

Cartography and Selection: Case Studies in Japanese *

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1 Introduction

The cartographic structure of the Japanese right periphery has been investigated extensively in recent years. For example, Ueda (2007) examines modals and presents the following structure:

- (1) [U-modalP [E-modalP [TP ... T] E(pistemic)-modal] U(terance)-modal]

Saito (2009) discusses the hierarchical relations of complementizers and arrives at (2).

- (2) [CP ... [CP ... [CP [TP ... T] Finite (*no*)] Force (*ka*)] Report (*to*)]

Endo (2010), on the other hand, considers the distributions of sentence-final particles and proposes (3).

- (3) [Mod-SpeechActP [Mod-EvaluativeP [Mod-EvidentialP [Mod-EpistemicP [TP ... T] *wa*] *na*] *yo*] *ne*]

The purpose of this paper is two-fold. First, I would like to put these results together and present a more comprehensive picture of the cartography of the Japanese right periphery.

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Secondly, I will reconsider the hierarchies themselves and explore their sources. It is assumed in the Minimalist research that phrase structure is constructed by the minimal operation Merge, which takes two syntactic objects and forms their union. (See Chomsky 1995, 2013.) This operation, taken by itself, does not yield the hierarchies in (1)-(3). Then, their sources must be sought elsewhere to the extent that they are correct. I will show that s-selection plays a role to determine the distributions of heads in the right periphery. I will argue in addition that compatibilities in morphology, semantics and speech acts limit the distributions of modals, complementizers and sentence-final particles respectively.

The following section concerns modals. Although Ueda (2007) proposes the hierarchy in (1), she also points out that a simple sentence cannot contain more than one modal. I will show that this generalization and more generally, the distributions of modals follow from morphology and s-selection. In Section 3, I will briefly review the discussion in Saito (2009) and argue that the hierarchy of complementizers in (2) can be explained by the s-selection and semantic properties of the complementizers. Finally, in Section 4, I will present Haraguchi's (2012) argument that sentence-final particles are genuine discourse elements whose distributions are confined to matrix contexts, and suggest that their distributions are dictated by s-selection as well as compatibility of speech acts. Section 5 concludes the paper.

2 The Uniqueness Condition on Modals in Japanese

In the Japanese syntax literature, 'modal' often refers to a category of clause-final elements that express modality or force and do not carry tense. Ueda (2007) classifies them into the two groups shown in (4).

- (4) a. E(pitemic)-modals: *daroo* (surmise), *desyoo* (formal surmise), *mai* (negative surmise)
 b. U(terance)-modals: *ro/e* (imperative), *(i)nasai* (formal imperative), *na* (negative imperative), *yoo* (invitation), *(i)masyoo* (formal invitation), *yoo* (volition), *mai* (negative volition)

She assumes the hierarchy in (1), and at the same time, observes that two modals cannot co-occur in the same clause. The observation is confirmed by the examples in (5).

- (5) a. Kimi-wa soko-e ik-u daroo (*na)
 you-TOP there-to go-Pres. will don't
 'Don't go there (Don't be going there)'

- b. Taroo-wa soko-e ik-u mai (*daroo)
 Taroo-TOP there-to go-Pres. won't will
 'Taroo won't go there (I guess Taroo won't go there)'

I will argue in this section that this uniqueness condition on modals follows from their lexical properties.¹

It should be noted here that English modals exhibit a similar uniqueness condition. Thus, (6a) is totally out although it is synonymous with the grammatical (6b).

- (6) a. *John may can solve the problem
 b. John may be able to solve the problem

It has long been observed that English modals can occur only in finite contexts and hence, cannot follow another modal. This suggests that they have a morphological requirement to merge with an affixal tense. I will assume that a similar approach should be pursued for the parallel case in Japanese. Yet, the situation is slightly different as Japanese modals, by definition, do not carry tense.

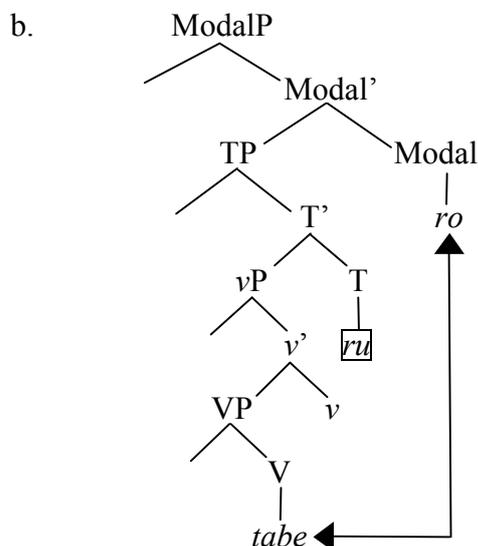
First, it seems plausible that all the modals in (4) take propositional complements. Propositions can take the syntactic forms of a *vP* (as in small clauses), a TP and a ModalP, for example. This by itself does not exclude the multiple occurrences of modals in (5). However, each modal has additional lexical requirements. Let's examine the imperative *ro/e* first. This element is a suffix that attaches to verb stems. As shown in (7), *ro* is employed for verb stems that end in vowels and *e* for those that end in consonants.

- (7) a. Taroo-wa sore-o tabe-ro
 Taroo-TOP it-ACC eat-Imp.
 'Taroo, eat it'
 b. Taroo-wa soko-ni ik-e
 Taroo-TOP there-to go-Imp.
 'Taroo, go there'

¹ The material in this section developed out of discussions with Tomoko Haraguchi over the last couple of years. See Haraguchi (2012) for an analysis that is different but shares the same general approach.

The suffixal nature of *ro/e* automatically limits its distribution. For example, if it takes a TP complement, then T intervenes and blocks its morphological merger with the verb, as illustrated in (8).

- (8) a. *Taroo-wa sore-o tabe-ru-ro
 Taroo-TOP it-ACC eat-Pres.-Imp.



The only morphologically permissible option is for it to take a *vP* complement. In this case, the suffix can successfully merge with *V* (or *V-v* complex). Significantly, *ro/e* cannot take a *ModalP* as its complement because the intervening modal blocks the morphological merger just like *T*. There is an independent reason then that *ro/e* cannot follow another modal.

Most of the other utterance modals have the same suffixal property. Among them are (*i*)*nasai* (formal imperative), *yoo* (invitation, volition), and (*i*)*masyoo* (formal invitation). Examples of (*i*)*masyoo* are shown in (9).²

- (9) a. Sore-o tabe-masyoo
 it-ACC eat-let's
 'Let's eat it'

² The form *masyoo* appears when the verb stem ends in a vowel, and *imasyoo* when the verb stem ends in a consonant. I assume that the morpheme is *imasyoo*, and that the initial vowel of the suffix is deleted by the following morphophonological rule when the stem ends in a vowel:

(i) $V \rightarrow \emptyset / V + _ C$

- b. Soko-e ik-imasyoo
 there-to go-let's
 'Let's go there'

I conclude then that they all must take *vP* complements in order to morphologically merge with *V*.

The epistemic modals *daroo* (surmise) and *desyoo* (formal surmise) also exhibit a regular pattern. They always take a TP complement. The head *T* can be present or past, and can be a verbal tense (*ru/ta*) or an adjectival tense (*i/katta*). This is shown in (10).

- (10) a. Taroo-wa sore-o tabe-ru /tabe-ta daroo
 Taroo-TOP it-ACC eat-Pres./eat-Past will
 'I guess Taroo will eat/ate it'
- b. Soko-no huyu-wa samu-i /samu-katta daroo
 there-GEN winter-TOP cold-Pres./cold-Past will
 'I guess the winter there is/was cold'

(11) shows that they cannot be employed as verbal or adjectival suffixes.³

- (11) a. *Taroo-wa sore-o tabe-daroo
 Taroo-TOP it-ACC eat-will
 'I guess Taroo eats it'
- b. *Soko-no huyu-wa samu-daroo
 there-GEN winter-TOP cold-will
 'I guess the winter there is cold'

Thus, *daroo* (and *desyoo*) takes a tensed proposition as a complement and s-selects *T*. It follows that they cannot have a ModalP as a complement.

The situation with *na* (negative imperative) is slightly more complex but is similar. It takes a TP with verbal present tense as its complement. The following examples meet this

³ There is another modal *karoo*, which is similar in meaning to *daroo* but is a suffix that attaches to adjectival stems. Thus, (11b) becomes grammatical when *karoo* is substituted for *daroo* as in (i).

- (i) Soko-no huyu-wa samu-karoo
 there-GEN winter-TOP cold-will
 'I guess the winter there is cold'

condition:

- (12) a. Taroo-wa sore-o tabe-ru na
 Taroo-TOP it-ACC eat-Pres. don't
 'Taroo, don't eat it'
 b. Taroo-wa soko-ni ik-u na
 Taroo-TOP there-to go-Pres. don't
 'Taroo, don't go there'

(13) shows that *na* is not a verbal suffix and also cannot take TP complements headed by past or adjectival present.

- (13) a. *Taroo-wa sore-o tabe-na
 Taroo-TOP it-ACC eat-don't
 'Taroo, don't eat it'
 b. *Taroo-wa sore-o tabe-ta na
 Taroo-TOP it-ACC eat-Past don't
 'Taroo, you should not have eaten it'
 c. *Taroo-wa kimuzukasi(-i) na
 Taroo-TOP difficult(-Pres.) don't
 'Taroo, don't be difficult'

It appears then that *na* selects for a specific subcategory, verbal present tense. But this requirement is plausibly s-selection rather than categorial selection (c-selection).

It is well known that verbal present tense *ru* is more precisely characterized as indicating non-past. Thus, it occurs also in future contexts as in (14).

- (14) a. Hanako-wa asita wani-o tabe-ru
 Hanako-NOM tomorrow alligator-ACC eat-Pres.
 'Hanako is going to eat alligator meat tomorrow'
 b. Taroo-wa rainen soko-ni ik-u
 Taroo-TOP next.year there-to go-Pres.
 'Taroo is going there next year'

This extension to future contexts, as far as I know, is not observed with the adjectival present *i*. (15) is ungrammatical.

- (15) a. *Taroo-wa asita kimuzukasi-i
 Taroo-TOP tomorrow difficult-Pres.
 ‘Taroo will be difficult tomorrow’
- b. *Watasi-wa asita kanasi-i
 I-NOM tomorrow sad-Pres.
 ‘I will feel sad tomorrow’

Then, it can be hypothesized that *na* s-selects future tense.

The distribution of *mai* (negative volition, negative surmise) is similar. The following examples indicate that it s-selects future tense just like *na*.

- (16) a. Watasi-wa sore-o tabe-ru mai
 I-TOP it-ACC eat-Pres. won’t
 ‘I will not eat it’
- b. Watasi-wa soko-ni ik-u mai
 I-TOP there-to go-Pres. won’t
 ‘I will not go there’
- c. *Watasi-wa sore-o tabe-ta mai
 I-TOP it-ACC eat-Past won’t
 ‘I will not have eaten it’
- d. *Watasi-wa kanasi(-i) mai
 I-TOP sad-Pres. won’t
 ‘I will not feel sad’

But there is another pattern observed with *mai*, as in (17).

- (17) Watasi-wa sore-o tabe-mai
 I-TOP it-ACC eat-won’t
 ‘I guess Taroo won’t eat it’

In this example, *mai* is suffixed to the verbal stem *tabe*. Curiously, *mai* cannot be suffixed to a verb stem that ends in a consonant. Thus, an example parallel to (17) cannot be formed with (16b). Here, I tentatively propose that the verbal suffix is not *mai* but *(u)mai*. Then, the example with this suffix that corresponds to (16b) is homophonous with (16b) as in (18).⁴

⁴ The suffix is *umai* uniformly. When it is merged with *tabe* as in (17), the initial *u* is deleted according to the morphophonological rule suggested in Footnote 2.

- (18) Watasi-wa soko-ni ik-umai
 I-TOP there-to go-won't
 'I will not go there'

This concludes the discussion of all modals listed in (4). It was shown that most of them are verbal suffixes and hence, must take ν P complements so that morphology can interpret them. *Daroo* (surmise) and *desyoo* (formal surmise) s-select T and must take TP complements. A similar pattern is observed with *na* (negative imperative) and *mai* (negative volition, negative surmise), which s-select T with future tense. It follows then that no modal can take a ModalP as a complement.⁵ This accounts for the uniqueness condition on modals. Ueda (2007) groups the elements in (4) under the category Modal in part because they are in complementary distribution. But given the analysis suggested here, it is no longer clear that they form a natural class. As shown in the subsequent sections, the complementizer *no* and the discourse particle *wa* s-select T, and hence, are in complementary distribution with the elements in (4). This, however, does not show that they belong to the category Modal. This state of affairs is expected under the bare phrase structure theory where there are no “fixed positions” for categories and Merge applies freely to two syntactic objects. It is simply that the formed structure must meet the requirements of morphology and s-selection, and this forces some elements to be in complementary distribution.

3 The Hierarchy of Japanese Complementizers

Japanese has three complementizers, *no*, *ka* and *to*, as illustrated in (19).

- (19) a. Taroo-wa [_{CP} Hanako-ga soko-ni i-ru no]-o sittei-ta
 Taroo-TOP Hanako-NOM there-in be-Pres. *no*-ACC know-Past
 'Taroo knew *that* Hanako was there'
- b. Taroo-wa [_{CP} Hanako-ga sono hon-o mottei-ru ka] siritagattei-ru
 Taroo-TOP Hanako-NOM that book-ACC have-Pres. *ka* want.to.know-Pres.
 'Taroo wants to know whether Hanako has that book'
- c. Taroo-wa [_{CP} Hanako-ga sono hon-o mottei-ru to] omottei-ru
 Taroo-TOP Hanako-NOM that book-ACC have-Pres. *to* think-Pres.
 'Taroo thinks that Hanako has that book'

These complementizers can co-occur as in (20), and when they do, they appear in the order

⁵ Two modals can appear, although not adjacently, in a structure like V- ν (T)-Modal-(X)-V- ν (T)-Modal. But the two modals belong to different clauses in this structure.

indicated.

- (20) Taroo-wa [_{CP} kare-no imooto-ga soko-ni i-ta (no) ka (to)] minna-ni tazune-ta
 Taroo-TOP he-GEN sister-NOM there-at be-Past *no ka to* all-DAT inquire-Past
 ‘Taroo asked everyone *if* his sister was there’

Given this, I proposed the hierarchy in (2), repeated in (21), in Saito (2009).

- (21) [_{CP} ... [_{CP} ... [_{CP} ... Finite (*no*)] Force (*ka*)] Report (*to*)]

(21) predicts that the complementizer sequences in (22a) are allowed while those in (22b) are not.

- (22) a. *no-ka, ka-to, no-ka-to*
 b. **to-ka, ka-no, to-no, to-ka-no, ka-to-no*
 c. **no-to*

There is, however, one sequence, *no-to* in (22c), that is consistent with the hierarchy in (21) and yet is illicit. Thus, (23) is ungrammatical.

- (23) *Taroo-wa [_{CP} kare-no imooto-ga soko-ni i-ru no to] kitaisi-ta
 Taroo-TOP he-GEN sister-NOM there-at be-Pres. *no to* expect-Past
 ‘Taroo expected his sister to be there’

The purpose of this section is to provide an explanation for the hierarchy in (21), and at the same time, to account for the exception in (22c).

It is necessary to consider the properties of each complementizer first in order to examine the source of their hierarchical relations. *Ka* is straightforward as it is the complementizer for questions. *No* and *to*, on the other hand, require some discussion. Let’s consider *to* first.

To is ambiguous between a marker of direct quotation as in (24a) and a complementizer that embeds indirect discourse as in (24b).

- (24) a. Hanako-ga, “Watasi-wa tensai da,” to it-ta /omot-ta (koto)
 Hanako-NOM I-TOP genius be *to* say-Past/think-Past fact
 ‘(the fact that) Hanako said/thought, “I’m an genius”’
 b. Hanako-ga [zibun-ga tensai da to] it-ta /omot-ta (koto)
 Hanako-NOM self-NOM genius be *to* say-Past/think-Past fact
 ‘(the fact that) Hanako said/thought that she is an genius’

In the latter case, it has been widely assumed that *to* is employed for propositional complements as it appears when the matrix verb is a typical bridge verb like *iw* ‘say’ and *omow* ‘think’. However, I argued in Saito (2009) that *to* embeds a paraphrase or report of direct discourse. Plann (1982) shows that the Spanish complementizer *que* has this function. What I proposed is that *to* is specialized for this function. One piece of evidence is that the matrix verbs that s-select *to* are all verbs of saying and thinking, that is, verbs that are compatible with direct quotation. A partial list of those verbs is shown in (25).

- (25) *omo-u* ‘think’, *kangae-ru* ‘consider’, *sinzi-ru* ‘believe’, *i-u* ‘say’, *sakeb-u* ‘scream’,
syutyoosu-ru ‘claim, insist’, *tazune-ru* ‘inquire’, *kitaisu-ru* ‘expect, hope’,
kakuninsu-ru ‘confirm’, *kanzi-ru* ‘feel’ (all in present tense)

Secondly, *to* embeds various types of sentences just like *que*. *To* follows a question in (26a), imperative sentences in (26b-c), and an expression of invitation in (26d).⁶

- (26) a. Taroo-wa Zi-roo-ni [_{CP} kanozyo-ga kare-no ie-ni ku-ru ka to] tazune-ta
 Taroo-TOP Zi-roo-DAT she-NOM he-GEN house-to come-Pres. *ka to* ask-Past
 ‘Taroo asked Zi-roo if she is coming to his house’
 b. Hanako-wa Taroo-ni [_{CP} kanozyo-no ie-ni i-ro to] meizi-ta
 Hanako-TOP Taroo-DAT she-GEN house-at be-Imp. *to* order-Past
 ‘Hanako ordered Taroo to be at her house’
 c. Hanako-wa Taroo-ni [_{CP} kanozyo-no ie-ni ik-u-na to] meizi-ta
 Hanako-TOP Taroo-DAT she-GEN house-to go-Pres.-don’t *to* order-Past
 ‘Hanako ordered Taroo not to go to her house’
 d. Hanako-wa Taroo-o [_{CP} kanozyo-no ie-ni ik-oo to] sasot-ta
 Hanako-TOP Taroo-ACC she-GEN house-to go-let’s *to* invite-Past
 ‘Hanako invited Taroo to go to her house’

This is unexpected if *to* is a complementizer for propositional complements. On the other hand, the examples in (26) should be grammatical if *to* embeds paraphrases of direct discourse. A direct discourse, and hence its paraphrase, can be a question, an order or an

⁶ Plann (1982) demonstrates that *que* can take a question CP as a complement when the matrix verb is a verb of saying or thinking. She argues, based on this fact, that *que* can embed a paraphrase of a quotation. Rivero (1994) shows in support of Plann’s analysis that *que* takes an imperative complement as well. The discussion of *to* in Saito (2009), thus, closely follows that of *que* in these two papers.

invitation, in addition to a simple statement.

Then, what is the complementizer for embedded propositions in Japanese? It is argued in Saito (2009) that *no* is employed for this purpose. (27) is a partial list of matrix verbs that take CP complements headed by *no*.

- (27) *wasure-ru* ‘forget’, *kookaisu-ru* ‘regret’, *mi-ru* ‘see’, *mat-u* ‘wait’, *tamera-u* ‘hesitate’,
kyohisu-ru ‘refuse’, *ukeire-ru* ‘accept’, *kitaisu-ru* ‘expect, hope’, *kakuninsu-ru*
‘confirm’, *kanzi-ru* ‘feel’ (all in present tense)

All of these verbs take complements that express events or actions. For example, what one forgets is an event or to perform an action. What one hesitates is to perform an action and what one waits for is for an event to happen. Then, they take propositional complements.

Matsumoto (2010) argues that *no* is a Finite head, a hypothesis originally proposed by Hiraiwa and Ishihara (2002). If *no* is the complementizer for propositions, it should in principle be able to embed a ModalP, as a ModalP can stand for a proposition. However, Matsumoto observes that *no* s-selects T and is incompatible with modals. This is shown in (28)-(29).

- (28) a. Taroo-wa [CP [TP ame-ga hur-u] no]-o kitaisi-ta
Taroo-TOP rain -NOM fall-Pres. *no*-ACC expect-Past
‘Taroo hoped that it would rain’
b. *Taroo-wa [CP [ModalP ame-ga hur-u daroo] no]-o kitaisi-ta
Taroo-TOP rain-NOM fall-Pres. will *no*-ACC expect-Past
‘Taroo hoped that it would rain’
- (29) a. Taroo-wa [CP [TP ame-ga hur-u] no]-o yosoosi-ta
Taroo-TOP rain-NOM fall-Pres. *no*-ACC predict-Past
‘Taroo predicted that it would rain’
b. *Taroo-wa [CP [ModalP ame-ga hur-u mai] no]-o yosoosi-ta
Taroo-TOP rain-NOM fall-Pres. won’t *no*-ACC predict-Past
‘Taroo predicted that it would not rain’

Finite, by definition, is closely related to Tense. Then, the fact that *no* s-selects T, Matsumoto (2010) argues, provides evidence that it is a Finite head.

Let us now consider the hierarchy in (21), repeated in (30), with this background.

- (30) [CP ... [CP ... [CP ... Finite (*no*)] Force (*ka*)] Report (*to*)

The fact that *no* occupies the lowest position in the hierarchy already follows from its s-selection requirement. As it s-selects T, it cannot take a CP complement. On the other hand, *ka* and *to* are not in selectional relation with any specific head. *Ka*, for example, merges with a syntactic object that stands for a proposition and creates a question. A proposition can be expressed as a *vP*, a TP, a ModalP or a CP. *Ka* can take a TP, a ModalP and a CP as its complement, as shown in (31).

- (31) a. Taroo-wa [CP [TP Hanako-ga soko-ni it-ta] ka] minna-ni tazune-ta
 Taroo-TOP Hanako-NOM there-to go-Past *ka* all-DAT ask-Past
 ‘Taroo asked everyone if Hanako went there’
- b. Taroo-wa [CP [ModalP Hanako-ga soko-ni ik-u daroo] ka] minna-ni tazune-ta
 Taroo-TOP Hanako-NOM there-to go-Pres. will *ka* all-DAT ask-Past
 ‘Taroo asked everyone if Hanako would go there’
- c. Taroo-wa [CP [CP Hanako-ga soko-ni it-ta no] ka] minna-ni tazune-ta
 Taroo-TOP Hanako-NOM there-to go-Past *no ka* all-DAT ask-Past
 ‘Taroo asked everyone if Hanako went there’

(31c) is the most relevant for the hierarchy in (30), which allows the *no-ka* sequence. As argued above, *no* is the complementizer for embedded propositions and a CP headed by *no* stands for a proposition. Hence, *ka* can merge with a *no*-headed CP as in (31c).

The merger of *vP* and *ka* should be possible on semantic grounds but is excluded by morphology. A verb stem is a dependent morpheme and requires a suffix such as tense. As *ka* cannot serve as an appropriate suffix for a verb stem, it cannot take a *vP* complement. Also, *ka* cannot combine with ModalPs and CPs that do not stand for propositions. Thus, the following examples are totally ungrammatical:

- (32) a. *Taroo-wa [CP [ModalP Hanako-ga soko-ni ik-e] ka] minna-ni tazune-ta
 Taroo-TOP Hanako-NOM there-to go-Imp. *ka* all-DAT ask-Past
- b. *Taroo-wa [CP [CP Hanako-ga soko-ni it-ta to] ka] minna-ni tazune-ta
 Taroo-TOP Hanako-NOM there-to go-Past *to ka* all-DAT ask-Past

The embedded ModalP in (32a) expresses an order, and the embedded *to*-headed CP in (32b) a paraphrase of direct discourse. These are examples of semantic incompatibility as *ka* requires a complement that stands for a proposition. (32b), in particular, illustrates why the complementizer sequence *to-ka* is impossible.

It was shown so far why *no-ka* is possible whereas *ka-no* and *to-ka* are not. It is necessary to review the property of *to* in order to examine the other combinations. It was argued above that *to* embeds a paraphrase of direct discourse. This complementizer, like *ka*, does not s-

select any specific head, and can combine with various types of clauses as long as its semantic requirement is satisfied. It was already shown in (19c) and (26) that *ka* can take a TP, a CP and a ModalP as its complement. Most relevant in the present context is (26a), repeated below as (33).

- (33) Taroo-wa Ziroo-ni [CP [CP kanozyo-ga kare-no ie-ni ku-ru ka] to] tazune-ta
 Taroo-TOP Ziroo-DAT she-NOM he-GEN house-to come-Pres. *ka to* ask-Past
 ‘Taroo asked Ziroo if she is coming to his house’

As the paraphrased direct discourse can be a question, *to* can take a question CP as its complement. A direct discourse, or an utterance, can express a statement, an assertion, a question, an order, and the like. It is then not surprising that *to* can embed various types of clauses. Outstanding in this context is the ungrammaticality of (23), repeated below as (34).

- (34) *Taroo-wa [CP kare-no imooto-ga soko-ni i-ru no to] kitaisi-ta
 Taroo-TOP he-GEN sister-NOM there-at be-Pres. *no to* expect-Past
 ‘Taroo expected his sister to be there’

This example indicates that *to* cannot take a *no*-headed CP as its complement. Recall here that *no*-headed CPs stand for propositions, and express events, states, actions and the like. Then, they cannot be construed as paraphrases of direct discourse. The *no-to* sequence is illicit also because of semantic incompatibility.

In this section, I argued that the hierarchical relation among the complementizers, *no*, *ka* and *to*, follows from the s-selection requirement of *no* and the semantics of those complementizers. *No*, which is the complementizer for embedded propositions, s-selects T. Hence, it occupies the lowest position in the hierarchy. *Ka* merges with clauses that stand for propositions and creates questions. Hence, the *no-ka* sequence is possible. *To* embeds paraphrases of direct discourse. Since the paraphrased direct discourse can be a question, the *ka-to* sequence is also possible. This covers all the possible combinations, *no-ka*, *ka-to*, and *no-ka-to*. On the other hand, the *ka-no* and *to-no* sequences are both in conflict with the s-selection requirement of *no*. The *to-ka* sequence is ruled out because a *to*-headed CP does not stand for a proposition. Thus, the hierarchy in (30) is precisely what is expected. The only exception to the hierarchy is that the *no-to* sequence is illicit. This fact too receives an account because a *no*-headed CP cannot express a paraphrase of direct discourse. In the following section, I turn to the distributions of sentence-final discourse particles, another phenomenon for which a hierarchy is proposed.

4 Discourse Particles and Speech Act Compatibility

Japanese is rich in sentence-final particles. Endo (2010) discusses four of them in some detail; *wa*, *yo*, *ne* and *na*. Roughly speaking, the first two are employed for assertion, and the latter two for solicitation of response. As Endo observes, their distributions are quite interesting because some of them can co-occur but only in a fixed order. For example, (35) contains three particles, and they must appear in the order indicated.

- (35) Hanako-wa soko-ni i-ta (wa) (yo) (ne)
 Hanako-TOP there-at be-Past *wa yo ne*
 ‘Hanako was there’

In this section, I will investigate the source of this hierarchy.⁷ I will first discuss the properties of these particles, and then, suggest that the hierarchy, to a large extent, stems from the specific speech acts they convey.

First, as Haraguchi (2012) shows, these particles are genuine discourse elements whose distributions are confined to matrix contexts. Thus, they cannot occur even within *to*-headed CPs, which embed various types of clauses as observed above.

- (36) a. Hanako-wa [_{CP} Taroo-wa kanozyo-no ie-ni i-ru (*wa) to] omot-ta
 Hanako-TOP Taroo-TOP she-GEN house-at be-Pres. *wa to* think-Past
 ‘Hanako thought that Taroo is at her house’
 b. Hanako-wa [_{CP} Taroo-ga kanozyo-o tasukete kure-ru (*yo) to] kitaisi-ta
 Hanako-TOP Taroo-TOP she-ACC help (for her)-Pres. *yo to* expect-Past
 ‘Hanako expected Taroo to help her’

Nevertheless, *wa*, in particular, has an s-selection requirement. It takes a TP complement as shown in (37).⁸

- (37) a. Watasi-wa soko-ni ik-u wa / it-ta wa
 I-TOP there-to go-Pres. *wa go*-Past *wa*
 ‘I will go there / I went there’
 b. Taroo-wa yasasi-i wa / yasasi-katta wa
 Taroo-TOP kind-Pres. *wa* kind-Past *wa*
 ‘Taroo is kind / Taroo was kind’

⁷ The content of this section is based on joint research with Tomoko Haraguchi, which is reported in more detail in Saito and Haraguchi (2012).

⁸ *Wa* is typically employed in women’s speech.

Wa follows verbal tenses (*ru/ta*) in (37a) and adjectival tenses (*i/katta*) in (37b).

On the other hand, *wa* cannot merge with a CP or a ModalP. (38a) shows that *wa* is incompatible with a CP complement, and (38b-c) that it cannot take a ModalP as its complement.

- (38) a. Taroo-wa soko-ni ik-u no (*wa)
 Taroo-TOP there-to go-Pres. *no wa*
 ‘Taroo will go there’
- b. Taroo-wa soko-ni ik-e (*wa)
 Taroo-TOP there-to go-Imp. *wa*
 ‘Taroo, go there’
- c. Hanako-wa ku-ru desyoo (*wa)
 Hanako-TOP come-Pres. will *wa*
 ‘Hanako will come’

Then, *wa* s-selects T. This predicts that *wa* must occupy the lowest position in a sequence of discourse particles. It indeed cannot follow any discourse particle, as shown in (39).

- (39) a. Hanako-wa soko-ni i-ta yo (*wa)
 Hanako-TOP there-at be-Past *yo wa*
 ‘Hanako was there’
- b. Hanako-wa soko-ni i-ta ne (*wa)
 Hanako-TOP there-at be-Past *ne wa*
 ‘Hanako was there, wasn’t she?’

Although *yo* is also employed for assertion, it exhibits a different distribution. It allows various clause types as its complement, and as Tenny (2006) notes, it can be translated roughly as ‘I’m telling you ...’ It takes TP complements in (40) and ModalP complements in (41).

- (40) a. Taroo-wa soko-ni i-ru yo / i-ta yo
 Taroo-TOP there-at be-Pres. *yo* be-Past *yo*
 ‘Taroo is there / was there’
- b. Taroo-wa yasasi-i yo / yasasi-katta yo
 Taroo-TOP kind-Pres. *yo* kind-Past *yo*
 ‘Taroo is kind / was kind’

- (41) a. Taroo-wa soko-ni ik-e / ik-inasai yo
 Taroo-TOP there-to go-Imp. go-Imp. yo
 ‘Taroo, go there’
- b. Soko-ni ik-oo / ik-imasyoo yo
 there-to go-Inv. go-Inv. yo
 ‘Let’s go there’

The examples in (42) show that *yo* can follow the complementizer *no* and the discourse particle *wa*.

- (42) a. Hanako-wa soko-ni i-ru no yo
 Hanako-TOP there-at be-Pres. no yo
 ‘Hanako is there’
- b. Hanako-wa soko-ni i-ru wa yo
 Hanako-TOP there-at be-Pres. wa yo
 ‘Hanako is there’

Yo clearly does not have any s-selection requirement, and given this, it is not surprising that it can follow another discourse particle.

Na and *ne*, which solicit response, are similar to *yo* in distribution. Here, I will provide some examples of *ne*.

- (43) a. Taroo-wa yasasi-i ne
 Taroo-TOP kind-Pres. ne
 ‘Taroo is kind, isn’t he?’
- b. Taroo-wa soko-ni ik-inasai ne
 Taroo-wa there-to go-Imp. ne
 ‘Taroo, go there. Will you?’
- c. Soko-ni ik-imasyoo ne
 there-to go-let’s ne
 ‘Let’s go there. Shall we?’
- d. Taroo-wa yasasi-i no ne
 Taroo-TOP kind-Pres. no ne
 ‘Taroo is kind, isn’t he?’
- e. Taroo-wa yasasi-i wa ne
 Taroo-TOP kind-Pres. wa ne
 ‘Taroo is kind, isn’t he?’

What appears in the complement position of *ne* is a TP in (43a), a ModalP in (43b-c), a CP in (43d), and a sentence headed by the speech act particle *wa* in (43e). Thus, *ne* does not s-select a specific head, either.

As Keiko Murasugi observes, there is clear evidence that *wa* and the other discourse particles differ in selectional properties. *Yo*, *ne* and *na* can appear not only sentence-finally but after any major constituent. (44) illustrates this with *ne*.

- (44) Taroo-ga ne soko-ni ne i-te ne ...
 Taroo-NOM *ne* there-at *ne* be-and *ne*
 ‘It’s Taroo, alright? It’s there, alright? He was there, alright? And, ...’

This is consistent with the proposal that *ne* does not s-select any head. *Wa*, on the other hand, cannot be employed in this way as it s-selects T.

Nevertheless, there are restrictions on the complements of *yo*, *ne* and *na*. For example, *ne* and *na* can follow *yo*, but *yo* cannot follow them. Further, *ne* and *na* are mutually exclusive. Relevant examples are shown in (45)-(46).

- (45) a. Hanako-wa soko-ni i-ta yo ne/na
 Hanako-NOM there-at be-Past *yo ne/na*
 Hanako was there, wasn’t she?
 b. *Hanako-wa soko-ni i-ta ne/na yo
 Hanako-NOM there-at be-Past *ne/na yo*

- (46) a. *Hanako-wa soko-ni i-ta ne na
 Hanako-NOM there-at be-Past *ne na*
 Hanako was there, wasn’t she?
 b. *Hanako-wa soko-ni i-ta na ne
 Hanako-NOM there-at be-Past *na ne*
 Hanako was there, wasn’t she?’

Then, descriptively, the hierarchy in (47) obtains.

- (47) [[[TP *wa*] *yo*] *ne/na*]

As argued above, *wa* must occupy the lowest position because it s-selects T. In the remainder of this section, I will suggest that the rest should be accounted for in terms of the speech acts these particles yield.

First, *yo* is employed for assertion, and hence, its complement must be capable of

expressing an assertion. The following examples demonstrate this:

- (48) a. [CP Dare-ga soko-ni ik-u ka] yo
 who-NOM there-to go-Pres. *ka yo*
 ‘Who will go there? = No one will go there’
- b. [CP Taroo-ni nani-ga deki-ru ka] yo
 Taroo-DAT what-NOM can.do-Pres. *ka yo*
 ‘What can Taroo do? = Taroo can’t do anything’

A question can be interpreted at the discourse level as a literal question or as a rhetorical question. However, when a question is embedded under *yo* as in (48), only the rhetorical question interpretation survives. This is expected because a rhetorical question expresses an assertion while a literal question does not. The situation is different with *ne* and *na*, which solicit response. (49a-b), unlike (48a-b), retain the ambiguity.

- (49) a. [CP Dare-ga soko-ni ik-u ka] ne
 who-NOM there-to go-Pres. *ka ne*
 ‘Who will go there? / (I think) no one will go there. What do you think?’
- b. [CP Taroo-ni nani-ga deki-ru ka] ne
 Taroo-DAT what-NOM can.do-Pres. *ka ne*
 ‘What can Taroo do? / (I think) Taroo can’t do anything. What do you think?’

This should be because a response can be solicited on a question or an assertion.

Given the observation above, it is not at all surprising that the *yo-ne/na* sequence is allowed whereas the *ne/na-yo* sequence is not. *Yo* combines with an expression of assertion and reinforces the speech act. It is then possible to solicit a response on the assertion by placing *ne/na* after *yo*. On the other hand, *ne/na* adds the speech act of soliciting a response. A sentence with these particles is in fact best translated as a tag question. But it was shown above that the complement of *yo* cannot express a literal question for the simple reason that a question cannot be asserted. Thus, the hierarchical relation between *yo* and *ne/na* is predicted from their discourse roles.

The final question to be addressed is why *ne* and *na* cannot co-occur, as was shown in (46). Although I do not have a clear-cut answer for this, I would like to make a suggestion, based on an observation in Endo (2010). Endo notes that *na* is appropriate when talking to oneself whereas *ne* is not. Let’s compare the following two examples:

- (50) a. Dekake-ta na
 go.out-Past *na*
 ‘It looks like she/he went out’
- b. Dekake-ta ne
 go.out-Past *ne*
 ‘You/she/he went out, didn’t you/he/she?’

Suppose that you go home alone and find that your roommate is not there. Then, you could utter (50a), talking to yourself. (50b) is inappropriate in this context. On the other hand, suppose that you go home with your friend. Then, you could say (50b) to your friend, referring to your roommate. Or (50b) can be addressed to your roommate when she/he comes home. This suggests that *na* solicits a response from the discourse participants including the speaker, while *ne* seeks a response from those excluding the speaker. *Na* can be employed when talking to oneself, as there is a discourse participant to whom the utterance can be addressed, namely, the speaker. *Ne* has no function in this context. If this characterization of *ne* and *na* is correct, then they should be mutually exclusive because their discourse functions are not compatible.

5 Conclusion

As discussed in this paper, constraints and hierarchies have been proposed and entertained in the recent investigation of the Japanese right periphery. Ueda (2007) examines Japanese modals in detail and entertains the constraint that a clause can contain at most one modal. Saito (2009) observes the hierarchy of Japanese complementizers in (30), repeated below in (51).

- (51) [CP ... [CP ... [CP ... Finite (*no*)] Force (*ka*)] Report (*to*)

Endo (2010), on the other hand, examines the hierarchy of discourse particles, which can be formulated as in (52).

- (52) [[[TP *wa*] *yo*] *ne/na*]

These constitute facts to be explained.

In this paper, I explored the possibility that they are consequences of the properties of the relevant lexical items. In Section 2, I showed that Japanese modals are either suffixes or s-select T, and argued that the uniqueness condition follows from these lexical properties. In Section 3, I argued that the hierarchy of complementizers in (51) is a consequence of the s-

selection requirement of *no* and the semantics of the complementizers. Finally, in Section 4, I suggested that the discourse particles are hierarchically organized as in (52) because *wa* selects T and any other ordering of *yo*, *ne* and *na* causes a contradiction in the composite speech act. These accounts need to be made more precise in future research. But they suggest that there is no need to postulate constraints or hierarchies for Japanese phrase structure as the relevant facts are derivable from lexical properties. This is in line with the Minimalist hypothesis that all that is required for phrase structure building is the minimal operation, Merge.

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Abstract: The cartographic analysis has been applied to the Japanese right periphery with fruitful results and hierarchies have been proposed for modals, complementizers and sentence-final particles. The purpose of this paper is to refine the proposed hierarchies and to show that they follow to a large extent from the lexical properties of the relevant functional heads. It argues that s-selection properties are important in all cases. It shows in addition that compatibility in morphology, semantics and the conveyed speech acts constrains the distributions of modals, complementizers and sentence-final particles respectively.

Keywords: Japanese right periphery, modal, complementizer, discourse particle, selection.