

JAPANESE FOCUS PARTICLES AT THE SYNTAX-SEMANTICS INTERFACE

by

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## ABSTRACT OF THE DISSERTATION

Japanese Focus Particles at the Syntax-Semantics Interface

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This dissertation centers around the syntax and semantics of the so-called focus-sensitive particles (FSP) in Japanese, such as *-dake* ‘only’. The first part deals with the scope interaction between *-dake* and modals, which is affected by the order between P(ostposition) and *-dake*. I argue that *-dake*’s scope is determined by *-dake*’s morphological ambiguity between a noun and a particle. The particle *-dake* appears after P and must move at LF to the Spec of Particle Phrase above the modal; this results in the fixed wide-scope of *-dake*. The noun *-dake* is not subjected to this movement; its scope ambiguity results from the optional V-to-I raising, which, when it takes place, semantically lowers the modal into the scope of *-dake*. This proposal differs from the previous accounts, which attributed such scope ambiguity to Quantifier Raising or other similar mechanisms.

The second part deals with the semantics/pragmatics of the Japanese FSP. First, the (in)compatibility between FSP and the topic-marker *-wa* is discussed. I propose a semantic/pragmatic account which uniformly explains the incompatibility between *sae/mo/shika* ‘even/also/except’ and *-wa*, and the compatibility between *-dake* and *-wa*. Then, the scalar implicatures of *-dake* and *-wa* are discussed. It is shown that the

contribution made by the scalar implicature of each is independent from that of the other. A scalar semantics of *-dake* is suggested.

The dissertation ends with a discussion of two related issues: the interaction between *-dake* and adverbs of quantification, and the difference among modals w.r.t. scope interaction with *-dake*.

The issues explored in this dissertation raise interesting questions about the nature of scopal relations in so-called “rigid-scope” languages such as Japanese. The scope ambiguity between *-dake* and the modal defies this conventional categorization, and calls into question the notion of the “rigidity of scope”. They also contribute to our understanding of cross-linguistic variation in natural language by investigating the semantics and pragmatics of Japanese FSP which have uses that do not directly correspond to the English *only*, *even*, etc., as well as ones that do. A closer look into such variations will help to better understand the nature of the universal grammar.

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## CHAPTER 1: Introduction

### 1.1 General introduction

In the traditional Japanese grammar, the usage of particles such as *-dake* ‘only’, *-sae* ‘even’, *-mo* ‘also’, and *-shika* ‘except (NPI)’ have been described in great depth, as have many other words in the language. In more recent linguistic literature, these particles have also received their share of attention as “focus-sensitive particles”. The term “particles” here refers to the morphemes that are typically very short (mono- or bi-syllabic) and can only appear attached to other elements such as nouns, verb stems, phrases, clauses, etc. This particular group of particles are called “focus-sensitive”, because of their semantic similarity to English words whose meaning is affected by focus, for example, *only*, as in *John only peeled potatoes*. As is well known, the meaning of this sentence depends on which phrase is focused. For example, if *potatoes* is focused, the sentence means that John peeled potatoes but he did not peel carrots and onions; if *peeled* is focused, it means that John peeled potatoes but did not cook them. While the group of Japanese particles that are discussed in this dissertation have uses that are not directly translated into English ones, and they do not associate with focus in the way *only* or *even* does in English, the use we are most concerned with is the one that corresponds to them. Therefore, I will stick to the term “focus-sensitive particles” to refer to them collectively throughout.

This dissertation explores several topics centering around syntax and semantics of these focus-sensitive particles in Japanese. The exploration is roughly divided into two parts. The first half, which occupies chapters 2 and 3, is focused on the scope



interaction between *-dake* and modals, which has been the main interest of the recent studies on these particles. The second half, chapters 4 and 5, discusses the semantics and pragmatics of the focus-sensitive particles in more depth, concentrating on their (in)compatibility with the topic-marker *-wa* and scalar implicatures.

## 1.2 Theoretical framework

In tackling the various puzzles posed by the Japanese focus-sensitive particles, the discussions in this dissertation will draw inspiration from the rich descriptive tradition in Japanese grammar, such as the etymology of *-dake* and its various usages not directly translatable to the English *only*, while adopting the more recent framework of generative grammar. I will follow the widely-held assumption in the generative framework that there is a systematic connection between syntactic structure and semantics. Specifically, I will assume that the Logical Form, or LF, is a level of syntax which is visible to semantic interpretation.

For the semantic interpretation of the focus-sensitive particles, I will adopt the cross-categorial semantics of the English *only* and *even* in Rooth's (1985) Alternative Semantics for focus, which is one of the most familiar semantics of these particles. In Alternative Semantics, focus introduces a contextually determined set of alternatives to the focused phrase, which determines the domain of quantification of a focus-sensitive operator such as *only* and *even*. The cross-categorial definition of *only/even* lends itself well to being adapted to Japanese focus-sensitive particles, since these particles can attach to more than one syntactic category. I will also adopt Cross-linguistic Semantics (Bittner 1994 etc.), which allows for semantic lowering of the modal operators.

### 1.3 The map of the dissertation

Several previous studies have observed that a focus-sensitive particle *-dake* can take wide-scope w.r.t. the modal which c-commands it at the S-structure<sup>1</sup> (Shoji 1986 and Harada and Noguchi 1992, among others):<sup>2</sup>

- (1) Taro-wa Hanako-**to-dake** asob-eru.  
           Hanako-with-*dake* play-can  
 “The only person Taro can play with is Hanako (he can’t play with others).” *dake* > can

In this example, *Hanako-dake-to* has scope over the modal *-eru* ‘can’, giving rise to the interpretation that Taro cannot play with anyone but Hanako. It has also been observed that the order between *-dake* and a postposition changes the scope pattern of *-dake*:

- (2) Taro-wa Hanako-**dake-to** asob-eru.  
       Taro-TOP Hanako-*dake*-with play-can  
 a. = (1) *dake* > can  
 b. “Taro can play with Hanako alone (without playing with others).”  
           can > *dake*

In this example, *-dake* precedes the postposition *-to* ‘with’, and the sentence is now scopally ambiguous.

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<sup>1</sup> Since Japanese is a consistently head-final language, it is not always possible to tell the c-commanding relationship between two elements. In these examples, the modal follows the verb, which indicates that the modal is higher than the verb at S-structure. There is no reason to assume that non-subject verbal argument(s) is outside of VP at the S-structure in Japanese, thus it can be assumed that the modal c-commands it at the S-structure.

<sup>2</sup> Morita (1971) first noted the scope behavior of *-dake* w.r.t. the verb *naoru* ‘be cured’, rather than a modal, when *-dake* is used with the instrumental particle *-de* ‘by/with’. He claimed that this phenomenon was limited to this particular particle. Kuno & Monane (1979) pointed out that the scope difference existed for other particles besides *-de* as well. For more details, please refer to the works cited here.

It is well-known that Japanese is a “rigid-scope” language, in which the scope between two or more quantified noun phrases (“quantified NPs”) in the same clause is “fixed” (Kuroda 1970, Kuno 1973, Hoji 1985, among others) by their c-commanding relationship at the S-structure. Thus, a sentence corresponding to *Someone loves everyone* has only one reading in Japanese, in which *someone* takes scope over *everyone*. Against the status of Japanese as a rigid-scope language, the scope ambiguity of *-dake* w.r.t. the modal is unexpected.

In chapter 2, I will compare two previous approaches to this scope puzzle. On the one side, we have a QR (Quantifier Raising) approach, in which *-dake* is treated as a regular quantifier such as *every*, and NP+*dake* is raised to the top of the clause via QR. I will review Shoji (1986) and Harada and Noguchi (1992), which are variants of this approach. On the other hand, Futagi (1998) proposed a non-QR approach, in which I gave an account that does not involve QR or any other raising of NP+*dake*. I will discuss pros and cons of each approach, ultimately rejecting either approach as a stand-alone.

In chapter 3, I will lay out the conditions that need to be met in order to account for all the pieces of the puzzle presented in chapter 2 without ad hoc stipulations. I will attempt to show that a hybrid of the two approaches discussed in chapter 2 fares better than either parent. This approach partly hinges on a proposal I will make, which states that *-dake* is morphologically ambiguous between a noun and a particle. As a particle, *-dake*, along with the phrase it is attached to, moves to the Specifier (“Spec”) of the Particle Phrase (“PartP”) as proposed by Bayer (1995). I will argue that the PartP is positioned above a Modal Phrase (“ModP”) in Japanese, whose head is the modal. Therefore, when a *dake*-phrase moves into Spec, PartP, it takes scope over the modal.

On the other hand, when *-dake* is a noun, it can remain in-situ and gives rise to a narrow-scope reading. I will present historical and syntactic evidence to support this claim, and will conclude the chapter by comparing the hybrid approach to the previous two approaches.

Chapter 4 moves on to the semantics of focus-sensitive particles by examining their interaction with the topic marker *-wa*, a marker not considered in the earlier chapters. There is a clear division among focus-sensitive particles in this respect: *-dake* is compatible with *-wa*, but *-sae/mo/shika* are not. There have been a few previous attempts to account for the incompatibility in terms of morphology and syntax. For example, Shoji (1986) argues that the incompatibility stems from the fact that the focus-sensitive particles that are incompatible with *-wa* are themselves topic markers, just like *-wa*, and the double-topic marking of one XP is not allowed in the language. Furthermore, Mogi (2000) claims that each focus-sensitive particle and *-wa* have an inherent position in a general syntactic structure of the language, and whether or not a certain combination of any two particles in a certain order is allowed is determined by this inherent “hierarchy” of particles. I will argue against both of these accounts and propose an alternative explanation: the incompatibility of *-sae/mo/shika* and *-wa* arises from the incompatibility in the semantics and pragmatics of the two. I will present Kuroda’s (1970 etc.) discussion of *-wa* as a categorical judgment marker and go on to show how this treatment of *-wa*, combined with existing semantics for each focus-sensitive particle, can account for the incompatibility. I will also show that this analysis naturally extends to the compatibility between the semantics and pragmatics of *-dake* and *-wa*.

In chapter 5, I will discuss the scalar implicature of *-wa* discussed by Hara (2003) and its relationship to the analysis of the interaction between focus-sensitive particles and *-wa* in chapter 4. An example of scalar implicature is give below:

- (2) a. Who came to the party?  
 b. JOHN-wa ki-ta  
 John-CTop come-Past  
 “As for John, he came (Implicature: I don’t know about others).”

This sentence asserts that John came, and implicates that this assertion is the strongest one that the speaker is willing to give, that is, s/he is not willing to assert whether the others came or not. This is a much weaker implicature than the one given in chapter 4 under Kuroda’s (1970 etc.) analysis of *-wa* as a contrastor. I will show that Kuroda’s analysis of *-wa* and Hara’s (2003) analysis are not mutually exclusive, but that the latter may not be sufficient to explain the focus-sensitive particle+*wa* combination by itself. I will also show that although there is an interaction, the scalar implicature of *-dake* is distinct from that of *-wa*, and suggest a unified, scalar semantics for *-dake*.

The final chapter, chapter 6, will broaden the discussion of the scope of focus-sensitive particles by presenting two issues relating to the scope puzzle discussed in chapters 2 and 3. The first topic is the scope pattern of adverbs of quantification w.r.t. *-dake* and the modal. We will see that the scope between adverbs and *-dake* is fixed at the S-structure, but the scope between adverbs and the modal is not. In the other topic, I will discuss von Stechow and Iatridou (2003), who observe that quantifiers cannot take a higher scope than an epistemic modal. They propose the following constraint:

- (3) *The Epistemic Containment Principle (ECP)*  
 A quantifier cannot have scope over an epistemic modal.

I will present the data involving various modal expressions in Japanese to show that this generalization also holds in Japanese. However, there is a Japanese twist that is not present in their data. Unlike in languages such as English, most modal expressions in Japanese are made up of more than one morpheme.<sup>3</sup> For example, the meaning corresponding to the English deontic *must* is expressed by a string of morphemes:

- (4) hashir + ana + kere + ba + nar + ana + katta  
 run + NEG + *kere* + *ba* + become + NEG + PAST  
 “had to run”

Of all the morphemes in this example, the verb *hashir* ‘run’ is the only one that is not part of the modal expression itself.

What is curious about this phenomenon is that the deontic modal expressions contain only one tense morpheme (after *nar* ‘become’ in the case of deontic *must* above), while the epistemic modal expressions also contain a tense after the lower V (counterpart of *hashir* ‘run’ in the example above). It is generally assumed that the quantifier scope is clause-bound. In light of this assumption, it seems as if the ECP is built-in in Japanese. In the final section, I will conclude by summing up the various observations and arguments presented in this dissertation.

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<sup>3</sup> English has modal expressions consisting of more than one morpheme, such as *be going to* or *have to*. However, in Japanese, this is the norm and a single-morpheme modal the exception.

#### 1.4 Discussion: some implications of this study

I would like to conclude this introductory chapter by discussing some reasons why I believe the explorations to be conducted in this dissertation are important beyond the obvious one of expanding our understanding of Japanese grammar.

It is well-known in the linguistic literature that languages differ as to the pattern of scope between two or more quantified NPs in the same clause. In languages such as English, a sentence containing more than one quantified NP in the same clause is scopally ambiguous. In other languages, such as Japanese, there is no scope ambiguity in such a sentence, thus leading to the notion of “rigid-scope” languages. The scope ambiguity of the former type can be syntactically captured by QR, as proposed in May (1977). QR raises and adjoins quantified phrases (QP) to VP or IP at LF. When the object DP is adjoined to VP, it has narrow-scope under the subject DP and when it is adjoined to IP, it can have wide-scope over the subject DP. QR, in its original form, turned out to be a rather powerful tool, which resulted in proposals of additional constraints in order to keep it from over-generating.

It is probably fair to say that even for “rigid-scope” languages, the current consensus is that QR exists in these languages. Under this view, it is the effect of QR that these languages lack, rather than the mechanism itself. In this line of reasoning, there are at least two major lines of explanation for “canceling out” the effect of QR in rigid-scope languages. One alternative is that there is a restriction on QR specific to rigid-scope languages which preserves the S-structure c-commanding relationships of quantifiers at LF (Hoji 1985, 1986). An obvious draw-back of this line of argument is that it may require otherwise unmotivated movements of quantified NPs. The other

alternative attributes the differences in the scope behavior between the two types of languages to the different S-structures in each language type, which, in turn, yields different LFs (Huang 1982, Aoun and Li 1993, Hornstein 1995). In the latter account, there is no difference in the mechanism of QR itself between the two types of languages.

What is striking about the notion of the rigidity of scope is that it is derived solely from the observation of the scope among quantified NPs. However, linguists have long been aware that there are other scopal elements in natural languages, such as modals, negation, and adverbs of quantification. Yet, the question has not been asked (at least not systematically) about what happens to the “rigidity” when these other elements come into play. Under the prevalent view that the scope between two elements is determined by their structural relationship at LF, a movement mechanism such as QR affects not only the scope of its targets, that is, quantified NPs, but also that of the other scopal elements which reside on its way. Therefore, in advocating any theory of QR, one needs to take into account a much wider array of scope-bearing elements than quantified NPs. The discussion of the scope interaction between *-dake* and the modal in chapters 2 and 3 is one manifestation of this point.

The previous studies on the meaning of Japanese focus-sensitive particles have mostly focused on the description of their usages and how they differ from each other. Compared to the increasing thoroughness of the studies on the scope behavior of these particles, the study of how their semantics and pragmatics interact with other elements of the language as well as with the other components of the grammar still has ways to go. The danger of such a discrepancy is to wrongly attribute as much of the phenomena concerning the focus-sensitive particles as possible to the syntax without considering



whether their semantics/pragmatics might offer a more comprehensive solution. I will address one manifestation of such a danger, namely, the incompatibility between *sae/mo/shika* and the topic marker *-wa*, in chapter 4. This has been attributed to their morphology/syntax by Shoji (1986) and Mogi (2000).

The discussion in chapter 4 will lead us deeper into the investigation of the scalar implicatures of *-dake* and *-wa* in chapter 5. It is well-known that *only* in English has a scalar reading, when a proper intonation is used:

- (5) John only PASSED the exam.  
 Scalar implicature: He didn't ace the exam.

It has been observed that *-dake* also has scalar implicature (Harada and Noguchi 1992), which is sometimes the same as that of the English *only*, and at other times, subtly different. Investigating such similarities and variations across languages will help us gain more insight into the nature of the universal grammar.

As stated above, the linguists are becoming more and more aware of the intricacy of the scope interactions of a wide array of scopal elements in natural languages beyond quantified NPs. It would be stating the obvious to say that in order to fully understand them, we must pay attention to the properties of the individual scopal elements in its various aspects. Yet, it is in this spirit that the investigation in this dissertation commences in the next chapter.

## CHAPTER 2: QR-approach vs. non-QR approach

### 2.1 Introduction

#### 2.1.1 Three pieces of the puzzle

In this chapter, I will discuss two different approaches to the scope puzzle of *-dake*, the QR-approach and a non-QR approach. First, I will describe the scope puzzle of *-dake* in detail, breaking them up into three pieces. The first piece is the fact that NP+*dake* follows this rigidity of scope attributed to Japanese, w.r.t. c-commanding quantifying NPs:

- (6) Daremo-ga Taro-**dake**-ni denwashita.  
 Everyone-NOM Taro-*dake*-DAT telephoned  
 “Everyone called Taro alone (no one called anyone else).” *every* > *dake*
- \* “Taro is the only person such that everyone called him (not everyone called Mary, not everyone called Bill, etc.).” *\*dake* > *every*

This sentence is not scopally ambiguous, just as the Japanese counterpart of *Someone loves everyone* is not. The presence of the modal does not affect the scope relationship between *-dake* and a c-commanding quantified NP:

- (7) Daremo-ga Taro-**dake**-ni denwa-dekiru.  
 Everyone-NOM Taro-*dake*-DAT telephone-can
- (i) “Everyone can call Taro alone (no one called anyone else).”  
*every* > *can* > *dake*
- (ii) “For everyone, Taro is the only person s/he can call.”  
*every* > *dake* > *can*
- \* “Taro is the only person such that everyone can call him (not everyone can call Mary, not everyone can call Bill, etc.).” *\*dake* > *every* > *can*



There is a yet additional twist with *-dake*'s scope puzzle, which makes up the third piece. Other NP-particles, such as the case markers *-ga* (nominative), *-o* (accusative), *-no* (genitive), and the topic marker *-wa*, cannot switch the order with *-dake*. For these particles, *-dake* can precede them, as in (8), but can never follow them, as shown in (9):<sup>4</sup>

- |     |    |   |            |
|-----|----|---|------------|
| (8) | a. | <b>Taro-dake-ga</b> kita.<br>Taro- <i>dake</i> -NOM    came<br>“Only Taro came.”          | Nominative |
|     | b. | <b>Sakana-dake-o</b> tabeta.<br>fish- <i>dake</i> -ACC    ate<br>“[We] ate only fish.”    | Accusative |
|     | c. | <b>Taro-dake-no</b> hon<br>Taro- <i>dake</i> -GEN    book<br>“a book that is only Taro’s” | Genitive   |
|     | d. | <b>Taro-dake-wa</b> kita.<br>Taro- <i>dake</i> -TOP    came<br>“Only Taro came.”          | Topic      |
|     |    |   |            |
| (9) | a. | *Taro- <b>ga-dake</b> kita.<br>*Taro-NOM- <i>dake</i> came                                |            |
|     | b. | *Sakana- <b>o-dake</b> tabeta.<br>*fish-ACC- <i>dake</i> ate                              |            |
|     | c. | *Taro- <b>no-dake</b> hon<br>*Taro-GEN- <i>dake</i> book                                  |            |

---

<sup>4</sup> Dative marker *-ni* is excluded from the discussion in this thesis for the following reason: Sadakane and Koizumi (1995) argue that *-ni* is ambiguous between case marker and postposition. They propose several diagnoses to separate the two. However, it seems to me that the particulars of the interaction between *-dake* and *-ni* obscures the point of the discussion, rather than helps it.

- d. \*Taro-**wa-dake** kita.  
       \*Taro-TOP-only came

Note that the scope pattern of *-dake* is the same as internal *-dake* above when the case marker is *-o* (accusative), which generally marks an object NP:

- (10) Ringo-**dake-o** taber-areru  
       apple-only-ACC eat-can  
       i. “[I] can eat apples alone.”                   Narrow-scope reading - *can* > *dake*  
       ii. “Apples are the only thing [I] can eat.”   Wide-scope reading - *dake* > *can*

Here again, *-dake* can take either narrow scope or wide scope w.r.t. the modal, as in the case of the internal *-dake* with a postposition. This will be referred to as the “Case Follows” piece.

Let us sum up the three independent (and interacting) pieces presented above in order to clarify what the answer to the overall puzzle should consist of: (I - “Scope Ceiling”) how *-dake* takes higher scope over the modal but not over the subject quantified NP; (II - “P-ordering and Scope”) why ordering between *-dake* and the postposition affects scope behavior of *-dake*; and (III - “Case Follows”) why *-dake* cannot change ordering with a case marker. In order to solve these pieces, syntactic and semantic properties of *-dake* need to be scrutinized.

In the next sub section, I will start the discussion of the combinations and orderings of these particles in more detail.

### 2.1.2 Particle ordering in Japanese

It is well-known that case markers never co-occur with the topic marker *-wa*, as shown in (11):<sup>5</sup>

- (11) a. \*John-ga-wa  
          -NOM-TOP  
      b. \*John-o-wa  
          -ACC  
      c. \*John-no-wa  
          -GEN  
  
      d. \*John-wa-ga  
      e. \*John-wa-o  
      f. \*John-wa-no

Case markers also do not co-occur with postpositions, for example, *-to* ‘with’ in the following example:<sup>6</sup>

- (12) a. \*John-to-ga  
          -with-NOM  
      b. \*John-to-o  
          -ACC  
      c. \*John-to-no  
          -GEN  
      d. \*John-ga-to  
      e. \*John-o-to  
      f. \*John-no-to

---

<sup>5</sup> Japanese have suffixal morphemes that are homophonous with Genitive *-no*, one of which will be discussed below. To avoid confusion, all examples will be clearly glossed as to which morpheme is under discussion.

<sup>6</sup> Sometimes case markers can appear directly after a postposition, but when this happens, the meaning of PP is no longer that of usual PP, but rather NP, suggesting that the combination [P + case marker] is only superficial. Therefore, this is not a counterexample to the above generalization, nor is it relevant to the discussion in this thesis.

On the other hand, the topic marker *-wa*, which often marks the subject instead of *-ga* as in (13),<sup>7</sup> may follow a postposition as in (14):

- (13) John-**wa** daidokoro-de            hon-o            yon-da  
 John-TOP kitchen-LOC            book-ACC            read-PAST  
           S            PP            O            V  
 “John read a book in the kitchen.”

- (14) John-wa daidokoro-**de-wa**    hon-o            yon-da  
 John-TOP kitchen-LOC-TOP    book-ACC            read-PAST  
           S            PP            O            V  
 “John read a book in THE KITCHEN (he didn’t read it somewhere else).”

In (14), *-wa* follows the locative postposition *-de* ‘in’. This order cannot be reversed:  
 \**John-wa-de*.

In the light of these restrictions, *-dake* is unlike any other particle in that it can very easily co-occur with a case marker, as we saw in (8).<sup>8</sup> It is worth noting that the other focus-sensitive particles discussed in the thesis, *-sae/mo/shika*, can neither precede or follow a case- or topic marker. I will use *-sae* as a representative here:

- (15) a. \*Taro-**sae-ga/ga-sae**    kita.  
       b. \*Sakana-**sae-o/o-sae**    tabeta.<sup>9</sup>  
       c. \*Taro-**sae-no/no-sae**    hon  
       d. \*Taro-**sae-wa/wa-sae**    kita.

---

<sup>7</sup> In chapter 4, I will discuss the use of *-wa* in some detail in relation to focus-sensitive particles,

<sup>8</sup> Objects of so-called “stative” verbs can be marked with *-ga* instead of *-o*. When this happens to NP<sub>OBJ</sub>+*dake*, it unambiguously takes scope over modal. Please see Tada (1992) and Koizumi (1994) for more discussion.

<sup>9</sup> Some native speakers allow *-o-sae* sequence.

These focus-sensitive particles can occur with a postposition, but unlike *-dake*, they can only follow it:

- (16) a Taro-**to-sae** ason-da  
       Taro-with-*sae* play-PAST  
       “I even played with TARO.”
- b. \*Taro-**sae-to** ason-da  
           -*sae*-with

In this respect, *-sae/mo/shika* pattern with the topic marker *-wa*. As we will see in chapter 4, Shoji (1986) takes this to be one piece of evidence that *-sae* is a topic marker.

For the sake of simplicity, I assume a fairly minimal NP structure throughout this thesis, unless there is a reason to do otherwise. That is, NP is not topped by a DP or a KP. I also assume that the subject is generated in a VP-internal position and raises to Spec TP at S-structure to receive a case (Hasegawa 1986, Terada 1990; also see Saito 1985).<sup>10</sup> Based on these assumptions, the structure for the sentence in (17) is as in (18):

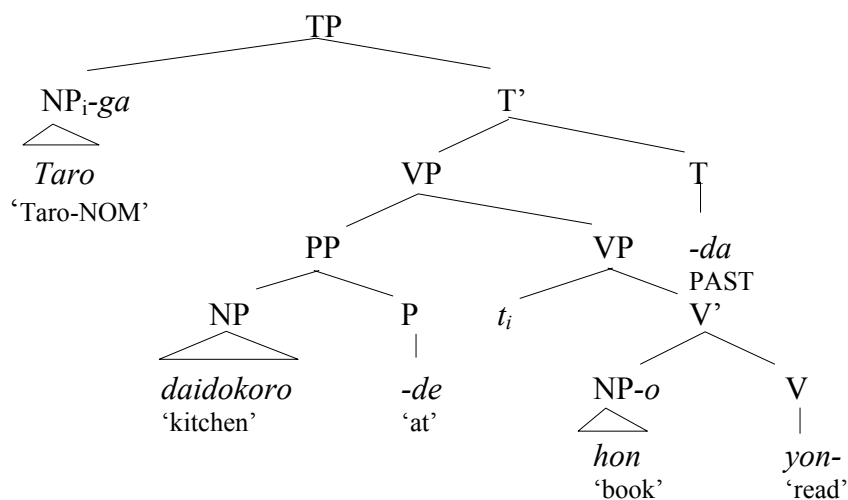
- (17) Taro-ga daidokoro-de hon-o yon-da  
       Taro-NOM kitchen-in book-ACC play-PAST  
       “Taro read a book in the kitchen.”

---

<sup>10</sup> Hasegawa (1986) notes that the nominative case is assigned only when there is tense in the clause. Combined with case-checking theory, the subject in Japanese has to raise at least to TP. Whether there is AgrSP above TP, and whether the subject raises there, does not have a significant impact on the current discussion, thus I will not go into that discussion.



(18)



Here, the sentence is a TP; the last (i.e. highest) visible morpheme is the past-tense *-da*, and there is no reason to assume there is any node higher than TP in this sentence, but nothing at this point hinges on it.

The next section begins the comparison between the two approaches to the scope puzzle of *-dake* and the modal. First, the QR-approach is discussed and then we will move on to a non-QR approach.

## 2.2 Standard QR

As described in the introduction, the standard QR raises and adjoins quantified phrases (QP) to VP or IP at LF. This is the type of approach employed by Shoji (1986) and Harada and Noguchi (1992) to account for the scope puzzle of *-dake*. While each analysis has its own advantages and disadvantages, they have one serious disadvantage in common: applying such “standard”-style QR to a non-subject *-dake* phrase inevitably predicts that it has wide-scope over the modal when it is adjoined to IP; as a result, it should also take scope over the subject QP, which is not borne out as we see in (7) above.

In the next section, I will review Shoji (1986) and Harada and Noguchi (1992) to illustrate the problems with the QR approach in more detail. I will then review Aoun and Li (1993), who attributes the difference between the rigid- and non-rigid-scope languages to the different S-structures in these languages. I will demonstrate that even in their version of QR, the scope puzzle of *-dake* and the modal remains unsolved.

## 2.3 QR-approach

### 2.3.1 Previous studies: Shoji (1986) and Harada and Noguchi (1992)

For the scope behavior of *-dake* in sentences such as (1) and (2), Shoji (1986) proposes an account which involves movement to the Focus position which she defines as a type of QR. It is necessary to note that her empirical generalization is slightly different from any speaker that I have checked with, and also from that of Harada and Noguchi's (1992) below, but the pattern of her judgment is crucial to her analysis. The difference is seen in the "internal *-dake*" case: for her, it is not ambiguous, but only has the narrow scope reading. The following is her judgment for (2) (repeated):

- (19) Taro-wa Hanako-**dake-to** asob-eru.  
 Taro-TOP Hanako-*dake*-with play-can  
 a. \*"The only person Taro can play with is Hanako (he can't play with others)." *dake* > can  
 b. "Taro can play with Hanako alone (without playing with others)." can > *dake*

For her, the interpretation in (19a) (=2b)) does not exist. Thus, as far as postpositions are concerned, her judgment appears to be unambiguous whether *-dake* is internal or

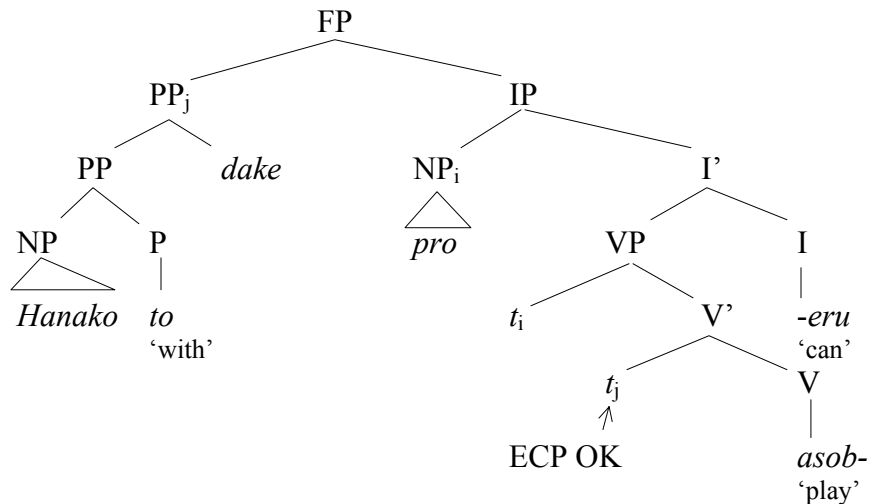
external. This may be because of a dialectal difference or it can be because of the postposition she uses.<sup>11</sup> On the other hand, her judgment and that of the others (including myself) do agree on case-markers, which always have *-dake* occur internally. Thus, her judgment for (10) is the same as indicated for that example.

Based on this judgment, the basic line of her argument is that the wide-scope of *-dake* is the result of LF-scrambling of the *-dake* phrase into the focus position discussed by Kiss (1981). On the other hand, the narrow-scope is the result of the in-situ *-dake* phrase. According to Shoji, *-dake*-phrases are focus phrases, thus must raise to the Focus position which is base-generated above S (above IP in more recent terms) via QR, unless QR violates the Empty Category Principle (ECP).

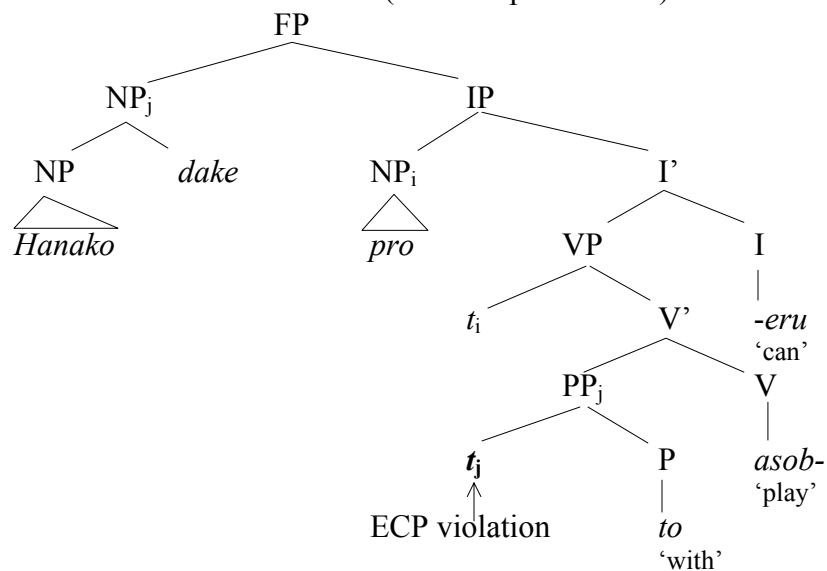
In the case of external *-dake*, which she assumes to be PP+*dake*, the *-dake* phrase can move without a problem - ECP is satisfied because the trace left by the raising of the *dake*-phrase is properly governed by the verb, resulting in unambiguous wide-scope:

---

<sup>11</sup> Many of Shoji's examples use one particular particle, namely, "instrumental" *de* 'by/with'. Note that in this case, the ambiguity seems to disappear even for speakers who usually get the ambiguity. See Harada & Noguchi (1992) for some discussion on this point. There are also some cases where the wide-scope reading for this word-order is somewhat marginal. To pursue this point is beyond the scope of this thesis. The sentences used in this paper are judged to be ambiguous by my informants.

(20) External *-dake*

On the other hand, wide-scope is blocked for the NP-*dake*-postposition order, because when *-dake* is attached to NP (internal *-dake*), and the NP is a complement of P, moving NP+*dake* would lead to ECP violation, under the assumption that P is not a proper governor in Japanese:

(21) Internal *-dake*: unavailable LF (wide-scope of *-dake*)

Thus, for Shoji, internal *-dake* results in unambiguously narrow-scope reading.

ECP is also at work for the optional wide-scope reading of *-dake* + case marker in the object position in her account. She assumes that the accusative-marker *-o* is adjoined to NP, thus it is not a governor of any kind and moves with the rest of NP. Thus, this NP movement leaves a trace which is properly governed by V, since there is no intervening particle (unlike the case of postpositions). Subjects, unlike objects, are always higher than the modal, thus *-dake* in this position always has wide-scope over the modal.

There are at least three pieces missing in this analysis to solve the scope puzzle of *-dake*: (i) it predicts wrong scope between wide-scope *-dake* and subject QP as pointed out in the previous section; (ii) it does not explain why wide-scope of external *-dake* is forced while that of case-marker-internal *-dake* is not; and (iii) the explanation for forced narrow-scope of PP-internal *-dake* is ad hoc.

Problem (i), predicting the wrong scope relationship between subject and object QP, is pointed out as the major objection to this general approach in the previous section. Problem (ii) comes about because her QR is driven by the focus-feature and constrained by ECP. ECP has nothing to say when there is no movement, thus it is irrelevant for the inability of PP+*dake* to stay in-situ. Then, the task is left for the focus feature. However, it is not quite plausible to assume that the focus feature makes a distinction between PP+*dake* and argument + *dake*, thereby forcing the former to raise, while making the movement optional for the latter. Problem (iii), the explanation for forced narrow-scope of PP-internal-*dake* is ad hoc, is because it is not clear what prevents the pied-piping of the postposition at LF for PP-internal-*dake* – after all, overt scrambling always takes it

along. If the postposition is pied-piped, the structure would be the same as that of external *-dake*, and thus valid.

Harada and Noguchi (1992) is a slight variation of Shoji (1986) in that they try to capture the ambiguity of internal *-dake* sentences as a kind of quantifying-in effect, analogous to the following English examples (cited from Taglicht (1984)):

- (22) a. We are [<sub>VP2</sub> required to [<sub>VP1</sub> **only** study physics.]]  
 “What we are required is to only study physics.”  
 b. We are [<sub>VP2</sub> required to [<sub>VP1</sub> study **only** physics.]]  
 i. “Physics is the only subject we are required to study.”  
 ii. “What we are required is to only study physics.”

Here, when *only* is attached to VP, *study physics*, as in (a), the sentence is unambiguous, while when *only* is attached to NP, *physics*, as in (b), the sentence is ambiguous, because [<sub>NP</sub> *only physics* ] can be quantified-in either at VP1 or VP2. When quantified-in at VP1, *only* is interpreted below *required*, thus giving the interpretation in (22b.ii), which is identical to (22a). On the other hand, when [<sub>NP</sub> *only physics* ] is quantified-in at VP2, it is above *required*, and gives the interpretation in (22b.i).

Applying this to internal *-dake* as in the following sentence, they argue that the narrow-scope reading (i), is a result of quantifying-in of [*Hanako-dake*]<sup>12</sup> at VP, and the wide-scope reading (ii) at IP:

---

<sup>12</sup> It is not clear what happens to the postposition *-to* in their analysis. That is, they do not specify whether it is stranded or pied piped. I assume stranding here, for the sake of keeping strict parallelism of NP-movement in English and Japanese examples.

- (23) [IP Watashi-wa [VP Hanako-**dake-to** asob]-eru.]  
           I-TOP                    Hanako-*dake*-with                    play-can  
 i. “I can play with Hanako alone (I don’t have to play with others).”  
 ii. “Hanako is the only person I can play with.”

What is new in their analysis is the data: for them, PP-internal *-dake* as well as case-marker-internal *-dake* has ambiguous scope w.r.t. the modal, as is seen in this example. They also use a more standard-style QR, rather than Shoji’s focus feature and ECP. Otherwise, the basic line of argument is identical and as such, it is obvious that this analysis has exactly the same problem as Shoji’s in that for wide-scope reading, *-dake* ends up higher than the subject, which predicts a wrong scope relationship between *-dake* and the subject quantifier as is pointed out above.

Harada and Noguchi (1992) have an additional potential empirical problem. Their analysis does not explicitly discuss the fixed wide-scope for the external *-dake* such as:

- (24) [IP [VP Hanako-**to-dake** asob]-eru.]  
           Hanako-with-only                    play-can  
       “Hanako is the only person I can play with.”

There is nothing in their analysis that explains why quantifying-in of the external *-dake* phrase at VP is prohibited. Thus, in their analysis, the external *-dake* in (24) should be ambiguous.

While there is a certain elegance in appealing to a general mechanism like QR to account for the scope ambiguity of *-dake*, it is clear that the standard-style QR, in which adjunction sites are VP and IP, is inappropriate for this scope puzzle. By now, it is also clear that even a theory of QR which aims to account for both ambiguous- and rigid-

scope languages does not suffice, because the goal of such a theory is to account for the scope relationship between two XPs, without reference to any head (modal under discussion). After all, QR is not necessarily plausible for fixed scope languages. In the next subsection, I will review Aoun and Li (1993) to demonstrate the problem.

## 2.3.2 Universality of QR: Aoun and Li (1993)

### 2.3.2.1 Summary of the theory

Aoun and Li propose the following principle for which elements participate in determining the scope between two NPs (DPs):

(25) *The Scope Principle* (p.88)

An operator A may have scope over an operator B iff A c-commands B or an  $\bar{A}$ -element coindexed with B.

That is, the scope is determined by a c-commanding relationship between operators or an operator and an intermediate trace of an operator.<sup>13</sup>

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<sup>13</sup> In their theory, intermediate trace does not occur in QR, so intermediate traces are relevant only for *wh*-operators.



Their definition of QR is as follows:

- (26) *LF extraction of quantificational elements (i.e. Quantifier Raising (QR))* (p.80)
- a. NP-adjunction to an  $\bar{A}$ -position
  - b. Q-adjunction to a position governing the whole NP whose specifier is quantificational.

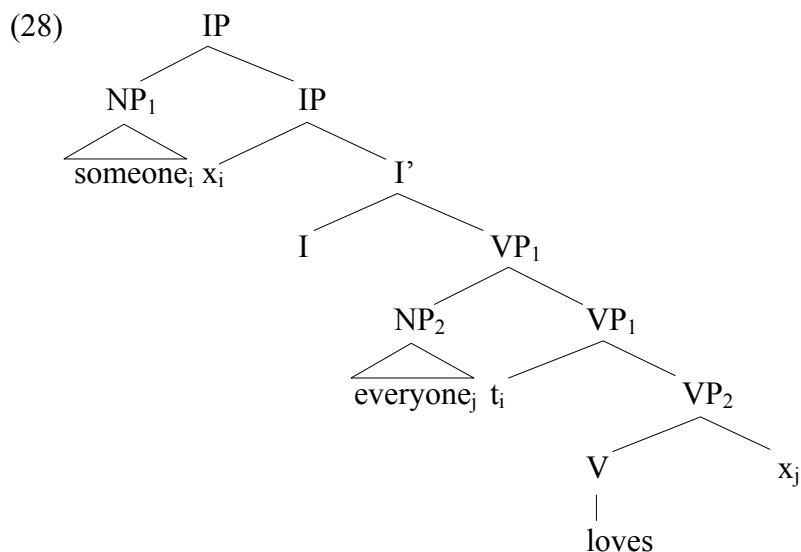
QR is obligatory for NPs (DPs) in  $\theta$ -positions, because quantificational phrases, like other operators, are not referential expressions and thus cannot remain in  $\theta$ -positions. For NPs in  $\bar{\theta}$ -positions, QR is optional. (26b) insures that an operator-variable configuration is created for QPs that do not go through NP-adjunction. In the following discussion, Q-adjunction will be omitted for quantified phrases that do go through NP-adjunction for the sake of simplicity.

In Aoun and Li's theory of QR, variables (traces left by  $\bar{A}$ -movement) do not directly participate in scope calculation. However, variables do play an important role in determining which structures are grammatical, since variables must satisfy the following requirements:

## (27) Requirements for variables

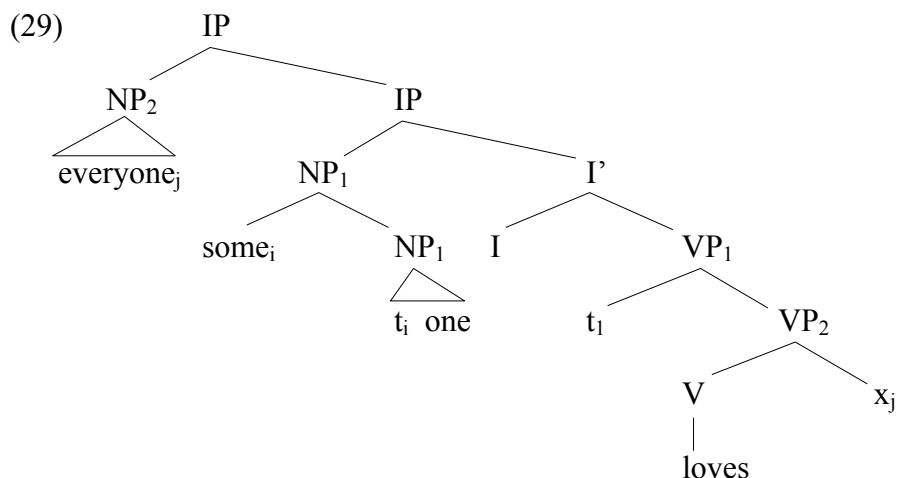
- a. *The Antecedent Requirement (The Minimal Binding Requirement (MBR))*  
A variable must be bound by the most local potential antecedent.
- b. *The Locality Requirement*  
A variable, if it is subject to the Locality Requirement, must be bound by an  $\bar{A}$  binder  $\alpha$  within the minimal maximal category containing<sup>14</sup>  $\alpha$  and the variable.

According to these requirements, (28) and (29) are the possible LFs for an ambiguous English sentence, *Someone loves everyone*:



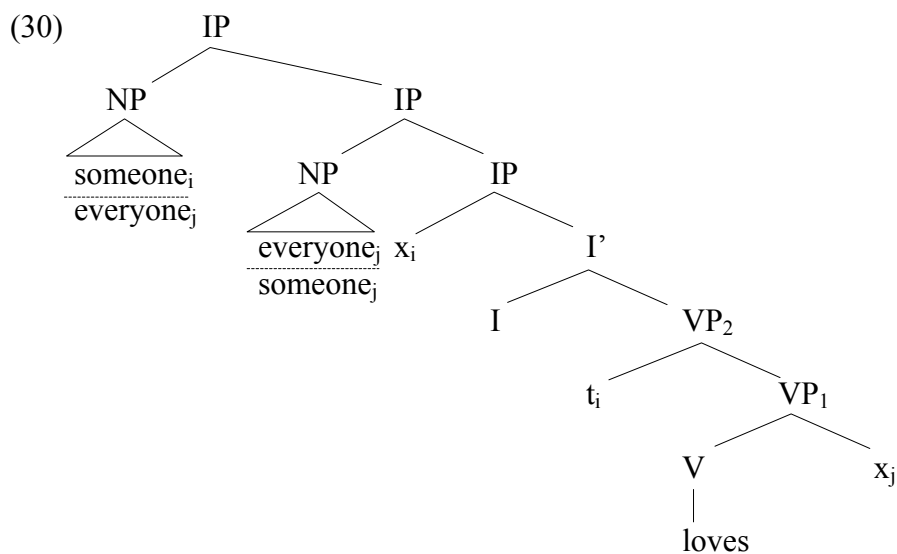

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<sup>14</sup> Aoun & Li follow Chomsky's (1986) definition of exclusion, i.e. "A contains B iff B is dominated by all segments of A".



(28) is an LF in which NP-adjunction applies to both the subject and the object NPs (Q-adjunction is omitted as noted above). In (29), NP-adjunction applies to the object NP while the subject NP remains in Spec IP. This is grammatical, since Spec IP is a non- $\theta$ -position.

There are two more logically possible LFs, namely, the ones in which both subject and object NPs adjoin to IP:



In this structure, regardless of the order in which the quantified NPs are attached to IP, there is a violation of the Antecedent Requirement (27a). If the subject *someone* is adjoined above *everyone*, the variable  $x_i$  in Spec IP is not bound by the most local potential antecedent, *everyone*. Similarly, if the object *everyone* is adjoined above *someone*, *someone* is the most potential antecedent for the variable  $x_j$  in  $VP_1$ , not the actual antecedent *everyone*.

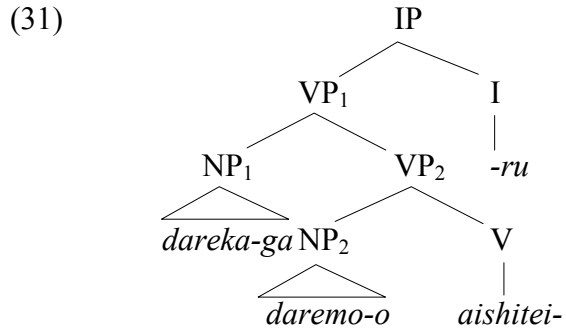
### 2.3.2.2 Japanese in Aoun and Li's theory of QR

The Antecedent Requirement for variables, or MBR, is crucial for accounting for non-ambiguity of similar sentences in “rigid-scope” languages, such as Chinese and Japanese. Aoun & Li make a crucial assumption that in such languages, the subject is base-generated in Spec VP and does not go through subject-raising at S-structure.<sup>15,16</sup> Under this assumption, the S-structure for the Japanese counterpart of *Someone loves everyone* is as follows:

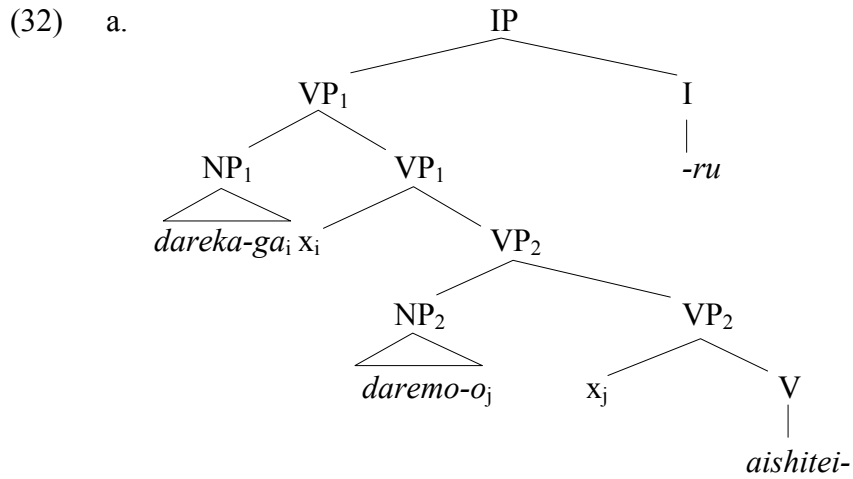
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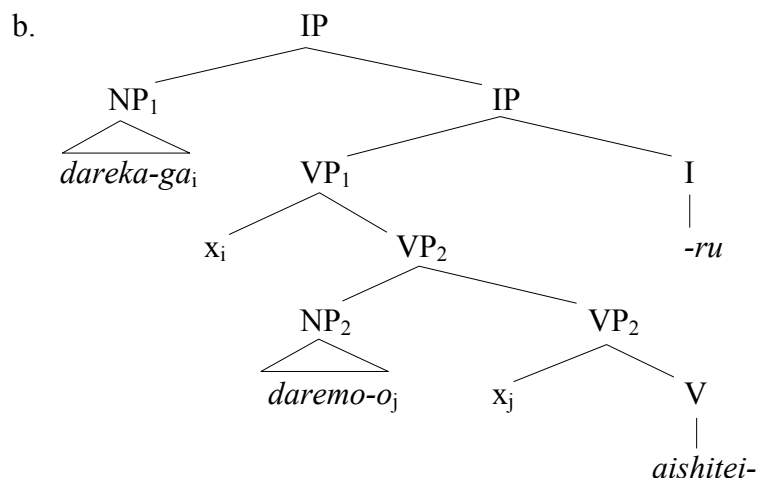
<sup>15</sup> As Aoun and Li point out, the lack of subject-raising in Japanese has been argued independently by Kitagawa (1986) Kuroda (1988) etc..

<sup>16</sup> The non-ambiguity of simple sentences such as a counterpart of *Someone loves everyone* in Chinese or Japanese can be accounted for by assuming that these languages lack subject-raising. However, this assumption poses a problem for Chinese sentences with modals. In these sentences, word-order is basically the same as in English. Thus, assuming that modals are generated above VP, which is pretty much standard, subjects in these sentences cannot be inside VP at least at S-structure. Since it is crucial in their theory of scope that subjects in “rigid-scope” languages do not raise, it would be necessary to revise their assumption and assume that in such languages, subjects are base-generated at Spec IP.



The only possible LFs for this sentence is the ones in which NP<sub>1</sub> is adjoined to VP<sub>1</sub> (32a) or IP (32b) and NP<sub>2</sub> to VP<sub>2</sub> (in both cases):





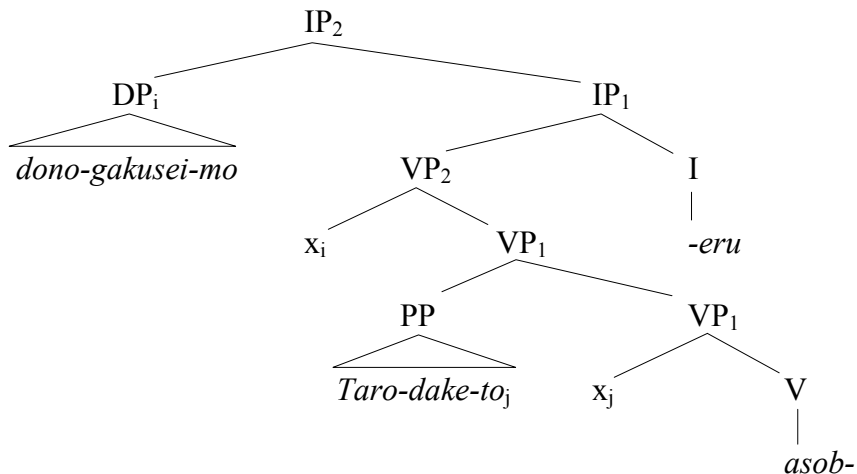
Both the subject and the object must QR, since they are in  $\theta$ -positions at the S-structure. The object NP<sub>2</sub> cannot adjoin to VP<sub>1</sub> nor IP, since MBR would be violated by doing so. Thus, this sentence is unambiguous, as predicted by Aoun and Li's theory. Now, let us see how the theory fares with the scope puzzles of *-dake*.

### 2.3.2.3 *Dake* and modal in Aoun and Li's theory of QR

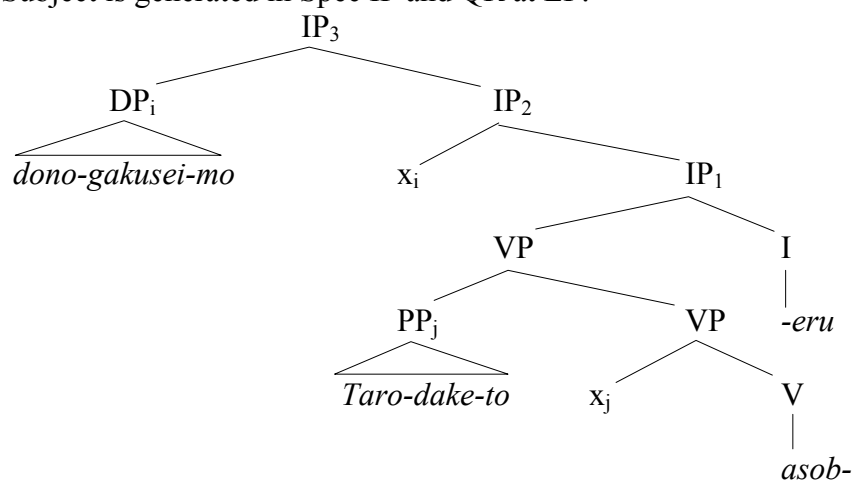
Consider the following sentence and the two alternative LFs for it that would be generated under Aoun and Li's approach to QR:

- (33) Dono-kodomo-mo Taro-dake-to asob-eru  
 which-child-mo Taro-only-with play-can
- every* > *only* > *can*  
 "For every child, Taro is the only person s/he can play with (no child can play with anyone else)."
  - every* > *can* > *only*  
 "For every child, it is possible for him/her to play with Taro alone (every child can play with someone else, but s/he doesn't have to)."
  - \**only* > *every* > *can*  
 \* "Taro is the only person whom every child can play with (not every child can play with Mary, not every child can play with Bill, etc.)."

(34) Subject is generated in Spec VP and stays there at S-structure, QR at LF:



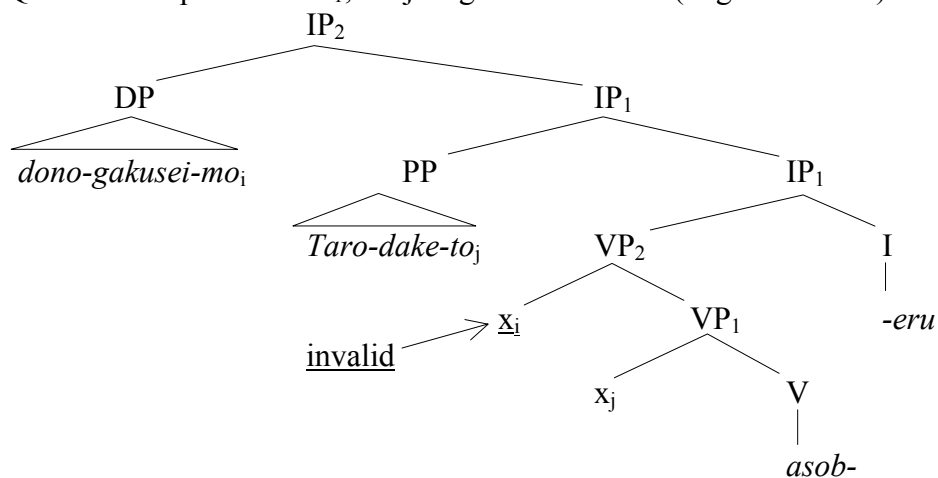
(35) Subject is generated in Spec IP and QR at LF:



I assume here that the complement of P is not a  $\theta$ -position, so a quantified phrase (*Taro-dake* in this example) can stay in that position at LF, to avoid non-crucial complication in the discussion. I also assume that when a QP c-commands a modal, it has scope over the modal. Both in (34) and (35), the LF gives the bottom-scope reading of *-dake* in (33b), since *dono-gakusei-mo* 'every student' c-commands *-eru* 'can', and they both c-command *Taro-dake-to* 'with only Taro'.

The difference comes out when QR applies to *Taro-dake-to* and gives the reading in (33a). In (34), the subject is base-generated inside VP, so its QR (obligatory in Aoun and Li's theory) leaves a variable in Spec VP<sub>2</sub>. In order for the PP *Taro-dake-to* to have a wide-scope over I *-eru*, it must adjoin to IP<sub>1</sub>:

(36) QR of *-dake*-phrase to IP<sub>1</sub>; subject generated in VP (ungrammatical):

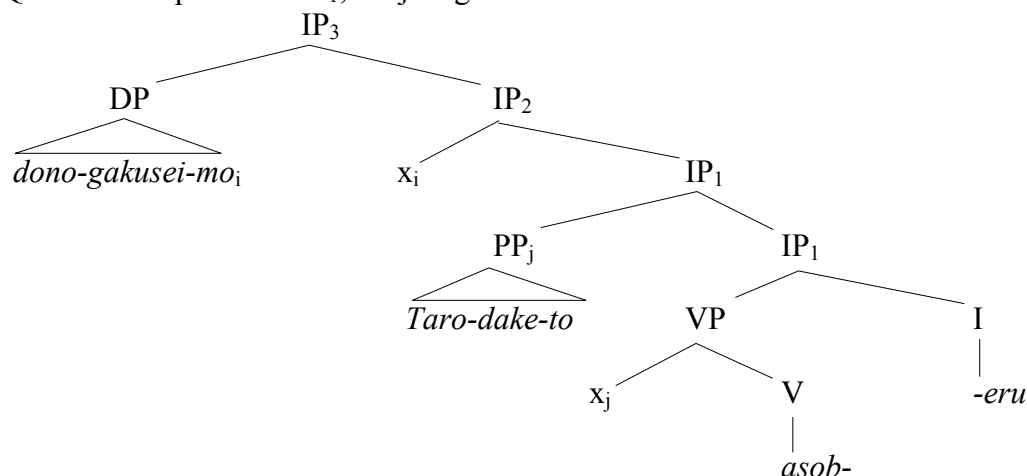


This structure is ungrammatical because the adjoined *dake*-phrase is the most local potential antecedent for the variable  $x_i$  in Spec VP<sub>2</sub>, but  $x_i$  is not bound by it. That is,  $x_i$  is an invalid variable.

On the other hand, if the subject is base-generated in Spec IP, as in (35), PP can adjoin to IP<sub>1</sub>, assuming that IP may cascade just like VP:



(37) QR of *-dake*-phrase to IP<sub>1</sub>; subject generated in IP:



In this case,  $x_i$  is still bound by its most local potential antecedent, DP<sub>*i*</sub>, and the variable left by PP by its most local potential antecedent, namely, PP adjoined to IP<sub>1</sub>. However, this is problematic in that it is contrary to the crucial assumption in Aoun and Li's theory which makes a rigid scope language a rigid scope language: the subject in these languages is base-generated in VP, not IP. Thus, we come to a dead-end: either the subject itself or its trace is inside VP, and there is no way a VP-internal *dake*-phrase can raise past it. This theory of QR cannot explain the scope of *-dake* and modal.

In the next section, I will present an earlier proposal of non-QR approach I have made (Futagi 1998), which is based on a head-movement (V-to-I) rather than an XP movement, and compare it against the QR approach.

## 2.4 A non-QR approach

### 2.4.1 Introduction

In this section, I will present an analysis of the scope of *-dake* without QR (or its relative). In this analysis, the scope ambiguity of the internal *-dake* is attributed to optionality of V-to-I movement. When it occurs, the semantic type of the modal under I takes the raised verb as its first argument, semantically combining with it. By semantics of trace, V+I combo is bound back to the position of the verb trace. This results in the semantic lowering of the modal under the scope of *-dake*. On the other hand, when the verb stays in-situ, the modal takes IP as its argument; *-dake* is contained in the IP, thus the modal takes scope over it.

I will then propose that the fixed wide-scope reading of the external *-dake* comes from a slightly different source. It is still a result of V-to-I movement, but this time it is forced by the head movement of *-dake* itself to the focus head position, which moves cyclically taking each head it adjoins to with it.

### 2.4.2 Theoretical assumptions

I continue to assume that the subject always moves to Spec IP to get the Nominative case. I will adopt Cross-Linguistic Semantics (XLS) (Bittner 1994 etc.) as a

theory which semantically lowers I with the raised V, and Rooth's (1985) alternative semantics for *only*.<sup>17</sup>

The following is a brief discussion of evidence presented in the literature for V-to-I movement in Japanese. Japanese is a strictly head-final language, that is, nothing intervenes between V and I. Thus, these heads are always linearly adjacent, making it impossible to tell whether any movement occurs among them just from the surface word order. However, the following two pieces of evidence have been given in favor of V-to-I movement in Japanese: (i) Holmberg states that object shift (or scrambling) occurs only when V moves to I. If Japanese object scrambling is parallel to the object shift, V-to-I raising must occur in Japanese; and (ii) Otani and Whitman (1991) observe that the “sloppy” reading of pronouns in elided phrases are much the same in English and Japanese:

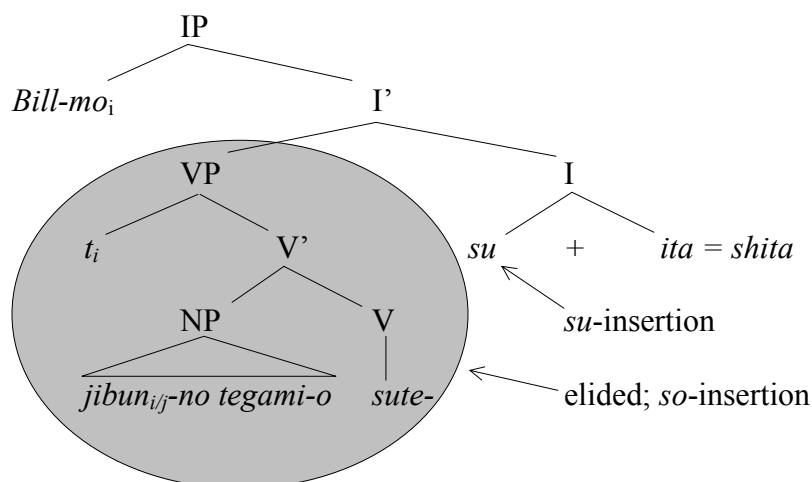
- (38) (a) John-wa jibun-no tegami-o sute-ta.  
           TOP self-GEN letter-ACC discard-PAST  
           “John threw out his letters.”
- (b) Bill-mo Ø sute-ta.  
           also discard-PAST  
           “Bill did, too.”  
           i. Bill threw out Bill's letters, too.  
           ii. Bill threw out John's letters, too.

---

<sup>17</sup> The effect of association with focus occurs in Japanese like in English, when *-dake* c-commands more than one word, e.g. modified NP, be it by adjectives or by other nouns. I do not discuss these more complex examples, since it is not directly relevant to my analysis. However, a theory of *only* which moves *only* and/or the focus to “physically” associate could cause various problems with the scope facts discussed here, depending on where they are moved to.



(41) For (40b)



When the verb stays in-situ and is deleted with VP, *su-* 'do' is inserted to support the stranded tense, much like the English *do*-support.

Such side-by-side existence of two elliptical constructions can be taken as evidence that V-to-I movement is optional in Japanese. The optionality of V-to-I movement plays a crucial role in the following analysis of the internal *-dake*.

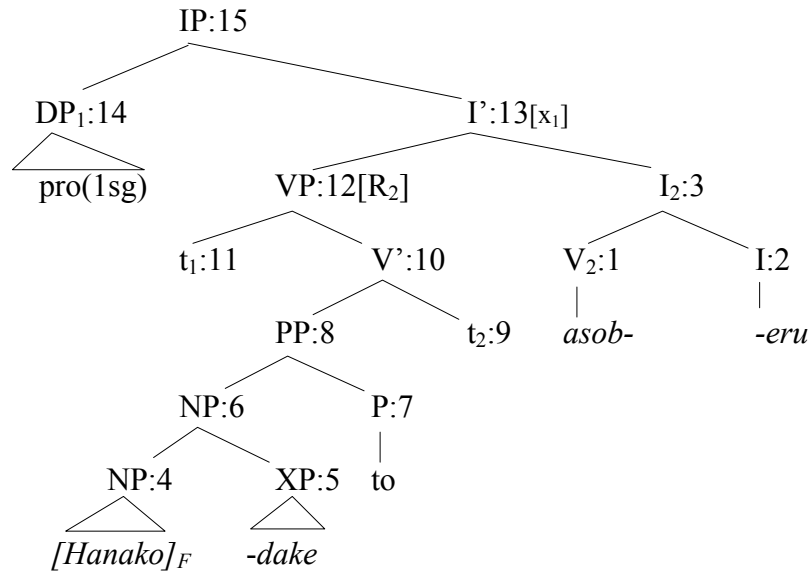
### 2.4.3 Internal *-dake*: deriving the scope ambiguity

#### 2.4.3.1 Wide-scope

Rooth's (1985) semantics for *only* provides a way for *only* to have a sentential scope without movement. His cross-categorical semantics for *only* allows it to combine with different elements (here, it is non-subject NP that *-dake* first combines with) and still quantify over propositions. Before providing full derivations and technical details of the analysis, I would like to convey the essence of the analysis in simplified form. For the sake of simplicity, in the following derivations, I will assume that the verb *asob-* 'play' is

a transitive verb which translates to ‘play-with’, and that the postposition *-to* ‘with’ is semantically vacuous. This does not change the main points of my argument.

(42) Internal *-dake* - wide-scope



	Ordinary denotation	Type	Store
1	play-with'	e,et	$\emptyset$
2	$\lambda R[\lambda x\lambda y[\diamond R(x)(y)]]$	$\langle\langle e,et \rangle, \langle e,et \rangle\rangle$	$\emptyset$
3	$\lambda x\lambda y[\diamond \text{play}(x)(y)]$	e,et	$\emptyset$
4	h	e	$\emptyset$
5	$\lambda y\lambda R\lambda x[\forall q[C(q) \wedge q \rightarrow q = R(y)(x)]]$	$\langle e, \langle\langle e,et \rangle, et \rangle\rangle$	$\emptyset$
6	$\lambda R\lambda x[\forall q[C(q) \wedge q \rightarrow q = R(h)(x)]]$	$\langle\langle e,et \rangle, et \rangle$	$\emptyset$
7	(semantically vacuous)		
8	$\lambda R\lambda x[\forall q[C(q) \wedge q \rightarrow q = R(h)(x)]]$	$\langle\langle e,et \rangle, et \rangle$	$\emptyset$
9	$R_2$	e,et	$\{R_2\}$
10	$\lambda x[\forall q[C(q) \wedge q \rightarrow q = R_2(h)(x)]]$	et	$\{R_2\}$
11	$x_1$	e	$\{x_1\}$
12	$\forall q[C(q) \wedge q \rightarrow q = R_2(h)(x_1)]$	t	$\{R_2, x_1\}$
	FINAL TRANSLATION		
12B	$\lambda R_2[\forall q[C(q) \wedge q \rightarrow R_2(h)(x_1)]]$	$\langle\langle e,et \rangle, t \rangle$	$\{x_1\}$
13	$\forall q[C(q) \wedge q \rightarrow \diamond \text{play-with}'(h)(x_1)]$	t	$\{x_1\}$
	FINAL TRANSLATION		
13B	$\lambda x_1[\forall q[C(q) \wedge q \rightarrow \diamond \text{play-with}'(h)(x_1)]]$	et	$\emptyset$
14	i	e	$\emptyset$
15	$\forall q[C(q) \wedge q \rightarrow q = \diamond \text{play-with}'(h)(i)]$	t	$\emptyset$

“The only person I can play with is Hanako” - wide-scope for *-dake*, assuming that  $C = \lambda p\exists x[p = \diamond \text{play-with}'(x)(i)]$  determined as follows:

	<i>Domain of quantification</i>	<i>Type</i>	<i>Store</i>
4	$\lambda y[y=y]$	$\langle e, t \rangle$	$\emptyset$
8	$\lambda y[y=y]$	$\langle e, t \rangle$	$\emptyset$
9	$\lambda R[R = R_2]$	$\langle \langle e, \langle e, t \rangle \rangle, t \rangle$	$\{R_2\}$
10	$\lambda P \exists x[P = R_2(x)]$	$\langle \langle e, t \rangle, t \rangle$	$\{R_2\}$
11	$\lambda x[x = x_1]$	$\langle e, t \rangle$	$\{x_1\}$
12	$\lambda p[\exists x'[p = R_2(x')(x_1)]$	$\langle t, t \rangle$	$\{R_2, x_1\}$
	FINAL TRANSLATION		
12B	$\lambda R_2[\lambda p[\lambda p[\exists x'[p = R_2(x')(x_1)]]]$	$\langle \langle \langle e, \langle e, t \rangle, \langle t, t \rangle \rangle \rangle$	$\{x_1\}$
13	$\lambda p[\exists x'[p = \diamond \text{play}(x')(x_1)]]$	$\langle t, t \rangle$	$\{x_1\}$
	FINAL TRANSLATION		
13B	$\lambda x_1 \lambda p[\exists x'[p = \diamond \text{play}(x')(x_1)]]$	$\langle e, \langle t, t \rangle \rangle$	$\emptyset$
14	$i$	$e$	$\emptyset$
15	$\lambda p[\exists x[p = \diamond \text{play}(x)(i)]]$	$\langle t, t \rangle$	$\emptyset$

In this derivation we can see that the verb ‘play’ has moved to I, forming the complex expression ‘can-play’. Crucially, there is a trace in the original V position. The main claim here is that the semantic type of the trace is the same as the semantic type of the V+modal. This means that the trace can act as a place-holder for V+modal, effectively bringing it under the scope of *-dake*.

In more technical terms, the claim I would like to make is that the source for the wide-scope of the internal *-dake* is the semantic lowering of the modal, caused by optional V-to-I movement, and the cross-categorical character of *-eru* ‘can’. When the verb raises to I, where *-eru* is, the semantic type of *-eru* is the one which takes the verb as its first argument and yields the same type, acting as a predicate modifier. For example, if the verb is of type  $\langle e, \langle e, t \rangle \rangle$  (transitive verb), *-eru* is type  $\langle \langle e, \langle e, t \rangle \rangle, \langle e, \langle e, t \rangle \rangle \rangle$ . If the semantic type of modal is different, for example, that of a sentence modifier  $\langle t, t \rangle$ , the derivation will crash because of the type mismatch between the verb and modal. The following is the list of notations for variables used in the derivation above as well as in the derivations to follow:

(43) Notations for variables<sup>18</sup>

x,y,z	<i>e</i>	f	ee	P,Q	et	R	e,et
p,q	<i>t</i>	$\emptyset, \mathfrak{R}$	et,t	k	$\langle\langle e,et \rangle, t \rangle$	$\mathfrak{I}$	$\langle\langle et, t \rangle, t \rangle$
$\aleph$	et,et	H	tt	J	tt,t		

(NOTE: Subscripts and prime(s) do not affect the type of variables)

Constants

*Hanako*      h                      pro<sub>1sing</sub>      i      *asob-*                      play-with'

The steps 1, 2 and 9 are crucial: the verb which has raised to I (step 1) left a trace with an identical type in its place of origin (step 9); it then combines with the modal which is of a predicate-modifier type (step 2). When VP and I are combined at step 13, the verb trace semantically lowers the verb+modal combo, giving rise to the wide-scope reading of *-dake*.

As we saw above, in the previous studies, QR to IP was proposed to give this reading. Here, however, the wide-scope is achieved without QR or movement of *-dake* itself. This analysis does not conflict with the rigidity of scope in Japanese. In the next subsection, we will see how the narrow-scope reading for the internal *-dake* comes about.

### 2.4.3.2 Narrow-scope

Now, I will turn to the narrow-scope reading, which is available only for the internal *-dake*. In this analysis, for *-dake* to take the narrow scope, it is crucial that the verb and the modal stay separate. If they come together, the modal is lowered in the interpretation and comes into the scope of *-dake*, as is shown in the previous subsection.

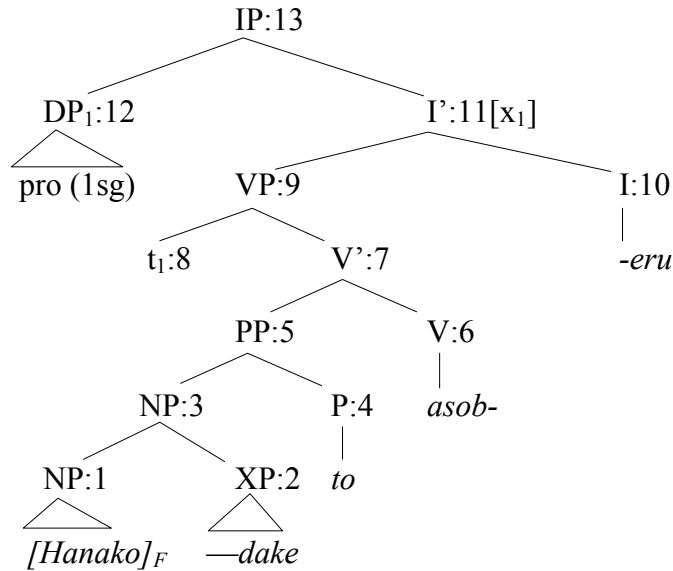
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<sup>18</sup> I will use simplified system for writing variable types. For example, et =  $\langle e, t \rangle$ , e,et =  $\langle e, \langle e, t \rangle \rangle$ , and so forth.



It is possible for the verb to stay in-situ, since V-to-I movement is optional as argued above. The verb and modal stay separate when the verb movement does not occur. Thus, the modal combines with the IP instead of V, acting as a sentential operator, not a predicate-modifier as in the case of wide-scope internal *-dake*.

(44) Internal *-dake* - narrow-scope



	Ordinary denotation	Type	Store
1	$h$	$e$	$\emptyset$
2	$\lambda y \lambda R \lambda x [\forall q [C(q) \wedge q \rightarrow q = R(y)(x)]]$	$\langle e, \langle \langle e, \langle e, t \rangle, \langle e, t \rangle \rangle \rangle \rangle$	$\emptyset$
3	$\lambda R \lambda x [\forall q [C(q) \wedge q \rightarrow q = R(h)(x)]]$	$\langle \langle e, \langle e, t \rangle \rangle, \langle e, t \rangle \rangle$	$\emptyset$
4	(semantically vacuous)		
5	$\lambda R \lambda x [\forall q [C(q) \wedge q \rightarrow q = R(h)(x)]]$	$\langle \langle e, \langle e, t \rangle \rangle, \langle e, t \rangle \rangle$	$\emptyset$
6	play-with'	$\langle e, \langle e, t \rangle \rangle$	$\emptyset$
7	$\lambda x [\forall q [C(q) \wedge q \rightarrow \text{play-with}'(h)(x)]]$	$\langle e, t \rangle$	$\emptyset$
8	$x_1$	$e$	$\{x_1\}$
9	$\forall q [C(q) \wedge q \rightarrow q = \text{play-with}'(h)(x_1)]$	$t$	$\{x_1\}$
10	$\lambda p [\diamond p]$	$\langle t, t \rangle$	$\emptyset$
11	$\diamond \forall q [C(q) \wedge q \rightarrow q = \text{play-with}'(h)(x_1)]$	$t$	$\{x_1\}$
FINAL TRANSLATION			
11B	$\lambda x_1 [\diamond \forall q [C(q) \wedge q \rightarrow q = \text{play-with}'(h)(x_1)]]$	$\langle e, t \rangle$	$\emptyset$
12	$i$		
13	$\diamond \forall q [C(q) \wedge q \rightarrow q = \text{play-with}'(h)(i)]$	$t$	$\emptyset$

“I can play with Hanako alone (without playing anyone else).” – narrow scope for *-dake*, assuming that  $C = \lambda p [\exists x [p = \text{play-with}'(x)(i)]]$  determined as follows:

<i>Domain of quantification</i> <sup>19</sup>		<i>Type</i>	<i>Store</i>
1	$\lambda y[y=y]$	$\langle e, t \rangle$	$\emptyset$
3	$\lambda y[y=y]$	$\langle e, t \rangle$	$\emptyset$
4	(semantically vacuous)		
5	$\lambda y[y=y]$	$\langle e, t \rangle$	$\emptyset$
6	$\lambda R'[R'=\lambda x'\lambda y'[\text{play-with}'(x')(y')]]$	$\langle \langle e, \langle e, t \rangle \rangle, t \rangle$	$\emptyset$
7	$\lambda P\exists x[P=\lambda y'[\text{play-with}'(x)(y')]]$	$\langle \langle e, t \rangle, t \rangle$	$\emptyset$
8	$\lambda z[z=x_1]$	$\langle e, t \rangle$	$\emptyset$
9	$\lambda p[\exists x' [p= \text{play-with}'(x')(x_1)]]$	$\langle t, t \rangle$	$\emptyset$

$\lambda p[\exists x' [p= \text{play-with}'(x')(x_1)]]$  applied to  $i$  is equivalent to:  $\lambda p[\exists x' [p= \text{play-with}'(x')(i)]]$

The crucial difference in this derivation from the one for the wide-scope *-dake* is the absence of V-to-I movement, and the semantics of the modal *-eru* ‘can’ necessitated by it. In the derivation of the wide-scope *-dake*, the denotation of *-eru* is:  $\lambda R[\lambda x\lambda y[\diamond R(x)(y)]]$ , which is type  $\langle \langle e, et \rangle, \langle e, et \rangle \rangle$ , taking the raised verb of type  $\langle e, et \rangle$  as its first argument, as we saw above. On the other hand, in the derivation of the narrow-scope *-dake*, it is  $\lambda p[\diamond p]$ , which is type  $\langle t, t \rangle$ , which takes the entire VP (type  $t$ ) as its argument (steps 10 & 11). In the former, the presence of the verb trace ultimately lowers back the [V+I] to its position into the scope of *-dake*. This semantic lowering simply is not available in the latter due to the lack of verb raising.

This analysis predicts that the different patterns of VP ellipsis yields a different reading for *-dake*. Earlier in this section, I have noted that there are two patterns of VP ellipsis: (i) the verb raises to I and is not deleted, as illustrated in (39), and (ii) the verb stays inside VP and is deleted, and *su*-support occurs to support the stranded tense, as in

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<sup>19</sup> In this structure, the domain of quantification is inside the VP, not the whole clause. The difference between this and (42) is that here, V-to-I movement does not take place. It is not clear at this point how the domain of quantification and V-to-I movement correlate when *dake* only c-commands the complement NP of the postposition.

(41). Since the verb raises to I, the pattern (i) should give only the wide-scope reading, and (ii), in which the verb stays in-situ, should give only the narrow-scope reading. This is almost borne out, but not quite, in that the wide-scope *-dake* and VP ellipsis results in an unacceptable sentence:<sup>20</sup>

- (45) a. John-wa Mary-to-**dake** asob-eru. (External *dake*, fixed wide-scope)  
 John-TOP Mary-with-**only** play-can  
 “Mary is the only person John can play with.”
- b. \*Bill-mo asob-eru.  
 Bill-also play-can  
 \* “Bill also can.”
- c. \*Bill-mo so dek-iru.  
 Bill -also so do-can  
 \* “Bill can, too.”

Thus, the generalization between the wide-scope and the narrow-scope of *-dake* concerning VP ellipsis is as follows: If the elided sentence yields only the wide-scope of *-dake*, the sentence is unacceptable; if it yields the narrow-scope of *-dake*, the sentence is acceptable.

Keeping this diagnosis in mind, consider the following example:

- (46) a. John-wa Mary-**dake**-to asob-eru.  
 John-TOP Mary-**only**-with play-can  
 i. “Mary is the only person John can play with.” *dake* > can  
 ii. “John can play with Mary alone.” can > *dake*

---

<sup>20</sup> This seems to hold in English as well:

- a. John can only play with Mary.  
 b. \*Bill can, too.  
 c. Bill can only play with Mary, too.

- b. \*Bill-mo asob-eru. <V remains>  
 Bill-also play-can  
 \* “Bill also can.”
- c. Bill-mo so dek-iru. <V deleted + *su*-support for modal and tense>  
 Bill-also so do-can  
 “Bill can, too.”  
 “Bill can play with Mary alone, too.” = for (a.ii) *can* > *only*

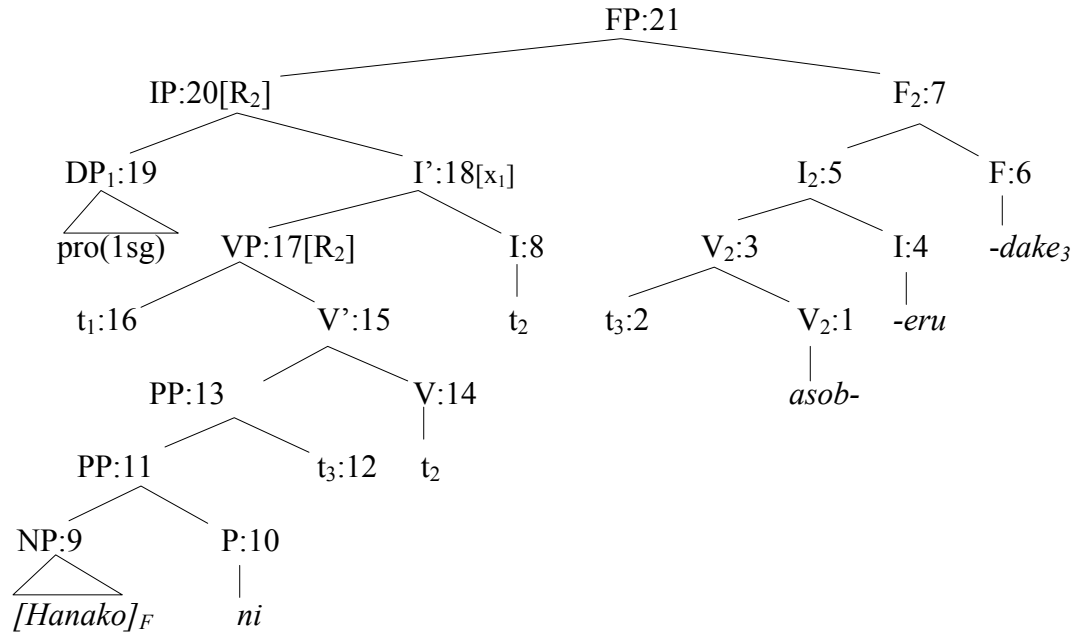
In (46b), the verb remains in the elided sentence because it raises to I. In the interpretation, I is semantically lowered with the verb, resulting in the wide-scope of *-dake* over *can*. The sentence is unacceptable, as predicted. On the other hand, in (46c), the verb does not raise and is deleted along with the VP. In this case, the sentence is acceptable, and the only reading is the narrow-scope of *-dake*. This example shows, therefore, that the V-to-I movement is relevant for the wide- vs. narrow-scope reading of *-dake* w.r.t. the modal.

In the next section, I will discuss the external *-dake*, which has fixed wide-scope w.r.t. modal. It will be proposed that the source of this wide-scope is somewhat different from that of the internal *-dake* just discussed above.

#### 2.4.4 External *-dake*

For the external *dake*, I assume *-dake* is attached to PP, and moves to V-I-F, for there is nothing that blocks this movement. Since this word-order has only the wide-scope reading, it must be the case that this movement is forced.

The following is the structure and the derivation proposed for the external *dake*:

(47) External *dake*

Ordinary denotation

Type

Store

1	play-with'	$\langle e, \langle e, t \rangle \rangle$	$\emptyset$
2	$\lambda R[R]$	$\langle \langle e, \langle e, t \rangle \rangle, \langle e, \langle e, t \rangle \rangle \rangle$	$\emptyset$
3	$\lambda R[R](\text{play-with}') = \text{play-with}'$	$\langle e, \langle e, t \rangle \rangle$	$\emptyset$
4	$\lambda R[\lambda x' \lambda y' [\diamond R(x')(y')]]$	$\langle \langle e, \langle e, t \rangle \rangle, \langle e, \langle e, t \rangle \rangle \rangle$	$\emptyset$
5	$\lambda x' \lambda y' [\diamond \text{play}(x')(y')]$	$\langle e, \langle e, t \rangle \rangle$	$\emptyset$
6	$\lambda R \lambda x \lambda y \forall p [C(p) \wedge p \rightarrow p = R(x)(y)]$	$\langle \langle e, \langle e, t \rangle \rangle, \langle e, \langle e, t \rangle \rangle \rangle$	$\emptyset$
7	$\lambda x \lambda y \forall p [C(p) \wedge p \rightarrow p = \diamond \text{play}(x)(y)]$	$\langle \langle e, \langle e, t \rangle \rangle \rangle$	$\emptyset$
8	$R_2$	$\langle \langle e, \langle e, r \rangle \rangle \rangle$	$\{R_2\}$
9	$h$	$e$	$\emptyset$
10	(semantically vacuous)		
11	$h$	$e$	$\emptyset$
12	$\lambda x[x]$	$\langle e, e \rangle$	$\emptyset$
13	$h$	$e$	$\emptyset$
14	$R_2$	$\langle e, \langle e, t \rangle \rangle$	$\{R_2\}$
15	$R_2(h)$	$\langle e, t \rangle$	$\{R_2\}$
16	$x_1$	$e$	$\{x_1\}$
17	$R_2(h)(x_1)$	$t$	$\{R_2, x_1\}$
	FINAL TRANSLATION		
17B	$\lambda R_2[R_2(h)(x_1)]$	$\langle \langle \langle e, t \rangle, t \rangle, t \rangle$	$\{x_1\}$
18	$R_2(h)(x_1)$	$t$	$\{x_1, R_2\}$
	FINAL TRANSLATION		
18B	$\lambda x_1[R_2(h)(x_1)]$	$\langle e, t \rangle$	$R_2$
19	$i$	$e$	$\emptyset$
20	$R_2(h)(i)$	$t$	$\{R_2\}$
	FINAL TRANSLATION		
20B	$\lambda R_2[R_2(h)(i)]$	$\langle \langle e, \langle e, t \rangle \rangle, t \rangle$	$\emptyset$
21	$\forall p [C(p) \wedge p \rightarrow p = \diamond \text{play}(h)(i)]$	$t$	$\emptyset$

“The only person I can play with is Hanako.” – wide scope for *-dake*, assuming that  $C = \lambda p \exists x [\diamond \text{play-with}'(x)(i)]$  determined as follows:

<i>Domain of quantification</i> <sup>21</sup>	<i>Type</i>	<i>Store</i>
5 $\lambda x' \lambda y' [\diamond \text{play-with}'(x')(y')]$	$\langle e, \langle e, t \rangle \rangle$	$\emptyset$
6 (no focus denotation)		
7 $\lambda x' \lambda y' [\diamond \text{play-with}'(x')(y')]$	$\langle e, \langle e, t \rangle \rangle$	$\emptyset$
9&11 $\lambda y [y=y]$	$\langle e, t \rangle$	$\emptyset$
12 (no focus denotation)		
13 $\lambda y [y=y]$	$\langle e, t \rangle$	$\emptyset$
14 $\lambda R [R = R_2]$	$\langle \langle \langle e, \langle e, t \rangle, t \rangle \rangle \rangle$	$\{R_2\}$
15 $\lambda P \exists x [P = R_2(x)]$	$\langle \langle e, t \rangle, t \rangle$	$\{R_2\}$
16 $\lambda z [z = x_1]$	$\langle e, t \rangle$	$\{x_1\}$
17 $\lambda p \exists x [p = R_2(x)(x_i)]$	$\langle t, t \rangle$	$\{R_2, x_i\}$
FINAL TRANSLATION		
17B $\lambda R_2 [\lambda p \exists x [p = R_2(x)(x_i)]]$	$\langle \langle \langle e, \langle e, t \rangle, \langle t, t \rangle \rangle \rangle \rangle$	$\{x_1\}$
18 $\lambda p \exists x [p = R_2(x)(x_i)]$	$\langle t, t \rangle$	$\{x_1, R_2\}$
FINAL TRANSLATION		
18B $\lambda x_1 [\lambda p \exists x [p = R_2(x)(x_i)]]$	$\langle e, \langle t, t \rangle \rangle$	
19 $i$	$e$	$\emptyset$
20 $\lambda p \exists x [p = R_2(x)(i)]$	$\langle t, t \rangle$	$\{R_2\}$
FINAL TRANSLATION		
20B $\lambda R_2 [\lambda p \exists x [p = R_2(x)(i)]]$	$\langle \langle e, \langle e, t \rangle \rangle, \langle t, t \rangle \rangle$	$\emptyset$
21 $\lambda p \exists x [p = \diamond \text{play-with}'(x)(i)]$	$\langle t, t \rangle$	$\emptyset$

In the ordinary denotation, the trace of *-dake* is not simply interpreted as  $x_3$ , but as a function that maps its argument onto itself (step 12). The position of the trace is unique in that it is adjoined to an XP that contains a focused element, and that its antecedent is a focus-sensitive operator. Thus, it is plausible that the interpretation of the trace is different from that of an ordinary head or other non-argument XP's (e.g. extraposed relative clause). Here, it is assumed that the interpretation of the trace “preserves” the

information contained in the XP to which it is adjoined, rather than creating another variable. In calculating the domain of quantification, this trace does not receive a focus denotation. *Dake* itself does not receive it, therefore neither does its trace.

In this analysis of the external *-dake*, the assumption made in previous studies that the whole *-dake*-phrase raises is minimally modified. I have argued that QR does not occur in deriving the ambiguous scope of the internal *-dake*, nor does it occur here. Rather, it is *-dake* alone that moves.

#### 2.4.5 Assessing the non-QR approach

In this section, I will discuss the advantages and disadvantages of the non-QR approach. One definite advantage it has over the QR approach is in predicting the correct scope relationship between higher QP and lower *-dake*. As pointed out above, the QR approach to the wide-scope of *-dake* over the modal results in the possibility of the *-dake*-phrase taking scope over a higher QP (e.g. subject). Example (7) is repeated here for illustration:

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<sup>21</sup> In this structure, *dake* ‘only’ c-commands only the NP *Taro*. Therefore, the NP is the only node that receives the focus denotation according to Rooth’s (1985) system. However, Rooth (1985) notes that when *only* is adjoined to NP, local domain selection gives a wrong result (pp.130-131), when he is discussing *only* + subject NP. The matter is further complicated by the fact that here, NP + *dake* is in the VP-internal position. It seems that everything inside of the VP must get a focus denotation, or the derivation gets stuck: if only the NP *Taro* receives the focus denotation, it cannot combine with the verb trace; if the node I receives focus denotation, the variable for the verb trace (R<sub>2</sub>) cannot be bound at I’, as it ought to be. And yet, the domain of quantification itself is the whole clause (includes the modal). It is not clear to me how to solve this problem so that it would derive a salient p-set otherwise. This problem is the same in the other two cases discussed below.

(48) Daremo-ga Taro-dake-ni denwa-dekiru.

Everyone-NOM Taro-dake-DAT telephone-can

(i) “Everyone can call Taro alone (no one called anyone else).”

*every > can > dake*

(ii) “For everyone, Taro is the only person s/he can call.”

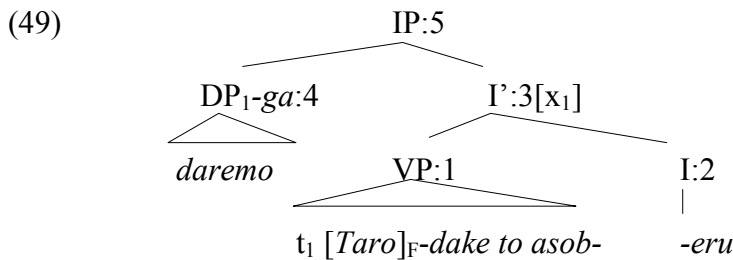
*every > dake > can*

\* “Taro is the only person such that everyone can call him (not everyone can call Mary, not everyone can call Bill, etc.).” *\*dake > every > can*

On the other hand, in the head-movement analysis proposed above, the correct scope is predicted, because semantic lowering takes the modal down into the scope of *-dake*, which does not move at all. The following abbreviated structures and derivation will illustrate this point.

First, let us look at the case where V-to-I movement does not occur (*every > can*

*> dake*):



Ordinary denotation

Type

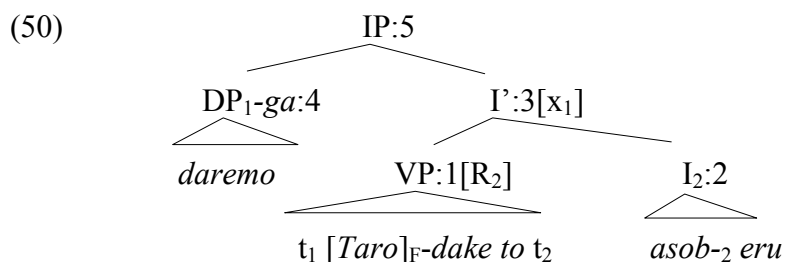
Store

1	$\forall q[C(q) \wedge q \rightarrow \text{play-with}'(h)(x_1)]$	$\langle e, t \rangle$	$\{x_1\}$
2	$\lambda p[\diamond p]$	$\langle t, t \rangle$	$\emptyset$
3	$\diamond \forall q[C(q) \wedge q \rightarrow \text{play-with}'(h)(x_1)]$	t	$\{x_1\}$
FINAL TRANSLATION			
3B	$\lambda x_1 \diamond \forall q[C(q) \wedge q \rightarrow \text{play-with}'(h)(x_1)]$	$\langle e, t \rangle$	$\emptyset$
4	$\lambda P \forall z[\text{human}(z) \rightarrow P(z)]$	$\langle \langle e, t \rangle, t \rangle$	$\emptyset$
5	$\forall z[\text{human}(z) \rightarrow \diamond \forall q[C(q) \wedge q \rightarrow \text{play-with}'(h)(z)]]$	t	$\emptyset$

“For everyone, it is possible to play with Hanako alone.”



This interpretation is straightforward. Next, let us turn to the case when V-to-I movement occurs with the internal *-dake* (i.e. the interpretation):



	<i>Ordinary denotation</i>	<i>Type</i>	<i>Store</i>
1	$\forall q[C(q) \wedge q \rightarrow R_2(h)(x_1)]$ FINAL TRANSLATION	t	$\{R_2, x_1\}$
1B	$\lambda R_2[\forall q[C(q) \wedge q \rightarrow R_2(h)(x_1)]]$	$\langle\langle e, \langle e, t \rangle \rangle, t \rangle$	$\{x_1\}$
2	$\lambda x \lambda y[\diamond \text{play-with}'(x)(y)]$	$\langle e, \langle e, t \rangle \rangle$	$\emptyset$
3	$\forall q[C(q) \wedge q \rightarrow \diamond \text{play-with}'(h)(x_1)]$ FINAL TRANSLATION	t	$\{x_1\}$
3B	$\lambda x_1 \forall q[C(q) \wedge q \rightarrow \diamond \text{play-with}'(h)(x_1)]$	$\langle e, t \rangle$	$\emptyset$
4	$\lambda P \forall z[\text{human}(z) \rightarrow P(z)]$	$\langle\langle e, t \rangle, t \rangle$	$\emptyset$
5	$\forall z[\text{human}(z) \rightarrow \forall q[C(q) \wedge q \rightarrow \diamond \text{play-with}'(h)(z)]]$	t	$\emptyset$

“For everyone, Hanako is the only person he/she can play with.”

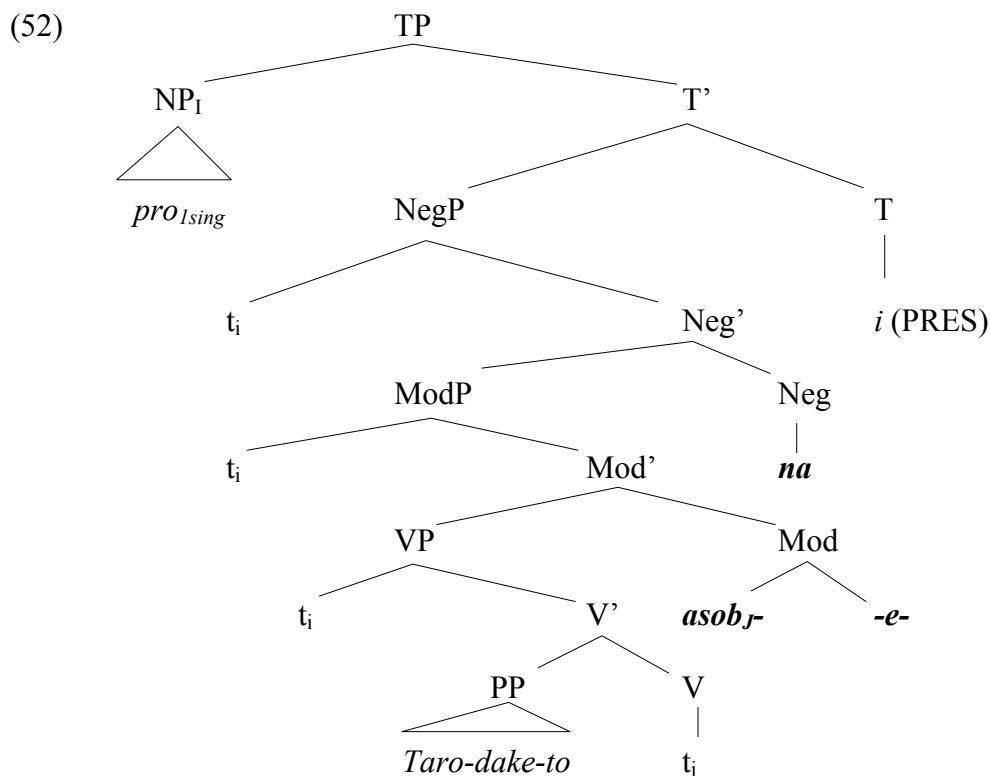
Here, the modal is bound back to the position of the verb trace together with the verb, because of the V-to-I movement. Again, this analysis yields the correct scope between *every* and *-dake* without any extra machinery. Rather, all the scope relation follows straightforwardly from the analysis, preserving the rigidity of QPs as well as accounting for the scope interaction between *-dake* and the modal.

This is not to say that this analysis trouble-free. One of the problems is that the way by which the external *-dake* obtains higher scope over the modal is ad-hoc. Such a movement is not motivated elsewhere in the language. Another stipulation needs to be made to account for cases when Japanese verb complexes have more than one scope-bearing suffix following the verb stem, such as the modal and the negation. The non-QR

analysis presented here, taken as it is, predicts such a sentence to be three-way ambiguous, which is not borne out:

- (51) Taro-**dake**-to asob-e-nai  
 Taro -only-with play-can-NEG
- i. “I can’t to play with Taro alone (I must play with others, too).”  
 Narrow-scope - *not* > *can* > *-dake*
- ii. “Taro is the only person I can’t play with (I can play with others).”  
 Wide-scope - *-dake* > *not* > *can*
- but: iii. \*“(It is no the case that the only person I can play with is Taro  
 (I can play with others, too).”  
 \*Intermediate-scope - *not* > *-dake* > *can*

The reading (i) is available when there is no V-to-I movement. The reading (ii) comes about when V moves to the modal and then to Neg cyclically, thus effecting semantic lowering of both scopal elements into the scope of *-dake*. The unavailable third reading is allowed by this approach, since V-to-I is optional and there is no restriction placed on it. Thus, when V-to-I movement stops at the modal, the semantics lowers only the modal with V, resulting in the unavailable reading in which *-dake* has scope between the modal and the negation:



The relevant pieces are indicated in bold face. This structure consists of a half wide-scope mechanism (semantic lowering of modal *-e-* ‘can’) and a half narrow-scope mechanism (Neg is untouched) for *-dake* presented above. Since the reading given by this LF is not available, it is necessary to stipulate that when V-to-I movement occurs, V must move all the way up to the highest functional head in the clause.

## 2.5 Summary of the two approaches

Each of the two approaches presented in Sections 2.3 and 2.4 has its own advantages and disadvantages. An advantage of the QR-approach is its universality. QR is independently motivated for other languages, therefore, tying the scope interaction of *-dake* and the modal to QR has certain elegance to it. However, as is pointed out in section 2.3, the QR approach has a serious empirical disadvantage, for it predicts wrongly

that *-dake* takes scope over a c-commanding quantified NP (such as subject) as well as the modal.

If we insist on QR being the answer to our puzzle, this fact would lead us to a serious theoretical modification: one of the standard landing sites assumed for QR, i.e. IP-adjoined position, is not available in Japanese. The QR approach has another empirical/theoretical disadvantage as well. Japanese is generally agreed to be a rigid-scope language, in which the scope between two quantified phrases reflects c-commanding relationship between them at S-structure. Thus, Japanese is generally thought to lack QR, or, if QR does exist, it is “structure-preserving”. For such a language, raising of *-dake* via QR would be quite out of character, for *-dake* would be acting unlike every other quantified phrase in the language. Thus, the QR-approach fails to solve any of the three pieces involved in this puzzle.

Turning to the non-QR approach presented in this chapter, it has the advantage of overcoming both the empirical and theoretical disadvantages of the QR-approach at the cost of losing its advantage (elegance of universality). Since the wide scope of *-dake* over the modal is achieved in the non-QR approach by head movements – verb-raising (internal *-dake*) or *-dake* raising (external *-dake*) – and semantic lowering triggered by them, *-dake* does not have a chance to be “above” the subject either physically or semantically. Thus, *-dake* never takes scope over the subject in this approach. As for the disadvantages of the non-QR approach, the impact of losing universality of QR depends on how universal QR is taken to be – on whether one wishes to maintain that QR exists in all languages, including the so-called rigid-scope languages, or to allow that in such languages, non-surface scope phenomena are derived by some other principles than QR.

A more immediate theoretical problem of this approach is an ad-hoc stipulation of cyclic head-movement of *-dake*. Unlike V-to-I movement, there is no independent motivation for the movement itself, not to mention for the manner in which *-dake* takes along the heads between it and the modal. This means that while this approach solves the “Scope Ceiling” piece, it fails to solve the “P-ordering and Scope” piece in a satisfactory manner.

As for the “Case Follows” piece, neither approach even attempts to solve it. Ideally, a theory which solves the other two pieces should be able to solve the “Case Follows” piece as well, because when the pieces “Scope Ceiling” and “P-ordering and Scope” are put together, we can clearly see that the position of *-dake* within a phrase matters to its scope. And yet, either approach only makes at most a passing description of the piece and offers no serious explanation. In the next chapter, I will propose a theory which attempts to account for all of the pieces, and we will see that the answer to the “Case Follows” piece is actually the key to the behavior of *-dake*.

## CHAPTER 3: A hybrid approach

### 3.1 Introduction

In the last chapter, I have discussed two approaches which are radically different from each other. However, as is pointed out in the conclusion of the last chapter, both of them fail to solve all (or some of) the pieces of the scope puzzle. I will begin this chapter by laying out the necessary properties of a theory which would do so. Then I will go on to a discussion of the details of such a theory, by first focusing on the piece that has been least attended to in previous studies, the piece “Case Follows”.

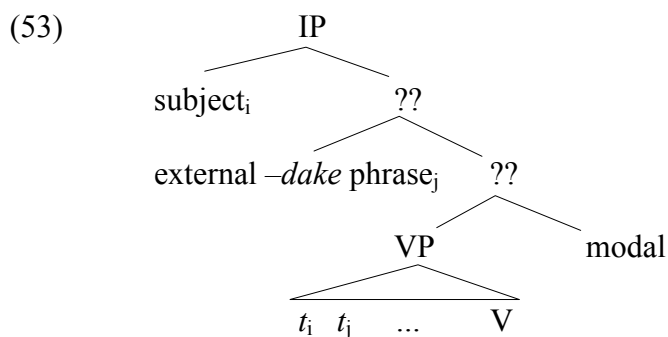
### 3.2 A blueprint for an ideal theory

The two approaches discussed in the last chapter approach the scope puzzle of *-dake* from the opposite ends, in a manner of speaking: the QR approach utilizes phrasal movement of the *-dake* phrase and the c-commanding relationship at LF. QR, as an independently motivated movement, has its appeal, but the appeal is lessened when the rigidity of scope between two quantified NPs, for whose scope ambiguity QR was originally proposed, in Japanese is considered. On the other hand, the non-QR approach uses a head movement of the verb or *-dake* and semantic lowering of the modal at LF. The strength of this approach is that it makes a correct prediction about *-dake*'s scope in relation to the subject, and that it fits in with the general scope rigidity of Japanese.

As a starting point for an “ideal” theory, let us take a look at how we might “fix” the problems of each approach. The major problem of the non-QR approach is an ad hoc stipulation of head-movement of *-dake* for external *-dake*. Note that this does not affect

internal *-dake* because the source of its wide scope is different from that of external *-dake* in this approach. Thus, if we can “fix” the scope mechanism for external *-dake*, the non-QR approach would work.

How about the QR approach? Its major problem is the wrong prediction for scope between wide scope of either internal or external *-dake* and the subject QP, caused by the IP-adjoined landing site which can be above the subject. We could “fix” this problem if we assume that the *-dake* phrase does raise, but not quite as high as IP-adjoined position in the standard QR. It must go up to a position between modal and subject, as is represented in the following structure:



The exact nature of the nodes represented by “??” must be examined: it may be an extended projection of the modal or I, or it may be a separate category.

The QR approach would need a further fix – the movement to this position needs to be optional for the internal *-dake*, but it must be forced for the external *-dake*, and the trigger for this difference must come from the position of *-dake*. This is an additional deviation from the standard QR theory, and one that requires Shoji (1986) to make an ad hoc stipulation. Recall that her judgment is different from the one discussed in this thesis as well as in Harada and Noguchi (1992). For her, postposition-internal *-dake* phrases

have only the narrow-scope reading, while accusative-marker-internal *-dake* phrases have ambiguous scope. She stipulates that the postposition does not raise with *-dake*, and thus prevents the trace of *-dake* phrase from being properly governed by the verb. The resulting ECP (Empty Category Principle) violation forces the postposition-internal *-dake* to have unambiguous narrow scope. A case-marker, on the other hand, is adjoined to the NP and is able to raise with it without violating ECP. Thus, case-marked *-dake* phrases can have wide-scope over modal.

Such a troublesome “fix”, however, would not be necessary if we employ a “division of labor” in the scope mechanisms proposed in the non-QR approach, which follows the division between the internal and external *-dake*. This is a more appropriate architecture for a theory which seamlessly incorporates the effects of different positions of *-dake* than the kind attempted by the QR approach. We can take advantage of both theories, rather than trying to “fix” one of them and ending up with different sets of problems.

The following is the outline and the details to be worked out for an ideal theory. As we see, it consists of features of both the QR and non-QR approaches. I will refer to this theory as a “hybrid theory”.



- (54) Hybrid theory
- a. Division of labor in scope mechanisms
    - i. Scope of internal *-dake* is determined by verb-raising and semantic lowering of modal (solution to “Scope Ceiling”)
 

*Dake* is a noun
    - ii. Forced “intermediate” raising of external *-dake* phrase (solution to “P-ordering and Scope”)
 

*Dake* is particle
  - b. Solution to “Case Follows”, which is the source for the division of labor in (a)
 

*Dake* is morphologically ambiguous between noun and particle

Evidence:

Historical – derived from a noun *take* ‘limit/extent’

Syntactic - (*-dake* patterns with nouns at the end of the clause (*-da* requirement) and after noun-modifiers (*-no* requirement), (i) a relative clause and (ii) A/AN
  - c. Independent motivation for the landing site for (a.ii).
 

(Bayer (1995))

In the following sections, I will attempt to build a hybrid theory according to this outline but in a slightly different order. I will start with (54b) by examining the morphological and syntactic properties of *-dake*, then move on to tying it to (54a) (i.e. solutions for “Scope Ceiling” and “P-ordering and Scope”). Then I will present a supporting theory for (54c) by Bayer (1995), which is independently motivated, to complete the hybridization.

### 3.3 Morphological/syntactic properties of *-dake*

In this section, I will examine *-dake* not only in NP-periphery but also in various other positions in order to show that *-dake* has dual morphological status, as a noun and as a particle, and that this is the reason why there are two positions for *-dake* w.r.t. postposition (internal and external). Specifically, I will discuss *-dake* in three positions, in the following order: (i) *-dake* at the end of a clause, and (ii) *-dake* attached to noun

modifiers (adjective and relative clause). Then I will come back to the current puzzle, (iii) *-dake* in NP periphery.

The idea that *-dake* can be a noun is not entirely new. Historically, *-dake* derived from a noun *take* ‘extent/limit’.<sup>22</sup> Shoji (1986) claims that *-dake* at the end of a clause ((i) above) is a noun. However, *-dake* in other positions have not been carefully examined but instead has been casually assumed to be a “particle”. I will show that *-dake* actually shows its nounhood in more positions than just the clausal one.

### 3.3.1 *Dake* at the end of a clause

The description of this environment is slightly misleading. When *-dake* is attached at the end of a sentence, copula (COP in the gloss) *da* must follow it, thus *-dake* is actually in the penultimate position.<sup>23</sup>

- (55) a. John-ga ringo-o tabe-ta **dake** **\*(da)** (non-past)  
 John-NOM apple-ACC eat-PAST **dake** **\*(COP<sub>NONPAST</sub>)**  
 “The only (relevant) thing that happened is that John ate apples.”<sup>24</sup>
- b. John-ga ringo-o tabe-ta **dake** **\*(da-tta)** (past)  
 John-NOM apple-ACC eat-PAST **dake** **\*(COP+PAST)**  
 “The only (relevant) thing that happened is that John ate apples.”

In Japanese, tensed verbs (*tabe-ta* ‘ate’ above) normally do not require additional copula to be a predicate; in fact, adding copula is ungrammatical. Compare (56) with (55):

- (56) a. John-ga ringo-o tabe-ru (\***da**) (non-past)  
 John-NOM apple-ACC eat-PRES (\***COP<sub>NONPAST</sub>**)  
 “John ate apples.”
- b. John-ga ringo-o tabe-ta (\***da-tta**) (past)  
 John-NOM apple-ACC eat-PRES (\***COP-PAST**)  
 “John ate apples.”

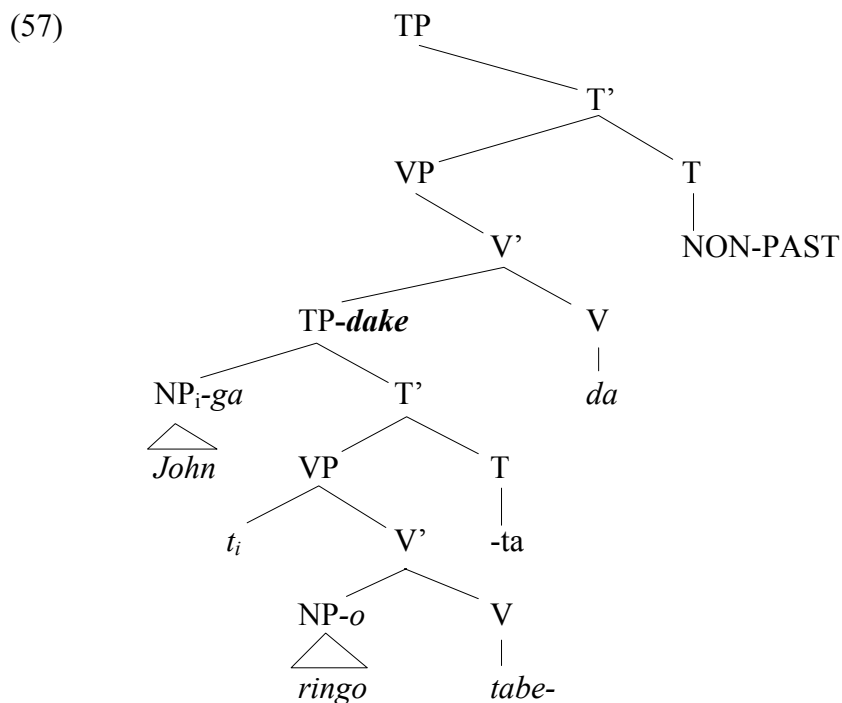
It is clear that *-dake* is triggering the presence of copula *da*, and that *da* is the predicate of the matrix clause, since it carries tense as seen in the above examples. This is unexpected under the traditional assumption that *-dake* is a real particle, which cliticizes onto a phrase (IP in this case) and does not project its own projection:

---

<sup>22</sup> The difference in voicing of the initial consonant probably comes from a phonological process *Rendaku*. For details, please refer to Ito, Mester and Padget (1995) among others.

<sup>23</sup> For a discussion of morphological/syntactic properties of copula *da*, see Nakayama (1989).

<sup>24</sup> With neutral intonation, without any single word bearing an emphatic accent.



This is the structure for (55) under the assumption that *-dake* is a particle cliticized onto the subordinate clause. Other “true” sentential “particles”, such as colloquial *-yo* (emphatic) or Q-morpheme *ka* do not require the presence of copula *-da*. Thus it is more plausible to assume that *-dake* is heading its own projection, which is not TP but some other XP which requires the presence of copula *-da*.

To determine what this XP headed by *-dake* is, we need to look at where *-da* usually appears. One of the positions is after an NP (58) or adjectival noun<sup>25</sup> (“AN”) (59) in a predicate position:

---

<sup>25</sup> Adjectival nouns, as the term suggests, exhibit properties that are a cross between noun and adjective. Their distribution is the same as adjectives, but they are similar to nouns in that they require a copula to be a predicate, and require different inflection in a predicate position and in a noun-modifying position, which is not the case for adjectives. Some claim that adjectives and adjectival nouns are syntactically parallel, the only difference being adjectives requiring a null copula, in a manner of speaking, instead of *-da*. We will return to this issue in later in this chapter.

(58) John-wa **isha** **da** - NP + *da*  
 John-TOP **doctor** **COP**  
 “John is a doctor.”

(59) Kono teeburu-wa **kirei** **da** - AN + *da*  
 this table-TOP **clean** **COP**  
 “This table is clean.”

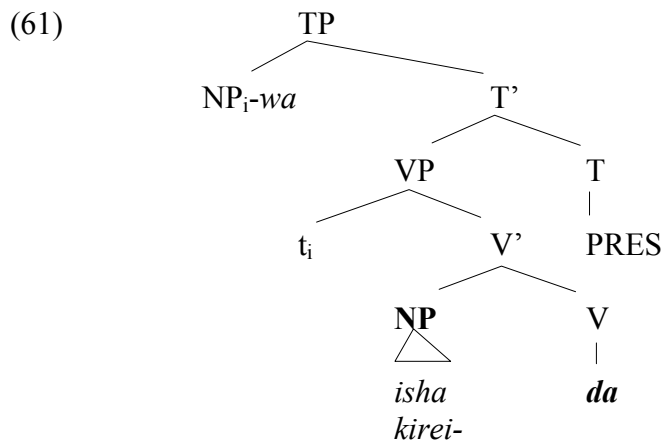
Note that with an adjective (60) or a verb (56) as a predicate, *-da* is not permitted.<sup>26</sup>

(60) Bara-wa **utsukushii** (**\*da**) - Adj. + *da*  
 rose-TOP **beautiful**  
 “Roses are beautiful.”

From these examples, we can deduce that both in (58) and (59), it is the nounhood of the (semantic) predicate that requires the presence of *-da*. This is in accordance with the grammar of the language, which dictates that every sentence must have tense, and that nouns and adjectival nouns cannot carry tense. Hereafter, I will refer to both N and AN predicates as “nominal predicates” and propose the following structure for them:

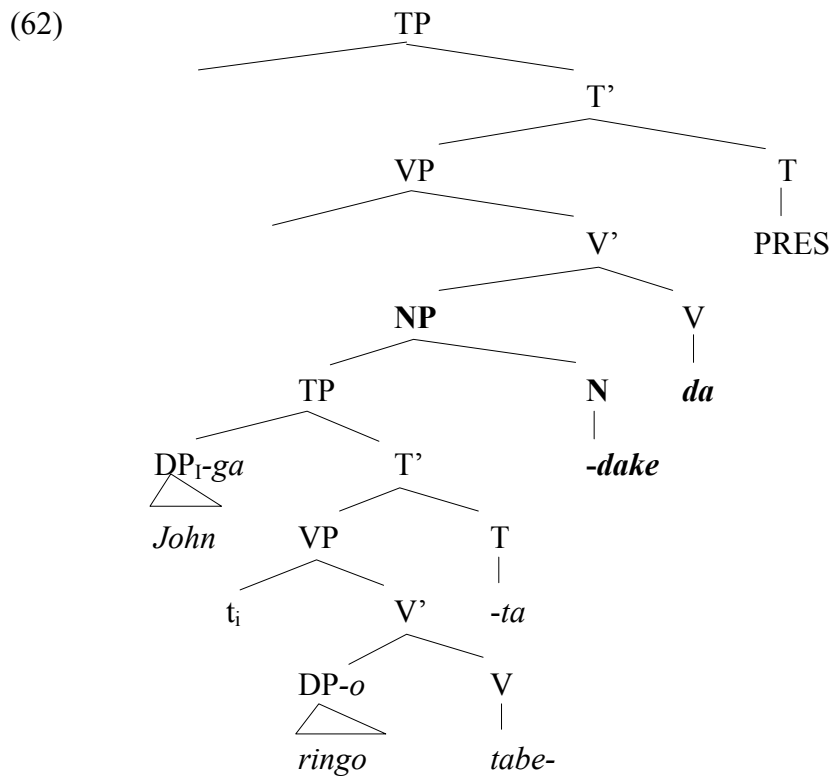
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<sup>26</sup> Whatever analysis of adjective one chooses, *-da* or decomposed *-de aru* is not permitted on a straight predicate adjective. See section 3.3.2.3 for further discussion of Japanese adjectival phrase.



From this, we can deduce that *-dake* is a noun in (55), thus requiring the presence of *da*.

Accordingly, (55) has the following structure:



There is no obvious way to test for what goes into the subject of the matrix clause. For the purpose of this thesis, I assume that the position is occupied by a covert expletive, though this assumption is not material to the point being made.

In addition to this argument for the nounhood of *-dake*, we can add the argument made by Shoji (1996). Her argument is based on the parallelism between *-dake* and *-wake* ‘cause, reason’ and *-tumori* ‘intention’ (her (66)).<sup>27</sup>

- (63) a. Sore-de John-ga itta            **wake da**  
           that-by John-NOM go-PAST        **reason COP**  
           ‘‘That is why John went.’’
- b. Asita     iku     **tumori**     **da**  
           tomorrow go     **intention**    **COP**  
           ‘‘I intend to go tomorrow.’’

In (55) and (63), *-dake*, *wake*, and *tumori* all appear after a verb, followed by a copula. They are traditionally classified as *keishiki meishi* (literally means ‘formal noun’), which are different from regular nouns in that they ‘‘must have a complement, i.e., none of these stands by itself’’ (p.45). The following shows that these nouns cannot stand alone (her (67)):

- (64) a. \*Dake     da  
       b. \*Wake    da  
       c. \*Tumori da

As opposed to:

- (65) *pro* sensei      da  
       *pro* teacher     COP  
       “[It/There] is the teacher.”

The structure she proposes for *-dake* following a clause is essentially the same as (62) above:

- (66) [S [VP [NP [S' ...] [N *dake* ] ] [V *da* ]]]

While I will not go into Shoji's claim that this construction is on a par with a cleft construction, we share the central observation: that there are a few nouns in Japanese which are bound morphemes and require sentential complement, and that *-dake* is one of them.

In the next section, let us take a look at *-dake* after an adjective and a relative clause. They are discussed side by side because they both act as noun-modifiers, and, under some analyses, they share a common structure (see 3.3.2.3).

### 3.3.2 *Dake* after a Noun-modifier

#### 3.3.2.1 Relative Clause

In Japanese, there are no overt relative pronouns corresponding to English *which* etc., and Japanese being a head-final language, a relative clause, indicated by square

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<sup>27</sup> Among them is also *koto* ‘thing, fact’, which is used to “nominalize” an embedded clause when it is in a



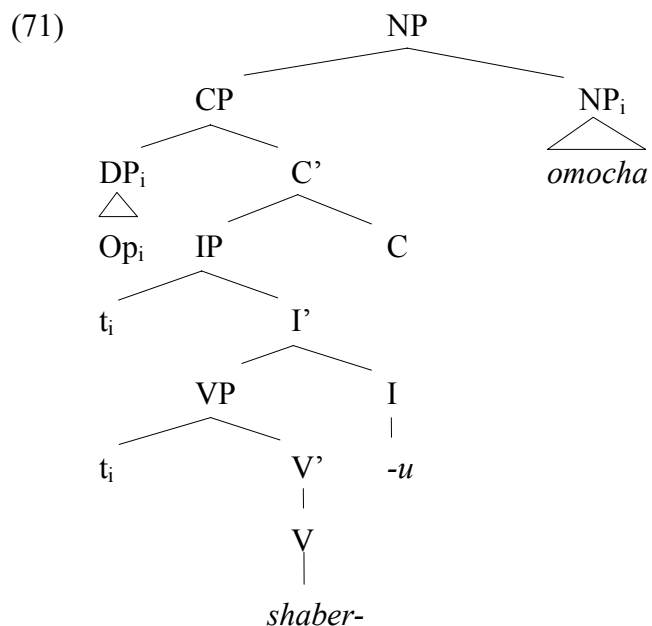
brackets, immediately precedes the associated noun. Here are a few examples of Japanese relative clauses, where the relative clause is placed within square brackets:

- (67) [koko-ni aru] hon  
 here-LOC exist book  
 “book(s) that is/are here”
- (68) [koko-ni at-ta] hon  
 here-LOC existed book  
 “book(s) that was/were here”
- (69) [shaberu] omocha  
 talk toy  
 “a toy that talks”
- (70) [tomodachi-ga kure-ta] hon  
 friend-NOM give-PAST book  
 “a book a friend gave [me]”

I will follow Ishii (1988, 1991) and Kaplan and Whitman (1995) among others in the view that the relative clause in Japanese is a CP attached to an NP. For example, the structure for (69) is as follows:

---

subject or object position.



There is a covert operator in Spec CP, the same position where an overt relative pronoun would be in English. It starts out in Spec VP of the relative clause, and is co-indexed with the head noun of the entire NP.

Now turning to *-dake*, it is possible to insert it after the verb in (67) through (70).

However, simply doing so creates ungrammatical sentences:

(72) \**koko-ni aru dake hon* cf.(67)  
 here-LOC exist *dake* book

(73) \**shaberu dake omocha* cf. (69)  
 talk- *dake* toy

To make grammatical sentences when *-dake* is attached to a relative clause modifying a noun, *-no* must be added along with *-dake*:

- (74) *shaberu dake no omocha*  
 talk      *dake no*      toy  
 “a toy that only talks (it does not move, etc.)”
- (75) *tomodachi-ga kure-ta dake no hon*  
 friend-NOM      give-PAST      *dake no*      book  
 “a book that only a friend gave [me] (not given by the prime minister or something)”

It must be some morphological property of *-dake* that demands the appearance of *-no*, since *-no* cannot appear without *-dake*.

Much like the case with copula *da*, the only other place where *-no* appears in a noun modifying construction is when the modifier itself is a noun:<sup>28</sup>

- (76) *eigo no sensei*  
 English lang.      *no*      teacher  
 “an English (language) teacher”
- (77) *mainichi no shokuji*  
 every day      *no*      meal  
 “daily meal”

Compare these sentences to the following (repeated), in which an adjective modifies a noun:

- (78) *yakamashii ongaku*  
 noisy (Adj.)      music  
 “noisy music”

---

<sup>28</sup> This *no* is homophonous with the genitive marker *no* and the complementizer *no*. Their distribution is different, but it is beyond the scope of this dissertation to explore the possible relationship among them.

Kitagawa and Ross (1982) proposes the following language-specific licensing condition on *-no* in this context:

- (79) Language-Specific Licensing condition on Noun Modification in Japanese (Phonological Component):

The particle *no* is licensed in the following configuration:

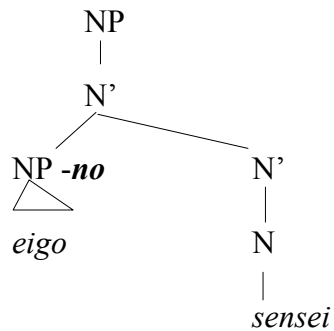
[<sub>NP</sub> XP *no* N], where N is phonologically empty or XP is [+N, -V] and N is not phonologically empty.

The first half of the condition, in which N is empty, is not relevant to our discussion. The second half fits the context here, as well as subsuming the “genitive” case marker *-no*, which is (suspiciously) homophonous with the *-no* we are looking at:

- (80) John-no hon  
 John-GEN book  
 “John’s book”

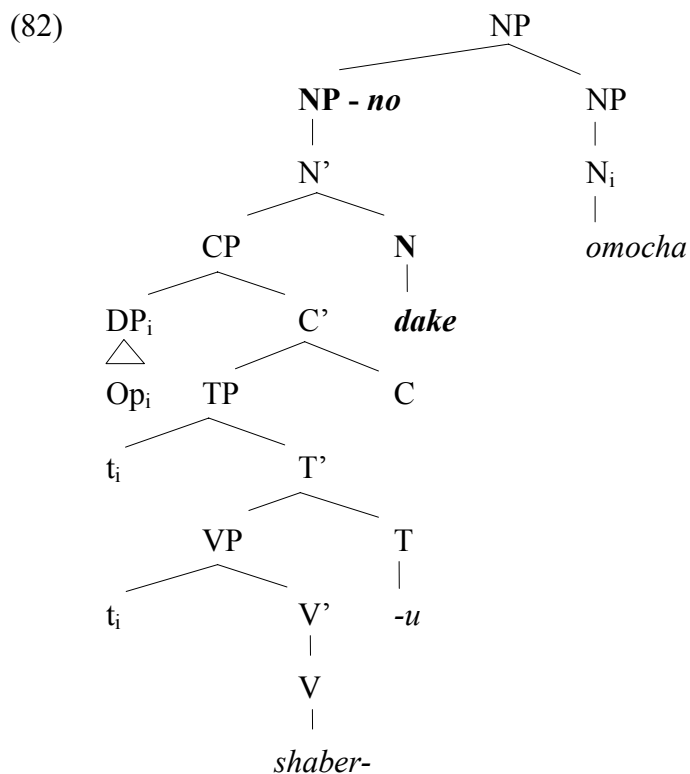
This is a canonical possessive construction, while the sentences in (76) and (77) are not. however, it is plausible that in all these cases, we are talking about the same morpheme *-no*. If that is the case, then this *-no* is a clitic like other case markers:

- (81) eigo-no sensei  
 English-*no* teacher  
 “[An] English teacher”



The fact that *-no* appears in (74) and (75), when *-dake* is inserted after the relative clause, indicates that we can plausibly conclude, again, that the entire relative clause is made into a noun phrase by the presence of *-dake*. There is no other reason why the nominal-modifier marker *-no* should be required.

Based on the relative clause structure and the nominal-modifier construction I am assuming, the structure for a relative clause + *-dake* must be as follows:



Here, *-dake* must be attached to the CP, turning it into an NP, otherwise it would not be the right configuration for *-no* to appear.

The structure in (82) closely parallels the nominal modifier construction in (81). Since the only difference between (67) through (70) and (74) - (75) is the presence of *-dake*, it must be the reason for the appearance of *-no*. Together with the case of adjectives/adjectival nouns discussed in the next subsection, this supports the claim that *-dake* is a noun in some positions.

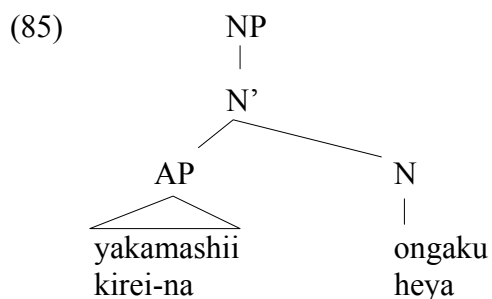
### 3.3.2.2 Adjectives

When an adjective (Adj.) modifies a noun, no special particle appears, as in (83); when an adjectival noun (AN) modifies a noun, it takes an inflected form *-na*:

(83) yakamashii    ongaku                    -Adj.            (= (78))  
       noisy            music  
       “noisy music”

(84) kirei-na    heya                    -AN  
       clean        room  
       “clean room”

These prenominal A/AN construction can be schematized as follows:



This is a run-of-the-mill NP with a modifying adjective/adjectival noun.<sup>29</sup>

---

<sup>29</sup> Some people argue that in Japanese, adjectives are always dominated by IP, since we can have a tensed adjective in the same position:

- |   |     |  |
|---|-----|--|
| (i) akai hana<br>red flower<br>“red flower” | vs. | (ii) aka-katta hana<br>red-PAST flower<br>“flower that was (once) red” |
|---|-----|--|

This will be discussed in the next subsection.

However, when *-dake* is attached to an adjective or AN, *-no* must appear between the adjective/AN and the head noun, as in the case of relative clauses; again, this *-no* is ungrammatical when *-dake* is absent:

- (86) yakamashii **dake** **\*(no)** ongaku                    -Adj.  
       noisy            *dake*            *no*            music  
       “music that is only noisy (not interesting, not beautiful, etc.)”

- (87) kirei-na **dake** **\*(no)** heya                         -AN  
       clean        *dake*        *no*        room  
       “a room that is only clean (not comfortable, not elegant, etc.)”

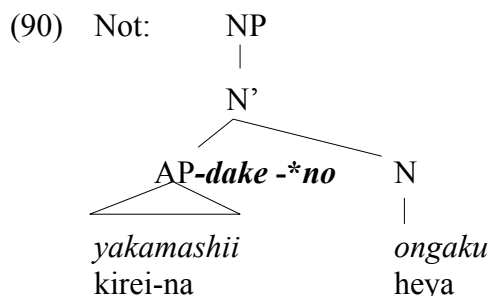
Compare:

- (88) \*yakamashii **no** ongaku                            -Adj.  
       noisy            **no**            music

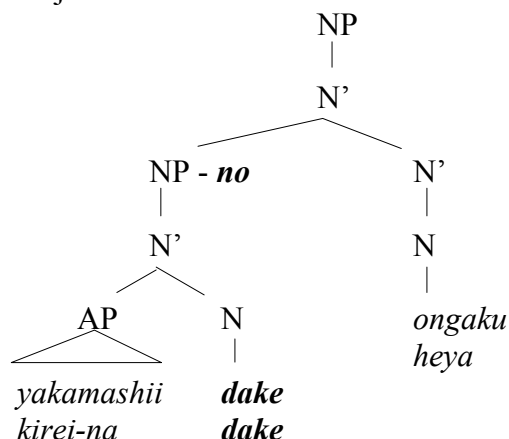
- (89) \*kirei-na **no** heya                                 -AN  
       clean        **no**        room

Again, it must be the morphological properties of *-dake* that demands *-no-* that is, like the relative clause + *-dake*, the structure becomes parallel to the nominal modifier construction when *-dake* is attached to an adjective or adjectival noun, . Thus we have (91) rather than (90):





(91) Adj/AN + *dake* construction:



In the structure (90), *-dake* is simply cliticized onto the AP in (85). If *-dake* is a true, cliticizing particle, as is often assumed, the category of the modifier phrase should remain as AP, therefore, *-no* should not appear. In (91), on the other hand, *-dake* heads a nominal projection of its own, making the whole AP + *-dake* an NP, which is parallel to the structure in (81). This validates the presence of *-no*, just as we see in the noun + noun examples above. Assuming that *-dake* is a particle would require an ad-hoc stipulation that *no*, which appears between nouns elsewhere in the language, appears after an AP only when the particle *-dake* is attached to it. On the other hand, identifying *-dake* as a noun does not require such a stipulation, and the construction can be simply regarded as a nominal modifier construction, which already exists in the language. The latter is

clearly preferable, thus I add it to the list of arguments that *-dake* is a noun in more positions than the clausal one.

In the next subsection, we will review Nishiyama (1999), which discusses adjective and adjectival nouns in more detail. According to his analysis, it is plausible that adjectives and adjectival nouns in prenominal positions are actually in a relative clause construction. If that is indeed the case, then it is natural that *-dake* behaves in exactly the same way towards relative clauses and adjectives/adjectival nouns.

### 3.3.2.3 Structure of AP in Japanese: Nishiyama (1999)

As we have seen above, Japanese has two separate categories of adjective-like words, one a “canonical” adjective (which I have been referring to as an “adjective”) and one an adjectival noun.<sup>30</sup> Not surprisingly, there are environments in which adjectives and adjectival nouns show more similarities than differences. For example, consider the following:

---

<sup>30</sup> Nishiyama refers to adjectival nouns as “nominal adjectives”; these terms are interchangeable as far as I can see.

(92) Suffix *-sa* ‘-ness’

<u>Adjective</u>	<u>Adjectival noun</u>	<u>Noun</u>	<u>Verb</u>
<i>taka-sa</i>	<i>sizuka-sa</i>	* <i>otoko-sa</i>	* <i>i-sa</i>
high-ness	quiet-ness	man-ness	exist-ness
<i>hiro-sa</i>	<i>kiree-sa</i>	* <i>gakusee-sa</i>	* <i>mi-sa</i>
wide-ness	pretty-ness	student-ness	see-ness

(Kageyama 1998, Miyagawa 1987; cited in Nishiyama 1999)

Here, the suffix *-sa* attaches to adjectives and adjectival nouns but not to nouns and verbs, which suggests that adjectives and adjectival nouns belong to the same natural class. Note that *-sa* attaches to an A and AN minus their “inflections”, if we consider *-i* of an A and *-da* of an AN to hold the same functions.

Another environment in which A and AN behave similarly is w.r.t. the focus-sensitive particles:

- (93) a. *yakamashi-ku-sae*      **aru**    *ongaku*      - adjective  
           noisy-*sae*                    exist    music  
           “music that is even noisy (on top of having terrible lyrics, etc.)”
- b. *kirei-de-sae*      **aru**    *heya*      -adjectival noun  
           clean-*sae*                    exist    room  
           “a room that is even clean (on top of being spacious, etc.)”

The only difference between (93a) and (b) is the underlined pieces *-ku-* and *-de-*.

Based on these observations, Nishiyama proposes that both adjectives and adjectival nouns require copulas, which constitute the same categorial projection for both, and that the difference between adjectives and adjectival nouns is in the way these copulas are pronounced.

In order to see how this proposal works, it is necessary to look more closely at the so-called copula *-da*. It has been proposed that *-da* is actually a contracted form of *-de*

*aru* (Nakayama 1988, Urushibara 1993). In general, the choice between *-da* and *-de aru* is stylistic, with *-de aru* being more formal (his (7)):

- (94) a. yoru-ga sizuka-da  
 night-Nom quite-COP.PRES  
 “The night is quiet.”
- b. yoru-ga sizuka-de ar-u  
 night-NOM quiet-*de* *ar*-PRES  
 “The night is quiet.”

However, there are cases where the contraction cannot apply. For example (his (8)):

- (95) a. yoru-ga sizuka-de-mo ar-u  
 night-NOM quiet-*de*-even *ar*-PRES  
 “The night is even quiet.”<sup>31</sup>
- b. \*yori-ga sizuka-da-mo (ar-u)  
 night-NOM quiet-COP.PRES-even (ar-PRES)  
 “The night is even quiet.”

The contraction can only apply when *de* and *aru* are adjacent.

Another environment where the contraction cannot apply is before *beki-da* ‘should’ (his (9)):

- (96) yoru-wa sizuka-\*da/\*no/\*na/de aru beki-da  
 night-TOP quiet should-COP  
 “The night should be quiet.”

---

<sup>31</sup> For me, (95a) means “the night is *also* quiet.”

Here, although *de* and *aru* are adjacent, contraction is blocked. Nishiyama (1999) does not specify what it is that blocks the contraction in this example, but finds this good enough to be a basis for his claim that *de aru* is the basic form based on this example.

Nishiyama's innovation in his unified analysis of adjectives and adjectival nouns is his proposal that Japanese has two kinds of copulas, one “semantically vacuous” and the other “semantically contentful” in the sense of Bloch (1946):

(97) *Semantically vacuous copula*

The copula appears when there is a formal (syntactic or morphological) requirement.

(98) *Semantically contentful copula*

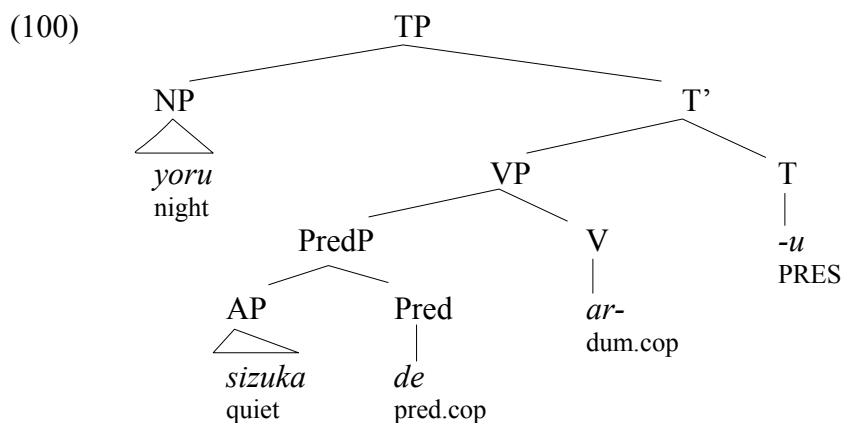
The copula is an essential ingredient for (non-verbal) predication.

Nishiyama (1999) gives the following examples to show that Bloch's view on semantically contentful copula is quite plausible for Japanese (his (13)):

- (99) a. John-ga sakana-o hadaka-de tabeta  
 John-NOM fish-ACC naked-*de* ate  
 “John ate the fish naked.”
- b. John-ga sakana-o nama-de tabeta  
 John-NOM fish-ACC raw-*de* ate  
 “John ate the fish raw.”

In the corresponding secondary predicate constructions in English, no copula is required, while *-de* is mandatory in these examples. This leads Nishiyama to propose that Japanese requires the copula even when there is no tense feature to support. As for *aru*, Nishiyama follows Nakayama (1988) and Urushibara (1993) and analyzes it as a dummy copula (glossed as *dum.cop* in his examples). He further proposes that *-de*, a predicate

copula (*pred.cop*) projects Pred(icate) Phrase as discussed in Bowers (1993). This gives the following structure for the adjectival noun (his (14)).<sup>32</sup>



Note that *sizuka* is an adjectival noun, which requires *de aru* or the contracted form *da* when it is in a predicate position.

For canonical adjectives, Nishiyama gives a careful dissection of their morphology and identifies *-ku* as the predicate copula. Recall the examples with focus-sensitive particles that we started out with:

- (93) a. *yakamashiku-sae aru ongaku* - adjective  
 noisy-*sae* exist music  
 “a music that is even noisy (on top of having terrible lyrics, etc.)”
- b. *kirei-de-sae aru heya* -adjectival noun  
 clean-*sae* exist room  
 “a room that is even clean (on top of being spacious, etc.)”

---

<sup>32</sup> Nishiyama states that if this analysis is correct, it constitutes a morphological evidence for Bowers’ (1993) claim that that whenever there is predication, there is a category PredP.

Here, the only difference between the adjective and adjectival noun examples is *-ku* and *-de*. *De* has been analyzed as a pred.cop, and if *-ku* is also analyzed as one, then the parallelism becomes clear.

However, there is one more step before adopting *-ku* as an independent morpheme. We have seen that in the non-past predicate position and prenominal position, the adjective inflectional paradigm contains no [k], while every other form does. Nishiyama compares the paradigm to that of the dummy copula *-aru*:

(101) Japanese adjective inflection

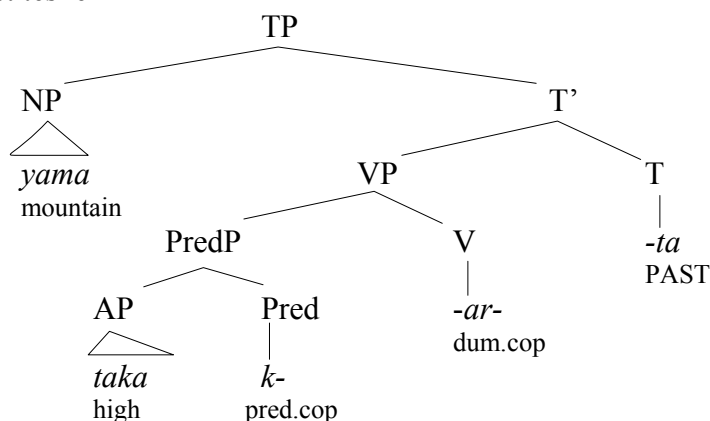
	‘beautiful’	dum.cop /ar/
<b>non-past</b>	<b><i>utsukushi-i</i></b>	<b><i>ar-u</i></b>
past	<i>utsukushi-kat-ta</i>	<i>at-ta</i>
<b>pre-nominal</b>	<b><i>utsukushi-i</i></b>	<b><i>ar-u</i></b>
presumptive	<i>utsukushi-karoo</i>	<i>ar-oo</i>
conditional	<i>utsukushi-kere-ba</i>	<i>ar-eba</i>
gerundive	<i>utsukushi-ku-te</i>	<i>at-te</i>

There is a marked similarity between adjective inflection and /ar/ conjugation, except for the two forms mentioned. Nishiyama points out that in Premodern Japanese, prenominal attributive forms did have [k] (*utsukushi-ki*). He speculates that the modern non-[k] forms are obtained by /k/-deletion.<sup>33</sup> Based on this analysis, a sentence with an adjective predicate has the following structure, parallel to that with an adjectival noun predicate (Nishiyama’s (24)):

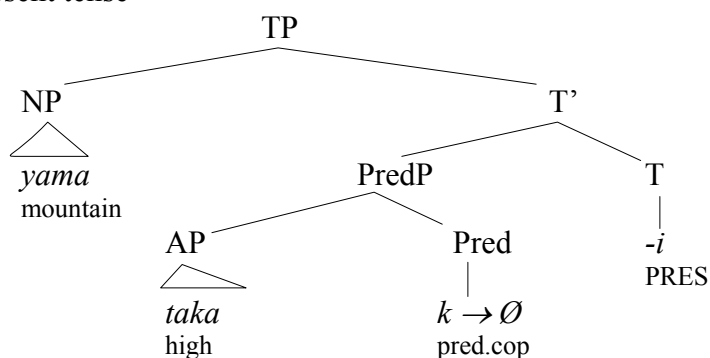
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<sup>33</sup> /k/-deletion before /i/ is attested elsewhere in Modern Japanese; for example, the present tense of the verb stem *kak-* ‘write’ is *kaku*, but in the past tense, the stem-final *-k-* is lost: *kaita*, not *kakita*.

## (102) Past tense



## (103) Present tense



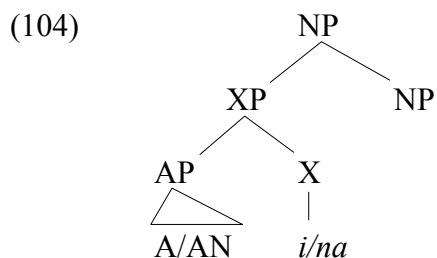
In the present tense, there is no dummy copula, which Nishiyama attributes to the cross-linguistic tendency that the present tense does not require the copula.

Nishiyama goes on to account for various differences between adjectives and adjectival nouns in the framework of Distributed Morphology, details of which are not directly related to the concerns of this thesis. One remaining point of importance is the projection of adjectives and adjectival nouns in prenominal position. The structures we have seen so far all have the adjective or adjectival noun in the predicate position. Our main concern is these categories in the prenominal position.

Nishiyama does not make a definitive proposal for prenominal APs but rather assumes that prenominal APs are relative clauses for the most part of the discussion. At



one point, he gives several possibilities for the categorial nature of a prenominal AP when *aru* is absent, as in the case of “tenseless” (i.e. not past tense) adjectives or adjectival nouns. Assuming a direct modification, the structure of a prenominal AP must be as follows (his (47) modified):

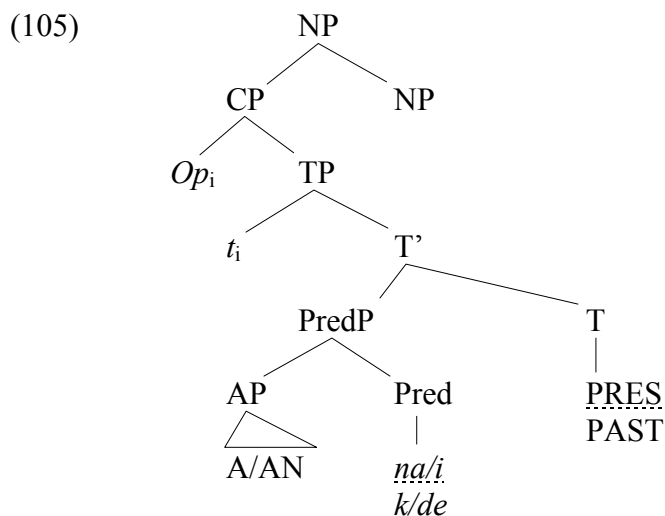


He suggests that an XP can be Modifier Phrase in the sense of Rubin (1994). He further suggests that Modifier Phrase may be a notational variant of Predicate Phrase.<sup>34</sup> For the purpose of the present discussion, I will assume that all prenominal APs, whether “tenseless” or past tense, are relative clauses:<sup>35</sup>

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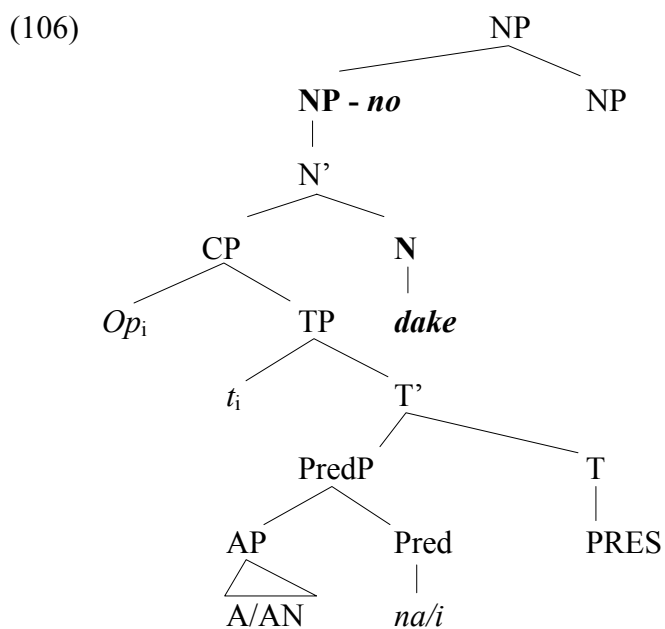
<sup>34</sup> He mentions that there is a problem with this. For details, please refer to Nishiyama (1999).

<sup>35</sup> Baker (2003) discusses a typological differences between languages which allow direct modification of nouns by adjectives and those which do not. Japanese is mentioned as one of the latter.



This is the structure of a prenominal AP that I adopt hereafter.

Under this analysis, adjectives and adjectival nouns in Japanese have parallel structure to regular relative clauses. The position of *-dake* which I posited in (91) for adjectives and adjectival nouns should then look more like (82), posited for a relative clause:



The only difference between (82) and (106) is the structure inside the relative CP. Thus, the status of *-dake* as a noun does not change.

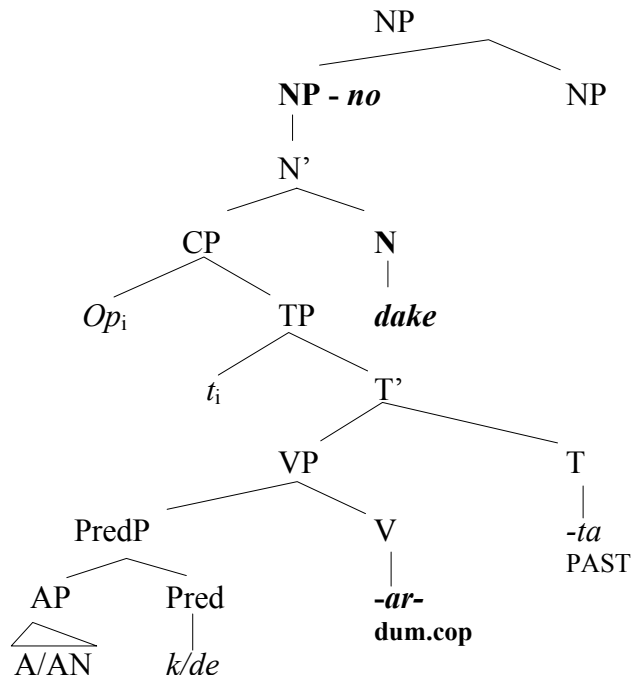
Under this analysis, it is simple to unite present-tense and past-tense prenominal adjectives under one roof. For example, the past-tense counterparts of (83) and (84) are as follows:

(107) yakamashi-**k-at-ta**      ongaku                      -Adj.  
       noisy-**PAST**                      music  
       “music which was noisy”

(108) kirei-**d-at-ta**      heya                              -AN  
       clean-**PAST**                      room  
       “room which was clean”

In (91), it is implicitly assumed that the prenominal adjectives in Japanese have no tense associated with it, as is the case in English. Under this assumption, past-tense prenominal adjectives alone would have the relative clause structure. Under Nishiyama’s analysis, the difference between present- or past-tense adjectival relative clauses is in the absence/presence (respectively) of the dummy copula *aru*:

(109) Past-tense adjectival relative clause with *-dake*:



*Aru* appears under V, which is between PredP and TP. Otherwise, the structure is parallel to that of the present-tense relative clause in (106).

If this analysis of AP in Japanese is correct, then *-dake* has somewhat more restricted and unified distribution than was assumed at the beginning of this chapter: it requires a tensed clause. Wherever that clause happens to be, however, *-dake* remains a noun. Let us now go back to *-dake* in the NP periphery, where our puzzle is located.

### 3.4 *Dake* in the NP periphery – morphological ambiguity of *-dake*

Up to this point in this chapter, I have shown how profoundly *-dake* behaves like a noun in various positions: at the end of a clause, after an adjective or adjectival noun, and after a relative clause which modifies a noun. It turns out that *-dake* shows its nominal property in one of the positions involved in our puzzle.

Recall that *-dake* can appear immediately before a case marker or a postposition, but not after a case marker:

(110) Taro-wa Hanako-**dake-to** asob-eru. = (2)  
 Taro-TOP Hanako-*dake*-with play-can

- a. “The only person Taro can play with is Hanako (he can’t play with others).” *dake* > can  
 b. “Taro can play with Hanako alone (without playing with others).” can > *dake*

(111) a. **Taro-dake-ga** kita. Nominative = (8)  
 Taro-only-NOM came  
 “Only Taro came.”

- b. **Sakana-dake-o** tabeta. Accusative  
 fish-only-ACC ate  
 “[We] ate only fish.”

- c. **Taro-dake-no** hon Genitive  
 Taro-only-GEN book  
 “a book that is only Taro’s”

(112) a. \*Taro-**ga-dake** kita. = (9)  
 \*Taro-NOM-only came

- b. \*Sakana-**o-dake** tabeta.  
 \*fish-ACC-only ate

- c. \*Taro-**no-dake** hon  
 \*Taro-GEN-only book

Suppose that *-dake* is a noun in all these examples, rather than a particle. Then the puzzle is solved: nouns can appear before a case marker or a postposition, but never after a case marker.

A supporting piece of evidence for this supposition comes from the behavior of other focus-sensitive particles in Japanese which, unlike that of *-dake*, exhibit no nominal

properties. I will take *-sae* ‘even’, *-mo* ‘also’ and *-shika* ‘only’ (Negative Polarity Item, “NPI”) as examples:

- (113) a. John-**sae**(\*-ga) k-ita<sup>36</sup>  
 John-*sae*(\*-NOM) come-PAST  
 “Even JOHN came.”
- b. John-**mo**(\*-ga) k-ita  
 John-*mo*(\*-NOM) come-PAST  
 “JOHN also came.”
- c. John-**shika**(\*-ga) k-onak-atta  
 John-*shika*(\*-NOM) come-NEG-PAST  
 “Only JOHN came.”
- (114) a. John-wa nama-no jagaimo-**sae**(\*-o) tabe-ta.  
 John-TOP raw-*no* potato-*sae*(\*-ACC) eat-PAST  
 “John **even** ate RAW POTATOES (e.g. because he was so hungry).”
- b. John-wa nama-no jagaimo-**mo**(\*-o)<sup>37</sup> tabe-ta.  
 John-TOP raw-*no* potato-*mo*(\*-ACC) eat-PAST  
 “John **also** ate RAW POTATOES.”
- c. John-wa nama-no jagaimo-**shika**(\*-o) tabe-nak-atta.  
 John-TOP raw-*no* potato-*shika*(\*-ACC) eat-not-PAST  
 “John **only** ate RAW POTATOES (he didn’t eat anything else).”
- (115) a. \*John-wa Bill-**sae-to** asonda.  
 John-TOP Bill-*sae-with* played
- b. \*John-wa Bill-**mo-to** asonda.  
 John-TOP Bill-*mo-with* played
- c. \*John-wa Bill-**shika-to** asob-ana-katta.  
 John-TOP Bill-*shika-with* play-not-PAST

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<sup>36</sup> Some speakers find [*-sae-ga*] sequence reasonably acceptable.

<sup>37</sup> Accusative marker *-o* can sometimes precede *-mo*, but not the other two. I will not go into this sequence here.

Please note that *-shika* is a negative polarity item (NPI), and always requires a negation in the same clause (underlined in (114c)). Negation in Japanese is always sentential - that is, there is no constituent negation equivalent of English “not everyone...” - and appears just before (i.e. below) tense. It is categorially an adjective, so the tense inflection of the sentence follows that of the adjective inflection.

The topic marker *-wa* is not included here. This is because *-wa* can be attached to phrases other than the NP (e.g. PP and adverbials). It is true that *-wa* can attach to the *-dake* phrases but not *-sae/mo/shika* phrases. However, the source of this incompatibility cannot simply be reduced to the non-nominal properties of these focus-sensitive particles because of the cross-categorial nature of *-wa*. Rather, the incompatibility stems from the semantics of these particles and *-wa*, which will be discussed in the next chapter.

That these focus-sensitive particles do not possess nominal property can be seen from the fact that they cannot appear in any of the positions in which *-dake* acts as a noun, such as before a case-marker as in (113) to (115) above, and the others discussed in the previous subsections:

(116) Clause + \_\_\_ + *-da*:

- |    |                         |  |               |                                |
|----|-------------------------|--|---------------|--------------------------------|
| a. | *Tenohira-o<br>palm-ACC | mitsume-ru/ta<br>stare at-NONPAST/PAST | <b>sae/mo</b> | <b>da</b><br>COP               |
| b. | *Tenohira-o<br>palm-ACC | mitsume-ru<br>stare at-NONPAST         | <b>shika</b>  | <b>de-wa-nai</b><br>COP-wa-NEG |

- (117) Adjective/Adjectival noun +     + *-no* N:
- a. \***ataakai-sae/mo-no**      *asa*      (Adjective)  
     warm-*even/also-no*      morning  
     Intended: “a morning that is even/also warm”
- b. \***kirei-na-sae/mo-no**      *heya*      (Adjectival noun)  
     clean-*na-even/also-no*      room  
     Intended: “room that is even/also clean”
- (118) Relative clause +     + *-no* N:
- a. \***shabe-ru/tta-sae/mo-no** *omocha*  
     talk-NONPAST/PAST-*no*      toy
- b. \***Shabe-ru/tta-shika-no** *omocha-o*      *kaw-ana-katta.*  
     talk-NONPAST/PAST-*no*      toy]-ACC      buy-not-PAST

As we see in these examples, the pattern of *-sae/mo/shika* shows striking contrast to that of *-dake*. In order for *-sae/mo/shika* to attach to a clause, they must attach to a PredP, as in the case of adjectives and adjectival nouns discussed by Nishiyama (1999) above ((93) and (95)):

“Free-standing” clause:

- (119) *Tenohira-o*      *mitsume*      **sae/mo**      *suru*  
     palm-ACC      stare-at      *sae/mo*      do  
     “[I] even/also stare at [my] palms.”

Regular relative clause:

- (120) *shaberi*      **sae/mo**      *suru*      *omocha*  
     talk      *sae/mo*      do      toy  
     “a toy which even/also talks”

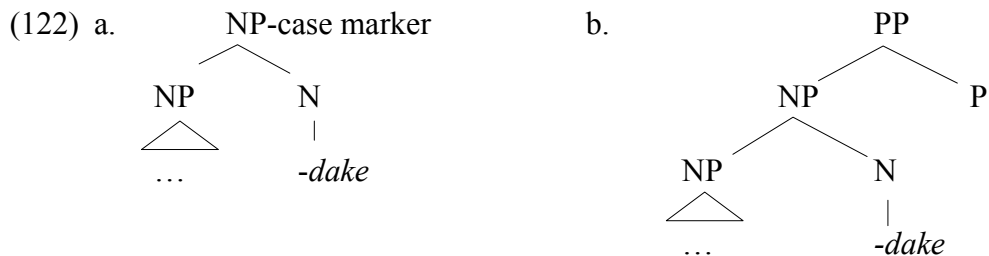
The verbs in these examples (underlined) are in *Ren'yo* form, which translates to a PredP under Nishiyama's analysis. It turns out that the only position in which they all appear that is relevant to our discussion is after a postposition:



- (121) a. John-wa Bill-**to-sae** asonda.  
 John-TOP Bill -with-sae played  
 “John even played with BILL.”
- b. John-wa Bill-**to-mo** asonda.  
 John-TOP Bill -with-mo played  
 “John also played with BILL.”
- c. John-wa Bill-**to-shika** asob-ana-katta..  
 John-TOP Bill-with-shika play-not-PAST  
 “John didn’t play with anyone but BILL.”

*Dake* and *sae/mo/shika* cannot possibly be bunched together as “particles”, except in this particular position.

With these examples in mind, let us go back to our initial question: why can *-dake* appear before a case marker or a postposition, but not after a case marker? By following the line of argument that *-dake* is a bound noun, unlike *-sae/mo/shika*, which are incompatible with a case marker/postposition, we can answer this question. The position before a case marker or a postposition is a canonical position for a noun. Adding *-dake* to an NP still makes an NP, thus, as far as the case marker or postposition is concerned, nothing is changed:



At the same time, this explains why *-dake* cannot appear after a case marker – nouns never do.

What about *-dake* after a postposition? Considering that nouns do not appear in this position, and that non-nominal focus-sensitive particles such as *-sae/mo/shika* can also appear in this position, we must conclude that external *-dake* is not a noun. It is more coherent to conclude that it is a “true” particle, cliticizing onto a PP without changing its category, like non-nominal *-sae/mo/shika*. In short, the answer to the piece “Case Follows” is, “*Dake* has a dual morphological status depending on its position: noun or particle.”

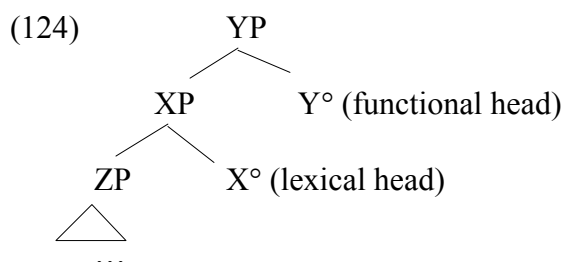
As a noun, *-dake* is different from regular nouns in more than one respect. As shown in examples (63) through (65), it belongs to the small group of “bound” nouns called *keishiki meishi* in Japanese. The examples given above are *wake* ‘that’s why/no wonder’ and *tsumori* ‘intend to’, both of which derived from regular nouns as *-dake* did. *Keishiki meishi* do not appear without complements, and their semantics is different from that of regular nouns: they are not the semantic “head” of their projection, in a manner of speaking, but rather their complement is. The differences must somehow be reflected in the syntax, since *-dake* does not prevent its NP complement from being selected by a postposition, nor does it interfere with its CP complement acting as a relative clause to the head noun of the overall NP.

As pointed out by Jane Grimshaw (personal communication), the theory of extended projections (Grimshaw 1991, 2004) offers a way to capture the relationship

of *-dake* to its complements.<sup>38</sup> Her definition of an extended projection is as follows (1991, p.4):

- (123) *y* is an extended projection of *x* iff:
- a. *y* dominates *x*
  - b. *y* and *x* share all categorial features
  - c. all nodes between *x* and *y* share all categorial features
  - d. For  $F_n(x)$  and  $F_m(y)$ ,  $n \leq m$

That is, an extended projection is made up of a lexical head, its projection, and all the functional projections above it. The following is a schematic representation of an extended projection in a head-final language:



YP, a projection of a functional head  $Y^\circ$ , is an extended projection of XP, a projection of a lexical head  $X^\circ$ , as long as both of them (and all the intervening functional projections, if any) share all the categorial features. For example, if  $Y^\circ$  is D,  $X^\circ$  is N; if  $Y^\circ$  is T,  $X^\circ$  is V.

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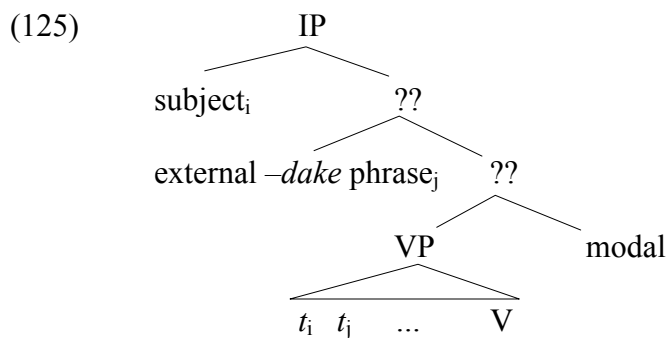
<sup>38</sup> I am indebted to Jane Grimshaw for her suggestion to analyze the nominal projection of *-dake* as an extended projection of its complement.

Applying this to the Japanese puzzle at hand, if *-dake* (as well as other members of *keishiki meishi*) is a kind of functional head at the same time as being a bound noun, and shares all the categorial features of the lexical head below, then the projection of *-dake* is an extended projection of the lexical head. If this is the case, *-dake* does not interfere with the syntactic relationship between *-dake*'s complement and whatever selects that complement from above the NP projected by *-dake*, whether its complement is a TP, CP, AP or PredP (depending on which analysis of adjectives and adjectival nouns one adopts), or an NP.

In the next section, I will show how the dual status of *-dake* helps to solve the other two pieces of the puzzle.

### 3.5 Dual status of *-dake* and its scope

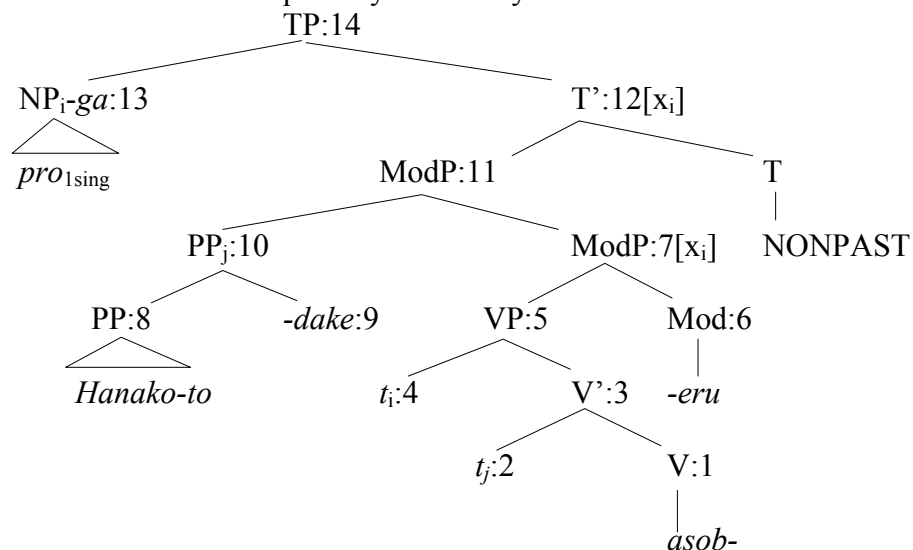
The effect of the dual morphological status of *-dake* is that unlike other focus-sensitive particles, *-dake* has two ways of deriving its scope: the external *-dake* behaves just like the rest of the focus-sensitive particles which are forced to raise, while the internal *-dake*, which is directly attached to an NP, is still an NP, and is not forced to raise. Its scope is derived by V-to-I movement, whose details are already discussed in chapter 2, section 2.4.3. In this subsection, I will show how the fixed wide-scope of *-dake* and other focus-sensitive particles is derived. The position to which the particles must raise is schematically shown in (53), repeated below:



I will use (1) (repeated) for a sample derivation:

- (126) Taro-wa Hanako-to-dake asob-eru.  
 Hanako-with-dake play-can  
 “The only person Taro can play with is Hanako (he can’t play with others).” *dake* > can

(127) External *-dake*: fixed wide scope in hybrid theory



	Ordinary denotation	Type	Store
1	$\lambda x \lambda y [\text{play-with}'(x)(y)]$	$\langle e, et \rangle$	$\emptyset$
2	$x$	$e$	$\emptyset$
3	$\lambda y [\text{play-with}'(x)(y)]$	$et$	$\{x\}$
4	$x_i$	$e$	$\{x_i\}$
5	$\text{play-with}'(x)(x_i)$	$t$	$\{x_i\}$
6	$\lambda p [\diamond p]$	$tt$	$\emptyset$
7	$\diamond \text{play-with}'(x)(x_i)$	$t$	$\{x_i\}$
8	$h$	$e$	$\emptyset$

9	$\lambda y \lambda Q \forall p [C(p) \wedge p \rightarrow p = Q(y)]$	$\langle e, \langle et, t \rangle \rangle$	$\emptyset$
10	$\lambda Q \forall p [C(p) \wedge p \rightarrow p = Q(h)]$	$\langle et, t \rangle$	$\emptyset$
11	$\forall p [C(p) \wedge p \rightarrow p = \diamond \text{play-with}'(h)(x_i)]$	t	$\{x_i\}$
12	=11		
FINAL TRANSLATION			
12B	$\lambda x_i [\forall p [C(p) \wedge p \rightarrow p = \diamond \text{play-with}'(h)(x_i)]]$	et	$\emptyset$
13	i	e	$\emptyset$
14	$\forall p [C(p) \wedge p \rightarrow p = \diamond \text{play-with}'(h)(i)]$	t	$\emptyset$

“The only person I can play with is Hanako” – wide scope for *-dake*, assuming that  $C = \lambda p \exists x [\diamond \text{play-with}'(x)(i)]$  determined as follows:

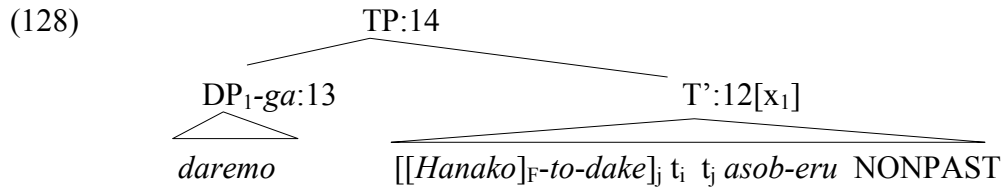
	<i>Domain of quantification</i> <sup>39</sup>	<i>Type</i>	<i>Store</i>
1	$\lambda R' [R' = \lambda x' \lambda y' [\text{play-with}'(x')(y')]]$	$\langle \langle e, et \rangle, t \rangle$	$\emptyset$
2	$\lambda y [y = y]$	et	$\emptyset$
3	$\lambda P \exists x [P = \lambda y' [\text{play-with}'(x)(y')]]$	et, t	$\emptyset$
4	$\lambda y [y = x_i]$	et	$\{x_i\}$
5	$\lambda p \exists x [p = \text{play-with}'(x)(x_i)]$	tt	$\{x_i\}$
6	$\lambda H [H = \lambda p [\diamond p]]$	$\langle tt, t \rangle$	$\emptyset$
7	$\lambda p' [p' = \diamond \exists x [\text{play-with}'(x)(x_i)]]$	tt	$\{x_i\}$

$\lambda p' [\exists x' [p' = \text{play-with}'(x')(x_i)]]$  applied to i is equivalent to:  $\lambda p [\exists x' [p = \text{play-with}'(x')(i)]]$

In the above derivation, it is assumed that the raising of *-dake* is an adjunction much like the standard QR, and the trace it leaves denotes a free variable.

A crucial difference between the external *-dake* and the internal one in this hybrid theory is the raised vs. in-situ position of the *-dake* phrase. This has an effect on the semantics of *-dake*. In the derivations of scopes of internal *-dake* shown in chapter 2, section 2.4.3, *-dake* is of type  $\langle e, \langle \tau, et \rangle \rangle$ , where  $\tau$  is the type of the verb. On the other hand, in the derivation of the external *-dake*, its type is equivalent to that of a generalized quantifier:  $\langle e, \langle et, t \rangle \rangle$ . This theory makes the correct prediction about the scope between *-dake* and the subject QP. The *dake*-phrase stays below the subject and is type  $\langle et, t \rangle$ ,

which does not allow semantic lowering of the subject QP. The following is a sample derivation for sentences with a subject QP + modal + *-dake*:



<i>Ordinary denotation</i>	<i>Type</i>	<i>Store</i>
1-11 same as (127)		
12 $\forall p[\text{C}(p) \wedge p \rightarrow p = \diamond\text{play-with}'(h)(x_i)]$ FINAL TRANSLATION	t	{ $x_i$ }
12B $\lambda x_i \forall p[\text{C}(p) \wedge p \rightarrow p = \diamond\text{play-with}'(h)(x_i)]$	et	$\emptyset$
13 $\forall z[\text{human}(z) \rightarrow \forall p[\text{C}(p) \wedge p \rightarrow p = \diamond\text{play-with}'(h)(z)]]$	t	$\emptyset$

“For everyone, Hanako is the only person s/he can play with.”

Up to this point, the raising of *-dake* has been assumed to be an adjunction to ModP without any basis. However, there is an independently proposed theory whose treatment of particle phrase strikingly resembles the *dake*-phrase movement proposed in this chapter. In the remaining of this chapter, I will present the theory proposed by Bayer (1995) in support of the hybrid theory proposed in this chapter and conclude by revising the landing site of the *dake*-phrase raising accordingly.

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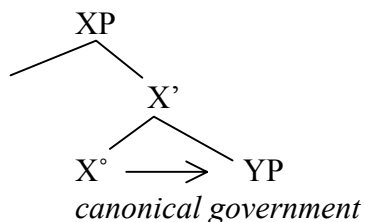
<sup>39</sup> In this structure, the domain of quantification is inside the VP, not the whole clause. The difference between this and (42) is that here, V-to-I movement does not take place. It is not clear at this point how the domain of quantification and V-to-I movement correlate when *dake* only c-commands the complement NP of the postposition.

### 3.6 Support for external *-dake* movement: Bayer 1995

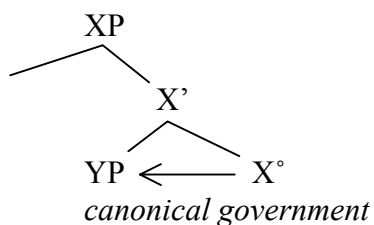
#### 3.6.1 Brief summary of the central argument

Bayer's (1995) discussion centers around what is referred to as *Directionality* of government. He argues that directionality of government "is not only a supervising force in the grammar of visible syntax but also in the grammar of LF" (Bayer 1995, p.5). Directionality is a theory which states that in every language, there is a canonical direction of government, which is the order between V and its complement. Bayer argues that when a head  $X^\circ$  of XP canonically governs its complement, YP, XP becomes "transparent"<sup>40</sup>, thus YP can move out of XP:

(129) a. VO language (e.g. English):



b. OV language (e.g. German):



He uses focusing particles such as *only* and *even* to test this claim: he argues that focusing particles must be in a certain position at LF, but are often not there at



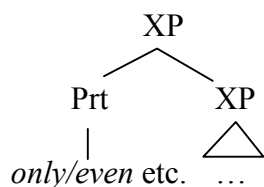
S-structure, therefore they must move at LF, as we will see in the next section. This LF movement is restricted by canonical government.

### 3.6.2 Particles in Bayer's theory

#### 3.6.2.1 Particles and scope

In his theory, a “particle” (“Part”) is a minor functional head which subcategorizes for a maximal projection, which does not project but rather whose features percolate up to the maximal projection of the XP it subcategorizes for:

(130) Particle construction:



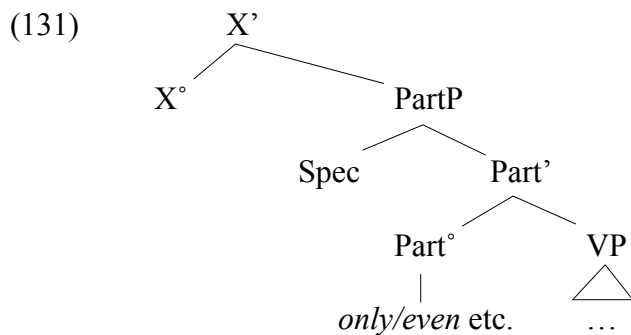
He advocates LF-movement of phrases to which a particle is attached, and uses this idea extensively to check if certain phrases are barriers to extraction in support for the theory of directionality.

He argues that particles such as *only* and *even* must be in a position where they can take scope over an appropriate phrase, i.e. a proposition-type phrase. There are two ways these particles can achieve this. The first is by occurring in a head position of a

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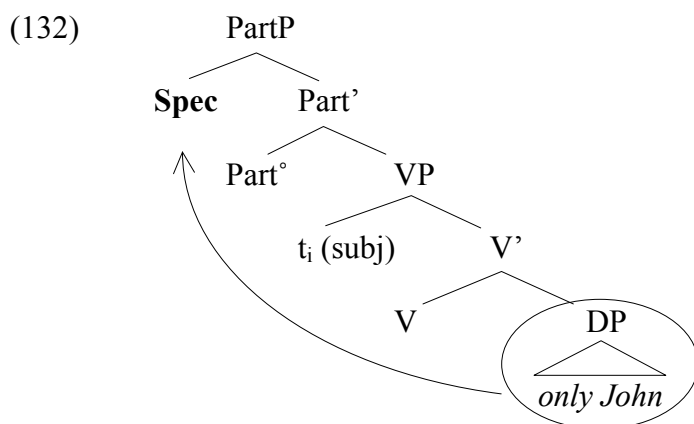
<sup>40</sup> He follows Chomsky's Barriers (1986) framework, and as such, “transparent” means “not a barrier”.

particle phrase (“PartP”), which he proposes to be above VP in languages which allow these particles to appear just before VP:



X' in English would be a TP or NegP. In this structure, the particles are already in a position from which they can take scope over an appropriate phrase, i.e. VP. In this case, particles are interpreted by “association-with-focus” as proposed by Rooth (1985).

The other possibility accounts for the cases in which *only* or *even* is attached to an XP inside a VP. For example, when particles are attached to an object DP, they cannot be interpreted in-situ because they are not in a position where they can take scope over a proposition:



Here, *only* is not in a position where it takes scope over a proposition. Bayer proposes that in these cases, a QR-like movement applies to  $[_{XP} \textit{only} XP]$ , which ends up in Spec PartP, where it can take scope over a VP.

Directionality dictates that such LF-movements can take place only if there is no barrier in between the two positions. Bayer looks at different XPs, among which PP is most relevant for the theme of this thesis. Therefore, we will look at his discussion of PP in some detail in the next subsection.

### 3.6.2.2 Particle and Pre/postpositional phrases

#### 3.6.2.2.1 P-stranding at S-structure

Bayer starts his discussion with P-stranding. VO-languages with prepositional phrases such as English and Scandinavian languages allow P-stranding at S-structure. On the other hand, OV languages with prepositional phrases such as German and Dutch do not, except when P appears with an incorporated so-called *R-pronoun* as in Dutch *daar + over* ‘there + over’, *daar + mee* ‘there + with’ or German *da + für* ‘there + for’, *da + gegen* ‘there + against’, *da + mit* ‘there + with’ etc. In these cases, extraction of R-pronoun is allowed leaving P stranded.

Under his directionality theory, DP complement of P can be extracted if P is not a barrier under the following definition (Bayer 1995, p.201):

(133) *Barrier*

XP is a barrier for YP if either (i) or (ii) holds:

- (i) XP is not selected by a head and does not exclude YP
- (ii) XP includes YP and X is a head that selects YP in the non-canonical direction, unless there is a ZP, ZP an extended projection of X in which X agrees with Z



The sentences in (135a) and (b) are examples of “normal” PP in Dutch and German, which do not allow P-stranding. The examples (c) and (d) show PP with *wh*-R-pronoun. Bayer argues that R-pronouns originate as a complement of P on the right, but as it cliticizes onto P on the left at S-structure, the directionality becomes canonical. Thus, PP is no longer a barrier for the cliticized R-pronoun. Thus, when *wh*-PPs are formed with R-pronouns like *wo + mit* ‘wh + with’, *wo + für* ‘wh + for’, *wo + gegen* ‘wh + against’, *wo + nach* ‘wh + after’ etc. as in (135d), *wh*-R-pronouns can move out of PP.

### 3.6.2.2.2 P-stranding at LF

Based on his movement-based focusing particle theory, Bayer (1995) argues that the following examples from English and German show that the directionality of government holds not only at S-structure but also at LF (p.94); (137) are German counterparts of (136):

- (136) a. John would rely on [**only** [his BROTHER]]  
 b. John decided on [**only** [the MOVIE]]  
 c. Mary would care for [**even** [her GRANDFATHER]]  
 d. Mary wrote about [**even** [SUBJACENCY]]
- (137) a. \*Hans verläßt sich auf [**nur** seinen BRUDER]  
 b. \*Hans entschied sich für [**nur** den FILM]  
 c. \*Maria kümmert sich um [**sogar** ihren GROSSVATER]  
 d. \*Maria schreibt über [**sogar** SUBJAZENZ]

While English allows *only* to be attached to the DP complement of P, German does not. This, according to Bayer, is due to the possibility of LF-extraction of [<sub>DP</sub> *only/even* DP]. As in the case of S-structure P-stranding, PP is not a barrier in English, since PP respects

the canonical government direction, whereas in German, PP ignores the canonical government direction, thus it is a barrier. Thus, English allows [<sub>DP</sub> *only/even* DP] to be extracted at LF to the position where it can take appropriate scope, making (136) grammatical, but German does not, resulting in ungrammaticality of (137).

The QR-like movement of focusing-particle phrase to Spec PartP shares much in common with the raising of the *dake*-phrase in the hybrid theory I have proposed above. For example, the trigger for the movement is the focus-sensitive particles such as *only* or *even*, and the landing site for the raising is a position where the particles can take propositional scope, and yet it is below subject. The fact that Bayer mostly uses examples from Germanic language does not prevent the theory from being applied to Japanese; rather, it adds to the appeal of the hybrid theory of *-dake*, since it suggests that *dake*-raising is not a Japanese-specific phenomenon.

In the next section, I will present the final picture of the hybrid theory of *-dake* proposed above, based on Bayer's theory of particles described here.

### **3.7 The hybrid theory and *-dake***

#### **3.7.1 The final picture of the hybrid theory**

In Bayer's theory, particles such as *nur* and *sogar* are minor functional heads which must take scope over a proposition-type projection at LF. Right now, we are concerned with Japanese focus-sensitive particles in NP periphery. This means that a particle-containing phrase must raise at LF to the Spec of PartP, rather than raising all the way up to adjoin to IP (or TP here) as in the standard QR. This places *-dake* below the

subject, thus the scope between the subject and *-dake* is unaffected by the movement, unlike the QR theories discussed earlier.

There is one Japanese-specific variation to Bayer's structure regarding the position of PartP. Recall that focus-sensitive particles except the internal *-dake* have fixed scope over the modal (repeated):

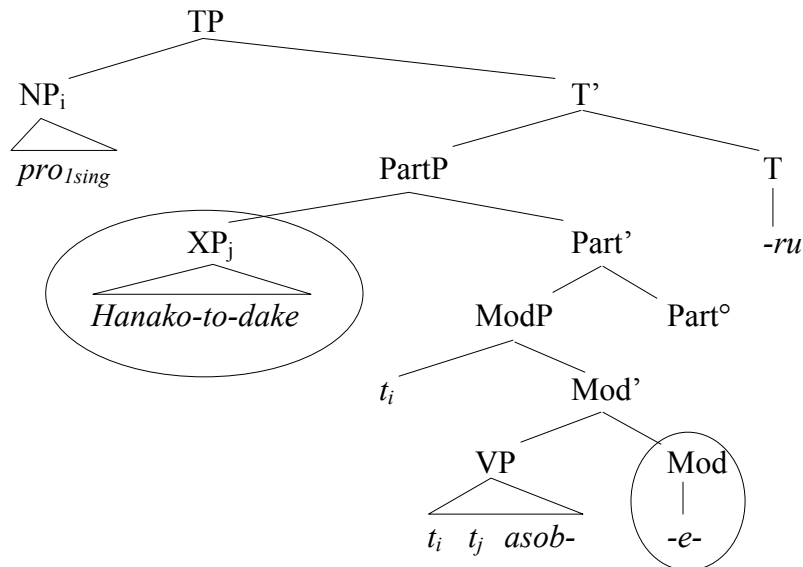
- (1) Taro-wa Hanako-**to-dake** asob-eru.  
       Hanako-with-*dake* play-can  
 "The only person Taro can play with is Hanako (he can't play with others)." *dake* > can
- (2) Taro-wa Hanako-**dake-to** asob-eru.  
       Taro-TOP Hanako-*dake*-with play-can  
 a. = (1) *dake* > can  
 b. "Taro can play with Hanako alone (without playing with others)." can > *dake*

If PartP is just above VP, the scope relationship is reversed. Thus, at least in Japanese, PartP must be above the phrase headed by modal (ModP) and just below TP, to whose Spec subject raises. This is represented in the following tree:<sup>41</sup>

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<sup>41</sup> There remains a question of what goes into Part<sup>o</sup>, since it must always be invisible in Japanese in the position proposed above. Ken Safir (personal communication) commented that one possibility is that it is a part of the universal hierarchy of functional heads proposed by Cinque (1999). I will leave this issue open for future pursuit.

(138) LF for (1) (external-*dake*):

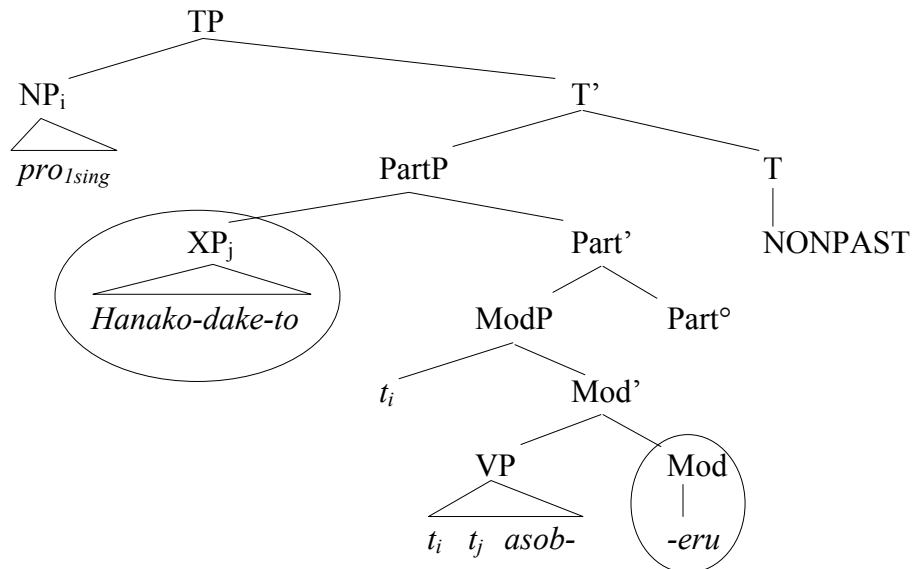


Except for this one Japanese-specific adjustment, Bayer's theory of particles and the treatment of external *-dake* in the hybrid theory are identical.

In the hybrid theory proposed above, the scope of internal *-dake* is determined by the presence vs. absence of V-to-I movement. For the hybrid theory to hold its ground, it is necessary to make sure that in-situ theory of internal *-dake* and raising theory of external *-dake* together do not yield unavailable scope for *-dake*. It turns out that this is not a problem. Whether or not the particle raising applies to the internal *-dake* has no impact on the scope pattern of internal *-dake*. Suppose that the internal *-dake* phrase raises to where the external *-dake* phrase is in (138), without verb raising:



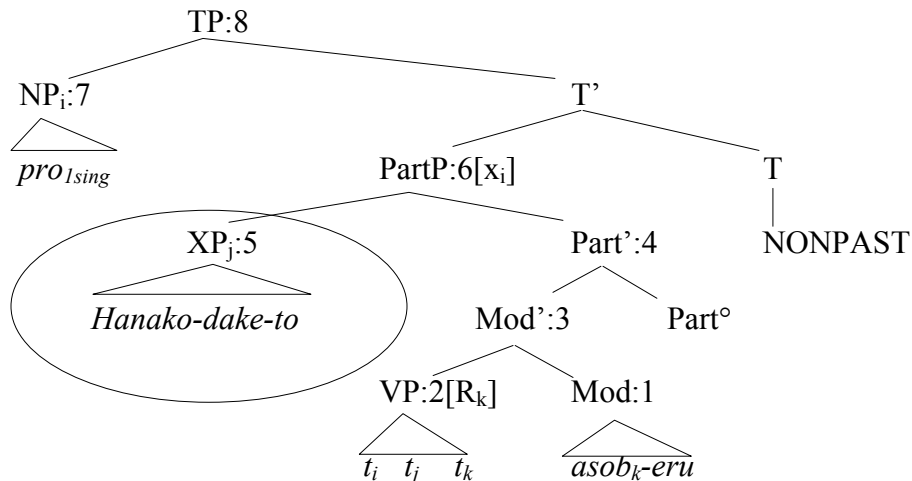
(139) LF for (2a):



This is equivalent to the derivation in (127), except for the external vs. internal *-dake*. In this position, *-dake* must be interpreted as a generalized quantifier, or the derivation fails. As we have seen above, the derivation in (127) yields an identical reading as the wide-scope reading of internal *-dake* derived by V-to-I movement as in (42).

Now suppose that raising applies to internal *-dake* at the same time as V-to-I movement:

(140) LF for (2b):



Ordinary denotation	Type	Store
1 $\lambda x \lambda y [\diamond \text{play}(x)(y)]$ (= (42) step 3)	e,et	$\emptyset$
2 $R_k(z)(x_1)$	t	$\{R_k, x_1\}$
FINAL TRANSLATION		
2B $\lambda R_k [R_k(z)(x_1)]$	$\langle \langle e, et \rangle, t \rangle$	$\{x_1\}$
3 $\diamond \text{play}(z)(x_1)$	t	$\{x_1\}$
FINAL TRANSLATION		
3B $\lambda z [\diamond \text{play}(z)(x_1)]$	et	$\{x_1\}$
4 = 3		
5 $\lambda Q \forall p [C(p) \wedge p \rightarrow p = Q(h)]$	$\langle et, t \rangle$	$\emptyset$
6 $\forall p [C(p) \wedge p \rightarrow p = \diamond \text{play}(h)(x_1)]$	t	$\{x_1\}$
FINAL TRANSLATION		
6B $\lambda x_1 \forall p [C(p) \wedge p \rightarrow p = \diamond \text{play}(h)(x_1)]$	t	$\emptyset$
7 i	e	$\emptyset$
8 $\forall p [C(p) \wedge p \rightarrow p = \diamond \text{play}(h)(i)]$	t	$\emptyset$

The final reading is again equivalent to the one in (127). Thus we can see that once the *dake*-phrase raises, it always takes wide-scope over the modal regardless of the position of the verb (in-situ or raised to I). The narrow-scope reading of the internal *-dake* comes about when neither the *dake*-phrase nor the verb raises, which is possible due to the nominal nature unique to the internal *-dake*.

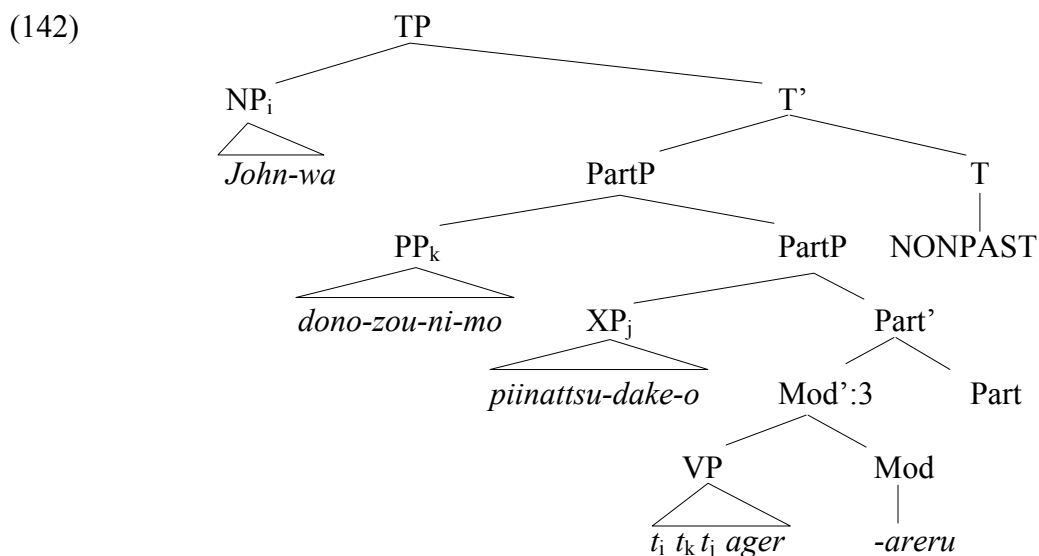
### 3.7.2 Some implications of the hybrid theory

It might be useful to end this discussion by considering some implications of the hybrid theory. Note that the proposed hybrid theory rules out the theories of QR in which (i) the subject is generated inside the VP and (ii) the QR traces have bearings on the calculation of scope in some way. The external *-dake* must raise in the hybrid theory, therefore traces are unavoidable. Let us consider Aoun and Li (1993) for example. In their theory, rigid-scope languages have rigid-scope by virtue of base-generating the subject inside the VP rather than in the IP. This assumption is crucial because QR chains cannot cross each other at LF (chains by definition involve traces). A theory in which the trace itself can be a player in the scope determination is problematic as well. In such a theory, the subject trace inside the VP is below the raised *dake*-phrase, and if this c-commanding relationship counts in the scope calculation, it would lead to a scope reading which is not actually available.

A theory which places a condition of the S-structure scope preservation on QR (or on any scope-related raising) fares better, despite being rather ad hoc. Whether the subject is base-generated in the VP and stays there at the S-structure, or it is in Spec IP at the S-structure, its relative position to *-dake* does not change at LF in such a theory. It also predicts a correct scope relation when the higher quantified phrase is not a subject but inside the VP, for example, a postpositional phrase. Consider the following example:

- (141) John-wa dono-zou-ni-mo piinattu-dake-o ager-arer-u  
 John-TOP which-elephant-to-*mo* peanuts-*dake*-ACC give-can-PRES
- a. “Every elephant is such that peanuts is the only food John can give him.”  
*every* > *dake* > *can*
- b. “Every elephant is such that John can give him peanuts alone (he doesn’t have to give him apples).”  
*every* > *can* > *dake*
- c. \* “Peanuts is the only food John can give to every elephant (he cannot give him apples).”  
 \**dake* > *every* > *can*

The underlined phrase is a universally-quantified PP. It c-commands the *dake*-phrase at S-structure, and this sentence does not have the reading in which *-dake* takes scope over it (the reading (c)). Suppose that the *-dake* phrase raises above the modal at LF in the reading (a) (which is compatible with V-to-I raising as shown in (140)). In this reading, the quantified PP still takes scope over the raised *-dake*, which suggests that it has also raised, to a position which c-commands *-dake*:



In this structure, the landing site of the PP is assumed to be PartP. If a non-scope-preserving theory of QR is applied, nothing blocks the PP from adjoining to the VP, deriving the unavailable (c) reading above. Imposing a structure-preserving condition on

QR would avoid this problem. In a theory which derives scope based on a movement in a “rigid-scope” language like Japanese, this line of preserving the rigidity of scope may be worth pursuing.

### 3.8 Summary

In this chapter, I have laid out an outline of an ideal theory which contains all the pieces: scope ambiguity of internal *-dake*, fixed wide-scope of external *-dake*, and why there is no case-marker-external *-dake*. The result is a hybrid theory which combines the strength of both the QR and non-QR approaches to the scope pattern of *-dake*. I have proposed that the split behavior between internal and external *-dake* comes from the fact that internal *-dake* is a noun whereas external *-dake* is a true particle like *-sae* or *-shika*. The internal *-dake* phrase is an NP, and thus is not forced to raise to Spec PartP, and its scope ambiguity is derived by the position of the verb and semantic lowering of the modal, as proposed in chapter 2, section 2.4.3. On the other hand, the external *-dake* phrase is forced to raise, giving only the wide-scope reading of *-dake* over the modal. In either case, I have shown that this “hybrid” theory makes correct predictions about the scope between the subject QP and *-dake*. I have also shown that raising of the *-dake* phrase is not in conflict with the V-to-I movement theory of internal *-dake* and that even if internal *-dake* raises, the theory still predicts on two scopes for internal *-dake*, without yielding any unavailable reading. Finally, I have pointed out some implications of the hybrid theory for the preservation of scope in a “rigid-scope” language.

## CHAPTER 4: Other focus-sensitive particles

### 4.1 Introduction

In the previous two chapters, I discussed the scope behavior of *-dake*. I proposed that the scope puzzle regarding *-dake* and modals comes from the dual morphological status of *-dake*. Specifically, I proposed that it is a noun in the following positions: immediately following an NP; at the end of a clause, co-occurring with copula *-da*; after an adjective/adjectival noun and a relative clause, or co-occurring with *-no*. On the other hand, *-dake* is a true particle when it follows a PP.

As a part of illustration of this point, it was pointed out in section 3.4 that there is a clear difference between *-dake* and *-sae* ‘even’, *-mo* ‘also’ and *-shika* ‘only (negative polarity item, “NPI”)’ in terms of their morpho-syntactic properties. In this chapter, I will concentrate on a semantic difference between *-dake* and the other three particles. As was mentioned in chapter 3, section 3.4, *-sae/mo/shika* are all incompatible with topic marker *-wa*. This is a well-known fact. However, exactly why it is so has not been a subject of serious linguistic inquiry in itself. Shoji (1986) presents this incompatibility as one piece of evidence that *-shika* is a topic marker itself. Mogi (2000) attempts to explain it from a purely syntactic point of view. He proposes that each focus-sensitive particle has a unique position within the syntactic structure, for example, inside VP, above VP and below negation, above negation, etc. He claims that the reason why *-wa* cannot attach to *-sae/mo/shika* is because it would conflict with their respective syntactic positions. However, neither of these offer a satisfactory explanation.

I will approach this issue from a different perspective. I will argue that the source of the incompatibility lies in their semantics/pragmatics rather than syntax or morphology. I will follow Kuroda's (1972, 1992) analysis of *-wa* as inducing a categorical judgment as opposed tothetic judgment, in the sense of Brentano (1874, 1924), and show that this property of *-wa* conflicts with some aspect of the semantics/pragmatics of *-sae/mo/shika*. I will also argue that the same approach can explain the compatibility between *-dake* and *-wa*. The split between the *-sae/mo/shika* group and *-dake* is rather striking, especially since *-dake* and *-shika* are so close in their meaning that it calls for an investigation.

I will start the discussion by presenting the two previous studies mentioned above: Shoji (1986) and Mogi (2000) and point out some problems in their analyses. In section 4.3, I will introduce Kuroda's discussion ofthetic and categorical judgments, which becomes the foundation of my proposal in the following section. Section 4.4 contains the actual analysis of focus-sensitive particles and *-wa*.

## 4.2 Previous studies

### 4.2.1 Shoji (1986)

Shoji argues that *-shika* is a topic marker which requires a sentence denoting a negated proposition as its comment. She presents several parallelisms between XPs (not necessarily arguments) marked by *-wa*, which is generally regarded as a topic marker in Japanese, and those marked with *-shika*. First, either of them can appear in a sentence with an associated gap or without (her chapter 3, (49), bold face mine):

- (143) a. [S” Sono-hon-**wa**<sub>i</sub> [S John-ga e<sub>i</sub> ka-tta.]] (with a gap)  
           that-book-TOP John-NOM buy-PAST  
           “That book, John bought.”
- b. [S” Huransu-**wa** [S wain-ga oisii ]] (without a gap)  
           France-TOP wine-NOM tasty  
           “As for France, wine is good.”

*Shika* can appear in the same positions as *-wa* in these sentences as long as the clause is negative (her chapter 3, (50); translation in parentheses mine):

- (144) a. [S” Sono-hon-**shika**<sub>i</sub> [S John-ga e<sub>i</sub> kaw-ana-katta.]] (with a gap)  
           that-book-*shika* John- NOM buy-NEG-PAST  
           “Except that book, John did not buy.”  
           (= “John only bought THAT BOOK.”)
- b. [S” Huransu-**shika** [S wain-ga oisiku-nai ]] (without a gap)  
           France-*shika* wine-NOM tasty-NEG  
           “Except France, no wine is good.”  
           (= “France is the only country whose wine is good.”)

(143a) and (144a) are parallel and so are (143b) and (144b).

The second piece of evidence, Shoji argues, is that *-shika* and *-wa* are incompatible with each other (her chapter 3 (52a)), where she also includes *-mo*:

- (145) a. \*John-**shika-wa** ko-**nai**.  
   come-NEG
- b. \*John-**wa-shika** ko-**nai**.
- c. \*John-**mo-wa** ko-**nai**.
- d. \*John-**wa-mo** ko-**nai**.

As noted in chapter 1, the topic marker *-wa* cannot appear next to a case marker regardless of the order, while it can appear after a postposition or *-dake*. The fact



that *-shika* cannot co-occur with *-wa*, Shoji argues, suggests that both *-shika* and *-wa* belong to the same class of particles.

Shoji also points out that neither *-wa* nor *-shika* is compatible with *wh*-words (her chapter 3, (55)).<sup>42</sup>

- (146) a. \***Dare-wa**            ki-ta            ka.  
               who-TOP            come-PAST        Q
- b. \***Dare-shika**        ko-na-katta        ka.  
               who-*shika*            come-NEG-PAST    Q

She argues that this is because of the conflict of function “between a topic representing old/given information and *wh*-words which ask for new information” (p.184).

For Shoji, the incompatibility between *-shika* and *-wa* is just one manifestation of the morphological status of these two particles as topic markers. However, this becomes suspect when we look at *-sae* and *-mo*, which Shoji does not include in her discussion. These two particles also behave in the same way as *-wa* and *-shika* (except that they do not require negation like *-shika*) in all three environments, which she takes as evidence of *-shika*'s status as a topic marker. Consider the following examples corresponding to the gap/no gap examples given by Shoji ((143) and (144) above):

---

<sup>42</sup> *Wh* + *wa/shika/sae*/etc. combination is OK in echo questions.

(147) *Sae*:

- a. [s” Sono-hon-**sae**<sub>i</sub> [s John-ga e<sub>i</sub> katta.]] (with a gap)  
     that book *sae* John-NOM buy-PAST  
     “John even bought THAT BOOK.”
- b. [s” Huransu-**sae** [s wain-ga oisiku-nai ]] (without a gap)  
     France-*sae* wine-NOM tasty NEG  
     “Wine is not good even in FRANCE.”

(148) *Mo*:

- a. [s” Sono-hon-**mo**<sub>i</sub> [s John-ga e<sub>i</sub> katta.]] (with a gap)  
     that-book-*mo* John-NOM buy-PAST  
     “John also bought THAT BOOK.”
- b. [s” Huransu-**mo** [s wain-ga oisiku-nai ]] (without a gap)  
     France-TOP wine-NOM tasty-NEG  
     “Wine is not good in FRANCE, either.”

In the (a) examples, the phrases marked with *-sae/mo* presumably move from their original positions to the Topic position just as those marked with *-wa* or *-shika*. On the other hand, in the (b) examples, which have no gap *-sae/mo* phrases are generated in the Topic position. Since *-sae* and *-mo* behave exactly like *-wa* and *-shika* here, this would count as evidence that *-sae* and *-mo* are also topic markers in Shoji’s analysis. Such whole-sale treatment of these particles is problematic, since they have rather different semantics aside from their focus-sensitivity.

Shoji herself points out that this pattern is not confined to topic markers but *-dake* also behaves this way (her chapter 3, (51)):

- (149) a. [S” John-**dake**<sub>i</sub> [S e<sub>i</sub> kita.]] (with a gap)  
 come-PAST  
 “It is only John that came.”
- b. [S” John-**dake** [S titioya-ga kanemoti da.]] (no gap)  
 father-NOM rich COP  
 “It is only John that (his) father is rich.”  
 (= “It is only John whose father is rich.”)

This, however, is not evidence that *-dake* is also a topic marker, according to Shoji. Rather, in this case, *-dake* is in the Focus position to which it must always move at LF (cf. chapter 2, section 2.3). Only, in this case, it either moved to that position at S-structure (a), or is base-generated there (b). Such an argument might offer a way to avoid having to claim that various other particles including *-dake* are also topic markers, but the trade-off is the loss of credibility of the evidence.

Even if the first piece of evidence can be dispensed with, her second piece of evidence, the incompatibility between *-wa* and the particles under discussion, would force her to conclude that *-sae* and *-mo* should be classed with *-wa* and *-shika* as topic markers, not with *-dake*. We saw in (145) that Shoji points out that *-shika* and *-mo* are incompatible with *-wa* in any order. The same holds for *-sae*:

- (150) a. \*John-**sae-wa** ko-**nai**.  
 come-NEG
- b. \*John-**wa-sae** ko-**nai**.

This incompatibility shows up even when *-sae/mo* phrases are in sentence-initial position, whether associated with a gap or not:

(151) *Sae*:

- |    |     |  |              |
|----|-----|--|--------------|
| a. | i.  | *[S” Sono-hon- <b>sae-wa</b> <sub>i</sub> [S John-ga e <sub>i</sub> katta.]] | (with a gap) |
|    | ii. | *[S” Sono-hon- <b>wa-sae</b> <sub>i</sub> [S John-ga e <sub>i</sub> katta.]] |              |
| b. | i.  | *[S” Huransu- <b>sae-wa</b> [S wain-ga oisiku- <u>nai</u> ]]                 | (no gap)     |
|    | ii. | *[S” Huransu- <b>wa-sae</b> [S wain-ga oisiku- <u>nai</u> ]]                 |              |

(152) *Mo*:

- |    |     |   |              |
|----|-----|---|--------------|
| a. | i.  | *[S” Sono-hon- <b>mo-wa</b> <sub>i</sub> [S John-ga e <sub>i</sub> katta.]] | (with a gap) |
|    | ii. | *[S” Sono-hon- <b>wa-mo</b> [S John-ga e <sub>i</sub> katta.]]              |              |
| b. | i.  | *[S” Huransu- <b>mo-wa</b> [S wain-ga oisiku- <u>nai</u> ]]                 | (no gap)     |
|    | ii. | *[S” Huransu- <b>wa-mo</b> [S wain-ga oisiku- <u>nai</u> ]]                 |              |

The incompatibility between *-sae/mo* and *-wa* rules out classing them with *-dake*, a focus-marker, since *-dake* can be followed by *-wa* in this position unlike *-sae/mo*:

- |          |   |              |
|----------|---|--------------|
| (153) a. | [S” John- <b>dake-wa</b> <sub>i</sub> [S e <sub>i</sub> kita.]] | (with a gap) |
|          | come-PAST   |              |
|          | “It is only John that came.”                                    |              |
| b.       | [S” John- <b>dake-wa</b> [S titioya-ga kanemoti da.]]           | (no gap)     |
|          | father-NOM rich COP   |              |
|          | “It is only John that (his) father is rich.”                    |              |
|          | (= “It is only John whose father is rich.”)                     |              |

Thus, according to Shoji’s theory, *-sae* or *-mo* must be as much a topic marker as *-wa* or *-shika*. Her final piece of evidence, inability to follow *wh*-words, confirms this:

- |          |                             |
|----------|-----------------------------|
| (154) a. | * <b>Dare-sae</b> ki-ta ka. |
|          | who come-PAST Q             |
| b.       | * <b>Dare-mo</b> ki-ta ka.  |
|          | who come-PAST Q             |

Again, *-sae* and *-mo* pattern with *-wa* and *-shika*. At least two out of three of her diagnostics for *-shika*’s status as a topic marker confirm that *-sae* and *-mo* are topic

markers. This is a problem, since bunching together particles with quite different semantics makes the notion of “topic” quite obscure.

Shoji sets out to investigate the difference between *-dake* and *-shika*, both of which generally translate to one word, *only*, in English. However, by focusing on these two particles and almost totally ignoring other focus-sensitive particles, this theory is not only in danger of making “topic” marker a mixed bag, but also fails to offer a satisfactory explanation for the difference between *-dake* and *-shika* w.r.t. their ability to combine with *-wa*. By taking *-sae/mo* into consideration, we begin to see that this difference is not really a manifestation of the morphological category of *-shika*, but rather there is a common semantic property which *-shika* shares with *-sae* and *-mo* but not with *-dake*.

#### 4.2.2 Mogi (2000)

Mogi (2000) attributes the incompatibility to the conflict of what he calls the “hierarchical property”<sup>43</sup> of each particles. In his attempt to categorize focus-sensitive particles *-dake*, *-made*, *-sae*, *-mo* and *-wa*, according to their scopal property,<sup>44</sup> “hierarchical property” seems to mean the scopal property of these particles w.r.t. various elements in the same sentence, namely, verbs with infinitival complement,<sup>45</sup> negation, and other scope-bearing particles.

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<sup>43</sup> The original Japanese terminology is “*kaiso:sei*”. The translation is mine.

<sup>44</sup> He specifically excludes any polarity item for the sake of simplicity. For the same reason, I exclude one of the particles he uses, namely *-made*, from the following discussion since it does not add to nor detract from it.

<sup>45</sup> *Fukugou-doushi* in Japanese.

He begins his categorization of particles by looking at their scope w.r.t. the verbs with infinitival complement, such as *sugiru* ‘overdo’ and *sobireru* ‘fail’. He states that this test indicates that *-dake* is the only particle on the list which can have a scope lower than the main verb. For example, compare (155) with (156) though (158):

- (155) Hanako-wa, [ke:ki-**dake**-o **tabe**<sub>V1</sub>] **sobireta**<sub>V2</sub>  
 Hanako-TOP cake-*dake*-ACC eat failed  
 a. “Hanako failed to eat cake alone (she ended up eating other things as well).” V2 > *-dake*  
 b. “Cake is the only thing Hanako failed to eat (she managed to eat everything else).” *-dake* > V2

- (156) Hanako-wa, [ke:ki-**mo** **tabe**<sub>V1</sub>] **sobireta**<sub>V2</sub>  
 Hanako-TOP cake-*mo*-ACC eat failed  
 a. ??“Hanako failed to also eat cake (she did manage to eat other things).” V2 > *-mo*  
 b. “Hanako also failed to eat cake (she failed to eat other things as well).” *-mo* > V2

- (157) Hanako-wa, [ke:ki-**sae** **tabe**<sub>V1</sub>] **sobireta**<sub>V2</sub>  
 Hanako-TOP cake-*sae*-ACC eat failed  
 a. \*“(Hanako failed to even eat cake (she did manage to eat other things).” \*V2 > *-sae*  
 b. “Hanako even failed to eat cake.” *-sae* > V2

- (158) Hanako-wa, [ke:ki-**wa** **tabe**<sub>V1</sub>] **kaketa**<sub>V2</sub>  
 Hanako-TOP cake-*sae*-ACC eat was about to  
 a. \*“(What Hanako was about to do was to eat cake at any rate.” (literal translation of interpretation given by Mogi) \*V2 > *-sae*  
 b. “As for cake, Hanako was about to eat (she wasn’t about to eat other food).” *-sae* > V2

The only example with *-dake*, (155), is the only one which really allows the narrow-scope reading of the focus-sensitive particle (a) w.r.t. the higher verb (V2). He thus divides the list into *-dake* | *-wa/sae/mo*. I find (155a) harder to detect than (b), but it is

still possible. On the other hand, I find (156a) impossible, as are (157a) and (158a). This judgment unambiguously confirms the division in the data.

He describes *-dake* as a particle which can stay inside the VP and *-wa/sae/mo* as particles which cannot, using a construction in which the entire VP which contains these particles is followed by *-sae* or *-mo* itself. He states that by checking the scope between the particle inside the VP w.r.t. the *-sae/mo* attached to the VP, one can find out whether the particle which originates inside the VP can stay in that position. His examples are as follows:

- (159) a. Hanako-wa [Taro-ni-**dake** sono koto-o uchiake]-**mo** shita<sup>46</sup>  
 Hanako-TOP [ Taro-to-*dake* that thing-ACC confide]-*mo* did  
 i. “Hanako even confided it to Taro alone.”<sup>47</sup> *-mo* > *-dake*  
 ii. “Taro is the only person Hanako also confided it to  
 (as well as asking for help etc.).” *-dake* > *-mo*
- b. Hanako-wa [Taro-ni-**sae** sono koto-o uchiake]-**mo** shita  
 Hanako-TOP [ Taro-to-*sae* that thing-ACC confide]-*mo* did  
 i. ??“Hanako also even confided it to TARO.” *??-mo* > *-sae*  
 ii. “Even to Taro, Hanako also confided it  
 (as well as asking for help etc.).” *-sae* > *-mo*
- c. Hanako-wa [Taro-ni-**wa** sono koto-o uchiake]-**mo** shita  
 Hanako-TOP [ Taro-to-TOP that thing-ACC confide]-*mo* did  
 i. \*“Hanako also even confided it to TARO.” *\*-mo* > *-wa*  
 (ii. = (a.ii) *-wa* > *-mo*)

In the example (159a), *-dake* has ambiguous scope w.r.t. the higher *-mo*. On the other hand, *-sae* and *-wa* take scope over *-mo* (Mogi does not mention the interpretation (ii)

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<sup>46</sup> Mogi does not mention this, but according to my judgment, the same scope ambiguity is present if *-mo* is replaced by *-sae* in this sentence.

<sup>47</sup> The particle *-mo* is sometimes interpreted like *even*.

for (159c), but it is available, i.e. the sentence is not ungrammatical or uninterpretable). According to Mogi, this indicates that a hierarchical property of *-dake* is staying (or able to stay) inside the VP, while that of *-sae/mo/wa* is not staying there.

Finally, he draws a division between *-sae/mo* and *-wa* based on their scope w.r.t. negation. He states that *-sae/mo* must move up above negation, while *-wa* only goes up to below negation.<sup>48</sup> He uses *subete* ‘all’ and *ikutsuka* ‘some’ as the crucial diagnosis. Consider the following examples:

- (160) a. [<sub>Neg</sub> Subete-no mondai-o toka]-na-katta.  
           all-*no*          problem-ACC solve]-NEG-PAST  
       i. “It is not the case that [I] solved all problems.”           Neg > *subete*  
       ii. “[I] didn’t solve any of the problems.”                 *subete* > Neg
- b. [<sub>Neg</sub> Ikutsuka-no mondai-o toka]-na-katta.  
           some-*no*          problem-ACC solve]-NEG-PAST  
       \*Intended: “It’s not the case that I solved some problems.” \*Neg > *ikutsuka*  
       Available: “There are some problems I didn’t solve.”         *ikutsuka* > Neg

*Subete* ‘all’ in (160a) can have narrow scope w.r.t. negation, while *ikutsuka* ‘some’ in (b) cannot. He applies this distinction to *-sae* and *-wa* attached to the VP:

- (161) a. [<sub>sae</sub> Subete-no mondai-o toki]-sae shi-na-katta.  
           all-*no*          problem-ACC solve]-sae do-NEG-PAST  
           “Even solving all problems, [I] didn’t do.”                 *sae* > Neg
- b. [<sub>sae</sub> ikutsuka-no mondai-o toki]-sae shi-na-katta.  
           some-*no*          problem-ACC solve]-sae do-NEG-PAST  
           “Even solving some problems, [I] didn’t do.”                 *sae* > Neg

---

<sup>48</sup> *Dake*’s scope w.r.t. negation is the same as its scope w.r.t. modal.



- (162) a. [<sub>wa</sub> Subete-no mondai-o toki]-**wa** shi-na-katta.  
 all-no problem-ACC solve]-*wa* do-NEG-PAST  
 “It’s not the case that I solved all problems.” Neg > *wa*
- b. ??[<sub>wa</sub> ikutsuka-no mondai-o toki]-**wa** shi-na-katta.  
 some-no problem-ACC solve]-*wa* do-NEG-PAST  
 Intended: “It’s not the case that I solved some problems.” ??Neg > *wa*

Mogi argues that the fact that (161b) is allowed means that *-sae* takes scope over negation, while the marginal (162b) indicates that *-wa* is inside the scope of negation. *Wa*, he claims, takes scope over VP but under negation.

Based on these observations, he states that the following division among particles holds, according to their scope property within the hierarchy of sentence structure:

*-dake* | *-wa* | *-sae/mo*. *Dake* is inside the VP, *-wa* is above the VP but below Neg, and *-sae/mo* is above Neg. Based on this hierarchy, he makes two claims. First is that this hierarchy partially predicts which combinations of these particles in a particular sequence (I will refer to this as “sequential combination” hereafter) are allowed, provided that their meanings do not conflict. Focusing on the relevant part of this prediction to our current discussion, *-dake* can be followed by *-wa* because it is hierarchically lower, while *-sae/mo* cannot be followed by *-wa* because the hierarchical property of *-sae/mo* is higher than that of *-wa*. The second is that this division explains why *-sae/mo* and *-wa* are allowed to attach to the *Ren'yo* form of the verb, while *-dake* is not. Some of the relevant examples were discussed in the previous chapter, and are repeated here:

- (119) Tenohira-o mitsume-sae/mo *suru* (repeated)  
 palm-ACC stare-at *-sae/mo* do  
 “[I] even/also stare at [my] palms.”



position: *-dake* at LF, an “interface level between syntax and semantics”, and *-sae/mo/wa* somewhere before LF, a level which is solely syntactic. Therefore, the argument seems to be, *-sae/mo/wa* can attach to the *Ren'yo* form (=VP) since this attachment is syntactic and these particles are already above the VP in syntax. On the other hand, *-dake* cannot attach to the VP because it does not climb above the VP until after syntax.

While one would be forced to make such an assumption if he tries to propose a fixed “syntactic” position for particles which have ambiguous scope like *-dake*, there are non-arbitrary theoretical consequences. Assuming two separate points where scope can be determined, more scope options should be available in the language than is attested. For example, Mogi places *-wa* below negation in syntax, as we saw in (162). But why should it be the case that *-wa* does not have the option of raising above negation at LF, like *-dake* does, making (162b) grammatical? It would require additional stipulations to prohibit such freedom in order to avoid wrong predictions under Mogi’s theory.

His prediction of possible combinations of particles in sequential combination also has its problems. He lists the ungrammatical combination: *sae-wa* in his prediction (his (19)). Since he places *-wa* below negation and *-sae* above negation, this order is predicted to be impossible regardless of their semantic (in)compatibility. However, his hierarchy does not prohibit the reverse order, *wa-sae* (not mentioned), which also happens to be ungrammatical in real life. This strongly suggests that there is something more at work in particle combinations than their “purely syntactic” hierarchical properties, for example, their semantics. Mogi makes a passing remark on provisions for

semantic compatibility between particles to be combined, but then does not really take it into consideration when he makes his predictions.

Not the least problematic about these predictions is that it is not clear from his discussion how exactly they derive from the proposed hierarchical property of the particles. He states that the hierarchical property of a particle comes from its position in the phrase structure. The diagnostics he uses are based on the relative scope of particles w.r.t. the VP or negation (notice that in examples of what he calls “scope between particles”, (159), one of the particles is attached to a VP). However, in the following example, both *-dake* and *-wa* are attached to an NP:

- (167) [<sub>NP</sub> John]-**dake-wa** furimuka-na-katta.  
 John-*dake*-TOP turn around-NEG-PAST  
 “John was the only person who didn’t turn around.”

All the particles in a sequential combination, by definition, are attached to the same phrase. According to Mogi, the *-dake-wa* sequence is allowed because of their relative hierarchical properties: *-dake* is hierarchically inside a VP and *-wa* is above a VP. Yet, in this example, we cannot take this literally, that is, *-dake* and *-wa* cannot be physically placed inside and outside the VP, respectively, in this sentence. Thus, one must assume that their hierarchical relationship in one configuration<sup>49</sup> is somehow carried over to their relationship elsewhere in the language, and that seems to be Mogi’s implicit assumption.

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<sup>49</sup> There seems to be an implicit assumption in Mogi’s argument that there is some configuration which serves as a “basic” phrase structure for Japanese.

How this is done, or why it should be done, needs to be addressed to give any validity to this prediction, but is not dealt with at all.

In this section, I reviewed two previous studies, by Shoji (1986) and Mogi (2000), which deal with the incompatibility between *-wa* and *-sae/mo/shika*, and pointed out their problems. In the following two sections, I will spell out a semantic account of the compatibility vs. incompatibility of *-wa* with *-dake* vs. *-sae/mo/shika*, respectively, based on Kuroda's analysis of *-wa*. I will show that this offers a more complete picture of the phenomena and does so without introducing ad hoc stipulations.

### 4.3 Thetic and categorial judgments

The purpose of this section is to give an overview of Kuroda's discussion of thetic and categorial judgments (1972 etc.) and the function of *-wa*. In the next section, I will draw on his theory presented in this section and propose that it is its semantics which determine whether a given focus-sensitive particle can combine with *-wa*.

As is mentioned in footnote 7 in chapter 1, the subject of a sentence in Japanese can be marked by either *-ga* or *-wa*:

(168) Neko-**ga** asoko-de nemutte iru  
 cat-NOM there-at sleeping is  
 A/The cat is sleeping there.”

(169) Neko-**wa** asoko-de nemutte iru  
 cat-TOP there-at sleeping is  
 “The cat is sleeping there.”

Kuroda argues that the fundamental difference between (168) and (169) is that of judgment forms. That is, (168) expresses a “thetic” judgment while (169) expresses a

“categorical” judgment. The distinction between thetic vs. categorical judgment dates back to Brentano (1874, 1924) and was applied to grammatical theory by Marty early in the 20th century.

Kuroda describes the distinction as follows (1992, p.21):

- (170) A thetic judgment is a simple form of a judgment, a unitary cognitive act. Hence, a thetic judgment was also called a simple judgment. In contrast, a categorical judgment consists of two distinct cognitive acts, one the recognition of the Subject, which Marty identified as a thetic judgment, and another the act of acknowledging or disavowing a Predicate of a Subject. Hence, a categorical judgment was also called a double judgment.

In this statement, “Subject” and “Predicate” are capitalized in order to distinguish them from various senses in which the terms “subject” and “object” are used in linguistic theories. He defines the capitalized “Subject” and “Predicate” as follows (p.18):

- (171) The concept of ‘subject’ which is our main concern here is the one that I assume was intended to be captured by the term ‘subject’ in traditional logic, or more specifically in the theory of judgment, the tradition that at least goes back to the theory of the Port-Royal logical-grammarians, according to which to judge is to assert or deny a predicate of a subject.

Under this view, the example in (168) with a *-ga*-marked (“nontopicalized”) subject is a simple perception of a situation where a/the cat is sleeping there - a thetic judgment. On the other hand, (169) first recognizes a “presupposed” subject (Ladusaw 1994) *neko* and then Predicate of it that it is sleeping there, constituting a categorical or “double” judgment.

It is not the purpose of this section to go into a detailed study of thetic and categorical judgments. However, Kuroda’s discussion of the basic function of *-wa* in

Predication (capitalized) under this view gives an answer to our current puzzle. He argues that Predication does not simply put “together two ideas, as traditional logicians (like the Port-Royal logicians) would have it.” Rather, it “implicitly involves a selection of a reality from among possibilities and a contrast of a certain entity with others by associating this reality with it.” In making these claims, he states that the particle *-wa* “has a more or less explicitly contrastive and selective function.” He goes on to say that this “selective-associative” function is a part of Predication, but can also be seen elsewhere.

His evidence for this claim comes from the phenomenon which he calls “mini-topics”, in which *-wa*, traditionally regarded as a marker of the topic of a sentence, appears as a topic of noun phrases or a postpositional phrases (1992, pp.36-38):

(172) Tanaka-ga ano kaigi-ni Huransu-zin-**wa** gengogakusya-o yonda  
Tanaka-NOM that meeting-to French-person-TOP linguist-ACC invited  
“Tanaka invited linguists, so far as the French are concerned, to that conference.”

(173) Tanaka-ga ano kaigi-de Huransu-zin-**ni-wa** gengogakusya-**ni** atta  
that meeting-at French-person-*ni*-TOP linguist-*ni* met  
“Tanaka met linguists, so far as the French are concerned, at that conference.”

(174) Tanaka-ga wain-o Amerika-**kara-wa** karihorunia-**kara** yunyu-shita  
wine-ACC America-from-TOP California-from imported  
“Tanaka imported wine from California, so far as America is concerned.”

At the first glance, it seems that the *-wa*-phrases in these sentences are of the ordinary variety, that is, a sentential topic which happens to be placed in the middle of the sentence. However, Kuroda points out that the inherent case marker *-ni*, which is required by the verb *atta* ‘met’, appears not only on the argument of the verb

*gengogakusya* ‘linguist’ but also on the topic phrase *Huransu-zin-ni-wa* in (173). The same happens with the postposition *-kara* ‘from’ in (174). Kuroda argues that this double-marking indicates that both *-ni*-marked phrases in (173) originate in the internal argument position of the verb *atta*. The same things happens for *-kara* phrases in (174), both of which must originate in the position which selects the postposition. By the same token, both *Huransu-zin-wa* and *gengogakusya-o* in (172) must originate in the direct object position of the verb *yonda* ‘invited’. The only reason why the accusative marker *-o* does not appear in the topic phrase is because the case marker and topic marker cannot appear on the same phrase, as mentioned in chapter 1. Kuroda names the *-wa*-phrases in these examples “mini-topics” in order to clarify that they are not sentence topics.

The importance of the mini-topic is that it clearly shows the contrastive nature of *-wa*. Kuroda argues that the mini-topic structure pragmatically presupposes a table like the following (p.39) for (172) and (173):

(175) French	psychologists	linguists	philosophers...
Americans	psychologists	linguists	philosophers...
Koreans	psychologists	linguists	philosophers...
...			

In (172) and (173), *linguists* is selected from among other candidates in the table and is associated with *French*. At the same time, *French* is contrasted with Americans, Koreans, etc. The contrastive function may be quite explicit or almost suppressed, so the mini-topicalized sentences has a flavor of contrast to varying degree. For example, a full interpretation of the sentence in (172) can be continued as:



- (176) *sosite/sikasi*    *amerika-zin-wa*    *sinrigakusya-to*    *gengogakusya-o,*  
 and/but            America-person-TOP    psychologist-and    linguist-ACC  
*kankoku-zin-wa*    *tetugakusya-o yonda*  
 Korean-person-TOP    philosopher-ACC invited  
 “...and/but he invited psychologists and linguists, so far as Americans are  
 concerned, and philosophers so far as Koreans are concerned.”

(172) also suggests that French psychologists and philosophers, unlike French linguists, were not invited. Thus, a mini-topicalized structure indicates that a particular pairing, for example, (French, linguists) “is selected as a reality, and then the mini-topic is “contrasted” with other possible mini-topics given or implied in the pragmatic context.” (p.40).

The interpretation of a sentence topic is somewhat different from mini-topics, but selection and contrast remain the basic functions. According to Kuroda, the schema of the topicalized sentence *NP-wa [... t ...]s* takes the form:

- (177) The NP to be contrasted is selectively associated with [... t ...]s

What this schema does is shown in the following example:

- (178) *Socrates-wa*    *ningen de*    *aru*  
 Socrates-TOP    human    be  
 “Socrates is a human being.”

According to the schema in (177), *ningen de aru* ‘is a man’ is selected from among other possibly relevant predicates, such as *kami de aru* ‘is a god’ or *doobutsu de aru* ‘is an animal’, depending on the context, and is associated with *Socrates*. At the same time,

*Socrates* is contrasted with someone or something that is possibly relevant, again depending on the context. Thus, this sentence can be continued as:

(179) Socrates-wa ningen de atte kami de wa nai  
   be and/but        god                   NEG  
           “Socrates is a human being and is not a god.”

Or as:

(180) Socrates-wa ningen de aru ga Apollo-wa ningen de wa nai  
   be    but                                   human                NEG  
           “Socrates is a human being but Apollo is not a human being.”

(179) is a case where the selective association (Socrates, is human being) is explicitly shown by stating that Socrates is not a god. (180), on the other hand, brings out the contrasting function of *-wa* by explicitly contrasting Socrates with Apollo w.r.t. being a human being. In the next section, I will show how these basic functions of selective association and contrast make *-wa* incompatible with *-sae/mo/shika*.

#### **4.4 Focus-sensitive particles and *-wa***

##### **4.4.1 Meaning of *-sae*, *-mo* and *-shika***

In this subsection, I will establish the semantics of *-sae*, *-mo*, and *-shika* which will be employed in the succeeding discussion. I first discuss *-sae* and *-mo* together,

because both of them conventionally implicate that there is at least one other relevant proposition which is true.<sup>50</sup> I adopt Rooth's (1985, p.120) semantics of *even* for *-sae*:

- (181) Semantics for *even*:<sup>51</sup>
- $$\lambda q[\exists p[C(p) \wedge p \wedge [p \neq q] \wedge \text{unlikely}'(p)] \wedge q]$$
- |
|
- conventional implicature
assertion

According to this semantics of *even*, the interpretation of the sentence in (182) is (183):

- (182) Taro-to-**sae** asob-eru  
 Taro-with-*sae* play-can  
 '[I] can even play with TARO.'

- (183)  $\exists p[\underline{C(p) \wedge p \wedge [p \neq \diamond \text{play-with}'(t)(i)]} \wedge \text{unlikely}'(p)] \wedge \diamond \text{play-with}'(t)(i)$   
 where  $C = \lambda p \exists x[\diamond \text{play-with}'(x)(i)]$

The underlined part of the conventional implicature in (183) states that there is at least one other person whom I can play with.

It is easy to see that *-mo* 'also' contains the same implicature. Let us assume the following semantics for *-mo* 'also' for the current discussion:

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<sup>50</sup> For *-mo*, this may be the assertion; it does not affect the point I will make in the next subsection, thus I will continue assuming that it is a implicature. It does affect the Contrastive Topic analysis of incompatibility between *-mo* and *-wa*, as we will see in the next section.

<sup>51</sup> Under the cross-categorical approach to these focus-sensitive particles, the exact formula will vary according to the position of the particles, as we saw in the discussion of *-dake* in the previous chapter. This does not affect the point being made.

- (184) Semantics for *-mo* ‘also’:  
 $\lambda q[\exists p[C(p) \wedge p \wedge [p \neq q]] \wedge q]$

This applied to the following Japanese example yields the interpretation in (186):

- (185) Taro-to-**mo** asob-eru  
 Taro-with-*mo* play-can  
 ‘[I] can also play with TARO.’

- (186)  $\exists p[\underline{C(p) \wedge p \wedge [p \neq \diamond \text{play-with}'(t)(i)]}] \wedge \diamond \text{play-with}'(t)(i)$   
 where  $C = \lambda p \exists x[\diamond \text{play-with}'(x)(i)]$

Again, the underlined part states that there is at least one other person I can play with besides Taro.

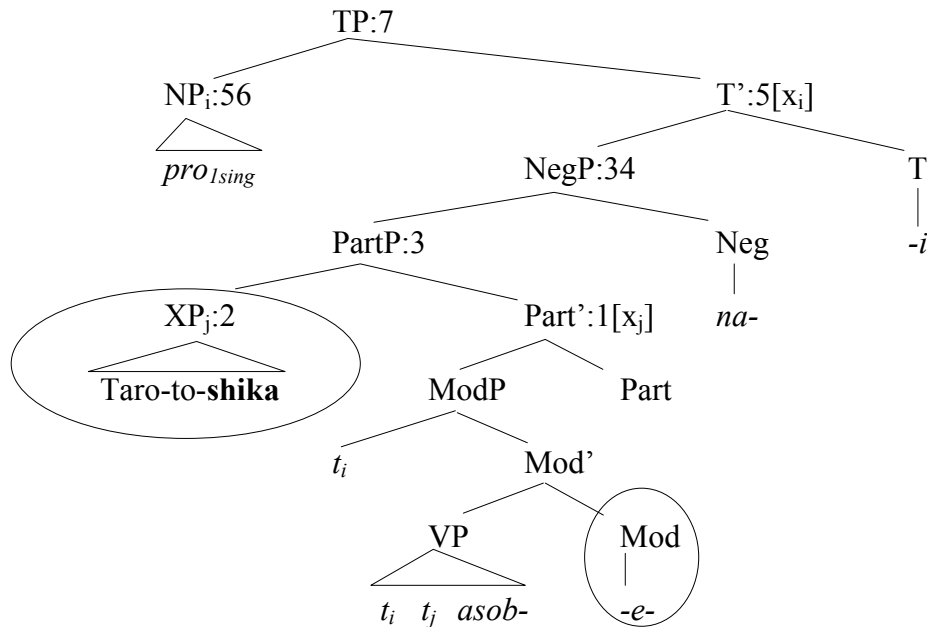
The final particle to be defined is the NPI, *-shika*. I will assume the following working definition of *-shika* which resembles ‘except’, with a usual syntactic requirement for an NPI that it has to be under the scope of negation.<sup>52</sup>

- (187) *-shika*  
 Assertion:  $\lambda y \lambda Q \exists p[C(p) \wedge p \wedge p \neq Q(y)]$   
 Presupposition:  $\exists p[C(p) \wedge p]$

Under these assumptions, the example in (188) has the LF and derivation in (189):

- (188) Taro-to-**shika** asob-e-nai  
 Taro-with-*shika* play-can-NEG  
 ‘The only person [I] can play with is TARO.’

(189) LF for (188):



Ordinary denotation	Type	Store
1 $\diamond\text{play-with}'(x_j)(x_i)$ FINAL TRANSLATION	t	$\{x_i, x_j\}$
1B $\lambda x_j[\diamond\text{play-with}'(x_j)(x_i)]$	et	$\{x_i\}$
2 $\lambda Q\exists p[C(p) \wedge p \wedge p \neq Q(t)]$	et,t	$\emptyset$
3 $\exists p[C(p) \wedge p \wedge p \neq \diamond\text{play-with}'(t)(x_i)]$	t	$\{x_i\}$
4 $\neg\exists p[C(p) \wedge p \wedge p \neq \diamond\text{play-with}'(t)(x_i)]$		
5B $\lambda x_i[\neg\exists p[C(p) \wedge p \wedge p \neq \diamond\text{play-with}'(t)(x_i)]$	et	$\emptyset$
6 i	e	$\emptyset$
7 $\neg\exists p[C(p) \wedge p \wedge p \neq \diamond\text{play-with}'(t)(i)]$ where $C = \lambda q[\exists x[q = \diamond\text{play}(x)(i)]]$		

At the step 3, before combining with negation, this *-shika* sentence means that I can play with someone who is not Taro. Then the negation *nai*, which must always c-command *-shika*, turns it around to assert that I cannot play with anyone except Taro. Note that this is the opposite of the conventional implicature of *-sae* and *-mo*.

<sup>52</sup> I am grateful to Roger Schwarzschild for suggesting this treatment of *-shika*.

Now we have all the pieces to this puzzle: contrastive and selective/associative functions of *-wa* as argued by Kuroda, and conventional implicature of *-sae/mo* and *-shika*. We are ready to put them together and see what their semantics yield in the next subsection.

#### 4.4.2 Combining *-sae/mo/shika* and *-wa*

It is possible to have *-wa* in the position occupied by *-sae/mo/shika* in the example we have been using:

- (190) Taro-to-**wa** asob-eru  
 Taro-with-TOP play-can  
 ‘[I] can play with Taro.’

According to Kuroda’s analysis of *-wa* as a selective-associative and contrastive particle, the topic-marked PP, [*Taro-to-wa*] ‘with Taro’, is to be contrasted, and is selectively associated with [... *asob-eru*] ‘[I] can play...’. Thus, the sentence may be continued thus:

- (191) Taro-to-**wa** asob-eru ga Mary-to-**wa** asob-e-nai.  
 but Mary-with-TOP play-can-NEG  
 “[I] can play with Taro, but I can’t play with Mary.”

Here, PP *Taro-to-wa* is contrasted with *Mary-to-wa* in terms of whom I can play with. If

(190) is continued as the following instead, the sentence is decidedly odd:

- (192) \*Taro-to-**wa** asob-eru shi/ga Mary-to-**wa** asob-eru.  
 and/but Mary-with-TOP play-can



Now, there would be no problem if the contrast induced by the focus-sensitive particles and the one induced by *-wa* did not conflict. However, in the case of *-sae/mo/shika*, they do. Let us look at concrete examples; again, *-sae/mo* and *-shika* will be discussed separately. Let us start with *-sae/mo*:

- (194) \*Taro-to-**sae/mo-wa** asob-eru  
           Taro-with-*sae/mo-TOP* play-can

We saw that a sentence with *-sae* ‘even’ or *-mo* ‘also’ has a conventional implicature that there is at least one other relevant proposition that is true. In the example sentence below, the conventional implicature is that there is at least one other person besides Taro that I can play with:

- (195) Taro-to-**sae/mo** asob-eru  
           Taro-with-*sae/mo* play-can  
           ‘[I] can even/also play with TARO.’

Implicature:  $\exists p[C(p) \wedge p \wedge [p \neq \diamond\text{play-with}'(t)(i)]]$   
                   where  $C = \lambda p \exists x[\diamond\text{play-with}'(x)(i)]$

Let us assume the candidate set to be {I can play with Taro, I can play with Mary, I can play with Bill} for the current discussion. At the same time, however, the contrastive function of *-wa* implicates that the PP *Taro-to* ‘with Taro’ is contrasted with other relevant PPs in terms of whom I can play with. That is, *-wa* implicates that *I can play with Taro* is the only true proposition in the candidate set. This is in direct conflict with the implicature of *-sae/mo*, making the sentence unacceptable.

Exactly the same kind of conflict happens with *-shika*. Consider the following ungrammatical sentence:



(196) \*Taro-to-**shika-wa** asob-e-nai  
 Taro-with-*shika*-TOP play-can-NEG

In the grammatical example without *-wa*, (188), *-shika* asserts that I cannot play with anyone other than Taro. The sentence in (188) also presupposes that I can play with someone. That someone has to be Taro, or the presupposition would contradict the assertion. Therefore, I can play with Taro. However, *-wa* in (196) implicates that Taro is the only person with whom *I cannot play with x* is associated. This is a contradiction of the assertion + presupposition given by *-shika*.

The key ingredients of the analysis presented here have already been independently proposed. Kuroda proposed the contrastive and selective/associative functions of *-wa* as a part of his discussion ofthetic vs. categorical judgments. The semantics of *-sae* is parallel to the one proposed for the English *even* by Rooth in his discussion of cross-linguistic semantics for *only* and *even*. The analogy of his semantics to *-mo* and *-shika* is not arbitrary, for they are also focus-sensitive particles and share their scope property with *-sae*. Putting the two together, however, has provided a straightforward explanation for the incompatibility of *-wa* and *-sae/mo/shika*.

In the next subsection, I will show that the semantic account discussed in this subsection can also straightforwardly account for why *-dake*, unlike *-sae/mo/shika*, is able to combine with *-wa*, without any additional ingredient.

#### 4.4.3 *Dake* and *-wa*

Back in chapter 1, it was mentioned that *-dake*, unlike *-sae/mo/shika*, can be followed by *-wa*:

- (8) d. Taro-**dake-wa** kita.  
           Taro-*dake*-TOP      came  
           “Only TARO came.”

This is predicted in the line of argument I have taken for focus-sensitive particles and *-wa*: the semantics of *-dake* and contrastive function of *-wa* converge. According to Rooth, *-dake* asserts that the only relevant proposition that is true is the one denoted by the sentence which contains *-dake*. In (8), for example, among the propositions of the form *x came*, *Taro came* is the only one that is true. This is exactly what the contrastive function of *-wa* says.

Note that there is no need to make special accommodations for the proposal for scope ambiguity of *-dake* in chapter 3. I proposed that the internal *-dake* is a noun and the external *-dake* is not. Since *-wa* can attach to phrases other than NP, it can attach to either internal or external *-dake*; no modification of the proposal is needed in this respect. Attaching *-wa* does have an effect on the scope of internal *-dake*, but I need not make any special accommodations for this fact, either, since it follows from what we have been discussing in this chapter. I proposed earlier that the contrastive function of *-wa* cannot be suppressed to an unnoticeable level when there is another element in the sentence which induces a contrast. Since *-dake* is such an element, *-wa* must contrast when attached to a *-dake* phrase.

The effect of *-wa* on *-dake*'s scope is observed when it is attached to an internal *dake*-phrase. Let us use the examples (1) and (2) from chapter 1 (repeated):

- (1) Taro-wa Hanako-**to-dake** asob-eru.  
       Hanako-with-*dake* play-can  
 “The only person Taro can play with is Hanako (he can’t play with others).” *dake* > can
- (2) Taro-wa Hanako-**dake-to** asob-eru.  
       Taro-TOP Hanako-*dake*-with play-can  
 a. = (1) *dake* > can  
 b. “Taro can play with Hanako alone (without playing with others).”  
       can > *dake*

When *-wa* is added, the narrow-scope reading of *-dake*, (2b), becomes indistinguishable from the wide-scope reading:

- (197) Taro-wa Hanako-**dake-to-wa** asob-eru.  
       Taro-TOP Hanako-*dake*-with play-can  
 a. “Hanako is the only person Taro can play with.”  
 b. “Taro can play with Hanako alone (but he can’t play with other people as well as Hanako).” = (a)

The relevant change in the interpretation in (197b) is underlined. This happens because *-wa* selectively contrasts the *-dake* phrase with other relevant PP (here, of the form *x-to* ‘with x’ where x is an individual), w.r.t. the rest of the sentence, i.e. *asoberu* ‘can play’. The contrastive function of *-wa* implies that there is no other relevant PP which makes the sentence true. On the other hand, the wide-scope reading of *-dake* over the modal in (197a) is not affected, since the contrastive function of *-wa* happens to match that of *-dake*. This is also true for external *-dake*, which has fixed wide-scope over modal:

- (198) Taro-wa Hanako-**to-dake-wa** asob-eru.  
 Hanako-with-*dake*-TOP play-can  
 “The only person Taro can play with is Hanako (he can’t play with  
 others).” *dake* > can

Because the original sentence without *-wa* has a fixed wide-scope reading which is not significantly affected by attaching *-wa*, this sentence does not show the kind of meaning change observed in (197b).

In this subsection, I have shown that the account of scope ambiguity of *-dake* in chapter 2 and the account of compatibility between *-dake* and *-wa* in this chapter do not compromise each other in any way under Kuroda’s treatment of *-wa* and the assumption that this function cannot be suppressed when a focus-sensitive particle is present. Up to this point, I have been treating the implicature of *-wa* as a clear contrast: If a *wa*-marked sentence asserts a positive proposition, its implicature is negative (e.g. assertion: I can play with Taro; implicature: I can't play with others), and vice versa. In the next chapter, I will examine "scalar implicature" of *-wa* as pointed out by Satoshi Tomioka (personal communication). He points out that the implicature of *-wa* is not always as strong as I have been treating it. I will discuss Hara’s (2003) proposal for calculating the scalar implicature of *-wa* and its implications for the relationship between focus-sensitive particles and *-wa*. While I agree that there is a scalar implicature in *-dake+wa* sentences, I will show that it is not brought on solely by *-wa*.

#### 4.5 Summary

I set out to explain the split behavior between two groups of focus-sensitive particles in this chapter: *-sae/mo/shika* on one hand, and *-dake* on the other. Under Kuroda’s (1970 etc.) view of *-wa* as essentially a contrastor, its incompatibility

with *-sae/mo/shika* can be fully explained without ad hoc stipulations: XP + *sae/mo/shika* has an implicature that there is more than one member in the candidate set of XP which makes the proposition true, which is in conflict with that of *-wa*. Moreover, this analysis can be extended to the opposite behavior of *-dake* toward *-wa*, without any special treatment of *-dake* w.r.t. its ambiguous scope behavior in relation to modals. This is a common problem to the two previous studies reviewed. The semantic similarity between *-shika* and *-dake* makes this split particularly puzzling. However, this analysis shows that in fact their semantic similarity is actually responsible for the split in conjunction with their morphological/syntactic disparity. *Shika* is an NPI, and thus always has a negative sentence in its scope, while *-dake* is not an NPI, thus the counterpart of *-shika* + NEG is *-dake* (no NEG), having the same assertion and implicature. When *-wa* comes into play this becomes crucial, for its selective/associative function now associates the opposite proposition with each: negative with *-shika*, and affirmative with *-dake*. The result is the split behavior between the two otherwise semantically similar particles.

The two previous studies reviewed earlier in this chapter offer partial explanations of paradigm with a number of stipulations which are otherwise unmotivated. Shoji (1986) states that *-shika* is incompatible with *-wa* because they are both topic markers. Mogi (2000) claims that the hierarchical property of each particle is partly responsible for determining the sequential combinations of particles. Some of their stipulations are needed because otherwise their stories of the scope of these particles would have to be compromised. Shoji (1986) cannot claim that *-dake* is a topic marker although it passes one of the diagnostics she uses to support her argument that *-shika* is a topic marker.

*Dake* has to be a focus marker because it can have a narrow scope w.r.t. the modal. As pointed out above, her theory runs into trouble when applied to *-sae* and *-mo*, because they would have to be topic markers, too, according to her evidence for *-shika*. Mogi (2000) also needs to make a stipulation in order to account for the scope of *-dake* at the same time as keeping his syntactic hierarchy of particles: *-dake* is hierarchically (i.e. before LF) inside the VP, but has the option of raising above the VP at LF; all other particles are already in their scope position before LF.

On the other hand, the analysis I have proposed here accounts for all the combinations under discussion: *-wa* and *-sae/mo/shika* are incompatible in any order because of semantic/pragmatic reasons; *--dake* and *-wa* are compatible because there is no meaning conflict; however, *-wa* must always follow *-dake*, because, morphologically, the topic marker must always be phrase-final in Japanese. By combining Kuroda's theory of *-wa* proposed in his discussion ofthetic vs. categorical judgments and implicature of various focus-sensitive particles, I have shown that it is possible to give a complete account of the phenomena.

In the next chapter, I will expand the semantic/pragmatic discussion of focus-sensitive particles and *-wa* and discuss their scalar implicature. I will review a study by Hara (2003), and examine how it relates to the account I have given in this chapter. Then I will move on to suggest a possible direction for scalar semantics for *-dake*.

## CHAPTER 5: Scalar implicature

### 5.1 Introduction

In the last chapter, I have shown that the contrastive analysis of *-wa* proposed by Kuroda can account for its (in)compatibility with various focus-sensitive particles. In this chapter, I will introduce an aspect of the semantics/pragmatics of *-wa* and *-dake* which have not been considered so far: their scalar implicatures. It is well-known that *only* in English gives a scalar implicature when the sentence is uttered with a certain intonation. The Japanese *-dake* also gives a scalar implicature, but they are not necessarily the same one as the English *only*, as we will see below. It is also known in Japanese linguistic literature that *-wa* often gives a scalar implicature. In section 5.2, I will review Hara's (2003) formal analysis of scalar implicature of the topic marker *-wa* and examine how it relates to my proposal for combinations of focus-sensitive particles and *-wa*. In section 5.3, I will suggest a possible approach to the scalar semantics of *-dake* which explains why *-dake* lacks a scalar implicature when it is attached to an NP without *-wa* following it.

### 5.2 Scalar implicature of *-wa* and focus-sensitive particles

#### 5.2.1 Contrastive topic analysis of *-wa*

Hara (2003) claims that if a sentence contains a Contrastive Topic ("CTopic"), it presupposes a particular subset of scalar alternatives, following Sauerland (2001). She argues that a CTopic-marked sentence must have a scalar alternative stronger than the assertion in order to be interpreted properly. Before I go into her formal proposal, I

would like to cite an excerpt from Hara (2003) in order to clarify what the implicature given by CTopic is (p.2):

(199) It is observed that Contrastive Topics always induce implicatures. In (2), for instance, compared to the utterance without CTopic-marking, *John-ga kita*. ‘John-nom came’, (2b) includes the speaker’s indication that the asserted proposition is the most informative answer that he or she can give. Similarly, CTopic-marking of numerals as in (3b) seem to have an effect similar to ‘at least N’, namely it specifies the number the speaker is certain of and indicates the uncertainty of bigger numbers (Teramura, 1991).

She gives the following examples for illustration:

- (2) a. Who came to the party?  
 b. JOHN-wa ki-ta  
 John-CTop come-Past  
 “As for John, he came (Implicature: I don’t know about others).”
- (3) a. How many people came to the party?  
 b. 3-nin-wa kita  
 3-Class-CTop came  
 “3 people came (Implicature: I don’t know whether more than three came).”

Here, the implicature of *-wa* is not that of negation (e.g. “Nobody else came.” for her (2b)), but that of uncertainty (or unwillingness) of the speaker to assert that negation.

She proposes the following condition for CTopic (her (17)):

- (200) CONTRASTIVE(<B, F>)  
 $\exists F'[F' \in \text{ALT}_C(F) \ \& \ B(F')] \text{ entails } B(F) \ \& \ B(F) \text{ doesn't entail } B(F')]$   
 (presupposition)



Hara further proposes that the implicature is induced by the following operation (her (22)):

- (201) CONTRASTIVE(<B,F>)  $\Leftrightarrow$
- a. F(B) (assertion)
  - b.  $\forall F'[[F' \in \text{ALT}_C(F) \ \& \ B(F') \text{ entails } B(F) \ \& \ B(F) \text{ doesn't entail } B(F')]$   
 $\rightarrow \text{Poss}(\neg B(F'))]$  (implicature)

She claims that the epistemic operator *Poss* gives the "I am not sure about others" part of the implicature, which is a property of Japanese *-wa*. (202) and (203) (her (4) and (5), respectively) shows how the condition (200) and the operation (201) actually work:

- (202) MINNA-wa ko-na-kat-ta  
 Everyone-CTop come-NEG-PAST
- a. "It is not the case that all the people came."  
 (Implicature: Probably some people came. (available reading))
    - (a) B(F) (assertion) = "It is not the case that all the people came."
    - (b) B(F') (a stronger alternative) = "Nobody came."
    - (c) B(F') entails B(F)
    - (d) B(F) does not entail B(F')
  - b. "All the people are such that they didn't come."  
 (No implicatures (unavailable reading))
    - (a) B(F) (assertion) = "All the people are such that they didn't come."
    - (b) B(F') = N/A  
 $\rightarrow$  no scalar implicature  
 $\rightarrow$  this reading does not survive

In the reading (a), in which the negation takes scope over the universal quantifier, there is a stronger alternative than the assertion B(F'), namely, "Nobody came", which entails the assertion B(F) but is not entailed by it. Therefore, this reading has a scalar implicature

and is available. On the other hand, the reading in (b),  $\forall$  takes scope over the negation and asserts the strongest possible alternative, “Nobody came”. Since there is no stronger alternative than the assertion, this reading does not have a scalar implicature and is therefore unavailable. The sentence in (202) is felicitous only under the reading (a). What happens in the unavailable (b) reading happens in (203), the affirmative counterpart of (202):

- (203) # Minna-wa kita.  
 Everyone-CTop came  
 (no implicatures)
- (a) B(F) = “All the people came”  
 (b) No stronger alternative  
 → no scalar implicature  
 → this sentence is infelicitous

The assertion of this sentence is the strongest possible alternative, therefore this sentence has no implicature. The sentence in (203) is infelicitous because there is no other reading for it.

With this background, I would like to explore the possibility of using Hara’s (2003) analysis of *-wa* to explain the incompatibility between *-sae/mo/shika* and *-wa* in the next subsection.

### 5.2.2 CTopic analysis of *-wa* and *-sae/mo/shika*

If we apply Hara’s proposal for CTopic to the sentence in (190), which does not have any focus-sensitive particle, its implicature would be calculated as follows:

- (204) Taro-to-**wa** asob-eru  
 Taro-with-*TOP* play-can  
 “I can play with Taro.”  
 (a) B(F) = “I can play with Taro.”  
 (b) B(F') = “I can play with Taro & Hanako.”  
 (c) B(F') entails B(F)  
 (d) B(F) does not entail B(F')  
 Implicature: “I am not sure if I can play with someone other than Taro.”

Using this example as a reference point, I will examine each focus-sensitive particle I have been discussing under CTopic analysis of *-wa*. Let us start with what turns out to be the least problematic particle for this analysis, namely, the NPI *-shika*. The assertion of *-shika...NEG* sentence is  $\neg\exists$ , which is equivalent to  $\forall\neg$ . This means that the calculation of the CTopic fails exactly where it did for (202b). Let us see the actual calculation:

- (205) \*Taro-to-**shika-wa** asob-e-nai  
 Taro-with-*shika-TOP* play-can-NEG(PRES)  
 (a) B(F) = “I cannot play with anyone except Taro.”  
 (b) B(F') = N/A  
 → no scalar implicature  
 → this sentence is ungrammatical

In this sentence, a stronger alternative of the kind in (204) is not available. For example, “I cannot play with anyone except Taro and Hanako” does not entail B(F) “I cannot play with anyone except Taro”, since the latter denies my being able to play with Hanako, who is not Taro. Nor does “I cannot play with anyone” entail B(F), since it contradicts the presupposition of the sentence, “I can play with Taro”. Thus, for *-shika*, CTopic analysis suffices to explain its incompatibility with *-wa*.

Next, let us examine a less straightforward particle, *-mo*. Suppose that the assertion of *-mo* is the core of the sentence, and its conventional implicature is that there is another relevant proposition which is true, as we did in the previous section. Under these assumptions, I can apply the CTopic calculation as follows:

- (206) \*Taro-to-**mo-wa**            asob-e-ru  
       Taro-with-*mo-TOP*        play-can-PRES  
 (a) B(F) = "I can play with Taro."  
 (b) B(F') = "I can play with Taro + Hanako."  
 (c) B(F') entails B(F)  
 (d) B(F) does not entail B(F')  
 Implicature: "I am not sure if I can play with someone other than Taro."  
 Condition: *-mo*'s implicature must be met ("I can play with someone in addition to Taro.")  
       → the condition is not met  
       → this sentence is infelicitous

Unlike *-sae*, which will be discussed next, *-mo* does not come with a built-in scale, so the calculation itself is straightforward. The assertion remains as it is in the same sentence without *-mo*. That means that the rest of the calculation would be the same as the one in (204). A condition that *-mo*'s implicature must be met is placed next to the implicature to show why this sentence is infelicitous under this treatment of *-mo+wa*. This time, the calculation itself does not fail, unlike with *-shika+wa*, but the resulting implicature is at odds with that of *-mo*. It is infelicitous to imply that I am not sure about something that I am implying in the same sentence, therefore, *-mo* and *-wa* cannot combine with each other.

Before concluding, as we did for *-shika*, that CTopic analysis can account for the incompatibility between *-mo* and *-wa*, I would like to point out that this conclusion can be reached straightforwardly only if we assume that the assertion in (206) is the same as

the sentence without *-mo*, as it is done. However, if *-mo* is included in the assertion, the implicature of the CTopic would no longer conflict with that of *-mo*, as illustrated in the following calculation:

- (207) (a') B(F) = "I can play with Taro in addition to someone *x*."  
 (b') B(F') = "I can play with Taro + Hanako in addition to someone *x*."  
 (c) B(F') entails B(F)  
 (d) B(F) does not entail B(F')  
 Implicature': "I am not sure if I can also play with more person(s) than Taro in addition to someone *x*."  
 Condition: *-mo*'s implicature must be met ("I can play with Taro in addition to someone *x*."  
 → This condition is met  
 → This sentence should be felicitous, which it is not.

The steps that changed from (206) are the first two, indicated by a prime. In this version, the condition that *-mo*'s implicature must be met is satisfied, because it is the same as the assertion B(F). A stronger implicature exists, and the rest of the calculation also goes through, resulting in a scalar implicature for the CTopic. This implicature has no uncertainty about my being able to play with Taro in addition to someone *x*, which is the assertion of the sentence. Therefore, the sentence should not be infelicitous. If we try to account for the incompatibility between *-mo* and *-wa* solely by the CTopic account of *-wa*, then we would have to make sure that (206), not (207), is the right calculation. However, that the assertion of the sentence with *-mo* should be the same as that of the sentence without it (i.e. B(F) in (206) is the same as in (204)) seems problematic. This would mean that *-mo* contributes nothing to the assertion of the sentence, which is not very plausible. This would leave (207) as the more plausible derivation, which is a

problem for trying to account for the incompatibility between *-mo* and *-wa* solely by Hara's (2003) account.

*Sae* 'even' is the most problematic particle to account for with the CTopic. First, let us suppose that the assertion of *-sae+wa* is the same as the assertion without *-wa*. Therefore, the assertion is the sentence without *-sae* (Rooth 1985). There is an additional twist in the calculation of the implicature of *-sae+wa* sentence which is not encountered in the cases of *-shika* and *-mo*; *-sae* gives a scalar implicature of its own. I would like to suggest that because of this nature of *-sae*, a stronger alternative B(F') of the *-sae+wa* sentence, not just the overall implicature, must satisfy the scalar implicature of *-sae*. This means that such an alternative must be "higher" on the relevant scale of *-sae*, which in the following example is that of the unlikelihood of my being able to play with someone:

- (208) \*Taro-to-**sae-wa**            asob-e-ru  
       Taro-with-*sae-TOP*        play-can-PRES  
 (a) B(F) = "I can play with Taro."  
 (b) B(F') = "I can play with Hanako."  
       Condition: Hanako is less likely for me to play with than Taro.  
 (c) B(F') entail B(F) (Note: see the following paragraph)  
 (d) B(F) does not entail B(F')  
       Implicature: "I am not sure if I can play with someone who is less likely for me to play with than Taro." - must be blocked or the sentence would not be infelicitous

In step (c), the following calculation is at work: the reasoning of *-sae*'s scale is that if I can play with *x*, I can play with everyone who is lower on the scale than *x*. Here, Hanako is *x*, and is higher than Taro on the scale of unlikelihood for me to be able to play with. If I can play with Hanako, I can play with Taro who is lower on the scale. Therefore, B(F') entails B(F). If we assume that this is not the case, then the calculation of the CTopic

scalar implicature fails, the implicature does not come about, and the sentence is infelicitous. On the other hand, if we assume this is true, and if every other condition is met, the implicature would be calculated, which does not conflict with implicature of *-sae*, and the sentence should be felicitous. In order to account for the infelicity of this sentence solely by the CTopic approach to *-wa*, one must look elsewhere for the calculation to fail. One possible way to do this is to make sure that the assertion B(F) itself is at the top of the scale so that there would be no stronger alternative. If this is the case, the sentence would be infelicitous for the same reason as in the *-shika* example in (203). However, there is no way to guarantee this, unless an assumption is made about *-sae*'s semantics, ensuring that what is above the assertion on the scale is not relevant for *-sae*'s implicature to come about. Let me point out that adding *-sae* itself in the assertion B(F) does not change this situation:

- (209) \*Taro-to-**sae-wa** asob-e-ru  
       Taro-with-*sae-TOP* play-can-PRES  
 (a') B(F) = "I can even play with Taro."  
 (b) B(F') = "I can even play with Hanako."  
       Condition: Hanako is less likely for me to play with than Taro.  
 (c) B(F') entail B(F) (Note: see the following paragraph)  
 (d) B(F) does not entail B(F')  
 Implicature: "I am not sure if I can even play with someone who is less likely for me to play with than Taro."  
       → this implicature must be blocked or the sentence would not be infelicitous

A stronger alternative exists which meets the condition that *-sae*'s scalar implicature be met, unless *-sae*'s domain of quantification is somehow restricted not to contain one, as suggested above. For Hara's (2003) theory of the CTopic to entirely account for the incompatibility between *-sae* and *-wa*, this is something that must be worked out.

To summarize this section up to this point, Hara's (2003) analysis of the CTopic alone, as it stands, can partially account for incompatibility between *-sae/mo/shika* and *-wa*, but not entirely. My treatment of *-shika* seems to work smoothly with CTopic analysis, but *-mo* and *-sae* require additional restrictions in order for their incompatibility with *-wa* to be explained by CTopic analysis. The last step before going back to the puzzling “invisibility” of *-dake* pointed out by Satoshi Tomioka (personal communication), that is, the sentence with *-dake+wa* seems to give the exact same scalar implicature as the sentence with *-dake*, is to see how Hara's (2003) analysis fares with *-dake*.

### 5.2.3 CTopic analysis and *-dake*

Let us recall that *-dake* and *-wa* are compatible, and that wide-scope reading of *-dake* is available, whereas narrow-scope reading is not. It turns out that Hara's (2003) analysis correctly predicts the unavailability of the narrow-scope reading, but it also predicts that the wide-scope reading, as under our current treatment of *-dake* following Rooth (1985), is not available, either. The problem with wide-scope reading arises because “*x-dake*  $\varphi$ ” asserts that only *x* makes  $\varphi$  true, which entails that every other member in the domain makes  $\varphi$  false. We saw this pattern with *-shika* in (205) above. Let me illustrate this with an actual example:



(210) Wide-scope *-dake*:

Taro- <b>dake-wa</b>	asob-e-ru	(external <i>-dake</i> )
Taro-with- <i>dake-TOP</i>	play-can-PRES	
or		
Taro- <b>dake-to-wa</b>	asob-e-ru	(internal <i>-dake</i> )
Taro- <i>dake</i> -with- <i>TOP</i>	play-can-PRES	

- (a) B(F) = "Taro is the only person I can play with."  
 → entail "I cannot play with anyone else."  
 (b) B(F') = N/A  
 → no scalar implicature  
 → this sentence/reading should be unavailable

As we see, wide-scope reading of *-dake* has no stronger alternative because it asserts the strongest possible alternative. Just as the *-shika+wa* calculation failed, this calculation fails and predicts that the wide-scope reading of the internal *-dake* is unavailable and that the external *-dake* with fixed wide scope is incompatible with *-wa*. However, this is contrary to the fact. The arrow-scope reading of the internal *-dake* can be handled by Hara's (2003) CTopic analysis, not because it asserts the strongest possible alternative, but because there is no stronger alternative which entails the assertion:

(211) \*Narrow-scope *-dake*:

- |                                     |               |
|-------------------------------------|---------------|
| Taro- <b>dake-to-wa</b>             | asob-e-ru     |
| Taro- <i>dake</i> -with- <i>TOP</i> | play-can-PRES |
- (a) B(F) = "I can play with Taro alone (without playing with others)."  
 (b) B(F') = " I can play with Taro and Hanako."  
 (c) B(F') does not entail B(F) → *this reading is unavailable.*  
 (d) B(F) does not entail B(F')

Although CTopic analysis of *-wa* can deal with narrow-scope reading of *-dake*, and it is not impossible to claim that the compatibility between wide-scope reading of *-dake* and *-wa* stems from something else, it would be more desirable if we can uniformly explain both phenomena. In the previous chapter, the contrastive *-wa* analysis that I

proposed does just that: *-wa*'s contrastive semantics gives rise to an implicature which conflicts with the implicature or assertion of each of *-sae/mo/shika*, resulting in the compatibility between *-wa* and these particles. At the same time, the same implicature for *-wa* converges with the assertion of *-dake*, thus correctly predicting their compatibility.

With these issues in mind, I would like to address Satoshi Tomioka's (personal communication) point that *-wa* gives a scalar implicature whether or not *-dake* is present, and in such cases *-dake*'s contribution is not clear. While I do not deny that *-wa* gives a scalar implicature to a *-dake* sentence, I disagree with the suggested "invisibility" of *-dake*. Let us first examine the relevant data provided by him:

(212) Taro-wa Eego-**dake-ga** hanas-e-ru.  
 Taro-TOP English-*dake*-NOM speak-can-PRES  
 "The only language that Taro can speak is English (i.e., The speaker asserts that Taro speaks no other languages)"

(213) Taro-wa eego-**dake-wa** hanas-e-ru  
 Taro-TOP English-*dake*-TOP speak-can-PRES  
 "Taro can speak at least English (i.e., The speaker asserts that Taro speaks English but is not willing to make assertions about other languages such that Taro speaks them; Hence the scalar implicature 'at least')"

(214) Taro-wa eego-**wa** hanas-e-ru  
 Taro-TOP English-TOP speak-can-PRES  
 "Taro can speak at least English (with the same implicature as (213))"

The point here is that although *-dake* is present, it is not mandatory that the speaker is negating that Taro can speak other languages in (213), while it is in (212). If (213) and (214) are really synonymous, the question arises as to what the contribution of *-dake* is in (213).

We might try to explain this intuition by assuming that *-wa*'s scalar implicature for (213) is calculated from the presupposition of *-dake*, which in this case is "Taro speaks English", rather than from its assertion as I did above. However, even if we apply this assumption, the problem is not quite solved. Let me illustrate this with sample calculations based on this assumption:

- (215) Taro-wa eego-**dake-wa** hanas-e-ru. for (213)  
 Taro-TOP English-*dake*-TOP speak-can-PRES  
 (a) B(F) = "Taro can speak English." *presupposition of -dake*  
 (b) B(F') = "Taro can speak English and German."  
 (c) B(F') entails B(F)  
 (d) B(F) does not entail B(F')  
 Implicature: Taro can at least speak English.

- (216) Taro-wa eego-**wa** hanas-e-ru for (214)  
 Taro-TOP English-TOP speak-can-PRES  
 (a) B(F) = "Taro can speak English."  
 (b) B(F') = "Taro can speak English and German."  
 (c) B(F') entails B(F)  
 (d) B(F) does not entail B(F')  
 Implicature: Taro can at least speak English.

Left as it is, (215) has the problem of leaving *-dake* itself out of calculation completely, although it achieves the same implicature for (215) and (216). In addition, this is a clear deviation from Hara's proposal that the CTopic calculation looks at the *assertion* of the sentence. If we revise her condition so that either the assertion or the presupposition can be used as B(F), it would result in some unwanted consequences. We have already seen one of them: incompatibility between *-mo* and *-wa* can be explained by Hara's theory if we assume that B(F) for the calculation is (206), not (207); they cannot both be assertions nor can they both be implicatures.

The actual implicature Tomioka (personal communication) suggests for (215), I believe, could come about if we let *-dake* take scope over *-wa* in Hara's operation for the CTopic in (201b), and make a provision for (201a) that the assertion B(F) is that of the remaining sentence:

(217) *eego-dake*[ $\forall F'$ [[ $F' \in \text{ALT}_C(F)$  & B(F') entails B(F) & B(F) doesn't entail B(F')]  
 $\rightarrow \text{Poss}(\neg B(F'))$ ]] (implicature)

Below *eego-dake* 'only English', the calculation would be the same as in (215), with appropriate replacement of *English* with a variable. When combined with the raised *-dake* phrase, this LF would produce the implicature: "English is the only language for which the speaker is willing to assert that Taro can speak it". The problem with this path is that the particular raising of NP+*dake* needs to strand *-wa* in order to take scope over it. Japanese does not allow any kind of overt affixal particle stranding, and it is quite likely to wreak havoc if we assume such a covert move.

So far, I have looked at the theoretical aspect of Tomioka's suggestion. In the following, I will turn my attention to the empirical aspect of it. There are native speakers (including myself), who detect a difference between (213) and (214).<sup>53</sup> For us, the implicature suggested for (213) is very difficult to detect, if not impossible. The more obvious "scalar" implicature for us is not only that Taro cannot speak any other language, but also that he cannot do any better than speaking English. For those of us who find this

implicature most obvious for (213), there is a clear contrast between (213) and (214). The implicature of the latter is what Kuroda (1970 etc.) proposed: it is contrastive (“Taro can’t speak other languages”), but can be suppressed to an unnoticeable level, thereby possibly bringing out the CTopic reading in (214). As noted, this not the most robust reading for this sentence.

When provided with a context, the contrast between *-dake+wa* and *-wa* alone can be clearly seen. One such instance is when they are continued with information about Taro’s ability of speaking other languages:

(218) #Taro-wa Eego-**dake-wa** hanas-e-ru ga furansugo-wa hanas-e-nai  
Taro-TOP English-dake-TOP speak-can-PRES but French-TOP speak-can-NEG  
 #“English is the only language Taro can speak, but he cannot speak French.”  
 (redundent)

(219) Taro-wa Eego-**wa** hanas-e-ru ga furansugo-wa hanas-e-nai  
Taro-TOP English-TOP speak-can-PRES but French-TOP speak-can-NEG  
 “Taro can speak English, but he can’t speak French”

(218) sounds redundant, while (219) does not. The redundancy in (218) can only come from the speaker’s use of *-dake* asserting that Taro cannot speak other languages despite *-wa*. On the other hand, in (219), the absence of *-dake* allows more ambiguity as to what the speaker is asserting with the first half of the sentence, so the sentence has no oddity about it. Another context where (213) and (214) clearly differ is in the use of adverb

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<sup>53</sup> My suspicion is that even those who make no distinction between (213) and (214) will find some context, possibly one of the two discussed here, in which the presence vs. absence of *-dake* does make a difference. However, I have not yet had a chance to verify this because the native speakers I have consulted with all distinguished between the two sentences.

*semete* ‘at least’, which carries a connotation that the designated least is barely enough.

Not surprisingly, it is more natural to use *semete* with *-dake+wa* than *-wa* alone:

- (220) *Semete Eego*<sup>?</sup>*(-dake)-wa hanas-e-ru yoo-ni natte-kudasai*  
 at least English(-*dake*)-TOP speak-can-INF state become-please  
 “Please at least become able to speak English.”

This sentence could be used as a minimum job requirement, and the presence of *-dake* makes sure of the “minimum” connotation, therefore it is much more salient with *semete*. In context, too, *-dake*’s assertion is intact: being able to speak another language (either as well as speaking English or a language more valuable to the company than English) would exceed the bare minimum conveyed by *semete*. It is true that the scalar implicature is present, certainly in (220); thus far, I agree with Tomioka. However, the assertion of *-dake* does not disappear with the addition of *-wa*, and the scalar implicature of *-dake+wa* is not the same.

It is well-known in Japanese linguistics literature that *-dake* possesses a scalar property in the same way as the English *only* does, implying that the asserted proposition is low on the relevant scale compared to its alternatives. Harada and Noguchi (1992) use the term “minimal”. I would like to suggest that the “minimal” reading of *-dake* is not very noticeable for those who find the scalar implicature of (213) and (214) to be almost indistinguishable. For those of us who do find the implicature of the two sentences to be rather different, the scalar implicature given by (213) is the result of the strong presence of the “minimal” reading of *-dake* combined with the scalar implicature of *-wa*, since they do not conflict with each other. In the next section, I will further explore issues surrounding the scalar implicature of *-dake* further.

### 5.3 “Scalar” semantics for *-dake*

As mentioned in chapter 3, *-dake* derived from the noun *take* ‘extent’:<sup>54</sup>

- (221) a. **take-ga** takai  
*take-NOM* high  
 “[s/he] is tall (literal: her/his height is high).”
- b. kimono-no **take-o** tumeru  
*kimono-no take-ACC* shorten  
 “shorten the length of one’s *kimono*”
- c. omoi-no **take-o** noberu  
*thought/feeling-no take-ACC* state  
 “bare one’s thoughts (literal: state the extent of one’s feelings)”

In (a), *take* corresponds to height, that is, the extent/upper limit of one’s stature, and in (b), to length, which is the extent/upper limit of *kimono*. In (c), it corresponds to the extent of an abstract notion, or thought.

While the use of the original noun *take* ‘extent/limit’ is becoming somewhat archaic, the use of *-dake* is not. It is not difficult to see that the ‘boundary/extent’ sense of *take* has been transferred to the morpheme *-dake* which derived from it in the following examples:<sup>55</sup>

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<sup>54</sup> This is in contrast to the English *only*, whose original meaning was ‘unique’ or ‘solitary’. It derived from Old English *ánlic* (*an* ‘one’ + *-lic* ‘-ly’) (from Oxford English Dictionary online).

<sup>55</sup> The examples are taken from *Kenkyusha’s New Japanese-English Dictionary (4th Edition)*.

(222) Enough; worth

- a. 5-en kitte-o      100-en-dake    kudasai.  
 5-yen stamp-ACC    100-yen-*dake*    give  
 “Give [me] one hundred yen worth of five-yen stamps.”
- b. Taberu-dake-no    shu:nyu:-wa    hitsuyo      da.  
 eat-*dake-no*      income-TOP    necessary    COP  
 “[I] must have enough income to live on.”

(223) ‘At least’ (note *-wa* after *-dake* in each example)

- a. Watashi-wa      kodomo-ni      ko:ko:-dake-wa      yaraseru tsumori da.  
 I-TOP            child-DAT      high school-*dake*-TOP    have do intention COP  
 “I will give my child a high-school education at least.”
- b. Watashi-wa      tsuki-ni      1,000-en-dake-wa      chokin-shitai.  
 I-TOP            month-in      1,000-yen-*dake*-TOP    save-want to  
 “I want to save a minimum of 1,000 yen a month.”

All of the uses of *-dake* in these examples have the sense of “upper limit/as much as”, which it inherited from the noun *take*.

It is worth noting that in these scalar readings, *-dake* is either attached to a non-NP element (e.g. clause), a numeral (222a), or attached to an NP followed by *-wa*. When *-dake* is attached to NP without *-wa*, the scalarity, or minimality, is not manifested. This is in contrast to *-dake* attached to a clause or an adjective/adjectival noun, where the scalar reading is very easy to perceive - in fact, in some cases, it is the most prominent reading. Consider the following examples:

- (224) (Kyo-wa,)      asa              pan-o              tabe-ta]-**dake** da  
 today-TOP      morning      bread-ACC      eat-PAST]-*dake* COP  
 “All I ate (today) is bread in the morning (I should eat something soon).”  
 Minimality implicature: “Eating bread in the morning and nothing else afterwards is not much/enough.”



In this sentence, *-dake* is attached to a clause, *asa pan-o tabe-ta* ‘[I] ate bread in the morning’. The minimality implicature given above is quite strong, when compared to a comparable sentence in which *-dake* is attached to *pan* ‘bread’:

- (225) (Kyo-wa,)      *asa pan-dake-o tabe-ta*  
 today-TOP      morning bread-*dake*-ACC eat-PAST  
 “(This) morning, the only thing I ate was bread.”

Unlike clause+*dake* in (224), (225) does not imply that eating only bread in the morning is not much. Adjectives and adjectival nouns also often give scalar implicature when *-dake* is attached, which is not surprising since they usually denote properties which can be compared to other properties. I will use an adjectival noun *kirei* as an example:

- (226) *Kore-wa kirei-na-dake-no heya da*  
 this-TOP clean-*dake*-no room COP  
 “This room is only clean”  
 Implicature: “The room does not have more desirable attribute such as well-furnished, elegant, comfortable, etc.”

In this example, a non-minimality reading is extremely hard to get; the value-judgment present in the implicature does not seem to be suppressible, which is in direct contrast to the cases in which *-dake* is attached to a noun without being followed by *-wa*.

It is puzzling that a scalar implicature of *-dake* which is so robust when attached to a clause or adjective/adjectival noun should be absent when *-dake* is attached to a noun, unless *-wa* is attached. In NP+*dake*+*wa*, *-wa* seems to be acting as the trigger of the scalar implicature in (213). A possible reasoning follows the one proposed for the contrastive reading of *-wa* combined with a focus-sensitive particle in chapter 4, section

4.4. There, I suggested that *-wa*'s contrastive function cannot be suppressed when a focus-sensitive particle provides it with a set of alternatives. If we reverse the roles, and follow Hara in that *-wa* is a CTopic, which always requires an implicature, we may argue that a scalar implicature of *-dake* is triggered by the CTopic-ness of *-wa*,<sup>56</sup> and that in some contexts, it overrides the scalar implicature of *-wa*. One thing this line of reasoning lacks is why *-dake*'s scalar implicature is dormant, so to speak, and needs to be “triggered” by *-wa* when it is attached to NP. I will turn to this issue now.

Scalar properties of the English *only* have, of course, been widely noted. Let us consider Schwarzschild's (1997) analysis of the English *only* as involving ordering (his (72)) to see if it may shed light on our analysis of the scalar implicature of *-dake*:

- (227) Let P and G be property variables.  
 $(\llbracket \text{only} \rrbracket^{\text{S}}(\text{P}))(\text{x})(\text{w}) = 1 \text{ iff } \forall \text{G}[(\text{P} \leq \text{G} \ \& \ \text{G}(\text{x})(\text{w})=1) \leftrightarrow \text{G}=\text{P}]$   
 a.  $\leq$  is a weak linear ordering.  
 b.  $\leq$  is a weak fan ordering.  $(\exists \text{l} \forall \text{x} \forall \text{y}[\text{x} \leq \text{y} \leftrightarrow (\text{x}=\text{l} \vee \text{x}=\text{y})])$

He claims that weak linear ordering in (a) gives the “scalar” reading of *only*, while the “fan” ordering in (b) gives the “one and only” reading. He states that in the latter case of *only*,  $\leq$  does not order different properties, but rather it is the identity function on some set of properties.

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<sup>56</sup> As we saw in the previous section, the scalar implicature of *-wa* is not necessarily the most robust implicature for some speakers in certain contexts, which means that for these speakers, the CTopic-ness of *-wa* is suppressible.

Since the Japanese *-dake* derived from a word which implies a limit, it is not a great leap to suppose that its semantics is that of ordering. If that is the case, the question arises as to the exact nature of *-dake*'s ordering. This is pertinent to the issue under discussion: the minimality reading of *-dake* is dormant when it is attached to an NP and there is no following *-wa*. In chapter 3, I have assumed that *-dake* is like the English *only* in that it always takes scope over a proposition, and does not operate on its first argument (i.e. NP, clause, adjective, etc. to which it attaches) in the way it operates on its domain of scope. If *-dake* always operates on a clause, the source of the division within its possible first arguments w.r.t. the availability of the scalar reading is not so clear. On the other hand, if we suppose that the calculation of the scale of *-dake* is based solely on the information provided by its first argument, the division actually seems rather logical.

Take [NP+*dake*], where the scalar implicature is dormant; this is because many nouns are neutral, that is, they do not have any inherent order w.r.t. other nouns. For example, without any external information, one would be hard-pressed to provide a scale among apples, oranges, and bananas, but once it is in a clause, for example, *John stole apples*, it is much easier to imagine a scale. For example, if oranges or bananas are much more valuable than apples, then stealing apples is not as bad as stealing the other fruits. On the other hand, many adjectives do have a scale, as noted above. For example, “good” vs. “great”; or “clean” vs. “elegant/comfortable/etc.”<sup>57</sup> Some VPs also have a scale, e.g. “pass the exam” vs. “ace the exam”. In Japanese, *-dake* cannot attach to a VP,

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<sup>57</sup> Admittedly, this one involves external judgment values to have a coherent scale; note that each of the adjectives *clean*, *elegant*, *comfortable* by itself requires external judgment values in any case. It is plausible that it is this inherent property of these adjectives which provides *-dake* with a scale.

but it can attach to a clause. Presumably, the scale provided by VP is passed up to the clause.

Let us see some actual examples of NP vs. VP. In *John only took APPLES* (with a scalar intonation), *apples* by itself is neutral. Only when it is combined with the verb *took*, can the scale be imagined, for example, the scale of degree of offense of taking different fruits. In the corresponding Japanese sentence (228), *-dake* is attached to the NP *ringo* ‘apple’ and the scalar reading is absent, while (229) with *-wa* does have scalar implicature, though the one brought in by *-wa* is not the same as the English sentence:

(228) John-wa ringo-**dake**-o tot-ta  
apples-*dake*-ACC take-PAST  
“Apples are the only thing John took.”

(229) John-wa ringo-**dake**-wa tot-ta  
apples-*dake*-TOP take-PAST  
“Apples are the only thing John took.”

- a. Scalar implicature of *-wa*: “John at least took apples (I’m not sure if he took other things).”
- b. “Minimality” scalar implicature: “It’s not like he took lots of other things/money/etc. (so don’t be so mad).”

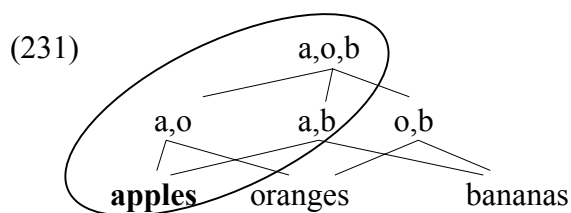
When *-dake* is attached to the clause, the English-like scalar implicature becomes available:

(230) John-wa ringo-o totta]-**dake** da  
apples-ACC took]-*dake* COP  
“All John did was taking apples.”  
“Minimality” scalar implicature = (229b)

It seems as if *-dake* does not have any access to the property needed for calculation of minimality scalar implicature when it is attached to NP, while it does when it is attached

to a clause. The simplest hypothesis is that the scale of *-dake* is solely based on information provided by its first argument. The scale which an NP provides does not include information which incurs scalar implicature whereas a clause does.

This brings us back to the discussion of the structure of the scale of *-dake*. Suppose that the domain of individuals consists of {apples, oranges, bananas} in (228) through (230). This domain does not have any ordering among individuals that is inherent to it, since these fruits are neutral by themselves (oranges are not “better” or “higher” than apples in any way, for example). Scalar semantics of *-dake* would still insist on calculating a “scale” on which its first argument is the upper limit and is minimal. One way *-dake* might do this is by referring to a lattice-ordered set of the power set of the domain:



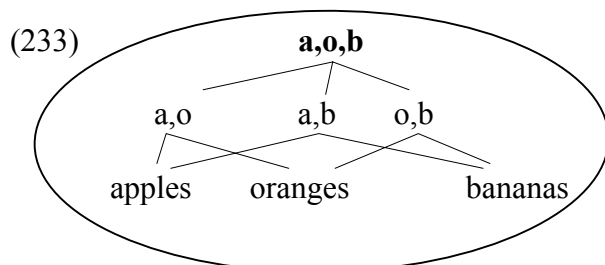
In a set like this, *-dake* would only look at individuals which include *apples* (inside the oval above) since *apples* is its first argument, and indicates that the atomic individual *apples* is the upper limit in this “scale” of the relevant individuals. Since the domain consists of more than apples, there are higher points on the scale than apples, apples+oranges, apples+bananas, and apples+oranges+bananas, in this case. This scale, without information from outside sources (e.g. verb), has no judgment-like property (e.g. “It’s an higher offense to take oranges than apples”) attached to it, so it only produces “one and only” reading rather than a scalar reading in the following reasoning: John took

apples, but not [apples + oranges] nor [apples + bananas] nor [apples + oranges + bananas].

One of the consequences of this approach is that by narrowing down the relevant individuals, the atomic individual oranges and bananas, and a plural individual, oranges+bananas, are excluded from the scale in the above example, making them unavailable for comparison with apples. This means that in the example sentence (228), that John did not take oranges and bananas is not directly referred to, but rather it is inferred from John's not having taken two plural individuals, apples+oranges and apples+bananas. Another consequence has to do with the oddity of using *-dake* with an NP which includes everyone in the domain. There is something odd about saying the following sentence when apples, oranges and bananas are the only fruits in the domain:

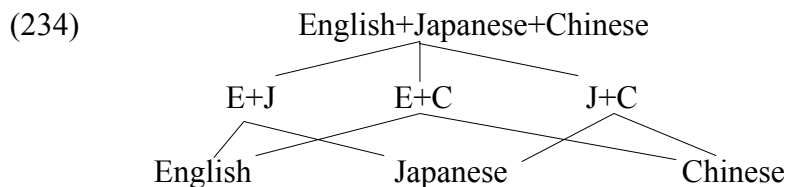
- (232) John-wa ringo-to orenji-to banana-dake-o totta.  
 apples-and oranges-and bananas-*dake*-ACC took  
 "John only took apples, oranges, and bananas."

There are two possibilities for the scale for *-dake* in this case, either of which has something wrong with it. First, it may only consist of one individual, apples+oranges+bananas, because the lattice cannot be built upward. This would not serve the purpose of a scale, which results in oddity. Another possibility is that it still has the lattice structure, but now it can only be built downward:



In this case, there is a scale, but the upper limit is now the highest point on the scale, which does not meet the minimality of *-dake*. This means that there is nothing in the domain that John did not take, which is an odd use of *-dake*,

Let us now turn to see how the hypothesis we are considering might explain the difference between *-dake* and *-wa*, and what brings about the scalar implicature of *-dake+wa* which is absent in the same sentence without *-wa* (at least for those who distinguish between (213) and (214)). Suppose that *-dake*'s scalar domain in (213) is as follows:



I have stated above that *-wa* uses a scale already provided by *-dake*. According to Hara's (2003) calculation of the scalar implicature of *-wa*, there are stronger implicatures than "John speaks English" in this scale, for example, "John speaks English+Japanese". With this scale comes the minimality implicature of *-dake*. Thus, the comparison *-wa* makes is between something minimal (speaking only English) and something higher than minimal, which includes the minimal (speaking English and Japanese). It is possible that for those who distinguish between (213) and (214), *-wa* triggers this minimality implicature of *-dake* and incorporates it into its own scale.

There is still a task left: how exactly is the minimality of *-dake* triggered by attaching *-wa*? I do not have a definite answer for this at this point. It turns out that

there is a further twist in native speakers' intuitions about the sentence. With NP+*dake*+*wa*, *-dake* acts as if it is attached to a clause rather than the NP. For example, the sentence in (213) can be paraphrased by (235) for those who distinguish between (213) and (214):

(213) Taro-wa eego-**dake-wa** hanas-e-ru  
 Taro-TOP English-*dake*-TOP speak-can-PRES  
 “Taro can speak at least English.”  
 Implicature: “He can’t do anything better than speaking English.”

(235) Taro-wa eego-ga hanas-e-ru]-**dake** da  
 English-NOM speak-can-PRES]-*dake* COP

That the paraphrase is possible can be seen from the fact that they can be continued in the same way and mean the same thing:

(236) (213)-*ga*/(235)<sup>58</sup>, yaku-ni tatsukoto-wa nani-mo deki-nai  
 -but , useful thing-TOP what-*mo* can do-NEG  
 “... but [he] can’t do anything useful.”

This is actually a possible implicature for (213). The implicature contains both the exclusive reading of *-dake*, indicated by *nani-mo...nai* ‘nothing’ and its minimality reading, indicated by *yaku-ni tatsu* ‘useful’ (i.e. “speaking English is not useful, therefore is minimum”). It is as if *-dake* is dissociated from the NP it was originally attached to and raised to the end of the clause. The problem with this is that it seems just as dangerously unrestrictive as the *wa*-stranding possibility mentioned in the theoretical



discussion above. Admittedly, this requires further investigation, but I hope to have provided some arguments for pursuing this line of explanation.

#### 5.4 Summary

From the discussion of the compatibility between focus-sensitive particles and *-wa* in the last chapter stemmed a topic of the scalar implicature of *-wa*. *Wa* gives the impression that the stated proposition is the strongest the speaker is willing to assert - s/he is not sure about, or is unwilling to, assert a stronger proposition. This led to an observation that in a sentence with NP+*dake*+*wa*, the contribution of *-dake* (its exclusivity) is unclear.

I reviewed a formal analysis of the scalar implicature of *-wa* by Hara (2003), and pointed out potential problems for using the CTopic part of *-wa* alone to account for the original issue of compatibility. My explanation for compatibility and CTopic analysis are not mutually exclusive; scalar implicature of *-wa* is necessary, for example, to explain the triggering of minimality implicature of *-dake* by *-wa*. However, even in these cases, *-dake*'s contribution of exclusivity is not suppressed, which results in the "minimality" implicature of *-dake*, which is distinct from the scalar implicature of *-wa*, at least for some native speakers.

As a part of the discussion of scalar implicature, I pointed out that *-dake*'s scalar implicature is unavailable when it is attached to NP and not followed by *-wa*, while it is available when it is attached to a clause or adjective/adjectival noun. I suggested a

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<sup>58</sup> The copula *-da* at the end of (235) is changed to *-de* in order to continue with "but ...".

possible approach to a scalar semantics for *-dake*, as an attempt to explain this division. In this approach, *-dake* always requires a scale, and its “one and only” reading is derived from a scale provided by a default lattice-ordered set. The exact formulation of this approach is left for future research.

## CHAPTER 6: Other topics surrounding focus-sensitive particles

### 6.1 Introduction

In this final chapter, I would like to discuss two additional scopal elements in Japanese which have not been taken up in the previous chapters, namely, adverbs of quantification and modals other than *-er-* ‘can’. The goal here is to indicate further issues of interest related to the topic of this dissertation rather than to present in depth analyses of these phenomena. In chapter 3, section 3.7, I briefly discussed the interaction between a VP-internal *-dake* and a VP-internal c-commanding universally-quantified PP. There, we saw that *-dake*’s scope is fixed at the S-structure w.r.t. the quantifiers. To give a fuller picture of the scope properties of *-dake*, I will present the data showing its interaction with adverbs of quantification in the next section.

In section 6.3, I will present the data on how a wider range of modals interact with *-dake* than we have seen up to this point. In the discussion of the scope puzzle of *-dake*, I have consistently used *-er-* ‘can’ to probe *-dake*’s scope behavior w.r.t. a modal. There are, of course, other modals in Japanese, but they have properties unlike those in some languages, such as English; the modal meanings are derived by combinations of morphemes, rather than a lexical meaning of a single morpheme. In von Stechow and Iatridou (2003), they propose the Epistemic Containment Principle (ECP), based on the observation that quantifiers behave differently in terms of scope toward deontic modals and epistemic modals. I will present their central argument and discuss how the Japanese data given below may be relevant to their proposal. I will close this chapter, as well as this dissertation, with some concluding remarks in section 6.4.

## 6.2 Adverbs

*Dake* is not scopally ambiguous w.r.t. the adverbs of quantification. Rather, its scope behavior toward adverbs is the same as toward quantified NPs, that is, it is determined by a c-commanding relationship at S-structure: when *-dake* is lower than *itsumo* ‘always’ at the S-structure, *-dake* only has narrow-scope interpretation as in (237), whether *-dake* is external or internal:

- (237) a. John-wa *shibashiba* Hanako-**to-dake** asobu.  
           often Hanako-with-*dake* play  
           “Hanako is often the only person John plays with  
           (he sometimes plays with others).”           often > *-dake*
- b. John-wa *shibashiba* Hanako-**dake-to** asobu.  
           often Hanako-*dake*-with play  
           = (a)

There are two possibilities why *-dake* does not take wide scope over *shibashiba* ‘often’ in (237). One possibility is that adverbs of quantification are a part of the scope preserving restriction mentioned in section 3.7. The other possibility is that *shibashiba* is always attached above Spec, PartP, to which *-dake* phrases move from inside VP at LF. At LF, *-dake* is still below *shibashiba*, thus the scope between them remains the same as that at the S-structure.

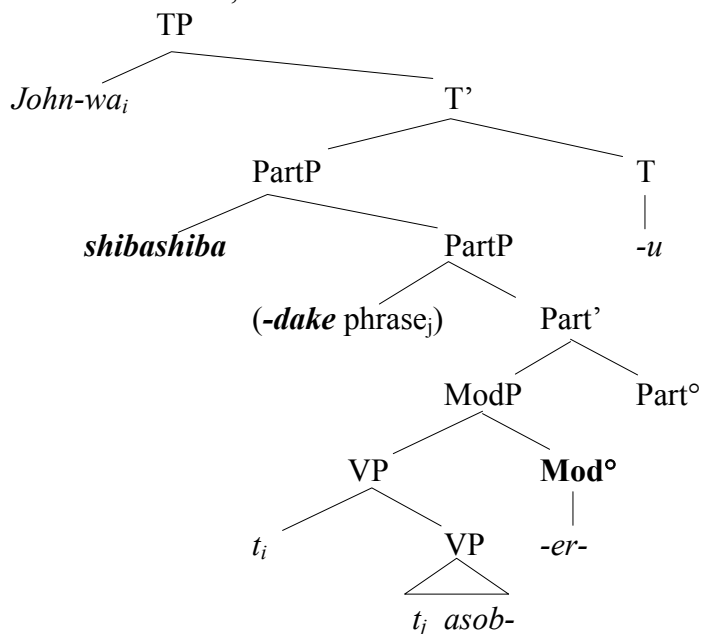
One way to check if adverbs of quantification are always above PartP is to check its scope interaction with a modal. In chapter 3, I proposed that PartP is above the modal in Japanese. This means that if adverbs of quantification are always above PartP, it must always take scope over the modal. Let us consider the following example:

- (238) John-wa shibashiba Hanako-to asob-eru  
 John-TOP often Hanako-with play-can  
 a. “It is possible for John to play with Hanako often.” *can* > *often*  
 b. “It is often possible for John to play with Hanako.” *often* > *can*

As we can see, the sentence is ambiguous between the two scope possibility, which indicates that *shibashiba* is sometimes below the modal, therefore, below PartP. Since there is no reason to assume that the modal itself moves around at LF w.r.t. the adverb, it is more straightforward to assume that it is the position of the adverb that is different. This rules out the possibility that the adverb is always attached above PartP, leaving us with the scope-preservation restriction alternative.

There are some consequences of this alternative. One is that with the external *-dake*, which has a fixed wide-scope over the modal, an adverb of quantification which c-commands *-dake* necessarily has scope over the modal. This is because the external *-dake* always raises to Spec PartP, which is above the modal. Scope preservation means that the adverb must also raise above Spec PartP, taking it higher than the modal as a consequence, if it originated lower than PartP at S-structure:

(239) LF for external *-dake*, *shibashiba* ‘often’ and *-er-* ‘can’:



As we can see in this tree, there is no way for the adverb of the quantification *shibashiba* to be below Mod° without reversing its scope with *-dake*, which does not happen in the language. A sentence which this structure represents is unambiguous:

(240) John-wa *shibashiba* Hanako-**to-dake** asob-eru.  
 often Hanako-with-*dake* play-can

“Hanako is often the only person John can play with  
 (he can sometimes play with others).”

often > *-dake* > can

On the other hand, with the internal *-dake*, which has ambiguous scope w.r.t. the modal, the scope between the adverb and the modal is ambiguous:



These data indicate that the scope of *-dake* is fixed at the S-structure in relation to other phrasal scopal elements such as quantified NPs and adverbs, but not to non-phrasal elements which are not a part of the phrase to which *-dake* is attached to,<sup>59</sup> such as a modal. Japanese is a head-final language with not insignificant verbal morphology and “rigid-scope”. This means that all the free-standing phrasal elements are stacked on the left side of the sentence and verbal affixes are stacked on the right side of the tree. The relative scope is fixed on the left side and right side independently, but not across the two sides. One possible line of future inquiry is to find out how a *-dake*-like element behaves in other languages which have a similar phrase structure as Japanese.

In the next section, I will discuss the Epistemic Containment Principle proposed by von Stechow and Iatridou (2003) and various modal expressions in Japanese.

### 6.3 *Dake* and deontic vs. epistemic modals

#### 6.3.1 The Epistemic Containment Principle

Von Stechow and Iatridou (2003) argue that QPs cannot bind their traces across an epistemic modal. They propose the following constraint ((3) repeated):

(243) *The Epistemic Containment Principle (ECP)*  
A quantifier cannot have scope over an epistemic modal.

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<sup>59</sup> It is possible to have two focus-sensitive particles attached to one NP, for example, *John-dake-to-mo asoberu* “I can also play with John alone (or I can play with John and Sue)”, which is unambiguous.



They give two pieces of evidence for the ECP. The first is scope judgments on sentences such as the following (their (10)):

- (244) Half of you are healthy. #But everyone may be infected.
- |                                       |                                 |
|---------------------------------------|---------------------------------|
| a. every person x (may x be infected) | consistent, *ECP                |
| b. may (every person be infected)     | inconsistent, <sup>OK</sup> ECP |

The fact that this sequence seems utterly inconsistent, they argue, is due to the forced wide-scope reading of the epistemic modal over QP because of the ECP. The ECP is not limited to this combination of the modal and QP. For example, *fewer than half* and *must* also exhibit the same effect:

- (245) #Fewer than half of the students must have passed the test,  
but perhaps all of them did.

This sentence is again inconsistent, because the consistent reading, in which the QP takes scope over the epistemic *must*, violates ECP; therefore, the only available reading is the inconsistent one.

The other evidence they present is binding (im)possibilities (their (17)):

- (246) Every student<sub>i</sub> must be awake if his<sub>j/i</sub> light is on.

In this sentence, *his* cannot be bound by *every student* because the epistemic *must* interferes according the ECP. The deontic reading of *must* does not show such restriction, as is shown by the following example (their (19)):

(247) Every student<sub>i</sub> must contact the dean if he<sub>i</sub> is too sick to attend the exam.

Here, *must* expresses an obligation following from some rules, thus it is not subject to ECP.

In order for sentences like (246) to satisfy the ECP, the quantifier in the subject position must be lower than the modal *must* at LF. There are two obvious possibilities for this to happen. One is for the modal to raise, the other is for the QP to lower. Von Stechow and Iatridou (2003) consider both possibilities, and reject the first one on the ground that it leads to unwanted scope consequences. They conclude that it must be the scope-diminishment mechanism that is responsible for the ECP, although they do not decide on a specific means through which it is attained. In the next section, I will introduce Japanese data which correspond to English ECP data, and in the following section, I will discuss the implications of Japanese epistemic modal expressions for the ECP in Japanese.

### 6.3.2 Modal expressions in Japanese

Before looking at the ECP-type data in Japanese, it must be noted that there are at least two marked differences between Japanese modal expressions and English ones. First, most Japanese modal expressions are not single morphemes, but are derived by combining multiple morphemes of various categories. One of the exceptions to this is the one we have seen in chapter 2, the verbal suffix *-er-* ‘can’. Second, Japanese modal expressions are not ambiguous between deontic and epistemic readings, that is, there is a separate expression for each reading of the corresponding English modal auxiliary. Generally speaking, deontic expressions involve a non-tensed clause + modal expression,

while epistemic modality is expressed with a tensed clause + modal expression. The following are the deontic modal expressions in Japanese which roughly correspond to *must*, *may*, *can* and *should* in English, with the verb *taber-* ‘eat’ in the non-tensed clause (modal expressions in italics):

(248) Deontic modal expressions in Japanese (*hashir-* ‘run’):

a. Must:

John-wa asagohan-o tabe- *nak-ere-ba nara-na-i*  
 breakfast-ACC eat- NEG-*ere-ba* accomplish-NEG-PRES  
 “John must eat breakfast.”

b. May:

John-wa asagohan-o tabe-te *yo-i*  
 good-PRES  
 “John may eat breakfast.”

c. Should:

John-wa asagohan-o taber-u<sup>60</sup> *beki-da*  
*beki-COP(PRES)*

d. Can:

John-wa asagohan-o tabe- *arer-u*  
*can-PRES*  
 “John can eat breakfast.”

The actual form of the verb in the non-tensed clause varies because the verbal conjugation is determined by the immediately following morpheme.<sup>61</sup> However, this is immaterial to the issue under discussion. For the same reason, I will not go into the

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<sup>60</sup> This non-tensed form is identical to the present tense form of the verb. However, we can confirm that it is the non-tensed form and not the present tense form by placing the past tense form of the verb, *tabe-ta*, instead. The sentence is ungrammatical, therefore, deontic *should* in Japanese takes non-tensed clause just like the other deontic expressions discussed here.

examination of the details of the actual structure of each expression, except to point out that the morphemes that make up these modal expressions do not neatly fall into a single category. For example, *must* includes negation (which is morphologically an adjective), a verb (*nar-* ‘accomplish’), along with an auxiliary and a particle, while *may* is an adjective. Despite this incongruity, they share one crucial point: none of these deontic modal expressions takes a tensed (present or past) clause.

Now let us look at the corresponding epistemic modal expressions:

(249) Epistemic modal expressions in Japanese:<sup>62</sup>

a. Must:

John-wa asagohan-o tabe-ru/ta *ni-chigai-na-i*  
eat-PRES/PAST *ni-difference-NEG-PRES*

“John must eat/must have eaten breakfast.”

b. May/can:

John-wa asagohan-o tabe-ru/ta *ka-mo-shire-na-i*  
whether-*mo*-known-NEG-PRES

“John may eat/may have eaten breakfast.”

c. Should:

John-wa asagohan-o tabe-ru/ta *hazu-da*  
*hazu-COP(PRES)*

“John should eat/should have eaten breakfast.”

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<sup>61</sup> The use of the word “clause” here is rather loose; for example, the by-now familiar modal *-er-* ‘can’ appears immediately after the verb root, whereas the deontic *must* expression contains two negations, and since Japanese has only sentential negation, one can be fairly certain that it is bi-clausal. I will keep using the word “clause” in all cases for simplicity, since the crucial point here is the tense vs. no tense distinction.

<sup>62</sup> When the tensed clause is of the form *X-ga./wa NP-de aru* ‘X is NP’, *-de aru* may appear without the copula *-de aru* in each of the epistemic modal expressions. I assume that these are sub-types of the tensed clause cases where the copula is omitted, rather than considering them as a separate construction. The past tense form of the copula (*-de atta*) cannot be omitted (i.e. without it, the clause cannot be interpreted as past tense).

In each example, the verb *taber-* can be either present- or past-tense form. This shows that the epistemic modal expressions take tensed clauses, unlike deontic modal expressions above.

The tense/no tense division between the deontic and epistemic modal expressions in Japanese is striking, especially under the Epistemic Containment Principle. The ECP was proposed for English because English modals are ambiguous between deontic and epistemic readings. However, if the ECP facts also hold in Japanese, one wonders, is it just an accident that deontic and epistemic modality are syntactically different in Japanese, or is the ECP actually “encoded” in Japanese syntax? In the next subsection, I will present the data showing the interaction between *-dake* and the various modal expressions given above. We have already seen in the first three chapters that not only can *-dake* take scope over the deontic *can*, but in some configurations (i.e. external *-dake*), it must take scope over the modal.

There is one more point to note before we go into the actual data. In the following discussion, I will leave out the modal expression corresponding to the deontic *should*, because of its idiosyncratic scope behavior. Crucially, it never allows wide-scope reading of *-dake*, regardless of the position of *-dake* within the clause at the S-structure (i.e. in the subject position or VP-internal) or of the order between *-dake* and postpositions. Consider the following examples:









- (258) Taro-**dake**-ga shiken-o uke-ta-**ni** **chigai-nai**  
 Taro-*dake*-NOM exam-ACC take-PAST-*ni* must (epistemic)  
 “It must be the case that only Taro has taken the exam.” must<sub>E</sub> > *dake*  
 (i.e. “Taro alone must have taken the exam.”)

This sentence can only mean that the speaker is quite sure, based on some evidence/circumstances, that Taro is the only person who took the exam, and nobody else did. The sentence does not mean that Taro is the only person the speaker is sure about his having taken the exam, based on some evidence. Thus, it is odd to continue the sentence as follows:

- (259) Taro-**dake**-ga shiken-o uke-ta-**ni** **chigai-nai**,  
                                   # hoka-no          gakusei-ni          tsuite-wa          wakar-nai.  
                                   other-*no*          student-DAT      about-TOP          know-NEG  
 “Taro must be the only person who has taken the exam,  
                                   # I’m not sure about other students.”

- 
- i. Imadewa wareware-no hotondo-no gaikusai-ga kyozyu-ni natteiru kamosirenai.  
 by now we-Gen most-Gen student-Nom professor-Dat become-Perf may  
 lit. ‘Most of our students may have become professors by now.’ most of our students > may
- ii. Imadewa wareware-no hotondo-no gakusei-ga gaikokuzin-ni natteiru kamosirenai.  
 by now we-Gen most-Gen student-Nom foreigner-Dat become-Perf may  
 lit. ‘Most of our students have been foreigners by now.’ may > most of our students

However, I am not sure if he really got the interpretation right – English translation can be rather misleading in this type of construction. To me, (i) means that the speaker thinks it is possible that the most of our students have become professors by now but probably not all of them, which is the ECP reading. It does not have the reading of the opposite scope: for the most of our students, the speaker thinks it is possible that he/she has become a professor by now but does not have any beliefs about the rest (the minority).

This sounds contradictory. In order to continue by (259) without causing oddity, the subject in (258) would have to be marked by *-wa* instead of *-ga*.<sup>64</sup>

- (260) Taro-**dake-wa** shiken-o uke-ta-ni chigai-nai,  
 Taro-*dake*-NOM exam-ACC take-PAST-*ni* must (epistemic)  
                   hoka-no gakusei-ni tsuite-wa wakar-nai.  
                   other-*no* student-DAT about-TOP know-NEG  
 “Taro is the only person whom I’m sure has taken the exam,  
                   I’m not sure about other students.” *dake* > must<sub>E</sub>  
 (scalar implicature of the first clause: “I’m at least sure about  
                   Taro taking the exam.”)

As is discussed in chapter 4, *-wa* has a selective-associative function and a contrastive function. In this example, *Taro-dake-wa* is associated with ‘must have taken the exam’, and is contrasted with other students. With a *ga*-marked subject, epistemic *may/can* and *should* also take scope over *-dake*:

- (261) Taro-**dake-ga** shiken-o uke-ta-**ka-mo-shire-nai**  
                   take-PAST-may (epistemic)  
 “It may have been only Taro who took the exam (#I know  
                   Bill did, too).” may/can<sub>E</sub> > *dake*

- (262) Taro-**dake-ga** shiken-o ukeru-**hazu da**  
                   Taro-*dake*-NOM exam-ACC take-should (epistemic)  
 “It should be Taro alone who takes the exam (I don’t think anyone  
                   else is supposed to).” should<sub>E</sub> > *dake*  
 \*”Taro is the only person who should take the exam (I’m not sure  
                   about others).” \**dake* > should<sub>E</sub>

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<sup>64</sup> Von Stechow and Iatridou (2003) give English examples in which a quantifier binds a variable across an epistemic modal when there is no QR (their (32) – (34)).



- (265) a. Taro-wa Hanako-**dake**-to ason-da **hazu-da**  
   -dake-with play-PAST should<sub>E</sub>  
 “Taro should have played with Hanako alone (he should not play with anyone else).” may<sub>D</sub> > *dake*  
 \*“Hanako is the only person Taro should have played with (I don’t know about others).” \**dake* > should<sub>E</sub>”
- b. Taro-wa Hanako-to-**dake** ason-da **hazu-da**  
   -with-*dake* play-PAST should<sub>E</sub>  
 = (a) should<sub>E</sub> > *dake*”

Just as the deontic modal expressions consistently allows *-dake* to take scope over itself (except for the idiosyncratic *should<sub>D</sub>*), the epistemic modal expressions in Japanese consistently disallows it to do so.

The same facts hold for non *-dake* focus-sensitive particles. Unfortunately, it is difficult to tell the scope of *sae/mo* w.r.t. a modal, whether the modal is deontic or epistemic (like *most of* and *must* examples in von Stechow & Iatridou). However, with *-shika*, the intuition is clear. It has fixed wide-scope over a deontic modal, as we already saw in the previous chapters, but it has fixed narrow scope under an epistemic one (here, counterparts of *may*):

- (266) Taro-shika shiken-o uke-naku-te yoi  
       Taro-sae/mo exam-ACC take-NEG may<sub>D</sub>  
 “Only Taro has to take the exam (other don’t have to).” *shika-nai* < may<sub>D</sub>”
- (267) Taro-shika shiken-o uke-nakat-ta-ka-mo shire-nai  
       Taro-shika exam-ACC take-NEG-PAST may<sub>E</sub>  
 “It may be the case that Taro was the only person who took the exam.” may<sub>E</sub> > *shika-nai*”

These data suggest that the ECP facts do hold in Japanese.

### 6.3.4 Discussion

Now that we have seen that the ECP facts hold in Japanese, it is time to wonder about the structural division between the deontic and epistemic modal expressions in Japanese. We saw above that all the epistemic modal expressions have tensed clauses as complements (modal expressions themselves involve various categories), while deontic modal expressions have non-tensed ones. This division is significant, because elsewhere in the language, the scope of focus-sensitive particles, like that of quantifiers, is limited to inside the clause it originates in. For example, *-dake* in the complement clause of *believe* cannot take a matrix scope in the following example:

- (268) Bill-wa [John-dake-ga shiken-o uke-**ta**-to]<sub>comp.cl.</sub> shinjiteiru  
 Bill-TOP John-*dake*-NOM exam-ACC take-PAST-COMP believe  
 “Bill believes that only John took the exam.” believe > *dake*  
 \*”John is the only person who Bill believes took the exam.” \**dake* > believe

The subordinate verb, *uker-* ‘take’, is in the past tense as indicated in the bold face. Since *-dake* sits inside the subordinate clause, it cannot take scope outside of this tensed clause.

The epistemic modal expressions all take tensed clauses, which means that the focus-sensitive particles inside the tensed clause can never take scope over the modal even if there is no Epistemic Containment Principle. Von Stechow and Iatridou (2003) stipulate a scope-diminishment mechanism, which is necessary for English quantifiers to satisfy the ECP. Such a mechanism is not necessary in Japanese, since it is structurally impossible for a subordinate-clause quantifier to take scope over an epistemic modal. On the other hand, with deontic modals, the only tense is the one attached to the modal expression itself, allowing the quantifier to take scope over it.

One of the questions regarding the ECP is its status in other languages: Is it “active” (in a manner of speaking) in other languages? If it is, then more questions spring up: Exactly how is it implemented? Are Japanese modals simply an accident, or is the ECP a real principle of human language which is powerful enough to drive some languages to actually encode itself syntactically? These questions remain open at this point. Nevertheless, the ECP is an additional indication that characterizing a language in terms of scope interaction is far more complex than rigid vs. non-rigid. On the one hand, we saw in chapters 2 and 3 that Japanese, a rigid-scope language, shows scope ambiguity when modals are involved. On the other hand, the ECP shows that even a non-rigid language such as English shows a sign of rigidity when epistemic modals are involved. Clearly, there is much more to be explored in this area.

#### **6.4 Conclusion**

This dissertation centered on the syntax and semantics of Japanese focus-sensitive particles as a means of probing the scope relationship which was not previously considered in the discussion of rigid- vs. non-rigid-scope languages. This division has been the product of the observation that there are languages in which a sentence containing more than one quantified NPs is not ambiguous. Since then, not a negligible number of researches have revealed a more complex picture of scope interactions that are not limited to quantified NPs.

To sum up, I first reviewed the previous studies on scope interaction between *-dake* and modals, the majority of which employ QR or a similar device in chapter 2. Then I went on to propose an account in which the scope of *-dake* w.r.t.

modals is derived either syntactically or semantically in chapter 3. How the scope is actually derived depends on the morphological category of *-dake*, which is either a noun or a particle. By closely examining scope interactions other than those between quantified NPs, namely, between Japanese focus-sensitive particles and modals, I aimed to demonstrate that QR (in its various forms), as it stands, is not sufficient to account for the large array of scope interactions observed in human language.

One might argue that since QR is, after all, a theory proposed to account for the scope interaction between two quantifiers, therefore it should not be held responsible for the behavior of other scopal elements. However, that would be missing the point. Under the widely held view that the relative scope of two elements is determined by their relative structural positions at LF, a theory such as QR, which moves a quantified NP past other scopal elements, must also take into account that the movement affects the scope between the target NP and whatever it passes on its way.

In the second half of the dissertation, I looked at the semantics of *-dake* more closely, by examining its relationship to the topic marker *-wa*. In chapter 4, I proposed an account which uniformly explains the (in)compatibility of various focus-sensitive particles and *-wa*. Then I took a closer look at the scalar implicatures of *-wa* and *-dake* in chapter 5. I showed that while adding *-wa* to a *dake*-phrase seems to trigger the scalar implicature of the latter, they are not exactly the same. I also observed that the availability of *-dake*'s scalar implicature depends on the meaning of the phrase to which it is attached, and suggested a scalar semantics of *-dake* which takes this observation into account.

In this final chapter, I discussed two related issues, adverbs of quantification and the Epistemic Containment Principle (ECP). In discussing the latter, I pointed out that deontic and epistemic modal expressions are syntactically different in Japanese, and suggested its possible implications for the status of the ECP.

The phenomena discussed in this dissertation occupy but a small corner in the vast arena of scopal elements in the natural languages, and open questions remain. Nevertheless, it is my hope that the discussion in this dissertation is an aid to understanding the complex interlacement of scope of various elements.



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