CONDITIONS ON JAPANESE PHRASE STRUCTURE:
FROM MORPHOLOGY TO PRAGMATICS *

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1. Introduction

The elimination of phrase structure rules in favor of X'-theory was made possible by proposals of independent principles that yield much of the information stipulated in the formulation of those rules. It is currently 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 1995a, 2012.) Needless to say, Merge, taken by itself, vastly overgenerates. It is then examined how certain derivations crash and fail to generate outputs. It is also assumed that some derivations converge, but send information to the C-I or P-A interface that can only be interpreted as gibberish. The purpose of this paper is to examine four phenomena in Japanese that might fall under the latter case.

The phenomena that I take up are (i) the uniqueness condition on modals, (ii) the transitivity harmony phenomenon on complex verb formation, (iii) the hierarchy of complementizers, and (iv) the distributions of discourse particles. The following section concerns modals. Ueda (2007), among others, shows that a Japanese clause can contain at most one modal. I argue that this should be attributed to the selectional properties of the modals. Many are verbal suffixes and morphologically select V or V-*v* (m-selection). The others semantically select T (s-selection). Then, if a modal merges with a ModalP to yield a structure with two modals, a problem arises either with morphology or with s-selection. In Section 3, I discuss what Kageyama (1993) calls lexical complex verbs, instantiated in (1).

(1) Taroo-ga   ana-ni suberi-oti-ta
    Taroo-NOM hole-to slip-fall-Past

    'Taroo slipped and fell into a hole'

He demonstrates that those complex verbs must consist of two verbs that are uniform with respect to the presence/absence of an external θ-role. For example, an unergative verb can combine with a transitive verb or with another unergative verb, but not with an unaccusative verb. I first argue that a characteristic property of those complex verbs is that each of the

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component verbs independently participates in the selectional relations in the syntax. Then, I show that Kageyama's generalization follows from the s-selection requirements of *v*/v*.

I turn to the hierarchy of complementizers in Section 4. It is shown in Saito (2012) that the three complementizers *no*, *ka* and *to* are in the hierarchical relation *no* (Finite) < *ka* (Force - question) < *to* (Report), as illustrated in (2).

(2) Taroo-wa [CP [CP [CP kare-no imooto-ga soko-ni i-ta (no)] ka] (to)] minna-ni
 Taroo-TOP he-GEN sister-NOM there-at be-Past *no ka to* all-DAT
 tazune-ta
 inquire-Past

 'Taroo asked everyone *if* his sister was there'

I suggest that this hierarchy reflects the semantics of those complementizers as well as the s-selection requirement of *no*. Section 5 concerns discourse particles as in (3).

(3) Hanako-wa soko-ni i-ta (wa) (yo) (ne)
 Hanako-TOP there-at be-Past *wa yo ne*

 'Hanako was there, wasn't she?'

These discourse particles are associated with specific speech acts; *wa* and *yo* are employed for assertion and *ne* solicits response. As discussed by Endo (2010), among others, they too exhibit a hierarchy. For example, the three particles in (3) must appear in the order indicated. I argue, along the lines of Saito and Haraguchi (2012), that *wa* occupies the lowest position as it s-selects T and that *ne* must follow *yo* for the composit speech act to be coherent.

If the discussion in this paper is on the right track, Japanese phrase structure is heavily constrained by morphology and s-selection, as well as by semantic and speech act compatibility. This is observed in a wide range of phenomena from complex verbs to discourse particles. There is no need to stipulate specific constraints or to postulate specific hierarchical structures to capture the observed generalizations.

2. The Uniqueness Condition on Modals in Japanese

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

(4) a. E(pitemic)-modals: *daroo* (surmise), *desyoo* (formal surmise), *mai* (negative surmise)

 b. U(tterance)-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 (5), and at the same time, observes that two modals cannot co-occur in the same clause. The observation is confirmed by the examples in (6).

(5) [U-modalP [E-modalP [TP … T] E-modal] U-modal]

(6) 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 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, (7a) is totally out although it is synonymous with the grammatical (7b).

(7) 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 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 *v*P (as in small clauses), a TP and a ModalP, for example. Then, this by itself does not exclude the multiple occurrences of modals in (6). 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 (8), *ro* is employed for verb stems that end in vowels and *e* for those that end in consonants.

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

     'Taroo, eat it'

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[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.

b. Taroo-wa   soko-ni ik-e
    Taroo-TOP there-to go-Imp.

'Taroo, go there'

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 (9).

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

b.
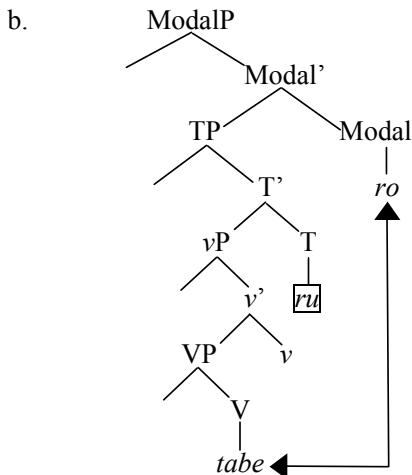
The only morphologically permissible option is for it to take a *v*P complement. In this case, the suffix can successfully merge with V (or V-*v* complex). Significantly, *ro/e* cannot take a ModalP as its complement because the intervening modal blocks the morphological merger just like T. There is 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 (10).[2]

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

'Let's eat it'

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[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 → Ø / V + __ C

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

        'Let's go there'

I conclude then that they all must take *v*P 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 (11).

(11) a.   Taroo-wa   sore-o tabe-ru /tabe-ta daroo
          Taroo-TOP it-ACC eat-Pres./eat-Past will

          'I guess Taroo eats/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'

(12) shows that they cannot be employed as verbal or adjectival suffixes.[3]

(12) 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 condition:

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[3] There is another modal *karoo*, which is similar in meaning to *daroo* but is a suffix that attaches to adjectival stems. Thus, (12b) 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'

(13) 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'

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

(14) 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

   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 (15).

(15) 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*. (16) is ungrammatical.

(16) 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*.

(17) 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

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 (18).

(18) 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 (18) cannot be formed with (17b). Here, I tentatively propose that the verbal suffix is not *mai* but *(u)mai*. Then, the example with this suffix that corresponds to (17b) is homophonous with (17b) as in (19).[4]

(19) 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

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[4] The suffix is *umai* uniformly. When it is merged with *tabe* as in (18), the initial *u* is deleted according to the morphophonological rule suggested in Footnote 2.

are verbal suffixes and hence, must take vP 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 disctribution. 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-selects 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 Transitivity Harmonony Phenomenon in Lexical Complex Verbs

This section concerns Kageyama's (1993) generalization in (20) on Japanese lexical complex verbs.

(20) The transitivity harmony principle
      In a complex verb V_1+V_2, V_1 and V_2 must be consistent with respect to the presence/ absence of an external θ-role.

This generalization states that if one of the component verbs is unaccusative, the other one must also be unaccusative. Thus, it distinguishes the transitive-transitive combination in (21a) and the unaccusative-transitive combination in (21b).

(21) a. Hanako-ga   Taroo-o   osi-taosi-ta
         Hanako-NOM Taroo-ACC push-make.fall-Past

         'Hanako pushed Taroo and made him fall'

     b. *Taroo-ga   kuzira-o   ukabi-mi-ta
         Taroo-NOM whale-ACC float-see-Past

         'A whale came to the surface and Taroo saw it'

Kageyama shows that there are three kinds of complex verbs in Japanese, aside from those that are idiosyncratically formed and pattern with simple verbs, and demonstrates that (20) applies to one of them, which he calls lexical complex verbs. I first briefly go over this qualification, and then, argue that (20) is to be explained by the s-selection requirements of

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

v*/*v*.

Kageyama (1993) first distinguishes between syntactic and lexical complex verbs. In the former, V_1 and V_2 project separate VPs, and V_2 takes the VP headed by V_1 (or the corresponding *v*P) as its complement. Typical examples are shown in (22), and the structure of (22a) is as in (23).[6]

(22) a. Hanako-ga   Taroo-ni   wani-o   tabe-sase-ta
      Hanako-NOM Taroo-DAT alligator-ACC eat-make-Past

      'Hanako made Taroo eat alligator meat'

  b. Taroo-ga   wani-o   tabe-hazime-ta
      Taroo-NOM alligator-ACC eat-start-Past

      'Taroo started to eat alligator meat'

(23)
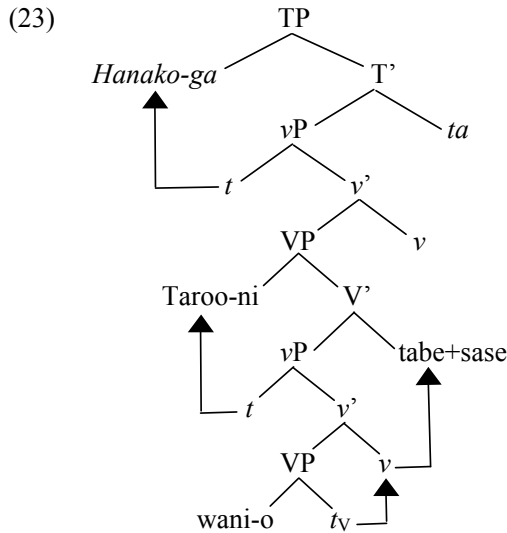
According to Kageyama, the complex verb *tabe-sase* is formed by the incorporation of *tabe* into *sase*.

One piece of evidence Kageyama provides for his analysis is that the pro-VP (or V') form *soo su* 'do so' can substitute for the VP (or V') headed by V_1. Thus, the following examples are grammatical:

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[6] (23) differs from the structure Kageyama posits in the details, but the crucial point is that *tabe* 'eat' and *sase* 'cause' both project VPs. It has been widely assumed since Kuroda (1965) that *sase* takes a clausal complement of some kind. The best known evidence is that in a causative sentence, the causer and the causee both qualify as the antecedent of the subject-oriented long-distance reflexive *zibun*. Here, I follow Murasugi and Hashimoto (2004), and assume that *sase* takes a *v*P complement.

(24) a. Hanako-ga   Taroo-ni   soo s-ase-ta
      Hanako-NOM Taroo-DAT so   do-make-Past

      'Hanako made Taroo do so'

   b. Taroo-ga   soo si-hazime-ta
      Taroo-NOM so   do-start-Past

      'Taroo started to do so'

Lexical complex verbs, on the other hand, are formed in the lexicon and project a single VP, according to Kageyama. Examples are provided in (25).

(25) a. Taroo-ga   ana-ni suberi-oti-ta
      Taroo-NOM hole-in slip-fall-Past

      'Taroo slipped and fell into a hole'

   b. Hanako-ga   me-o   naki-harasi-ta
      Hanako-NOM eye-Acc cry-make.swollen-Past

      'Hanako cried and made her eyelids swollen'

Although the complex verbs in (22) and (25) look similar on the surface, they pattern differently with *soo su* substitution. As shown in (26), *soo su* cannot substutute for V_1 or its projection in the case of (25).

(26) a. *Taroo-ga   (ana-ni) soo si-oti-ta
      Taroo-NOM hole-in so   do-fall-Past

   b. *Hanako-ga   (me-o)   soo si-harasi-ta
      Hanako-NOM eye-ACC so   do-make.swallen-Past

This is expected if the complex verb is formed in the lexicon and V_1 does not project an independent VP.

Kageyama (1993) shows that lexical complex verbs are subject to the transitivity harmony principle in (20). (27) lists some examples.

(27) a. <u>transitive-transitive</u>: *hiki-nuk* 'pull-pull.out', *nigiri-tubus* 'grasp-crash',
      tataki-otos 'knock-drop', *kiri-tor* 'cut-remove', *uke-tome* 'receive-catch'

   b. <u>unergative-unergative</u>: hasiri-yor (run-go.close.to), tobi-ori (jump-go.down),
      kake-nobor (run-climb), aruki-mawar (walk-go.around), mure-tob (form.a.flock-fly)

   c. <u>unaccusative-unaccusative</u>: suberi-oti (slip-fall), ukabi-agar (float-rise),
      umare-kawar (be.born-change), huri-sosog (fall-flow)

    d. <u>transitive-unergative</u>: moti-aruk (carry-walk), sagasi-mawar (look.for-go.around), mati-kamae (wait-hold)

    e. <u>unergative-transitive</u>: naki-haras (cry-make.swollen), nori-kae (ride-change), nomi-tubus (drink-waste), odori-akas (dance-stay.up.all.night)

Ungrammatical examples that do not conform to (20) are shown in (28)-(31).

(28) a. *Taroo-ga   kuzira-o   ukabi-mi-ta (unaccusative+transitive)
        Taroo-NOM whale-ACC float-see-Past

        'A whale came to the surface and Taroo saw it'

    b. *Kareha-ga   zimen-o   oti-kakusi-ta
       dead.leaf-NOM ground-ACC fall-hide-Past

       'Dead leaves fell and covered the ground'

(29) a. *Hanako-ga   Taroo-o   osi-taore-ta (transitive+unaccusative)
        Hanako-NOM Taroo-ACC push-fall-Past

        'Hanako pushed Taroo and Taroo fell'

    b. *Hanako-ga   wain-o   nomi-yot-ta
       Hanako-NOM wine-ACC drink-get.drunk-Past

       'Hanako drank wine and got drunk'

(30) a. *Kodomo-ga kaika-ni   asobi-oti-ta (unergative+unaccusative)
        child-NOM downstairs-to play-fall-Past

        'A child played and fell downstairs'

    b. *Hanako-ga   undoozyoo-de hasiri-koron-da
       Hanako-NOM field-in   run-tumble-Past

       'Hanako ran and tumbled in the field'

(31) a. *Taroo-ga   kaika-ni   oti-ori-ta (unaccusative+unergative)
        Taroo-NOM downstairs-to fall-go.down-Past

        'Taroo fell and went downstairs'

    b. *Kodomo-ga karyuu-ni   nagare-oyoi-da
       child-NOM downstream-to be.carried-swim-Past

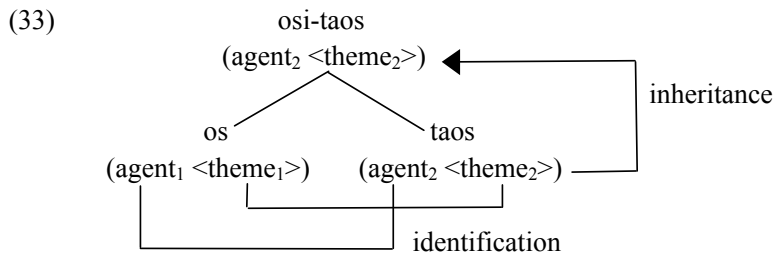   'A child was carried and swam downstream'

  The transitivity harmony phenomenon, just illustrated, poses an interesting question. (20)

clearly is not a plausible candidate for a universal, innate principle on word formation. In fact, as Kageyama notes, it is not universally observed with lexical complex verbs. For example, Chinese compound verbs do not exhibit the phenomenon. The following examples are from Huang (1982):[7]

(32) a.   Ta he-zui   (jiu) le
          he drink-get.drunk wine Asp.

     'He drank (wine) and got drunk'

     b.   Ta qi-lei-le   lianpi ma
          he ride-tired-Asp. two   horse

     'He rode two horses and got them tired'

At the same time, it is hard to imagine that Japanese speakers acquire (20) as a language-specific constraint through experience. Then, (20) is expected to be a consequence of a property of Japanese lexical complex verbs. But before going into this, let me briefly go over Kageyama's analysis of those complex verbs and also illustrate his third kind of complex verbs.

Kageyama proposes that Japanese lexical complex verbs are formed through θ-role identification. His analysis of *osi-taos* 'push-make.fall' in (21a) is shown in (33).

(33)   osi-taos
                  (agent₂ <theme₂>) ◀──────────┐
                                                 │ inheritance
               os   taos   │
     (agent₁ <theme₁>)   (agent₂ <theme₂>) ─────┘
               └──────┐   ┌────┘   │
                      identification

The two component verbs, *os* and *taos*, have their own θ-roles. The agent roles of the two verbs are identified, and so are their theme roles. After this θ-role identification, the complex verb inherits the argument structure of the head, *taos*. Given this mechanism, the transitivity harmony principle can be construed as a constraint on θ-role identification: if a component verb has an external θ-role, it must be identified with the external θ-role of the other verb.

There is another kind of lexical complex verbs, according to Kageyama, that are formed through a different process. Typical examples are shown in (34).
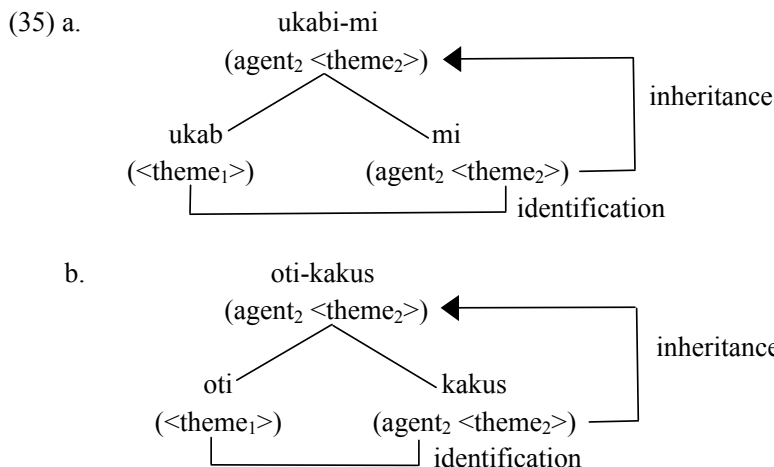
(34) a.   Hanako-ga   Taroo-o   heya-ni oi-kon-da (transitive+*kom*)
          Hanako-NOM Taroo-ACC room-in chase-KOM-Past

     'Taroo was chased by Hanako into the room'

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[7] See Li (1993) for a detailed comparison of Chinese and Japanese complex verbs.

b. Taroo-ga   kawa-ni   tobi-kon-da   (unergative+*kom*)
Taroo-NOM river-to   jump-KOM-Past

'Taroo jumped into the river'

c. Osensui-ga   umi-ni   nagare-kon-da   (unaccusative+*kom*)
contaminated.water-NOM   ocean-to flow-KOM-Past

'Contaminated water flowed into the ocean'

These examples show that the verbal suffix *kom* can combine with any kind of verb. It appears then that complex verbs of the form V+*kom* are not subject to transitivity harmony. However, the issue does not arise in this case because *kom*, at least with its meaning in (34), is not an independent verb with its own θ-roles.[8] *Kom* can be suffixed to the verb when the sentence indicates that a person or an object moves, and it adds the meaning that the person or the object moves to the location specified in the sentence. Kageyama, then, concludes that *kom* adds to the lexical-conceptual structure of the verb it is suffixed to. The complex verbs that are formed in this way are lexical complex verbs, but I refer to them as LCS complex verbs in order to distinguish them from those that are subject to transitivity harmony.

With this background, let me now consider the source of the transitivity harmony phenomenon. As noted above, the phenomenon is expected to follow as a consequence of a property of Japanese lexical complex verbs. The relevant property does not seem to be semantic. For example, there does not seem to be anything semantically wrong if lexical complex predicates are formed in ways inconsistent with transitivity harmony. The illicit *ukabi-mi* 'surface-see' and *oti-kakus* 'fall-hide' in (28) can be straightforwardly formed as in (35) under Kageyama's analysis.

(35) a.
$$\text{ukabi-mi}$$
$$(\text{agent}_2 \langle \text{theme}_2 \rangle)$$

ukab   mi
$(\langle \text{theme}_1 \rangle)$ $(\text{agent}_2 \langle \text{theme}_2 \rangle)$

inheritance

identification

b.
$$\text{oti-kakus}$$
$$(\text{agent}_2 \langle \text{theme}_2 \rangle)$$

oti   kakus
$(\langle \text{theme}_1 \rangle)$ $(\text{agent}_2 \langle \text{theme}_2 \rangle)$

inheritance

identification

The relevant property cannot be morphological, either. Lexical complex verbs are not morphologically different from syntactic complex verbs or LCS complex verbs. Then,

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[8] There is an independent verb *kom*, which means 'become crowded'.

transitivity harmony is likely to be a reflection of a syntactic property of lexical complex verbs.

Kageyama's analysis illustrated in (33) suggests a curious property of those complex verbs. Because of θ-role identification, the argument structures of V_1 and V_2 are both projected in the syntax. Let us consider again (21a), repeated below as (36).

(36) Hanako-ga   Taroo-o   osi-taosi-ta
     Hanako-NOM Taroo-ACC push-make.fall-Past

     'Hanako pushed Taroo and made him fall'

In this example, *Hanako* is the agent of *os* as well as *taos*, and *Taroo* serves as the theme for both verbs. Further, Kageyama makes an important observation that the arguments of a lexical complex verb must satisfy the selectional requirements of both V_1 and V_2. His relevant examples are shown in (37)-(38) with slight modifications.

(37) a. Tuta-ga   boo-ni   maki-tui-ta
         ivy-NOM stick-to wind-attach-Past

         'An ivy twined around the stick'

     b. Abura-ga kabe-ni simi-tui-ta
         oil-NOM   wall-to   soak-attach-Past

         'The wall was stained with oil'

(38) a. *Tuta-ga   boo-ni   simi-tui-ta
         ivy-NOM stick-to soak-attach-Past

         'The stick was stained with an ivy'

     b. *Abura-ga kabe-ni maki-tui-ta
         oil-NOM   wall-to   wind-attach-Past

         'The oil twined around the wall'

(38a) is ungrammatical because an ivy cannot soak into a stick, and (38b) because oil cannot twine around a wall. These examples demonstrate that both V_1 and V_2 enter into selectional relations with the arguments.

If V_1 and V_2 are both visible in the selectional relations with the arguments, they must also participate in the selectional relations with $v*/v$, as illustrated in (39) for (36).

(39) a. [$_{VP}$ Taroo [$_V$ [$_V$ osi]-[$_V$ taos]]]

b.   [$_{v'}$ [$_{VP}$ Taroo   [$_V$ [$_V$ osi]-[$_V$ taos]]] v*]
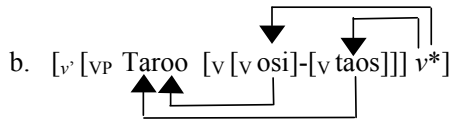
It has been widely assumed since Chomsky (1995b) that v* s-selects transitive/unergative V while v s-selects unaccusative V. The selectional requirement of v* is satisfied in (39b) as both *os* 'push' and *taos* 'make.fall' are transitive. But note that a lexical complex verb can meet the selectional requirements of v*/v when and only when the complex verb obeys the transitivity harmony principle in (20). Since each member of the complex verb enters into selectional relations with v*/v, v* requires that both members be transitive or unergative and v demands that both be unaccusative. Hence, the transitivity harmony follows from the s-selection requirements of v*/v.

In this section, I argued that a characteristic property of Japanese lexical complex verbs is that each component verb participates in selectional relations, and given this, Kageyama's (1993) transitivity harmony phenomenon follows from the s-selection requirements of v*/v.[9] In the following two sections, I discuss cases where semantic and speech act compatibility contributes to the well-formedness of sentences.

4. The Hierarchy of Japanese Complementizers

Japanese has three complementizers, *no*, *ka* and *to*, as illustrated in (40).

(40) a.   Taroo-wa   [$_{CP}$ Hanako-ga   soko-ni i-ru   <u>no</u>]-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 <u>ka</u>] 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 <u>to</u>] 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 (41), and when they do, they appear in the order indicated.

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[9] The next question to be addressed is why Japanese productively employs complex verbs with this property. See Saito (to appear) for some discussion on this.

(41) 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 (42) in Saito (2012).

(42) [CP … [CP … [CP … Finite (*no*)] Force (*ka*)] Report (*to*)]

(42) predicts that the complementizer sequences in (43a) are allowed while those in (43b) are not.

(43) 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 (43c), that is consistent with the hierarchy in (42) and yet is illicit. Thus, (44) is ungrammatical.

(44) *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 (42), and at the same time, to account for the exception in (43c).

It is necessary to discuss 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 (45a) and a complementizer that embeds indirect discourse as in (45b).

(45) 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 (2012) 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 (46).

(46)   *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 (47a), imperative sentences in (47b-c), and an expression of invitation in (47d).[10]

(47) a. Taroo-wa   Ziroo-ni   [CP kanozyo-ga kare-no ie-ni   ku-ru   <u>ka to</u>] 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'

    b. Hanako-wa   Taroo-ni   [CP kanozyo-no ie-ni   i-ro   <u>to</u>] 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   <u>to</u>] 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   <u>to</u>] 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 (47) 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 invitation, in addition to a simple statement.

Then, what is the complementizer for embedded propositions in Japanese? It is argued in Saito (2012) that *no* is employed for this purpose. (48) is a partial list of matrix verbs that take CP complements headed by *no*.

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[10] 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.

(48) *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 (49)-(50).

(49) 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'

(52) 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 (42), repeated in (53), with this background.

(53) [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 *v*P, a TP, a ModalP or a CP. *Ka* can take a TP, a ModalP and a CP as its complement, as shown in (54).

(54) 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'

(54c) is the most relevant for the hierarchy in (53), 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 (54c).

   The merger of *v*P 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 *v*P complement. Also, *ka* cannot combine with ModalPs and CPs that do not stand for propositions. Thus, the following examples are totally ungrammatical:

(55) 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 (55a) expresses an order, and that in (55b) a paraphrase of direct discourse. These are examples of semantic incompatibility as *ka* requires a complement that stands for a proposition. (55b), in particular, illustrates why the complementizer sequence *to-ka* is impossible.

   It was shown so far why *no-ka* is possible wheras *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 (40c) and (47) that *ka* can take a TP, a CP and a ModalP as its complement. Most relevant in the present context is (47a), repeated below as (56).

(56) 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 (44), repeated below as (57).

(57) *Taroo-wa   [CP kare-no imooto-ga   soko-ni i-ru   <u>no to</u>] 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 (53) 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.

5. 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, (58) contains three particles, and they must appear in the order indicated.

(58) 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 investigate the source of this hierarchy.[11]

    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.

(59) 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 (60).[12]

(61) 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'

Wa follows verbal tenses (*ru*/*ta*) in (61a) and adjectival tenses (*i*/*katta*) in (61b).

    On the other hand, *wa* cannot merge with a CP or a ModalP. (62a) shows that *wa* is incompatible with a CP complement, and (62b-c) that it cannot take a ModalP as its complement.

(62) a. Taroo-wa   soko-ni ik-u   no (*wa)
        Taroo-TOP there-to go-Pres. *no*   *wa*

       'Taroo will go there'

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[11] The content of this section is based on joint research with Tomoko Haraguchi and is reported in more detail in Saito and Haraguchi (2012).

[12] *Wa* is typically employed in women's speech.

   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 (63).

(63) 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 (64) and ModalP complements in (65).

(64) 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'

(65) 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 (66) show that *yo* can follow the complentizer *no* and the discourse particle *wa*.

(66) 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 solocit response, are similar to *yo* in distribution. Here, I provide some examples for *ne*.

(67) 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 (67a), a ModalP in (67b-c), a CP in (67d), and a sentence headed by the speech act particle *wa* in (67e). 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. (68) illustrates this with *ne*.

(68) 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 used 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 (69)-(70).

(69) 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*

(70) 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 (71) obtains.

(71)   [[[TP *wa*] *yo*] *ne*/*na*]

As argued above, *wa* must occupy the lowest position because it s-selects T. I suggest that the rest should be accounted for in terms of the speech acts those particles yield.
    First, *yo* is employed for assertion, and hence, its complement must be capable of expressing an assertion. The following examples demonstrate this.

(72) 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 (70), 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. (73a-b), unlike (72a-b), retain the ambiguity.

(73) 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 while 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 seen 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 (70). 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 onself whereas *ne* is not. Let's compare the following two examples:

(74) 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 (74a), talking to yourself. (74b) is inappropriate in this context. On the other hand, suppose that you go home with your friend. Then, you could say (74b) to your friend, referring to your roommate. Or (74b) 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.

6. Conclusion

As discussed in this paper, interesting constraints and hierarchies have been proposed and entertained in the recent investigation of Japanese syntax. Ueda (2007) examines Japanese modals in detail and entertains the constraint that a clause can contain at most one modal. Kageyama (1993) proposed an influential constraint on lexical complex verb formation, namely, the transitivity harmony principle in (20). Saito (2012) observes the hierarchy of Japanese complementizers in (42), repeated below in (75).

(75)   [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 (76).

(76)   [[[TP *wa*] *yo*] *ne*/*na*]

These constraints and hierarchies constitute facts to be explained in the Minimalist syntax. The same is true of any alternative proposals at the same descriptive level.

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 proposed that a characteristic property of Japanese lexical complex verbs is that their component verbs participate in selectional relations. Given this, Kageyama's (1993) constraint on those complex verbs can be explained in terms of the s-selection requirements of *v**/*v*. In Section 4, I argued that the hierarchy of complementizers in (75) is a consequence of the s-selection requirement of *no* and the semantics of the complemetizers. Finally, in Section 5, I suggested that the discourse particles are hierarchically organized as in (76) because *wa* s-selects T and any other ordering of *yo*, *ne* and *na* causes a contradiction in the composit speech act.

The case studies reported here are by no means exhaustive. But taken together, they suggest that there is no need to postulate constraints or hierarchies for Japanese phrase structure as the relevant facts are derived from lexical properties. This supports the Minimalist hypothesis that all that is required for phrase structure building is the minimal operation, Merge.

References

Chomsky, N. (1995a) "Bare Phrase Structure." In G. Webelhuth, ed., *Government and Binding Theory and the Minimalist Program*, Blackwell, Oxford, 383-439.

Chomsky, N. (1995b) *The Minimalist Program*, MIT Press, Cambridge, Massachusetts.

Chomsky, N. (2012) "Problems of Projection," unpublished ms., MIT.

Endo, Y. (2010) "The Cartography of Sentence Final Particles." In N. Hasegawa, ed., *New Developments in Syntactic Theory and the Analysis of Japanese: Beyond Propositions*, Kaitakusha, Tokyo, 67-94. (in Japanese)

Haraguchi, T. (2012) "Distributions of Modals and Sentence Final Particles: Selection or Something Else?", presented at the Thirteenth Workshop of the International Joint Research Project on Comparative Syntax and Language Acquisition (February 20, 2012), Center for Linguistics, Nanzan University.

Hiraiwa, K. and S. Ishihara (2002) "Missing Links: Cleft, Sluicing, and 'no da' construction in Japanese," *Proceedings of Humit 2001*, MIT Working Papers in Linguistics #43, 35-54.

Huang, C.-T. J. (1992) "Complex Predicates in Control." In R. K. Larson, et al., eds., *Control and Grammar*, Kluwer Academic Publishers, Dordrecht, 109-147.

Kageyama, T. (1993) *Grammar and Word Formation*, Hituzi Syobo, Tokyo. (in Japanese)

Kuroda, S.-Y. (1965) "Causative Forms in Japanese," *Foundations of Language* 1, 30-50.

Li, Yafei (1993) "Structural Head and Aspectuality," *Language* 69, 480-504.

Matsumoto, E. (2010) *Quotative Expressions and Sentential Complementation in Japanese*, B.A. thesis, Nanzan University. (in Japanese)

Murasugi, K. and T. Hashimoto (2004) "Three Pieces of Acquisition Evidence for the *v*-VP Frame," *Nanzan Linguistics* 1, 1-19.

Plann, S. (1982) "Indirect Questions in Spanish," *Linguistic Inquiry* 13, 297-312.

Rivero, M.-L. (1994) "On Indirect Questions, Commands, and Spanish Quotative *Que*," *Linguistic Inquiry* 25, 547-554.

Saito, M. (2012) "Sentence Types and the Japanese Right Periphery." In G. Grewendorf and T. E. Zimmermann, eds., *Discourse and Grammar: From Sentence Types to Lexical Categories*, Walter de Gruyter, Berlin, 147-175.

Saito, M. (to appear) "Selectional Restrictions and the Formation of Complex Verbs," in H. Kishimoto and Y. Yumoto, eds., *New Developments in the Research on Complex Predicates*, Hituzi Syobo, Tokyo. (in Japanese)

Saito, M. and T. Haraguchi (2012) "Deriving the Cartography of the Japanese Right Periphery: The Case of Sentence-Final Discourse Particles," *Iberia* 4.2, 104-123.

Tenny, C. (2006) "Evidentiality, Experiencers and the Syntax of Sentience in Japanese," *Journal of East Asian Linguistics* 15, 195-244.

Ueda, Y. (2007) "Syntactic Structure and Person Restrictions of Japanese Modals." In N. Hasegawa, ed., *Main Clause Phenomena in Japanese*, Kaitakusha, Tokyo, 123-150. (in Japanese)