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## 英語と日本語における動詞句等位接続と時制素性の照合について

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# 英語と日本語における動詞句等位接続と 時制素性の照合について

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## VP Coordination and Tense Feature Checking in English and Japanese\*

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In VP coordination structures of Japanese, the verbs in the conjoined VPs are all tenseless except for the final verb. In English VP coordination structures, all the verbs in the conjoined VPs can be tensed. This paper aims to provide a principled explanation for this curious difference between English and Japanese. Our account crucially utilizes the notion of feature checking within the framework of Chomsky's (1995) Minimalist Program. I suggest that tense features are not chosen when Japanese verbs enter the numeration, whereas they are optionally chosen when English verbs enter the numeration. In a nutshell, our claim is that the difference we are interested in stems from the absence of tense feature checking in Japanese, and the presence thereof in English. During the course of our discussion, I will also offer a piece of evidence that subjects in Japanese must be within VP, at least in certain sentences.

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Key words: VP coordination, English, Japanese, tense features of verbs

## 1. Introduction

Japanese and English exhibit an interesting difference in the way Verb Phrases coordinate. To see the difference with which we are concerned, compare the Japanese sentence (a) and its English counterpart (b) in the following pairs of sentences.

- (1) a. Neko-ga nezumi-o mituke, oikake, tukamae-ta. (Japanese)  
cat-Nom mouse-Acc find chase catch-Past  
'A cat found a mouse, chased (it), and caught (it).'

b. A cat found a mouse, chased it, and caught it. (English)

- (2) a. John-ga kinoo honya-e iki, zassi-o kat-ta.  
John-Nom yesterday bookstore-to go magazine-Acc buy-Past  
'John went to a bookstore yesterday, and bought a magazine.'

b. John went to a bookstore yesterday, and bought a magazine.

While only the last verb is tensed in the Japanese examples (1a) and (2a), all the verbs are tensed in the corresponding English examples (1b) and (2b). Despite this formal difference, sentence (a) and sentence (b) express the same meaning in each sentence pair (1) and (2). Since the difference is not semantic, either syntax or morphology, or both, must be responsible for the contrast under consideration. But exactly how does this difference arise? What follows is an attempt to answer this question.

## 2. Tense Feature Checking in English

### 2.1. On the tense feature specification of English infinitives

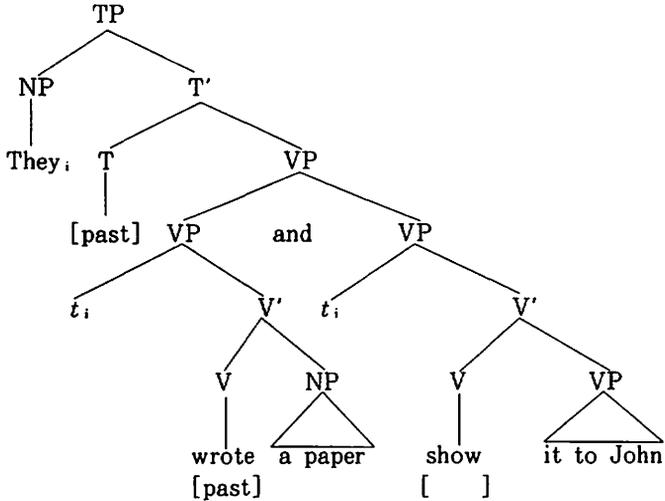
Let us begin our discussion by comparing the grammatical Japanese sentence (3) and the ungrammatical English sentence (4).

- (3) Karera-ga ronbun-o kaki, (sosite) John-ni sore-o mise-ta.  
they-Nom paper-Acc write and John-Dat it-Acc show-Past  
'They wrote a paper and showed it to John.'
- (4) \*They wrote a paper, and show it to John.

In the Japanese example (3), the first verb *kaki* 'write' is tenseless.<sup>1</sup> Nevertheless, it is interpreted as denoting a past event, by virtue of the past tense marker *-ta* attached to the second verb *mise* 'show'. Since English is a head-initial language, the English sentence corresponding to the Japanese sentence (3) in relevant structural respects would be (4), where the first verb *wrote* is tensed, and the second verb *show* is tenseless (i.e. it is in its bare infinitive form). But (4) is ungrammatical in English, in contrast to the Japanese counterpart (3).

To find out what might be wrong with (4), consider its phrase structure in (5).

(5)

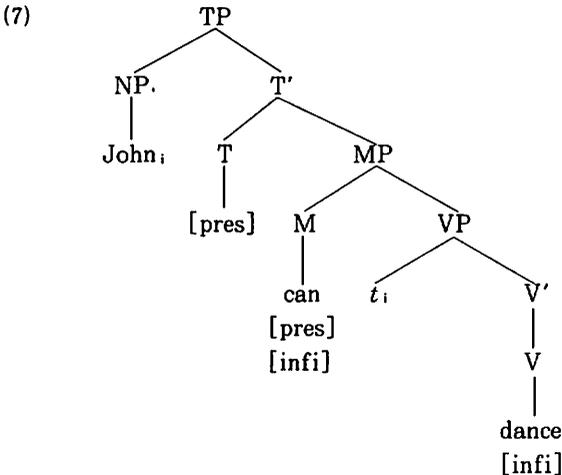


Following Burton and Grimshaw (1992) and McNally (1992), I assume that in a VP coordination structure such as (5), the subject NP originates in the [Spec, VP] position of both VP conjuncts, and moves into [Spec, TP].<sup>2</sup>

Adopting the framework of Chomsky's (1995) Minimalist Program, let us consider how we might account for the ill-formedness of (5). At first glance, what is wrong with (5) appears to be a mismatch of tense features between T and *show*. Implementing this idea, however, is not as easy as it may seem initially. Consider first the possibility that the verb *show*, being infinitive, does not carry any tense feature. But then, it means that there is no tense feature of *show* to check against the tense feature [past] of T. Thus, there cannot be any mismatch of tense features between *show* and T. Meanwhile, the feature [past] of the verb *wrote* will be checked against the feature [past] of T. Then, there appears to be nothing in the structure of (5) that leads to a crash of the derivation.

Given the difficulty mentioned above, one might assume that *show* in (5) has a tense feature of [infi] (for “infinitive”). If so, the ill-formedness of (5) immediately follows: since T has [past], the feature [infi] of *show* cannot be checked off, and the derivation crashes. However, the assumption that infinitive verbs have the [infi] feature is problematic. Consider example (6) and its structure (7).

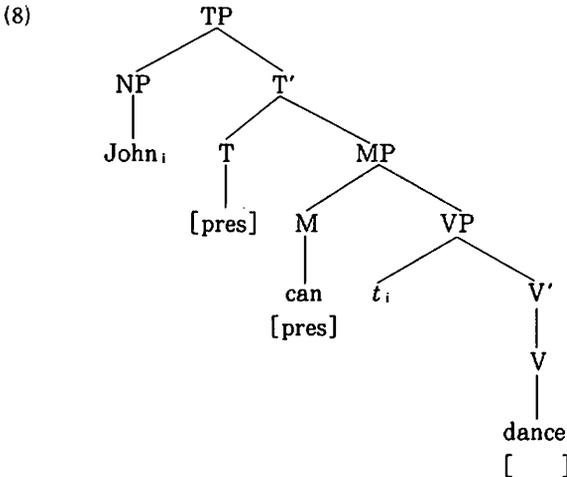
(6) John can dance.



I assume that modals in English head their own projection MP. Since a verb that comes after a modal must be in the infinitive form, modals like *can* must have the feature [infi] so that the same feature in the main verb can be checked off. At the same time, however, modals must also have their own tense feature, either [pres] (= present tense) or [past], which they must check against T. Note that verbs can never be both [infi] and [pres], or both

[infi] and [past]. These features are mutually exclusive. One could perhaps argue that modals are different in this respect. One might say that the feature [pres] of *can* in (7) is a “checker” feature (i.e. it raises to check), but the other feature [infi] is a “checked” feature (i.e. it gets checked by a feature raised from the lower V). Thus, there is no feature conflict between the two, one might argue.

However, the recognition of such a distinction among features of the same lexical item results in a complication of grammar, and should be avoided if there is an alternative analysis that would not require such a complication. In fact, there is a much simpler account of sentences like (6). Suppose that English verbs are associated with one of the three types of tense specifications: [pres], [past], or no tense feature at all. Then, it follows that English infinitive verbs do not have any tense feature. Given that, the structure for (6) would be as in (8).



Since *dance* does not have a tense feature, no feature checking is necessary between it and *can*. The only tense feature checking required in (8) is that between *can* and T, and this checking can take place without any problem. Thus, the well-formedness of (6) follows straightforwardly. If the verb in (8) were *danced*, with a [past] feature, then this feature would not be checked off, leading the derivation to crash. This accounts for the status of (9).

(9) \*John can danced.

What about cases like (10)?

(10) \*John can dances.

Here, the verb *dances* has a tense feature of [pres], along with  $\phi$  features that match with the subject *John*. The features relevant for our discussion are shown in (11).

(11) [John [ T [can [dances ]]]]  
           |     |     |  
           [pres] [pres] [pres]

Note first that the tense feature checking in English is a covert operation. Thus, all the [pres] features in (11) remain intact at the point of Spell-Out. In the covert component, T in (11) attracts the [pres] feature of *can*, but not the [pres] feature of *dances*, due to the Minimal Link Condition (12), where the notion “closer” is understood as in (13).

(12) K attracts  $\alpha$  only if there is no  $\beta$ ,  $\beta$  closer to K than  $\alpha$ , such that K attracts  $\beta$ . (Chomsky 1995: 311)

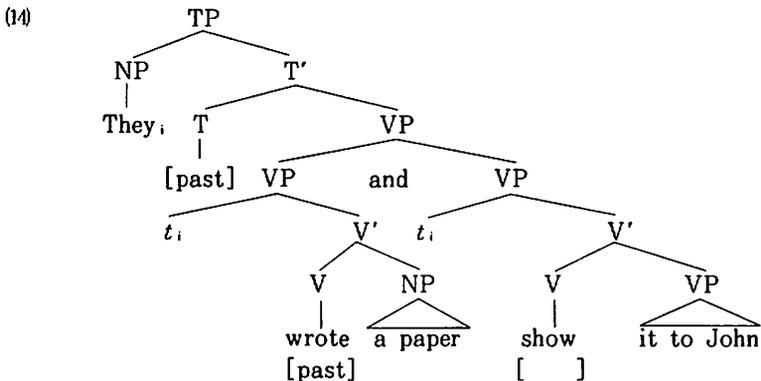
- (13) If  $\beta$  c-commands  $\alpha$  and  $\tau$  is the target of raising, then  $\beta$  is closer to K than  $\alpha$  unless  $\beta$  is in the same minimal domain as (a)  $\tau$  or (b)  $\alpha$ . (Chomsky 1995: 336)

Since the modal *can* in (11) c-commands the verb *dances*, the feature [pres] of T cannot “see” beyond the feature [pres] of *can*, in accordance with (12). Thus, the [pres] feature of *dances* cannot raise to T for feature checking, and the derivation crashes.

Thus, once we assume that English infinitive verbs do not have any tense features, certain properties of modal constructions can be explained straightforwardly, without recourse to the kind of complication that the other approach (the [infi] feature approach) has to resort to.

## 2.2. Coordinate structure constraint violations

With the foregoing discussion in mind, let us return to the question we raised at the outset of the previous section. The question was: Why does the structure in (6), repeated here as (14), not yield a convergent derivation?



To repeat, there appears to be nothing wrong with this structure, on the assumption that the infinitive *show* does not carry a tense feature. Given that this assumption is well-justified on independent grounds (as discussed in section 2.1), I would now like to suggest that indeed, there is something wrong with the structure in (14).

Note first that our initial analysis of (14) assumed that it is all right for one feature of a VP conjunct to move out of it, while no such movement takes place in the other VP conjunct. If such a movement were overt, and if the entity moved were a constituent instead of a feature, then this operation would certainly violate Ross's (1967) Coordinate Structure Constraint (CSC). I would like to argue that the CSC is also applicable to the feature movement involved in (14). Of course, this feature movement is covert, and we need independent evidence to show that covert movements in English are subject to the CSC.<sup>3</sup> The following examples suggest that, in fact, covert movement is subject to the CSC.

- (15) a. i. \*Who criticized [<sub>NP</sub> which boy and John] ?  
ii. For which person x, and for which boy y, did x criticize y and John?
- b. i. \*[<sub>NP</sub> Which boy and John] read what?  
ii. For which boy x, and for which thing y, did x and John read y?
- (16) a. i. Who criticized [<sub>NP</sub> which boy and which girl] ?  
ii. For which person x, for which boy y, and for which girl z, did x criticize y and z?
- b. i. [<sub>NP</sub> Which boy and which girl] read what?

- ii. For which boy *x*, for which girl *y*, and for which thing *z*, did *x* and *y* read *z*?

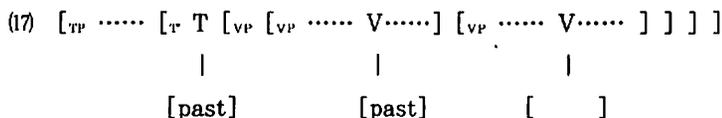
The asterisks in (15) indicate that (15ai) and (15bi) cannot have the interpretations expressed by the logical forms (15aii) and (15bii), respectively.<sup>4</sup> Adopting the standard assumption of the 1980s that all *wh*-phrases must be in [Spec, CP] at LF, the *wh*-phrase within the coordinated NP in (15ai) and (15bi) must move to the [Spec, CP] in LF. But this movement violates the CSC –if the CSC is applicable to covert movements as well–, because a conjunct NP is extracted out of a coordinated NP. If this covert movement were successful, then (15ai) and (15bi) should be able to be interpreted as in (15aii) and (15bii), respectively. The fact that they actually do not have such interpretation indicates that the CSC constrains covert movement, as well as overt movement.

Example (16ai), in contrast to (15ai), does allow the interpretation expressed by the logical form (16aii). Thus, it should be the case that both *wh*-phrases in the coordinated NP can move to [Spec, CP] in LF. The same remark applies to example (16bi), where the interpretation expressed in (16bii) is possible. (Cf. (15b).) This state of affairs is exactly what we expect. As is well-known, the CSC does not apply to across-the-board movements, which move parallel *wh*-phrases out of all conjuncts of a coordinate structure. In the case of (16ai), for example, the CSC will not be violated, since both of the conjunct *wh*-phrases move to [Spec, CP].

In our discussion of (15) and (16) so far, we assumed a standard framework of the pre-Minimalist Principles-and-Parameters theory. Let us now adopt the Minimalist framework. In the Minimalist Program, it is assumed that the operation Move seeks to raise only

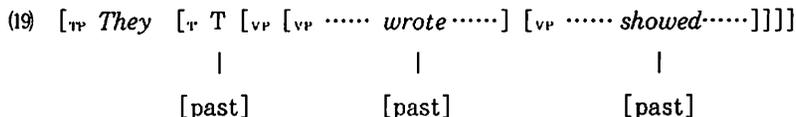
F, F a feature. Hence, the covert movement of *wh*-phrases we discussed above will be taken to be movement of a [wh] feature. Translating our discussion of (15)–(16), then, it must be the case that the CSC applies to covert feature movement.

Returning to the structure in (14), we now have an answer to the question of why (14) is illegitimate. Consider the schematized structure of (14) given in (17).



The [past] feature of the first V must raise covertly to adjoin to T for this structure to converge: otherwise, the uninterpretable formal feature [past] will remain, and the derivation will crash.<sup>5</sup> However, this feature movement will be barred by the CSC, due to the absence of tense feature on the second V. If the second V had the feature [past], then the derivation should converge, as a result of an across-the-board movement. This is indeed the case, as exemplified by the grammaticality of (18), with its associated structure (19).

(18) They wrote a paper and showed it to John (Cf. (4))



To sum up section 2, we conclude that infinitive verbs in English

do not carry any tense features. The ungrammaticality of example (4), repeated here as (20), is due to the impossibility of the [past] feature of *wrote* to raise to T for feature checking; the impossibility of this movement is due to the CSC.

(20) \*They wrote a paper, and show it to John.

### 3. Absence of Tense Feature Checking in Japanese

We now turn to Japanese and ask the opposite question: Why is the Japanese example (21) (= (3)) grammatical, whereas the English example (20) above is not?

(21) Karera-ga ronbun-o kaki, (sosite) John-ni sore-o mise-ta.  
they-Nom paper-Acc write and John-Dat it-Acc show-Past  
'They wrote a paper and showed it to John.'

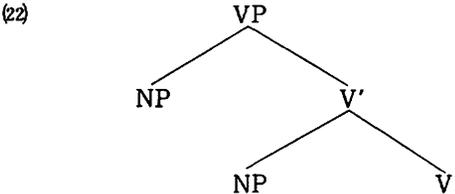
One way to account for (21) would be to assume that all Japanese verbs are tenseless when they are selected from the numeration. Then, it follows that there is no tense feature checking in Japanese. If so, it is not surprising at all that (21) is grammatical, in contrast to the English counterpart (20). Let us explore this possibility.

Following Chomsky (1995: 239), I will assume that tense features and  $\phi$  features of English verbs are chosen optionally as the item enters the numeration. For Japanese, I will assume that assignment of tense features to verbs, when they enter the numeration, does not take place, not even optionally.<sup>6</sup> Thus, Japanese verbs are tenseless in both the lexicon and the numeration. This contrasts with English

verbs that are tenseless in the lexicon, but tensed optionally in the numeration.

Semantically, it should not be a problem that Japanese verbs are tenseless when they are selected from the numeration. In examples like (21), we may assume that some rule of semantics utilizes the tense marker at the end of the sentence to determine the tense of all verbs in coordinated VPs.

But if verbs do not carry tense features, how can we guarantee that sentences necessarily have tense, with the notable exception of imperative sentences? Putting it another way, why can't Japanese non-imperative sentences have a structure such as (22), which lacks T?



For ease of exposition, I will use the word “sentence” to refer to “non-imperative sentence” for the rest of this section. Assuming that V in (22) does not have a tense feature, there is no formal reason for T to appear in the structure. But clearly, structures of the type (22) should be barred, since sentences cannot end with a verb root:

- (23) \*Mary-ga sono eiga-o mi.  
Mary-Nom that movie-Acc see

It seems plausible that the requirement that a sentence should

have tense is an interface condition. It may be that at the conceptual-intentional (C-I) interface, a sentence lacking a tense will violate the principle of Full Interpretation. A support for this view comes from the fact that clauses do not require the presence of tense; it is sentences that require the presence of tense. For example, consider:

(24) For [ you to talk to him ] would be a mistake.

(25) John-ga [terebi-o mi]-nagara benkyoosi-ta  
John-Nom TV-Acc watch-while study-Past  
'John studied while watching TV.'

In (24)–(25), the bracketed clauses do not have tense. The well-formedness of these clauses indicates that it is a mistake to require that verbs be always tensed; plainly, sometimes they are not. Nevertheless, we have to account for the fact that in order for them to stand alone, clauses need tense, as demonstrated by (26).

(26) a. \*You to talk to him / \*For you to talk to him. (Cf. (24))  
b. \*Terebi-o mi. (Cf. (25))  
TV-Acc watch

Notice that the requirement of tense within a sentence is observed in both English and Japanese. Thus, the problem we raised concerning the Japanese structure (22) is not a problem that is caused by our assumption that Japanese verbs are tenseless when they are selected for computation. Let us therefore assume that the requirement of the presence of tense for sentences is a C-I interface condition. We

then need not worry how the computational system guarantees that sentences have tense. There is nothing in the computational system per se that prohibits the derivation of a sentence without tense; but such a sentence violates the principle of Full Interpretation at the C-I interface, leading to its ungrammaticality.

Returning to example (21), repeated here as (27), our goal of this section was to account for the fact that, unlike English, only the last verb is tensed in Japanese VP coordination structures.

- (27) Karera-ga ronbun-o kaki, (sosite) John-ni sore-o mise-ta.  
they-Nom paper-Acc write and John-Dat it-Acc show-Past  
'They wrote a paper and showed it to John.'

My proposal is that tense features are not chosen when Japanese verbs enter the numeration. Hence, there cannot be checking of tense features in Japanese. It follows then that the effects of the CSC we witnessed in such English examples as (20) cannot possibly be observed in Japanese, since there is no tense feature movement in Japanese in the first place.

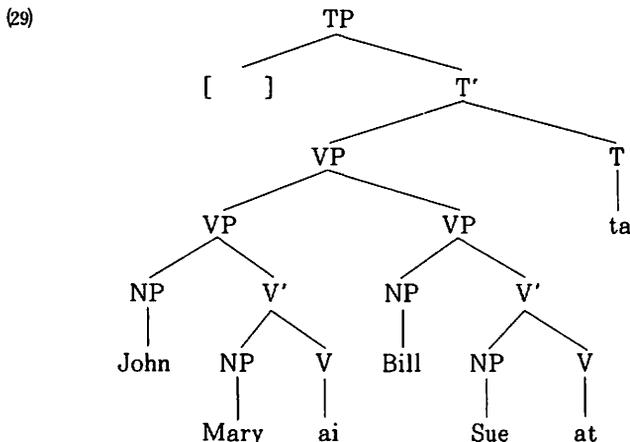
#### 4. Evidence that Japanese Subjects Can Remain Internal to VP

Finally, a remark is in order about the VP-internal subject hypothesis for Japanese. By now, the VP-internal subject hypothesis (or predicate-internal subject hypothesis) seems to be widely accepted. In this paper, too, we have assumed it for both English and Japanese, throughout. It is generally agreed that the VP-internal subject in English has to move to [Spec, IP] overtly in order to

check nominative Case. By contrast, Kuroda (1988) argued that the VP-internal subject in Japanese does not have to move to [Spec, IP]. Supporting Kuroda's claim, I will offer in this section a piece of evidence that at least in some sentences, subjects in Japanese must reside within VP. Consider (28).

- (28) John-ga Mary-ni ai, Bill-ga Sue-ni at-ta.  
 John-Nom Mary-Dat see Bill-Nom Sue-Dat see-Past  
 'John saw Mary, and Bill saw Sue.'

Assuming that subjects remain VP-internal in Japanese, the structure underlying (28) would be (29).



Note that the subjects of the VP conjuncts are distinct. If these subjects overtly move to [Spec, TP], we get (30).<sup>7</sup>

(30) John, Bill-ga Mary-ni ai, Sue-ni at-ta.

Comparing (28) and (30), we can conclude that across-the-board movement of *John* and *Bill* to [Spec, TP] does not take place in the derivation of (28).

Note also that the first verb in (28) is tenseless. Thus, it cannot be the case that what is involved in (28) is TP coordination rather than VP coordination. If TP coordination were a possible underlying structure for (28), we would not know whether or not VP-internal subjects have moved to [Spec, TP]. In the case of (28), however, the tenselessness of the first verb clearly indicates that the conjoined phrases are VPs. Since overt movement of the VP-internal subjects in (29) would result in the string in (30) contrary to the actual word order observed in (28), it must be the case that the subjects in (28) reside in their original [Spec, VP] positions as in (29).<sup>8</sup>

## 5. Summary

To recapitulate, our main concern in this paper was to give a principled explanation for why English and Japanese differ in regard to verb forms in coordinated VPs in such sentences as (1a) and (1b), repeated here as (31a) and (31b).

(31) a. Neko-ga nezumi-o mituke, oikake, tukamae-ta. (Japanese)  
cat-Nom mouse-Acc find chase catch-Past  
'A cat found a mouse, chased (it), and caught (it).'

b. A cat found a mouse, chased it, and caught it. (English)

The answer we gave is that the difference stems from whether or not tense features are chosen (optionally) when verbs enter the numeration. In the case of Japanese, they are not chosen. In the case of English, they are chosen optionally. Since Japanese verbs do not carry any tense features, there is no feature checking between verbs and tense markers, either. This explains why the first and second verb in (31a) is tenseless.

At least one tense marker must be present in Japanese and English non-imperative sentences, and we proposed that this requirement is not a requirement of the computational system, but rather, is imposed by the conceptual-intentional interface. In the case of English, most verbs do carry tense features by the time they get selected for computation. If one of the verbs of a VP coordinate structure is tenseless while the other verbs in the same VP coordinate structure are tensed, then the derivation crashes. We have identified the source of this crash to be Coordinate Structure Constraint violations. By examining modal constructions, we have also determined that English infinitive verbs do not have any tense features, including the putative feature [infi]. Finally, in the last section, we saw evidence that Japanese VP-internal subjects may remain in situ, in contrast to English VP-internal subjects.

### Notes

\*I would like to thank Gaylene Levesque for proofreading this paper. I am also grateful to Randy Hendrick for his help with the English examples (15)–(16).

<sup>1</sup>A comment on the morphological status of *kaki* is in order. The root form of the morpheme meaning 'write' is *kak-*. Thus, a question

arises concerning the status of the final *i* in *kaki*. I assume here that *i* has no morphological function, and it is added to the root *kak* by a general phonological rule in Japanese, whose phonology prohibits a word-final consonant (except when the consonant is /N/). Traditionally, *i* in such forms as *kaki* has been treated as an inflectional ending. (See Shibatani (1990: §10.3) for an overview of various proposals to that effect.) If we adopt the traditional view, however, we have to say that this inflectional ending is absent in *mituke*, *oikake*, and *tukamae* in (1). These forms are verb roots, and unlike *kak*, the ending *i* does not attach to them. This discrepancy is puzzling under the traditional view, but not so under the analysis proposed here: *i*-insertion takes place only when a verb root ends in a consonant, as in *kak*; since verb roots like *mituke* end in a vowel, *i*-insertion does not apply. In any event, what is crucial for the analysis to follow is that *kaki* is tenseless, which is uncontroversial.

<sup>2</sup>I also assume that the second VP conjunct in (5) involves a Larsonian VP shell, as is widely assumed for verbs that take more than one internal arguments. Since the exact structural details of the VP-shell are irrelevant for our discussion, I use a simplified representation here.

<sup>3</sup>Though it is generally assumed that Subjacency does not apply in LF, we cannot infer from it that the CSC is not applicable in LF, either. After all, the CSC is not among the constraints that have been subsumed by Subjacency.

<sup>4</sup>Both (15ai) and (15bi) are acceptable as an echo question, but this reading is irrelevant for our discussion.

<sup>5</sup>I am assuming here that the tense features [pres] and [past] attached to verbs are uninterpretable formal features, whereas the same features attached to the functional head T are interpretable features.

<sup>6</sup>I put aside the question of whether  $\phi$  features are optionally assigned to Japanese verbs by the time they enter the numeration.

<sup>7</sup>This movement will not violate the CSC, since it is an across-the-board operation.

<sup>8</sup>The possibility that only the first subject in  $\emptyset\emptyset$  is in [Spec, TP] is excluded, due to the CSC.

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