of a use of S-topic called contrastive topic.

(4.14) A: *Which book would Fritz buy?*

B: *Well,* [*I*]$_{T}$ *would buy* [*The Hotel New HAMPshire*]$_{F}$.

B': #*Well, I would buy* [*The Hotel New HAMPshire*]$_{F}$.

(Büring 1999: 66)

To A's question, B's answer, in which *I* is marked as a contrastive topic with a specific intonation pattern, is an appropriate answer while B''s answer, which lacks the intonation pattern, is not appropriate. (4.14B) does not answer properly to question (4.14A) since while (4.14A) asks about Fritz, (4.14B) is about the speaker. The contrastive topic in (4.14B) makes the answer, which is unacceptable without a contrastive topic, acceptable. Speaker B tries to evoke other alternative individuals to what is given in the previous utterance and keep herself away from what is being talked about. To explain the acceptability in (4.14), Büring (1999) introduces the concept of topic value in addition to the notion of focus value. The function of the topic value is to mark a constituent other than the focused constituent and to evoke alternatives for each of the propositions in a focus value. For example, for (4.14), the focus value evokes alternatives to the focused constituent, *The Hotel New Hampshire* and the topic value evokes alternatives to the subject *I* in addition to the alternatives evoked by the focus. (4.15) and (4.16) are the focus value and the topic value of (4.14).

(4.15) { { I would buy War and Peace, I would buy The Hotel New Hampshire, I would buy The World According to Garp, … } }
(Büring 1999: 67)

(4.16) { { I would buy War and Peace, I would buy The Hotel New Hampshire, I would buy The World According to Garp, … }, { Bolle would buy War and Peace, Bolle would buy The Hotel New Hampshire, Bolle would buy The World According to Garp, … } , { Fritz would buy War and Peace, Fritz would buy The Hotel New Hampshire, Fritz would buy The World According to Garp, … }, … }
(Büring 1999: 67)

The focus value in (4.15) consists of alternative propositions in which the focused constituent is replaced with alternatives and is a set of propositions. The topic value in (4.16) is a set of sets of propositions since alternatives are evoked for another constituent than the focused constituent in each of alternative propositions in the focus value. Buring (1999) proposes a condition for appropriate question-answer pairs as in (4.17).

(4.17) Question-Answer Condition:

The meaning of the question must match one element in the Topic value of the answer.
(Büring 1999: 67)

The semantic value of the question in (4.14A) is (4.15), which is a set of possible answers to the question and the topic value of the answer in (4.14B) is (4.16). (4.14B) is an appropriate answer since (4.15) matches one of the elements in (4.16).

4.1.1.3 INTERPRETATIONS OF -*NADO* AND INFORMATION STRUCTURE

In the surprising/expected interpretations of the sentences containing -*nado* in (4.18) and (4.19), only for the surprising interpretations in (4.18a) and (4.18b), the nominative marker *ga* can be suffixed to the subject.

(4.18) a. *Daisuke-nado(-ga)* *ki-ta.*
Daisuke-NADO come-PAST
(It is surprising to utter) 'Daisuke came.'

b. *Daisuke-nado(-ga)* *ko-na-katta.*
Daisuke-NADO come-NEG-PAST
(It is surprising to utter) 'Daisuke didn't come.'

(4.19) a. *Daisuke-nado(*-ga)* *(mochiron)* *ki-ta.*
Daisuke-NADO off.course come-PAST
'(Expectedly,) Daisuke came.'

b. *Daisuke-nado(*-ga)* *(mochiron)* *ko-na-katta.*
Daisuke-NADO off.course come-NEG-PAST
'(Expectedly,) Daisuke didn't come.'

(4.18a) and (4.18b), the information focus is on the constituent which is focused by -*nado*, since the nominative marker *ga*, which indicates information focus, can be suffixed to what is focused by -*nado*, the subject in this example. The question-answer pair in (4.20a) and (4.20b) also suggests that for surprising interpretations, the information focus is on the constituent which is focused by -*nado*. Sentence (4.18a) is an appropriate answer to (4.20a), which asks who came. In (4.19a) and (4.19b), on the other hand, the information structure focus is not on the subject since

the nominative marker cannot be suffixed to the subject. (4.19a) is not an appropriate answer to (4.20a).

(4.20) a. *Dare-ga* *ki-ta-no.*
who-NOM come-PAST-Q
'Who came?'

b.(=4.18a) *Daisuke-nado(-ga)* *ki-ta.*
Daisuke-NADO come-PAST
(It is surprising to utter) 'Daisuke came.'

c.(=4.19a) *#Daisuke-nado(*-ga)* *ki-ta.*
Daisuke-NADO come-PAST
'(Expectedly,) Daisuke came.'

(4.19a) is not an appropriate answer to (4.21a), either, which asks what Daisuke did.

(4.21) a. *Daisuke-wa* *nani-o-shi-ta-no.*
Daisuke-TOP what-ACC-do-PAST-Q
'What did Daisuke do?'

b.(= 4.19a) *#Daisuke-nado(*-ga)* *ki-ta.*
Daisuke-NADO come-PAST
'(Expectedly,) Daisuke came.'

(4.20a) and (4.20c), and (4.21a) and (4.21b) show that for expected interpretations, neither the constituent focused by *-nado* nor other constituents than the one focused by *-nado*, can be the information structure focus. (4.19a), however, is an appropriate answer to (4.22a), which asks whether Daisuke came.

(4.22) a. *Daisuke-wa ki-ta-no.*
Daisuke-NOM come-PAST-Q
'Did Daisuke come?'

b.(= 4.19a) *Daisuke-nado(*-ga) ki-ta.*
Daisuke-NADO come-PAST
'(Expectedly,) Daisuke came.'

In the expected interpretation in (4.22b), the information focus is on the truth or falsity of the sentence. In other words, the type of focus of (4.22b)(= 4.19a) is verum focus.

As illustrated above, the interpretations of *-nado* involve two focused constituents, information structure focus and focus by *-nado*. This suggests that not only focus value but also topic value are needed to characterize the meaning of *-nado* since alternatives are evoked for two constituents, a constituent on which the information focus is placed, and a constituent which *-nado* focuses on. I propose that *-nado* means (4.23). In (4.23), P_T indicates the topic value of P, *f* and *a* are the constituent focused on by *-nado* and alternatives to the focused constituent, respectively.

(4.23) -nado P (f): It is less relevant that { Q: the members in P_T (f) which contain f } than { Q: the members in P_T (f) which contain a }

For example, the meaning of *-nado* in (4.24a) and (4.24b) is (4.25a) and (4.25b), respectively.

(4.24) a. *Daisuke-nado(*-ga)* *ki-ta.*
Daisuke-NADO come-PAST
'(Expectedly,) Daisuke came.'

b. *Daisuke-nado(-ga)* *ki-ta.*
Daisuke-NADO come-PAST
(It is surprising to utter) 'Daisuke came.'

(4.25) a. -nado P (f): It is less relevant that { (Daisuke came, Daisuke did not come } than { (someone else came, someone else did not come) }

b. -nado P (f):
It is less relevant that (Daisuke came) than (someone else came)

There are two cases as shown in (4.25a) and (4.25b) since the information structure focus is different from what is focused by *-nado* for expected interpretations and they are the same for surprising interpretations. When the information structure focus is different from *-nado*'s focus, P_T is a usual topic value while when the information structure focus and *-nado*'s focus are on the same constituent, P_T is the same as the focus value P_F since alternatives to the constituent are already evoked by the information structure focus. For example, for (4.19a), repeated here in (4.26), the information structure focus is different from *-nado*'s focus. The focus value and the topic value introduced by *-nado* are (4.27) and (4.28), respectively.

(4.26) [*Daisuke-nado(*-ga)* *(mochiron)* *kita.*]$_F$
Daisuke-NADO off.course come-PAST
'(expectedly,) Daisuke came.'

(4.27) P_F = (Daisuke came, Daisuke didn't come)

(4.28) P_T = λx (x came, x didn't come)

In (4.26), the information structure focus is on the truth or falsity of the sentence and the alternative proposition is the polar opposite proposition. *-nado* evokes alternatives to the subject *Daisuke* and introduces the topic value in (4.28). According to the definition in (4.23), the meaning of (4.26) is represented as (4.29).

(4.29) It is less relevant that { Daisuke came, Daisuke didn't come }
than { { Yuka came, Yuka didn't come }, { Takuya came, Takuya didn't come }, … }

{ P: P = P_T (f) } and { P: P = P_T (a) } for (4.26) are (4.30) and (4.31), respectively.

(4.30) { Daisuke came, Daisuke didn't come }

(4.31) {{ Yuka came, Yuka didn't come }, { Takuya came, Takuya didn't come }, … }

(4.29) says that it is less relevant whether Daisuke came or not than whether someone else came or not. In other words, the question whether Daisuke came or not is relatively settled compare to the question whether other individuals came. (4.26) is appropriate in contexts in which the proposition that Daisuke came is relatively unquestionable.

For (4.18a), repeated here in (4.32), in which the information structure focus and *-nado*'s focus are on the same constituent, the meaning of *-nado* depends only on the focus value.

(4.32) [*Daisuke-nado(-ga)*]$_F$ *kita.*
Daisuke-NADO come-PAST
(It is surprising to utter) 'Daisuke came.'

Since the information structure focus and *-nado*'s focus are the same, *-nado* does not have to evoke additional alternatives and consequently, the focus value and topic value are the same, as shown in (4.33).

(4.33) $P_F = P_T$ = { Daisuke came, Yuka came, Takuya came, … }

According to (4.23), the meaning of (4.32) is (4.34).

(4.34) It is less relevant that Daisuke came than other individuals came

{ P: P = P_T (f) } and { P: P = P_T (a) } for (4.32) are (4.35) and (4.36), respectively.

(4.35) { Daisuke came }

(4.36) { Yuka came, Takuya came, … }

(4.34) says that Daisuke's coming is less relevant than other individuals' coming. The reason why the proposition expressed by (4.32) is perceived as surprising is that irrelevant propositions

are usually surprising to the listener. This effect on the listeners can be characterized as a perlocutionary effect of uttering irrelevant propositions.

4.1.1.4 RELEVANCE THEORY

I proposed a meaning for *-nado* in the previous section that appeals to the notion of relevance. In this section, I introduce Sperber and Wilson's (1986) definition of relevance as a preparation to a redefinition of the meaning of *-nado*. Sperber and Wilson (1986) propose the definition of relevance in (4.37). For a new assumption to be relevant in a context, it has to be related to assumptions which are already in the context.

(4.37) *Relevance*

> An assumption is relevant in a context if and only if it has some contextual effect in that context. (Sperber and Wilson 1986: 122)

Whether a new assumption is related to a context depends on whether it has what Sperber and Wilson (1986) calls contextual effects. There are three kinds of contextual effects: contextual implications, contradictions, and strengthening. When a new assumption has these contextual effects in a context, it is considered to be relevant.

Let us look at examples of contextual effects and relevant utterances. Consider a context in which (4.38a)-(4.38c) are assumed.

(4.38) a. *If Peter, Paul and Mary came to the party, the party was a success.*

b. *Peter came to the party.*

c. *Paul came to the party.*

(Sperber and Wilson 1986: 109)

The utterance in (4.39) together with the three assumptions in (4.38a), (4.38b) and (4.38c) implies (4.40).

(4.39) *Mary came to the party.* (Sperber and Wilson 1986: 109)

(4.40) *The party was a success.* (Sperber and Wilson 1986: 109)

(4.39) has the contextual implication (4.40) in the context characterized in (4.38) and the utterance is relevant according to the definition in (4.37). Suppose that another assumption in (4.41) is added to the context.

(4.41) *If the party broke up late, then it was a success.* (Sperber and Wilson 1986: 112)

In this context, the utterance of (4.42) implies (4.40).

(4.42) *The party broke up late.* (Sperber and Wilson 1986: 112)

Both (4.39) and (4.42) imply (4.40). Whether (4.42) is relevant or not depends on how strongly (4.39) and (4.42) imply (4.40). If (4.42) implies (4.40) less strongly than (4.39), it is not relevant since the stronger implication has already been -made by (4.39). However, if (4.42) implies (4.40) more strongly than (4.39), it is relevant since (4.42) has the contextual effect of strengthening (4.40). Finally, consider the assumptions in (4.43).

(4.43) *If Jennifer came, the party was a success.*

b. *Jennifer came.*

c. *If Bill came, the party was not success.*

d. *The party was a success.*

(Sperber and Wilson 1986: 114)

In the context in which (4.43a)-(4.43d) are assumed, (4.44) implies (4.45) and (4.45) contradicts (4.43d).

(4.44) *Bill came.* (Sperber and Wilson 1986: 114)

(4.45) *The party was not a success.* (Sperber and Wilson 1986: 114)

When a contradiction occurs between assumptions in a context and a new assumption, the strength of the conflicting information is compared. If the conclusion in (4.45) is found to be stronger than (4.43d), the assumption in (4.43d) and what implies (4.43d), which is weaker of

(4.43a) and (4.43b) will be erased from the context since a weaker assumption is easier to be erased than a stronger one. (4.44) changes the assumptions in the context as a result of the contradiction which it introduces. Contradiction is another kind of contextual effects and (4.44) is relevant in the context.

4.1.1.5 THE NOTION OF RELEVANT FOR THE SURPRISING INTERPRETATION

As I proposed above, the meaning of *-nado* is characterized by means of the notion of relevance. For example, the meaning of the expected interpretation in (4.46) and surprising interpretation in (4.47) are represented as (4.48) and (4.49), respectively.

(4.46) *Daisuke-nado(*-ga)* *(mochiron)* *kita.*
Daisuke-NADO off.course come-PAST
'(expectedly,) Daisuke came.'

(4.47) *Daisuke-nado(-ga)* *kita.*
Daisuke-NADO come-PAST
(It is surprising to utter) 'Daisuke came.'

(4.48) It is less relevant that { Daisuke came, Daisuke didn't come }
than {{ Yuka came, Yuka didn't come }, { Takuya came, Takuya didn't come }, … }

(4.49) It is less relevant that (Daisuke came) than (Takuya came, Yuka came…)

The secondary meaning characterized by *-nado* in (4.48) seems to be intuitively straightforward. (4.48) means that it is less relevant whether Daisuke came than whether someone else came. For a question not to be relevant means that the answer should already be known or expected. This is why (4.46) means that Daisuke's coming is expected. However, what the notion of relevance contributes to the surprising interpretations in (4.49) is less clear. I explain surprising interpretations of *-nado* such as (4.47) by means of Sperber and Wilson's (1986) definition of relevance in (4.50).

(4.50) *Relevance*

> An assumption is relevant in a context if and only if it has some contextual effect in that context. (Sperber and Wilson 1986: 122)

For example, in a context in which (4.47), repeated in (4.51) is appropriate, Daisuke's coming is less relevant than someone else's coming. The context proposition in (4.52b) has a stronger contextual implication than the one which the text proposition in (4.52a) has since a more relevant proposition has a stronger contextual implication.

(4.51) a. *Daisuke-nado(-ga)* *kita.*
Daisuke-NADO come-PAST
(It is surprising to utter) 'Daisuke came.'

b. It is less relevant that (Daisuke came) than (Takuya came, Yuka came…)

(4.52) a. Text proposition: Daisuke came

b. Context proposition: { Yuka came, Takuya came, … }

Let us look at how the definition in (4.50) works in attested examples. The newspaper article in (4.53) is about subsidies which a town received.

(4.53) *黒木は町長就任以来、ユニークな発想と強力なリーダーシップで国や県から補助金を次々に引き出してきた。中でも語り草になっているのが納豆工場の建設だ。「自治体がなんで納豆**なんか**つくるんだ」と、県から一度は激しく批判された事業だった。しかし、黒木は「稲作転換で作った大豆に付加価値を付けるのが納豆。健康食ブームで需要も高い」と粘り強く説得し、同町産業公社は年間二十五万カップを出荷する実績を残した。*

The mayor received various subsidies by proposing unique ideas and showing strong leadership. One of the most famous ones is for constructing a factory producing fermented soybeans. It was once seriously criticized by the prefecture, which said 'why should a local government (produces fermented soybeans)-***nanka***?'[15] But the mayor said 'we put extra value on soybeans by making it fermented. There is high demand for healthy foods.' and convinced them. The town has sold 250,000 packages of them a year.

Usually, subsidies are allocated to a town, for example, to construct roads, bridges, etc. When one thinks of subsidies, one would make the assumption in (4.54).

(4.54) If a town plans to construct roads, bridges, etc., it would receive subsidies

In a context in which (4.54) is an assumption, the sentence in (4.55) is not relevant since it does not have a contextual implication.

(4.55) A local government (produces fermented soybeans)-nado

[15] *-nanka* is a conversational form of *-nado*.

The sentence in (4.56), on the other hand, is relevant since it has a contextual implication, given the assumption in (4.54), namely (4.57).

(4.56) A local government constructs roads, bridges, etc

(4.57) The local government receives subsidies

The meaning characterized by *-nado* in (4.53) is represented as in (4.58).

(4.58) It is less relevant that (a local government produces fermented soybeans) than (a local government construct roads, bridges, etc.)

(4.59) is another example of *-nado* in newspaper articles. In (4.59), the conditional in the first sentence introduces the assumption in (4.60).

(4.59) *改札がなければ、そもそも入場料なんてものが発生しないのに、改札**なんか**があるからこういう問題が起こる。そういえば、神戸の市電も「IC カードで入場してそのまま出場すると最低料金が必要です」みたいな掲示があった。駅が街のなかでショートカット*2 になっているというのは街の構造上の問題でもあるかもしれない。*

If there is no gate, there is no entrance fee, but since there is (a gate)-***nanka***, a problem like this happens. In a station in Kobe, there is a notice saying that when you get through a gate, you have to pay the minimum fee even when you don't take the train. It is a problem caused by the structure of the town in which crossing through a station is a short cut.

(4.60) If there is no gate, there is no entrance fee

In the context in which (4.60) is assumed, the sentence in (4.61), in which *-nado* occurs, does not seem to be relevant since it does not have any contextual implications.

(4.61) There is (a gate)-nado

The sentence in (4.62), on the other hand, is relevant since it has the contextual implication in (4.63).

(4.62) There is no gate

(4.63) There is no entrance fee

(4.62) is a context proposition and the meaning characterized by *-nado* is represented as in (4.64).

(4.64) It is less relevant that (there is a gate) than (there is no gate)

The proposition that there is a gate, has to have less contextual implications than the proposition that there is no gate. It seems clear that (4.61) is less strong than (4.62) since the proposition that there is no gate has the contextual implication in (4.63) and the proposition that there is a gate, does not have any contextual implication.

Finally, let us look at (4.65). From the second sentence, one would assume (4.66).

(4.65) *最近、女性誌などで「大人の女」を特集することが多く、しばしばコメントを求められるが、残念ながら、今の日本で需要があるのは「子供の女」である。「大人の女」に**なんか**なったらもてないのだ。まことに嘆かわしいかぎりだが、人間を「裸のサル」と見なして生態を観察することを続けてきた著者によると、進化の観点から見て、こうした傾向にはそれなりの理由があるようだ。*（毎日新聞: 2007 年 4 月 1 日）

Recently, many women's magazines feature about 'adult women', and I'm often asked for comments. However, unfortunately, it is immature women, who are attractive in current Japan. If one (becomes mature)-***nanka***, she is not attractive. It is very unfortunate, but according to the author, who has investigated human behaviors by regarding human as naked monkies, this conclusion is reasonable in terms of their evolution. (Mainichi Shinbun: 4/1/2007)

(4.66) If a woman is immature, she is attractive

In a context in which (4.66) is assumed, the sentence in (4.67), in which *-nado* occurs, is not relevant since it does not have a contextual implication.

(4.67) One (becomes mature)-nado

The sentence in (4.68), on the other hand, is relevant since it has the contextual implication in (4.69) based on the assumption in (4.66).

(4.68) One is immature

(4.69) She is attractive

The meaning of the sentence in (4.67) is represented as in (4.70).

(4.70) It is less relevant that (one becomes mature) than (one is immature)

4.1.2 PERLOCUTIONARY EFFECT OF *-NADO*

In surprising interpretations, the text proposition is less relevant than the context propositions. One could wonder why there are particles such as *-nado* which express less relevant propositions since uttering less relevant propositions seems to violate Grice's conversational principle. *-nado* signals that the speaker understands that the propositions are less relevant at the time of utterance. If less relevant propositions are uttered without *-nado*, listeners could become confused in searching for inferable propositions in vain. After letting the listeners know that the speaker understands that she utters less relevant propositions and keeping the listeners from making unnecessary inferences, the speaker can explain why she has uttered less relevant sentences.

Austin (1975) classifies acts of utterances, which he refers to as performatives, into three subclasses, locutionary acts, illocutionary acts and perlocutionary acts. Locutionary acts are the acts of saying something. Performing locutionary acts in general accompany illocutionary acts. Austin (1975) lists examples of illocutionary acts in (4.71) and characterizes illocutionary acts as the acts in saying something.

(4.71) asking or answering a question,

giving some information or an assurance or a warning,

announcing a verdict or an intention,

pronouncing sentence,

making an appointment or an appeal or a criticism,

making an identification or giving an description,

(Austin 1975: 98)

Performing illocutionary acts often produce effects on listeners' feeling, thought and actions. Austin (1975) refers to this kind of acts as perlocutionary acts and characterizes perlocutionary acts as the acts by saying something. (4.72) is an example of locutionary, illocutionary and perlocutionary acts.

(4.72) a. Locution

He said to me 'You can't do that.'

b. Illocution

He protested against my doing it.

c. Perlocution

He pulled me up, checked me.

(Austin 1975: 102)

(4.72a) is a locutionary act of saying 'You can't do that.' The referent of *he* performed an illocutionary act of protesting in saying 'You can't do that. The person performed an

perlocutionary act on the referent of *me* by saying "You can't do that': he produced an effect on him as he pulled him up.

-nado's function of preventing the listeners from making unnecessary inferences is a perlocutionary act. By performing a locutionary act of uttering sentences containing *-nado*, one performs an illocutionary act of giving information that the text proposition over which *-nado* scopes is irrelevant. This illocutionary act produces an effect of keeping listeners from making unnecessary inferences.

4.1.3 THE SECONDARY MEANING OF *-NADO*

In this section, I discuss the semantic status of the surprising/expected interpretations of *-nado*. I examine the semantic properties discussed in Potts (2005) and argue that the surprising/expected interpretations are similar to the secondary meaning of lexical items like English *even* or *but*.

4.1.3.1 CONDITIONAL, MODAL AND QUESTION OPERATORS

The surprising/expected interpretations of *-nado* always scope over operators such as conditional, modal and question operators. In (4.73), in which *-nado* occurs in the antecedent, the surprising/expected interpretations of *-nado* scope over the conditional. In (4.73), whether it is surprising or not that one eats ice cream does not affect the truth or falsity of the consequent. In contexts in which (4.73) is uttered, it is surprising that one eats ice cream regardless of the truth conditions of the consequent.

(4.73) *Aisukuriimu-nado* *tabe-ta-ra* *onakakowa-su.*
ice.cream-NADO eat-PAST-if have.stomachache-NONPAST

surprising (ate (ice.cream)) $\wedge$ (ate (icecream) $\rightarrow$ stmachache)
(surprising (ate (ice.cream)) $\wedge$ (ate (icecream)) $\rightarrow$ stmachache

'If you eat ice cream, you would have stomachache.'

Similarly, as (4.74) and (4.75) show, the surprising/expected interpretations of *-nado* always scope over the modal operator *–kamoshirenai* 'may' and interrogative operator *–no*.

(4.74) *Aisukuriimu-nado* *tabe-ta-kamoshirena-i.*
ice.cream-NADO eat-PAST-may-NONPAST

surprising (ate (ice.cream)) $\wedge$ may (ate (icecream))
may (surprising (ate (ice.cream)) $\wedge$ (ate (icecream)))

'She might have eaten ice cream.'

(4.75) *Aisukuriimu-nado* *tabe-ta-no?*
ice.cream-NADO eae-PAST-Q

surprising (ate (ice.cream)) $\wedge$ Q (ate (icecream))
Q (surprising (ate (ice.cream)) $\wedge$ ate (icecream))

'Did you eat ice cream?'

(4.74) does not mean that eating ice cream might have been surprising and (4.75) does not ask whether eating ice cream is surprising. For example, to the question in (4.75), the answer in (4.76a), which is about whether the speaker ate ice cream or not, is acceptable but (4.76b), which is about whether eating ice cream is surprising or not, is not acceptable.

(4.76) a. *Uun, tabe-na-katta-yo.*
No eat-NEG-PAST-DM
'No, I didn't eat ice cream.'

b. *#Uun, odoroku koto jyanai-yo.*
No surprising COMP NEG-DM
'No, it's not surprising.'

The surprising/expected interpretations of *-nado* behaves like presuppositions and always scope over operators such as conditional, modal, and question operators.

4.1.3.2 NON CANCELABILITY

The surprising/expected interpretations of *-nado* behave like secondary meanings and are not cancellable in contrast to presupposition. As a continuation after sentence (4.77), (4.78a) is acceptable but (4.78b) is not acceptable.

(4.77) *Takuya-nado-ga ki-ta njya naku-te,*
Takuya-NADO-NOM come-PAST COMP NEG-and
'It's not the case that Takuya (surprisingly) came, but'

(4.78) a *Daisuke-ga ki-ta-n-da-yo.*
Daisuke-NOM come-PAST-COMP-NONPAST-DM
'Daisuke came.'

b. *#Omo-ttei-ta touri-da-yo.*
think-PERF-PAST as-NONPAST-DM
'it is what is expected.'

(4.78b) is not acceptable since what can be negated in (4.77) is the primary meaning and the surprising interpretation of *-nado* that Takuya's coming is surprising is not cancellable.

4.1.3.3 ANTI-BACKGROUNING

Information conveyed by conventional implicatures is new to a discourse in contrast to presuppositions, which convey back-grounding information. It does not seem to be clear whether the surprising/expected interpretations of *-nado* are part of back-grounding information or new information. The expected interpretation of *-nado* in (4.79) that Yuka's not coming is expected, does not seem to be shared with the speaker B since the speaker B explicitly says that she expected that Yuka was coming.

(4.79) A: *Yuka-nado* *ko-na-i-yo.*
Yuka-nado come-NEG-NONPAST
'(Expectedly,) Yuka will not come.'

B: *Sounano?* *Ku-ru-to* *omo-tte-ta.*
Really come-NONPAST-COMP think-PERF-PAST
"Really? I thought she was coming.'

However, it might be the case that speaker A assumed the expected interpretation was shared with B and it just happened not to be the case that it was shared. It is not very clear if the surprising/expected interpretations of *-nado* are shared between the speaker and listeners.

4.1.3.4 SPEAKER ORIENTATION

Conventional implicatures are always speaker oriented and scope over propositional attitude verbs like *say* and *believe* unless contexts explicitly suggest otherwise; see Harris and Potts (2009). Secondary meanings, on the other hand, can be under the scope of propositional attitude verbs. It is not clear whether the surprising/expected interpretations of *-nado* are always speaker oriented and are not someone else's belief. In (4.80), a person who believes the expected interpretation of *-nado* that it was expected that the teacher would not drink milk, seems to be the teacher but not the speaker since the speaker wonders why the teacher would not drink milk in (4.80b).

(4.80) a. *Sensei-wa* *gyuunyuu-nado*
teacher-TOP milk-NADO
onomininara-na-i *to* *ossya-tta.*
drink(honorific)-NEG-NONPAST COMP say-PAST
'The teacher said that (expectedly,) she wouldn't drink milk.'

b. *Kenkouniii* *noni* *nande* *darou-ne.*
healthy although why wonder-DM
'I wonder why (she said it), because it is good for your health.'

However, (4.80) could be uttered even if *-nado* was not included in what the teacher said. Even if the teacher did not actually say the word *-nado*, the speaker could still use *-nado* in the complement clause of *say* to express what the teacher would believe. In such a situation, the speaker expresses what she believes the teacher believes. It is intuitively difficult to decide

whether the surprising/expected interpretations of *-nado* are always speaker oriented, but at least it is possible that it be speaker oriented.

4.1.3.5 SECONDARY MEANING OF *-NADO*

Table 4.1 summarizes the semantic properties discussed in this section.

	Conditional, modal, question operators	Non cancelability	Anti-backgrouning	Speaker orientation
even	Wide scope	√	?	*
-nado	Wide scope	√	?	?

Table 4.1: Properties associated with semantic status of propositions

The surprising/expected interpretations of *-nado* behaves similarly to the secondary meaning of *even* or *but* except for speaker orientation.

4.2 SECONDARY MEANING OF *-KOSO*

Similarly to *-nado*, the Japanese contrastive particle *-koso* specifies the relationship between the text and context propositions by the notion of relevance, in contrast to a more

general contrastive particle *-wa*,[16] which evokes alternatives without further specifying the relationship between the text and context propositions. While the text proposition over which *-nado* scopes is less relevant than the context proposition, the text proposition over which *-koso* scopes is more relevant than the context proposition. In (4.81), for example, the text proposition that bears are quiet is more relevant in a given context than the context proposition that other animals are quiet. (4.81) expresses the three propositions in (4.82).

(4.81) *Kuma-koso* *otonashi-i* *doubutsu-da.*
bear-KOSO quiet-NONPAST animal-NONPAST
'Bears are quiet animal.'

(4.82) a. T(ext proposition): Bears are quiet

b. C(ontext proposition): Other animals are quiet

c. T is more relevant than C

While (4.81) is a generic statement which describes a property of bears in general and *-koso* is acceptable in this kind of sentences, *-koso* is not acceptable in episodic statements like (4.83). In (4.83), which describes a specific event in the past, *-koso* is not acceptable.[17]

(4.83) *#Yuka-koso* *benkyoushi-ta.*
Yuka-KOSO study-PAST
Intended: 'Yuka studied.'

[16] Kuno (1973) proposes two distinct uses of *-wa*, its thematic and contrastive uses. There have been various attempts to relate the two uses (e.g. Kuroda 1972, Shibatani 1990).
[17] There are some exceptions like (a).
(a) *Kochira-koso* *osewaninarimashi-ta.*
I-KOSO receive.support-PAST
(a) does not describe an event in the past but is an idiomatic expression that expresses the speaker's gratitude.

While (4.83) is not acceptable, the same sentence, when embedded under verbs like *believe*, is acceptable as shown in (4.84).

(4.84) *Yuka-koso* *benkyoushi-ta* *to* *shinji-tei-ru.*
Yuka-KOSO study-PAST COMP believe-PERF-NONPAST
'I believe that Yuka studied.'

-koso is acceptable also under the scope of modal expressions. Japanese has modal expressions for epistemic necessity and deontic obligation. *-koso* is acceptable under the scope of these modal expressions, as shown in (4.85).

(4.85) a. *Yuka-koso* *ku-ru-hazu-da.*
Yuka-KOSO come-should(epistemic)-NONPAST
'Yuka should come.'

b. *Yuka-koso* *ku-ru-beki-da.*
Yuka-KOSO come-should(deontic)-NONPAST
'Yuka should come.

We just saw that the text proposition over which *-koso* scopes is considered is more relevant than the context proposition in a context. However, *-koso* when occurring in adversative clauses, does not seem to express the same meaning as when occurring in other environments. In (4.86), the proposition expressed by the first conjunct containing *-koso*, seems to be less relevant than the proposition expressed by the main clause.

(4.86) *Kaze-koso* *tsuyoku-na-i* *ga* *kion-wa*
wind-KOSO strong-NEG-NONPAST although temperature-TOP
hiku-i.
low-NONPAST
'Although the wind is not strong, the temperature is low.'

A more general contrastive particle *-wa* expresses the similar meaning as *-koso*. However, compared with the sentence in (4.87), in which *-wa* is substituted for *-koso*, (4.86) seems to express more strongly that the first conjunct could have been false: the speaker expected that the wind would be strong.

(4.87) *Kaze-wa* *tsuyoku-na-i* *ga* *kion-wa*
wind-WA strong-NEG-NONPAST although temperature-TOP
hiku-i.
low-NONPAST
'Although the wind is not strong, the temperature is low.'

Another difference between the two contrastive particles *-wa* and *-koso* in adversative clauses, is that *-wa* is compatible to semantic oppositions expressed by the two conjuncts while when *-koso* occurs in adversative clauses, oppositions must involve a larger context outside adversative sentences. In (4.88a), in which *-wa* appears, elephants' being big is contrasted with squirrels' being small. What is contrasted in (4.88a) is a semantic opposition between being big and being small and no larger pragmatic context is required to make the contrast. *-koso* is not acceptable in such sentences which express semantic contrasts without referring to larger contexts, as shown in (4.88b).

(4.88) a. *Zou-wa* *ookii* *ga* *risu-wa* *chiisa-i.*
elephant-WA big but squirrel-WA small-NONPAST
'Elephants are big but Squirrels are small.'

b. *#Zou-koso* *ookii* *ga* *risu-wa* *chiisa-i.*
elephant-KOSO big but squirrel-WA small-NONPAST
'Elephants are big but Squirrels are small.'

-koso is acceptable in (4.86) since the contrast between the two conjuncts is not semantic but pragmatic. What is contrasted in (4.86) is how the speaker perceives the propositions expressed by the conjuncts. For example, the speaker would be happy that the wind is not strong but would not be happy that the temperature is low.

In the following sections, first, in section 4.2.1, I define the contextual meaning of *-koso* by looking at attested examples from a newspaper. Secondly, in section 4.2.2, I discuss the interpretation of *-koso* in adversative clauses. Finally, in section 4.2.3, I examine a use of *-koso* when it focuses on temporal expressions.

4.2.1 CONTRASTIVE MEANING OF *-KOSO*

The semantic function of *-koso* is to evoke contextually available alternatives and specify the relationship between the text proposition containing the focused constituent and the context proposition containing an alternative by the notion of relevance. In the previous section, I informally described the secondary meaning of *-koso* as in (4.89). I call (4.89) the secondary meaning of *-koso* since that meaning behaves like the secondary meaning of *even* or *but*, or *-shika* or *-nado*.

(4.89) The text proposition is more relevant than the context propositions.

To define the secondary meaning of *-koso* more formally, Sperber and Wilson's (1986) definition of relevance in (4.90) is useful.

(4.90) *Relevance*

> An assumption is relevant in a context if and only if it has some contextual effect in that context. (Sperber and Wilson 1986: 122)

As I introduced in the discussion of the meaning of *-nado*, there are three kinds of contextual effects, contextual implications, contradictions, and strengthening. The semantic function of *-koso* is to strengthen contextual implications. I define the secondary meaning of *-koso* as in (4.91).

(4.91) -koso (P (f)): The text proposition P (f) implies a contextually determined proposition R more strongly than the context proposition P (a) does

In the contexts in which sentences containing *-koso* are uttered, (4.92) is assumed.

(4.92) If the context proposition is true, then R is true

-koso means that although (4.92) is assumed, the text proposition implies a contextually available proposition R more strongly than the context proposition. *-koso* in (4.93), for example, has the secondary meaning in (4.94).

(4.93) *Hokkaido-koso* *yuki-ga* *oo-i.*
Hokkaido-KOSO snow-NOM many-NONPAST
'It snows a lot in Hokkaido.'

(4.94) -koso (snow.a.lot (Hokkaido)): (snow.a.lot (Hokkaido)) implies a contextually available proposition R more strongly than (snow.a.lot (another place)) does

In contexts in which (4.93) may be uttered, (4.95) is assumed. (4.94) means that although (4.95) is assumed, the text proposition that it snows a lot in Hokkaido implies R more strongly than the context proposition.

(4.95) If the context proposition that it snows a lot somewhere else, then R is true.

For (4.93), which is given in isolation, a contextually available proposition R cannot be specified. In (4.96), R is clearer as shown in (4.97).

(4.96) *Yasai-ga* *kiraina* *hito-wa* *ooi* *ga* *kenkou* *notameni-wa*
vegetable-ga dislike people-TOP many but health for-TOP
yasai-koso *tabe-nakutewanarana-i.*
vegetable-KOSO eat-should-NONPAST
'Many people don't like vegetables but one has to eat vegetables to stay healthy.'

(4.97) -koso (one.eat (vegetable)):
(one.eat (vegetable)) implies (one.stay.healthy) more strongly than (one.eat (something else)) does

(4.97) means that although it is assumed that if one eats some other healthy foods implies the proposition that one stays healthy, eating vegetables more strongly implies staying healthy than eating some other foods. The contextually determined proposition R for (4.96) is that one stays healthy.

Let us look at attested examples from a newspaper and see how the definition in (4.91) works. For (4.98), the text proposition P (f), context proposition P (a) and contextually available proposition R are (4.99a), (4.99b) and (4.99c), respectively. The secondary meaning of *-koso* is (4.100).

(4.98) *攻守にバリエーションを持たせることも重要だが、それぞれの適性がかみ合ってこそ戦術として結果に表れるもの。この時期の指揮官は、確固たるコンセプトを改めて示すことが大事だ。何より、選手に不安を与えることだけは避けなければならない。*(毎日新聞: 2010 年 4 月 11 日)

It is also important to have various options for both their offence and defense, but (each player's skill helps a team to play well)-*koso*, and the tactics works. The coach should give a clear concept to the players. The most important thing is not to confuse players. (Mainichi Shinbun: 4/11/2010)

(4.99) a. Text proposition P (f): Players' skills help a team

b. Context proposition P (a): A team has various options

c. R: The team's tactics work well

(4.100) -koso (players' skills integrate): (Players' skills help a team) implies (the team's tactics works well) more strongly than (a team has various options) does

(4.98) discusses what a soccer team should do to make their tactics work. The sentence which contains *-koso* in (4.98) means that although it is assumed that the context proposition that a team has various options implies the proposition that the team's tactics works, the text proposition that players' skills integrate more strongly implies that the team's tactics works than the context proposition. This does not mean that the text proposition instead of the context proposition implies that the tactics works well. Rather, the text proposition in addition to the context proposition more strongly implies that the tactics works well than the context proposition alone does. It is necessary for a team's tactics to work well that the team has various options since otherwise the tactics would be easily predictable. However, to execute the various options, it is also necessary that players' skills integrate. This is an example of strengthening of Sperber and Wilson (1986). (4.101) is another example from a newspaper. P (f), P (a) and R for (4.101) are (4.102a), (4.102b) and (4.102c), respectively and the secondary meaning of *-koso* is (4.103).

(4.101) *日産が営業赤字に転落したのは 1995 年以来 14 年ぶり。99 年にゴーン社長体制になってからは初めてです。この危機的状況に、原価低減といった地道な努力のほかに、新型の電気自動車を開発・販売することで業績回復を図ろうとしています。*

日産は 00 年 4 月に初のハイブリッド車であるティーノ・ハイブリッドを販売しています。ただし 100 台限定でした。新任のゴーン社長の意向もあり、コストカットこそが必要な時期に、赤字覚悟のハイブリッド車の販売は困難ということで、その後の販売はありませんでした。(日経新聞: 2009 年 5 月 26 日)

This is the first time in fourteen years since 1995 that Nissan experiences a deficit. It is the first time since a new president took over the company in 1999. In this critical situation, they are trying to make a recovery not only by reducing the cost of production, but also by developing and selling new electric vehicles.

Nissan sold hybrid cars for the first time in April 2000. But it was only 100 cars. When (lowering production costs)-*koso* was necessary, it was difficult to sell hybrid cars, which didn't make much profit, and they haven't sold hybrid cars since then. (Nikkei Shinbun: 5/26/2009)

(4.102)a. Text proposition P (f): The company reduces production cost

b. Context proposition P (a):
The company does something else like producing hybrid cars

c. R: The company recovers from a deficit

(4.103)-koso (the company reduces production cost): (the company reduces production cost) implies (the company recovers from a deficit) more strongly than (the company does something else like producing hybrid cars) does

(4.101) discusses how the car company manages to get through a tough economic situation. As indicated by the first paragraph in the example, when the company experiences a deficit, they try to recover from it by lowering the cost of production and developing new vehicles. Lowering the cost of production and developing new vehicles is a major strategy for the company to recover

from difficult economic situations. However, last time when they attempted to both lower the production cost and develop new hybrid cars, it was not successful and choose to focus more on reducing the production cost than developing hybrid cars. The sentence in which *-koso* appears in (4.101) means that although it is assumed that the fact that the company produces hybrid cars implies that the company gets through a tough economic time, the text proposition that the company reduces production cost more strongly implies that the company will get through a tough economic time than the context proposition. Finally, for (4.104), P (f), P (a) and R are (4.105a), (4.105b) and (4.105c), respectively and the secondary meaning of *-koso* is (4.106).

(4.104) *こうなると、イスラエルはすぐには軍隊を引き揚げられないと言うだろうし、逆にＰＬＯ（パレスチナ解放機構）の方は軍の撤退に固執するだろう。この和平協定にはもともと双方の内部に反対論が強かった。交渉がズルズル延びれば、それだけ過激派を勢いづけ、対立を利用する勢力の暗躍を許し、協定への反対が強まる可能性が強い。*
今、最も考えなければならないのは、交渉を長引かせるのは危険であり、妥協こそ次善の策であるということだ。イスラエルはエリコの範囲は二十七平方キロメートルに限定されるべしと言い、ＰＬＯは三百四十平方キロメートルだと主張している。この中間に妥協点を見いだすべきだ。(日経新聞: 1993 年 12 月 25 日)

If the negotiation continue without an agreement, it makes extremists and those who take advantage of the conflict happy and opposition against the agreement would get stronger. What we have to think about now is that it is dangerous to continue the negotiation without a solution and the best solution is to seek (a compromise)-*koso*. Israel insists that Jericho is limited in twenty seven square kilo, but PLO insists that it is three hundred forty square kilo. We should seek a compromise between the two. (Nikkei Shinbun: 12/25/1993)

(4.105)a. Text proposition P (f): they seek a compromise

b. Context proposition P (a): they continue the negotiation

c. R: An agreement is made

(4.106) -koso (they seek a compromise): ((they seek a compromise) implies (they continue the negotiation) more strongly than (an agreement is made) does

(4.104) discusses how Israel and PLO reach an agreement. Israel and PLO are negotiating to make an agreement but just insisting each other's request is not sufficient and the two sides need to make a compromise. Continuing to negotiate is necessary for them but they need to take another step to make an agreement. *-koso* in (4.104) means that although the context proposition that they continue the negotiation implies that Israel and PLO will eventually reach an agreement, the text proposition that they seek a compromise more strongly implies that Israel and PLO will reach an agreement than the text proposition.

Before closing the section, I define the secondary meaning of *koso* in (4.107) more formally by means of possible worlds.

(4.107) koso (P (f)):
P (f) implies a contextually determined proposition R more strongly than P (a) does

A text proposition P implying a contextually determined proposition R more strongly than a context proposition Q means that the propotion of the number of possible worlds in which P and R are true to the number of possible worlds in which P is true is larger than the propotion of the number of possible worlds in which Q and R are true to the number of possible worlds in which Q is true. (19) is rephrased as in (20).

(4.108) koso (P (f)): The proportion of the number of possible worlds in which P (f) and R are true to the number of possible world in which P (f) is true is larger than the proportion of the number of possible worlds in which P (a) and R are true to the number of possible world in which P (a) is true:
$card_W (P (f) \wedge R) / card_W (P (f)) > card_W (P (a) \wedge R) / card_W (P (a))$

4.2.2 -*KOSO* IN ADVERSATIVE SENTENCES

In this section, I discuss -*koso* in adversative clauses. First, in section 4.2.2.1, I review analyses of Lang (1984), Lakoff (1971) and Izutsu (2008) on English adversative connector *but*. Although there are other studies about adversative connectives such as Malchukov (2004), which discuss more subtle differences among adversative connectives in various languages and distinguish them from other connectives such as contrastives, concessives, etc., I focus on general properties of adversative connectives for the purpose of the current discussion. Secondly, in section 4.2.2.2, I discuss the interpretation of -*koso* in adversative clauses which appears to be different from its interpretation in other environments. I argue that although its two interpretations appear to be different, -*koso* is not ambiguous and its interpretation in adversative clause is a result of an interaction between its secondary meaning and the semantics of adversative connectives. In section 4.2.2.3, I examine two seemingly different interpretations of -*koso* in adversative clauses which Mogi (2006) discusses and show that the two interpretations are explained by two different kinds of contrasts that adversative clauses can express. In 4.2.2.4, I discuss the difference between -*koso* and a more general contrastive particle -*wa* in adversative clauses. Finally, in section 4.2.2.5, I examine why -*koso* is incompatible with what Lakoff (1971) calls 'semantic opposition *but*'.

4.2.2.1 ADVERSATIVE CONNECTIVES

Lang (1984) discusses the meaning of English adversative connector *but*. (4.109), (4.110) and (4.111) are examples of different kinds of the meaning of *but*.

(4.109) a. *x is divisible but (x is) odd.*

b. *x is odd but (x is) divisible.*

(Lang 1984: 171)

(4.110) a. *x is an odd number but (x is) a square number.*

b. *x is a square number but (x is) an odd number.*

(Lang 1984: 171)

(4.111) a. *x is a divisible number but y is a prime number.*

b. *x is a prime number but y is an even number.*

(Lang 1984: 173)

A semantic property which is common to examples in (4.109)-(4.111) is that the two conjuncts have to be compatible or in other words, the propositions expressed by the two conjuncts can be true simultaneously. The sentences in (4.112) are not acceptable since the two conjuncts are not compatible.

(4.112)a. *#x is an odd number but (x is) an even number.*

b. *#x is an even number but (x is) a prime number.(except 2)*

(Lang 1984: 170)

The two conjuncts in (4.112) are not compatible since numbers cannot be odd and even or even and prime simultaneously. Another constraint on the conjuncts connected by *but* is that one conjunct neither entails nor is entailed by the other conjunct. The sentence in (4.113a) is not acceptable since the proposition that a number is even entails the proposition that a number is divisible.

(4.113)a. ??*x is even but divisible.*

b. ?*x is divisible but even.*

(Lang 1984: 170)

Lakoff (1971) or more recently, Izutsu (2008) classifies the semantic relationships between the two conjuncts of *but* into two classes. Lakoff (1971) calls *but* in (4.111) 'semantic opposition *but*'and *but* in (4.109) and (4.110) 'denial of expectation *but*'. For the 'semantic opposition *but*', what is contrasted is semantically mutually exclusive. In (4.111a), being a divisible number and being a prime number are mutually exclusive and the first and second conjuncts are semantically contrasted. For the 'denial of expectation *but*', on the other hand, what is expected or assumed from propositions described by the two conjuncts is contrasted. For (4.109a), the two conjuncts are not mutually exclusive since a number can be both divisible and odd but a contrast is made based on an assumption that if a number is divisible, it is usually not

odd. (4.110) is also example of the denial of expectation *but* but for (4.110), it is not the case that if a number is odd, it is usually not square. The two conjuncts in (4.110) are not contrasted with each other directly but they are contrasted pragmatically with the help of another contextually available proposition. Suppose, for example, the speaker is looking for an even square number. It is expected from the first conjunct that the speaker is happy and from the second conjunct that she is not happy. The pragmatically expected propositions that the speaker is happy and that the speaker is not happy are contrasted in (4.110). Izutsu (2008) calls the opposition expressed in (4.109) direct concessive and the opposition expressed in (4.110) indirect concessive.

Japanese adversative connectives *ga*/*kedo* are similar to *but* and have uses similar to both semantic opposition *but* and denial of expectation *but*. *Ga/kedo* in (4.114a) is an example of semantic opposition *but*. In (4.114a), being big is semantically contrasted with being small. (4.114b) is an example of denial of expectation *but*. Suppose that the person talked about in (4.114b) is a basketball player. What is expected from the first conjunct that she is not quick is that she is not a good basketball player and what is expected from the second conjunct that she plays every game is that she is a good basketball player. The two propositions that she is not a good basketball player and that she is a good basketball player are contrasted in (4.114b).

(4.114) a. *Zou-wa* *ooki-i* *ga/kedo* *risu-wa*
elephant-WA big-NONPAST but/but squirrel-WA
chiisa-i.
small-NONPAST

'Elephants are big but squirrels are small.'

b. *Asi-wa* *hayaku-na-i* *ga/kedo*
leg-WA quick-NEG-NONPAST but/but
itumo *shiai-ni* *de-tei-ru.*
always game-in participate-PROG-NONPAST

'She is not quick but she plays every game.'

In (4.114), the contrastive particle -*wa* occurs in the first conjuncts. However, if -*koso* is substituted for -*wa* in (4.114a), the sentence is not acceptable as shown in (4.115a). If -*koso* is substituted for -*wa* in (4.114b), on the other hand, the sentence is acceptable as shown in (4.115b).

(4.115)a. *#Zou-koso* *ooki-i* *ga/kedo*
elephant-KOSO big-NONPAST but/but
risu-wa *chiisa-i.*
squirrel-WA small-NONPAST

b. *Asi-koso* *hayaku-na-i* *ga/kedo* *itumo*
leg-KOSO quick-NEG-NONPAST but/but always
shiai-ni *de-tei-ru.*
game-in participate-PROG-NONPAST
'She is not quick but she is an everyday player.'

-*koso* is acceptable with denial of expectation *but* uses of *ga*/*kedo* but not acceptable with semantic opposition *but* uses of *ga*/*kedo*.

4.2.2.2 INTERACTION BETWEEN -*KOSO* AND ADVERSATIVE CLAUSES

In examples discussed so far, the text proposition over which -*koso* scopes is more relevant than the context propositions. However, when -*koso* occurs in the first conjuncts of adversative clauses, the text proposition does not seem to be relevant in the context. Sawada (2007) and Aoki (1993) present the examples in (4.116) and (4.117) and claim that -*koso* is usually suffixed to a constituent which is considered to be the most important but when occurring in the first conjuncts of adversative clauses, it is suffixed to a constituent which is

considered to be the least important. In (4.116) and (4.117), the propositions in the second conjuncts seem to be more relevant than the proposition contributed by the first conjuncts which contain *-koso*.

(4.116) *Takino-chiku-wa* *yuki-koso* *ooku-na-i* *ga*
Takino-region-TOP snow-KOSO many-NEG-NONPAST but *tokiniwa*
reika *jyuu-do* *ika-ni-mo* *nar-u.*
sometimes minus ten-degree below-at-even become-NONPAST
'In Takino, it does not snow a lot but the temperature sometimes becomes even below minus ten degree.'

(4.117) *Shisya-koso* *dema-sen-deshita* *ga* *daisanji-deshita.*
killed.people-KOSO be.found-NEG-PAST but disaster-PAST
'No one was killed but it was disaster.'

Sawada (2007) and Aoki's (1993) observation is intuitively correct. However, this does not necessarily mean that *-koso* is ambiguous between its interpretations when occurring in adversative clauses and its interpretation when occurring in other environments. I propose that the meaning of *-koso* interacts with the semantic function of adversative connectives to produce interpretations which appear to be incompatible. In (4.116), the proposition that it does not snow and the proposition that temperature becomes below minus ten degree, are not mutually exclusive and the opposition involves some expectations based on these propositions. Let us look at (4.118), which is the continuation of (4.116).

(4.118) *koutuu-no* *ben-mo* *waru-ku* *1950-nendai-ni-wa*
traffic-of convenience-also bad-and 1950-age-in-CONT
23-ko datta *syuuraku-ga* *genzai-wa* *9-ko-ni-made*
23-CL PAST village-NOM currently-CONT 9-CL-to-even
het-tei-ru.
decrease-PERF-NONPAST
'The access to the village is not convenient and currently the number of families in the village has decreased from 23 to 9 since 1950's.'

The example discusses how inconvenient it is to live in the village. In (4.116), what is expected given the first conjunct is that living in the village is not inconvenient and what is expected given the second conjunct is that living in the village is inconvenient. The contrast in (4.116) concerns these two distinct expectations.

In the previous section, I proposed that *-koso* had the secondary meaning in (4.119).

(4.119) -koso (P (f)): P (f) implies a contextually determined proposition R more strongly than P (a) does

For (4.116), the text proposition P (f) is the first conjunct and one of the most salient context proposition P (a) is the second conjunct and R is the proposition that living in the village is not inconvenient, as shown in (4.120).

(4.120) a. Text proposition P (f) = it does not snow a lot

b. Context proposition P (a)
= the temperature sometimes becomes below minus ten degree

c. R = living in the village is not inconvenient

For P (f), P (a) and R in (4.120), it seems obvious that P (f) implies R more strongly than P (a) since P (a) implies the negation of R. The proposition that temperature sometimes becomes below minus ten degree implies that living in the village is inconvenient. P (f) implies R, and P (a) implies the negation of R, and therefore it is clear that P (f) implies R more strongly than P (a).

In many cases, P (f) has a competing P (a) regarding whether they imply R. Consequently, P (f), which implies R more strongly than P (a), is considered to be highly relevant or important in such a context. However, when *-koso* occurs in the first conjunct of adversative clauses, the most salient P (a) is the second conjunct. As shown for (4.116), P (a) implies the negation of R and it is not very "competitive", so to speak with respect to how strongly it implies R. Because of the lack of a "competitive" P (a), the P (f) expressed by the first conjunct is not considered to be very relevant in the context. As a whole, (4.116) means that the proposition that it does not snow a lot, does not affect at all the conclusion that living in the village is inconvenient.

(4.121) and (4.123) are attested examples of *-koso* in adversative clauses from a newspaper

(4.121) *やはり基本はちゃんと掃除ですか。うーん、しょうがない、やりましょうみなさん。私も幸い喘息こそないものの、ハウスダストで熱が出る体質なので、人ごとではありません。*(日経新聞)

> Basically, we need to clean our house carefully. We don't have any other choices. We have to do it. Fortunately, I don't suffer from asthma-***koso*** but house dust gives me a fever, so I also have to be careful. (Nikkei shinbun)

What is discussed in (4.121) is how important it is to clean rooms. P (f), P (a) and R for (4.121) are shown in (4.122).

(4.122)a. Text proposition P (f): I don't suffer from asthma

b. Context proposition P (a): House dust gives me a fever

c. R: I don't have to clean carefully

P (f) implies R but P (a) is not competing with P (f) with respect to how strongly they imply R since P (a) implies the negation of R. P (f), therefore is not considered to weaken the main claim in this discourse that the speaker has to clean her house carefully. The adversative sentence containing *-koso* roughly means that I don't suffer from asthma but it does not affect at all the conclusion that I have to clean our room. (4.123) is another example of *-koso* in the first conjuncts of adversative sentences.

(4.123) *ところが、警察庁交通局の「平成16年中の交通事故の発生状況」によますと、平成16年の1年間で、わが国で発生した交通事故は95万2,191件、重軽傷を合わせた負傷者数は118万3,120人にも上りました。死者の数**こそ**近年では減少傾向にはあるものの、発生件数、負傷者数はともに増加。これらの数字は実に過去最悪を記録しているのです。*

In 2005, the number of traffic accidents was 952,191, and the number of people who were injured either slightly or seriously was 1183,120. Although the number of people who were killed-***koso*** is decreasing recently, the number of accidents and injured people has increased. These numbers are the worst in history.

What is discussed in (4.123) is how the situation about traffic accidents is getting worse. P (f), P (a) and R for (4.123) are shown in (4.124).

(4.124) a. Text proposition P (f):
the number of people who were killed is decreasing

b. Context proposition P (a):
the number of accidents and injured people has increased

c. R: The situation is not getting worse

P (a) is not competing against P (f) with respect to how strongly they imply R. P (f), therefore does not affect the conclusion that the situation about traffic accidents is getting worse.

4.2.2.3 TWO INTERPRETATIONS OF *-KOSO*

In the previous section, I discussed the interpretation of *-koso* in adversative clauses and proposed that *-koso* is not ambiguous. However, as Mogi (2006) points out, *-koso* in adversative clauses not only has the interpretation discussed in the previous section but also the same interpretation as *-koso* in other environments. In (4.125), in which *-koso* occurs in an adversative clause, two interpretations seem to be available depending on what follows. When (4.126a) follows (4.125), the sentence means that it is highly relevant that her grandfather needs support but his family has not understood it while when (4.126b) follows (4.125), the sentence means that it is not relevant that her grandfather needs support since otherwise he does not have any problems.

(4.125) *Koureino* *sohu-ni-wa* *senmonka-no* *sapooto-koso*
old grandfather-for-TOP expert-from support-KOSO
hituyounano-da-ga.
necessary-NONPAST-although

'Support from an expert is necessary for her old grandfather, but'

(4.126) a. *kazoku-wa* *sono-koto-ni* *kizui-te-na-i.*
family-TOP the-thing-ACCrealize-PERF-NEG-NONPAST

'his family hasn't understood it yet.'

b. *kare* *hitori-de* *kurasukoto-ni* *mondai-wa* *na-i.*
he alone-by living-about problem-TOP NEG-NONPAST

'he doesn't have any problem living alone.'

(Mogi 2006: 223)

The reason why there are two interpretations in adversative clauses, however is not that *-koso* has two meanings but that the two sentences differ in what is being contrasted. For the interpretation in (4.126b), the propositions expressed by the two conjuncts are contrasted while for the interpretation in (4.126a), what is contrasted is whether her grand father's family should understand the content in the first conjunct.

For the interpretation in (4.126b), what is contrasted is (4.127a) and (4.127b).

(4.127) a. Support from an expert is necessary for her old grandfather

b. He doesn't have any problem living alone

In this example, the contents of the two conjuncts are contrasted and the most salient context proposition to the text proposition (4.127a) expressed by *-koso* is (4.127b) in the second conjunct.

If one assumes a contextually available proposition is that his family is not happy, the contrast expressed by (4.125) and (4.126b) is illustrated as in (4.128).

(4.128)

Support from an expert is necessary for her old grandfather		He doesn't have any problem living alone
↓		↓
his family is not happy	⇔	his family is happy

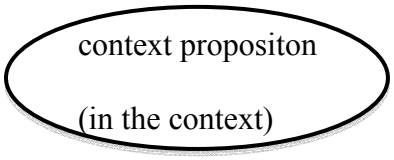
What is contrasted in (4.128) are the two propositions that his family is not happy and that his family is happy. For the interpretation in (4.126a), on the other hand, what is contrasted is (4.129a) and (4.129b).

(4.129) a. (Support is necessary for one's grandfather >) His family understands it

b. His family does not understand that support is necessary for their grand father

For this interpretation, what is contrasted is not the content of the two conjuncts but whether his family understands the content of the first conjuncts. Since what is contrasted is not the content of the two conjuncts or expectations from the two conjuncts, the context proposition relevant to the contribution of *-koso* is not the second conjunct but has to be found in a context outside the sentence, as illustrated in (4.130).

(4.130)



a. Support from an expert is necessary
for their grandfather

↓

His family understands (6a) ⇔ His family does not understand (6a)

For example, a possible context proposition and R for (4.125) in the context illustrated in (4.130) are (4.131a) and (4.131b), respectively.

(4.131)a. Context proposition:
Support from his family is necessary for their grandfather

b. R: Their grand father is not in good shape

In this context, the text proposition that support from an expert is necessary more strongly implies R that their grand father is not in good shape than the context proposition that support from his family is necessary does.

The difference between the two interpretations is that for one interpretation, the context proposition is the second conjunct or an expectation from the second conjunct while for the other interpretation, it has to be found in a larger context.

4.2.2.4 SEMANTIC/PRAGMATIC FUNCTION OF *-KOSO* IN ADVERSATIVE CLAUSES

As discussed in previous sections, in contrast to its interpretation in other environments, the text proposition expressed by *-koso* in adversative clauses does not seem to be relevant in contexts. However, a more general contrastive particle *wa* can replace *-koso* in adversative clauses and sentences containing *wa* do not appear to be significantly different from sentences containing *-koso*. For example, in (4.132a) in which *-koso* appears and (4.132b) in which *wa* appears, the proposition that wind is strong is less relevant than the proposition in the main clause that it is not raining.

(4.132)a. *Kaze-koso* *tsuyoi-ga* *ame-wa* *hut-tei-na-i.*
wind-KOSO strong-but rain-CONT fall-PRG-NEG-NONPAST
'The wind is strong but it's not raining.'

b. *Kaze-wa* *tsuyoi-ga* *ame-wa* *hut-tei-na-i.*
wind-WA strong-but rain-CONT fall-PRG-NEG-NONPAST
'The wind is strong but it's not raining.'

One difference between *-koso* and *wa* in adversative clauses is that the text proposition expressed by *-koso* is not expected to be true while there is not such restriction for the text proposition expressed by *wa*. The adverb *mochiron* 'of course' is compatible with *wa* but not with *-koso* as shown in (4.133) since the text proposition that wind is strong is not expected to be true for *-koso*.

(4.133) a. *#Kaze-koso* *mochiron* *tsuyoi-ga* *ame-wa*
wind-KOSO of.course strong-but rain-CONT
hut-tei-na-i.
fall-PRG-NEG-NONPAST

Intended: 'The wind is of course strong but it's not raining.'

b. *Kaze-wa* *mochiron* *tsuyoi-ga* *ame-wa*
wind-WA of.course strong-but rain-CONT
hut-tei-na-i.
fall-PRG-NEG-NONPAST

'The wind is of course strong but it's not raining.'

Another difference is that for *-koso*, the negated contextually available proposition ¬ R is equally or more strongly inferred from the negated text proposition than from the context proposition expressed in the second conjunct. For (4.134), a possible contextually available proposition is that it is good. One can infer that it is good from the text proposition that there was no one who was absent. (4.134a) is acceptable since usually being absent is worse than being late and the negated contextually available proposition that it is not good is more strongly inferred from the negated text proposition that there was someone who were absent than the context proposition that there were someone who were late as shown in (4.135).

(4.134)a. *Kessekisya-koso* *i-na-katta-ga*
one.who.is absent-KOSO exist-NEG-PAST-NOM
nanninka-ga *okurete* *ki-ta.*
someone-NOM late come-PAST
'There were no one who were absent, but there are someone who were late.'

b. *Kessekisya-wa* *ina-katta-ga*
one.who.is absent-WA exist-NEG-PAST-NOM
nanninka-ga *okurete* *ki-ta.*
someone-NOM late come-PAST
'There were no one who were absent, but there are someone who were late.'

(4.135)a. Negated text proposition:
there were someone who were absent >>(more strongly infer) it is not good

b. Proposition in the main clause:
there were someone who were late > it is not good

However, (4.136a) is not acceptable since the proposition that it is not good is less strongly inferred from the negated text proposition that there was someone who was late than the context proposition that there was someone who was absent as shown in (4.137).

(4.136)a. *#Chikokusya-koso* *ina-katta-ga*
one.who.are.late-KOSO exist-NEG-PAST-NOM
nanninka-ga *kesseki-shi-ta.*
Someone-NOM being.absent-do-PAST

Intended. 'There was no one who were late, but there was someone who was absent.'

b. *Chikokusya-wa* *ina-katta-ga*
one.who.are.late-WA exist-NEG-PAST-NOM
nanninka-ga *kesseki-shi-ta.*
Someone-NOM being.absent-do-PAST

'There was no one who was late, but there was someone who was absent.'

(4.137)a. Negated text proposition:

there was someone who was late >(less strongly infer) it is not good

b. Proposition in the main clause:

there was someone who was absent >> it is not good

(4.136b) which contains *wa*, on the other hand, is acceptable since there is no such restriction for *wa*.

Although adversative sentences which contain *-koso* and *wa* describe similar situations, contexts in which *-koso* is acceptable are more restricted than *wa*. The text proposition expressed by *-koso* is not expected to be true and a negated contextually available proposition is equally or more strongly inferred from the negated text proposition than the proposition in the main clause.

It is not clear where this restriction on contexts in which *-koso* in adversative clauses is acceptable comes from. Usually the text proposition expressed by *-koso* is highly relevant as a result of the existence of a 'competing' context proposition. When *-koso* appears in adversative clauses, there is no such competing proposition. This lack of a competing proposition may lead *-koso* to search for another proposition with which the text proposition is competing. The most

probable candidate for a proposition with which the text proposition can be competing is the negated text proposition because of the fact that adversative connectives relate two conjuncts from which opposite propositions can be inferred. When *-koso* appears in adversative clauses, the negated text proposition would be more relevant than the competing context proposition and consequently would be highly relevant although the negated text proposition is false in the actual world. The context proposition is not competing to the text proposition but it is competing to the negated text proposition.

4.2.2.5 SEMANTIC OPPOSITION *BUT*

As we saw in section 4.2.2.1, English *but* can express two kinds of opposition, which Lakoff (1971) calls semantic opposition and denial of expectation. (4.138a) and (4.138b) are examples of semantic opposition *but* and denial of expectation *but*, respectively.

(4.138) a. *Zou-wa* *ooki-i* *ga/kedo* *risu-wa*
elephant-WA big-NONPAST but/but squirrel-WA
chiisa-i.
small-NONPAST

'Elephants are big but squirrels are small.'

b. *Asi-wa* *hayaku-na-i* *ga/kedo* *itumo*
leg-WA quick-NEG-NONPAST but/but always
shiai-ni *de-tei-ru.*
game-in participate-PROG-NONPAST

'She is not quick but she plays every game.'

In (4.138), the contrastive particle *wa* occurs in the first conjuncts. As briefly mentioned in section 4.2.2.1, *-koso* is not acceptable in the first conjunct of semantic opposition uses of

ga/*kedo* while it is acceptable in the first conjunct of denial of expectation uses of *ga*/*kedo*, as shown in (4.139).

(4.139)a. *#Zou-koso* *ooki-i* *ga/kedo*
elephant-KOSO big-NONPAST but/but
risu-wa *chiisa-i*.
squirrel-WA small-NONPAST

b. *Asi-koso* *hayaku-na-i* *ga/kedo* *itumo*
leg-KOSO quick-NEG-NONPAST but/but always
shiai-ni *de-tei-ru.*
game-in participate-PROG-NONPAST
'She is not quick but she plays every game.'

-koso always requires a contextually available proposition R and make a contrast between the text proposition P (f) and a context proposition P (a) in terms of how strongly they imply R, as shown in (4.140b).

(4.140)-koso (P (f)):
P (f) implies a contextually determined proposition R more strongly than P (a) does

The interpretation of *-koso* in adversative clauses is different form the interpretation in other environments since it depends on two polar opposite propositions which are implied by the two conjuncts. For (4.139b), the two propositions that she is not a good basketball player and that she is a good basketball player are implied by the two conjuncts as shown in (4.141). The text proposition is not considered to be highly relevant since it is obvious that the text proposition implies more strongly that she is not a good basketball player than the context proposition, which implies that she is a good basketball player.

(4.141) she is not quick she plays every game

*↓ ⇔ ↓

she is a good basketball player she is a good basketball player

-koso in adversative clauses is not used to make a semantic contrast between the text proposition in the first conjunct and the context proposition in the second conjunct themselves but to make a contrast regarding the relationship between them and another contextually available proposition R. In other words, what is contrasted is not the text and context proposition but their relative relevance. When opposition between two conjuncts is semantic as in (4.139a), the two conjuncts themselves are semantically contrasted and it is not necessarily the case that what are inferred from two conjuncts create an opposition, as shown in (4.142). ⇔ between the two propositions that elephants are big and that squirrels are small, indicates that there is a semantic contrast between the two proposition. ?(⇔) indicates that it does not necessarily the case that there is a contrast about how strongly the two semantically contrasted propositions implies some contextually available proposition R.

(4.142) elephants are big ⇔ squirrels are small

↓ ?(⇔) ↓

R R

In such situations in which there is no difference in how strongly the text and context proposition infer R, *-koso* is not acceptable. (4.139a) becomes acceptable when there is a contrast between

how strongly the two conjuncts imply A. Let us suppose that one is looking for big animals. It is expected from the first conjunct that she is happy and from the second conjunct that she is not happy. In such a context, the sentence becomes acceptable. In contrast to *-koso*, the meaning of the more general contrastive particle *wa* is compatible to either the semantic opposition *but* or the denial of expectation *but* since its meaning does not necessarily involve relevance.

4.2.3 *-KOSO* WITH TEMPORAL EXPRESSIONS

In examples discussed so far, the text proposition over which *-koso* scopes strengthens an inference: the text proposition implies a contextually available proposition more strongly than the context proposition. However, as Sperber and Wilson (1986) propose, relevant propositions not only strengthen an inference but can also contradict assumptions in contexts. In (4.143), *-koso* is suffixed to the temporal expressions and the sentence expresses the three propositions in (4.144).

(4.143) *Raisyuuno-doyoubi-koso* *hare-ru.*
next-Saturday-KOSO become.sunny-NONPAST
'It will become sunny next Saturday.'

(4.144) a. T(ext proposition): it will become sunny next Saturday

b. C(ontext proposition): it will become sunny this Saturday

c. T implies a contextually determined proposition R more strongly than C

Let us suppose that a picnic was scheduled this Saturday but it is re-scheduled for next Saturday because of rain. Before this Saturday, (4.144b) is relevant since (4.145b) is assumed. However, after knowing that the picnic is cancelled this Saturday, (4.144a) is more relevant than (4.144b) since once this Saturday has passed, only the assumption (4.145a) is in the context.

(4.145) a. it is sunny next Saturday → R: there is a picnic

b. it is sunny this Saturday → R: there is a picnic

In this situation, (4.143) means that although it was not sunny this Saturday, it will become sunny next Saturday. The contextually determined proposition R differs before and after the picnic is cancelled. Before the picnic is cancelled it is (4.146a) while after it is cancelled it is (4.146b).

(4.146) a. R: there is a picnic on this Saturday

b. R: there is a picnic on next Saturday

This context is not an example of strengthening since it is not the case that it being sunny this Saturday implies that there will be a picnic more strongly than it being sunny last Saturday does. Instead, the text proposition in (4.144a) contradicts the context proposition in (4.144b) since there should be only one picnic and if it is sunny and there is a picnic next Saturday, it suggests that it was not sunny and there was no picnic this Saturday.

I proposed that the text proposition expressed by *-koso* is more relevant than the context proposition. In other words, the text proposition strengthens or contradicts what the context

proposition implies. Contrastive particles, which leave unspecified whether there is an alternative to replace the focused constituents in the text proposition, are appropriate to express the notion of relevance since the context proposition can be either true as in the case of strengthening or false as in the case of contradicting.

4.3 CONCLUSION

I this chapter I claim that the meaning of Japanese contrastive particle *-nado* crucially involves the notion of relevance. The text proposition associated with *-nado* is less relevant than the context proposition. The reason why the text proposition is surprising in some contexts and expected in other context is that different information structure foci are possible. For surprising interpretations, a sentence containing *-nado* involves constituent focus while for expected interpretations, a sentence containing *-nado* involves sentence focus. I define the meaning of *-nado* by means of Sperber and Wilson (1986)'s definition of relevance. Sperber and Wilson (1986) argue that relevant propositions have contextual effects such as contextual implications, contradictions, and strengthening. The text proposition of *-nado* has less contextual effects than the context proposition.

-koso is similar to *-nado* and its meaning is represented by the notion of relevance.[18] While the text proposition expressed by *-nado* is less relevant than context propositions, the text proposition expressed by *-koso* is more relevant than the context propositions. Although, the text proposition of *-koso* when occurring in adversative clauses seems to be different from its

[18] I did not discuss idiomatic expressions like (a).
(a) *Kochira-koso yoroshiku.*
'Nice to meet you, too'
It is necessary to investigate the historical development of the expression to discuss the semantic contribution of *koso* in such idiomatic expressions.

interpretation in other environments, its interpretation in adversative contexts is the result of an interaction between the semantic function of adversative connectives and the meaning of *-koso* and there is no need to assume that *-koso* is ambiguous. One difference between *-koso* and the more general contrastive particle *wa* in adversative clauses is that *-koso* cannot be used to make semantic oppositions. The interpretation of *-koso* in adversative clauses involves the notion of relative relevance of the text and context propositions. This interpretation is not compatible with semantic opposition *but* since the two conjuncts expressing a semantic opposition do not necessarily differ in how strongly they imply another contextually available proposition. Finally, the stronger relevance evoked by *-koso* does not involve only strengthening but also contradicting as when *-koso* focuses on a temporal expression, the text proposition contradicts the context proposition.

CHAPTER 5

CONCLUSION

5.1 SUMMARY

In the dissertation, I provided the first comprehensive description of the Japanese focus particles in Table 5.1. I summarize below the result of this investigation.

Exclusive particles	*-shika*, *-dake*, *-bakari*
Scalar additive particles	*-sae*, *-desae*, *-made*
Contrastive particles	*-nado*, *-koso*

Table 5.1: Japanese focus particles

5.1.1 EXCLUSIVE PARTICLES

Chapter 2 discussed the contextual meaning of the Japanese exclusive particle *-shika* by comparing it with another exclusive particle, *-dake*. The Japanese exclusive particles *-shika* and *-dake* behave similarly in that sentences containing these particles express the prejacent and asserted propositions associated with *only*-like particles. One difference between the two particles is that *-shika* obligatorily co-occurs with the negative verbal suffix *–na*. There have been proposals that try to account for the presence of the negative verbal suffix by assuming that

-shika is an exceptive marker like English *everyone except*. However, the exceptive analysis of *-shika* leaves some properties of the negative verbal suffix unsolved, such as its downward entailments and NPI licensing properties. I propose that the negative verbal suffix is not an ordinary negation and it only participates in *-shika*'s secondary meaning exemplified in (5.1c) for (5.1).

(5.1) *Yuna-shika ko-na-katta.*
Yuka-SHIKA come-NEG-PAST
'Only Yuna came.'

a. Prejacent: Yuna came

b. Assertion: No one other than Yuna came

c. Secondary meaning:
Yuna's coming and no one else's coming implies ¬ Q
Q: contextually available proposition

Due to its secondary meaning, contexts in which *-shika* is acceptable are perceived to be more negative than those in which *-dake* is acceptable.

Japanese has another exclusive particle *-bakari*. Intuitively, *-bakari* is associated with some kind of plurality. When *-bakari* appears in existential statements, the number of entities focused on with *-bakari* is more than one and when sentences containing *-bakari* denote events, the events must happen repeatedly. However, when *-bakari* is suffixed to non-past and past tense forms of verbs, it does not seem to express any kind of plurality. *-bakari* is ambiguous between the use which expresses plurality and a use which does not express plurality.

5.1.2 SCALAR ADDITIVE PARTICLES

Chapter 3 discussed the behaviors of three Japanese scalar additive particles in implication reversing environments. The scalar additive particles -*sae* and -*desae* behave differently when they appear in implication reversing environments. While -*sae* cannot scope over environments such as universal statements or cleft sentences, -*desae* more readily scopes over those environments. When -*sae* and -*desae* appear in antecedents of conditionals, -*sae* is interpreted as 'at least' and -*desae* is interpreted as 'even'. I propose that the text proposition expressed by the sentence containing -*desae* is marked as too informative to be relevant in the context. This secondary meaning of -*desae* does not only account for the behaviors of the two particles in implication reversing environments but also accounts for why -*desae* is perceived to be more emphatic than -*sae*.

Another scalar additive particle, -*made*, differs from other scalar particles in that when -*made* appears in simple negative sentences, it can be under the scope of clausemate negation. I propose that the text proposition expressed by -*made* is presupposed. Because of that constraint, while usually, the context proposition expressed by scalar additive particles is inferred from the text proposition, for -*made*, a more informative text proposition is searched for on the basis of the context proposition. This analysis also accounts for why the context proposition expressed by -*made* must be true in the actual world when it is not under the scope of implication reversing environments and why it must be confirmed to be true independently of the text proposition when it is under the scope of implication reversing environments.

5.1.3 CONTRASTIVE PARTICLES

Chapter 4 discussed another class of focus particle, contrastive particles, which are neither exclusive nor additive. The secondary meanings contributed by the contrastive particles *-nado* and *-koso* involve the notion of relevance. The text proposition expressed by *-nado* is marked as less relevant than the context proposition. Sentences containing *-nado* seem to receive two distinct interpretations. However, *-nado* is not ambiguous and the two interpretations are the result of an interaction between the meaning of *-nado* and the information structure of sentences containing *-nado*. Uttering less relevant propositions seems to violate a conversational principle, but the function of *-nado* is to induce a perlocutionary effect, namely preventing listeners from making unnecessary inferences.

The text proposition expressed by *-koso* is marked as more relevant than the context proposition. Although when *-koso* appears in adversative clauses, the text proposition does not seem to be relevant in the context, this does not necessarily suggest that *-koso* is ambiguous. *-koso* receives a distinct interpretation in adversative clauses because its secondary meaning is satisfied trivially when the context proposition is the proposition denoted by the second conjunct.

5.2 GENERAL DISCUSSION

I addressed two broad questions in this dissertation. The first question is what kinds of concepts Japanese focus particles express. Like English focus particles, Japanese focus particles evoke alternatives to the focused constituent and relate the new proposition that is "about" the focus constituent's denotation to true propositions that are about "alternatives" already in the

context. For exclusive particles, there is no alternative to substitute for the focused constituent that would lead to a true proposition and for additive particles, there is at least one alternative to substitute for the focused constituentthat would lead to a true proposition. Scalar additive particles relate the text and context propositions by the notion of likelihood. In addition to exclusive and additive particles, Japanese has contrastive particles. With contrastive particles, the speaker does not commit herself to whether there are alternatives to substitute for the focused constituent. What contrastive particles express is the relative relevance between the proposition containing the focused constituent and propositions containing alternatives.

The second question, which is related to the first question, is why Japanese has a larger inventory of focus particles than English. First, some Japanese focus particles target only subsets of the concepts which English focus particles express. Secondly, the secondary meaning of some Japanese focus particles involve not only the text and context propositions but also a third contextual proposition.

5.2.1 WHAT KINDS OF CONCEPTS DO JAPANESE FOCUS PARTICLES EXPRESS?

Japanese exclusive and additive particles can express concepts which English counterparts express. In addition to what exclusive and additive particles express, Japanese contrastive particles express the notion of relevance. While for exclusive or additive particles, the speaker commit to the truth or falsity of propositions containing alternatives, contrastive particles evoke alternatives without the speaker commiting to the truth or falsity of propositions containing alternatives. The semantic function of the Japanese contrastive particles *-koso* and *-nado* is to relate the newly introduced text proposition and the context proposition in terms of the

notion of relevance: The text proposition over which *-koso* scopes is more relevant than the context proposition while the text proposition over which *-nado* scopes is less relevant than the context proposition. Since a more relevant proposition does not necessarily entail a less relevant proposition or vice versa, the speaker does not have to commit to the truth or falsity of the context proposition to express relative relevance between the text and context propositions.

5.2.2 WHY DOES JAPANESE HAVE A LARGER INVENTORY OF FOCUS PARTICLES?

First, the meanings of some Japanese focus particles are more restricted than those of their English counterparts. The text proposition expressed by sentences containing the scalar additive particle *-desae* is not relevant in the context, while the text proposition expressed by sentences containing *even* can be either relevant or irrelevant in the context. The context proposition expressed by sentences containing *-made* has to be presupposed while the context proposition expressed by sentences containing *even* can be either inferred from the text proposition or presupposed. Thus, Japanese scalar additive particles *-desae* and *-made* target only subsets of what *even* can express.

Secondly, in addition to evoking alternatives and relating the text and context propositions, Japanese focus particles such as *-nado*, *-koso* and *-shika*, require the presence in the context of additional propositions. These additional propositions further restrict contexts in which Japanese focus particles are appropriate. For example, the secondary meanings of *-nado* and *-koso* involve the notion of relevance. To decide the relative relevance of two propositions, not only the two propositions but also another metalinguistic/contextual proposition against which the relative relevance of the two propositions is evaluated, are necessary. *-shika* also

requires a metalinguistic/contextual proposition. The required presence of a contextual proposition is part of -*shika*'s secondary meaning and accounts for the intuition that contexts in which -*shika* is appropriate are somewhat more negative than those in which -*dake* is appropriate.

5.3 FUTURE RESEARCH

In this dissertation, I investigated Japanese focus particles by comparing them with their English counterparts. I plan to extend my research to other languages. Because of the similarity between Japanese and other East Asian languages such as Korean, the first step would be to investigate focus particles in other East Asian languages. Another future research topic is the historical development of focus particles. So far I have only investigated Japanese focus particles synchronically. The behavior of some focus particles appears to be inexplicable from a synchronic point of view. For example, the historical development of -*desae* may reveal whether its use can compositionally derive from the separate contributions of -*de* and -*sae*. A diachronic investigation would help deepen the understanding of the meanings of Japanese focus particles.

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