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# Exploring Syntax from the Interfaces

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## Exploring Syntax from the Interfaces

Yoshiyuki Shibata, Ph.D.

University of Connecticut, 2015

Based on the scope of negation in Japanese, the dissertation establishes a generalization that all  $\nu$ P-internal phrases move out of NegP in Japanese. The main argument concerns reconstruction, which allows a moved element to be interpreted at the original site rather than the surface position. It is shown that reconstruction applies to moved elements quite generally except for those that occur with adjoined focus particles in both Japanese and English. A semantic explanation for this is provided on the basis of Fox's (2003) trace conversion, an interpretive mechanism that serves to interpret movement chains. Given the mechanism, it is shown that a number of differences between Japanese and English with respect to scope relations between arguments and negation can be derived from a single structural difference: Only in Japanese, objects obligatorily move to a position above negation. The analysis of the anti-reconstruction property of focus particles presented in the dissertation is extended to provide explanations for the Neg-split phenomenon in English, the fact that a contrastive topic is interpreted as the focus of negation in Japanese, and the interpretive properties of focus particles in German and various kinds of disjunction phrases in English, Japanese, and Korean.

Regarding the reason for the movement of  $\nu$ P-internal phrases in Japanese, it is shown that it must occur due to the morphological merger of heads. It is argued that T, Neg,  $\nu$  and V are combined into a word by morphological merger in Japanese, and that morphological merger is subject to a structural adjacency condition that prohibits overt elements from intervening between T and V. It follows then that all  $\nu$ P-internal phrases must move out of NegP for morphological merger to apply. The analysis is shown to make correct predictions for a number of properties of constructions with a variety of complex predicates, such as causatives and potentials. A further consequence of the analysis is that Japanese does not have the process of *su*-support that parallels English *do*-support.



Exploring Syntax from the Interfaces

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APPROVAL PAGE

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# **Chapter 1**

## **Preface**

The subsequent chapters by Yoshiyuki Shibata represent his dissertation research. Yoshi, as he was called at the University of Connecticut, started his graduate study in September, 2009 and assumed a lecturer position at Mie University in April, 2014 while he was working on his Ph.D. dissertation. He was at the final stage of preparing a complete dissertation draft and was getting ready to defend it when he suddenly passed away on November 5, 2014 due to arrhythmia. We decided to make the manuscript he left public because it was already in a form that qualifies as a dissertation and it contains much significant material that contributes greatly to the field.

The last versions of Chapters 3 and 4 that Yoshi left are printed here mostly as they were, with only minor changes, mostly of editorial nature. In Chapter 3, he examines in detail scope relations between arguments and negation. The phenomenon in Japanese has been discussed a great deal in the last 35 years; many descriptions were proposed in the literature that present the phenomenon as a peculiarity of the language. Yoshi first points out that inconsistencies in the previous descriptions arise in part because various kinds of quantificational elements are not appropriately distinguished with respect to reconstruction, which allows a moved element to be interpreted at the original site rather than the surface position. He goes on to show that reconstruction applies to moved elements quite generally except for those that occur with adjoined focus particles in both Japanese and English, and provides a semantic explanation for this exception on the basis of Fox's (2003) trace conversion, an interpretive mechanism that serves to interpret movement chains. Given

this, he demonstrates that the various differences between Japanese and English with respect to the scope relations between arguments and negation can be derived from a single structural difference: Only in Japanese, objects obligatorily move to a position above negation. This radically simplifies the description of the problematic phenomenon, and allows us to raise a “why-question” in a meaningful way. The question to be addressed at this point is why objects must raise past negation in Japanese.

Chapter 4 provides an answer to the question formulated in Chapter 3. Yoshi first examines  $\nu$ P-internal phrases other than objects, and demonstrates that they all move to positions above negation in Japanese. This is confirmed by the scope properties of reconstructable quantifiers as well as focus phrases that resist reconstruction. Then, he proposes that T, Neg,  $\nu$  and V are combined into a word by morphological merger in Japanese, and that morphological merger is subject to a structural adjacency condition that prohibits overt elements from intervening between T and V. It follows then that all  $\nu$ P-internal phrases must move out of NegP for morphological merger to apply and the sentence to be well-formed. The analysis is shown to make correct predictions for sentences with a variety of complex predicates, such as causatives and potentials. A further consequence of the analysis is that there is no *su*-support, which has been widely assumed as a Japanese counterpart of *do*-support in English.

These two chapters can constitute a dissertation by themselves. But Yoshi planned to add two more chapters. As the analysis of anti-reconstruction effects proposed in Chapter 3 has a number of important consequences which go beyond the phenomena discussed in chapter 3, he was going to create an independent chapter, Chapter 2, to discuss them. Further, he planned to add a fourth chapter on a related topic, particle-stranding ellipsis in

Japanese. (The material for this chapter was presented at Formal Approaches to Japanese Linguistics 7 in June 2014.) It elegantly explains the distribution of stranded Case markers on the basis of focus and prosody, and fits the general theme of the dissertation to explain apparently chaotic phenomena with simple interface conditions. But as the dissertation is already quite rich in content without this last chapter, we decided not to include it here, hoping that it will be made available as an independent paper.

Chapter 2, on the other hand, is more directly related to Chapters 3 and 4, and further, has far-reaching consequences for the general theory. For this reason, we included this chapter here. Yoshi left a detailed outline of the chapter with all the examples, generalizations, and analyses. Željko Bošković spelled out some of the arguments so that it reads as a chapter. This chapter extends the analysis of the anti-reconstruction property of focus particles presented in Chapter 3 and provides explanations for the Neg-split phenomenon in English and the interpretive properties of focus particles in German and various kinds of disjunction phrases in English and Japanese (with an extension to Korean in chapter 3). It also presents a solution, for the first time to our knowledge, for a puzzling fact in Japanese where a contrastive topic is interpreted as the focus of negation. Yoshi obviously planned to adjust Chapters 3 and 4 after the completion of Chapter 2 in order to eliminate repetitions and redundancies (he also planned to add an introductory chapter). But we did not do this on his behalf because the redundancies do not affect the readability and we wanted this dissertation to faithfully reflect Yoshi's own writing to the extent possible. We only minimally edited the manuscript for stylistic improvements, which Yoshi was planning to do, for the same reason.

In summary, this dissertation builds on the literature on the scope of negation in

Japanese, especially Kataoka (2006), and presents a new generalization that all  $\nu$ P-internal phrases move out of NegP in Japanese. In the course of the discussion, it is shown that focus particles resist reconstruction. A semantic analysis for this is provided based on Fox's (2003) trace conversion. Regarding the movement of  $\nu$ P-internal phrases in Japanese, it is argued that it must occur due to the morphological merger of heads. This is clearly a very significant piece of work that advances the field. And more importantly, we are certain that it will stimulate much further research on these issues in the future. The future works, whether they build on this dissertation or present alternatives to it, will be more focused and theoretically advanced compared with those in the past, thanks to Yoshi's work. We would like to invite the reader to build on or to constructively argue against the fascinating proposals in this dissertation.

Finally, we would like to thank Kensuke Takita for finding the most recent files of the dissertation manuscript in Yoshi's computer and forwarding them to us, and to Yuta Sakamoto for his help with formatting and completing the compilation of the references.

## Chapter 2

### Trace Conversion and Obligatory Late Insertion

#### 2.1. Introduction

##### 2.1.1. Copy theory of movement and Trace Conversion

Since the revival of the copy theory of movement (e.g. Chomsky 1995), moved elements are assumed to leave a copy, not a trace. However, the formal semantics (e.g. Heim and Kratzer 1998) still needs traces, not copies, to calculate meanings. Under these considerations, Fox (1999, 2002, 2003) proposes a process which converts copies into something that can be treated as ‘traces’ in the semantics:<sup>1</sup>

#### (1) Trace Conversion

- a. *Variable Insertion*      (Det) Pred  $\rightarrow$  (Det) [Pred  $\lambda y$  ( $y = x$ )]
- b. *Determiner Replacement* (Det) Pred  $\rightarrow$  the [Pred  $\lambda y$  ( $y = x$ )]

Trace Conversion consists of two steps: (i) variable insertion, which inserts a variable into the copy and (ii) determiner replacement, which replaces a determiner with the definite one.

Consider, for example, the following:

---

<sup>1</sup> Fox (2003) assumes that this operation applies in the syntax, but since it violates Chomsky’s (1995) Inclusiveness Condition, I assume that it is done during the syntax-semantics mapping, like insertion of  $\lambda$ -nodes into the structure.

- (2) a. Every boy did not come.
- b. [TP every boy [T' did [NegP not [vP every boy come]]]]
- c. [TP every boy [T' did [NegP not [vP every boy identical to x come]]]] (step in (1a))
- d. [TP every boy [T' did [NegP not [vP the boy identical to x come]]]] (step in (1b))

The sentence (2a) has two copies of the universal quantifier as in (2b), to which Trace Conversion applies, ultimately yielding (2d). With the representation (2d), we can get the desired interpretation for (2a), just as we do under the trace theory of movement. (cf. Lechner 2012 for how scope reconstruction is captured with the Trace Conversion)

### 2.1.2. Obligatory late insertion

It is well known that some elements lack scope reconstruction effects to their copies/traces. DPs with a focus operator *only* are among them:

- (3) Only that boy didn't come. (only>not; \*not>only)

This contrasts with cases with other quantifiers:

- (4) a. Every boy didn't come. (every boy>not; not>every boy)
- b. A boy didn't come. (a boy>not; not>a boy)

With the Trace Conversion, the contrast between (3) and (4) can be accounted for. Consider the derivation of (3):

- (5) a. [TP only that boy [T' did [NegP not [vP only that boy come]]]]  
 b. [TP only that boy [T' did [NegP not [vP only the boy identical to x come]]]]

It is clear that in English, adnominal *only* is attached outside of the determiner. Following Rooth (1985), I assume that the focus operator *only* is adjoined to the DP in this case. The subject in (5) moves from [Spec,vP] to [Spec,TP], leaving its copy at [Spec,vP]. When the Trace Conversion applies to the copy of the subject, the operator *only* is not affected by this process since it is located outside of the domain of the Trace Conversion. Thus, a problem arises: there are two occurrences of *only* in different positions. Therefore, the semantics cannot treat the representation in (5).<sup>2</sup>

The problem, however, can be avoided if *only* can be inserted acyclically (following a number of proposals regarding late insertion of adjuncts, for example Lebeaux 1988, Stepanov 2001). Consider the following:

- (6) a. [TP that boy [T' did [NegP not [vP that boy come]]]] *movement of the subject*  
 b. [TP only that boy [T' did [NegP not [vP that boy come]]]] *late insertion of 'only'*  
 c. [TP only that boy [T' did [NegP not [vP the boy identical to x come]]]]

*Trace Conversion*

In the above derivation, the problem we faced in (5) does not arise.

The above discussion indicates that we in fact MUST rely on late insertion in cases

---

<sup>2</sup> Note that even if the operator *only* somehow could appear inside of the determiner *the* after the Trace Conversion, the result is *the only boy identical to x*. McNally (2008) argues that *only* inside a DP has a different semantics from the one as a focus operator, so again the problem arises: we have two different *only*'s even though they are copies of the same element.



like (3), to yield a representation which can be properly treated in the semantics. Thus, I propose the following:

(7) *Obligatory Late Insertion*

An adnominal element outside of the domain of the Trace Conversion must be acyclically inserted after movement if it adjoins to a moving element.

The above proposals also account for the fact that *only* cannot be interpreted below the negation in (3); there is in fact only one *only* in the structure, which is acyclically adjoined to the subject at [Spec,TP]. Under the current analysis, there is no way to get a representation like *[didn't [[only that boy] come]]*, which would yield the reading where the subject with *only* is interpreted below negation.

## 2.2. Consequences of Obligatory Late Insertion (7)

### 2.2.1. Neg-split in English

Iatridou and Sichel (2009) observe that negative quantifiers lack scope reconstruction effects as a whole (8)c, but allow the so-called split reading (8)d:

- (8) a. No butler was proven to be guilty.  
b. <sup>OK</sup>no butler > proven  
c. \* proven > no butler  
d. <sup>OK</sup>no > proven > a butler (*neg-split reading*)

What is interesting here is the neg-split reading, where the negation part and the indefinite part are interpreted in different positions.

The scope pattern in (8) can be captured under the current analysis. Assume that negative determiner *no* consists of negation and existential (e.g. Jacobs 1980):

(9)  $no = not + a(n)$

If we put a negative determiner in this way, the negation part is in fact located outside of the domain of the Trace Conversion (i.e., it is outside of the indefinite determiner). This means that if the negative part is present from the beginning, the problem arises:

- (10) a. [not a butler [was proven [not a butler to be guilty]]]  
b. [not a butler [was proven [not the butler identical to x to be guilty]]]

In (10)b, where the Trace Conversion is applied to the lower copy, since the negation is not affected by the conversion process, there are two occurrences of the negation; the negation simultaneously take scope over and under *proven*, which is undesirable.

What we need is thus the following, with late insertion of *not*.

- (11) a. [a butler [was proven [a butler to be guilty]]] *movement of Subj.*  
b. [not a butler [was proven [the butler identical to x to be guilty]]]

*Trace Conversion*

Then, I assume that ‘not + a’ is realized as ‘no’ in the PF component:

(12) not + a → no

Thus, the negative part cannot be interpreted below *proven* since its copy does not exist below *proven*, whereas the indefinite part leaves its copy under *proven*, which is the source of the narrow scope reading of this indefinite part.<sup>3</sup>

### 2.2.2 Disjunctive phrases and anti-reconstruction in English

Disjunctive phrase appearing in the subject position do not allow the reconstructed reading:

(13) John or Tom didn’t come. (or>not;\*not>or)

In this case, what is significant is that the disjunction has to be interpreted ‘exclusively’, that is, either John didn’t come or Tom didn’t come but not both.

Chierchia, Fox, and Spector (2012) propose that this exclusive reading, which has often been regarded as a result of pragmatic reasoning (implicature), comes from the existence of a silent exhaustive operator as in (14):

(14) O<sub>ALT</sub>(John or Tom) didn’t come.

---

<sup>3</sup> Later, I discuss how this split scope reading is derived in detail, arguing that syntactic structures are translated into the semantics on the basis of c-command relations.

Then, following Chierchia, Fox, and Spector (2012), I assume the semantics of  $O_{ALT}$  as follows :

(15)  $O_{ALT}(S)$  expresses the conjunction of  $S$  and of the negations of all the members of  $ALT$  that are not entailed by  $S$ .<sup>4</sup>

In short, the exhaustive operator excludes non-weaker alternatives. For instance, in (14), the set of alternatives is:

(16) {John or Tom, John and Tom}<sup>5</sup>

Since the second one ‘John and Tom’ is stronger than the first one ‘John or Tom’ (i.e., ‘J and T’ entails ‘J or T’), this alternative is excluded and only the exclusive disjunctive reading survives.

Then, the question is why the sentence (13) does not allow other readings. Here, note that the silent operator is located outside of the domain of the Trace Conversion (it is adjoined to the two coordinated DPs). The operator then must be acyclically adjoined to the subject after movement for reasons discussed above. As a result, the subject with the silent operator cannot be interpreted below the negation.

It should, however, be noted that there is in fact another possibility for (13). If  $O_{ALT}$  is inserted acyclically but the lower copy of the subject is used for the interpretation, just

---

<sup>4</sup> Technically,  $\|O_{ALT}(S)\|_w = 1 \text{ iff } \|S\|_w = 1 \wedge \forall \varphi \in ALT(\varphi(w)=1 \rightarrow \|S\| \subseteq \varphi)$

<sup>5</sup> Even if the null operator is attached to the sentence, not the subject, (i.e.,  $O_{ALT}(\text{John or Tom didn't come})$ ) the result is the same. In that case, the set would be {John or Tom didn't come, John and Tom didn't come}, and since the second one is stronger than the first one, it is excluded and only the exclusive disjunctive reading survives.

as in the case of neg-split, we should have the following:

(17)  $O_{ALT}$  (didn't [John or Tom] come).

At first sight, it seems that this should allow the reading 'not>or'. Let us, however, look at this in more detail. In this case, the set of alternatives is:

(18) {[not [John or Tom came]], [not [John and Tom came]]}

Note here that in this case the first one is stronger than the second one (i.e., [not John or Tom came] entails [not John and Tom came]), so there is no alternative that can be excluded. This means that the addition of  $O_{ALT}$  in (17) is semantically vacuous since it has the exactly same meaning as the following, where  $O_{ALT}$  is absent:

(19) [didn't [[John or Tom] come]]

Following Fox (2009), I assume that in such a case, the insertion of  $O_{ALT}$  is banned. Fox states the following:

(20) \* $S(O_{ALT}(A))$  if  $O_{ALT}$  is incrementally vacuous in  $S$ :

- a.  $O_{ALT}$  which takes  $A$  as argument is *incrementally vacuous* in a sentence  $S$  if  $O_{ALT}$  is globally vacuous for every continuation of  $S$  at point  $A$ .
- b. An occurrence of  $O_{ALT}$  is *globally vacuous* in a sentence  $S$  if eliminating it

doesn't change truth conditions, i.e., if  $S(O_{ALT}(A))$  is equivalent to  $S(A)$ .

Based on the above, it follows that in our case, since the silent operator is present (i.e., in a sense, *obligatory implicature*), we cannot interpret the sentence in the way (17) does; otherwise, (20) is violated. In other words, once  $O_{ALT}$  is inserted, we cannot interpret the sentence as if  $O_{ALT}$  were absent.

### 2.2.3. German focus particles

#### 2.2.3.1 Basic properties

It is often assumed that German has both adverbial and adnominal focus particles (FP) like English. However, several authors (Jacobs 1983, 1996, Buring and Hartmann 2001) have argued against this view, claiming that German focus particles are only adverbial. As the evidence for this claim, Buring and Hartmann (2001) point out the following: In German, the topicalized object can reconstruct (without recourse to special help of intonation (i.e., rise-fall intonation)<sup>6</sup>)

- (21) a. [Einen Fehler]<sub>1</sub> hat vermutlich jeder <sub>t<sub>1</sub></sub> gemacht.  
a<sub>ACC</sub> mistake has presumably everyone<sub>NOM</sub> made  
'Presumably, everyone made a mistake.' (a>every; every>a)
- b. [Seine<sub>2</sub> Frau]<sub>1</sub> respektiert jeder<sub>2</sub> Mann <sub>t<sub>1</sub></sub>  
his wife respects everyone<sub>NOM</sub> man  
'Every man<sub>1</sub> respects his<sub>1</sub> wife.' (bound variable reading is ok)

---

<sup>6</sup> This is important since in German, it is well known that rise-fall intonation (or hat/bridge contour) yields the otherwise unavailable scope readings. The sentences provided in this section, thus, should be read with the unmarked intonation.

The contrast is obtained if we put the object with a focus particle in the topicalized position:

- (22) a. **Nur** MARIA liebt jeder t  
 only Maria loves everyone  
 ‘Only Mary is loved by everyone.’ (only>every; \*every>only)
- b. **Nur** das ABSTRACT hat jeder t gelesen.  
 only the abstract has everyone<sub>NOM</sub> read  
 ‘Only the abstract was read by everyone.’ (only>every; \*every>one)

When the focus particle is present, the reading where the focus particle takes scope under the universal quantifier is unavailable. Note that the impossible readings in (22) are in principle possible if the universal c-commands the focus particle:

- (23) a. Jeder liebt **nur** MARIA. (ok every>only)  
 b. Jeder hat **nur** das ABSTRACT gelesen. (ok every>only)

Based on this, Büring and Hartmann claim that German has only adverbial focus particles. Their argument can be summarized as follows:

- (24) a. [<sub>CP</sub> FP CP] derivation, yielding the correct reading even with reconstruction:  
 SS: [<sub>CP</sub> FP [<sub>CP</sub> DP<sub>1</sub> C Subj t<sub>1</sub> V]]  
 LF: [<sub>CP</sub> FP [<sub>CP</sub> \_\_\_\_ C Subj DP V]]

b. [DP FP DP] derivation, yielding the unattested reading:

SS: [CP [DP FP DP]<sub>1</sub> C Subj t<sub>1</sub> V]

LF: [CP [DP\_\_\_\_ C Subj [DP FP DP] V]

Since (24)b is not possible, they claim that German focus particles are all adverbial like (24)a.

As further evidence for their claim, they adduce the following:

(25) [Nur ein Bild von seiner<sub>1</sub> FRAU]<sub>2</sub> besitzt jeder<sub>1</sub> Mann t<sub>2</sub>.

only a picture of his wife possesses every man

ok: only > every > a picture (split reading)

‘The only person every man possesses a picture of his wife.’

\* every > only a picture

‘Every man only possesses a picture of his wife.’

In (25), the sentence is constructed in the way that only the reconstructed reading is possible (due to the presence of the bound pronoun), but even in this case, the focus particle cannot be interpreted in the lower copy.

Another example is given in the following:



- (26) **Nur** die Hoffnung, dass wir je wieder GEWINNEN hat  
 only the hope that we ever again win has  
 niemand/\*jemand t behalten  
 nobody/somebody retained  
 ok only>nobody> the hope that we'll *ever* ...  
 'The only thing nobody retained was the hope that we ever win again.'  
 \*only>nobody>the hope that we'll *ever* ...  
 'Nobody retained only the hope that we ever win again.'

In this case, the topicalized phrase contains the NPI which is licensed by the negative subject (thus, when the subject is *jemand* 'somebody', the sentence is bad). Here, again, the focus particle must be interpreted at the surface position, even though the DP it attached to is interpreted below the negative subject (hence the sentence is good). Based on these, Buring and Hartmann (2001) conclude that focus particles in German can be only adverbial, not adnominal.

Buring and Hartmann (2001), however, observe a serious problem for their approach. If the focus particles in the above data are adverbial, these sentences are V3, not V2, which raises an issue given that German is a verb second language. They note this problem and argue that focus particles are special adverbs in that German sentences become V3 with it.<sup>7</sup>

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<sup>7</sup> Reis (2005: Reply to Buring and Hartmann 2001) points out that this is in fact not an issue of V2 vs. V3. Since Buring and Hartmann (2001) assume that the focus particles are attached to CP in the relevant data, it can be V4 or V5 if we add more FPs.

### 2.2.3.2. New analysis

The data in Buring and Hartmann (2001) can be accounted for under the current approach. First, what is missing in Buring and Hartmann (2001) is the recognition that focus particles generally lack reconstruction effects (as shown in English data (3)). Further, the availability of split scope does not necessarily mean that they do not form a constituent in syntax. For instance, neg-split is a case where a single syntactic constituent can be interpreted separately (i.e. syntactically (or morphologically) ‘nobody’; semantically ‘negation ... existential’). Hence, the observation in Buring and Hartmann (2001) that the focus particle and the DP it co-occurs with can be interpreted separately does not necessarily tell us anything about their constituency.

Under the current analysis, since the focus particle *nur* is located outside of the domain of the Trace Conversion, it has to be inserted acyclically:

- (27) a. [CP Maria [liebt<sub>1</sub> [TP jeder Maria t<sub>1</sub>]]] *movement of object*  
Maria loves everyone Maria
- b. [CP nur Maria [liebt<sub>1</sub> [TP jeder Maria t<sub>1</sub>]]] *late insertion of ‘nur’ only*

In this derivation, the focus particle is present only with the higher copy. As *nur* is not present below *jeder*, the reading where *jeder* takes scope over *nur* does not exist.

Likewise, split-scope is also accounted for:

- (28) [Nur ein Bild von seiner<sub>1</sub> FRAU]<sub>2</sub> besitzt jeder<sub>1</sub> Mann t<sub>2</sub>.  
only a picture of his wife possesses every man

- (29) a. [ein Bild von seiner<sub>1</sub> Frau] besitzt [jeder<sub>1</sub> Mann [ein Bild von seiner<sub>1</sub> Frau]]

*movement of the object*

- b. [**nur** [ein Bild von seiner<sub>1</sub> Frau]] besitzt [jeder<sub>1</sub> Mann [ein Bild von seiner<sub>1</sub> Frau]]

*late insertion of ‘nur’*

In the case above, the higher copy of the object is not available for the interpretation; otherwise, the universal QP subject cannot bind the pronoun in the object. So the lower copy is used for the interpretation, but since the focus particle never occurs below the universal, it must scope over the subject.<sup>8</sup> I conclude therefore that we can account for the German data from Büring and Hartmann (2001) while still keeping the assumption that German is strictly V2.

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<sup>8</sup> Meyer and Sauerland (2009: Another reply) argue that although the sentences in Büring and Hartmann (2001) are truly unambiguous in that the focus particles must be interpreted at the surface, when the subject is a negative quantifier, the reconstructed reading is in fact possible with the special intonation (rise-fall contour). This possibility is also pointed out by Reis (2005) and an anonymous reviewer of Büring and Hartmann (2001) (but Büring and Hartmann (2001) state that the reconstructed reading under the negative QP subject is impossible for them even with the special intonation).

Meyer and Sauerland (2009) claim that the sentences in Büring and Hartmann (2001) are unambiguous due to their constraint *Truth Dominance* below:

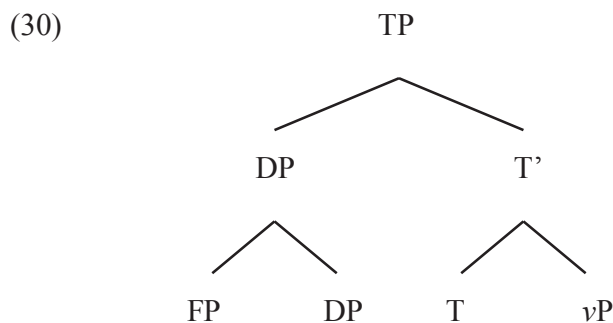
- (i) *Truth Dominance*: Whenever an ambiguous sentence S is true in a situation on its most accessible reading, we must judge sentence S to be true in that situation.

Meyer and Sauerland claim that this can have the masking effect on ambiguity since a sentence will be judged true even if it has another reading on which it is false in the scenario considered. They claim that in the above cases, since any situation which is true under the ‘every>only’ reading is also true under the ‘only>every’ reading (i.e., ‘every>only’ is a subset of ‘only>every’), we cannot detect the ambiguity.

I do not take Meyer and Sauerland’s objections to Büring and Hartmann (2001) seriously here due to the following two reasons: As they admit, even with the negative quantifiers, the help of special intonation (bridge intonation) is required, which is not needed in the usual reconstruction cases in German. This suggests that what Meyer and Sauerland observe is something different from our concerns, since the bridge intonation is known to induce scope reversal even in otherwise scope rigid sentences. Second, it seems to me that their Truth Dominance simply does not work, since split scope patterns in Büring and Hartmann (2001) ((25) and (26) above) are ‘unambiguous’ sentences (because of the presence of bound pronoun or NPI, one reading is excluded). The fact that the narrow scope of the focus operator is impossible even in those unambiguous sentences indicates that the reasoning depending on the Truth Dominance is not on the right track, since the constraint should not constrain unambiguous sentences.

#### 2.2.4. How are adjuncts interpreted in the semantics?

So far, I have not discussed how the focus operators which are acyclically inserted to the moved elements are treated in the semantics. I assume that in the relevant cases, focus particles (FPs), which are inserted acyclically, are adjoined to the moved elements. For example, when the FP is attached to the subject, the syntactic structure looks like the following:



This raises a question: how is this adjoined FP treated in the semantics?<sup>9</sup>

There are two possibilities here (given the options that have already been discussed in the literature; the task undertaken here is to determine which one would be more appropriate for the case under consideration when it comes to determining its semantics).

- (31) a. like a specifier of DP:  $[_{TP} [_{DP} FP [_{D'} D NP] [_{T'} T [_{vP} \dots]]]$   
b. like an independent operator:  $[_{TP} FP [_{TP} DP [_{T'} T [_{vP} \dots]]]]$

---

<sup>9</sup> What we are dealing with here is the issue of how adjoined elements should be interpreted in the semantics, which surprisingly does not seem to be discussed in the semantic literature and which may bear on recent discussions of labeling (i.e. whether interpretation of adjuncts requires labeling, see Hornstein and Nunes 2008, Hunter 2010, Chomsky 2013, Bošković 2014).

The first option is to treat the FP like a specifier of DP would be treated. The second option is to treat the FP as if it were an independent operator outside of the DP.

Here, I would like to note that the FP in (30) in fact c-commands (i.e. takes scope) out of the DP it attaches to under the standard definition of c-command.<sup>10</sup> This is desirable empirically as well, given the scope interactions between the FP and other scope bearing elements outside of the DP that the FP is attached to.

Based on this, I assume that (31)b is more plausible and propose the following:

(32) *The Adjunct Mapping Hypothesis*<sup>11</sup>

Syntactic structures are translated into the semantics on the basis of c-command relations, that is, the semantic representation must reflect the c-command relations in the syntax

According to the hypothesis, the semantic representations must reflect the c-command/scope relations in the syntax.

Thus, I assume that the structure in (33)a is translated into the one in (33)b during the syntax-semantics mapping:

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<sup>10</sup> I assume the definition of c-command from Kayne (1994) (see also Despić 2013), given in (i). (It should, however, be noted that Kayne actually equates traditional Specifiers with adjuncts, which I am not doing here.)

(i) X c-commands Y iff *X and Y are categories* and X excludes Y and every category that dominates X dominates Y.

<sup>11</sup> The formalization here is not limited to adjuncts, but since only adjuncts are cases where c-command relations and syntactic/morphological constituency break, this is virtually a rule for how adjuncts should be translated into the semantics (see here footnote 9), as indicated by the name of the condition.

- (33) a. Syntax:  $[_{TP} [_{DP} FP DP]] [_{T'} T [_{vP} \dots]]$   
 b. Semantics:  $[_{TP} FP [_{TP} DP [_{T'} T [_{vP} \dots]]]]$

This accounts for the mismatch between the syntactic constituency and the semantic interpretation:

As discussed above, the FP and DP as a whole can act as a single constituent in the syntax (for example, in German, the FP and DP count as one element for V2 considerations. Or in English, the negation and the indefinite are realized as one morphological unit ‘nobody’). However, they can behave as if they are separate elements in the semantics (e.g., as in the case of scope-split in German and neg-split in English.) The mapping process depicted in (33) nicely captures these properties.<sup>12</sup> I therefore assume that a process like (32) should be at work during the syntax-semantics mapping.

### 2.3. Japanese focus particles

I now turn to Japanese focus particles. They can be divided into the following two types:

- (34) a. K-particles (K = *kakari* ‘linking’)  
       *-mo* ‘also, even’, *-wa* ‘topic’, *-sae* ‘even’  
 b. F-particles (F = *fuku* ‘adverbial’)  
       *-dake* ‘only’, *-made* ‘even’, *-bakari* ‘only’, *-nomi* ‘only’, etc.

All of the above can act as a focus particle, with the following properties:

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<sup>12</sup> This is also desirable for the semantics of focus operators. We do not need to assume two separate semantics for each focus operator regardless of whether it is adverbial or adnominal, since with the current approach, we can treat adnominal *only* just as adverbial one, anyway.

- (many of) F-particles were originally nouns, and still have nominal nature:
- => case-particles can be attached to them
- => they can head relative clauses
- K-particles cannot co-occur with case-particles
- ordering restriction: when two types of focus particles co-occur, F-particles must precede K-particles.

### 2.3.1. Scope properties of focused phrases in Japanese

Just like English, normal QPs can reconstruct under the negation in Japanese:

- (35) a. Subete-no gakusee-ga ko-nakat-ta.  
all-GEN student-NOM come-NEG-PAST  
‘All students didn’t come.’ (all>not; not>all)
- b. 10-nin-izyoo-no gakusee-ga ko-nakat-ta.  
10-CL-or.more-GEN student-NOM come-NEG-PAST  
‘Ten or more students didn’t come.’ (10 or more>not; not>10 or more)

However, when the focus particle is attached to the subject, the narrow scope reading becomes unavailable (see chapter 3 for more extensive discussion):

- (36) a. Taro-mo ko-nakat-ta.  
Taro-also come-NEG-PAST  
Lit. ‘Also Taro didn’t come.’ (also>not; \*not>also)

b. Taro-dake ko-nakat-ta.

Taro-only come-neg-past

‘Only Taro didn’t come.’

(only>not;\*not>only)

This is readily captured under the current analysis:

Aoyagi (1998, 2006) argues that these focus particles are adjoined to the phrase they modify (see chapter 3, section 3.4. for evidence to this effect). As a result, they are outside of the domain of Trace Conversion. (This is also reasonable on the basis of their scope patterns: as will be shown later, they allow split scope, which should be impossible if they are not adjuncts to the phrases they modify). Given the above discussion, this means that these focus particles must be inserted after the subjects move. As a result, there is only one occurrence of those focus particles in the structure, which is higher than the negation in (36). Consequently, they cannot scope under the negation.

Disjunctive phrases show the same pattern (see also chapter 3):

(37) Taro-ka Ziro-ga ko-nakat-ta.

Taro-or Ziro-NOM come-NEG-PAST

‘Taro or Ziro didn’t come.’

(or>not;\*not>or)

This can be treated on a par with the English disjunction case.<sup>13</sup>

Assume that there is a silent exhaustive operator that is attached to the disjunction:

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<sup>13</sup> Though there seems to be a lexical variation whether the disjunction can occur with a silent exhaustive operator  $O_{ALT}$ , see chapter 3, section 4).



(38) O<sub>ALT</sub>(Taro-ka Ziro-ga) ko-nakat-ta.

Taro-or Ziro-NOM come-NEG-PAST

This yields the following set of the alternatives:

(39) {Taro or Ziro, Taro and Ziro}

Since the operator excludes the non-weaker alternatives (in this case, ‘Taro and Ziro’), only the exclusive disjunctive reading survives, just like the English case. (The way ‘not>or’ reading is excluded is the same as in the English case, discussed above). The obligatory late insertion approach can then be extended to Japanese as well.

### 2.3.2. Split-scope

Split-scope patterns are also observed with Japanese focus particles. To get the split pattern more naturally (and to avoid unnecessary complications), I use a scrambled instrumental phrase with a focus particle:

(40) Hashi-de-**mo**<sub>1</sub> Taro-wa gohan-o t<sub>1</sub> tabe-nakat-ta.<sup>14</sup> (also>not)  
 chopstick-with-also Taro-TOP rice-ACC eat-NEG-PAST (\*not>also)

‘It is also the case for chopsticks that Taro didn’t eat rice with them.’

Here, the FP must be interpreted above the negation but the instrumental phrase, which the FP is attached to, can be the focus of the negation (i.e., “Taro ate rice not with

<sup>14</sup> The position of the trace might be higher than the accusative object, which is not important here.

chopsticks”).

The same situation is obtained with other particles as well.

(41) Hashi-de-**dake**<sub>1</sub>      Taro-wa   gohan-o   t<sub>1</sub>   tabe-nakat-ta.

chopstick-with-only   Taro-TOP   rice-ACC                  eat-NEG-PAST

‘It is the case only for chopsticks that Taro didn’t eat rice [with them]<sub>F</sub>.’

Again, the focus particle has to be interpreted above the negation but the instrumental phrase can be the focus of the negation, which must be within the scope of the negation.

These split scope patterns can be readily accounted for:

- First, the instrumental phrase undergoes movement from somewhere below the negation to the sentence initial position.
- Second, the focus particle is adjoined to the instrumental phrase acyclically.
- The adjoined FP is translated into the semantics based on its c-command relation at the syntax-semantics interface (the hypothesis in (32)).
- The lower copy of the instrumental is used for the interpretation (i.e. reconstruction).

Furthermore, the current analysis can provide an answer to a well-known property of the contrastive topic in Japanese.

### 2.3.3. Contrastive topic *-wa*

Traditionally, in Japanese linguistics, the contrastive topic (I express it as *WA*) has been regarded as something which attracts the focus of negation:

(42) Minna-WA ko-nakat-ta.

everyone-<sub>contr</sub>TOP come-NEG-PAST

ok ‘Not everyone came.’ (not>every)

\* ‘Nobody came’ (= [Everyone [not came]]) (every>not)

The universal subject has to be the focus of the negation in (42).

This contrasts with the case when the nominative marker is used, instead of the contrastive topic:

(43) Minna-ga ko-nakat-ta.

everyone-NOM come-NEG-PAST

ok ‘Not everyone came.’ (not>every)

ok ‘Nobody came’ (= [Everyone [not came]]) (every>not)

Based on this contrast, the contrastive topic is often said to attract the focus of the negation. This can be captured easily under the current analysis: (42) is simply the case of the split pattern.

Here, I follow Oshima (2008) in that the contrastive topic is a kind of focus particle which induces a reversed polarity presupposition. (i.e., it is antonymous to the additive

particle *-mo* ‘also’). Oshima argues that WA induces the presupposition, not a conventional implicature, by indicating that its presupposition survives under the negation, which would not be expected if it is an implicature:

(44) Taro-WA siken-ni ukat-ta.

Taro-<sub>contr</sub>TOP exam-DAT pass-PAST

‘Taro passed the exam.’

*Presupposition*: ‘(Putting aside Taro) there is at least one person who failed or is not known to have passed it.’ (Oshima 2008)

The sentence has the presupposition which is, in a sense, opposite to the one induced by the additive FP *-mo* ‘also’.

What is important is that this presupposition survives even under negation:

(45) [Taro-WA siken-ni ukat-ta] toiu-koto-wa-na-i.

Taro-<sub>contr</sub>TOP exam-DAT pass-PAST it.is.not.the.case

‘Taro passed the exam.’

*Presupposition*: ‘(Putting aside Taro) there is at least one person who failed or is not known to have passed it.’ (Oshima 2008)

Even under the negation, the presupposition does not change. If it is an implicature, it can be easily deleted under the negation (or DE operator).

Another argument provided by Oshima (2008) concerns uncancellability.

Implicatures can be canceled in principle, but the presupposition cannot:

(46) Context: Taro and Ken (and nobody else) took an exam.

A: So Taro passed the exam. How about Ken?

B. #Ken-WA ukat-ta.

Ken-<sub>contr</sub>TOP pass-PAST

‘Ken passed it.’

Here, the response in B presupposes that there is at least one person other than Ken who did not pass the exam (or is not known to have passed the exam). This conflicts with the given context and hence the degraded status of the sentence (we have a presupposition failure). Importantly, (46) sounds infelicitous, not merely awkward. Thus, Oshima (2008) concludes that the contrastive topic induces the reversed polarity ‘presupposition’, not implicature.<sup>15</sup>

Returning to our data in (42), what is presupposed in this sentence is the following:

(47) Minna-WA ko-nakat-ta.

everyone-<sub>contr</sub>TOP come-NEG-PAST

‘Not everyone came.’

Presupposition: there is at least one person who did **NOT** not come.

= there is at least one person who came

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<sup>15</sup> The semantics provided by Oshima (2008) for the contrastive topic marker is the following:

- (i) A sentence S: ‘... $\alpha$ -WA ...’ can be felicitously uttered only if there is some proposition  $p \in C$  such that  $p \neq [[S']]^{M.g}$  and  $p$  does not follow from the common ground, where S’ is identical to S except that it lacks the CT(Contrastive Topic)-morpheme and  $C$  is a contextually determined set of alternative propositions of  $[[S']]^{M.g}$  with respect to  $\alpha$ .

Since the contrastive topic induces the reversed polarity presupposition, what is presupposed in (47) is ‘ $\exists x. x$  NOT [didn’t come]’ = ‘ $\exists x. [x$  came]’.

Under this situation, if the universal takes scope over the negation, it follows that there is nobody who came (i.e., everyone is such that he/she did not come). This conflicts with the presupposition induced by the contrastive topic. As a result, only the reading where the universal QP takes scope under the negation survives.

Note that to yield this reading, the contrastive topic and the phrase which the FP is attached to must be split: If the contrastive topic is below the negation, what is presupposed is the negative sentence (e.g., see the presupposition in (44), where the presupposition of WA is a negative sentence). But the presupposition in (47) is a positive sentence. To get this, WA must take scope over the negation

(48) **NOT** [ $x$  didn’t come] (= [ $x$  came])  
  
negation introduced by the contrastive topic

Thus, to get the observed reading in (47), the contrastive WA must be interpreted above the negation, whereas the universal QP which the contrastive FP is attached to must be interpreted below the negation. This is exactly what we have observed so far: Split-scope pattern. I conclude therefore that the scope pattern (47) and the property traditionally regarded as attraction of the focus of the negation can be captured easily under the current analysis.

It should be noted here that the traditional view that the contrastive topic attracts the focus of the negation is not always correct. As I suggested, what blocks the wide scope

reading of the universal subject in (47) is a conflict with the presupposition of WA. So if there is no conflict with the presupposition of WA, the subject does not have to be the focus of the negation. This is shown below:

(49) Ookuno hito-WA ko-nakat-ta.

many person-<sub>contr</sub>TOP come-NEG-PAST

ok many>not: For many people x, x did not come.

ok not>many: It is not the case that many people came.

Presupposition: There is at least one person who did NOT not come.

= there is at least one person who came.

In this case, the wide scope reading of the subject does not necessarily conflict with the presupposition. For instance, we can say many people didn't come, but at the same time many other people came (that is, 1000 people didn't come but 1000 people came to the concert, for example.)

The above discussion indicates that the view that the contrastive topic attracts the negation is not really correct. The obligatory narrow scope of the subject in the universal subject case in (47) is simply due to the interaction between the subject scope and the presupposition of WA; nothing special in fact happens here.

#### **2.3.4. Surface scope effects**

I have argued that the focus operator lacks reconstruction effects. Combined with the well-known fact that Japanese seems to lack (optional) quantifier raising (QR) operation,

the scope of these elements reflects their surface position (see chapter 3 for more discussion):

- (50) *The surface scope effects*: An element with acyclic adjunction allows only surface scope.

The scope of focus operators reflects their surface position. To confirm this, let's look at the data below:

- (51) a. *Object scrambled over subject*

[Taroo-ni-**mo**]<sub>i</sub> minna-ga t<sub>i</sub> at-ta.

Taroo-DAT-also everyone-NOM meet-PAST

'It is also the case for Taro that everyone met him.' (also>every; \*every>also)

- cf. b. [Hutari-no kodomo-ni]<sub>i</sub> minna-ga t<sub>i</sub> at-ta.

2-CL-GEN child-DAT everyone-NOM meet-PAST

'Everyone met two children.' (two>every; every>two)

In Japanese, the scrambled phrase can reconstruct easily as shown in (51)b, but the focused object cannot reconstruct.<sup>16</sup> The same holds for the accusative object scrambled over the dative object:

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<sup>16</sup> To be precise, what cannot reconstruct is the focus operator itself. The element which the FP is attached to in principle can reconstruct, as in split scope patterns, but in (51), such an element is a non-scope-bearer, so we cannot detect whether it undergoes reconstruction or not here.



(52) a. *Accusative object scrambled over dative object*

Taroo-wa [Ziro-**mo**]<sub>i</sub> minna-ni t<sub>i</sub> syookaisi-ta.

Taro-TOP Ziro-also everyone-DAT introduce-PAST

‘It is also the case for Ziro that Taro introduced him to everyone.’

(also>every; \*every>also)

cf. b. Taroo-wa [hutari-no kodomo-o]<sub>i</sub> minna-ni t<sub>i</sub> syookaisi-ta.

Taro-TOP 2-CL-GEN child-ACC everyone-DAT introduce-PAST

‘Taro introduced two children to everyone.’

(two>every; every>two)

Again, the focused phrase is scopally trapped at the surface position as in (52)a, whereas the normal QP is not as in (52)b.

Furthermore, focused adjuncts are also scopally trapped:

(53) a. *Focused adjuncts are scopally trapped*

Taroo-wa [kyoositu-de-**mo**]<sub>i</sub> ookuno gakusee-o t<sub>i</sub> sikat-ta.

Taro-TOP classroom-at-also many student-ACC scold-PAST

‘It is also the case for the classroom that Taro scolded many students there.’

(also>many) (\*many>also)

cf. b. Taroo-wa [ni-kasyo-izyoo-de]<sub>i</sub> ookuno gakusee-o t<sub>i</sub> sikat-ta.

Taro-TOP 2-CL-or.more-at many student-ACC scold-PAST

‘Taro scolded many students at two or more places.’ (two>many; many>two)

Note that focused elements can be within the scope of other elements if they are lower, which indicated that focused elements do not move to some specific higher position (see chapter 3 for more discussion):

- (54) Ookuno hito-ga Taroo-ni-**mo** at-ta.  
 many person-NOM Taro-DAT-also meet-PAST  
 ‘Many people also met Taro.’ (ok: many>also)

- (55) Taroo-wa ookuno hito-ni Ziroo-**dake** syookaisi-ta.  
 Taro-TOP many person-DAT Ziroo-only introduce-past  
 ‘Taro introduced only Ziro to many people.’ (ok: many>only)

- (56) Taroo-wa ookuno gakusee-o kyoositu-de-**dake** sikat-ta.  
 Taro-TOP many student-ACC classroom-at-only scold-PAST  
 ‘Taro scolded many students only in the classroom.’ (ok: many>only)

The scope relation of the relevant elements basically reflects their surface positions, as in (50).

It is worth noting here that, in (54) - (56), the inverse scope readings seem to be unavailable (the judgment is confirmed by Masahiko Takahashi and Ken Takita). This means that the reconstruction process to the trace which is within the scope of focus operator is impossible here.

This in fact can be accounted for under the compositional semantics approach.

Assume that sentence meaning is calculated in a bottom-up fashion. Then, when we calculate the meaning of the focus operator, higher quantifiers do not exist in the domain of the focus operator. Hence, the focus operator yields a presupposition which does not contain higher quantifiers, which contributes only to the surface scope reading.

For example, consider the following:

- (57) [Taro-dake] ookuno hito-ga t home-ta.  
 Taro-only many person-NOM praise-past  
 Lit. ‘It is only Taro that many people praised.’

In (57), since the QP subject is within the scope of *-dake* (that is, when we reach *-dake* at the semantic calculation in a bottom-up way, the QP subject is already calculated), this yields the following presupposition:

- (58) Presupposition: there is no person other than Taro who many people praised.

By contrast, in the sentence below, when we reach *-dake* in a bottom-up way, the QP subject is not calculated yet (only its lower copy, which is converted into a trace in the semantics, is)

- (59) [Ookuno hito-ga [Taro-dake [<sub>VP</sub> t<sub>Subj</sub> [ t<sub>Obj</sub> home-ta]]]].

- (60) Presupposition: There is no other person other than Taro who x(= t<sub>Subj</sub>) praised.  
 = There is no other person other than Taro who was praised (by x).

Note that what contributes to the scope property of focused phrases are these presupposition themselves, because the assertions of the two sentences above are the same, as follows:

(61) Assertion (of (57) and (59)): Many people praised Taro.

Thus, with the presupposition in (58), since the QP subject is included in this presupposition, we judged the sentence as ‘only>many’ alone. Likewise, in (59), we judged it as ‘many>only’ alone since the QP subject is not included in its presupposition (and the QP distributes over the FP). Thus, these data suggest that the semantic calculation proceeds strictly in a bottom-up fashion.

### 2.3.5. NP-Internal *-dake*

Lastly, I briefly discuss the particle *-dake* ‘only’, which occurs inside the NP. In the literature, the two forms below are often regarded as having the same meaning:

- (62) a. Taro-dake ki-ta.  
           Taro-only come-PAST
- b. Taro-dake-ga ki-ta.  
           Taro-only-NOM come-PAST  
           ‘Only Taro came.’

I will call the former NP-external *-dake* since it is the outmost element in the NP and has

the same distribution as other focus particles like *-mo* ‘also’, *-sae* ‘even’, and *WA* ‘contrastive topic.’ I will call the latter NP-internal *-dake* since it occurs inside a case particle (or a postposition).

In some contexts, the two forms above actually have different interpretations:

- (63) a. Taro-wa Hanako-to-dake asob-e-ru.  
Taro-TOP Hanako-with-only play-PAST  
‘It is only Hanako who Taro can play with.’
- b. Taro-wa Hanako-dake-to asob-e-ru.  
Taro-TOP Hanako-only-with play-PAST  
‘Taro can play with Hanako (without any other person).’

Futagi (2004), for instance, provides a relatively complicated semantics for these two occurrences of *-dake*, with the assumption that they are both focus operators.

However, under the current approach, the NP-internal *-dake* cannot be the same focus operator as the NP-external *-dake*. Since the internal *-dake* does not c-command out of the NP where it occurs, it is predicted that it does not interact with other scope bearer.

This is supported by the observation in Hayashishita (2008) and Shibata (2012): they argue that NP-internal *-dake* is in fact not a scope bearer. In this respect, Hayashishita (2008) provides the following data:

(64) a. NP-external *-dake*

John-wa Kimura-sensee-ni-dake email-de soodansi-ta.

John-TOP Prof.Kimura-DAT-only email-by consult-PAST

‘It is only Prof. Kimura that John consulted with by email.’

b. NP-internal *-dake*

John-wa Kimura-sensee-dake-ni email-de soodansi-ta.

John-TOP Prof.Kimura-only-DAT email-by consult-past

‘Prof. Kimura is the only person who John consulted with and this was done by email.’

In (64)a, the sentence is felicitous even if John consulted with other teachers if Prof. Kimura is the only person who John consulted with ‘using email’. This is not surprising since ‘by email’ is within the scope of *-dake*, so the presupposition of *-dake* is ‘there is no other person who John consulted with by email.’

By contrast, in (64)b, the sentence is infelicitous if there is another person who John consulted with even if this was done not by email, say by phone. This is strange if the *-dake* phrase here is a scope bearer since the phrase ‘by email’ is clearly lower than the *-dake* phrase. Based on this, Hayashishita (2008) concludes that the NP-internal *-dake* is not a scope bearer.<sup>17</sup>

Furthermore, McNally (2008) argues that English FP *only* appearing inside the DP (i.e., *only* in *the only tall boy*) has different semantics from the focus operator (i.e., *only*

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<sup>17</sup> Shibata (2012) reaches the same conclusion, showing that the NP-internal *-dake* is free from scope trapping effects, which trap the scope of scope bearers.

in *only the tall boy*).<sup>18</sup> The above discussion indicates that care must be taken when we use *-dake* as a test tool to investigate scope patterns.

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<sup>18</sup> The difference between the NP-internal *-dake* and the NP-external *-dake* is also indicated by the fact that we do not need to insert NP-internal *-dake* acyclically since it is within the domain of the Trace Conversion. For instance, see (i) :

- (i) a. The only tall boy didn't come.  
b. [the only tall boy]  $\lambda x$ . [didn't [ [the only tall boy identical to x] come]

## Chapter 3

### Negative Structure and Object Movement in Japanese

#### 3.1. Introduction

In this chapter, I investigate negative structure in Japanese. One puzzle regarding this issue is that it seems that the scope of Japanese negation can be relatively narrow, compared to other languages such as English. Thus, many authors (Kuno 1980, 1983, Takubo 1985, Han, Stroschenko, and Sakurai 2004, Kataoka 2006, Kishimoto 2007, 2008, among others) argue that negation in Japanese is different from negation in, e.g. English, where NegP is often assumed to be located between  $\nu$ P and TP. Furthermore, it has been claimed that there are several possible positions for negation in Japanese, which contributes to the seemingly peculiar scopal property of negation in this language. In section 2, I point out problems for this multiple-negative-structure analysis, and argue that the apparent differences in the behavior of negation between Japanese and English come from other factors, keeping the negative structure in Japanese the same as the one in English. The crucial factor for the proposed analysis is the scopal property of object NPs in Japanese, which is different from the one in English in that typical quantifier phrases (QPs) in object position allow either wide or narrow scope with respect to negation in Japanese, while certain scope bearing elements (e.g. focused phrases and disjunctions, which I argue cannot undergo reconstruction) allow only wide scope over the negation. I claim that this is due to the obligatory object movement into the domain above NegP, not due to a difference in negative structure between Japanese and English. I will discuss the consequences of this analysis, which are not captured under the



multiple-negative-structure analysis in section 3. Then, section 4 notes that there are variations among disjunctive phrases in Japanese and Korean regarding their scope property. It concludes that some disjunctions are not suitable as a test tool to investigate structural relations among scope bearing elements. Section 5 is the conclusion.

### **3.1.1. Previous approaches to Japanese negative sentences**

The scope properties of negation in Japanese have attracted much attention in the literature. In this section, I will review how this issue has been treated in the literature.

#### **3.1.1.1. Kuno (1980, 1983)**

Kuno (1980, 1983) notes that the scope of negation in Japanese is relatively narrow, compared to languages like English, and proposes the generalization in (1):

- (1) The scope of negation is extremely limited and extends only to the verbal constituent that negative morpheme *na-i* is attached to: the immediately preceding verb, adjective or X+copula. (Kuno 1983: 130)

This generalization captures why the following sentence sounds odd:

- (2) #Hanako-wa [Taroo-ga but-ta kara] naitei-nai.

Hanako-TOP Taro-NOM hit-PAST because be.crying-NEG

ok: 'Because Taro has hit her, Hanako isn't crying.'

\*'Hanako is crying not because Taro hit her.'

(Kuno 1980: (13d))

The sentence (2) only has the non-sensible meaning, where the *because*-clause is outside the scope of negation. This contrasts with English example (3), where the *because*-clause can be inside the scope of negation:

(3) Hanako isn't crying because Taro hit her.

ok: 'Because Taro has hit her, Hanako isn't crying.'

ok: 'Hanako is crying not because Taro hit her.'

If the scope of negation in Japanese is limited to the immediately preceding verb, the *because*-clause in (2) has to be outside the scope of the negation, which accounts for the non-sensible meaning.

Although the generalization (1) captures why the sentence (2) sounds odd, it cannot handle sentences where elements other than the verb immediately preceding the negation are within the scope of negation. For instance, the sentence (4) is such a case:

(4) Kyoo-wa kuruma-de ko-nakat-ta node, aruite kaera-nakerebanaranai.  
today-TOP car-by come-NEG-PAST because walk return-must

'Today, since I didn't come by car, I have to go home on foot.' (Kuno 1983: 129)

In (4), the phrase *kuruma-de* 'by car' can be the focus of the negation even though it is not an element immediately preceding the negative morpheme. To account for this, Kuno (1983) supplements the generalization (1) with the following discourse or pragmatic principle:

(5) The generalization (1) holds unless the focus of negation is a multiple-choice focus.

In a series of Kuno's work, however, the precise definition of 'multiple-choice focus' is not provided. He merely suggests that the multiple-choice focus is determined (i) by the information concerning the events that can repeatedly occur, or (ii) by the choice being strictly limited among the elements that can appear as the focus. In (4), for example, *kuruma-de* 'by car' is selected among the elements like 'by bus' or 'on foot', and hence this phrase can be regarded as a multiple-choice focus, but it is still unclear exactly how this works for other cases. To sum up, Kuno (1980, 1983) accounts for the focus of negation in Japanese by 'linear precedence', supplemented with the pragmatic principle (5).

### **3.1.1.2 Takubo (1985)**

Under the assumption that Japanese verbs basically do not project VP, that is, adopting the non-configurational approach to Japanese, except for certain cases, Takubo (1985) assumes that when the sentence has a flat, VP-less structure, the negative morpheme *-nai* takes scope only over the preceding verb, as Kuno (1980, 1983) claims. However, he argues that in some marked cases, including cases where predicates take a clausal complement like (6) below, the verb and the complement form a VP and in this case, negation scopes over the VP.

(6) Watasi-wa [kare-ga 1920-nen-ni umareta to] (wa) omowa-nai.

I-TOP he-NOM 1920-year-in was.born COMP TOP think-NEG

‘I don’t think he was born in 1920.’ (Takubo 1985: 37)

In (6), either *kare* or *1920-nen* in the embedded clause can be the focus of the negation. This observation cannot be captured by Kuno’s generalization (1) since these elements are not the ones immediately preceding the negation.<sup>19</sup> Then, Takubo argues that the scope of negation should be determined by the structural notion ‘c-command’ (Reinhart 1976, 1983), not by ‘the linear precedence’ as Kuno claims. He proposes (7) below:

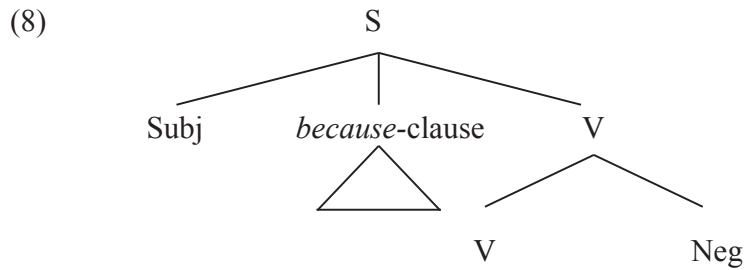
(7) The scope of negation is the syntactic domain of the negative morpheme. The focus of negation must be in the scope of negation. (Takubo 1985: 39)

He assumes that the syntactic domain of negation is the c-command domain of the negation<sup>20</sup>. When a sentence has VP-less structure, which he assumes for the structure of sentences like (2), the only element c-commanded by the negation is the preceding verb or adjective to which the negative morpheme is attached.

<sup>19</sup> Of course, it may be possible to give some pragmatic account, using a principle along the lines of (5), but since the precise nature of the pragmatic principle is not worked out, this still needs to be accounted for.

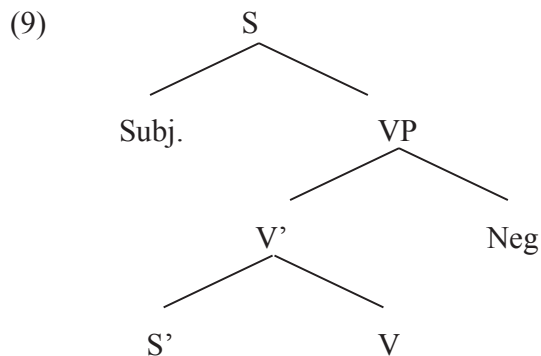
<sup>20</sup> The definition of c-command that Takubo (1985) assumes is given in (i), which is from Reinhart (1976, 1983):

(i) C-Command: Node A c-commands node B iff the branching node  $\alpha_1$  most immediately dominating A either dominates B or is immediately dominated by a node  $\alpha_2$ , which dominates B, and  $\alpha_2$  is of the same category type as  $\alpha_1$ .



This also accounts for why the *because*-clause in (2) cannot be within the scope of the negation. According to Takubo (1985), the sentence has a VP-less, flat structure in cases like (2); the only element c-commanded by the negation is the verb immediately preceding it. Thus, the *because*-clause is outside the scope of the negation and the sentence results in the odd reading.

By contrast, in (6), he assumes that VP is projected; in such cases, the negative morpheme is located in the position where it c-commands any elements within the VP:



Since the negation c-commands S' in (9), it is not surprising that any element in this complement clause can be the focus of the negation. Thus, Takubo (1985) treats the scope of negation in terms of structural notion 'c-command', not 'linear precedence'.

### 3.1.1.3 Han, Storoshenko, and Sakurai (2004)

Assuming that VP is dominated by  $\nu$ P, where the external argument is merged, Han et al. (2004) argue that Japanese NegP dominates only VP, and is dominated by  $\nu$ P. Their conclusion is based on an experimental study, using the Truth Value Judgment Task. They investigate the scope relation between object QPs and the negation in Japanese. The methodology is as follows: one experimenter acts out short stories in front of participants using toys, and the other experimenter plays the role of a puppet who watches the scenario alongside the participant. At the end of the story, the puppet makes a statement about the story, and the participant is asked to determine whether the puppet understood the story and whether the statement is true or not. Crucially, each scenario is compatible only with one scope reading.

They tested 48 participants in total (20-30 years old native speakers of Japanese). A sample of their test sentences is given below:

(10) Donald-ga orenji-sebete-o tabe-nakat-ta.

Donald-NOM orange-all-ACC eat-NEG-PAST

Lit. 'Donald didn't eat every orange.'

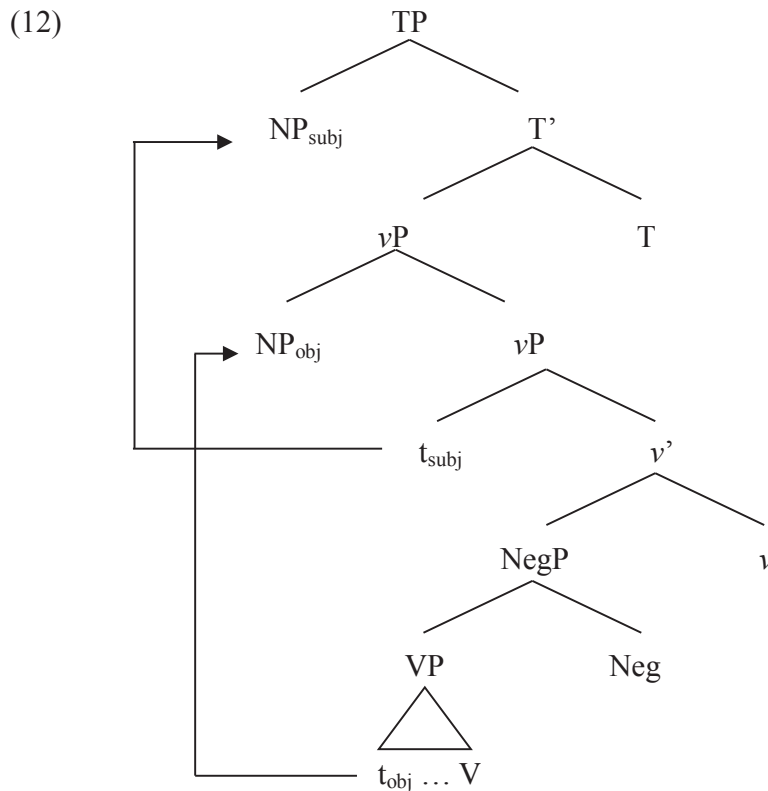
The result they obtained is as follows:

(11) Mean Percentage Acceptance

object QP > Neg: 98%

Neg > object QP: 54%

Based on this result, following Koizumi's (1995) and Miyagawa's (2001) claim that Japanese objects undergo raising to [Spec,vP] to check accusative Case, Han et al. argue that Japanese NegP is between VP and vP:



As for 54% of people who accept the ‘Neg>Obj.’ reading, Han et al. argue that the verb moves to T, picking up the negation on the way to T, adopting the definition of c-command in Kayne (1994).<sup>21</sup> They assume that this operation is not available to all speakers, which results in the lower acceptance rate of this reading. Thus, Han et al. argue that Japanese NegP is different in location from languages like English, where NegP is

<sup>21</sup> The definition of c-command in Kayne (1994) is given in (i), where a segment cannot enter into a c-command relation:

(i) X c-commands Y iff *X and Y are categories* and X excludes Y and every category that dominates X dominates Y.

generally assumed to dominate  $\nu P$ .<sup>22,23</sup>

### 3.1.1.4 Kataoka (2006)

Kataoka (2006) notes that not only objects but also subjects can take scope under negation in Japanese:

- (13) (Kono kurasu-no) [go-nin-izyoo-no seeto-ga] [geemu sofuto-o]  
this class-GEN 5-CL-or.mor-GEN student-NOM game software-ACC  
san-bon-izyoo] motte-inai  
3-CL-or.more have-NEG  
'Five or more students (in this class) don't have 3 or more pieces of game  
software.'  
(Kataoka 2006: 55)

In (13), either the subject or the object can be the focus of the negation.<sup>24</sup> Assuming that all arguments are generated within VP, Kataoka interprets this observation as evidence that Japanese negation can have a sister relation to any node of the projection of V (or A):

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<sup>22</sup> Aihara (2007) also argues for the structure in (12) on the basis of expressions of the form 'universal quantifier+particle+universal quantifier', which behaves in the same way as NPIs like *any* in English, except that they cannot occur in object position in negative sentences. This will be discussed later in section 3.6.3.

<sup>23</sup> Han, Lidz, and Musolino (2007) propose the same structure for negative sentences in Korean.

<sup>24</sup> Miyagawa (2003) argues that it is impossible to interpret a subject NP in transitive sentences as being inside the scope of negation, and he claims that to get that reading, the object phrase has to undergo scrambling over the subject. However, as many authors note (e.g. Kato 1985, Kataoka 2006, Saito 2009a, b, among others), the 'Neg>Subj.' reading is possible without object scrambling, though not the most prominent (see section 3.3). One interfering factor regarding subjects is that in Japanese, NPs with nominative Case-marker *-ga* in the sentence initial position often induce 'exhaustive listing' effects (i.e. the reading like 'only X and not others'). This effect is easily obtained with stative predicates. Since negation is in principle a stative predicate, subjects in negative sentences are often construed exhaustively. I will show that exhaustivity matters for the availability of the inverse scope readings in section 3.4 and 3.8.2.



- (14) a. [<sub>VP</sub> NP-*ga* [<sub>V'</sub> NP-*o/ni* [V]-*nai* ]]  
 b. [<sub>VP</sub> NP-*ga* [[<sub>V'</sub> NP-*o/ni* V]-*nai* ]]  
 c. [[<sub>VP</sub> NP-*ga* [<sub>V'</sub> NP-*o/ni* V]]-*nai* ] (Kataoka 2006: 56)

In (14)a, only the preceding verb is in the scope of the negation, and in (14)b, the object phrase can be the focus of the negation since it is in the c-command domain of the negative morpheme. In (14)c, even the subject phrase can be the focus of the negation. Thus, Kataoka's claim is that Japanese has several possible positions for the negation, and that the scope of the negation varies depending on its position.

### 3.1.1.5 Kishimoto (2007, 2008)

As the last account reviewed in this section, let us look at Kishimoto (2007, 2008). He claims that Japanese negation can take scope over TP as a result of head movement of the negation to T. He notes that Japanese has no subject-object asymmetry in negative polarity item (NPI)-licensing, which contrasts with English:<sup>25</sup>

- (15) a. Daremo<sub>NPI</sub> Taroo-o tatak-anakat-ta. (subject NPI)  
 anyone Taro-ACC hit-NEG-PAST  
 'Nobody hit Taro.'

<sup>25</sup> Japanese NPI *daremo* 'anyone' consists of an indeterminate pronoun *dare* 'who' and a focus particle *-mo* 'also/even'. Also, note that Japanese NPIs like indeterminate+*-mo* or NP-*shika* 'only NP' cannot co-occur with a Case particle (i.e. \**daremo<sub>NPI</sub>-ga* or \*NP-*shika-ga*). As for the status of these expressions, see section 2.3 and references cited there.

b. Taroo-ga daremo<sub>NPI</sub> tatak-anakat-ta. (object NPI)

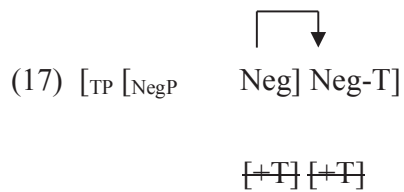
Taro-NOM anyone hit-NEG-PAST

‘Taro didn’t hit anyone.’

(16) a. \* Anyone didn’t hit Taro.

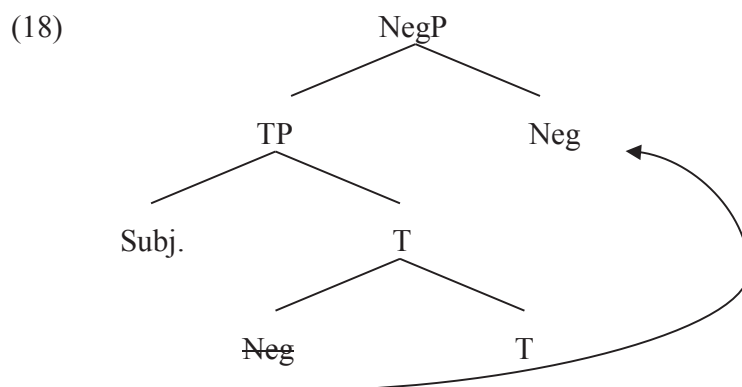
b. Taro didn’t hit anyone.

Kishimoto assumes that both the negative head and tense occur with uninterpretable [+T] features, and that these formal features are deleted under matching after Neg-head raising:



(Kishimoto 2008: 393)

Then, he proposes that when the negative head in the T-head takes scope, it undergoes excorporation out of the tense morpheme as in (18):



(Kishimoto 2008: 396)

As a result of this Neg-movement, the subject is now under the scope of negation. Kishimoto argues that this is the reason why Japanese allows subject NPIs to be licensed in addition to object NPIs. In short, Kishimoto's (2007, 2008) claim is that in principle, Japanese negation can scope over TP as in (18).

### 3.1.1.6 Short summary

The approaches we have seen so far are summarized as follows:

(19) *The scope of negation*

- a. Kuno (1980, 1983): the verb immediately preceding the negation
- b. Takubo (1985): the c-command domain of Neg;  
 $[_V V \text{ Neg}]$  in normal cases: or  
 $[_{VP} [_{V'} S' V] \text{ Neg}]$  when the verb takes a clausal complement.
- c. Han et al. (2004): only VP (excluding  $vP$ ) with object movement to  $vP$   
 $[_{vP} v [_{NegP} \text{ Neg } [_{VP} \dots V]]]$
- d. Kataoka (2006): any node of a projection of V  
 $[_{VP} [_{V'} [V] \text{-Neg}]]$ ,  $[_{VP} [_{V'} \text{ Obj } V] \text{-Neg}]$ , or  $[[[_{VP} \text{ Subj } [_{V'} V]] \text{-Neg}]$
- e. Kishimoto (2007, 2008): TP after Neg-head movement to T

Thus, the issue of the scope of negation in Japanese has not been settled. In the next section, I observe some problems with the above approaches.

### 3.2 Problems with the Previous Approaches

#### 3.2.1 Scope Interaction between Negation and Object QPs

In both Kuno (1980, 1983) and Takubo (1985), it is assumed that the scope of negation is basically limited to the preceding verb or adjective to which the negative morpheme is attached. However, it has often been observed (e.g. Kato 1985, Kataoka 2006 as in section 1.1.4) that an object in simple transitive sentences can be within the scope of negation, though such a reading is not prominent in many cases (see Han et al. 2004):

(20) Taro<sub>wa</sub> [yoteishi-te-ita mono-o zenbu]<sub>obj</sub> kaw-anakat-ta.

Taro-TOP plan-to things-ACC all buy-NEG-PAST

Lit. ‘Taro didn’t buy all of the things that he planned to buy.’ (Kato 1985: 106)

Kato (1985) reports that the predominant reading in (20) is ‘all>Neg’, that is, ‘Taro bought nothing that he planned to buy’, but that the other reading ‘Neg>all’ is still possible. It is not clear how Kuno (1980, 1983) and Takubo (1985) can account for this observation. Since Kuno’s treatment of cases in which elements other than the immediately preceding verb or adjective are negated relies on a pragmatic or discourse principle which is not precisely defined, it might be possible to provide a context where the object can be regarded as being a multiple-choice focus, but it still remains unclear how this observation can be explained in a principled manner. In Takubo (1985), since a transitive sentence like (20) is assumed to have a VP-less structure, the existence of ‘Neg>Obj’ reading is simply mysterious.<sup>26</sup> Thus, Kuno (1980, 1983) and Takubo (1985)

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<sup>26</sup> Of course, if one assumes that every verb in Japanese projects VP and that negation is attached to VP, the ‘Neg>Obj’ reading is easily obtained, but under this assumption, it still needs to be accounted for why

face a problem in accounting for ‘Neg>Obj.’ readings in sentences like (20).<sup>27</sup>

### 3.2.2 Scope Interaction between Negation and Subject QPs

Miyagawa (2003) reports that in the SOV order, the subject QP cannot take scope below negation, and that in the OSV order, derived by object scrambling over the subject, the subject QP can take scope below negation:<sup>28</sup>

- (21) a. Zen’in-ga sono tesuto-o uke-nakat-ta. (all>Neg; \*Neg>all)  
all-NOM that test-ACC take-NEG-PAST  
‘All did not take the exam.’
- b. [Sono tesuto-o]<sub>i</sub> zen’in-ga t<sub>i</sub> uke-nakat-ta. (all>Neg; Neg>all)  
that test-ACC all-NOM take-NEG-PAST  
‘All did not take the exam.’ (Miyagawa 2003)

This observation is, however, not shared by other authors (e.g. Kato 1985, Kataoka 2006, Saito 2009a, b, among others). For instance, Saito (2009a, b) reports that although the ‘all>Neg’ reading is prominent, the ‘Neg>all’ reading is readily available when the context is appropriately given. Thus, the ‘Neg>all’ reading is easily obtained when the

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the predominant reading is ‘Obj.>Neg’, not ‘Neg>Obj.’. I will discuss this issue in detail in section 3.

<sup>27</sup> This means that Kuno’s example like (2) may simply indicate that the *because*-clause is generated in a different position from such clauses in English, not that the position for negation in Japanese is different from that in English. Here, I assume that this is the case. This would not be unreasonable since even in English, for instance, the causal *since*-clause cannot be within the scope of negation even though it is semantically similar to the *because*-clause as in (i):

(i) The room was not warm since the air condition broke down.

\*‘The room was warm. Its cause was not that the air condition broke down.’

OK. ‘The room was not warm. Its cause was that the air condition broke down.’ (Kawamura 2008: 108)

<sup>28</sup> See also footnote 6 and section 3.7 and 3.8.

sentence is embedded in a conditional clause.<sup>29</sup>

- (22) Zen'in-ga sono tesuto-o uke-nakat-ta-ra, raigetū mata tesuto-o su-ru.  
all-NOM that test-ACC take-NEG-PAST-if next.month again test-ACC do-PRES  
'If all do not take the exam, (we will have) another exam next month.'  
(all>Neg; Neg>all) (Saito 2009a)

The second context is as follows:

- (23) (Context: *Students have a choice of taking the exam or handing in a term paper to receive a credit for a course.*)  
Zen'in-ga siken-o erab-ana-i to omo-u.  
all-NOM exam-ACC choose-NEG-PRES that think-PRES (all>Neg; Neg>all)  
'I think that all will not choose an exam (over a term paper.)' (Saito 2009a)

In this case, again, the narrow scope reading of the subject is readily available. This means that subject QPs in principle can be the focus of the negation. This observation is problematic for the structure proposed by Han et al. (2004) since their structure in (12) predicts that subject QPs are never inside the scope of the negation.<sup>30</sup> Thus, the scope interaction between negation and subject QPs tells us that at least subjects need to be base-generated below negation, which automatically excludes the structure (12) by Han

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<sup>29</sup> Miyagawa also notices the existence of this kind of examples. He suggests that in this case, tense may be subjunctive, and that this may be the cause of the availability of the narrow scope reading of the subject.

<sup>30</sup> Of course, this is also problematic for Kuno (1980, 1983) and Takubo (1985).

et al. (2004).<sup>31</sup>

### 3.2.3 Status of Japanese NPIs

On the basis of Japanese NPI licensing, Kishimoto (2007, 2008) assumes that negation in principle can take scope over TP in Japanese. This reasoning is valid only if subject NPIs are indeed located in [Spec,TP] and those phrases are NPIs that need to be c-commanded by negation. There are, however, potential problems for both of these assumptions.

As for the first issue, Aoyagi and Ishii (1994) argue that NPIs of the form ‘indeterminate+*-mo*’ are actually adjuncts, not true arguments. They observe that they can co-occur with a Case-marked argument:

(24) a. Gakusee-ga daremo ko-nakat-ta.

student-NOM anyone come-NEG-PAST

‘No student came.’

b. Taroo-wa gakusee-o daremo sir-anakat-ta.

Taro-TOP student-ACC anyone know-NEG-PAST

‘Taro didn’t know any student.’

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<sup>31</sup> The narrow scope of subjects under negation would still be captured by the additional assumption in Han et al. (2004) that some speakers allow optional verb raising to T, picking up negation on the way to T, which allows negation to take scope over  $\nu$ P, and thus a copy of the subject is now under the c-command domain of the negation. However, this predicts that there exists a strict correlation between the availability of the object narrow scope and the one of the subject narrow scope, and that there are in fact two grammars among speakers; one allows optional verb raising and the other disallows it. This two-grammar hypothesis regarding scope relation between object and negation is also proposed for Korean in Han, Lidz, and Musolino (2007), but an experimental study by Yoon and Shimoyama (2013) reveals that this two-grammar hypothesis for Korean is not on the right track. They found that 71% of the participants had mixed responses of acceptances for both ‘Obj.>Neg’ reading and ‘Neg>Obj.’ reading, which would be unexpected under Han et al.’s two grammar model. Thus, the validity of the two-grammar hypothesis for Japanese is also an issue that needs to be proven independently, and I put it aside here.

In (24), there are overt Case-marked arguments co-occurring with NPIs. This shows that these NPIs are not necessarily in argument position in these cases. Based on this observation, Aoyagi and Ishii (1994) conclude that these phrases are, in fact, adjuncts. This argument is also supported by the fact that Case-particles cannot be attached to NPI *daremo*:<sup>32</sup>

(25) a. \* *Daremo*<sub>NPI</sub>-ga ko-nakat-ta.

anyone-NOM come-NEG-PAST

b. \* *Taroo-wa daremo*<sub>NPI</sub>-o sir-anakat-ta.

Taro-TOP anyone-ACC know-NEG-PAST

Thus, even though NPIs interpreted as subjects can be licensed, this does not necessarily mean that negation must take scope over TP in Japanese.

As for the second issue, Watanabe (2004) claims that the expression of the form ‘indeterminate+*-mo*’ in Japanese is not an NPI, but a negative concord item (NCI). He uses five diagnostics, which are based on Valluduví (1994) and Giannakidou (2000), to check the status of the expression *daremo*:

(26) a. Ability to appear in non-negative contexts;

b. Ability to appear in pre-verbal position;<sup>33</sup>

c. Ability to be modified by expressions like *almost*;

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<sup>32</sup> Sentences (25) are acceptable if *daremo* is interpreted as a universal quantifier. In such cases, the first syllable must be accented: *da'remo* = everyone, *daremo* (unaccented) = anyone<sub>NPI</sub>.

<sup>33</sup> The phrase ‘pre-verbal position’ here is intended to mean ‘derived subject position’ in [Spec,TP]. This criterion holds if a sentence is negative and without any other downward-entailing operator higher in the structure.



- d. Ability to be used as an elliptical answer;
- e. Ability to be licensed by superordinate negation.

NPIs are positive for (26)a/(26)e and negative for (26)b-d. NCIs have the opposite properties regarding these diagnostics. For instance, English NPI *any* shows NPI properties regarding the diagnostics in (26):

- (27) a. If John steals anything, he will be arrested.  
 b. \* Anybody didn't criticize John.  
 c. \* John didn't eat almost anything.  
 d. Q: What did you see? - A: \*Anything. (meaning 'nothing')  
 e. I didn't say that John admired anyone. (Watanabe 2004: 562-565)

By contrast, the Japanese expression 'indeterminate+*-mo*' shows NCI properties with respect to (26):

- (28) a. \* John-ga (moshi) **nani-mo** nusun-dara, taihos-areru daroo.  
 John-NOM if what-MO steal-COND arrest-PASS be.will.  
 'If John steals anything, he will be arrested.'  
 b. **Dare-mo** monku-o iw-anakat-ta.  
 who-MO complaint-ACC say-NEG-PAST  
 'Nobody complained.'

- c. John-wa hotondo **nani-mo** tabe-nakat-ta.  
 John-TOP almost what-MO eat-NEG-PAST  
 ‘John ate almost nothing.’
- d. Q: Nani-o mi-ta no? - A: **Nani-mo**.  
 what-ACC see-PAST Q what-MO  
 ‘What did you see?’ ‘Nothing.’
- e. ?\*Boku-wa [John-ga **dare-mo** sonkeishiteiru to] iw-anakat-ta.  
 I-TOP John-NOM who-MO admire C say-NEG-PAST  
 ‘I didn’t say that John admired anyone.’ (Watanabe 2004: 562-565)

These data indicate that Japanese expressions like *daremo* are fundamentally different from English NPIs like *any*. Since Kishimoto’s (2007, 2008) argument is valid only if expressions like *daremo* are NPIs which need to be in the c-command domain of the negation, his assumption for the scope of negation is not necessarily valid.

Therefore, based on the adjunct status of the expressions like *daremo* and their non-NPI status, I conclude that Kishimoto’s (2007, 2008) assumption that negation can take scope over TP is not well-supported.

### 3.2.4 What do We Need for Japanese Negative Sentences?

In the previous subsections, we have seen problems for the previous approaches. So far, the only viable option is Kataoka (2006). Assuming that subject NPs as well as object NPs are base-generated within VP, Kataoka argues that there are several structures for Japanese negative sentences, where negation can be a sister to V, V’, or VP as in (14).

The main reason why she assumes this is that either subject or object can be within the scope of negation in Japanese. (14) accounts for all the facts about scope relations we have seen so far. However, I do not adopt this analysis in the current study for the following reason: Kataoka's (2006) approach crucially relies on assuming several positions for negation and hence many examples are compatible with several positions for negation (e.g., both (14)b and (14)c are compatible with an object as the focus of negation). Thus, on simplicity grounds, it would be preferable if all the scope patterns regarding negative sentences in Japanese can be captured with just one position for negation. In this study, I will pursue this possibility.<sup>34</sup>

As the starting point in the development of a new analysis for negative structures in Japanese, let us consider possible options for the position of negation, on the basis of the discussion so far. Following Pollock (1989), Chomsky (1991), Laka (1990), Zanuttini (1991), and Haegeman (1995), I assume that negation projects its own projection, NegP. Then, since subject NPs can be the focus of the negation, this NegP must be at least above the position where subjects are base-generated. Following Chomsky (1995), I assume that subjects are base-generated in [Spec, vP], which means that NegP is above vP. Thus, tentatively at this point, I assume that the negative structure for Japanese is as follows:

(29) [TP T [NegP Neg [vP v [VP ... ]]]]

In actuality, this is the structure which is widely assumed cross-linguistically. In the next

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<sup>34</sup> Also, Kataoka's (2006) assumption that all arguments including subjects are base-generated within VP is contra Chomsky (1995) where external arguments are merged outside VP, namely vP, but this can be resolved if we assume that negation can be attached to any 'extended' projection of V, including vP.

section, I will show that the structure in (29) is, in fact, enough to account for all the scope patterns we have seen so far once we determine the position of object NPs in Japanese.

### 3.3 Position of Object NPs in Japanese

In this section, I discuss scope relations between negation and argument NPs, which reveals that what is special about Japanese, in comparison to English, is not the position of the negation but the position of the object.

#### 3.3.1 Scope Ambiguity of Object NPs

As we have already seen, accusative objects can take scope either above or below negation in Japanese:

(30) Taroo-wa [zen'in/go-nin-izyoo-no gakusee]-o sikar-anakat-ta.

Taro-TOP all/5-CL-or.more-GEN student-ACC scold-NEG-PAST

Lit. 'Taro didn't scold all/five or more students.' (Obj.>Neg; Neg>Obj)

This ambiguity contrasts with English example (31), where the universal object cannot scope over negation:<sup>35</sup>

(31) John didn't scold every student. (\*Obj.>Neg; Neg>Obj.)

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<sup>35</sup> This does not mean that all object QPs do not take scope over negation in English. For instance, it is well known that an expression like *more than N* can take scope over negation even in object position.

At first sight, this scope property of Japanese seems to indicate that Japanese negative sentences are different from English ones in that there are several positions for the negation. The previous approaches such as Takubo (1985), Han et al. (2004), Kataoka (2006), and Kishimoto (2007, 2008) have in fact taken this line of reasoning. In this study, I assume that Japanese negative structure is, basically, not different from the English one, which will allow us to maintain universal sentence structure in this respect, and pursue another possibility for the scope facts, namely the possibility that the position of object NPs in Japanese is different from the one in English due to a movement of the object (i.e. not a difference in clausal structure). In the sections below, I will examine certain expressions such as focused or disjunctive phrases which lack scope reconstruction effects, and argue that this shows that Japanese object NPs are indeed syntactically higher than negation.

### **3.3.2 Obligatory Wide Scope: Focus and Disjunction**

In Japanese, the items given in (32) allow only wide scope readings over clausemate negation:

- (32) a. NPs with a focus particle (*-mo* ‘also’, *-dake* ‘only’, *-sae* ‘even’, etc)  
b. disjunction: NP-*ka*-NP ‘NP or NP’

- (33) a. Taroo-wa pan-mo/dake/sae kaw-anat-ta.<sup>36</sup>  
 Taro-TOP bread-also/only/even buy-NEG-PAST  
 Lit. ‘Taro didn’t buy also/only/even bread.’ (Obj.>Neg;\*Neg>Obj.)
- b. Taroo-wa [pan-ka-kome-o] kaw-anat-ta.  
 Taro-TOP bread-or-rice-ACC buy-NEG-PAST  
 Lit. ‘Taro didn’t buy bread or/and rice.’ (Obj.>Neg;\*Neg>Obj.)

In (33), the object phrases cannot take scope under the negation. This contrasts with cases like (30), where object QPs exhibit scope ambiguity with respect to the negation. In the next two subsections, I will review how these two cases are treated in the literature and point out potential problems with the existing accounts.

### 3.3.2.1 Focus Movement Approaches

The first account of the obligatory wide scope phenomenon illustrated above is the focus movement approach (Hasegawa 1994, Aoyagi 1999, Hoshi 2006, Miyagawa 2010, among others). In this approach, focused phrases undergo movement to some projection above NegP for focus licensing reasons.

A potential problem with this approach is that adding a focus particle does not affect scope relations among arguments. For instance, in (34), the prominent reading remains ‘Dat>Acc’, which is the same situation where accusative objects do not have a focus

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<sup>36</sup> Focus particles like *-mo* cannot co-occur with an accusative Case particle *-o*. By contrast, *-dake* can co-occur with an accusative Case particle only in the order of ‘NP-*dake-o*’, not \*‘NP-*o-dake*’. The particle *-sae* has an in-between status, that is, some speakers allow it to occur with *-o* in ‘NP-*sae-o*’ order, while other speakers find the form ‘NP-*sae-o*’ is degraded. For the possible ordering of Case-particles and focus particles, see Aoyagi (1998, 2006).

particle:<sup>37</sup>

(34) *Dative object and focused accusative object:*

Taroo-ga [san-nin-izyoo-no sensee-ni] [yo-nin-izyoo-no dansi

Taro-NOM 3-CL-or.more-GEN teacher-DAT 4-CL-or.more-GEN male

gakusee-**mo/sae**] syookaisi-ta.

student-**also/even** introduce-PAST (Dat.>Acc.;??Acc.>Dat.)

Lit. ‘Taro introduced also/even four or more male students to three or more students.’

The same holds for the focused dative object and the subject:

(35) *Subject and focused dative object:*

[San-nin-izyoo-no sensee-ga] [yo-nin-izyoo-no dansi gakusee-ni-**mo/sae**]

3-CL-or.more-GEN teacher-NOM 4-CL-or.more-GEN male student-DAT-**also/even**

John-o syookaisi-ta

John-ACC introduce-PAST (Subj.>Dat.;??Dat.>Subj.)

Lit. ‘Three or more teachers introduced John to also/even four or more students.’

This indicates that the focus movement in question would have to be very local.

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<sup>37</sup> Note that Japanese is known to be a so-called ‘scope-rigid’ language, so in the dative>accusative order like the one in (i) below, the possible scope relation is said to be only ‘Dat>Acc’, not ‘Acc>Dat’.

(i) Taroo-wa [san-nin-no otoko-ni] [yo-nin-no onna-o] syookaishi-ta.  
Taro-TOP 3-CL-GEN man-DAT 4-CL-GEN woman-ACC introduce-PAST  
‘Taro introduced four women to three men.’ (Dat.>Acc.;??Acc.>Dat)

I will discuss this scope rigidity issue in Japanese in section 3.7 and 3.8.

Furthermore, since a focus particle can also be attached to a subject, the focus movement approach in fact requires several distinct licensing heads for those focused phrases, and each movement has to be local, not crossing a higher argument:

(36) [<sub>FP1</sub> F [ Foc.Subj. [<sub>FP2</sub> F [ Foc.Dat. [<sub>FP3</sub> F [ Foc.Acc. ...



Note that in clear focus movement languages, focus movement does not look like this; rather, it involves movement to a fixed high position for all focalized elements. Thus, if one is to argue for this approach, the existence of the type of movements shown in (36) needs to be proven independently.

It is also unclear how the focus movement approach can capture the similarity between focused phrases and disjunctions regarding the scope relation with negation. Of course, it might be possible to argue that a particle *-ka* in disjunction of the form ‘NP-*ka*-NP’ is focus-related, and in fact, this is what Miyagawa (2010) claims. However, this does not seem to be on the right track, for this wide scope property of disjunction is observed even when another form of disjunction *matawa* is used, where a particle *-ka* is irrelevant:

(37) Taroo-wa [yasai matawa kudamono-o] tabe-nakat-ta.

Taro-TOP vegetable or fruit-ACC eat-NEG-PAST (or>Neg;\*Neg>or)

‘Taro didn’t eat vegetables, or didn’t eat fruits.’ (Shimoyama 2011: 440)



In (37), again, the only possible reading is the one where the object takes scope over the negation. Thus, even Miyagawa (2010) cannot capture the scope pattern in (37).

### 3.3.2.2 Positive Polarity Item (PPI) Analysis

Hasegawa (1991) argues that a phrase with a focus particle *-mo* ‘also’ is a positive polarity item (PPI) and Goro (2007) argues that Japanese disjunction is a PPI, and hence those phrases must move outside the scope of the negation. More precisely, Goro (2007) maintains that the impossibility of Japanese disjunction taking narrow scope below the negation can be accounted for by assuming that the phrase in question is a PPI like English *some*. It is well known that *some* cannot scope under the local negation even though the negation c-commands it at the surface structure (see Szabolcsi 2002, 2004):

(38) John didn’t call someone.      (\*not > some)

Since PPIs cannot appear within the scope of negation, it is assumed that they have to move outside the scope of the negation. Thus, Hasegawa (1991) and Goro (2007) analyze a focused phrase with *-mo* and disjunction, respectively, as PPIs. If they are indeed PPIs, it is not surprising that they cannot take scope below negation.

The problem for this approach is that focused and disjunctive phrases do not behave exactly in the same way as PPIs. Regarding this point, Goro (2007) himself notices that Japanese disjunction is different from PPIs like English *some* in that the former do not show a so-called ‘rescuing effect’. Szabolcsi (2002, 2004) observes that when there is another downward-entailing (DE) operator in a higher position, those PPIs can scope

under the local negation (i.e., two DE operators cancel out each other):

- (39) a. John didn't call someone. (\*not>some)  
 b. I don't think that John didn't call someone. (ok: not>not>some)  
 c. I am surprised that John didn't call someone. (ok: surprised>not>some)
- (Goro 2007: 265-266)

By contrast, Japanese focused phrases and disjunction are still unable to take scope under the local negation even after adding another DE operator:

- (40) a. Taroo-wa [Ziroo-ga ringo-mo tabe-nakat-ta to] omow-anakat-ta.  
 Taro-TOP Ziro-NOM apple-also eat-NEG-PAST C think-NEG-PAST  
 'Taro didn't think Ziro didn't eat an apple either.' (\*¬>¬>also/ ok: ¬>also>¬)
- b. Taroo-wa [Ziroo-ga ringo-dake tabe-nakat-ta to] omow-anakat-ta.  
 Taro-TOP Ziro-NOM apple-only eat-NEG-PAST C think-NEG-PAST  
 'Taro didn't think that it is only an apple that Ziro didn't eat.'
- (\*¬>¬>only/ ok: ¬>only>¬)

- (41) John-wa [Taro-ga piza ka pasuta-o tabe-nakat-ta to] omowa-nakat-ta  
 John-TOP Taro-NOM pizza or pasta-ACC eat-NEG-PAST C think-NEG-PAST  
 Lit. 'John didn't think that Taro didn't eat pizza or pasta' (\*¬>¬>or / ok: ¬>or >¬)
- (Goro 2007: 267)

In (40) and (41), the existence of another DE operator in the matrix clause does not affect the impossibility of the embedded object taking scope below the local negation. Thus, if one is to claim that Japanese focused phrases and disjunction are PPIs, it must be accounted for why they behave differently from PPIs like *some*.<sup>38</sup>

### 3.3.3 Obligatory Wide Scope as Anti-reconstruction Effects

In the previous sections, I discussed the previous approaches to the issue of the obligatory wide scope phenomenon and the potential problems with those approaches. In this section, I argue that these two cases can be characterized under the same notion, which provides a clue to unify the two.

As we have seen, Japanese QP objects show scope ambiguity with sentential negation, and this property is also observed when QPs appear in subject position:

- (42) a. Subete-no gakusee-ga ko-nakat-ta.  
all-GEN student-NOM come-NEG-PAST  
‘All students didn’t come.’ (Subj.>Neg; Neg.>Subj.)
- b. Go-nin-izyoo-no gakusee-ga ko-nakat-ta  
5-CL-or.more-GEN student-NOM come-NEG-PAST  
‘5 or more students didn’t come.’ (Subj.>Neg; Neg>Subj.)

Then, when focused phrases and disjunction appear in subject position, again the narrow scope readings under the negation become unavailable:

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<sup>38</sup> On the basis of the observation in (41), Goro (2007) concludes that Japanese disjunctions are PPIs but not ‘rescuable’ PPIs, which still requires independent explanation.

- (43) a. Taroo-mo/dake/sae ko-nakat-ta.  
 Taro-also/only/even come-NEG-PAST  
 Lit. ‘Also/Only/Even Taro didn’t come.’ (Subj.>Neg;\*Neg>Subj.)
- b. [Taroo-ka Ziroo]-ga ko-nakat-ta.  
 Taro-or Ziro-NOM come-NEG-PAST  
 Lit. ‘Taro or/and Ziro didn’t come.’ (Subj.>Neg;\*Neg>Subj.)

Significantly, the same phenomenon is also observed in English:

- (44) a. Every/A student didn’t take the exam. (Subj.>Neg; Neg>Subj.)
- b. Only John/John or Tom didn’t take the exam. (Subj.>Neg;\*Neg>Subj.)

Since the subjects in (44) are located in [Spec,TP], that is, outside the scope of the negation, the narrow scope reading of the subject in (44)a is obtained by some form of reconstruction process below negation.<sup>39</sup> This means that the obligatory wide scope over the negation as in (43) and (44)b can be regarded as the ‘lack of reconstruction effects’ or anti-reconstruction effects. Then, the question is why focused phrases and disjunction cannot undergo reconstruction below negation.

### 3.3.4 Surface Scope Effect

To answer the question raised in the previous section, first, I assume that copies left by movement are converted into traces during the syntax-semantic mapping via Trace

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<sup>39</sup> Here, I put aside the precise mechanism of reconstruction process (e.g., whether reconstruction happens in syntax or in semantics). For the detailed discussion of how reconstruction is implemented, see Lechner (1998).

Conversion (Fox 2003):<sup>40</sup>

(45) *Trace Conversion*

- a. Variable Insertion: (Det) Pred  $\rightarrow$  (Det) [Pred  $\lambda y$  (y=x)]
- b. Determiner Replacement: (Det) Pred  $\rightarrow$  the [Pred  $\lambda y$  (y=x)]

- (46) a. Every boy didn't come
- b. [every boy [didn't [every boy come]]].
  - c. [every boy  $\lambda x$ . [didn't [the boy identical to x] come]]].

The sentence (46)a, for example, has two copies of the universal quantifier as in (46)b, and then Trace Conversion (45) applies to the lower copy and we get the representation in (46)c.

Then, first consider an English case like (44)b, where the NP occurs with a focus operator *only*. It is clear that in English, adnominal *only* is attached outside of the determiner as in (47). Following Rooth (1985), I assume that the focus operator *only* is adjoined to the noun phrase in this case.

- (47) Only that boy didn't come.


Then, if *only* is present from the beginning (i.e. before the subject moves to [Spec,TP]), we have (48) below:

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<sup>40</sup> Fox (2003) assumes that this operation applies in the syntax, but since it violates Chomsky's (1995) Inclusiveness Condition, I assume that it is done during the syntax-semantics mapping, like insertion of  $\lambda$ -nodes into the structure.


(48) [only that boy [didn't [only that boy [come]]].

Now, the problem occurs: since the operator *only* is outside of the determiner, it remains unchanged after Trace Conversion (45). Thus, we get the following:<sup>41</sup>

(49) [only that boy [didn't [ [only [the boy identical to x]] [come]]].  
  
 result of Trace Conversion

This makes the semantics unable to get the correct interpretation, hence problematic.

This problem can be avoided if the operator *only* is acyclically adjoined to the subject:<sup>42</sup>

- (50) a. [that boy] didn't [that boy] come. *First, movement of the subject*  
  
 b. [only [that boy]] didn't [that boy] come. *Second, acyclic adjunction of only*  
 c. [only [that boy]] λx. [didn't [[the boy identical to x] come]]  
*Third, Trace Conversion*

Note that this derivation automatically excludes the reading where the subject with *only* is interpreted below negation since there is no way to have a representation like [didn't [[only that boy] come]] under the current analysis. Therefore, I propose (51) for adnominal phrases outside the domain of (45):

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<sup>41</sup> Note that even if *only* somehow could be inside of the determiner *the* after Trace Conversion, the result is *the only boy identical to x*. McNally (2008) argues that *only* inside a DP has a different semantics from the one as a focus operator, so in that case, we have two different '*only*'s even though they should be the same copy, which is an undesirable outcome.

<sup>42</sup> For late adjunction process, see Lebeaux 1988 and Stepanov 2001.

(51) An adnominal element outside of the domain of Trace Conversion must be acyclically inserted after movement if it adjoins to a moving element.

Then, the next question is how to treat the disjunction case. Here, I follow Chierchia, Fox, and Spector (2012) in that ordinary scalar items including disjunction are typically interpreted with a silent exhaustive operator. For instance, (52)a only means (52)b, not (52)c, even though disjunction logically does not exclude the reading (52)c. Chierchia et al. argue that this is due to the existence of a silent exhaustive operator,  $O_{ALT}$ , which is similar to English *only*, as in (52)d. This operator excludes its alternative (52)c:<sup>43</sup>

- (52) a. John or Tom will come.                      b. John will come or Tom will come.  
      c. Both John and Tom will come.            d.  $O_{ALT}$ (John or Tom) will come.

Then, once we assume that there is a silent operator adjoined to the disjunctive phrase, the same analysis as the focus operator *only* can be applied; the disjunctive subject first moves, and then the operator  $O_{ALT}$  is acyclically inserted, which makes it impossible to get the narrow scope reading of the subject in (44)b.<sup>44</sup>

Next, consider Japanese cases like (43). Aoyagi (1998, 2006) argues that focus particles in Japanese are a type of adjuncts since they never interfere with the selectional relations that hold under sisterhood:<sup>45</sup>

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<sup>43</sup> The unavailability of the reading (52)c for (52)a is often treated as a matter of implicature. Chierchia et al. (2012) try to capture the implicatures by grammatical devices like a silent operator, as in (52)d.

<sup>44</sup> For another argument that the late insertion blocks the reconstructed readings, see Fox and Nissenbaum (1999).

<sup>45</sup> Aoyagi calls them ‘adjunct clitics’ in the sense that they are functional heads that do not project and require a phonological host, but they are introduced into the syntactic derivation as adjuncts.

- (53) a. John<sub>2</sub>-wa [e<sub>2</sub> susi-o tabe]-te mi-ta.  
           John-TOP           sushi-ACC eat-ASP see-PAST  
           ‘John tried eating sushi.’
- b. John<sub>2</sub>-wa [e<sub>2</sub> susi-o tabe]-te-**mo** mi-ta.  
           John-TOP           sushi-ACC eat-ASP-also see-PAST  
           ‘John tried also eating sushi.’
- c. \* John<sub>2</sub>-wa [e<sub>2</sub> susi-o tabe]-ni(-**mo**) mi-ta.  
           John-TOP           sushi-ACC eat-ASP-also see-PAST (Aoyagi 1998: 15)<sup>46</sup>

The verb *mi* ‘see, try’ requires a category suffixed with *-te*, a perfective aspectual marker, in its particular meaning and cannot take a category suffixed with *-ni*, another aspectual marker. This selectional relation is not affected even if we add a focus particle *-mo* as in (53)b. Thus, Aoyagi claims that focus particles in Japanese are adjuncts and can be adjoined to an arbitrary category  $X^n$ .

Following Aoyagi (1998, 2006), I assume that the focus particles in question are adjoined to NPs in Japanese, and that these focus particles are outside of the domain of Trace Conversion. Then, the unavailability of the narrow scope reading (43) can be accounted for: first, assume that the subject moves to [Spec,TP] in Japanese too (see Takezawa 1987), and then, a focus particle is acyclically adjoined to the moved subject, which makes it impossible for the subject to undergo reconstruction. Note also that the disjunction case in (43)b can be treated on a par with the English case (44)b: there is a silent exhaustive operator which is acyclically adjoined to the disjunctive subject, which

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<sup>46</sup> The original observation that focus particles do not interfere with selectional relations is from Sells (1995).



blocks the subject to reconstruct. Thus, once we adopt Aoyagi (1998, 2006), Japanese cases also can be accounted for.

Based on the above, I propose (54) for the scope property of focused and disjunctive phrases:<sup>47</sup>

(54) *The surface scope effect of elements with acyclic adjunction*

An element with acyclic adjunction allows only surface scope.

This surface scope effect accounts for why the attachment of focus elements suddenly eliminates the reconstructed readings in Japanese (43) and English (44)b, and more importantly, the two cases in Japanese and English can be accounted for uniformly. In the next section, I will show that this scope effect is, in fact, very useful to investigate hierarchical relations among scope bearing elements, even in head-final languages like Japanese, where such relations cannot be read off from the surface order; we will see that this effect reveals that there is no need for special assumptions for the structure of negative sentences in Japanese.<sup>48</sup>

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<sup>47</sup> As for the alternative analysis of the anti-reconstruction effects in question, see Shibata (2013). The account presented in that work is based on the following two assumptions: (i) A-movement does not reconstruct in the syntax and (ii) alternative propositions are calculated on the basis of LF structure. Under that account, once some element A-moves, it remains in that position in the syntax (i.e., A-movement reconstruction is possible only in the semantics, assuming Semantic Reconstruction process from Cresti 1995 and Rullmann 1995). Then, alternative propositions are created based on that structure (i.e., the one after movement), which blocks the reconstructed reading of the moved element.

<sup>48</sup> Mamoru Saito (p.c.) pointed out to me that existential expressions like *dareka* ‘someone’ or *nanika* ‘something’ scopally behave exactly in the same way as focused or disjunctive phrases, that is, they cannot take scope under the local negation (even with another DE operator above them). Here, I assume that these expressions too carry some focus operator since it is observed that these phrases induce focus intervention effects in *wh*-questions as in (i), just like focused and disjunctive phrases as in (ii):

(i) ??Dareka-ga        nani-o        yon-da        no.  
           someone-NOM   what-ACC   read-PAST   Q  
           ‘What did someone read?’

### 3.3.5 Object Movement above Negation

The surface scope effect proposed above provides us with an interesting implication for object NPs in Japanese. As we have already seen, Japanese objects allow either wide or narrow scope with respect to sentential negation as in (30) (repeated here as (55)):

- (55) Taroo-wa [zen'in/go-nin-izyoo-no gakusee]-o sikar-anakat-ta.  
 Taro-TOP all/5-CL-or.more-GEN student-ACC scold-NEG-PAST  
 Lit. 'Taro didn't scold all/five or more students.' (Obj.>Neg; Neg>Obj)

Then, when focused or disjunctive phrases appear in object position, the 'Neg>Obj.' reading becomes impossible as in (33) (repeated as (56)).

- (56) Taroo-wa pan-mo/dake kaw-anat-ta.  
 Taro-TOP bread-also/only buy-NEG-PAST  
 Lit. 'Taro didn't buy also/only/even bread.' (Obj.>Neg; \*Neg>Obj.)

- (57) Taroo-wa pan-ka-kome-o kaw-anakat-ta.  
 Taro-TOP bread-or-rice-ACC buy-NEG-PAST  
 Lit. 'Taro didn't buy bread or rice.' (Obj.>Neg; \*Neg>Obj.)

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(ii) ??? Ken-mo/[Ken-ka Erika]-ga nai-o yon-da no.  
 Ken-also/Ken-or Erika-NOM what-ACC read-PAST Q  
 'What did Ken also/Ken or Erika read?' (Tomioka 2007a)

If these existential phrases carry a focus operator, just like focused and disjunctive phrases, it is not surprising that these phrases behave scopally in the same way as focused and disjunctive phrases because of the surface scope effect (54).

Based on the surface scope effects, these data indicate that object phrases in Japanese are in fact located in a position higher than the negation in the syntax.<sup>49</sup> This contrasts with English examples, where focused or disjunctive object phrases can take scope below the negation:

- (58) a. John didn't buy only bread. (ok: Neg > only)  
 b. John didn't buy bread or rice. (ok: Neg > or)

The English case is not surprising if the objects are located in a position below the negation, and in fact, there is plenty of evidence that this is indeed the case (e.g., NPIs, which are assumed to be licensed in the scope of negation, can appear in object position but not in subject position in simple negative sentences in English). What is significant is that Japanese focused phrases and disjunction in object position behave in the same way as English subject phrases, not object phrases in this respect. Thus, I propose the following for Japanese:<sup>50</sup>

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<sup>49</sup> Since the accusative Case-marker does not appear with the focused phrase, one could consider the possibility that in (56), these phrases are in fact adjuncts and the true arguments are *pro* just like the case of NPI *daremo* discussed in section 2.3. This possibility is excluded for *-mo* since the phrase with *-mo* cannot co-occur with accusative-marked NPs, unlike the expression such as *daremo* or *shika*<sub>NPI</sub> 'only':

- (i) \*Taroo-wa gakusee-o John-mo home-ta.  
 Taro-TOP student-ACC John-also praise-PAST  
 Lit. 'Taro praised a student, John too.'

By contrast, *-dake* is less clear. It seems to be able to co-occur with the accusative-marked argument:

- (ii) Taroo-wa gakusee-o John-dake home-ta.  
 Taro-TOP student-ACC John-only praise-PAST  
 Lit. 'Taro praised a student, only John.'

Traditionally, *-mo* and *-dake* are treated in different ways: *-mo* is called a *kakari-zyosi* ('linking particle') and *-dake* called *fuku-zyosi* 'adverbial particle', hence it might be not surprising that phrases with *-dake* can behave more adverbial-like ways. Anyway, since *-mo* clearly resists co-occurring arguments, our test still can be used.

<sup>50</sup> Of course, this raises a question why and where object phrases move in Japanese. I will discuss this point in section 4.

(59) Japanese objects must move above negation.

Due to this object movement process, Japanese object phrases are located outside the scope of negation in the syntax, and since the attachment of a focus particle scopally traps them in their surface position, they disallow the narrow scope reading below the negation. Thus, I claim that negative transitive sentences in Japanese have the following structure (for the time being, I simply assume that objects move to some position X above NegP; as for the issue regarding exactly where and why they move, I discuss it in greater detail in chapter 4):

(60) [TP Subj. [XP Obj. [NegP ... t ... Neg]] T]<sup>51</sup>



As in Section 2.4, I assume that the negative structure in Japanese does not differ from that in other languages like English, that is, there is a projection for negation ‘NegP’ which dominates vP. The difference between Japanese and English is the existence of object movement over NegP in the former, which makes the scope of negation look very limited as Kuno (1980, 1983) and Takubo (1985) observe. In the section below, I will show that this analysis provides a unified explanation for several phenomena, which cannot be unified in other approaches without additional stipulations.<sup>52</sup>

<sup>51</sup> There is also a trace/copy of the subject in vP in (60), which I omit here.

<sup>52</sup> One potential counterexample to the proposed analysis is the scope of *-dake* ‘only’ phrases in potential constructions. Authors like Sano (1985), Tada (1992), Koizumi (1994, 1995), and Nomura (2005) report that objects with an accusative Case in potential constructions allow only narrow scope readings under the potential morpheme. This appears to be problematic for the current analysis; since the potential always takes narrow scope under negation, object movement into the TP-domain predicts that these objects should take wide scope over negation in these cases too, which seems to conflict with the observations in the

### 3.3.6 Consequences of the Object Movement Analysis

#### 3.3.6.1 Scope Ambiguity between Object Phrases and Negation

The first consequence is that the object movement analysis accounts for why Japanese object QPs can take scope over sentential negation. As we have seen in section 1, according to the experimental study in Han et al. (2004), this reading is more prominent than the narrow scope reading of the object. Also, recall that this property of Japanese objects contrasts with English object QPs. In (61), the universal QP in object position cannot take scope over negation:

(61) John didn't scold every student. (\*Obj.>Neg; Neg>Obj.)

Under the current analysis, this is not surprising at all. Since object phrases move over negation as depicted in (60), the 'Obj.>Neg' reading is indeed just a surface scope reading. As it is a surface scope reading, it is also not surprising that the 'Obj.>Neg'

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literature. For example, Nomura (2005) provides the following example:

- (i) Taro<sub>o</sub>-wa uwisukii-dake-o nom-e-nai. (\*only>Neg>can; Neg>can>only)  
Taro-TOP whiskey-only-ACC drink-can-NEG  
Lit. 'Taro can't drink only whiskey (without ice or water).'

Here, I assume that in this case, *-dake* appearing inside a Case particle is in fact not a scope bearing element, and hence this is not problematic for the current analysis. Actually, Hayashishita (2008) argues that when *-dake* appears inside a Case particle, we cannot treat it as a scope bearing element, on the basis of the data like (ii):

- (ii) John-wa Kimura-sensee-dake-ni email-de soodansi-ta.  
John-TOP Kimura-teacher-only-DAT email-with consult-PAST  
Lit. 'John consulted only with Prof. Kimura by email.'

The sentence (ii) is infelicitous under the situation that John consulted with two professors by phone but Prof. Kimura is the only person who John consulted with by email. This is strange if the *-dake* appearing inside a Case particle is a scope bearer. If it is a scope bearer, the sentence means 'It is only Prof. Kimura that John consulted with by email' (note that 'by-email' is structurally lower than the *-dake* phrase in (ii)), so the sentence should be felicitous under the situation described above.

Therefore, I assume that the example like (i) is not a problem for the current analysis. (See also footnote 61, which briefly discusses cases of complex predicates including the potential constructions.) For the detailed discussion of *-dake* occurring inside a Case particle, see Hayashishita (2008) and Shibata (2012).

reading is more prominent than the ‘Neg>Obj.’ reading as the surface scope reading is often stronger than the inverse scope reading (e.g. Bobaljik and Wurmbrand 2012). By contrast, if one is to argue that Japanese objects stay within the scope of negation at LF, this difference between Japanese and English would be mysterious since Japanese is often assumed to lack English type optional quantifier raising (QR) operations.<sup>53</sup> On the other hand, under the analysis in (60), the question above simply does not arise since the object is located in a position higher than the negation after object movement.

### 3.3.6.2 Narrow Scope of Disjunctive Phrases

The current analysis predicts that when disjunctive phrases are not interpreted with a silent exhaustive operator, they should be allowed to take scope below the local negation. Recall that the silent exhaustive operator is a grammatical device proposed by Chierchia et al. (2012) to capture the implicature of those phrases. Hence, it should be possible for the disjunctive phrase to take narrow scope in environments which typically cancel implicatures. This prediction is indeed borne out. Goro (2007) notes that when a disjunction is in the antecedent of a conditional clause, the narrow scope of the object under negation becomes available:

- (62) John-ga eego-ka-doitugo-o hanas-ana-i-nara,  
 John-NOM English-or-German-ACC speak-NEG-PRES-COND  
 watasi-tachi-wa koma-ru.  
 I-PL-TOP in.trouble-PRES  
 ‘If John doesn’t speak English or German, we will be in trouble.’ (ok: Neg>or)

<sup>53</sup> I will discuss this scope rigidity issue in Japanese in section 3.7 and 3.8.

To account for this, Goro (2007) adopts the approach in Kato (1997), where negation in the antecedent of conditional clauses can optionally raise to a position above the subject. Under the current approach, such an additional assumption is not required. Since the *if*-clause cancels the implicature, which means that the disjunctive phrase is interpreted without a silent exhaustive operator, the object is free from the surface scope effects. As additional evidence, the same phenomenon is observed when we place those object phrases in one of the disjuncts, which is also an environment that cancels the implicature:

- (63) (Wareware-ga koma-ru no wa) John-ga eego-ka-doitugo-o  
 we-NOM in.trouble-PRES C TOP John-NOM English-or-German-ACC  
 hanas-ana-i ka/matawa kaigi-no siryoo-ga maniaw-anakat-ta  
 speak-NEG-PRES or meeting-GEN document-NOM in.time-NEG-PAST  
 baai da.  
 case COP  
 ‘The case in which we are in trouble is either John doesn’t speak English or German  
 or the documents for the meeting don’t reach us.’ (ok: Neg>or)

Again, the disjunctive phrase *eego-ka-doitugo* ‘English or German’ can take scope below the local negation. In this case, the sentence does not contain a conditional clause, hence the analysis by Kato (1997) cannot capture the narrow scope of the object. By contrast, under the current analysis, (63) can be treated on a par with (62) since implicatures are canceled in disjuncts. Thus, the surface scope effects + object movement analysis can

explain these cases without any additional assumptions.<sup>54</sup>

### 3.3.6.3 Lack of Subject-Object Asymmetry with Respect to NPI Licensing

Aihara (2007) claims that Japanese has (true) NPIs and observes that they exhibit an apparently peculiar distribution (if they are truly NPIs like English *any*), namely lack of subject-object asymmetry in NPI licensing. In English, this asymmetry is widely recognized:

- (64) a. \* Anybody didn't hit John.  
b. John didn't hit anybody

Aihara reports that expressions of the form 'universal+particle+universal', which he calls 'Double Universal Quantifiers (DUQs)', behave in the same way as NPIs. They pass all the five criteria in (26):

(65) Double Universal Quantifiers (DUQs)

a.	minna-ga-minna	minna-o-minna	minna-ni-minna
	everyone-NOM-everyone	everyone-ACC-everyone	everyone-DAT-everyone
b.	zenbu-ga-zenbu	zenbu-o-zenbu	zenbu-ni-zenbu
	all-NOM-all	all-ACC-all	all-DAT-all

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<sup>54</sup> One might wonder why disjunctive objects in Japanese cannot take scope under local negation in simple negative sentences even though the negation is one of the typical items which cancel implicature in its domain. Recall that under the current analysis, objects move above negation, which means that they are outside of the domain of negation like the subject phrase in the English example (44)b.



First, these expressions cannot appear in positive sentences.<sup>55</sup>

- (66) ??Taro-ga gakkoo-de minna-o-minna mi-ta.  
 Taro-NOM school-at everyone-ACC-everyone see-PAST  
 ‘Taro saw everyone at the school.’

Then, these phrases exhibit the properties of NPIs:

- (67) a. Minna-ga-minna (moshi) paatii-ni iku-nara, watasi-mo iku-daroo.  
 everyone-NOM-everyone if party-to go-COND I-also go-will  
 ‘If everyone goes to the party, I will go there too.’
- b. \* Minna-ga-minna daigaku-e ik-ana-i.  
 everyone-NOM-everyone university-to go-NEG-PRES  
 ‘Everyone does not go to a university.’
- c. \* [Taro-ga gakkoo-de *hotondo* minna-o-minna mi-ta wake]  
 Taro-NOM school-at almost everyone-ACC-everyone see-PAST reason  
 de-wa na-i.  
 COP-TOP NEG-PRES  
 ‘It is not the case that Taro saw almost everyone at the school.’
- d. Q: Dare-ga ki-ta no? A: ??Minna-ga-minna.<sup>56</sup>  
 who-NOM come-PAST Q everyone-NOM-everyone  
 ‘Who came?’ ‘Everyone.’

<sup>55</sup> Aihara (2007) notes that some speakers marginally accept (66) when the phrase is interpreted as emphatic.

<sup>56</sup> Again, the expression is marginally acceptable if it is emphatic.

e. [Taro-ga gakkoo-de minna-o-minna mi-ta wake]

Taro-NOM school-at everyone-ACC-everyone see-PAST reason

de-wa na-i.

COP-TOP NEG-PRES

‘It is not the case that Taro saw everyone at the school.’ (Aihara 2007: 5-7)

These data show that DUQs behave as NPIs, not NCIs. Note here that like English NPIs (see (64)a), Japanese (true) NPIs cannot be licensed in subject position of negative sentences, as shown in (67)b. Significantly, Aihara notes that DUQs are not licensed in object position in simple negative sentences either:

(68)\*Taro-ga gakkoo-de minna-o-minna mi-nakat-ta.

Taro-NOM school-at everyone-ACC-everyone see-NEG-PAST

‘Taro didn’t see everyone at the school.’

He regards this as evidence for the structure proposed by Han et al. (2004) in which NegP dominates only VP, excluding  $\nu$ P, and object NPs are located in [Spec, $\nu$ P]. As discussed earlier, the structure in Han et al. (2004) cannot account for the availability of the narrow scope reading of subject NPs. Under the current analysis, the impossibility of DUQs in object position is not surprising since objects are outside of the scope of negation, just like subjects as in (67)b, and the symmetric behavior of subject and object DUQs is predicted without any additional assumptions, which again supports the object movement analysis.

I therefore conclude that the object movement approach does not require any special treatment of negative structures in Japanese to account for the scope interaction with negation, and it also has several desirable consequences as discussed above. In the following section, I will discuss an issue that is mostly ignored in the literature, namely the conflicting conclusions that the scopal interaction between negation and arguments and the scopal interaction between arguments themselves lead to, and explain them away.

### 3.3.7 On Scope Rigidity in Japanese

#### 3.3.7.1 Availability of Inverse Scope Readings

The current approach has an important implication on scope rigidity in Japanese. Japanese is generally considered to be a scope rigid language (see Kuroda 1970, Hoji 1985, among others), based on examples like (69), where it is argued that the subject is unable to take scope under the object unless the object undergoes scrambling over the subject as in (70):

- (69) Dareka-ga daremo-o aisi-teiru.  
 someone-NOM everyone-ACC love-PRES  
 ‘Someone loves everyone.’ (Subj.>Obj.:\*?Obj.>Subj.)

- (70) Daremo-o<sub>i</sub> dareka-ga t<sub>i</sub> aisi-teiru.  
 everyone-ACC someone-NOM love-PRES (Subj.>Obj.: Obj.>Subj.)

However, this state of affairs contradicts what has been observed for the scope property

between subjects/objects and negation. As authors like Kato (1985), Han et al. (2004), Kataoka (2006) and Saito (2009a, b) note and as discussed above, subjects can take scope below negation in transitive sentences like (22) and (23), and the same holds for objects, as in (30). Given those data, we might expect that inverse scope readings of subjects under objects should be possible in environments where subjects can reconstruct to the original position (which is needed to get the subject to take scope under negation). This expectation seems to conflict with the claims in the literature that subject QPs cannot take scope under object QPs in Japanese. Then, what is going on here?

Recognizing that we are dealing here with a much larger issue which in fact seems to represent a more general problem for the scope theory, I will make here some preliminary remarks. I suggest that in principle, subject QPs can take scope under object QPs when the subject can reconstruct, and that in many cases, the availability of the inverse scope readings is masked by other factors that I will discuss in the next section. Actually, authors like Kitagawa (1990, 1994), Kuroda (1993), Miyagawa (1997), Kuno, Takami, and Wu (1999), Hayashishita (1999, 2000) argue against the ‘strict’ scope rigidity in Japanese, and maintain that the inverse scope between subjects and objects and the one between dative objects and accusative objects are indeed available.<sup>57</sup> For instance, Kitagawa (1990) and Kuno et al. (1999) report that the same sentence in (69) is scopally ambiguous although the surface scope reading is stronger (I also share this judgment). Kitagawa (1990) maintains that the difference between (69) and (70) is not in the availability of the ‘Obj.>Subj.’ reading but in the prominence of the ‘Obj.>Subj.’

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<sup>57</sup> See Kitagawa (1990) and Kuno et al. (1999) for the scope ambiguity between subjects and objects in non-scrambled contexts, and Kuroda (1993), Kitagawa (1994), Miyagawa (1997) for the one between dative objects and accusative objects. Hayashishita (1999, 2000) discusses both of the cases, and claims that inverse scope readings are available when contexts are appropriate.

reading; such a reading is weaker in (69) but readily available in (70), compared to the ‘Subj.>Obj.’ reading.<sup>58</sup> Hayashishita (2000: 209) also provides the following sentence, where the inverse scope reading is readily available:

- (71) [huta-tu-izyoo-no      ginkoo-ga] [itu-tu-no kouriten-o]      siensi-ta-ra, ...  
 two-CL-or.more-GEN   bank-NOM   5-CL-GEN   retail.shop-ACC   support-PAST-COND  
 ‘If two or more banks supported five retail shops, ...’      (ok: Obj.>Subj.)

The sentence above is true under the reading where for each of the five retail shops, there are two or more banks that support it (i.e., the total number of banks must be 10 or more). This reading should be unavailable if Japanese were a ‘strict’ scope rigid language.

Significantly, these inverse scope readings become totally unavailable when a focused phrase or a disjunction appears in subject position:

- (72) a. Dareka-mo      daremo-o      aisi-teiru.  
 someone-also   everyone-ACC   love-PRES  
 Lit. ‘Also someone loves everyone.’      (Subj.>Obj.; \*Obj.>Subj.)  
 b. Taroo-ka-Ziroo-ga   daremo-o      aisi-teiru.  
 Taro-or-Ziro-NOM   everyone-ACC   love-PRES  
 ‘Taro or Ziro loves everyone.’      (Subj.>Obj.; \*Obj.>Subj.)

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<sup>58</sup> For correlation between PF word order and scope, see Bobaljik and Wurmbrand (2012). They argue that there exists a ‘soft’ economy constraint called ‘Scope Transparency’, regulating correspondence between LF hierarchical relation and PF word order.

- (73) [Huta-tu-no ginkoo-dake] [itu-tu-no kouriten-o] siensi-ta-ra, ...  
 2-CL-GEN bank-only 5-CL-GEN retail.shop-ACC support-PAST-COND  
 ‘If only two banks supported five retail shops, ...’

These facts can be straightforwardly captured under the current analysis. We can account for the availability of the ‘Obj.>Subj.’ reading by assuming that the reading is obtained from a reconstruction process. Since this process is blocked in (72) and (73) due to the surface scope effect, we then also explain the lack of the inverse scope readings in these examples. Thus, following the authors cited above, I suggest that even in non-scrambled contexts, ‘Obj.>Subj.’ readings are in principle available in the environments where subject phrases can undergo reconstruction. In the next section, I will address the question why the ‘Obj.>Subj.’ reading has been regarded as unavailable in the literature other than works cited above. I will claim that in many cases, ‘Obj.>Subj.’ readings appear to be unavailable due to the definiteness of subjects or are really unavailable due to the surface scope effect. The following section is basically exploratory in nature; it is not intended to resolve the issue under consideration, which would go beyond the limits of the paper, but merely point out some factors that could be in play here.

### 3.3.8 Factors that Block Inverse Scope Readings

In this section, I consider two factors that may affect the availability of inverse scope readings for arguments: One is ‘definiteness’ and the other is ‘exhaustivity’.

### 3.3.8.1 Definiteness

The first factor that may block inverse scope readings concerns definiteness. In judgment tasks for the availability of inverse scope between subjects and objects in non-scrambled contexts, we check whether sentences in question allow the distributive reading of objects over subjects. However, if subjects are definite expressions, it becomes difficult to check the availability of the inverse scope since the choice of entity that definite expressions refer to never changes even when the quantifier above it is interpreted distributively, for they refer to some definite/specific entity given in the contexts. For example, in (74), the choice of professors does not vary depending on the choice of students: the total number of professors must be three, not more than three:

(74) Every student respects the three professors.

In Japanese, due to the lack of definite determiners, noun phrases are basically ambiguous with respect to definiteness/specificity.<sup>59</sup> For instance, the subject in (75) can refer either to some specific group consisting of three students or to non-specific three students:

(75) San-nin-no gakusee-ga ki-ta.

3-CL-GEN student-NOM come-PAST

‘The three students came.’ or ‘Three students came.’

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<sup>59</sup> However, NPs of the form ‘Noun-Case-Numeral-CL’ are unambiguously indefinite/non-specific. As for this property, see Watanabe (2006) and Nishiguchi (2007).

Then, when a noun phrase is interpreted as being definite/specific, the choice of entity that the NP refers to cannot change even though it is c-commanded by another QP as expected:

(76) (*Talking about three students who have high marks in a test*)

Dono-sensee-mo    san-nin-no    gakusee-o    home-ta.

which-teacher-also    3-CL-GEN    student-ACC    praise-PAST

‘Every teacher praised the three students.’

In (76), the number of students must be three, not more than three. This means that if speakers interpret subjects in test sentences as being definite/specific, we cannot reliably check whether the sentences in question are really unambiguous because of the nature of definite expressions. Thus, the definiteness is one potential factor that masks the availability of inverse scope readings between subjects and objects in Japanese.

### 3.3.8.2 Exhaustivity

Another factor that may affect the availability of inverse scope readings is exhaustivity. In Section 3.4, we have seen that when disjunctive phrases are interpreted with an exhaustive operator, the reconstruction is blocked. Thus, if subjects are accompanied by an exhaustive operator, the inverse scope readings become unavailable.

It is well known that nominative subjects often induce so-called ‘exhaustive listing effects’ in Japanese. This effect is especially strong with stative predicates in non-embedded contexts. For instance, the subject in (77) tends to be interpreted as ‘only



Taro and not others’:<sup>60</sup>

(77) Taroo-ga kasiko-i.

Taro-NOM smart-PRES

Lit. ‘Taro is smart.’

Let us assume that this exhaustive interpretation for the subject is also obtained from a silent exhaustive operator attached to the subject, just as in the case of disjunctive phrases. This means that when the exhaustive listing effect is at work, the inverse scope reading is blocked due to the surface scope effect (54). Then, the exhaustive listing effect of nominative marker is another factor that blocks the inverse scope reading of the subject below the object; this effect must be controlled for when checking the availability of inverse scope readings of subjects as the effect completely blocks reconstruction of subjects.

In addition to the exhaustive listing effects of nominative Case marker, there is another source of exhaustivity. Numeral expressions are often interpreted exhaustively. For example, in (78), the continuation of the speaker B is infelicitous even though the numeral expression *san-nin* ‘three people’ logically can mean ‘three or more people’:

(78) A: ‘How many students came yesterday?’

B: San-nin ki-ta yo. #Seekaku-ni-wa, yo-nin ki-ta yo.

3-CL come-PAST PRT to.be.precise 4-CL come-PAST PRT

‘Three (students) came. To be precise, four (students) came.’

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<sup>60</sup> Another way to express the proposition that Taro is smart is to use a topic marker *-wa* instead of *-ga*.

In this case too, I assume that there is a silent exhaustive operator that excludes the alternatives like {4 people, 5 people, ...}; i.e., numerals can have an exhaustive operator. Then, since there is an exhaustive operator, it is predicted that there should be a contrast between bare numeral phrases like the one in (78) and numeral expressions in which exhaustive readings are suppressed like ‘three or more people’ regarding the availability of reconstructed readings. This prediction is borne out. The influence of the exhaustive interpretation of bare numeral expressions can be seen in (79), in which the reconstructed reading of the subject below negation is obtained more easily in (79)b, where *or more* is explicitly expressed, than in (79)a:<sup>61</sup>

- (79) a. [San-nin-no gakusee-ga] atumar-anakat-ta.  
           3-CL-GEN student-NOM gather-NEG-PAST  
           ‘Three students didn’t gather.’
- b. [San-nin-izyoo-no gakusee-ga] atumar-anakat-ta.  
       3-CL-or.more-GEN student-NOM gather-NEG-PAST  
       ‘Three or more students didn’t gather.’

Thus, exhaustivity from bare numeral expressions affects the availability of reconstructed readings. Then, a prediction from this discussion is that if the inverse scope of the subject below the object involves the reconstruction process of the subject, the inverse scope readings should become difficult with bare numeral expressions like *three students*, compared to expressions like *three or more/at least three students*, where the exhaustive

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<sup>61</sup> Note that this exhaustivity from a silent operator is the source of exhaustive ‘implicatures’, as argued in Chierchia, Fox, and Spector (2012). Thus, with appropriate contexts, (79)a is perfectly acceptable under the inverse scope reading of the subject under the negation.

readings are suppressed. This prediction seems to be borne out.

- (80) a. (Kono gakka-de-wa) huta-ri-no gakusee-ga dono-sensee-mo  
 this department-in-TOP 2-CL-GEN student-NOM which-teacher-also  
 sonkeesi-teiru.  
 respect-PRES  
 ‘(In this department,) two students respect every professor.’ (?(?)Obj.>Subj.)
- b. (Kono gakka-de-wa) sukunakutomo huta-ri-no gakusee-ga  
 this department-in-TOP at.least 2-CL-GEN student-NOM  
 dono-sensee-mo sonkeesi-teiru.  
 which-teacher-also respect-PRES (ok: Obj.>Subj.)  
 ‘(In this department,) at least two students respect every professor.’

Imagine that in the department in question, every professor has (at least) two advisee students and that the speaker has a belief that every advisee student respects his or her advisor. In this context, the sentence (80)b is felicitous but (80)a sounds odd. (80)a tends to be interpreted more like ‘there are two students who respect every professor’.<sup>62</sup> Thus, the exhaustivity of bare numerals is also a factor that blocks inverse scope readings of subjects, and has to be controlled for when testing the availability of inverse scope readings.

To summarize, I have suggested that several blocking factors may be responsible for the assumption in the literature that Japanese is a scope rigid language. As briefly mentioned in section 3.6.1, reconstructed readings are typically weaker than surface

<sup>62</sup> Of course, in an appropriate context, (80)a is also fine under the inverse scope reading.

scope readings (possibly because of processing factors). Additionally, the blocking factors discussed above also affect the availability of reconstructed readings. In fact, in many test sentences in the literature, they are not controlled for, and hence it is possible that these factors may have prevented some speakers from getting inverse scope readings. I therefore assume that Japanese in principle allows inverse scope readings between subjects and objects as a result of reconstruction of subjects as long as this reconstruction is not blocked by independent factors.

### **3.4 Note on Disjunction**

Before closing this chapter, I would like to note the scope property of disjunctive phrases, which I have used as one of the important test tools to investigate the structural relation among scope bearing elements. In Section 3.3 and 3.4, we have seen that the Japanese disjunctive phrase ‘NP-*ka* NP’ and the English one ‘NP *or* NP’ exhibit anti-reconstruction effects, and following Chierchia, Fox and Spector (2012), I argued that these cases can be treated on a par with cases with a focus operator like *only*, by assuming that there is a silent exhaustive operator which is outside of the domain of Trace Conversion and hence the operator must be inserted acyclically after movement, which accounts for why those disjunctive phrases cannot be interpreted in their lower trace/copy position (i.e. the surface scope effect). However, when we consider disjunctions in other languages, the picture becomes more complex. In this section, I discuss disjunctions which lack anti-reconstruction effects (Korean disjunction *-(i)na* and some form of Japanese disjunction) and discuss why they lack the effects.

### 3.4.1. Korean Disjunction

Szabolcsi (2002, 2004) reports that in Korean, disjunction always takes scope under negation, regardless of the choice of two negative forms, short form negation (SN) or long form negation (LN)<sup>63</sup>:

- (81) a. Mary-nun sakwa-na pay-lul an mek-nun-ta. [SN]  
 Mary-NOM apple-or pear-ACC NEG eat-PRES-DECL  
 ‘Mary did not eat apples or pears.’ (\*or>not; not>or)
- b. Mary-nun sakwa-na pay-lul mecki-ahn-nun-ta. [LN]  
 Mary-NOM apple-or pear-ACC eat- NEG-PRES-DECL  
 ‘Mary did not eat apples or pears.’ (\*or>not; not>or)

This scopal property contrasts with Japanese disjunction ‘NP-*ka* NP’, which cannot take scope under negation in simple negative sentences like the above. In fact, according to Goro and Akiba’s (2004) experimental study on Japanese disjunction ‘NP-*ka* NP’ in object position, Japanese-speaking adults (in total 20 people) rejected ‘not>or’ reading 100% of the time and accepted ‘or>not’ reading 100% of the time, which is compatible with the analysis I provided in the previous section.

By contrast, Korean disjunction ‘NP-*(i)na* NP’ looks different as in (81). Lee (2010) conducted a similar experimental study on Korean disjunction *-(i)na* in object position, with the same methodology used in Goro and Akiba (2004), and found that Korean-speaking adults (in total 19 people) accepted ‘not>or’ reading 65.8% of the time

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<sup>63</sup> Korean has two forms of negation, short form negation and long form negation. In short form negation, the negative morpheme appears before the verb, and in long form negation, it appears between the verb stem and tense morpheme.

and accepted ‘or>not’ reading 34.2% of the time. This experiment shows that the wide scope reading of the disjunction over negation is not always impossible, unlike the claim in Szabolcsi (2002, 2004), but at the same time, the ‘not>or’ reading is much more prominent than the other reading. Furthermore, this narrow scope property is also observed when the relevant element appears in subject position:

(82) John-ina Tom-i oci ah-ess-ta.

John-or Tom-NOM come NEG-PAST-DECL.

Lit. ‘John or Tom didn’t come.’ ( ?or>Neg; Neg>or)

In (82), ‘Neg>or’ reading is much more prominent, just like the cases of the disjunction in object position. Thus, the preference for narrow scope of Korean disjunction with *-(i)na* is observed in both subject and object position.

What seems to be even more puzzling is that, other QPs in Korean basically behave in the same way as QPs in Japanese (see Han, Lidz, and Musolino 2007, Yoon and Shimoyama 2013). For example, the universal QP in object position tends to take scope over negation, as in Japanese:

(83) a. Khwukhi Monste-ka motun khwukhi-lul mek-ci ani ha-yess-ta. [LN]

Cookie Monster-NOM every cookie-ACC eat-ci NEG do-PAST-DECL

Lit. ‘Cookie Monster didn’t eat every cookie.’

b. Khwukhi Monste-ka motun khwukhi-lul an mek-ess-ta. [SN]

Cookie Monster-NOM every cookie-ACC NEG eat-PAST-DECL

‘Cookie Monster didn’t eat every cookie.’ (Han, Lidz and Mosolino 2007: 28)

According to the experiment in Han et al. (2007), the acceptance rate of ‘each scope reading is as follows:

- (84) a. ‘Obj.>Neg’ in long form negation like (83)a: 98%
- b. ‘Neg>Obj.’ in long form negation like (83)a: 46%
- c. ‘Obj.>Neg’ in short form negation like (83)b: 98%
- d. ‘Neg>Obj.’ in short form negation like (83)b: 37%

Then, when focused phrases are in object position, they must take scope over negation:

(85) a. John-un sakwa-man/to mek-ci anh-ass-ta. [LN]

John-TOP apple-only/also eat-ci NEG.do-PAST-DECL

Lit. ‘John didn’t eat only/also apple.’ (only/also>Neg; \*Neg>only>also)

b. John-un sakwa-man/to an mek-ess-ta. [SN]

John-TOP apple-only/also NEG eat-PAST-DECL

Lit. ‘John didn’t eat only/also apple.’ (only/also>Neg; \*Neg>only/also)

Thus, the Korean scope bearing elements in general behave in the similar way as the

Japanese ones.<sup>64</sup> This might not be surprising since it is well known that Japanese and Korean have very similar syntactic structures; what remains puzzling then is why Korean and Japanese differ with respect to the scope interaction between negation and disjunction. In the next section, I will show that there are in fact several types of disjunctions in both Japanese and Korean and that they show different behavior regarding the possibility of reconstruction.

### 3.4.2 Disjunction without the Surface Scope Effect

#### 3.4.2.1 Another Disjunctive Form in Japanese

In Japanese, in addition to the form ‘NP-*ka* NP’, there are other forms of disjunction. As shown in (37), the form ‘NP *matawa* NP’ behaves the same way as ‘NP-*ka* NP’; it must take scope over negation in simple negative sentences. There is still another form of disjunction ‘NP *naisi* NP’, which acts as disjunction, as shown in (86) below:

- (86) Taroo naisi Ziroo-ga ku-ru.  
       Taro    or     Ziro-NOM come-PRES  
       ‘Taro or Ziro will come.’

What is interesting about this item is that it does allow narrow scope reading under negation, unlike the items with *-ka* or *matawa*, and this narrow scope reading is more prominent than the other reading:

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<sup>64</sup> QPs in subject position also behave in the same way.



(87) Taroo-wa pan naisi kome-o tabe-nakat-ta.

Taro-TOP bread or rice-ACC eat-NEG-PAST

Lit. 'Taro didn't eat bread or rice.'

(or>Neg; Neg>or)

In addition, this scope property is observed when the relevant element appears in subject position:

(88) Taroo naisi Ziroo-ga ko-nakat-ta.

Taro or Ziro-NOM come-NEG-PAST

Lit. 'Taro or Ziro didn't come.'

(or>Neg; Neg>or)

Again, in this case, the subject can take scope under the negation, and the narrow scope reading of the disjunction is much more prominent, just as in (87). Then, a natural question is why this form of disjunction is different from the other two disjunctions.

#### 3.4.2.2 Correlation with the Focus Intervention Effects

A hint to solve the question raised above is given by the fact that there is an interesting correlation between the type of disjunctions which show anti-reconstruction effects in negative sentences and those which induce the so-called 'focus intervention effect'. In Japanese, when a focused phrase intervenes between a *wh*-phrase and Q-operator in CP, the sentence is degraded (i.e. focus intervention effects):

(89) a. ???Ken-**mo/dake** nani-o yon-da no.

Ken-also/only what-ACC read-PAST Q

‘What did Ken read?’

b. Nani-o Ken-**mo/dake** yon-da no.

what-ACC Ken-also/only read-PAST Q

(Tomioka 2007a)

In (89)a, the focused phrase *Ken-mo* intervenes between the *wh*-phrase *nani-o* and the Q-operator in CP and the sentence is degraded, whereas when the *wh*-phrase is scrambled over the focused subject so that there is no intervention configuration between the *wh*-phrase and the Q-operator, the sentence is fine. It is also well-known that Japanese disjunction of the form ‘NP-*ka* NP’ induces the focus intervention effect, as in (90):

(90) a. ???Ken-**ka** Erika-ga nani-o yon-da no.

Ken-or Erika-NOM what-ACC read-PAST Q

‘What did Ken or Erika read?’

b. Nani-o Ken-**ka** Erika-ga yon-da no.

what-ACC Ken-or Erika-NOM read-PAST Q

Just like the focused item in (89), the disjunctive form ‘NP-*ka* NP’ induces the focus intervention effect. This may not be so surprising. Recall that following the approach by Chierchia, Fox and Spector (2012), I argue that what prevents disjunctive phrases from undergoing reconstruction is a silent exhaustive operator similar to English *only*. Thus, under the current approach, it is not surprising that the disjunctive phrase in (90) behaves

in the same way as the focused phrases in (89) do, for both cases involve a focus operator; it is simply null in (90).

Significantly, the disjunctive form ‘NP *naisi* NP’, which can take scope under negation, does not show the focus intervention effect, as in (91):

(91) Taroo **naisi** Ziroo-ga nani-o yon-da no.

Taro or Ziro-NOM what-ACC read-PAST Q

‘What did Taro or Ziro read?’

If a silent exhaustive operator is the source of the intervention effects in the case of (90), it follows that the disjunctive form in (91) does not have this silent operator. Thus, I assume that the existence of a silent exhaustive operator depends on the choice of a lexical item for disjunction.<sup>65</sup> Recall that since it is the existence of a silent focus operator which makes it impossible for disjunctive phrases to be interpreted in a reconstructed position, if there is no silent focus operator with the disjunctive phrase, it is predicted that such disjunctive phrases should be able to undergo reconstruction, which is indeed the case.

Thus, once we assume that the disjunctive form ‘NP *naisi* NP’ does not have a silent operator, we can account both for its lack of the focus intervention effect and its lack of anti-reconstruction effects. After noting that there is a lexical variation regarding the existence of a silent exhaustive operator among disjunctions, I will go back to the issue of

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<sup>65</sup> Note that under the pragmatic approaches to the question why disjunction cannot be interpreted inclusively in non-embedded contexts (i.e. the property standardly assumed to be implicatures), this state of affairs is difficult to handle; both forms are disjunctions semantically. However, under the approach by Chierchia, Fox and Spector (2012), where what is generally assumed to be implicatures is captured by a grammatical device like a silent operator, the difference between the two types of disjunction can be treated as a lexical difference, which is a desirable consequence for the issue we discuss here.

Korean disjunctions.

### 3.4.3 Back to Korean Disjunctions

As shown in the previous section, Japanese has several forms of disjunction and one form, them ‘NP *naisi* NP’, scopally behaves in the same way as Korean disjunction ‘NP-(*i*)*na* NP’. Then, I showed that the form ‘NP *naisi* NP’ in Japanese lacks the focus intervention effects and concluded that this form does not have a silent exhaustive operator, which is the source of the anti-reconstruction effect and the focus intervention effect. Then, the next question to ask is how Korean disjunctions behave with respect to the focus intervention effects.

#### 3.4.3.1 Another Disjunctive Form in Korean

Before checking the status of Korean disjunction of the form ‘NP-(*i*)*na* NP’, I would like to note that there is another form of disjunction in Korean, namely ‘NP *ani-myem* NP’ (which literally means ‘not-if’). What is interesting about this item is that when it co-occurs with negation, it obligatorily takes wide scope over negation, regardless of whether it is in object position or subject position:

(92) (disjunction in Obj. position)

John-i ppang ani-myem pap-ul melci-ahn-ass-ta.

John-NOM bread or rice-ACC eat-NEG-PAST-DECL

Lit. ‘John didn’t eat bread or rice.’ (or>Neg; \*Neg>or)

(93) (disjunction in Subj. position)

John ani-myem Tom-i oci-ah-ess-ta.

John or Tom-NOM come-NEG-PAST-DECL

Lit. ‘John or Tom didn’t come.’

(or>Neg;\*Neg>or)

Thus, this form has a different scope property from the other one. In the next section, I will check the status of the two Korean disjunctions regarding the interaction with the focus intervention effect.

### 3.4.3.2 Interaction with the Focus Intervention Effects

In Korean, it is reported that focused phrases induce intervention effects, as in Japanese:

(94) a. ?\*John-**to** mues-ul ilk-ess-ni.

John-also what-ACC read-PAST-Q

‘What did John also read?’

b. mues-ul John-**to** ilk-ess-ni.

what-ACC John-also read-PAST-Q

(Tomioka 2007b)

Just like the Japanese cases, when the focused phrase intervenes between the *wh*-phrase and the Q-operator in CP, the sentence is degraded, as in (94)a, while when the *wh*-phrase is scrambled over the intervener, the sentence becomes acceptable. Then, what is worth checking is how the two forms of disjunctions in Korean behave regarding the focus intervention effect.

Significantly, the two forms behave differently in this respect:

- (95) ‘NP-(*i*)na NP’: No anti-reconstruction effect → No focus intervention effects<sup>66</sup>

John-**ina** Tom-i mues-ul ilk-ess-ni.

John-or Tom-NOM what-ACC read-PAST-Q

‘What did John or Tom read?’

- (96) ‘NP *ani-myem* NP’: With anti-reconstruction effects → Focus intervention effects

??John **ani-myem** Tom-i mues-ul ilk-ess-ni.

John or Tom-NOM what-ACC read-PAST-Q

‘What did John or Tom read?’

Note that the form ‘NP-(*i*)na NP’, which lacks the anti-reconstruction effect, also lacks the focus intervention effect, as in (95), whereas the form ‘NP *ani-myem* NP’, which does show the anti-reconstruction effect, also shows a clear intervention effect. This state of affairs is very similar to what we have seen in Japanese. Japanese disjunctive form ‘NP-*ka* NP’ has the anti-reconstruction effect and induces the focus intervention effect, while the form ‘NP *naisi* NP’ lacks both of them. Therefore, I conclude that Korean disjunction ‘NP-(*i*)na NP’ is the same type of disjunction as Japanese ‘NP *naisi* NP’ in that it occurs without a silent exhaustive operator and that the form ‘NP *ani-myem* NP’ is the same type as Japanese ‘NP-*ka* NP’ in that it appears with a silent exhaustive operator.

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<sup>66</sup> Tomioka (2007b) reports that the form ‘NP-(*i*)na NP’ also induces the focus intervention effects like other focused items, but he puts just one question mark with another in parenthesis ‘?(?)’ for this disjunctive form in Korean, which is clearly weaker than other focused items discussed in the paper (e.g., the intervention effect with NP-*to* ‘NP-also’ is ?\*). The grammaticality status of (95) is based on the judgments from my informant.

If there is no focus operator with the form ‘NP-(i)na NP’, it is not surprising now that it can undergo reconstruction and that it lacks the focus intervention effect because it does not have the source for both of the effects (i.e. a silent focus operator adjoined to it).

One remaining question is, then, why the prominent reading of Korean disjunction ‘NP-(i)na NP’ and Japanese one ‘NP *naisi* NP’ in negative sentences is the ‘not>or’ reading, not the ‘or>not’ reading. I speculate that this is due to pragmatic reasons. One type of disjunction in both languages always has the ‘or>not’ due to the presence of a silent exhaustive operator, and the other type in principle allows both ‘or>not’ and ‘not>or’ readings. In this case, it would not be so unreasonable to assume that there is a process like Gricean maxim ‘avoid ambiguity’ at work. That is, if one wants to express the ‘or>not’ reading, since there is an unambiguous item for this purpose, one should choose an unambiguous one. Thus, because of the availability of an unambiguous item, the wide scope reading of the ambiguous item becomes dispreferred. Of course, this is merely a speculation, but the fact that the experiment by Lee (2010) shows that the ‘or>not’ reading for Korean ‘NP-(i)na NP’ is not completely unavailable but just weaker than the other reading indicates that it may be on the right track.

#### **3.4.4 Disjunction as a Test Tool**

What we have learned from the discussion in the previous section is that when we use disjunction as a test tool to investigate structural relations among scope bearing elements, care must be taken. As I showed that some forms of disjunctions may lack a silent exhaustive operator, hence they also lack the anti-reconstruction effect. In addition, there is another interfering factor. As we briefly discussed in Section 3.2.2, we also need to

check whether the item in question has positive polarity property. Szabolcsi (2002, 2004) claims that disjunctions in languages like Hungarian, Russian, and Serbo-Croatian are PPIs and states that nominal disjunctions in Hungarian, Russian and Serbo-Croatian exhibit so-called ‘rescuing effect’ by another DE operator, which Japanese disjunction ‘NP-*ka* NP’ fails to show. If the disjunctive phrase in question is a PPI, we cannot use it as a test tool (at least) in negative sentences due to its PPI property. Therefore, when we use disjunction as a test tool to investigate the scope relation with another scope bearer such as negation, we have to pay attention to: (i) whether the item in question is interpreted with a silent exhaustive operator and (ii) whether it is a PPI: otherwise, the result obtained from those elements would not be reliable enough to develop a reasonable analysis about the relevant syntactic structures. The summary of the discussion in this section is given below:<sup>67</sup>

#### (97) Type of Disjunctions

1. disjunctions with a silent exhaustive operator:
  - ➔ disallow reconstruction (= anti-reconstruction effects)
  - ➔ induce focus intervention effects
2. disjunctions without a silent exhaustive operator
  - ➔ allow reconstruction
  - ➔ lacks focus intervention effects
3. disjunctions with PPI property

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<sup>67</sup> In principle, there can be more types of disjunctions such as the one both with a silent operator and with the PPI property or the one without a silent operator but with the PPI property. In (97), I simply assume that the types in 1 and 2 lack the PPI property since Japanese disjunctions in question do not show ‘rescuing effect’ which should be shown if they were PPIs, but of course, more detailed cross-linguistic study on this issue is required.



### 3.5 Conclusion

In this chapter, I have investigated negative structure in Japanese. At first sight, the data regarding scope properties of negation seem to indicate that Japanese allows several positions for negation. I have shown that we need not posit multiple representations for negative sentences, and that the scope properties of negation can be accounted for by assuming that object NPs undergo movement into the TP-domain in Japanese. The evidence was obtained from focused and disjunctive phrases which allow only surface scope readings (i.e. the surface scope effects). When those items appear in object position, they allow only wide scope readings over negation, which clearly indicates that object NPs are located above NegP in Japanese. Those data also suggest that the previous approaches that posit multiple negative structures are on the wrong track since under those approaches, it is rather mysterious why those objects disallow narrow scope readings below negation if one of the possible structures allows objects to occur below negation throughout the derivation. I also demonstrated that the elements in question are neither PPIs nor elements that undergo focus movement to some higher projection. By contrast, the current study can account for the facts in question without any additional assumptions; the elements in question move into the TP-domain, as Japanese objects in general do, and are trapped there by the surface scope effects. Moreover, the current analysis also accounts for why the ‘Obj.>Neg’ reading is prominent in Japanese, and why Japanese lacks the subject-object asymmetry in NPI licensing, which cannot be treated uniformly under the previous approaches. Then, in the last section, I noted that there is a variation regarding the type of disjunctions. Some forms of disjunctions fail to show the surface scope effects due to the lack of a silent focus operator. I showed that such

disjunctions also fail to exhibit the focus intervention effect and concluded that the type of disjunctions without a silent exhaustive operator cannot be used as a test tool to investigate structural relations among scope bearing elements; hence care must be taken in determining the type of disjunction.

## Chapter 4

### Filters at the Interfaces

#### 4.1 Introduction

In this chapter, I will address the question raised in the previous chapter, namely, why the (accusative) objects have to move above negation in Japanese. To answer this, first, I will show that the movement in question is not limited to accusative objects but in fact applies to a wide range of elements, including dative objects, argumental PPs, and even adjuncts. Then, I will demonstrate that the movement in question is not limited to negative sentences either. The movement happens quite generally, as can be confirmed by checking a variety of non-negative complex predicates. On the basis of these observations, I will propose the generalization that elements in principle cannot stay in the middle of complex predicates in Japanese. Then, I will claim that this can be accounted for if we assume that complex predicates are formed not via head movement but via morphological/PF merger. To be more concrete, the heads involved in complex predicates (say, the verb, *v*, negation, or causative) become one complex head through morphological merger, but for the merger to apply, the relevant heads must be adjacent to each other. I propose that this adjacency should be based on structural relations, not linear, and that any overt element present between the relevant heads disrupts this adjacency, and hence such derivations cannot be handled appropriately in the morphology. Thus, the morphology works as a kind of ‘filter’, excluding derivations which do not satisfy the condition imposed by the interface. After that, I will answer the question why the relevant elements start to move in the first place. My definition of relevant adjacency does not

exclude the complement position of the verb as the final position of the object, so it is predicted that the object can stay at that position, not undergoing subsequent movements over the whole complex predicates. There, I will propose that staying in the complement position of the verb is impossible for quantifiers and focus particle due to a type mismatch in the semantics. That is, the derivations where the quantifiers or focus particles attached to the object staying in the complement position of the verb cannot be calculated correctly in the semantics and hence only the derivation where those elements move survive. In this case, the semantics works as a kind of ‘filter’ to exclude the undesirable derivations. (I will also discuss one alternative to this approach, reconsidering the definition of the adjacency condition for the morphological merger, and will show that the same effect can be derived if we define the adjacency in terms of simple c-command.) Then, I provide evidence to support my analysis. My analysis predicts that when the predicate consists of morphologically distinct units, a position between them can serve as the final landing site of the elements. I will show that this is indeed the case by examining causative verbs taking an adjectival projection as their complement. Finally, I will discuss cases where a focus particle appears within a complex predicate. In the literature, this is often analyzed with the operation *su*-support, which is similar to *do*-support in English. I will demonstrate that such an analysis is not on the right track, showing that the analysis makes a wrong predication about the scope property of the focus particle within the complex predicates. Rather, I will argue that Japanese in fact does not have the operation ‘*su*-support’. This means that the presence of the focus particle necessarily disrupts the adjacency between the relevant heads, hence such derivations are excluded at the interface. I will claim that this is indeed the case and show

that the apparent complex predicates within which a focus particle appears in fact have quite different structure, involving predicate fronting.

#### **4.1.1 What do we need to consider next?**

In the previous chapter, I argued that we do not need to assume anything special for the position of negation in Japanese, unlike the claims by the authors such as Han, Stroshenko, and Sakurai (2004), Kataoka (2006), Kishimoto (2007, 2008). I demonstrated that all the scope patterns relevant to negative sentences in Japanese can be captured with the standard negative structure, where NegP is located between *v*P and TP, if we assume that objects move above the negation in Japanese. Then, I showed that this object movement approach has many desirable consequences which cannot be captured uniformly under the previous approaches, and concluded that Japanese has the negative structure similar to the English one and that objects must move above negation, which makes the negative structure look rather different from languages like English.

In this chapter, I discuss the following three questions which naturally arise from the analysis in the previous chapter:

- (1) a. Is obligatory movement limited to accusative objects?
- b. Does obligatory movement happen only in negative sentences?
- c. Why do elements have to move in Japanese?

In the previous chapter, I only claimed that “objects” must move above negation and did not mention other types of phrases with respect to this obligatory movement. In fact,

among objects, what I showed is that at least “accusative” objects must move, so in order to answer the first question, we have to check whether other types of elements such as dative objects, postpositional phrases (PPs), or adverbials also have to move in Japanese. After discussing the behavior of elements other than accusative objects in negative sentences, I will address the second question, that is, whether the movement into the higher domain is some special property of negative sentences or not. In that section, I will demonstrate that this movement is not limited to negative sentences but in fact applied to sentences with “a complex predicate” in general. Then, I will discuss why elements have to move above a complex predicate, and argue that the movement is related to some interface considerations, one is in morphology and one is in semantics.

## **4.2. Scope property of elements other than accusative objects**

In this section, we will look at the scopal behavior of various elements in negative sentences.

### **4.2.1 Dative objects**

In Japanese, some verbs take a dative object as their complement. For example, the verb *aw-* ‘meet’ is such a verb:

(2) Taroo-wa Ziroo-ni at-ta.

Taro-TOP Ziro-DAT meet-PAST

‘Taro met Ziro.’

Then, just like accusative objects, the universal quantifier phrase (QP) with a dative case shows scope ambiguity with respect to negation as in (3), whereas the corresponding focused phrases allow only wide scope over the negation as in (4):

- (3) Taroo-wa subete-no seeto-ni aw-anakat-ta.  
 Taro-TOP all-GEN student-DAT meet-NEG-PAST  
 ‘Taro didn’t meet all students.’ (Obj.>Neg; Neg>Obj.)

- (4) a. Taroo-wa Ziroo-ni-**dake** aw-anakat-ta.  
 Taro-TOP Ziro-DAT-only meet-NEG-PAST  
 Lit. ‘Taro didn’t meet only Ziro.’ (Obj.>Neg;\*Neg>Obj.)
- b. Taroo-wa Ziroo-ni-**mo** aw-anakat-ta.  
 Taro-TOP Ziro-DAT-also meet-NEG-PAST  
 Lit. ‘Taro didn’t meet Ziro, either.’ (Obj.>Neg;\*Neg>Obj.)

In addition, dative objects in double object constructions exhibit the same pattern:

- (5) a. Taroo-wa subete-no seeto-ni hon-o syookaisi-nakat-ta.  
 Taro-TOP all-GEN student-DAT book-ACC introduce-NEG-PAST  
 ‘Taro didn’t introduce a book to all students.’ (Dat.>Neg; Neg>Dat.)
- b. Taroo-wa Ziroo-ni-**dake/mo** hon-o syookaisi-nakat-ta.  
 Taro-TOP Ziro-DAT-only/also book-ACC introduce-NEG-PAST  
 Lit. ‘Taro didn’t introduce a book only/also to Ziro.’ (Dat.>Neg;\*Neg>Dat.)

Thus, dative objects behave exactly in the same way as accusative objects, that is, dative objects also must move above negation in Japanese.

#### 4.2.2 Argumental PPs

Next, let us look at the scopal behavior of argumental PPs. The verb *moraw-* ‘receive’ takes a source argument which is realized as a PP:

- (6) Taroo-wa hon-o Ziroo-kara morat-ta.  
 Taro-TOP book-ACC Ziro-from receive-PAST  
 ‘Taro received a book from Ziro.’

When normal QPs appear in this source argument, they show scope ambiguity with negation as in (7), while with focused phrases, they must take scope over negation as in (8):

- (7) Taroo-wa ame-o zen’in-kara moraw-anakat-ta.  
 Taro-TOP candy-ACC all-from receive-NEG-PAST  
 ‘Taro didn’t receive a candy from all people.’ (all>Neg; Neg>all)

- (8) a. Taroo-wa ame-o Ziroo-kara-**dake** moraw-anakat-ta.  
 Taro-TOP candy-ACC Ziro-from-only receive-NEG-PAST  
 ‘Taro didn’t receive a candy only from Ziro.’ (only>Neg; \*Neg>only)



b. Taroo-wa ame-o Ziroo-kara-**mo** moraw-anakat-ta.

Taroo-TOP candy-ACC Ziro-from-also receive-NEG-PAST

Lit. 'Taro didn't receive a candy also from Ziro.' (also>Neg;\*Neg>also)

As another instance, consider (9), where the goal argument of *okur*- 'send' is realized as a PP headed by *e* 'to':

(9) Taroo-wa hon-o gakkoo-e okut-ta.

Taroo-TOP book-ACC school-to send-PAST

'Taro sent a book to the school.'

Again, this PP argument shows the same pattern; with a normal QP, it allows either wide or narrow scope with respect to the negation, but with a focused phrase, it allows only wide scope over the negation:

(10) Taroo-wa hon-o subete-no gakkoo-e okur-anakat-ta.

Taroo-TOP book-ACC all-GEN school-to send-NEG-PAST

'Taro didn't send a book to all schools.' (all>Neg; all>Neg)

(11) a. Taroo-wa hon-o kookoo-e-**dake** okur-anakat-ta.

Taroo-TOP book-ACC high.school-to-only send-NEG-PAST

Lit. 'Taro didn't send a book only to the high school.' (only>Neg;\*only>Neg)

b. Taroo-wa hon-o kookoo-e-**mo** okur-anakat-ta.

Taroo-TOP book-ACC high.school-to-also send-NEG-PAST

Lit. 'Taro didn't send a book also to the high school.' (also>Neg; \*also>Neg)

These data indicate that argument PPs behave scopally in the same way as accusative and dative objects; normal QPs show scope ambiguity with respect to negation while focused phrases allow only wide scope over negation. Thus, the obligatory movement applies to dative objects and argument PPs as well as accusative objects, that is, arguments in general.

#### 4.2.3 Adjuncts

In the previous two sections, we have seen that arguments in general must move above negation in Japanese. Then, what about adjuncts? Do they pattern with arguments or not?

First, let us consider adjunct PPs. In (12) below, the locative PP shows scope ambiguity with respect to negation:

(12) Taroo-wa subete-no kooen-de asob-ankat-ta.

Taro-TOP all-GEN park-at play-NEG-PAST

Lit 'Taro didn't play in all the parks.' (all>Neg; Neg>all)

Above, the universal QP in the PP adjunct and the negation show scope ambiguity. This ambiguity itself is not so surprising since Japanese has scrambling and the wide scope reading of the universal might simply result from scrambling of the locative PP

somewhere higher in the structure. Thus, if the locative PP can stay below the negation, unlike arguments, the phrase in question should be able to take scope below the negation even after adding a focus particle. However, this is clearly not possible as shown in (13):

- (13) a. Taroo-wa kooen-de-**dake** asob-anakat-ta.  
 Taro-TOP park-at-only play-NEG-PAST  
 Lit. ‘Taro didn’t play only in the park.’ ‘only>Neg;\*Neg>only’
- b. Taroo-wa kooen-de-**mo** asob-anakat-ta.  
 Taro-TOP park-at-also play-NEG-PAST  
 Lit. ‘Taro didn’t play also in the park.’ ‘also>Neg;\*Neg>also’

As discussed in detail in the last chapter, the focus particles indicate their surface position, so the unavailability of the narrow scope under negation in (13) means that even the adjunct PP undergoes overt movement over the negation.

As another instance of adjunct PP, let us consider the instrumental PP in (14):

- (14) a. Taroo-wa gohan-o fooku-de tabe-nakat-ta.  
 Taro-TOP rice-ACC fork-with eat-PAST  
 ‘Taro didn’t eat rice with a fork.’
- b. Taroo-wa gohan-o fooku-de-**mo** tabe-nakat-ta.  
 Taro-TOP rice-ACC fork-with-also eat-NEG-PAST  
 Lit. ‘Taro didn’t eat rice also with a fork.’ (also>Neg;\*Neg>also)

In (14)a, the instrumental phrase can be the focus of the negation, so the sentence is compatible with the situation where Taro ate rice without using a fork. This means that the derivation where the instrumental PP is generated below the negation should be possible; otherwise, the instrumental PP could not be the focus of the negation. Significantly, when the focus particle is added to this PP, the particle must be interpreted above the negation. Thus, (14)b presupposes that there is something other than a fork such that Taro did not eat rice with it. Since the focus particle must be interpreted at the position where it is inserted (i.e., the surface scope effect), this suggests that the instrumental PP in (14) too undergoes movement above negation.

Lastly, let us look at the behavior of adverbials.

(15) Taroo-wa utukusiku odor-anakat-ta.

Taro-TOP beautifully dance-NEG-PAST

‘Taro didn’t dance beautifully.’

In (15), the adverb *utukusiku* ‘beautifully’ can be the focus of the negation, so the sentence can mean that Taro danced but not beautifully, which indicates that this adverb is merged below the negation. Then, when we add a focus particle to this adverb, again the focus particle must take scope over the negation:

(16) Taroo-wa utukusiku-**mo** odor-anakat-ta.

Taro-TOP beautifully-also dance-PAST-NEG

‘Taro didn’t dance beautifully, either.’

(also>Neg;\*Neg>also)

The sentence in (16) presupposes that there is some manner other than ‘beautifully’ such that Taro didn’t dance in that way, that is, the additive focus particle *-mo* ‘also’ takes scope over the negation. If the focus particle is within the scope of the negation, the sentence means that Taro dances in some manner (say, quietly) but not beautifully. This is clearly not available in (16). Thus, not only adjunct PPs but also adverbials behave in the same way.

In sum, the answer to the first question in (1) (i.e., whether the obligatory movement is limited to accusative objects) is negative. As the above data showed, adjuncts (including PP and adverbial adjuncts) as well as arguments (including dative and PP arguments) occupy a position above negation at the surface structure, which suggests that the obligatory movement is at work quite widely in this language.

#### 4.3. Does the obligatory movement happen only in negative sentences?

So far, what we have seen is that in negative sentences, elements including arguments and adjuncts move above negation in Japanese. Then, the next question is whether this movement is limited to negative sentences or not. More concretely, in this section, we will check various types of complex predicates to see if the movement operation in question is limited to the negation. In Japanese, negative morpheme *-(a)na* is categorically adjectival and forms a complex predicate with the predicate it co-occurs with. Look at the comparison between the negation and the adjective *ao-i* ‘blue’ below:

(17) *ao-i* ‘blue’

a. *mizzen-kei* ‘Irrealis form’:      *ao-kar-oo*      (conjecture)

- |    |   |                             |                 |
|----|---|-----------------------------|-----------------|
| b. | <i>renyoo-kei</i> ‘Adverbial<br>or Infinitival form’: | <u>ao</u> - <b>kat</b> -ta  | (past tense)    |
|    |   | <u>ao</u> - <b>ku</b> -te   | (infinitival)   |
| c. | <i>syuusi-kei</i> ‘Conclusive form’:                  | <u>ao</u> - <b>i</b>        | (present tense) |
| d. | <i>rentai-kei</i> ‘Attributive form’:                 | <u>ao</u> - <b>i</b>        | (attributive)   |
| e. | <i>katei-kei</i> ‘Hypothetical form’:                 | <u>ao</u> - <b>ke</b> -reba | (conditional)   |

(18) *mi-na-i* ‘not see’

- |    |   |                                |                 |
|----|---|--------------------------------|-----------------|
| a. | <i>mizzen-kei</i> ‘Irrealis form’:                  | <i>mi-na</i> - <b>kar</b> -oo  | (conjecture)    |
| b. | <i>renyoo-kei</i> ‘Adverbial<br>or Infinitival form | <i>mi-na</i> - <b>kat</b> -ta  | (past tense)    |
|    |   | <i>mi-na</i> - <b>ku</b> -te   | (infinitival)   |
| c. | <i>syuusi-kei</i> ‘Conclusive form’:                | <i>mi-na</i> - <b>i</b>        | (present tense) |
| d. | <i>rentai-kei</i> ‘Attributive form’:               | <i>mi-na</i> - <b>i</b>        | (attributive)   |
| e. | <i>katei-kei</i> ‘Hypothetical form’:               | <i>mi-na</i> - <b>ke</b> -reba | (conditional)   |

The above shows that the negative morpheme *-(a)na* has the adjectival inflection and forms a complex predicate as a whole. If negative sentences in Japanese necessarily involve a complex predicate headed by the negative morpheme, it is worth investigating whether the obligatory movement is also observed with complex predicates in general.

#### 4.3.1 Complex predicates and possible scope of focused phrases

In Japanese, there are a number of complex predicates which behave as a morphologically single unit but have internal syntactic structure. For instance, negation forms a morphologically single unit with the predicate it takes; negation and the predicate

cannot be separated as in (19) and some verbs show contextual allomorphy with negation as in (20):

(19) \*Taroo-wa kome-o tabe kyoo nakat-ta.

Taro-TOP rice-ACC eat today NEG-PAST

Intended ‘Taro didn’t eat rice today.’

(20) a. *ar* ‘exist’ + *ana* ‘not’ → *na-*

b. *ku* ‘come’ + *ana* ‘not’ → *kona-*

c. *su* ‘do’ + *ana* ‘not’ → *sina-* etc.<sup>68</sup>

The negation and the predicate are, however, syntactically distinct elements. Adverbials, for example, can modify only the lower predicate as shown in (21) and normal QPs like universal can take scope between the negation and the verb as shown in (22):

(21) Taroo-wa kome-o subayaku tabe-nakat-ta.

Taro-TOP rice-ACC quickly eat-NEG-PAST

‘Taro didn’t eat rice quickly.’

(22) Taroo-wa subete-no mado-o sime-wasure-nakat-ta.

Taro-TOP all-GEN window-ACC close-forget-NEG-PAST

‘Taro didn’t forget to close all windows.’

(ok: Neg>all>forget)<sup>69</sup>

<sup>68</sup> The inflectional form of the verb with negation is called *mizen-kei* ‘Irrealis form’.

<sup>69</sup> The sentence also allows the reading ‘all>Neg>forget’.

As shown above, negation is one instance of a complex predicate in Japanese. In the section below, I will look into other complex predicate which have the same property as negation, that is, ‘morphologically single but syntactically distinct’, with respect to possible scope patterns for focused phrases to answer the second question in (1) (i.e., whether negation is special or not).

#### 4.3.1.1 Apparent scope ambiguity with the additive particle *-mo* ‘also’

Before looking into the possible scope patterns with complex predicates in detail, I would like to discuss one property of the additive focus particle *-mo* ‘also’, which makes it an unsuitable item for investigating the scope pattern with complex predicates. As I showed, the additive particle must take scope over the clause-mate negation:

(23) Taroo-wa sushi-mo tabe-taku-na-i.

Taro-TOP sushi-also eat-want-NEG-PRES

Lit. ‘Taro doesn’t want to eat also sushi.’

(also>Neg;\*Neg<also)

However, without the negation, the sentence seems to be ambiguous with respect to the scope relation with the intensional predicate *-ta(i)* ‘want’:

(24) Taroo-wa sushi-mo tabe-ta-i.

Taro-TOP sushi-also eat-want-PRES

‘also>want’: Taro wants to eat something other than sushi and also wants to eat sushi.



‘want>also’: Taro already ate something other than sushi but he still wants to eat sushi.

On the first reading, Taro has to have some desire to eat some food in addition to the desire to eat sushi, whereas on the second reading, this is not necessarily the case; ‘What Taro wants to do is [also eat sushi]’. Thus, as expressed in the translation for the ‘want>also’ reading in (24), the sentence is felicitous under the situation where Taro already ate some food (other than sushi) but still wants to eat sushi in addition to that food. The sentence (24) sounds fine under either of the readings. Does this mean that the additive particle *-mo* can take scope below the intensional predicate *-ta(i)*, unlike negation?<sup>70</sup> Why does the sentence sound ambiguous?

A hint to answer this question lies in the property of the scope of the additive *-mo*. Okutsu, Numata and Sugimoto (1986) and Aoyagi (1994) observe that the additive *-mo* attached to NP extends its scope over TP as follows:

(25) Hanako-ga odor-i, Taro-ga gitaa-mo hii-ta.

Hanako-NOM dance-and Taro-NOM guitar-also play-PAST

‘Hanako danced, and also Taro played the guitar.’

In the second sentence above, what is presupposed is that there was some (positive) event (or proposition) other than Taro’s playing the guitar, which is compatible with the first conjunct (Hanako’s dancing). Note that if the second conjunct does not extend its scope, the presupposition of it is that there is something other than the guitar which Taro played,

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<sup>70</sup> Recall that the additive *-mo* ‘also’ is not a PPI, which is discussed in Chapter 3 in detail.

whose relation to the first conjunct is not clear here.

Under my approach, this can be captured without assuming the extension of the scope domain. As I argued in Chapter 2, the mapping from the syntax to the semantics is based on their c-command relation (i.e. the semantic representation must reflect the c-command/scope relations in the syntax). For example, the focus particle *-mo* attached to NP is translated in the following manner during the mapping:

- (26) syntax:      [TP ... [NP [NP Taro]-mo] ... [<sub>v</sub>P ...  
                  semantics:    [TP ... [ mo [ Taro ... [<sub>v</sub>P ...

Since the particle *-mo* is simply adjoined to the NP, it c-commands out of the NP. Thus, with the hypothesis that the semantic representation must reflect the c-command relations in the syntax, this particle is translated as in the semantic representation in (26).

Under this approach, the apparent wide scope of the additive particle in (25) can be captured when we assume that the NP with the additive particle is located at least above *v*P. If the NP with the additive *-mo* is above *v*P, the additive takes scope over the whole *v*P. Since *v*P expresses the proposition, when the whole *v*P is the focus of the additive particle, it presupposes that there is some proposition other than the one focused by the particle, which means that we can capture the scope extension phenomenon in (25) without assuming the actual extension of the scope of the particle.<sup>71</sup>

Now, let us go back to the issue raised in (25), that is, the apparent scope ambiguity with the predicate *-ta(i)*. The issue is that the sentence sounds compatible with the

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<sup>71</sup> Later in Section 3.3.4, I will argue that indeed elements like objects move over TP, and hence the property of the focus particle to take scope over the whole TP is exactly what is predicted under my analysis.

situation for the narrow scope reading under the predicate *-ta(i)*:

(27) Taro<sub>o</sub>-wa sushi-mo tabe-ta-i.

Taro-TOP sushi-also eat-want-PRES

‘want>also’: Taro already ate something other than sushi but still wants to eat sushi.

This compatibility with the situation for the narrow scope reading, however, does not show anything about the availability of the narrow scope reading of the particle *-mo*. Consider what the presupposition is if the whole *vP* is the focus of the additive particle. This presupposes that there is some (positive) event other than Taro’s eating sushi. Since Taro’s eating something other than sushi can be regarded as this presupposed event it follows that we expect that (25) is always true under the narrow scope reading, even though the additive particle itself is located above the intensional predicate *-ta(i)* ‘want’. In short, all the situations for the narrow scope reading under the predicate *-ta(i)* are a subset of the situations which are true with the particle *-mo* focusing the whole *vP*. This means that we cannot tell whether the narrow scope reading is really available in (25) or not.

What this discussion tells us is that care must be taken when we check the availability of the narrow scope reading with the focus particle. One suitable situation for the additive particle to be used as a test tool may be sentences with negation. As we have seen many times, if the particle takes scope over NegP, what is presupposed is some negative proposition or event, while if the particle takes scope below NegP, what is presupposed is some positive proposition or event, so the distinction is very clear in this

case. In the following section, I mainly use the focus particle *-dake* and use the additive *-mo* only when the issue discussed in this section does not arise.<sup>72</sup>

#### 4.3.1.2 Complex predicates consisting of two elements

In this section, I look into various complex predicates with respect to the possible scope reading of the focus particle. In doing this, I mainly discuss types of complex predicates where we can clearly see the possible scope readings for focus particles. In many cases, it is not so clear what the possible scope positions for the focus particles are since the two relevant scope readings (wide and narrow scope reading with respect to some predicate) cannot be distinguished easily. Thus, in order to check the possible scope position for the focus particle, I will use the type of complex predicates where the distinction between the wide scope and the narrow scope reading is clearer.

##### 4.3.1.2.1 V-CAN

The first case is the potential construction. The potential morpheme *-rare* is verbal in nature and has allomorph *-e* when it co-occurs with a certain type of verbs.<sup>73</sup> The potential and the verb cannot be separated but the adjunct can modify only the lower verb:

<sup>72</sup> For the same reason, the particle *-sae* ‘even’ is not a suitable one, since we can say the following:

(i) Hanako-ga odor-i, Taro-ga gitaa-sae hii-ta.  
Hanako-NOM dance-and Taro-NOM guitar-even play-PAST  
‘Hanako danced and even Taro played the guitar.’

The sentence sounds fine. In this case, the second conjunct simply expresses that the proposition ‘Taro’s playing the guitar’ is lower on the likelihood scale.

<sup>73</sup> The verb *-aw* ‘meet’ is such a verb:

(i) Taro-wa Hanako-ni a-e-ru.  
Taro-TOP Hanako-DAT meet-CAN-PRES  
‘Taro can meet Hanako.’  
cf. Taro-wa kome-o tabe-rare-ru.  
Taro-TOP rice-ACC eat-CAN-PRES  
‘Taro can eat rice.’

(28) a. \* Taroo-wa Hanako-ni a(w) kyoo e-ru.

Taro-TOP Hanako-DAT meet today CAN-PRES

Intended ‘Taro can meet Hanako today.’

b. Taroo<sub>i</sub>-wa Hanako-ni zibun<sub>i</sub>-no heya-de a-e-ru.

Taro-TOP Hanako-DAT self-GEN room-at meet-CAN-PRES

‘Taro can meet Hanako in his room.’

(28)a shows that when there is an intervening adverb between the verb and the potential morpheme, the sentence is unacceptable, which indicates that the potential morpheme and the verb form a morphologically single unit.<sup>74</sup> On the other hand, modification of a lower verb by an adverbial is still possible in (28)b, which suggests that the potential morpheme and the verb are separate elements (at least) in the syntax. (In this case, what Taro can do is meeting Hanako in his room.) Then, what happens when we add a focus particle? What is the possible scope with respect to the potential morpheme? Look at the following:

(29) Taroo-wa Hanako-to-**dake** asob-e-ru.

Taro-TOP Hanako-with-only play-CAN-PRES

ok only>CAN

‘The only person Taro can play with is Hanako.’

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<sup>74</sup> This is also the case when the potential morpheme is *-rare*, not *-e*:

(i) \*Taroo-wa kome-o tabe kyoo rare-ru.  
 Taro-TOP rice-ACC eat today CAN-PRES  
 Intended ‘Taro can eat rice today.’

\* CAN>only

‘Taro can play with Hanako alone (without playing with others).’ (Futagi 2004: 3)

In the above sentence, the focus particle *-dake* must take scope over the potential morpheme. The same thing holds for the adjunct phrase with the focus particle as shown below:

(30) Taroo-wa Hanako-to kooen-de-**dake** asob-e-ru.

Taro-TOP Hanako-with park-at-only play-CAN-PRES

ok only>CAN

‘It is only in the park that Taro can play with Hanako.’

\*CAN>only

‘What Taro can do is playing with Hanako only in the park.’

Here, again we observe the same pattern, that is, the focus particle attached to the locative phrase has to take scope over the whole complex predicate. This means that the obligatory wide scope property of focus particles is not limited to negative sentences. The above data show that this property also holds at least for potential constructions.<sup>75</sup>

#### 4.3.2.2.2 V-CAUSE

The second case is (syntactic) causative. The causative morpheme *-(s)ase* is verbal in nature (i.e., it has a verbal inflection). It is well known that the causative construction has

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<sup>75</sup> The obligatory wide scope property of focus in potential construction has in fact long been noticed in the literature, in relation to the discussion of the scope of *-dake* ‘only’; See Tada 1992, Nomura 2003, 2005, Futagi 2004, a.o.).

bi-clausal nature.<sup>76</sup> For example, the causee, which is realized with a dative case, can bind the subject-oriented anaphor *zibun*:

- (31) Taroo-wa Ziroo<sub>i</sub>-ni zibun<sub>i</sub>-o subayaku tatak-ase-ta.  
 Taro-TOP Ziro-DAT self-ACC quickly hit-CAUSE-PAST  
 ‘Taro made Ziro hit himself quickly.’

Note that in this case, the adverb *subayaku* ‘quickly’ can modify only the lower verb, which means that there is a syntactic structure here. Of course, since the causative and the verb form a morphologically single unit, they cannot be separated by an intervening adverb:

- (32) \*Taroo-wa Ziroo<sub>i</sub>-ni zibun<sub>i</sub>-o tatak(u) kyoo sase-ta.  
 Taro-TOP Ziro-DAT self-ACC hit today CAUSE-PAST  
 Intended ‘Taro made Ziro hit himself today.’

Then, when the focus particle appears in this construction, it has to take scope over the whole complex, just as is the case in the potential construction or negative sentences:

- (33) Taroo-wa Ziroo-ni Hanako-to-**dake** asob-ase-ta.  
 Taro-TOP Ziro-DAT Hanako-with-only play-CAUSE-PAST  
 ok only>CAUSE  
 ‘It is only Hanako that Taro made/let Ziro play with.’

<sup>76</sup> See Kuroda (1965), Kuno (1973), Inoue (1976), Shibatani (1976), among many others.

\*CAUSE>only

‘What Taro made/let Ziro to do is playing only with Hanako.’

In the narrow scope reading of *dake* ‘only’ under the causative, what Taro caused is that Ziro played with Hanako alone. Under this reading, it is still compatible even if Taro made Ziro play with someone other than Hanako, as long as he made Ziro play with Hanako alone (on another occasion), but such a reading is clearly impossible in (33), which means that the focus particle must be interpreted above the whole complex predicate ‘V+CAUSE’. Since the focus particle has the surface scope effect, this means that elements have to move above the complex predicates in causative constructions too.

#### 4.3.1.2.3 V-*oeru* ‘V+finish’

The third case we will look at is the verb *oe(-ru)* ‘finish’. This verb can take another verb as its complement and expresses terminative aspect. For example, let us look at the following:

(34) Taroo-wa sushi-o tabe-oe-ta.

Taro-TOP sushi-ACC eat-finish-PAST

‘Taro finished eating sushi.’

The morphological unity of the predicate in (34) is shown below:



(35) \*Taroo-wa sushi-o tabe ima oe-ta.

Taro-TOP sushi-ACC eat now finish-PAST

‘Taro finished eating sushi just now.’

Now, let us look at the possible scope of the focused phrase in this construction. Since the terminative *oe(-ru)* and the verb form one complex predicate, we expect that the focus particle has to take scope over the whole complex. This is indeed the case as shown below:

(36) Taroo-wa sushi-**dake** tabe-oe-ta.

Taro-TOP sushi-ACC-only eat-finish-PAST

ok only>FINISH

‘It is only sushi that Taro finished eating.’

\*FINISH>only

‘Taro finished/stopped eating only sushi.’

In (36), the narrow scope reading expresses that what Taro finished/stopped is eating only sushi, that is, up to this point, Taro ate sushi alone (not other foods) and he stopped this now. This reading is felicitous even if Taro continued to eat sushi as long as sushi is not the only food he eats (say, he eats pizza and french fries in addition to sushi). This narrow scope reading is, however, not available in (36), which again indicates that the focus particle must take scope over the whole complex predicate.<sup>77</sup>

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<sup>77</sup> Perhaps, the same property holds for inchoative verb *hazime(-ru)* ‘begin’, but since the distinction between the wide scope reading and the narrow scope reading of *-dake* ‘only’ with respect to *hazime* is not

#### 4.3.1.2.4 V-*ta(i)* ‘V+want(Adj.)’

The fourth case is the adjective *-ta-i* ‘want’ (expressing a mental state of wanting something), which forms a single complex predicate with the verb it takes:

(37) Taroo-wa sushi-o tabe-ta-i.

Taro-TOP sushi-ACC eat-want-PRES.

‘Taro wants to eat sushi.’

The complex predicate here is not a lexical compound since only the lower verb can be modified, which shows that there is a syntactic structure here:

(38) Taroo-wa sushi-o sushi baa-de tabe-ta-i.

Taro-TOP sushi-ACC sushi bar-at eat-want-PRES.

‘Taro wants to eat sushi at the sushi bar.’

In (38), *sushi baa-de* ‘at the sushi bar’ can modify only the lower verb (i.e., what Taro wants to do is eating sushi at the sushi bar), which is unexpected if *tabe-ta-i* ‘want to eat’ is a lexical compound that is formed in the lexicon.

Then, let us look at what the possible readings of focused phrases are with respect to this predicate. Consider the following:

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so clear as the one with *oe* ‘finish’, I only use *oe* here.

(39) Taro-wa Hanako-ni-**dake** ai-ta-i.

Taro-TOP Hanako-DAT-only meet-want-PRES

ok only>want

‘It is only Hanako that Taro wants to meet.’

\* want>only

‘What Taro wants to do is meeting only Hanako.’

Interestingly, in this case too, the focused element has to be interpreted above the whole complex predicate. Under the narrow scope reading of *-dake*, Taro’s desire is that he meets Hanako alone (without others), so the sentence should be felicitous even if Taro has a desire to meet someone other than Hanako. However, such a reading is impossible in (39), which indicates that again, the focus particle must be interpreted above the whole complex. Thus, the complex predicate *V-ta-i* ‘V-want(Adj.)’ behaves in the same way as the complex predicates we have seen so far.

#### 4.3.1.2.5 With negation

So far, we have checked five complex predicates; all of them behave in the same way as negation. Then, what happens if we add negation to those complex predicates? If focused elements have to take scope over the whole complex, it is predicted that if we add negation on top of the complex predicates, the focused elements have to take scope over the negation in that case. This prediction is borne out:

- (40) a. Taroo-wa Ziroo-ni sushi-**mo/dake** tabe-sase-na-i.  
 Taro-TOP Ziro-DAT sushi-also/only eat-CAUSE-NEG-PRES  
 Lit. ‘Taro does not let Ziro eat also/only sushi. (also/only>Neg;\*Neg>also/only)
- b. Taroo-wa sushi-**mo/dake** tabe-rare-na-i.  
 Taro-TOP sushi-also/only eat-CAN-NEG-PRES  
 Lit. ‘Taro can not eat also/only sushi.’ (also/only>Neg;\*Neg>also/only)
- c. Taroo-wa sushi-**mo/dake** tabe-oe-nakat-ta.  
 Taro-TOP sushi-also/only eat-finish-NEG-PAST  
 Lit. ‘Taro did not finish eating also/only sushi.’  
 (also/only>Neg;\*Neg>also/only)
- d. Taroo-wa sushi-**mo/dake** tabe-taku-na-i.  
 Taro-TOP sushi-also/only eat-want-NEG-PRES  
 Lit. ‘Taro doesn’t want to eat also/only sushi.’ (also/only>Neg;\*Neg>also/only)

Above, the focus particles have to take scope over the negation which is added on top of the complex predicate. They cannot take scope below the negation. Nor can they take scope in the middle of the complex predicates. Thus, the scopal behavior of focus particles does not change even when we add negation to the complex predicates we have seen above: the focus particle always takes scope over the whole complex.

#### 4.3.1.3 Complex predicates consisting of more than two

In this section, I will look into complex predicates which consist of more than two elements.

#### 4.3.1.3.1 V-CAUSE-*oe(-ru)* ‘finish’

The causative morpheme can be attached to the terminative verb *oe(-ru)* ‘finish’, which results in a morphologically single predicate consisting of three elements.

(41) Taroo-wa Ziroo-ni sushi-o tabe-sase-oe-ta.

Taro-TOP Ziro-DAT sushi-ACC eat-CAUSE-finish-PAST

‘Taro finished making Ziro eat sushi.’

The morphological unity of this predicate is confirmed by the following data, where the presence of the intervening adverb results in unacceptable sentences:

(42) a. \* Taroo-wa Ziroo-ni sushi-o tabe ima sase-oe-ta.

Taro-TOP Ziro-DAT sushi-ACC eat now CAUSE-finish-PAST

‘Taro finished making Ziro eat sushi just now.’

b. \* Taroo-wa Ziroo-ni sushi-o tabe-sase ima oe-ta.

Taro-TOP Ziro-DAT sushi-ACC eat-CAUSE now finish-PAST

‘Taro finished making Ziro eat sushi just now.’

Then, let us consider the following, where the focus particle is attached to the accusative object:

(43) Taroo-wa Ziroo-ni sushi-**dake** tabe-sase-oe-ta.

Taro-TOP Ziro-DAT sushi-only eat-CAUSE-finish-PAST

ok only>FINISH>CAUSE

‘It is only sushi that Taro finished/stopped making Ziro eat.’

\* FINISH>only>CAUSE

‘What Taro finished/stopped doing is making Ziro eat only sushi.’

\* FINISH>CAUSE>only

‘What Taro finished/stopped making Ziro do is eating only sushi.’

Under the first reading of (43), since Taro stopped making Ziro eat sushi (and this is the only food that Taro stopped making Ziro eat), the sentence is infelicitous if Taro continues to make Ziro eat sushi (in addition to something other than sushi). By contrast, under the second reading ‘finish>only>CAUSE’, the sentence is still felicitous even if Taro continues to make Ziro eat sushi as long as sushi is not the only food that Taro makes Ziro eat (say, Taro makes Ziro eat pizza and french fries in addition to sushi). Likewise, under the third reading of (43) ‘finish>CAUSE>only’, what Taro stopped making Ziro do is that Ziro eats only sushi, which means that the sentence is still felicitous even if Taro continues to make Ziro eat sushi as long as sushi is not the only food that Ziro eats. Significantly, the sentence (43) is fine only under the first reading. This suggests that the focus particle again has to take scope over the whole complex predicate, not below or in the middle of it.

#### **4.3.1.3.2 V-CAUSE-CAN**

The potential morpheme can take the causative construction as its complement,. This results in a morphologically single predicate consisting of three elements (i.e.,

V+CAUSE+CAN). In this case too, the same result is obtained. Consider the following (note that CAN is structurally higher than CAUSE, so the relation between CAN and CAUSE is fixed as ‘CAN>CAUSE’):

(44) Taro-wa Hanako-o Ziroo-ni-**dake** aw-ase-rare-ru.

Taro-TOP Hanako-ACC Ziro-DAT-only meet-CAUSE-CAN-PRES

ok only>CAN>CAUSE

‘It is only Ziro that Taro can make Hanako meet.’

\*CAN>only>CAUSE

‘What Taro can do is making Ziro meet only Hanako.’

\*CAN>CAUSE>only

‘What Taro can make Ziro do is meeting only Hanako.’

Under the first reading, since Ziro is the only person that Taro can make Hanako meet, the sentence is infelicitous if there is someone other than Ziro who Taro can make Hanako meet. By contrast, under the second and the third readings, since the focus particle does not take scope over the potential, the sentence is compatible with the situation in which there is someone other than Ziro who Taro can make Hanako meet. Thus, the second reading is still felicitous under such a situation as long as it is possible for Taro to make Hanako meet only Ziro (say, Taro can make Hanako meet only Ziro and Taro also can make Hanako meet only Kyoko), and the third reading is also felicitous in that situation as long as Taro can cause the situation where Ziro meets only Hanako. Since the focus particle indicates the surface position of the element it is attached to, it

follows that in this case, too, it must be higher than the whole complex at the surface position.

#### 4.3.1.3.3 With negation

We have so far seen two complex predicates which consist of three elements. Then, when we add negation on top of the whole complex, the focus particle must be interpreted above the negation, not below or in the middle of the complex predicates:

##### (45) V-CAUSE-*oe(-ru)*-NEG

Taroo-wa Ziroo-ni sushi-**mo/dake** tabe-sase-*oe*-nakat-ta.

Taro-TOP Ziroo-DAT sushi-also/only eat-CAUSE-finish-NEG-PAST

Lit. 'Taro did not finish making Ziro eat also/only sushi.'

(also/only>Neg;\*Neg>also/only)

##### (46) V-CAUSE-CAN-NEG

Taroo-wa Ziroo-ni sushi-**mo/dake** tabe-sase-rare-nakat-ta.

Taro-TOP Ziro-DAT sushi-also/only eat-CAUSE-CAN-NEG-PAST

Lit. 'Taro couldn't make Ziro eat also/only sushi.'

(also/only>Neg;\*Neg>also/only)

Since the negation is the topmost element in the complex predicates, the unavailability of 'Neg>also/only' reading suggests that the focus particle must be higher than the whole complex predicate including the negation at the surface position.

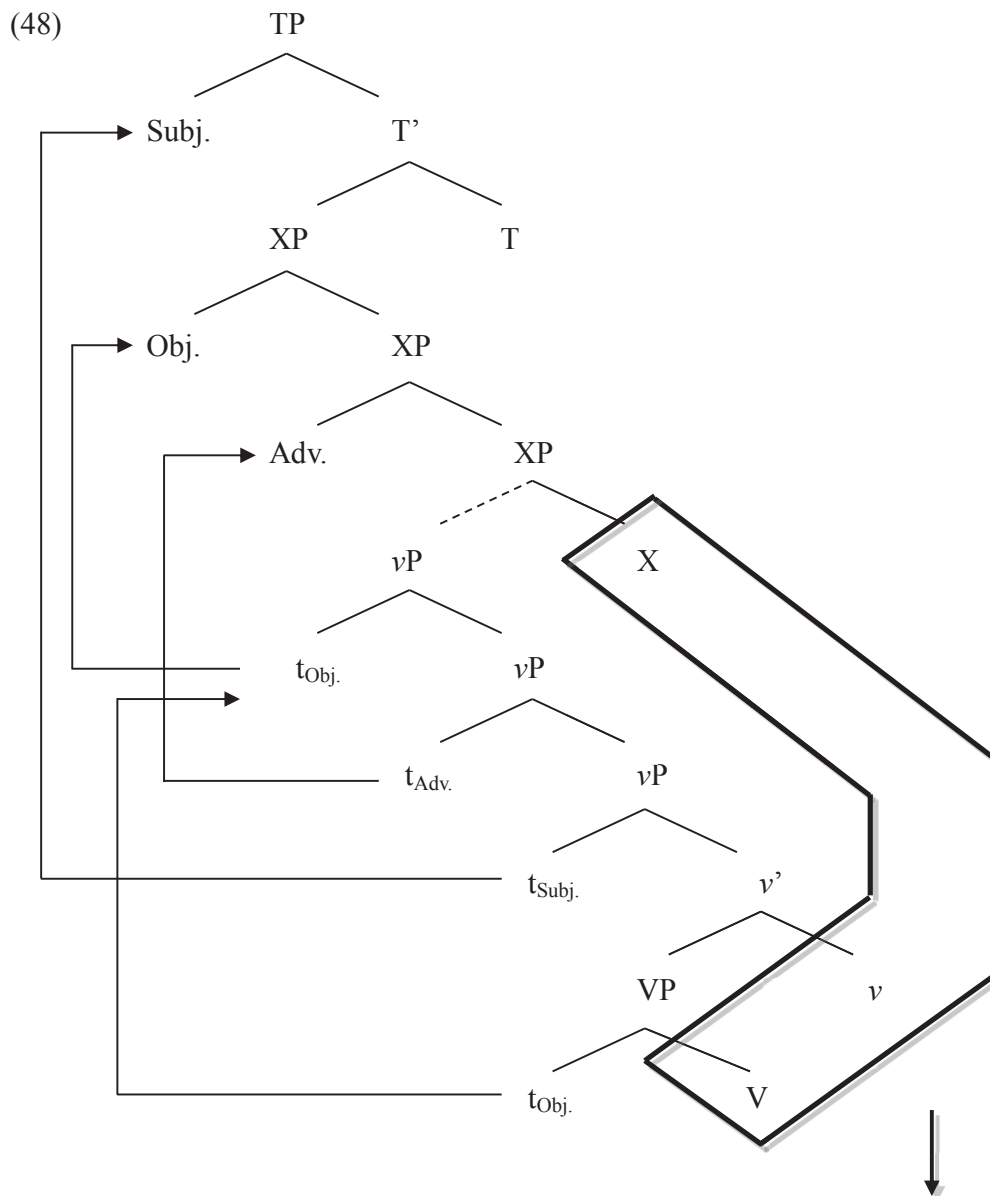


### **4.3.2 Generalization about complex predicates in Japanese**

In the sections above, we have seen that focus particles cannot be interpreted below or in the middle of complex predicates in Japanese. In Chapter 2, I argued that these focus particles are interpreted only at the position they are inserted, and if they are attached to moving elements, they must be inserted after movement happens (i.e. obligatory late insertion). For this reason, focus particles are a very useful tool to investigate the surface position of various elements: since focus particles cannot be interpreted below or in the middle of complex predicates, this means that these particles are inserted after the elements to which they are attached undergo movement above the whole complex. Thus, one generalization can be made from the above data:

- (47) No element can stay overtly below or in the middle of a complex predicate in Japanese.

This means that some process depicted in the following seems to be at work in Japanese:



V-v-X forms one complex predicate (X = NEG, CAN, CAUSE, want(Adj.), etc)

Recall that normal QPs like universal quantifiers can take scope between the negation and the verb (e.g., (22)) and that adjuncts can modify only the lower predicate. These indicate that we at least need copies/traces of quantifiers or adjuncts in the middle of the complex predicate as in (48). However, the fact that focus particles, which must be inserted after movement, cannot be interpreted in the middle (or below) a complex

predicate indicates that the elements to which the focus particles are attached have to occupy a position where they asymmetrically c-commands the topmost head of the complex predicate (here, I simply assume that they are adjoined to the topmost projection). Therefore, to account for the scope patterns we have observed so far, we need a process in (48) (or one similar to (48)). Then, a natural question arising from this is why Japanese has a process in (48) in the first place, which is the main topic of the next section.

#### **4.3.3 Filtering effects at the interfaces**

As noted above, elements can in principle be interpreted in the middle of complex predicates (e.g., normal QPs or adjuncts), but they cannot stay in the middle of such predicates: otherwise, focus particles should be able to be interpreted in such a position. We can then say the following:

(49) Semantics has no problem with a position in the middle of a complex predicate.

This seems to be reasonable: if no position in the middle of a complex predicate were available for interpretation, neither normal QPs nor adjuncts would be interpretable in such a position. Therefore, the obligatory wide scope property of focused phrases over the whole complex must come from other sources.

One possibility, which I would like to pursue here, is that this is attributed to a PF reason. We have observed that elements cannot stay in the middle of a complex predicate. In other words, this suggests that elements cannot be realized in such a position at PF.

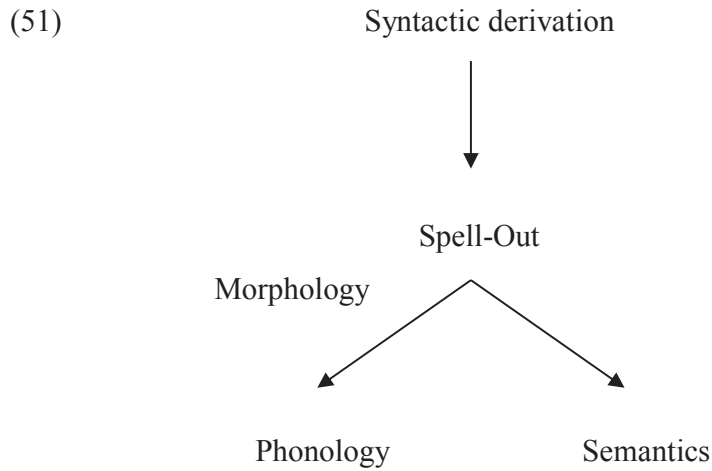
Thus, I assume the following as a working hypothesis:

(50) PF has some problem with a position in the middle of a complex predicate.

In this section, I will give one possible answer to the question why the position in the middle of a complex predicate is problematic for the PF component.

#### **4.3.3.1 How are complex predicates formed?**

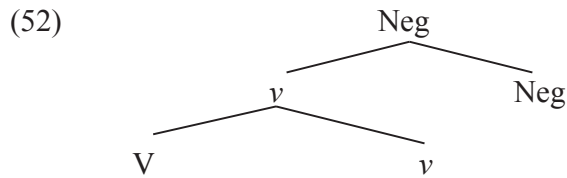
The complex predicates we have investigated in the previous sections have internal syntactic structure: the lower predicate can be modified alone and normal QPs can take scope in the middle of them. At the same time, they behave as a single unit morphologically: they cannot be separated and some complex predicates show contextual allomorphy. These properties would be difficult to account for if we assume that the complex predicates in question are formed in the lexicon, for modification to the subpart of a lexical compound is basically impossible. Here, I adopt the framework of the Distributed Morphology (DM) (the name introduced by Halle and Marantz 1993, 1994) for the word formation process. In DM, Morphology is assumed to be located after the syntax and before the phonology, that is, it receives the output of the syntactic derivation and yields the input to the phonological component. Schematically, this is shown below:



There are two important hypotheses in DM: Syntax-all-the-way-down and Late Insertion. Syntax-all-the-way-down is the idea that syntax operates on the units even below the word-level, and thus (some) word formation is syntactic. Late Insertion is a hypothesis that the elements treated in the syntax are abstract in the sense that they lack phonological content. The insertion of the phonological information (Vocabulary Insertion (VI)) to the terminal nodes happens after the syntax, during the mapping from the syntax to PF.

Now, let consider the complex predicates we have seen so far. Since they are a morphologically single unit, we need the relevant heads to be realized as a single complex head at least in the morphological component to capture their morphological unity. For example, negation and the main verb should have the following form in Morphology:<sup>78</sup>

<sup>78</sup> To be precise, in (52) V should be  $\sqrt{V}$  (Root) and Neg might be represented as  $\sqrt{\text{Neg}}$  with  $a$  (Recall that Japanese negation has adjectival inflection).



Although we need the structure like (52) to account for the morphological behavior of the complex predicate consisting of the negation and the verb, the question is how a complex head like (52) is formed. We are dealing here with heads which are introduced separately into the syntactic structure, so we need some process which makes those distinct heads into one complex head. There are two ways to achieve this: one is syntactic and the other is post-syntactic:

(53) Complex head is formed via:

- a. head movement in the syntax
- b. some process in PF

The first option is to obtain the complex head via syntactic head movement: in the case of (52), for instance, V head-moves to *v* and then the complex ‘[*v* [V] *v*]’ head-moves to Neg, which results in (52). The other option is that the heads in question remain distinct in the syntactic derivation, but they are changed into a single complex head after Spell-Out to PF. In this case, one possible operation is morphological merger (or PF merger) (Marantz 1984, 1988)<sup>79</sup>, which turns ‘adjacent’ heads into a single complex.<sup>80</sup> The two options

<sup>79</sup> In Marantz (1988), this is expressed as follows:

(i) *Morphological Merger*

At any level of syntactic analysis (d-structure, s-structure, phonological structure), a relation between X and Y may be replaced by (expressed by) the affixation of the lexical head of X to the

make different predictions when there is an intervening element. For instance, it is well known that Tense affix and the verb can form one unit in French but cannot in English across negation:

(54) Jean (n') embrasse pas Marie.

John            kisses    not    Mary

'John does not kiss Mary.'

(Pollock 1989)

(55) a. \* John kisses not Mary.

b. \* John not kisses Mary.

c. John does not kiss Mary.

These examples are often regarded as evidence which shows that in French, it is head movement that makes the tense affix and the verb become one unit but that in English, it is PF/morphological merger (or traditionally called 'affix hopping') which makes them become one unit. Thus, the two operations behave differently when there is an intervening element. In the section below, I will look into the second operation, that is, morphological merger in more detail, making it clear what element is regarded as an intervener or what the definition of intervention for it is.

#### **4.3.3.2 Morphological merger**

As mentioned briefly above, morphological merger is an operation which turns 'adjacent'

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lexical head of Y. (Marantz 1988)

<sup>80</sup> The definition of 'adjacency' will be discussed in detail later in section 3.3.2.

heads into a single complex heads. Then, the question we have to consider now is what the definition of ‘being adjacent’ is for the operation to apply. There are two possible types of adjacency that are often assumed for morphological merger in the literature: one is linear adjacency and the other is structural adjacency (see for example Marantz 1984). With linear adjacency, what is important is whether the two heads are linearly adjacent each other or not. By contrast, for structural adjacency, the two relevant heads are not necessarily linearly adjacent. It is fine if the two heads satisfy some structural relation which is defined as ‘being adjacent’ (the definition will be given shortly).

Then, which of the two is relevant to the operation ‘morphological merger’? Here, I argue that the adjacency relevant to morphological merger cannot be linear adjacency, and that it must be structural adjacency for the following reason: in the framework of DM, vocabulary items are assumed to be inserted into the terminal nodes via the operation Vocabulary Insertion (VI) in the PF component. This process targets the structure like (52), changing the terminal nodes into actual vocabulary items in a bottom up fashion, and linearizes them. For example, Embick and Noyer (2001) propose the following:

(56) *The Late Linearization Hypothesis*

The elements of a phrase marker are linearized at Vocabulary Insertion.

What is significant here is that morphological merger is a process which creates the structure to which VI applies, that is, the morphological merger is a process before VI. Assuming (56), this means that elements of a phrase marker are not linearized yet at the application of morphological merger. It thus follows that the adjacency requirement for



the morphological merger cannot be linear adjacency (since elements are not linearized yet); the possibility left is that morphological merger is subject to ‘structural’ adjacency. Therefore, I argue for (57) below as a requirement for morphological merger:<sup>81</sup>

- (57) For two heads X and Y to form one single complex head via morphological merger, X and Y must be structurally adjacent.

Once we adopt structural adjacency, the next question is in which situation the two relevant heads are regarded as being structurally adjacent. In the literature, it is often assumed that the operation like affix hopping cannot be applied across an intervening head, but it can across an intervening adverb:

- (58) a. \* John not kissed Mary.  
b. John never kissed Mary.

To capture this difference, Bobaljik (1995) proposes the following adjacency condition to combine an affix and a stem:

- (59) a. ... X [<sub>YP</sub> NP<sub>[overt]</sub> [<sub>Y'</sub> Y ... X, Y not adjacent  
b. ... X [<sub>YP</sub> t [<sub>Y'</sub> Y ... X, Y adjacent  
c. ... X [<sub>YP</sub> adverb [<sub>YP</sub> [<sub>Y'</sub> Y ... X, Y adjacent (Bobaljik 1995: 60)

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<sup>81</sup> This means that the analysis based on the linear adjacency in the literature should be analyzed in terms of structural adjacency. In fact, the difference between ‘linear’ and ‘structural’ adjacency is not so clear in head initial languages but the difference is much clearer in head final languages like Japanese. The approach here suggests that structural adjacency is more suitable as the definition of adjacency for morphological merger, both empirically and theoretically.

When there is an overt specifier between X and Y, as in (59)a, the two heads are not adjacent, but if that specifier is a trace, the two heads are adjacent. Then, the case in (59)c is relevant to (58). Bobaljik (1995) assumes that since adjunction does not alter basic structural relations, the two heads are regarded as being adjacent in (59)c.

Several authors, however, claim that we do not need to say anything special about adverbs for data like (58) (Lasnik 2003, Bošković 2004 a.o.). For example, Lasnik (2003) argues that adverbs, which are often regarded as ‘intervening’ adverbs, are located above Tense in the relevant cases so that they do not disrupt the adjacency for the merger of T and the verb. Furthermore, Bošković (2004) argues that even adverbs should be regarded as interveners for morphological merger, based on a discussion of stylistic fronting in Scandinavian. In Icelandic, a stylistically fronted element and the verb must be adjacent. Look at the following (the elements undergoing stylistic fronting are underlined):

(60) a. *Þetta er maður sem ekki hefur leikið nítiú leiki.*

this is a man that not has played ninety games

‘This is a man that has not played ninety games.’

b. \* *Ég held að ekki Halldór hafi séð þessa mynd.*

I think that not Halldor has seen this film

‘I think that Halldor has not seen this film.’

cf. *Ég held að Halldór hafi ekki séð þessa mynd* (Bošković 2004: 37-38)

In (60)b, stylistic fronting of *ekki* is blocked by the intervening subject *Halldór*. Significantly, Bošković observes that this intervention effect is also obtained with an

intervening adverb:

- (61) \**Petta er maður sem ekki í gær hegur lekið nítiu leiki*  
this is a man that not yesterday has played ninety games  
'This is a man that has not played ninety games yesterday.'

Based on this, Bošković (2004) claims that adverbs do count for the purpose of PF adjacency relevant to PF merger. In other words, intervening adverbs do block morphological merger.

Following these authors, I assume that even adjuncts disrupt adjacency for morphological merger, and propose the following:

(62) *Complex head formation via morphological merger*

Head X and Y form one complex head via morphological merger if and only if X and Y are structurally adjacent.

(63) *Structural Adjacency*<sup>82</sup>

X and Y are structurally adjacent if and only if there is no overt Z which is asymmetrically c-commanded by X and asymmetrically c-commands Y.

Under the definition in (63), even the adverb in (59)c is regarded as an intervener for the


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<sup>82</sup> As for why overtiness matters for (63), in the tradition of rescue-by-PF-deletion line of research, it is possible that morphological merger over an intervener leads to \*-marking of the intervener. If the intervener is turned into a trace, the \* is removed under copy deletion (or \*s on phonologically null elements are simply ignored in PF); see Bošković 2011). Alternatively, there may be nothing deep here, overtiness matters simply because we are dealing here with PF.

two heads X and Y, and the morphological merger of the two heads is blocked. With this assumption, let us consider which of the two processes, which can yield one complex head from originally distinct heads (namely, head movement and morphological merger), can capture the scope data involving complex predicates in Japanese.

#### 4.3.3.3 Head movement or morphological merger?

As discussed in the previous section with respect to complex head formation, the main difference between the approach with head movement and the one with morphological merger is that the former is not necessarily blocked by an intervening element.<sup>83</sup> Recall that in French, the main verb moves to T across negation. Also, it is well known that T moves to C in interrogative sentences in English but this is done across an intervening subject between T and C as in (64):

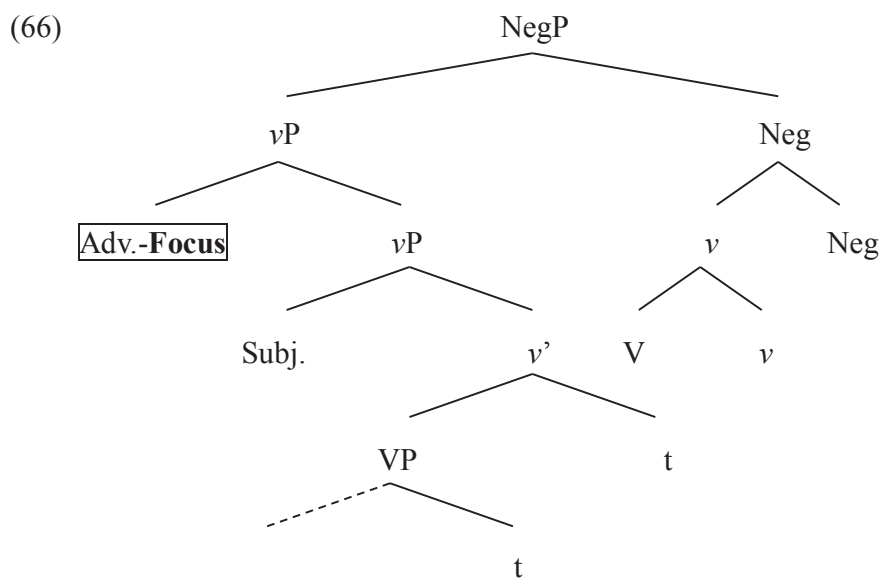
- (64) a. Will you come?  
 b. [CP [C' will [TP you [T' t [ ... come ]]]]
- 

In Japanese, we have observed that no element can stay in the middle of a complex predicate as depicted in (48) (here repeated as (65)):

<sup>83</sup> This holds unless there is an intervening ‘head’, for the head movement is known to obey the Head Movement Constraint (HMC) (Travis 1984).



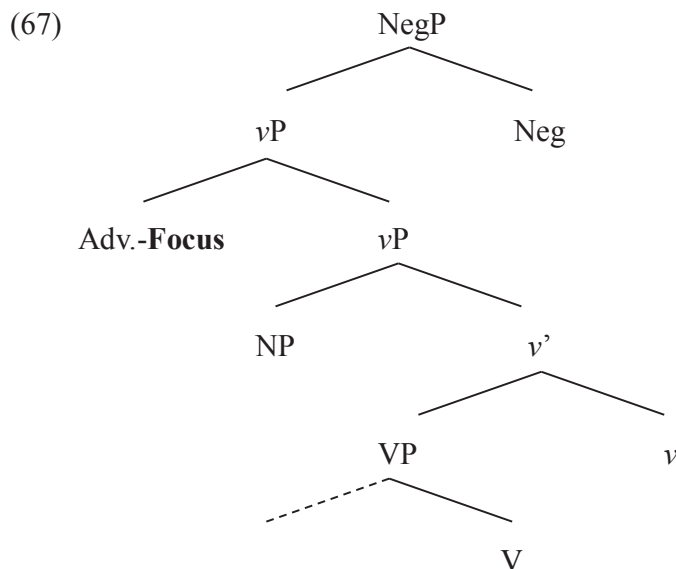
the complex head is formed via head movement, we get a wrong prediction about the possible scope of the focus particle. As discussed above, a focus particle cannot be interpreted in the middle of a complex predicate, but if the complex is formed via head movement, there is no clear reason why a focus particle has to be interpreted above the whole complex. For instance, consider the following abstract structure:



In (66), the complex head ‘ $[_{Neg}[_v[V]-v]-Neg]$ ’ is formed via head movement of V to  $v$  and of ‘ $[_v[V]-v]$ ’ to Neg. With this structure, the focus particle attached to a low adverb such as manner adverbs should be able to be interpreted below negation. Recall that focus particles in Japanese are not PPIs (see Chapter 3). Moreover, recall that a focus particle cannot be interpreted in the middle of the complex predicate even when there is no negation (Section 3.1 and 3.2 in this chapter). Thus, under the head movement approach to complex predicate formation, the impossibility of the narrow scope interpretation of focus particles remains a mystery: something that should be accounted for independently

of complex predicate formation.

On the other hand, under the approach which adopts morphological merger (with structural adjacency), both the behavior of elements in the middle of a complex predicate and the unavailability of the narrow scope reading of the focus particles can be captured by the same notion ‘adjacency disruption’. For instance, in the structure (67) below, the adverb with the focus particle and the NP in [Spec,  $\nu$ P] are regarded as interveners for the two heads, Neg and  $\nu$ , with the definition of structural adjacency in (63):



Thus, unless these elements move to a position where they do not interfere with adjacency between the relevant heads undergoing morphological merger in the subsequent component, the derivation “crashes”. In other words, only the derivations in which intervening elements move so that they do not disrupt the adjacency survive and all the derivations in which the intervening elements do not move and thus do disrupt the adjacency cause a crash in the morphological component. In sum, what I propose is the

following:

- (68) The syntactic movement of an element is forced in case it will disrupt a necessary relation in the morphological component if it does not move.<sup>84</sup>

In this idea, the morphological component works as a kind of ‘filter’ which excludes the derivations which do not satisfy the configuration for morphological merger to apply. Note, however, that this does not mean that a concern of the morphological component is an actual motivation to drive movement in the syntax, which would be impossible without assigning a look-ahead nature to the syntactic component.<sup>85</sup> This simply says that morphological merger can be applied to heads if they are structurally adjacent and cannot if they are not structurally adjacent. That’s all. Not more and not less than that. But this is enough to capture the behavior of elements in the middle of the complex predicate in Japanese, that is, no elements can stay in the middle of the complex predicate. In summary, I claim that the following is at work:

- (69) a. In Japanese, complex predicates are formed via morphological merger in PF.  
b. Morphological merger is subject to structural adjacency.

In the next section, I will discuss one issue arising from the above definition of structural

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<sup>84</sup> This is virtually the complementary version of Bobaljik’s (1995) account of Object Shift in Scandinavian languages:

(i) The syntactic movement of the object is prohibited in case it will disrupt a necessary relation in the subsequent morphological component. (Bobaljik 1995: 59)

<sup>85</sup> In this approach, it does not matter what the relevant movements are in the syntax, since any independently possible syntactic movement will do for our purpose. Thus, I do not discuss what kind of movements we actually have, leaving it open here.



adjacency.

#### 4.3.3.4 Where should the moved elements be adjoined?

In the previous section, I adopted a ‘simple’ version of the definition of structural adjacency, that is, even adjoined elements are regarded as an intervener. In relation to this, I followed Lasnik (2003) regarding PF merger of Tense and the verb in that when there is an adverb, the adverb has to be in a position where it does not disrupt the adjacency between Tense and the verb. Then, one natural question that arises from this discussion is the following: in Japanese, the tense morpheme is combined with the predicate in the morphological component, that is, T and the predicate form a morphologically single unit. If so, does this mean that no position between T and the predicate is available for the adjunction site for moved elements?

Note that focused phrases do allow the narrow scope reading with respect to the subject which is often assumed to be located in [Spec, TP] (e.g. Takezawa 1987):

(70) *Ookuno hito-ga sushi-mo tabe-ta.*

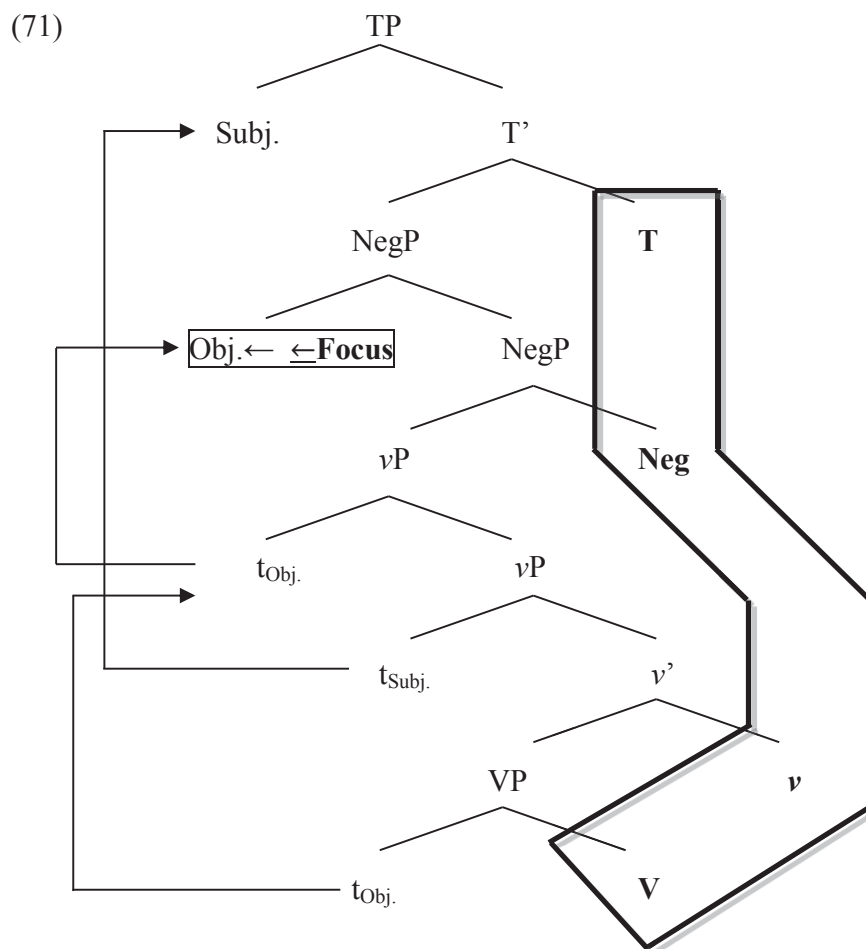
many person-NOM sushi-also eat-PAST

‘Many people also ate sushi.’

(ok many>also)

In (70), the subject *ookuno hito* ‘many people’ takes scope over the focused object, that is, the reading is ‘many people ate sushi and for each of those people, there is something other than sushi that he/she ate’. In this case, the subject can be distributed over the focused object, so the food each person ate in addition to sushi can be different. (In the

inverse scope reading ‘also>many’ for (70), which is impossible unless the object is scrambled over the subject, the existence of something other than sushi which many people ate is presupposed. This is missing in the surface scope reading of (70). Thus, in combination with the above discussion that Tense and the predicate form a morphologically single unit even in Japanese, this raises a non-trivial question about the possible landing site for moved elements. Schematically, this problem is described as follows:<sup>86</sup>



<sup>86</sup> Note that here, the focus particle is inserted after object movement, which yields the surface scope nature of the focus particles.

Since the focused object takes scope under the subject, it has to be below the subject. If the subject is located in [Spec,TP], then the focused object must be below the [Spec,TP]. But at the same time, if the heads V-v-Neg-T form a morphologically single unit via morphological merger, any position which disrupts the adjacency among those heads should not be available for moved elements, which means that the object cannot be adjoined to NegP since the adjunction to NegP disrupts the adjacency relation between T and Neg. Then, what should we do? In the next two sections, I will discuss two possible ways to resolve this issue, keeping the simple adjacency condition like (63). Both of them are independently motivated in the literature.

#### **4.3.3.4.1 Subjects are above TP in Japanese**

The first possibility is that subjects are not located in [Spec, TP] in Japanese but they are located somewhere above TP. If the subject is above TP, everything goes well now; the elements such as objects and adjuncts can be adjoined to TP but the subject can take scope over those phrases from the position above TP. In fact, this is what is proposed in Saito (2009a, b). Miyagawa (2001, 2003, 2005) makes an observation that it is harder that for the subject of a transitive verb to take scope below negation when the object is located between the subject and the negative predicate; it is easier for it to take narrow scope under negation when the object undergoes scrambling over the subject:

- (72) a. Zen'in-ga sono tesuto-o uke-nakat-ta (yo/to omo-u).  
all-NOM that test-ACC take-NEG-PAST (Part/that think-PRES)  
'All did not take that exam.' (all>Neg; \*Neg>all)<sup>87</sup>
- b. Sono tesuto-o<sub>i</sub> zen'in-ga <sub>t<sub>i</sub></sub> uke-nakat-ta (yo/to omo-u)  
that test-ACC all-NOM take-NEG-PAST (Part/that think-PRES)  
'All did not take that exam.' (all>Neg; Neg>all)

Although Saito points out that the narrow scope reading of the subject in (72)a is not impossible, unlike what Miyagawa reports, he admits that there is a contrast between the two examples above regarding the availability of the narrow scope reading under the negation. Saito assumes that when the negation takes scope over the subject, the negation in fact can take scope over [Spec, TP]. This means that in sentences like (72)a, the subject is in fact located above TP. He proposes that there is a functional head above TP which attracts the first constituent to its specifier position.<sup>88</sup>

Although my analysis does not share the crucial scope pattern of the transitive subject as given in (72) with Miyagawa (2001, 2003, 2005), it nicely fits with the idea in Saito (2009a, b) that Japanese subjects are located above TP. Note that in Japanese, sentence initial elements have several peculiar properties. For example, a *wa*-marked elements can be interpreted thematically only in the sentence-initial position (otherwise, they are interpreted as a contrastive topic). Also, the sentence initial subject has strong exhaustive listing effects (with a stative predicate). These properties are not observed

<sup>87</sup> This judgment is Miyagawa's. As I pointed out in Chapter 3, this sentence is in principle ambiguous (this ambiguity is also indicated in Saito (2009a, b); the wide scope reading of the subject is simply more prominent. As for why the sentence initial QP is harder to take scope under negation in Japanese, see Chapter 3, where it is argued that the exhaustive listing effects that those subject phrases have are a potential blocking factor for the reconstruction process.

<sup>88</sup> In Saito (2009a), this projection is expressed as 'ThP', and in Saito (2009b), this is expressed as 'PredP'.

with elements in other positions. Thus, it would not be so unreasonable to assume that the subjects are in fact located in some higher functional projection above TP, which contributes to those special interpretive effects. If this turns out to be tenable, the current analysis supports such an approach from completely independent grounds.

#### **4.3.3.4.2 Tense morpheme is not in T in Japanese**

The second possibility is that the morphemes *-ru* and *-ta* which are often regarded as present tense and past tense morphemes are in fact not in T. This is not so absurd since it is controversial whether these are tense morphemes or aspectual morphemes. For instance, the morpheme *-ta* is often regarded as a perfect morpheme. Ogihara (1999) adduces the following three major arguments made in the literature for the aspectual status of the morpheme *-ta*: (i) a tense morpheme is a deictic expression but *-ta* is not, (ii) *-ta* specifies the temporal location of the relevant event or state (a referential use) or existentially quantifies over past times without specifying the location of the relevant event or state, and (iii) *-ta* allegedly carries a result state meaning on a par with the English perfect. If the morphemes *-ru* and *-ta* are not in T but in an Aspect head below TP, the problem raised in 3.3.4 is resolved; now, the subject is at [Spec, TP] but the elements such as objects or adjuncts are adjoined to Aspect Phrase headed by *-ru* or *-ta* below TP (see also Kang 2014 for extensive arguments that the corresponding morphology in Korean is in fact not Tense morphology).

Another possibility is that the morphemes *-ru* and *-ta* are ‘tense’ morphemes but not the same ones as English tense, and they are located below the projection where the subject is situated. For example, Soga (1983), Matsumoto (1985) and Ogihara (1996)

argue that Japanese has a relative tense system in that every tense morpheme is interpreted in relation to the tense that locally c-commands it. Then, what about if we assume that the relative tense morphemes are in a head below the projection where the subject is situated? For instance, the relative tense morphemes head their own projection, say 'relTP', and this projection is dominated by another tense-related projection which denotes, say, the utterance time 'uTP' (or absolute tense). If we assume that the subject is located in the specifier of 'uTP' above 'relTP', the problem in 3.3.4 is resolved. In this case, our approach supports the view that Japanese tense morphemes *-ru* and *-ta* are different from English tense in that they are not in T, from completely independent grounds.

The two possibilities we have seen above are basically independently proposed in the literature, and thus it might be the case that both of the possibilities in fact exist in Japanese. Therefore, I leave it open here which option is better, simply noting that my analysis suggests that something similar to the ones we have seen above should hold for Japanese.

#### **4.3.4 What's wrong with the complement of V?**

So far, I have given an account for why elements cannot stay in the middle of a complex predicate. I argued that this is so because such positions disrupt the adjacency required for the heads to form a single complex head via morphological merger. However, there remains one big question under this approach: why do objects start to move from the complement of V in the first place? What I showed is simply that the presence of overt elements in the middle of a complex predicate poses a problem for the morphological

component, but this does not say anything about the complement position of the lowest verb. Under the current analysis, the complement position of V does not disrupt the adjacency between V and *v*, so the concern about the morphology does not exclude this position. Yet, on the basis of the scope patterns (both normal QPs and focus particles), elements have to be located above the whole complex, so the question is why elements start to move from the complement of V.

There are a number of possible answers to this question. For instance, one possible answer is Case checking:

(73) Objects move to [Spec,*v*P] to check its accusative Case.

As stated in (73), one possibility is that accusative objects move to [Spec,*v*P] for Case checking reason (cf. Koizumi 1995). If this is the case, however, it is unclear why even dative objects have to leave the complement position of V. (Recall dative objects in the non-double object constructions behave exactly in the same way as accusative objects: e.g. (2)-(4).) In such cases, we might be able to say that dative objects are actually also accusative-marked and on the top of it, they have a dative, but of course, this is just a stipulation if we do not have clear evidence for that. In this section, however, I will show that we can exclude the derivations where objects (accusative as well as dative) stay in the complement of V without assuming the stipulation above.

#### **4.3.4.1 Semantics as a filter**

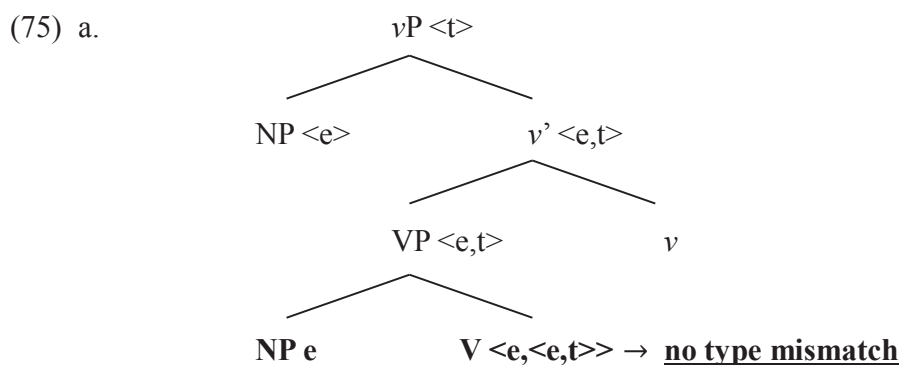
The statement in (73) above is a type of an account for why objects have to leave the

complement position of V. By contrast, in this section I will provide a type of an account for why objects ‘cannot stay’ in the complement of V, leaving the discussion of the motivation of movement open.

Consider what happens in the semantic component, which receives the input from the syntax, if an object stays in the complement of V. Roughly divided, there are two possibilities as follows:<sup>89</sup>

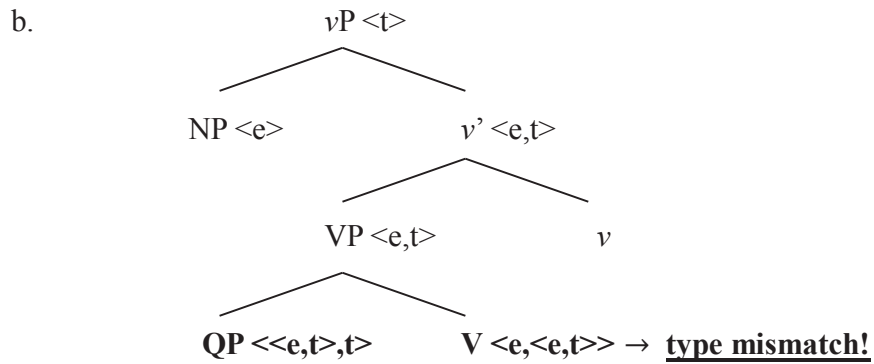
- (74) a. If it is an individual type  $e$ , semantics is fine with it.  
 b. If it is a generalized quantifier of type  $\langle\langle e,t\rangle,t\rangle$ , semantics is unhappy with it due to a type-mismatch.

One sample case, where the verb is a simple transitive verb of type  $\langle e,\langle e,t\rangle\rangle$ , is shown below:

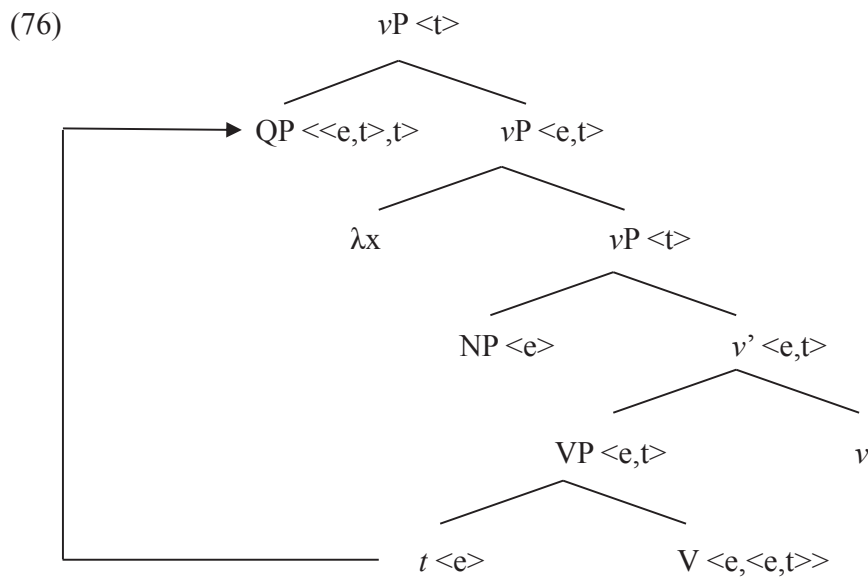


<sup>89</sup> Of course, these are not all the possibilities. For example, if we follow Landman (2004), indefinite objects are generated as the predicate type of  $\langle e,t\rangle$ . For ease of exposition, I just assume these two types here.





In (75)a, where the object is of type  $e$ , there is no type mismatch, so there is no problem in the semantic calculation, but in (75)b, due to a type mismatch between the QP and the verb, the semantics cannot continue the calculation. This means that a viable option for quantifiers necessarily involves movement of the object as in (76):



In (76), the type mismatch is resolved via the movement of the object. Recall that since we use quantifiers or other scopal elements to check their structural position relative to other scope bearers, all the derivations where object quantifiers do not move cause a

problem for the semantics and only the derivations where objects move survive, which fits with what we have observed.<sup>90</sup> Thus, in this case, the type mismatch in the semantics acts as a kind of filter to exclude the derivations with a problem such as (75)b.

Here, one crucial assumption is that if the semantic component receives a syntactic structure like (75)b at the interface, the derivation ‘crashes’ in the sense that the semantics cannot calculate it. To ensure this, I assume the following:<sup>91</sup>

(77) No movement operation exists in the semantics.

This states that there is no (obligatory) quantifier raising (QR) to save type mismatch ‘in the semantics’. More precisely, here I do not assume any movement operation which occurs in a component other than the syntax. This seems to be a rather natural assumption if we regard movement as a kind of Merge (i.e., internal Merger) as in Chomsky (2000, 2001, 2008). Since Merge operation is not defined (or maybe does not exist) in a component other than the syntax, movement operation, which is a type of Merge, also cannot be defined in other components.<sup>92</sup> Therefore, it is too late when the semantics receives the structure (75)b from the syntax; there is no way left for the semantics to resolve the problem, only ending up with ‘crashing’.

In the discussion above, I have shown that quantifiers can be excluded in the complement position of V due to a type mismatch. In fact, this line of reasoning can also be extended to focus particles. We already saw that focus particles can be attached to type

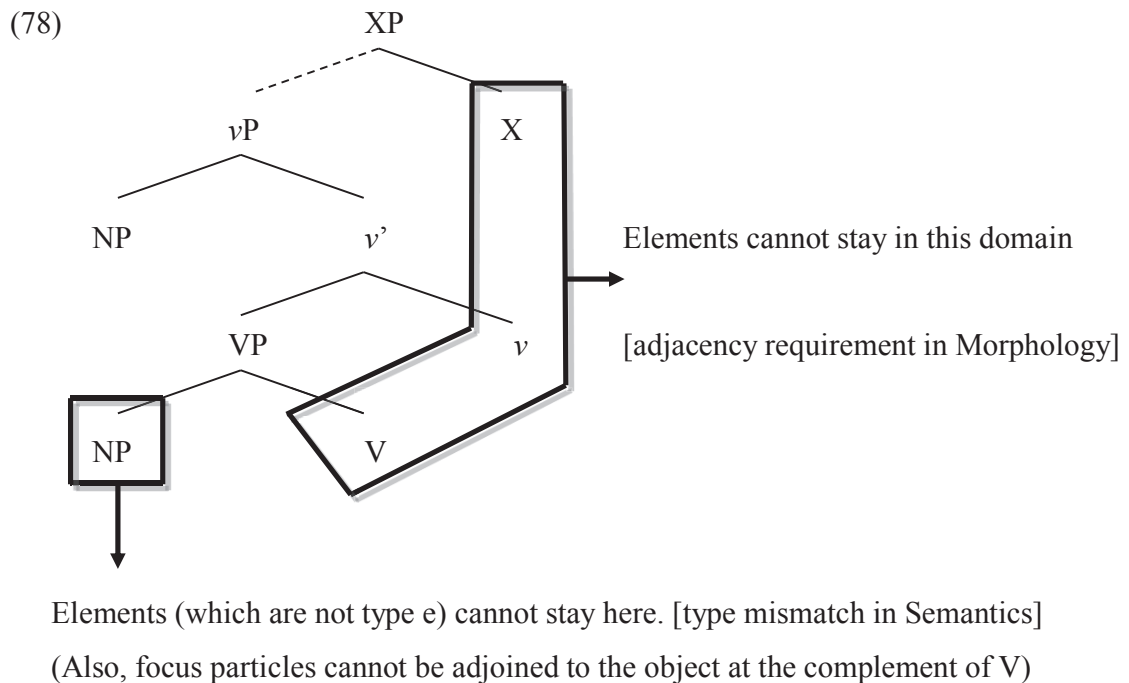
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<sup>90</sup> This means that in principle, elements of type *e* can remain in the complement of V ‘semantically’.

<sup>91</sup> It would actually suffice for our purposes that there is no traditional QR in Japanese.

<sup>92</sup> So I do not assume morphological merger as an operation which moves a morpheme to some place in the structure. I simply assume it is an operation that turns adjacent heads into a complex head.

e elements like proper names, but if the focus particle attached to the element in the complement of V, the same problem we have seen above arises, that is, a type mismatch in the semantics. Notice that focus operators are basically sentential operators (Rooth 1985, Nakanishi 2006 for Japanese focus particles), so they cannot do their job if they appear in non-sentence type position. This means that when a focus particle is attached to the complement of V, such a representation cannot be treated in the semantics since in that case, the focus particle is located in a non-sentence type position (the transitive verb is of type  $\langle e, \langle e, t \rangle \rangle$ , not of type  $t$ ). Thus, just like quantifiers, the derivation where the object moves (at least above  $vP$ , which is assumed to be of type  $t$ ) survives. In sum, what I propose is the following:



Therefore, in all the relevant sentences we have seen so far, every (scopal) element has to be higher in the structure so that it does not cause a problem either in the morphology or

the semantics. In sum, under this approach, what we have to assume is just the following two, which account for the behavior of various scope bearing elements in Japanese:

- (79) a. Complex predicates are formed via morphological merger in Morphology.  
b. Quantifiers cannot stay in the complement of V due to a type mismatch in Semantics.

In the section below, I will discuss one alternative to the assumption (79)b, reconsidering the definition of structural adjacency for morphological merger.

#### 4.3.4.2 Adjacency based on simple c-command

In the previous section, I discussed why an object cannot stay at the complement of V. I have argued that when a quantificational object remains in the complement of V, the semantics cannot handle such a representation due to a type-mismatch, with the assumption that there is no ‘movement’ operation in the semantic component. This reasoning implies that if the object is an individual type element (i.e., type *e*), it can stay in the complement of V. However, since it is not a scope bearer, there is simply no way to check whether the element is really in the complement of V or not.<sup>93</sup> In this section, I will propose an alternative approach, where even the complement position of V is not available for the object because the position is counted as an intervener for the morphological merger of V and *v*.

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<sup>93</sup> It is assumed that the object in the complement position of a transitive intentional verb receives *de dicto* reading (Zimmerman 1993) and the one at a position higher than that receives *de re* reading. However, even if the object undergoes movement to a higher position, if it reconstructs to the original position, it still can receive the *de dicto* reading, and hence an intensional transitive verb also does not help in this context.

In Section 3.4.2, I defined the adjacency for morphological merger as follows:

(80) *Structural Adjacency*

X and Y are structurally adjacent if and only if there is no overt Z which is asymmetrically c-commanded by X and asymmetrically c-commands Y.

In this definition, I use ‘asymmetric c-command’ without any justification. However, this point is not so clear when we look at what ‘interveners’ are in the literature. For example, in Rizzi (1990), the definition of Relativized Minimality is based on simple c-command, not asymmetric c-command:

(81) *Relativized Minimality*: X  $\alpha$ -governs Y only if there is no Z such that

- (i) Z is a typical potential  $\alpha$ -governor for Y,
- (ii) Z c-commands Y and does not c-command X. (Rizzi 1990: 7)

Then, what happens if we adopt this simple c-command for the definition of our structural adjacency? This is given below:<sup>94</sup>

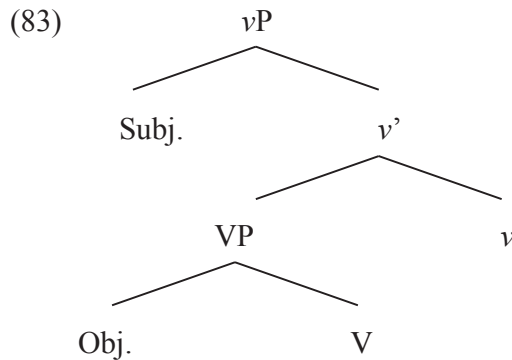
(82) *Structural Adjacency* (version 2)

X and Y are structurally adjacent iff there is no overt Z which is c-commanded by X and c-commands Y.

Now, let us consider the structure below:

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<sup>94</sup> I thank to Željko Bošković for pointing out this possibility to me.



With the definition based on simple c-command (82), an object in the complement of V is also regarded as an intervener for V and  $v$ ;  $v$  c-commands the object and the object c-commands V. In this case, V also c-commands the object (i.e. mutual c-command), but this does not matter for the definition of adjacency (82). This means that if the object remains in the complement of V, such a derivation crashes in the morphology, for morphological merger cannot apply. Thus, only derivations where the object moves to some position where it does not disrupt adjacency survive; the result we have obtained from the assumptions in the previous section is now derived from just one assumption.

Then, which approach is better, the mixture of morphological and semantic concerns as in the previous section or the one in this section, where all movements occurs due to morphological concerns? This is not a trivial question and in fact, very difficult to resolve. As I said above, the type mismatch approach implies that the complement position of the verb is not always unavailable for the object. The position is available if the object is of type e. By contrast, the approach in this section makes the complement position unavailable uniformly, regardless of the semantic type of the object. Although these two make different predictions about the availability of the complement position of the verb, currently I do not have any evidence to select one over the other. Moreover, it is

also possible that the complement position of the verb is unavailable for both of the reasons since the type-mismatch in the semantics and the adjacency disruption in the morphology are quite distinct issues. Therefore, I leave it open which option is better here, noting that the object cannot stay in the complement position of the verb for either (or both) of the reasons.

#### 4.4. Evidence for the morphological approach

In the sections above, I proposed that elements cannot stay in the middle of a complex predicate which forms a morphologically single unit due to the adjacency disruption for morphological merger, which applies in the morphology. Then, as one natural prediction from this approach, it follows that if a complex predicate does not form a morphologically single unit (say, it consists of two morphologically distinct units), elements should be able to stay in the middle of it. Below, I will demonstrate that this is indeed the case.

##### 4.4.1 Syntactic causative consisting of two distinct units

Kuroda (1981) observes that a syntactic causative can be broken up by an intervening negative morpheme *-ana*:

(84) Watasi-wa Taroo-ni tabako-o      **suw-anaku sase-ru.**

I-TOP      Taro-DAT tobacco-ACC smoke-NEG CAUSE-PRES

‘I cause Taro not to smoke cigarettes.’

(Kuroda 1981: 106)

The element *-ku* that appears after the negative morpheme *-ana* is an inflectional ending of the *renyoo* form (continuative or infinitival form) of the adjective (see (17) and (18) for the inflectional pattern of adjectives). For the sentence above, Kuroda (1981) assumes that it involves the embedding of the negative sentence under the causative as follows:

- (85) Watasi-wa [Taroo-ni tabako-o suw-ana] sase-ru.  
 I-TOP Taro-DAT tobacco-ACC smoke-NEG CAUSE-PRES (Kuroda 1981: 106)

Then, he argues that the predicate in (84) (i.e., *suw-anaku sase* ‘[cause [not smoke]]’) is a negative counterpart of the affirmative one as in (86) below:

- (86) Watasi-wa Taroo-ni tabako-o suw-ase-ru.  
 I-TOP Taro-DAT tobacco-ACC smoke-CAUSE-PRES  
 ‘I cause Taro to smoke cigarettes.’ (Kuroda 1981: 106)

He maintains that the causative *-sase* in (84) is truly a manifestation of the causative verb itself and not the causative form of the verb *-su* ‘do’, for in Japanese, when we make the causative form of the verb *-su* ‘do’, its surface realization would be *-s-ase* ‘do-cause’, which is superficially identical to the one in (84), which is shown in the following:

- (87) a. Taroo-ga benkyoo-o su-ru.  
 Taro-NOM study-ACC do-PRES  
 ‘Taro studies.’



b. Watasi-wa Taro-ni benkyoo-o s-ase-ru.

I-TOP Taro-DAT study-ACC do-CAUSE-PRES

‘I cause Taro to study.’

(Kuroda 1981: 107)

Kuroda dismisses this possibility, indicating that the embedding sentence in (84) (i.e., the one in the bracket in (85)) cannot be changed into the one with the verb *-su*.<sup>95</sup>

(88) \*Taro-ga tabako-o saw-anaku su-ru.

Taro-NOM tobacco-ACC smoke-NEG do-PRES

(Kuroda 1981: 108)

If the causative morpheme *-sase* in (84) is the causative form of the verb *-su*, the sentence above should be grammatical, just as the transitive sentence (87)a, which is embedded in the causative sentence in (87)b, is grammatical. Thus, Kuroda (1981) concludes that the morpheme *-sase* in (84) is the manifestation of the causative morpheme itself.

Note that the negative morpheme appearing in the predicate in (84) is an actual negation, not a part of the lexical compound which happens to contain the sequence *-nai/naku*. The negation part can license an NPI *-sika* ‘except’:

(89) Watasi-wa Hanako-ni nyuuseihin-sika tabe-naku sase-ru.

I-TOP Hanako-DAT milk.product-except eat-NEG CAUSE-PRES

‘I make Hanako eat only milk products.’

(Kuroda 1981: 110)

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<sup>95</sup> Mamoru Saito (p.c.) points out to me that the judgment here is not so clear. I admit that (88) does not sound so bad, but when we change the present tense to the past tense, it sounds to me much worse, which is not expected if the predicate in (85) really consists of the verb *su* ‘do’ and the causative (it is not clear why a factor like tense affects the acceptability of (88)), though this does not affect the discussion; even if the predicate in (85) consists of the verb *su* ‘do’ and the causative, what matters is whether the relevant complex predicate is formed with morphologically distinct units or not.

cf. \*Watasi-wa Hanako-ni nyuuseihin-sika tabe sase-ru.

I-TOP Hanako-DAT milk.product-except eat-CAUSE-PRES

‘I make Hanako eat only milk products.’

If the negative morpheme *-naku* is a part of a lexical compound in (84), it should not be able to license the NPI as shown below:

(90) \*Taroo-sika nasakenai.

Taro-except miserable

Intended ‘OnlyTaro is miserable.’<sup>96</sup>

The predicate *nasakenai* ‘miserable’ originally consists of the noun *nasake* ‘sympathy’ and the negative morpheme *-nai* ‘not’ but has the special meaning ‘miserable’ as a whole. Since the negative morpheme *-nai* in this predicate is a part of a lexical compound, it cannot license the NPI, unlike the one in (84).

Moreover, with respect to the negative morpheme in the predicate in (84), quantifiers do show scope ambiguity, which is also unexpected if it were a part of a lexical compound:

(91) Watasi-wa Ziroo-ni subete-no tabako-o suw-anaku sase-ta.

I-TOP Ziro-DAT all-GEN tobacco-ACC smoke-NEG CAUSE-PRES

‘I made Ziro not smoke all cigarettes.’ (all>Neg; Neg>all)

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<sup>96</sup> Note that *-sika* ‘except’ NPI in principle can appear in the subject position in Japanese.

(92) Watasi-wa Ziroo-ni 10-pon-izyoo-no tabako-o suw-anaku sase-ta.

I-TOP Ziro-DAT 10-CL-or.more-GEN tobacco-ACC smoke-NEG CAUSE-PRES

‘I made Ziro not smoke 10 or more cigarettes.’ (10 or more>Neg; Neg>10 or more)

Then, as usual, when the focus particle is attached to the object, it has to take scope over the negation:

(93) Watasi-wa Ziroo-ni tabako-**mo/dake** suw-anaku sase-ta.

I-TOP Ziro-DAT tobacco-also/only smoke-NEG CAUSE-PRES

Lit. ‘I made Ziro not smoke also/only cigarettes. (also/only>Neg; \*Neg>also/only)

Thus, the causative morpheme *-sase* in the structure like (84) takes a structure up to NegP (at least) as its complement.

One significant property of this form is that the predicate is not a morphologically single unit. Rather, it consists of two distinct parts. By contrast, the affirmative counterpart of it forms a morphologically single unit. For ease of exposition, the relevant sentences are repeated below:

(94) a. Watasi-wa Taroo-ni tabako-o suw-anaku sase-ru.

I-TOP Taro-DAT tobacco-ACC smoke-NEG CAUSE-PRES

‘I cause Taro not to smoke cigarettes.’

b. Watasi-wa Taro-ni tabako-o suw-ase-ru.

I-TOP Taro-DAT tobacco-ACC smoke-CAUSE-PRES

‘I cause Taro to smoke cigarettes.’

(Kuroda 1981: 106)

As Kuroda discusses, these two sentences are syntactically very similar; in both sentences, the causee, which has the role of the embedded subject, is realized with a dative case (these dative phrases can bind a subject-oriented anaphor *zibun* in either of the sentences). However, in (94)a, *suw-anaku* ‘V-NEG’ and *-sase* ‘CAUSE’ are not a single unit since they can be separated by an intervening adverb, which is impossible in the case of (94)b:

(95) a. Watasi-wa Taro-ni tabako-o suw-anaku kyoo totuzen sase-ru.

I-TOP Taro-DAT tobacco-ACC smoke-NEG today suddenly CAUSE-PRES

‘I cause Taro not to smoke cigarettes.’

b. \* Watasi-wa Taro-ni tabako-o suw(u) kyoo totuzen (s)ase-ru.

I-TOP Taro-DAT tobacco-ACC smoke today suddenly CAUSE-PRES

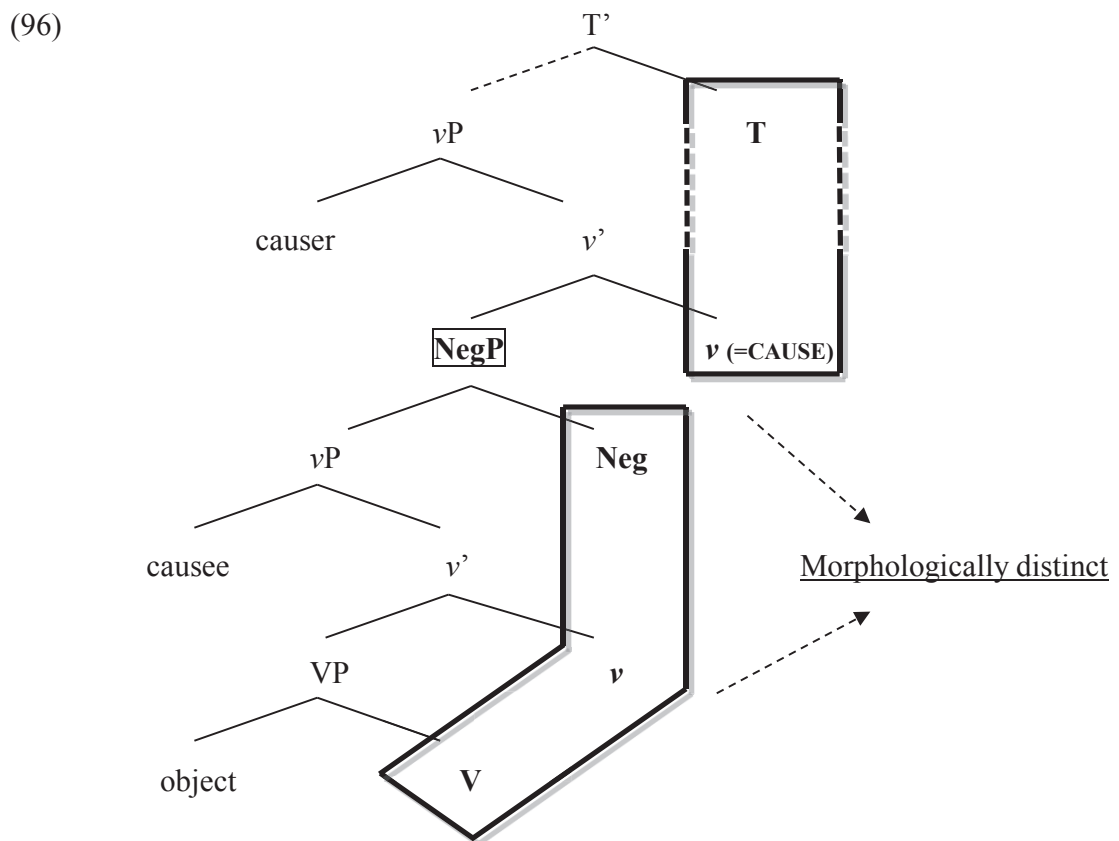
‘I cause Taro to smoke cigarettes.’

Thus, even though the form *suw-anaku sase* ‘smoke-NEG CAUSE’ shares the basic syntactic property with the form *suw-ase* ‘smoke-CAUSE’, the former consists of morphologically distinct units *suw-anaku* and *-sase*.

#### 4.4.2 Availability of the intermediate scope: V-NEG CAUSE

If the predicate *V-anaku sase* ‘V-NEG CAUSE’ in (84) does not form a morphologically

single unit, the current approach predicts that in this case, arguments of the embedded verb (or adjuncts) should be able to stay in the middle of the two units, that is, focus particles should be able to be interpreted between the two. This prediction is schematically presented as follows:



**Prediction:** This NegP can be the final landing site of elements.

In (96), even if elements are adjoined to NegP below the causative *v*, no adjacency issue arises since the negation and the causative do not undergo morphological merger.<sup>97</sup> Thus,

<sup>97</sup> For ease of exposition, I put the causative verb *-sase* in the higher *v*. Note that the discussion here does not change if we put the causative verb in *V*, which takes NegP as its complement and put *v* above this causative VP as long as the causative verb and *v* form a morphologically single unit.

the prediction from this is that focused elements should be able to be interpreted above the negation but below the *vP* of the causative *-sase*.

Surprisingly, this prediction is borne out. Look at the following:

(97) Taroo-wa Ziroo-ni biiru-**mo** nom-anaku sase-ta.

Taro-TOP Ziro-DAT beer-also drink-NEG CAUSE-PAST

ok CAUSE>also>NEG

‘Taro made Ziro not drink beer in addition to some drink other than beer.’

The sentence above is felicitous in the following situation: Ziro doesn’t drink whiskey because he doesn’t like its taste (and this is not caused by Taro). Then, Taro somehow made Ziro not drink beer (i.e., what Taro caused is ‘Ziro doesn’t drink beer, either’). In this case, Taro made Ziro do something only once; Taro made Ziro not drink beer in addition to some drink which Ziro doesn’t drink regardless of Taro. Of course, the reading where the focus particle takes scope over the causative ‘also>CAUSE>NEG’ is also possible since Japanese has scrambling operation. In such a case, the number of times Taro made Ziro do something must be two or more (i.e., Taro made Ziro not drink beer and there is some drink other than beer which Taro made Ziro not drink). Furthermore, in (97), the focus particle cannot be interpreted below the negation as usual. The significance of (97) is in the availability of the intermediate scope reading of the focus particle. This reading is predicted to be available under the current approach and (97) shows that this is indeed the case.

This result does not change in the case where the adjunct is focused. Look at (98)

below:

(98) Taroo-wa Hanako-ni koohii-o ofisu-de-**mo** nom-anaku sase-ta.

Taro-TOP Hanako-DAT coffee-ACC office-at-also drink-NEG CAUSE-PAST  
ok CAUSE>also>NEG

‘What Taro caused is that Hanako doesn’t drink coffee in her office in addition to some place where she does not drink coffee (regardless of Taro).’

In this case too, the intermediate scope is available. The number of times Taro made Hanako do something can be one, which is unexpected if the additive focus particle *-mo* ‘also’ must take scope over the causative; in that case, there must be some place other than the office such that Taro made Hanako not drink coffee at that place, in addition to her office, which does not necessarily hold for the sentence (98).<sup>98</sup>

Furthermore, when we add negation on the top of the whole predicate, the focused element now can take scope between the two negations, as expected:

(99) Taroo-wa Hanako-ni koohii-o ofisu-de-**mo** nom-anaku

Taro-TOP Hanako-DAT coffee-ACC office-at-also drink-NEG  
sase-(ra)re-nakat-ta.

CAUSE-CAN-NEG-PAST

ok NEG>also>NEG<sup>99</sup>

‘What Taro couldn’t cause is that Hanako also doesn’t drink coffee in her office.’

---

<sup>98</sup> Again, the wide scope of the focus particle is also available due to the presence of scrambling operation in Japanese, which is not important here.

<sup>99</sup> More precisely, what is available here is NEG>CAN>CAUSE>also>NEG.

By contrast, as already observed, when the predicate forms a morphologically single predicate, the focused element must take scope over the whole complex. Compare (99) with (100):

(100) Taroo-wa Hanako-ni koohii-o ofisu-de-**mo**

Taro-TOP Hanako-DAT coffee-ACC office-at-also

nom-sase-(ra)re-nakat-ta.

drink-CAUSE-CAN-NEG-PAST

‘It is also the case for the office that Taro couldn’t make Hanako drink coffee there.’

(ok **also**>NEG>CAN>CAUSE \*NEG>**also**>CAN>CAUSE

\*NEG>CAN>**also**>CAUSE \*NEG>CAN>CAUSE>**also**)

The impossibility of the intermediate scope in (100) is predicted under the current analysis; the predicate *nam-sase-(ra)re-nakat-ta* ‘drink-CAUSE-CAN-NEG-PAST’ forms one big complex predicate, which is morphologically a single unit, and hence the presence of an element in the middle of the complex predicate would disrupt the adjacency which is necessary for the heads to undergo morphological merger. Thus, the data above support the analysis on which when a complex predicate forms a morphological single unit, overt elements cannot disrupt it structurally.

#### 4.4.3 Another case: *V-taku sase* ‘V-want(Adj.) CAUSE’

The adjective *-ta* ‘want’ and the causative *-sase* is another case which supports the



current analysis. In this case, the predicate as a whole does not form a morphologically single unit. This contrasts with *V-ta-gar-sase* ‘V-want(Adj.)-GAR-CAUSE’, that is, another verb *-gar* ‘GAR’ is attached to the adjective *-ta* and the elements form a single unit as a whole. The verb *-gar* changes the attached adjective into the verb and expresses the meaning ‘acts as if ...’ or ‘show the feeling of ...’. The two relevant sentences are given below:

- (101) a. Taroo-wa kome-o tabe-ta-i.  
           Taro-TOP rice-ACC eat-want-PRES  
           ‘Taro wants to eat rice.’
- b. Taroo-wa kome-o tabe-ta-gar-u.  
           Taro-TOP rice-ACC eat-want-GAR-PRES  
           ‘Taro wants to eat rice.’

(101)a simply expresses Taro’s desire of eating rice, but (101)b sounds that Taro does some action to express his desire of eating rice.

Interestingly, although these two form express a similar meaning, when the two forms are attached to the causative *-sase*, they behave differently; the form in (101)a becomes a distinct unit from the causative but the one in (101)b forms one morphological unit with the causative:

- (102) a. Taroo-wa Ziroo-ni nasu-o tabe-taku sase-ta.  
 Taro-TOP Ziro-DAT eggplant-ACC eat-want CAUSE-PAST  
 ‘Taro made Ziro want to eat an eggplant.’
- b. Taroo-wa Ziroo-ni nasu-o tabe-taku kyoo totuzen sase-ta.  
 Taro-TOP Ziro-DAT eggplant-ACC eat-want today suddenly CAUSE-PAST  
 ‘Taro made Ziro want to eat an eggplant.’
- (103) a. Taroo-wa Ziroo-ni nasu-o tabe-ta-gar-ase-ta.  
 Taro-TOP Ziro-DAT eggplant-ACC eat-want-GAR-CAUSE-PAST  
 ‘Taro made Ziro want to eat an egg plant.’
- b. \* Taroo-wa Ziroo-ni nasu-o tabe-ta-gar(a)  
 Taro-TOP Ziro-DAT eggplant-ACC eat-want-GAR  
kyoo totuzen sase-ta.  
 today suddenly CAUSE-PAST  
 ‘Taro made Ziro want to eat an eggplant.’

This indicates that the predicate *V-taku sase* ‘V-want CAUSE’ in (102)a consists of two distinct units but the one *V-ta-gar-ase* ‘V-want-GAR-CAUSE’ in (103)a forms a morphologically single unit.

Then, a prediction can be made regarding these predicates; when a focus particle is attached, the particle can be interpreted in the middle of the predicate in (102)a but this should be impossible with the predicate in (103)a. This is borne out:

(104) Taroo-wa Ziroo-ni nasu-**mo** tabe-taku sase-(ra)re-nakat-ta.

Taro-TOP Ziro-DAT eggplant-also eat-want CAUSE-CAN-NEG-PAST

ok NEG>(CAUSE>)also >want

‘Taro couldn’t make Ziro want to eat an eggplant in addition to something other than an eggplant which Ziro wants to eat.’<sup>100</sup>

Here I add negation above the causative verb to make it easier to see whether the position in the middle of the predicate is available or not. Significantly, the focus particle can be interpreted between the negation and the causative. This contrasts with the case where the predicate *V-ta-gar-ase* ‘V-want-GAR-CAUSE’ is used. In that case, the focus particle must take scope over the whole complex predicate:

(105) Taroo-wa Ziroo-ni nasu-**mo** tabe-ta-gar-ase-(ra)re-nakat-ta.

Taro-TOP Ziro-DAT eggplant-also eat-want-GAR-CAUSE-CAN-NEG-PAST

\* NEG>(CAUSE>)also>want

‘Taro couldn’t make Ziro want to eat an eggplant in addition to something other than an eggplant that Ziro wants to eat.’<sup>101</sup>

ok also>NEG(>CAUSE>want)

‘Taro couldn’t make Ziro want to eat an eggplant and there is something other than an eggplant that Taro couldn’t make Ziro want to eat.’

The two forms *V-taku sase* ‘V-want CAUSE’ and *V-ta-gar-ase* ‘V-want-GAR-CAUSE’

<sup>100</sup> The wide scope reading over the negation is also possible (via scrambling), which is not important here.

<sup>101</sup> Again, the wide scope reading over the negation is also possible (via scrambling), which is not important here.

are semantically similar, but morphologically different. This difference contributes to the different scopal behavior as shown above. Since *V-taku sase* ‘V-want CAUSE’ consists of morphologically distinct units, the “intermediate” position is available as the final landing site of the movement, while such a position is unavailable with the morphologically single predicate *V-ta-gar-ase* ‘V-want-GAR-CAUSE’. Thus, the data above again support the current approach, which is summarized as follows:

- (106) a. When the predicate consists of morphologically distinct units, elements can stay in the middle of it.
- b. When the predicate forms a morphological single unit, elements cannot stay in the middle of it (due to adjacency disruption for morphological merger).

#### 4.4.4 Is the *renyoo* form of adjectives special?

Here, one might consider the following: when the intermediate scope is possible for focused elements in the above cases, the adjectives end with *-ku* (i.e., *renyoo* form ‘continuative or infinitival form’), so this inflectional form is somewhat special in that it allows the intermediate scope for focused phrases. Below, I will show that this is not the case.

First, let us look at the following:

- (107) *Taroo-wa kome-o tabe-taku-na-i.*

Taro-TOP rice-ACC eat-want-NEG-PRES

‘Taro doesn’t want to eat rice.’

In (107), the adjective *-ta* takes the *renyoo* form before the negation. Significantly, in this case, *-ta* ‘want(Adj.)’ and the negation form a morphologically single unit, unlike the case of *-ta* ‘want(Adj.)’ and the causative in (102):

(108)\* Taroo-wa kome-o tabe-taku kyoo (totuzen) na-i.

Taro-TOP rice-ACC eat-want today suddenly NEG-PRES

‘(Suddenly) Taro doesn’t want to eat rice today.’

In (108), the adjective *-ta* cannot be separated by an intervening adverb, even though it takes the *renyoo* form.

Moreover, the adjective *-ta* in the *renyoo* form shows contextual allomorphy with the negation. In Japanese, the ending of the *renyoo* form of adjectives can be *-ka*, not *-ku*, right before the negation as shown below (this form sounds more colloquial and informal):

(109) A-*ku* → A-*ka*/ \_\_\_\_ *ana* (*ana* = NEG)<sup>102</sup>

Thus, the sentence in (107) optionally can be the following:

(110) Taroo-wa kome-o tabe-ta**ka**-na-i.

Taro-TOP rice-ACC eat-want-NEG-PRES

‘Taro doesn’t want to eat rice.’

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<sup>102</sup> ‘A’ here is the adjectival root.

Since the adjective *-ta* cannot be separated from the negation and the two show contextual allomorphy, I conclude that the adjective *-ta* and the negation form a morphologically single unit in this case.

Then, this can be used as a test to check which of the following two is right:

- (111) a. If the *renyoo* form of adjectives is somewhat special in allowing the intermediate scope for focus particles, the intermediate scope should be possible in a sentence like (107);
- b. If what matters is whether the predicate forms a morphologically single unit or not, the predicate in (107) should not allow the intermediate scope since the adjective *-ta* and the negation form a single complex predicate in this case.

The data below demonstrates that the second one is right:

- (112) Watasi-wa kome-**mo** tabe-taku-na-i.

I-TOP rice-also eat-want-NEG-PRES

ok als>NEG>want

‘I don’t want to eat rice, either.’

\*NEG>also>want

‘It is not the case that I want to eat rice, in addition to something other than rice that I want to eat.’

In (112), the intermediate scope between the adjective *-ta* and the negation is clearly

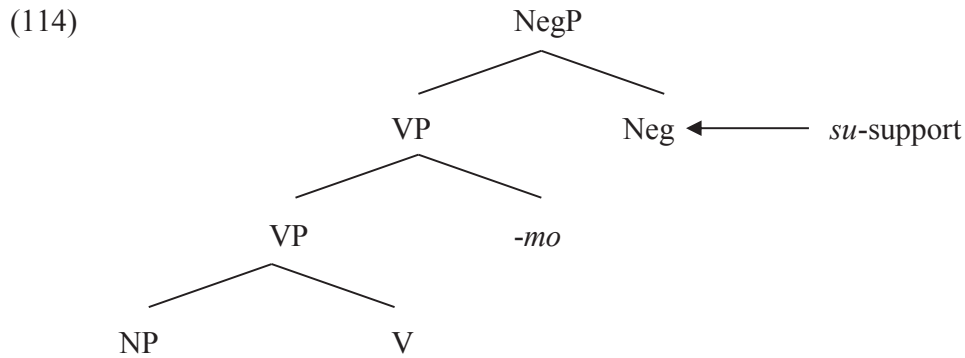
impossible. Therefore, this indicates that the *renyoo* form of adjectives does not play a special role in allowing the intermediate scope for focused elements. Rather, what is crucial is whether the predicate forms a morphologically single unit or not. In (112), the adjective *-ta* and the negation form one complex predicate, and hence the intermediate scope of focused phrases is unavailable. Thus, the data above again support the current claim that in Japanese, elements cannot stay in the middle of a complex predicate which forms a morphologically single unit.

#### 4.5. Focus particle within complex predicates?

Japanese allows the following form of a predicate, where it seems that a focus particle appears in the middle of a complex predicate:

- (113) Taroo-wa    hon-o        yomi-**mo**    si-nakat-ta.  
           Taro-TOP   book-ACC   read-also   do-NEG-PAST  
           Lit. ‘Taro also didn’t read a book.’

According to Aoyagi (1998, 2006), in the cases like (113), the sentence has the following structure:



Aoyagi (1998, 2006) assumes that the focus particle *-mo* is adjoined to the VP, and that this adjunction to the VP makes it impossible for the verb and the negation to form one unit, which induces *su*-support to the negative morpheme, just like *do*-insertion to Tense in English.

This analysis raises several questions for the current analysis: the focus particle is an intervener for the verb (or *v*) and the negation in (114), so we expect that in this case, the morphological merger for those heads cannot apply. Does this mean that we need some special operation *su*-support like *do*-insertion in English, which supports the otherwise stranded morpheme? In this section, I will provide the answers to these questions. More concretely, I will argue that morphological merger is blocked in the structure like (114), but that there is no operation like *su*-support in Japanese, hence an expression which has the structure equivalent to (114) does not exist in Japanese, contrary to what has been claimed in the literature (Aoyagi 1998, 2006, Kishimoto 2007, 2008, a.o.).

#### 4.5.1 Where is the focus particle located?

In the literature, it is often assumed that a focus particle within a predicate is located



where it surfaces. For example, in the predicate (113) (repeated as (115) below), it is above the verb *yom* ‘read’ and below the negation:

- (115) Taroo-wa hon-o yomi-**mo** si-nakat-ta.  
Taro-TOP book-ACC read-also do-NEG-PAST  
Lit. ‘Taro also didn’t read a book.’

This led many authors to assume a structure like (114), but does this really reflect the structure for the predicate in (115)?

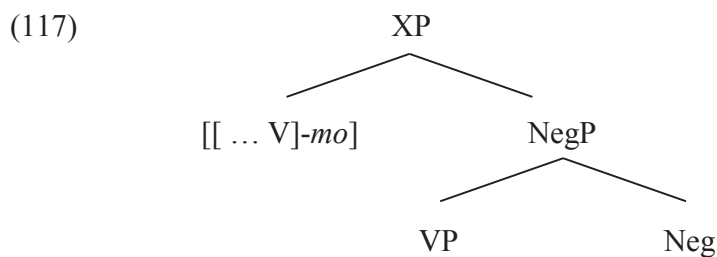
To check this, let us look at the possible scope readings for the sentence (115). If it has the structure in (114), since the focus particle is c-commanded by the negation, it should allow the narrow scope reading under the negation. However, such a reading does not exist in (115):

- (116) Taroo-wa hon-o yomi-**mo** si-nakat-ta.  
Taro-TOP book-ACC read-also do-NEG-PAST  
ok also>Neg  
‘Taro didn’t read a book in addition that he didn’t do something other than reading a book.  
\* Neg>also  
‘Taro didn’t read a book in addition that he did something other than reading a book.’

For example, the narrow scope reading below the negation can express the situation where Taro picked up the book but he didn't read it, but the sentence is infelicitous under this scenario. For the sentence to be felicitous, it must be the case that Taro didn't do something in addition that he didn't read a book, which is the wide scope reading over the negation. This means that the structure in (114) does not correctly reflect the scope property of the predicate with the focus particle, and the predicate with the focus particle in (115) must have the structure other than the one in (114).

#### 4.5.2 No *su*-support

In the previous section, I showed that the structure in (114) is not right for a predicate with a focus particle; it makes a wrong predication about the scope of the focus particle. Based on the scope property of the focus particle, at least the predicate to which the focus particle is attached must occupy a position higher than the negation; otherwise, the focus particle does not take scope over the negation. Thus, what we need is the following:



In (117), the predicate to which the focus particle is attached occupies some position higher than the negation. Since the focus particle is adjoined to this predicate, it takes scope over the negation. The scope property of the focus particle in (115) suggests that the sentence has the structure like (117), not the one in (114).

In fact, the argument here fits with the analysis in Takita (2010). He observes that in principle, the predicate with the focus particle can be fronted as a whole:

- (118) [Ringo-o tabe]-sae<sub>1</sub> Taro-ga (kinoo-wa)  $t_1$  si-ta.  
 apple-ACC eat-even Taro-NOM yesterday-TOP do-PAST  
 Lit. '[Even eat an apply], Taro did (yesterday).'
- (Takita 2010: 116)

The above data is a clear case of predicate fronting; the predicate with the object (what he assumes is VP) moves above the subject position.<sup>103</sup>

I claim that the same thing happens in our example (115); the predicate moves above the negation and then the focus particle is attached to it, which results in the obligatory wide scope of the focus particle over the negation. Then, what does this tell us? It seems to me that this suggests that Japanese does not have an operation like *su*-support, which would be like English do-support. Note that if we have *su*-support and can have the structure in (114), there is no need for the predicate to move and thus the focus particle should be able to take scope below the negation. By contrast, assume that Japanese does not have the operation *su*-support. This means that the presence of the focus particle between the two heads necessarily blocks morphological merger, and it follows that such predicates cannot exist. This indeed seems to be the case, based on the scope of the predicate in (115) where the focus particle takes scope over the negation. Thus, I conclude that Japanese does not have the operation of *su*-support and that given the adjacency requirement for morphological merger, the structure in (114) cannot exist

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<sup>103</sup> Takita argues that the verb *su* 'do' in this construction is the main verb; he argues that there are two types of *su* 'do', one is a raising predicate and the other is a control predicate.

in Japanese, for the focus particle here necessarily disrupts the adjacency between the two relevant heads. Therefore, a predicate which superficially looks like having the structure in (114) has a very different structure (i.e., predicate fronting over the negation).<sup>104</sup>

#### 4.6. Conclusion

In this chapter, I discussed the question raised in the previous chapter, namely why accusative objects have to move above negation in Japanese. To answer this, first I addressed the following two sub-questions: (i) is the movement limited to accusative objects? (ii) is the movement limited to negative sentences. As for the first question, I showed that the movement is not limited to accusative objects but applies to various elements including dative objects, argumental PPs and even adjuncts: All these elements have to move above the negation in Japanese. As for the second question, I demonstrated that the obligatory movement is in fact observed with a wide range of complex predicates, hence it is not a property which holds only for negative sentences. After answering these two questions, I addressed the bigger question why elements in general move above the (complex) predicate in Japanese. I noted that the position in the middle of a complex predicate is in principle available for interpretation, for the normal QPs can be interpreted

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<sup>104</sup> For the same reason, I argue that Japanese does not have so-called *ar*-support (*aru* = ‘be’) which is assumed to support a stranded adjective. The following data show that a focus particle has to take scope over *ar*, just as in the “*su*-support” case.

- (i) Taroo-wa yasasi-i  
Taroo-TOP kind-Pres.  
'Taroo is kind'
- (ii) Taroo-wa yasasiku-mo ar-u  
Taroo-TOP kind-also be-Pres  
'Taroo is kind also.' = Taroo has many good characters. He is kind also.
- (iii) Taroo-wa yasasiku-mo na-i  
Taroo-TOP kind-also Neg-Pres.  
'Taroo is not kind either'  
= Taroo lacks many good characters. He is not kind either.  
=/= Taroo has many good characters. But he is not kind in addition.

in the middle of a complex predicate. I regarded this as evidence that the semantics does not have any problems with such positions. Then, from the impossibility of focus particles to be interpreted in the middle of a complex predicates, I argued that such positions are not good for a PF reason, namely morphological merger. I proposed that in Japanese, complex predicates are formed via morphological merger, not head movement, and that this process requires the relevant heads to be adjacent each other, adopting a ‘structural’ version of the adjacency (not the ‘linear’ one). This makes any position in the middle of a complex predicate unavailable as the final landing site of movement. As I argued in Chapter 2, since the focus particle is inserted at the final landing site of movement where it adjoins to the moving element, this makes focus particles unable to take scope in the middle of complex predicates, which fits well the observations made in this dissertation. As for the reason why an object cannot stay in the complement of V, I maintained that this is due to a type mismatch in the semantics. Then, in the last section, I discussed one consequence of the current analysis: since the presence of a focus particle within a complex predicate necessarily disrupts the adjacency required for morphological merger, a focus particle cannot appear within a complex predicate. I showed that predicates which apparently look like complex predicates within which a focus particle appears in fact have a completely different structure. In relation to this, I claimed that Japanese does not have the process of *su*-support that parallels English *do*-support, since such an operation would make wrong predictions regarding the scope of focus particles. Thus, in this chapter, I argued that the syntactic derivation is affected by interface considerations. However, this occurs through a filtering effect of these interface considerations, which exclude certain well-formed syntactic derivations because they do

not satisfy interface conditions.

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