Japanese Postverbal Constructions Revisited

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Abstract

There are two types of possible approaches to the derivation of Japanese Postverbal Constructions (JPVCs): (i) movement and (ii) base-generation. Certain base-generation analyses can account for properties of JPVCs that movement analyses fail to, such as split antecedency. These properties are explained by interface conditions and a licensing condition for adjoined elements, on the basis of the claim that postverbal elements are adjoined to preceding phrases by *external Merge*.

1 Introduction

Japanese is classified as a verb-final language. In colloquial speech, however, optional non-verbal elements can appear in the sentence-final position. This phenomenon, which I call Japanese Post-verbal Constructions (JPVCs), is shown in (1).[1]

(1) a. *Kinoo   keiki-o   tabe-masita, **Taro-ga**.*
     yesterday cake-ACC ate   Taro-NOM
     'Taro ate cake yesterday.'
   b. *Taro-ga   keiki-o   tabe-masita, **kinoo**.*
     Taro-NOM cake-ACC ate   yesterday

Taro-ga 'Taro-NOM' in (1a) and ***kinoo*** 'yesterday' in (1b), which appear postverbally, are here called postverbal elements (PVEs).[2]

There are two types of possible approaches to the derivation of JPVCs: (i) movement and (ii) base-generation. Movement analyses can be further classified into two types: (i-a) rightward movement and (i-b) leftward movement. The purpose of this paper is to argue against movement approaches.

The present paper is organized as follows. In section 2, I point out empirical problems with the arguments by Simon (1989) and Tanaka (2001): Simon (1989) claims that the JPVC is derived by rightward movement, and in Tanaka (2001) the derivation of the JPVC is purported to involve the operation of deletion after leftward movement. In section 3, I argue that PVEs are adjoined to phrases via *external Merge*, and that properties that movement analyses explain poorly can be accounted for by independently motivated principles, including interface conditions. Section 4 concludes the paper.

2 Previous Studies

In this section, I will first discuss a rightward movement analysis proposed by Simon (1989).[3] Then, I will take up Tanaka (2001) as an example of leftward movement analyses.[4] I will argue that neither movement analysis is tenable, pointing out several empirical problems with them.

2.1 A Rightward Movement Analysis

In the framework of government and binding theory, Simon (1989) claims that the JPVC is generated by rightward movement, and proposes that the PVE is moved rightward from a preverbal position and right-adjoined to a clause, as schematized in (2), where a trace of the PVE is indicated by *t*:

(2) [CP [CP ……..t_i………] **PVE**$_i$]

The JPVC does not display the Right Roof Constraint (RRC) effect, as shown below:[5]

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[1] The abbreviations I use in glossing the data are as follows: ACC=accusative, COMP=complementizer, FP=sentence-final particle, NOM=nominative, Q=question particle, TOP=topic.
[2] (Latent) postverbal elements are henceforth indicated by boldface.
[3] Kaiser (1999) and Takano (2014) also take rightward movement approaches. In the former, the JPVC is functionally analyzed, and in the latter, it is analyzed more phonologically and a crucial discussion is based on some data that seem to be very subtle. For these reasons, in 2.1 I focus on Simon (1989), who analyzes the JPVC more syntactically.
[4] Leftward movement analyses are also defended by Endo (1996), Whitman (2000), Abe (2004), Kurogi (2006), Watanuki (2006) and Takita (2011). Therefore, all of them face some similar problems concerning movement approaches.
[5] The RRC states that an element cannot move rightward out of the clause in which it is contained. (Ross, 1986)

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(3) [$_{CP}$ t_i *Hanako-o   aisiteiru koto*]-*ga hontoo*
        Hanako-ACC love   that -NOM true
    desu, Taro$_i$-ga.
    is   Taro-NOM
    'That Taro loves Hanako is true.'

Simon (1989: 104) therefore claims that as shown in (4), "an element first adjoins to the S'[=CP] from which it originates, then to the next higher S'[=CP], and so on, until it reaches the highest S'[=CP] and adjoins to its right" (successive cyclic movement), assuming that the RRC is not active in Japanese.

(4) [$_{CP1}$ [$_{CP1}$ *Ken wa okusan ni* [$_{CP2}$ [$_{CP2}$ [$_{CP3}$ [$_{CP3}$ t_i
        Ken-TOP wife to
    yame-yoo to] t_i]   *omotte-ru tte*] t_i]
    (he) quit-will that (he) is-thinking that
    itta no yo] *kaisha$_i$-o*.
    said FP company-ACC
    'Ken told his wife that (he)'s thinking that (he)'ll quit his company.' (Simon, 1989: 102)

Because of just stipulating that the PVE should successive-cyclically move to the root, however, Simon (1989) fails to explain in a principled way why the PVE cannot stay in an embedded clause (i.e., a root phenomenon), as shown in (5):[6]

(5) *[$_{CP}$ *John-ga* t_i *tabe-ta* *susi$_i$–o*   *koto*] -*wa*
        John-NOM eat-PAST sushi-ACC COMP-TOP
    hontoo desu.
    true   is
    'That John ate sushi is true.'

   Moreover, every movement analysis fails to cope with examples like the one in (6). [7] There, the

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[6] At first glance, (i) seems to be an exception:
(i) [$_{NP}$ [*Dress kat-ta   Ginza-de*, *tte yuu*] *uwasa*]-*o   ki-ita*.
        Dress bought Ginza-at Prt say rumor-ACC heard
 '(I) heard the rumor that someone bought a dress on the
 Ginza.'   Adapted from (Whitman, 2000: 465)
However, the underlined part in (i) should be regarded as direct speech, because *tte yuu* 'particle say' is usually used to quote what someone has said. (cf. Seraku, 2015)
[7] Another type of problematic example, shown in (i), is fully acceptable:
(i) [$_{NP}$ [$_{CP}$ *Sonkeisiteiru*] *gakuseitati*]-*ga   fueteimasu yo*,
        respect   students -NOM increase FP
    Tanaka sensei-o.
    Tanaka teacher-ACC
    'The number of the students who respect Mr. Tanaka is increasing.'   Kamada (2013a: 459)

PVE concurrently modifies *ringo* 'apple' and *mikan* 'orange', and the pronoun *karera* 'they' can refer to *Taro* and *Ken* (i.e., the so-called split antecedent phenomenon). If movement were involved in the derivation, no source structure for (6) would exist.

(6) *Taro-wa ringo-o,   Ken-wa mikan-o,*
    Taro-TOP apple-ACC Ken-TOP orange- ACC
    *tabe-masita, **kinoo   karera-ga katta**.*
    ate   yesterday they-NOM bought
    'Taro ate an apple and Ken ate an orange, which they bought yesterday.'

2.2 Leftward Movement Analyses

2.2.1 A Biclausal + Deletion Analysis

Tanaka (2001) assumes, following Kuno (1978), that the JPVC should be derived from two separate clauses that have no hierarchical relation, as schematized in (7).[8]

(7) [$_{CP1}$ …(*pro*)…… ….], [$_{CP2}$ …………..]

According to Tanaka (2001: 558-560), the first clause CP1 may or may not contain an empty pronoun *pro* as in (7), and in the second clause CP2, a "PVE" is left-adjoined to IP by scrambling in overt syntax as shown in (8a), which is the S-structure representation. Tanaka (2001) proposes further that the IP to which the PVE adjoins in the second clause is deleted under a certain identity condition, as diagrammed in (8b) with elided material indicated by strikeout:

(8) a. [$_{CP2}$ [$_{IP}$ **PVE**$_i$ [$_{IP}$..........t_i…..……]]]

   b. [$_{CP2}$ [$_{IP}$ **PVE**$_i$ [~~$_{IP}$…………t_i………~~]]]

Under movement analyses, the PVE in (i) is purported to be extracted out of the object position within the relative clause, thereby violating the so-called complex NP constraint. For a discussion on the presence or absence of island effects observed in JPVCs, see Kamada (2009, 2013a,b), where the island effect is accounted for in terms of language processing (cf. Hagiwara & Soshi, 2004).
[8] Under a base-generation analysis, Kuno (1978) proposes that the JPVC is derived from two clauses by the ellipsis of relevant elements in each clause under an "identity condition." However, the ellipsis analysis has a critical flaw in the language processing in that the parser fails to recover the deleted "PVE" in the first clause before encountering the PVE. The same flaw is found in Takita (2011).

According to this analysis, the example in (9) is derived in the way illustrated in (10):

(9) *Kinoo   Ken-ga   kai-masita, **kuruma-o**.*
    yesterday Ken-NOM bought   car   -ACC
    'Ken bought a car yesterday.'

(10) a. [IP kinoo Ken-ga *pro* kai-masita],
         [IP kinoo Ken-ga **kuruma-o** kai-masita]
     b. kinoo Ken-ga *pro* kai-masita,
        kuruma$_i$-o [IP kinoo Ken-ga t$_i$ kai-masita].
     c. kinoo Ken-ga *pro* kai-masita,
        kuruma$_i$-o [IP ~~kinoo Ken-ga t$_i$ kai-masita~~]

The example in (9) has an underlying structure as given in (10a), where an empty pronoun *pro* appears in the first clause and the PVE ***kuruma-o*** 'car-ACC' is base-generated in a canonical position in the second clause. Then, ***kuruma-o*** undergoes scrambling, and is left-adjoined to the IP in the second clause as illustrated in (10b). Finally, as shown in (10c), the remnant IP in the second clause is deleted.

Since the PVE undergoes leftward movement, it is possible to account for the absence of the RRC effect. Furthermore, Tanaka (2001) accounts for the root phenomenon by assuming that subordinate clauses cannot be repeated for certain pragmatic reasons:

(11) a. *[[*John-ga susi-o   tabeta, John-ga*
         John- NOM sushi-ACC ate,   John- NOM
         susi-o tabe-ta] *koto*]-*wa hontoo desu.*
         sushi-ACC ate COMP TOP true   is
         'That John ate sushi is true.'
     b. *[[*John-ga pro   tabeta, John-ga*
         John- NOM sushi-ACC ate,   John- NOM
         susi-o tabe-ta] *koto*]-*wa hontoo desu.*
         sushi-ACC ate COMP TOP true   is

Tanaka (2001) claims that (11b), which is supposed to be a source structure for (5), is ill-formed for the same reason as (11a) and that the example in (5) is hence impossible.

2.2.2 Problems with Tanaka (2001)

In this subsection, I will present three kinds of empirical problems encountered in Tanaka (2001). The first problem comes from the fact that adjuncts can appear postverbally, but they cannot undergo leftward movement (i.e., scrambling).

(12) *Ken-ga   ie-o   kai-masita, **sugoku ookii**.*
     Ken-NOM house-ACC bought   very   large
     'Ken bought a very large house.'

(13) ***Sugoku ookii**, Ken-ga ie-o   kai-masita.*
     Very   large Ken-NOM house-ACC bought
     'Ken bought a very large house.'

(14) *Ken-ga kai-masita, **ie-o**,   **sugoku ookii**.*
     Ken-NOM   bought house-ACC very   large
     cf. *Ken-ga   (**sugoku ookii) kai-masi-ta, **ie-o**.*
     Ken-NOM   very   large bought house-ACC

(15) a. *Ken-ga   (**sugoku ookii**) **ie-o**   kai-masita.*
        Ken-NOM very large   house-ACC bought
     b. *(**Sugoku ookii**) **ie-o** Ken-ga   kai-masita.*
        very large   Ken-NOM house-ACC bought
     c. *Ken-ga   ie-o   (**sugoku ookii**) kai-masita.*
        Ken-NOM house-ACC very large bought
     d. ***Ie-o**,   (**sugoku ookii**,) Ken-ga kai-masita.*
        House-ACC very large   Ken-NOM bought

Tanaka (2001) would claim that the examples in (12) and (14) are derived from sources that contain the relevant PVEs undergoing leftward movement, as in (13) and (15d).

Although examples like the one in (12) are not discussed at all in Tanaka (2001), it can be assumed that nonarguments should be scrambled such that (12) can be derived. In (13), therefore, ***sugoku ookii*** 'very large' moves leftward from a position inside the noun phrase *ie* 'house'. This movement, however, violates the Left Branch Condition (LBC), which states that an element is inhibited from moving out of the specifier position of DP/NP. That is, it is impossible to derive (13), which is a supposed source for (12). Therefore, there is no way for Tanaka's (2001) analysis to produce the acceptable example in (12).[9]

Next, let us turn to (14), where the adjunct follows the head noun. As shown in (15c, d), however, adjuncts are inhibited from following their head nouns when both the adjuncts and their heads appear preverbally. If the second clause in the source for (14) were (15d), (14) would be predicted to be unacceptable, which is not the case.

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[9] An example like (12) would also challenge Simon (1989) unless the LBC is purported to be inactive in Japanese in the case of rightward movement.

Thus, as with the example in (12), (14) challenges Tanaka's (2001) analysis as well.[10]

Another problematic example is the one in (6), of which the second clause in the source might be (16):

(16) ***Kinoo   karera-ga katta,** *Taro-wa*
yesterday they-NOM bought Taro-TOP
ringo-o,   Ken-wa   mikan-o, tabe-masita.
apple-ACC Ken-TOP orange-ACC ate

As with (13), the relative clause is not allowed to undergo scrambling. Besides this, the underlying structure for (16) is not clear in the first place. Therefore, Tanaka (2001) cannot cope with (6).

The second problem concerns pronominal coreference.

(17) a. *Taro$_i$-no oji-ga   homemasita,* ***kare$_i$-o***.
Taro-GEN uncle-NOM praised him
'Taro's uncle praised him.'
b.*Kare$_i$-o, Taro$_i$-no oji-ga t$_i$ homemasita.*
him   Taro-GEN uncle-NOM praised
'Him, Taro's uncle praised.'

In (17a), *Taro* and *kare* 'he' can be coreferential, whereas in (17b) they cannot. Tanaka (2001) would claim that the structure corresponding to the second clause in the source for (17a) should be (17b), where *kare-o* is left-adjoined to IP by scrambling. Thus, Tanaka (2001) incorrectly predicts that *Taro* cannot be an antecedent of ***kare*** in (17a).

The third problem is related to scope ambiguity.[11]

(18) a. *Dareka-ga   subete-no-hon-o yomi-masita.*
someone-NOM all book-ACC   read
'Someone read all books.'
someone >> all, *all >> someone
b. *Subete-no-hon-o yomi-masita,* ***dareka-ga***.
all   book-ACC read   someone-NOM
someone >> all, ?all >> someone

In (18a), *dareka* 'someone' takes scope over *subete-no hon* 'all books', but not vice versa. By contrast, in (18b), either ***dareka*** or *subete-no-hon* may take scope over the other, although ***dareka*** preferentially takes scope over *subeteno-hon*. Since (18a) roughly corresponds to the second clause in the source, (18b) is incorrectly predicted to be unambiguous.

It may be worth noting in passing that Tanaka (2001) does not describe how to license scrambled elements, namely PVEs.

3   A Base-Generation Analysis

In the previous section, I pointed out empirical problems with movement analyses. I claim that the derivation of the JPVC involves no movement, thereby accounting for some properties peculiar to the JPVC, including the absence of the RRC effect, the split antecedent phenomenon, and scope ambiguity. In this section, I propose that PVEs are adjoined to phrases via *external Merge* (see, e.g., Chomsky, 2005), creating adjunction structures, as schematized below in (19).[12,13]

(19)

Here, I adopt the Licensing Condition (LC) originally proposed by Kamada (2015: 230), given in a slightly modified form in (20).

(20) The Licensing Condition for adjoined phrases (where X = any syntactic category):
A phrase α adjoined to XP is licensed only if α is associated with an element β such that
(i) α c-commands β, and

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[10] Based on Merchant (2004), Watanuki (2006) claims that deletion of traces of scrambled phrases within remnant IPs makes ungrammatical extraction possible (island repair). The example in (14), however, remains to be accounted for, as the adjunct is still not allowed to follow the head noun even after the deletion of the remnant part as long as the underlying structure is biclausal (i.e., CP1 is independent of CP2).
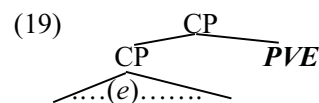
[11] X >> Y indicates that X takes scope over Y.

[12] Following Saito and Fukui (1998), I assume that order is introduced in Narrow Syntax (NS), although the Minimalist Program has assumed that there is no order in NS except for adjuncts (see Chomsky, 2004: 117ff.).

[13] Non-referential NPs (e.g., idiom chunks) can appear in a postverbal position. Hence, *pro* is inappropriate as a null argument (pace Tanaka, 2001). Accordingly, I follow Xu (1986) in proposing that the null argument *e* is underspecified, being an empty category that has no inherently specified features such as [+pronominal]. Under (21), the value of a null argument may be determined (for a discussion of functional determination of empty categories, see e.g., Chomsky, 1981, 1982; Xu, 1986; Pesetsky and Torrego, 2004; Adger and Ramchand, 2005).

(ii) α is non-distinct from β in terms of agreement-features.[14],[15]

Furthermore, Kamada (2015: 230) proposes the Interpretive Rules (IRs) in (21).

(21) Interpretive Rules for adjoined phrases
Suppose that a phrase α is adjoined to XP (where X = any syntactic category) and is associated with an element β; then,
(i) α is construed as an element sharing properties with β [16] only if
  a. α is an NP or a CP, and
  b. α is non-distinct from β in terms of semantic features and semantic types.[17]
(ii) α is construed as a potential modifier of β only if α cannot be construed as an element sharing properties with β.

To show how the LC and the IRs apply to JPVCs, let us consider the examples in (1). In (1a), *Taro-ga* 'Taro-NOM' is adjoined to CP by *external Merge*, thereby c-commanding the null argument *e*. *Taro-ga* is non-distinct from *e* in terms of agreement features. Being associated with *e*, *Taro-ga* is licensed.[18] Furthermore, according to the IRs in (21), *Taro-ga* is construed as an argument of the verb *tabe* 'eat' because *Taro* and *e* are non-distinct in terms of semantic features and types. (1a) is thus acceptable. Even if *Taro-ga* were intended to correspond to *keiki-o* 'cake-ACC', for example, *Taro-ga* would not be associated with *keiki-o* (i.e., not licensed) because they have different Case features. By contrast, in the case where *Taro-ga* is intended to be connected with the verb *tabe*, *Taro-ga* is associated with the verb, which is non-distinct from *Taro-ga* in terms of agreement

features, and hence *Taro-ga* is licensed. (21ii) in the IRs is applicable in this case, and thus *Taro-ga* is construed as a potential modifier of the verb. In Japanese, however, NPs are not allowed to modify verbs or verb phrases. It is therefore impossible to interpret *Taro-ga* as modifying the verb.

The example in (1b) does not contain *e*. The PVE *kinoo* 'yesterday' is licensed because it c-commands the VP without disagreement in terms of agreement features. (21ii) in the IRs allows the PVE to be construed as a modifier of the VP. Hence, (1b) is acceptable.

3.1 A Solution to the Problems with Movement Analyses

The base-generation of the PVE makes the RRC effect disappear. In this subsection, I consider another phenomenon that movement analyses cope with poorly. Let us first return to (12).

(12) *Ken-ga   ie-o   kai-masita, sugoku ookii*.
   Ken-NOM house-ACC bought   very   large
   'Ken bought a very large house.'

In (12), *sugoku ookii* 'very large' c-commands *ie-o* 'house-ACC', and they are non-distinct in terms of agreement features. Hence, the PVE is licensed. According to the IRs in (21), the PVE can be construed as a potential modifier of *ie-o* because *sugoku ookii* and *ie-o* are not non-distinct in terms of semantic features and semantic types.

Let us next re-consider (14), repeated below with a slight modification.

(14) *Ken-ga e kai-masita, ie-o,   sugoku ookii*.
   Ken-NOM bought   house-ACC very   large

Assume that the structure for multiple PVEs is schematized in (22), where the PVE is adjoined to CP by repeated *external Merge*.

(22)

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                    CP
                CP        PVE
            CP      PVE
        …..(e)…..
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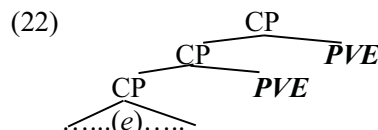
Based on (22), in (14), *ie-o* 'house-ACC' is licensed because it c-commands *e* and they are non-distinct in terms of agreement features. As with (1a), *ie-o* is construed as an argument of the verb *kau* 'buy'. As for *sugoku ookii* 'very large', it

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[14] "Node A c-commands node B if neither A nor B dominates the other and the first branching node which dominates A dominates B." (Reinhart, 1976: 32)

[15] Agreement features include φ-features, Case features and honorific features.

[16] "α and β share properties including theta-roles (if any), referentiality, and semantic features/types unless semantic conflicts occur." (Kamada, 2015: 230n)

[17] "Concerning semantic types, if α is an NP, its semantic type may be <e> or < <e, t> t>, and if α is a CP, its semantic type may be <t> or <e, t>." (*ibid.*)

[18] In Kamada (2009), I propose that, in Japanese, Case features are interpretable (i.e., visible at the interfaces) only if they are morphologically realized as case particles such as *-ga* and *-o* in the phonological component. "Legibility conditions" (Chomsky, 2001) can thus be met.

c-commands *ie-o*, and they are non-distinct in terms of agreement features. Thus, **sugoku ookii** is licensed. **Sugoku ookii** is neither an NP nor a CP, but an AP, and can hence be construed as modifying *ie* 'house'. (14) is therefore correctly predicted to be acceptable.

The LC in (20) and the IRs in (21) can also apply in the example in (6) where the PVE has split antecedents.[19] If the PVE in (6) merges with the topmost clause, thereby c-commanding both *ringo* 'apple' and *mikan* 'orange', it is licensed. Accordingly, the PVE can be construed as modifying *ringo* and *mikan* (see footnote 17). Concerning the coreferentiality of the pronoun *karera* 'they' with *Taro* and *Ken*, it is natural in Japanese that antecedents precede their pronoun.

Let us return to the example in (17a), reproduced as (23), where *e* is inserted.

(23) *Taro$_i$-no oji-ga e$_i$ home-masita, **kare$_i$-o***.
     Taro-GEN uncle-NOM praised   him
     'Taro's uncle praised him.'

Recall that in (17a), *Taro* and *kare* 'he' can be coreferential. In (23), the PVE c-commands the null argument *e*, thereby being licensed. According to (21), the PVE is construed as an element sharing properties with *e* because they are non-distinct in terms of semantic features and semantic types.

(24) *Taro$_i$-no oji-ga   kare$_i$-o home-masita.*
     Taro-GEN uncle-NOM him   praised

Just as *Taro* can be co-indexed with the overt pronoun *kare* in (24), so too can *Taro* be co-indexed with *e* in (23). There, the PVE **kare** can hence be interpreted as an element co-indexed with *Taro* (i.e., *i = j*). Note that since the PVE (i.e., **kare-o**) in (23) occupies an A-bar position, no violation of the Binding Principle (C) occurs.

Next, let us turn to the scope ambiguity in (18b), reproduced as (25).

(25) *Subete-no-hon-o   yomi-masita, **dareka-ga***.
     all   book-ACC read   someone-NOM
     someone >> all, ?all >> someone

Recall that as mentioned earlier, in (25), **dareka** 'someone' preferentially takes scope over *subeteno-hon* 'all books' but either **dareka** or *subete-no-hon* may take scope over the other. Before discussing this point, based on Aoun and Li (1993: 204) and Abe (2004: 57) (cf. Kural, 1997: 504), I propose a scope assignment rule in (26) to capture the fact that scrambling changes quantifier scope interpretation, as shown in (27).

(26) Scope Assignment Rule
     QP$_1$ (quantifier phrase) may take scope over QP$_2$ only if (a) QP$_1$ c-commands QP$_2$ or (b) QP$_1$ c-commands the element co-indexed with QP$_2$.[20]

(27) *Subete-no-hon$_i$-o   dareka-ga t$_i$ yomi-masita.*
     all   book-ACC someone-NOM   read
     someone >> all, all >> someone

In (27), the object is scrambled leftward to the initial position of the clause, and a scope ambiguity emerges. This ambiguity can be explained by the scope assignment rule in (26): *subete-no hon* 'all books' c-commands *dareka* 'someone', and hence the former takes scope over the latter in accordance with (26a); *dareka* c-commands the element co-indexed with *subete-no hon*, namely the trace of *subete-no hon*, and *dareka* can hence take wide scope in accordance with (26b).

Furthermore, the absence of ambiguity in (18a) also comes from the rule in (26). In (18a), **dareka** c-commands *subete-no hon*, whereas *subete-no hon* cannot c-command **dareka**. Thus, **dareka** takes scope over *subete-no hon*, but not vice versa.

With this in mind, let us return to the example in (25), assuming that the structure for (25) is (25').[21] The object *subete-no hon-o* 'all books-ACC' may undergo scrambling because nothing prohibits the

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[19] The coordinate structure in (i) illustrates that the PVE may be associated with more than one null argument if **susi-o** 'sushi-ACC' c-commands the two null arguments:
(i) *Taro-ga e tsukuri Ken-ga e   tabe-masita, **susi-o***.
    Taro-NOM make (and) Ken-NOM ate   sushi-ACC
    'Taro made and Ken ate sushi.'
It may be interesting to point out that in (i), the sushi that Ken ate should be the one Taro made, but in (ii), the sushi that Ken ate is not necessarily the one Taro made.
(ii) *Taro-ga susi-o   tsukuri, Ken-ga susi-o tabe-masita.*
    Taro-NOM sushi-ACC make (and) Ken-NOM sushi-ACC ate
    'Taro made sushi and Ken ate sushi.'

[20] The element co-indexed with QP$_2$ may or may not be the trace of QP$_2$ (see Aoun and Li, 1993; Abe, 2004).
[21] As will be seen in 3.2, it is assumed that the verb is attached to the light verb, and then the complex *v* is adjoined to T at the interfaces.

object from being analyzed as a scrambled element unless syntactic principles are violated. [22]

The structure in (25') is compatible with the fact that (25) is scopally ambiguous: in (25'), the PVE c-commands the scrambled object *subete-no hon*, and the scrambled NP c-commands the null argument *e* that is co-indexed with the PVE via the IRs, which leads to the scope ambiguity in (25).

(25')
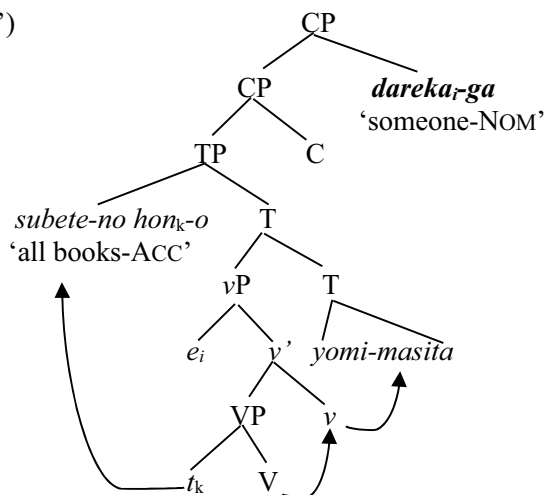
3.2 Interface Conditions

The proposed analysis thus far does not prohibit the PVE from adjoining to any projection via *external Merge* unless such adjunction is incompatible with bare phrase structure. As the examples in (28a, b) show, however, the PVE is not allowed to adjoin to *v*P or to TP. Before addressing this problem, I will discuss the head movement in detail.

(28) a. [*v*P adjunction] Impossible
  *[$_{vP}$[$_{vP}$ *Ken-ga e tabe*] ***susi-o***] *-masita ka.*
    Ken-NOM eat sushi-ACC -PAST Q
  'Did Ken eat sushi?'
 b. [TP adjunction] Impossible
  *[$_{TP}$ [$_{vP}$ *Ken-ga e tabe*]*-masita*] ***susi-o*** *ka.*
    Ken-NOM eat - PAST sushi-ACC Q
 c. [CP adjunction] Possible
  [$_{CP}$ [$_{TP}$[$_{vP}$ *Ken-ga e tabe*]*-masita*] *ka*] ***susi-o***

Ken-NOM eat- PAST Q sushi-ACC

Let us first suppose that there are morphological restrictions on functional heads such as T. Based on the basic idea advanced in Stowell (1995: 278), I propose a condition on Tense as formulated in (29), which states that Tense must be amalgamated with the Verb at the interfaces. In other words, Tense can be given a proper interpretation only if Tense and the Verb amalgamate.

(29) The Output Condition on T (= Tense): [23]
  T (= Tense) must be amalgamated with V at the interfaces—i.e., PHON and SEM.
                (cf. Sakai, 2002: 5)

The amalgamation of T with V is realized on the assumption that V moves to T, as given in (30).

(30) V moves to T (= Tense)   (Chomsky, 1986)

It is possible that complementizers in Japanese (e.g., *-ka, -to, -no, -koto*) may be regarded as bound morphemes just like the past tense morpheme *-masita* and morphological case particles such as *-ga*, because they cannot stand by themselves (cf. Whitman, 2000: 465). I therefore propose the following output condition on complementizers formulated in such a way that complementizers can be given a proper interpretation at the interfaces.

(31) The Output Condition on COMP in Japanese
  A complementizer (COMP) that is phonetically non-null must be amalgamated with V adjoined to T at the interfaces.

Following van Riemsdijk (1998), I also adopt the Head Adjacency Principle as given in (32).

(32) The Head Adjacency Principle (HAP)[24]
  A transformation process that affects two head positions must be Head Adjunction.

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[22] It is assumed that in Japanese, if necessary, nominative Case checking should be done in the specifier of *v*P without movement to the specifier of TP (see footnote 18, cf. Fukui, 1995; Kuroda, 1992). That is, a subject does not move to the specifier position of TP unless T has an EPP feature (cf. Miyagawa, 2001).

[23] PHON and SEM are interface levels; the former comprises phonetic forms accessed by sensorimotor systems and the latter comprises semantic forms accessed by conceptual-intentional systems.

[24] The complete definition of HAP given in van Riemsdijk (1998: 645) adds Head Substitution: "a head is moved into head position which is phonetically empty but which may contain Φ-features, thereby unifying the two morphosyntactic feature matrices."

Head Adjunction: Two phonetically identified [=realized] heads are joined, yielding an adjunction structure, in which case the two heads must be strictly linearly adjacent at the moment of application of the rule.
Adapted from (van Riemsdijk, 1998: 644-645)

Let us now return to the question of the syntactic position of the PVE. As shown above in (28), the PVE is not allowed to adjoin to *v*P or to TP.

In (28a), ***susi-o*** 'sushi-ACC' is adjoined to *v*P by *external Merge* as diagrammed in (33a), where the PVE intervenes between the verb *tabe* 'eat' and the past morpheme *-masita*. The verb cannot move to T because the HAP is not observed, and hence a violation of the output condition in (29) occurs.

In (28b), the PVE is adjoined to TP by *external Merge* as illustrated in (33b). There, the question particle *ka* is merged with TP, but the past tense morpheme amalgamated with the verb cannot move to the particle *-ka* because the PVE intervenes between them, and hence the output condition in (31) is violated.

(33) a. [TP[*v*P[*v*P *Ken-ga e tabe*] ***susi-o***]*-masita*] *ka*.

    b. [TP[*v*P *Ken-ga e tabe*]*-masita*] ***susi-o** ka*.

    c. [CP [TP[*v*P *Ken-ga e tabe*]*-masita*] *ka*] ***susi-o***

In (28c), the PVE is adjoined to CP by *external Merge* as given in (33c). The verb can move to T, and subsequently to C, because there are no elements intervening between the verb, T, and C. Thus, the interface conditions in (29) and (31) are satisfied, and the example is acceptable unless other principles are violated. Therefore, the system assumed here can account for why the PVE can never adjoin to *v*P or to TP.

It is worth noting in passing that if the verb moves to T and C before the PVE is adjoined to *v*P or TP (see e.g., Koizumi, 2000 for a discussion of head movement in Narrow Syntax), the above argument would be untenable. However, it remains possible to explain why the PVE can adjoin neither to *v*P nor to TP, if one follows Chomsky (1995) in adopting a condition on *external Merge* called the Extension Condition, as formulated in (34):

(34) Extension Condition (EC):
    External Merge always applies at the root only.
        Adapted from (Chomsky, 1995: 248)

The EC successfully excludes the possibility that the PVE adjoins to *v*P or TP after verb movement takes place. That is, if the verb moves to T and the PVE is subsequently adjoined to *v*P by *external Merge*, then the EC is violated because the *v*P at which *Merge* applied is no longer a root. The same is true in the case of TP-adjunction: the TP at which *Merge* could apply is not a root after it is merged with the C to which the verb moves. Therefore, whether or not verb movement takes place in Narrow Syntax, it is possible to rule out the adjunction of the PVE to *v*P and to TP.

3.3 A Root Phenomenon

PVEs cannot appear within subordinate clauses, as observed in (5), reproduced below with a slight modification.

(5) *[CP *John-ga e tabe-ta **susi−o** koto*] *-wa*
    John-NOM eat-PAST sushi-ACC COMP-TOP
    hontoo desu.
    true   is

The Output Condition in (31) requires that *koto* 'COMP' should be amalgamated with the complex T *tabe-ta* 'eat-PAST'. This amalgamation, however, is impossible due to the presence of ***susi-o*** between the two relevant elements. Hence, (5) violates (31). This is why the JPVC is restricted to a root clause.

4 Conclusion

In this paper, I demonstrated that properties specific to JPVCs such as a root phenomenon and split antecedency, which are poorly dealt with by movement analyses, receive a better account in terms of the LC, the IRs, and the interface conditions, claiming that the PVE is adjoined to preceding phrases via *external Merge*.

Acknowledgments

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