語彙の意味と文法

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On the Variety of Movements to the *v*P Edge*

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1. Introduction

Movement to the *v*P edge has been examined in many contexts, including successive-cyclic operator movement (Chomsky 2000, Legate 2003), Romance participle agreement (Kayne 1989, Déprez 1998, Belletti 2005), Germanic object shift (Collins and Thráinsson 1993, Vikner 2005), and local scrambling (Tada 1993, Nemoto 1993). The purpose of this paper is to contribute to this discussion by comparing three types of movements in Japanese; movement to subject position, scrambling, and operator movement.

We assume that movement to the *v*P edge is A′-movement when triggered by a P(eriphery) -feature (Chomsky 2000) and is A-movement when the attractor is an EPP-feature (Chomsky 2001). In the course of the discussion, we confirm Tada's (1993) hypothesis that there is a third possibility for this kind of movement, i.e., scrambling without any driving feature. The first main conclusion of the paper is that *v* always has an inherent EPP-feature just like T. The EPP requirement of *v* is satisfied by the external argument when the verb is transitive or unergative, and by successive-cyclic movement of the object through the *v*P edge when the verb is passive or unaccusative. The second conclusion has to do with the assignment of a P- or EPP-feature to a phase head to accommodate successive-cyclic movement. We argue that *v* can be assigned a P-feature or an additional EPP-feature for this purpose. But we suggest at the same time that this option is limited to languages without scrambling. This amounts to saying that there is a parameter with respect to intermediate steps of movement: a language employs scrambling if it is an available option, and resorts to the assignment of a P- or EPP-feature if it is not.

In the following section, we examine Japanese sentences with complex predicates and argue that *v* is always equipped with an inherent EPP-feature. Then in Section 3, we present further evidence that a passive/unaccusative *v* has an EPP-feature, based on Legate's (2003) discussion on binding reconstruction and Déprez's (1998) analysis of French participle agreement. In Section 4, we examine the intermediate steps of operator movement and scrambling in Japanese, and show that they have the properties of scrambling, and not of P- or EPP-triggered movement. Based on this, we argue that free assignment of a P- or EPP-feature does not obtain in the language. Section 5 concludes the paper.

2. A-movement and Subjecthood

In this section, we argue that two distinct kinds of A-movement to the *v*P edge are observed in Japanese. One is scrambling and the other is triggered by the inherent EPP-feature of *v*. In Section 2.1, we briefly go over the binding properties of scrambled phrases. Then, in Section 2.2, we examine sentences with complex predicates and show that a passive/unaccusative *v* has an inherent EPP-feature that triggers movement of the object to its Spec position.[1]

2.1. A-properties of Scrambling

It has been known since Mahajan (1990) that clause-internal scrambling exhibits A-properties. Thus, (1b-c) are grammatical in sharp contrast with (1a).[2]

(1) a. ?*Masao-ga [otagai-no sensei -ni] karera-o syookaisi-ta (koto)
-NOM e. o. -GEN teacher-DAT they -ACC introduce-Past fact
'Masao introduced them to each other's teachers'

b. Masao-ga karera-o$_i$ [otagai-no sensei -ni] t_i syookaisi-ta (koto)
-NOM they -ACC e. o. -GEN teacher-DAT introduce-Past fact

c. Karera-o$_i$ Masao-ga [otagai-no sensei -ni] t_i syookaisi-ta (koto)
they -ACC -NOM e. o. -GEN teacher-DAT introduce-Past fact

(1a) is ungrammatical as the anaphor *otagai* 'each other' is not bound by its antecedent *karera* 'they'. Scrambling of the antecedent across the indirect object makes the sentence perfect, as shown in (1b). This indicates that the

scrambled phrase is in an A-position. In (1c), the antecedent is scrambled to the sentence-initial position through the *v*P edge. The grammaticality of this example is expected if scrambling to the *v*P edge can be A-movement.

Scrambling also exhibits A-properties when the landing site is the edge of TP. For example, (2b) contrasts with (2a).

(2) a. ?*[Otagai-no sensei -ga] Masao-ni karera-o syookaisi-ta (koto)
e. o. -GEN teacher-NOM -DAT they -ACC introduce-Past fact
'*Lit.* Each other's teachers introduced them to Masao'

b. Karera-o$_i$ [otagai-no sensei -ga] Masao-ni t_i syookaisi-ta (koto)
they -ACC e. o. -GEN teacher-NOM -DAT introduce-Past fact

(2a), like (1a), is ungrammatical because *otagai* 'each other' is not bound. In (2b), the antecedent moves to the edge of TP through *v*P, but binds the anaphor only at the final landing site. Thus, (2b) shows that clause-internal scrambling to the TP edge can also be A-movement.

The A-properties do not obtain with long scrambling across CP, as shown in (3).

(3) a. *[Otagai-no sensei -ga] Masao-ni [$_{CP}$ Hanako-ga karera-o
e. o. -GEN teacher-NOM -DAT -NOM they -ACC
hihansi -ta to] it -ta (koto)
criticize-Past that say-Past fact
'Lit. Each other's teachers told Masao that Hanako criticized them'

b. *Karera-o$_i$ [otagai-no sensei -ga] Masao-ni [$_{CP}$ Hanako-ga t_i
they -ACC e. o. -GEN teacher-NOM -DAT -NOM
hihansi -ta to] it -ta (koto)
criticize-Past that say-Past fact

(3a) is ungrammatical for the same reason as (1a) and (2a). In (3b), *karera* 'they' is scrambled out of the embedded CP to a position that c-commands *otagai* 'each other'. Yet, no improvement is observed. Hence, it is widely assumed that only clause-internal scrambling can be A-movement, as illustrated in (4).

(4) [$_{TP}$ ..... [$_{vP}$ ..... [$_{CP}$ ..... [$_{TP}$ ..... [$_{vP}$ .... DP ....]]]]]
A A A

With this background, we examine movements to subject positions and

compare them with A-scrambling in the following subsection. We start the section with the discussion on the proper definition of subject position.

2.2. Subjects of Complex Predicates

The Japanese reflexive pronoun *zibun* 'self' is known to be subject-oriented, and its interpretation is often used as a diagnostic for the subjecthood of an argument. In (5a), for example, *Hanako*, but not *Masao*, can be the antecedent of *zibun* and it is considered the subject of the sentence.

(5) a. Hanako-ga Masao-o zibun-no heya-de sikat-ta (koto)
-NOM -ACC self -GEN room-in scold-Past fact
'Hanako scolded Masao in her room'

b. Masao-ga$_i$ zibun-no heya-de t_i sikar-are-ta (koto)
-NOM self -GEN room-in scold-Pass-Past fact
'Masao was scolded in his room'

c. Masao-ga$_i$ zibun-no niwa -de t_i ana -ni oti-ta (koto)
-NOM self -GEN garden-in hole-into fall-Past fact
'Masao fell into a hole in his garden'

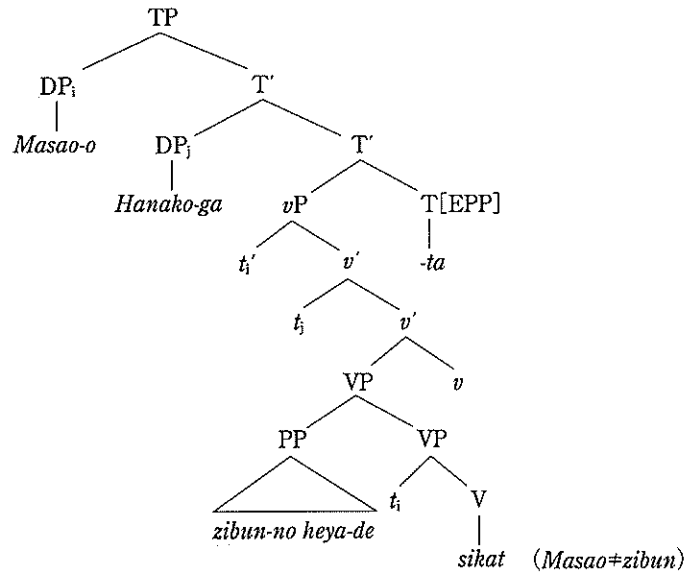
(5b-c) show that what qualifies as the antecedent of *zibun* is the surface subject. In both of these examples, *Masao* moves from the object position to TP Spec and consequently obtains subject status.

Given the discussion above, it is tempting to define 'subject' in the relevant sense as a DP in TP Spec. However, this simple definition does not suffice when scrambling is taken into consideration. As we saw above, clause-internal scrambling to the edge of TP can be A-movement. Then, it is reasonable to suppose that its landing site is the outer Spec of TP. Yet, a scrambled object does not qualify as the antecedent of *zibun*, as shown in (6).

(6) Masao-o$_i$ Hanako-ga zibun-no heya-de t_i sikat-ta (koto)
-ACC -NOM self -GEN room-in scold-Past fact
'Hanako scolded Masao in her room'

The structure of the example is as in (7).

(7)



As only the inner Spec of TP qualifies as a subject position, it seems that 'subject' should be defined as the phrase that checks the EPP-feature of T.

Further interesting complications arise when sentences with complex predicates are considered. (8a) and (8b) are examples of causative and indirect (adversity) passive, respectively.

(8) a. Hanako-wa Masao-o zibun-no heya-de benkyoos-ase-ta
-TOP -ACC self -GEN room-in study -let -Past
'Hanako let Masao study in her/his room'

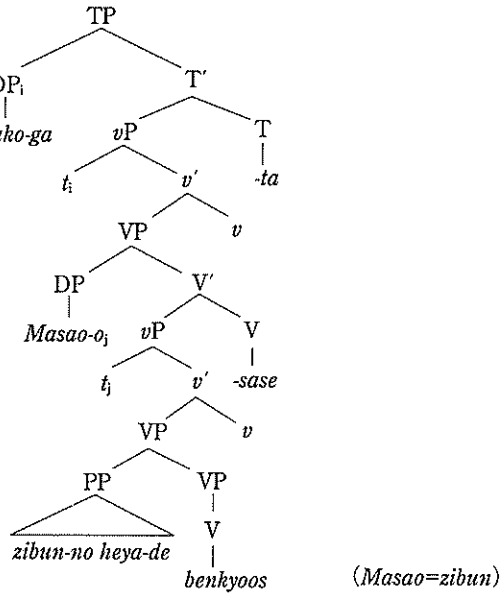
b. Masao-wa Hanako-ni (heyazyuu -ni) zibun-no
-TOP -by all-over-the-room-in self -GEN
yoohuku-o baramak-are -ta
clothes -ACC scatter -Pass-Past
'Masao was affected by Hanako scattering his/her clothes (all over the room)'

Both *Hanako* and *Masao* can be the antecedent of *zibun* in these examples. In particular, the causee *Masao* in (8a) and the agent *Hanako* in (8b) exhibit subject properties. Hence, it has been assumed since Kuroda (1965) and Kuno (1973) that the causative -*(s)ase* and the indirect passive -*(r)are* are main

verbs taking sentential complements. The causee in (8a) and the agent in (8b) are then subjects of the embedded clauses.

However, the embedded clauses in these examples clearly lack tense and are most plausibly analyzed as *v*P. The structure of (8a), for example, is then as in (9).[3]

(9)



(*Masao=zibun*)

Masao, in this example, is the internal argument of *-(s)ase* 'cause' as well as the external argument of *benkyoos* 'study'. It is by virtue of being in the embedded *v*P Spec position that it qualifies as a subject. It is necessary then to consider *v*P Spec as a subject position.

The examples in (10) represent even more interesting cases.

(10) a. Sono isya -wa Masao-o zibun-no ie -de sin-ase-te simat-ta
that doctor-TOP -ACC self -GEN house-in die-let have -Past
'The doctor has let Masao die in her (the doctor's)/his house'

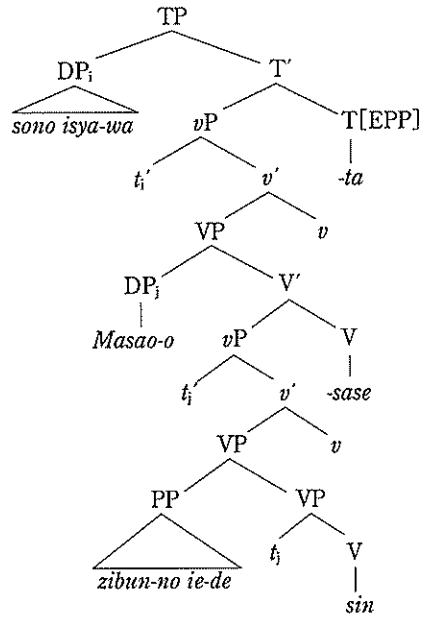
b. Masao-wa dai-sensei -o zibun-no gakusei-tati-ni-yotte
-TOP big-teacher-ACC self -GEN student-PL -by
suuhais-are -sase-te oi -ta
worship-Pass-let keep-Past
'Masao kept letting the big professor be worshipped by his/her (the professor's) students'

c. Sono isya -wa Hanako-ni zibun-no heya -de sin-are-te simat-ta
that doctor-TOP -by self -GEN room-at die-Pass have -Past
'The doctor has been affected by Hanako's death in his (the doctor's)/her room'

Embedded under the causative *-(s)ase* 'cause' is the unaccusative *sin* 'die' in (10a), and the passive *suuhais-are* 'be worshipped' in (10b). In both cases, the causee as well as the causer can be the antecedent of *zibun*. In (10c), the unaccusative *sin* 'die' is embedded under the indirect passive *-(r)are*. Here too, *Hanako* as well as the matrix subject (affectee) qualify as the antecedent of *zibun*.

Let us consider the rough structure of (10a), shown in (11), to see the implications of these examples.[4]

(11)



(*Masao=zibun*)

Masao in this example is an internal argument of the causative *-(s)ase* as well as of the unaccusative *sin* 'die', but it can be the antecedent of *zibun*. The only way for it to obtain subject status seems to be by moving through the embedded *v*P Spec, as illustrated in (11).

The discussion so far on the subjecthood of *v*P Spec raises two questions. First, scrambling through the *v*P edge does not make the scrambled phrase a

subject. A relevant example (6) is repeated below as (12).

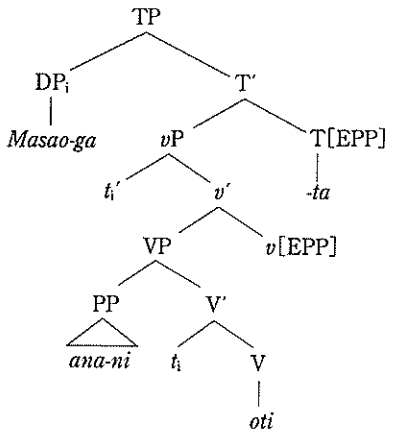
(12) Masao-o$_i$ Hanako-ga zibun-no heya-de t_i sikat-ta (koto)
-ACC -NOM self -GEN room-in scold-Past fact
'Hanako scolded Masao in her room'

In this example, *Masao* moves through the *v*P edge to the sentence-initial position, as was shown in (7), but is not a possible antecedent for *zibun*. Then, what distinguishes the movements through *v*P Spec in (11) and (12)? Secondly, if the movement to *v*P Spec in (11) is not scrambling, what triggers this movement? A proposal that answers both of these questions is that *v* is equipped with an inherent EPP-feature.

We started the discussion in this section with a tentative definition of 'subject' as a phrase that satisfies the EPP requirement of T. Let us generalize this and define 'subject' as a phrase that checks an EPP-feature. If *v* is always equipped with an EPP-feature, *Masao* in (11) must move through the *v*P edge to check it. Consequently, it obtains subject status and becomes a possible antecedent for *zibun*. The proposal here implies that the surface subjects of passive and unaccusative sentences always move through the *v*P edge to satisfy the EPP requirement of *v*. The derivation of the unaccusative sentence (13a) is illustrated in (13b).

(13) a. Masao-ga ana -ni oti -ta
-NOM hole-in fall-Past
'Masao fell into a hole'

b.



We assume that when the verb is transitive or unergative, the external argument that is merged directly at *v*P Spec checks the EPP-feature of *v*, and thus qualifies as a subject. This explains the fact that *Masao* is a possible antecedent for *zibun* in (9). Finally, scrambling does not create new subjects because by hypothesis it is not feature-driven and has nothing to do with the EPP. It follows then that *Masao* does not qualify as the antecedent of *zibun* in (7) despite the fact that it moves to the edge of *v*P and then to the edge of TP. Thus, the complex interpretive pattern of *zibun*, discussed in this section, follows from the following proposals we made so far:

(14) a. *v* has an inherent EPP-feature, just like T.
b. 'Subject' (possible antecedent of *zibun*) is defined as a phrase that checks an EPP-feature.

3. Further Evidence for the EPP-feature of *v*

One of the main proposals of the preceding section was that *v* has an inherent EPP-feature. This hypothesis receives support from parallel examples in English as well. Let us consider the small clause complements in (15).

(15) a. I saw [John steal books from the shop]
b. I saw [books$_i$ stolen t_i from the shop]
c. I saw [books$_i$ fall t_i off the shelves]

Just like the complements of the causative *-(s)ase* and the indirect passive *-(r)are* in Japanese, the small clause complement of the perception verb *see* in English lacks tense and is arguably a *v*P. When the small clause contains a passive verb as in (15b), or an unaccusative verb as in (15c), the internal argument moves to the left of the verb. This is expected if *v* has an EPP-feature and the internal argument moves to *v*P Spec to check this feature.

We examine further related data in this section. In Section 3.1, we discuss Legate's (2003) argument that passive and unaccusative *v*Ps constitute strong phases, and show that it is consistent with our proposal that *v* has an inherent EPP-feature. Then, in Section 3.2, we consider some facts of French participle agreement, discussed in Déprez 1998, and argue that they provide further evidence for our proposal.

3.1. Legate 2003 on Binding Reconstructions

One of Legate's arguments is based on facts of binding reconstructions. Let us first consider (16a-b) from Fox (1998).[5]

(16) a. [Which of the papers that he$_i$ gave Mary$_j$] did every student$_i$ ask her$_j$ to read *t* carefully

b. * [Which of the papers that he$_i$ gave Mary$_j$] did she$_j$ ask every student$_i$ to revise *t*

In the LF representations of these examples, the bound pronoun *he* must be within the scope of the quantified noun phrase *every student*. At the same time, *Mary* cannot be bound by the coindexed pronoun *her/she* for otherwise the examples are ruled out by Condition (C) of the Binding theory. Suppose, as seems reasonable, that reconstruction is possible only to the initial position or to the intermediate landing sites. Then, (16a) can satisfy both requirements simultaneously by reconstruction to the position 4, i.e., the edge of the matrix *v*P. On the other hand, there is no appropriate reconstruction site in the case of (16b) and the example is correctly ruled out. Fox (1998) presents this as evidence that *v*P as well as CP constitute strong phases and movement indeed proceeds through the edge of *v*P.

Adopting the same line of argument, Legate (2003) presents examples such as (17a), where the matrix verb is passive.

(17) a. [At which of the parties that he$_i$ invited Mary$_j$ to] was every man$_i$ introduced to her$_j$ *t*

b. * [At which of the parties that he$_i$ invited Mary$_j$ to] was she$_j$ introduced to every man$_i$ *t*

(17b) is ungrammatical because there is no possible reconstruction site that allows *every man* to bind *he* and at the same time avoids the binding of *Mary* by *she*. On the other hand, there must be a reconstruction site that satisfies these requirements in the case of (17a) as the example is grammatical. The only candidate is the position 2, which indicates that the Wh-movement has proceeded through the *v*P edge. Since the verb is passive, Legate concludes that a passive *v* projects a strong phase just like a transitive/unergative *v*, contrary to the prevailing view.

Legate (2003) reaches the same conclusion for an unaccusative *v* based on the examples in (18).

(18) a. Every organizer's$_i$ embarrassment escaped the invited speaker$_j$ at the conference where he$_i$ mispronounced her$_j$ name

b. * Every organizer's$_i$ embarrassment escaped her$_j$ at the conference where he$_i$ mispronounced the invited speaker's$_j$ name

c. [At which conference where he$_i$ mispronounced the invited speaker's$_j$ name] did every organizer's$_i$ embarrassment escape her$_j$ *t*

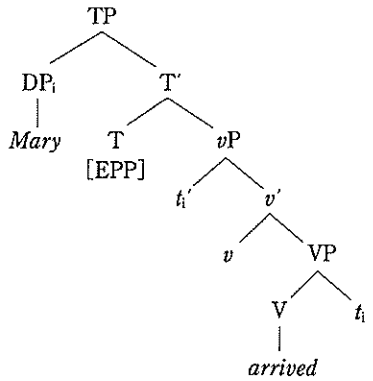
(18a) shows the basic grammatical relations that are intended in the subsequent examples. (18b), where the positions of *the invited speaker* and the coreferential pronoun *her* are exchanged, shows that the object *her* binds into the locative PP headed by *at* because it is a Condition (C) violation. The locative PP is moved to CP Spec by Wh-movement in (18c), making the example grammatical. If the Wh-phrase stays in CP Spec in LF, *every organizer* fails to bind the pronoun *he*. Hence, reconstruction is necessary for this example. It cannot be reconstructed to the initial site 1 because that would cause a Condition (C) violation just like (18b). Thus, the intermediate landing site 2 is the only possible position for reconstruction. Legate, assuming that *escape* is unaccusative, concludes that an unaccusative *v* also projects a strong phase, forcing Wh-movement to proceed through its edge.

Legate (2003) considers the reconstruction properties of A′-movement. But given her conclusion that a passive/unaccusative *v* projects a strong phase, a

simple NP-movement as in (19a) must also proceed through the *v*P edge, as illustrated in (19b).

(19) a. Marry$_i$ arrived t_i

b.



And in this case, the feature that triggers the initial movement to *v*P Spec must be EPP. If a P-feature attracts the DP to *v*P Spec, the movement would be A′-movement. But then, the next step to TP Spec would be improper as A-movement follows A′-movement. Hence, NP-movement in unaccusative sentences takes place successive-cyclically by EPP-features on *v* and T. This is consistent with the discussion in the preceding section and in particular, with our proposal that *v* always has an inherent EPP-feature.

3.2. A Brief Discussion on French Participle Agreement

Another phenomenon that closely relates to the present discussion is French participle agreement, examined by Kayne (1989), Déprez (1998), and Belletti (2005), among others.[6] Participle agreement is absent when there is no movement, as shown (20a).

(20) a. *J'ai prises les photos
I have taken the pictures

b. Je les$_i$ ai prises t_i
I them have taken

c. les photos$_i$ que tu as prises t_i
the pictures that you have taken

However, it is allowed when the object undergoes movement. (20b) illustrates the case of clitic movement and (20c) operator movement. Kayne, for example, has proposed that the movement of the object to the *v*P edge makes the agreement possible.[7]

We assume, following Déprez (1998), that A-movement to the *v*P edge triggers agreement but A′-movement does not. Then, the presence/absence of agreement correlates with whether the EPP- or P-feature is assigned to *v* to make the intermediate movement possible. Let us consider (21) for illustration of this analysis.

(21) Combien de fautes$_i$ a-t-elle fait(es) t_i
how many of mistakes has she made

As indicated, agreement is optional. If an EPP-feature is assigned to *v* for successive-cyclic movement, the movement to the *v*P edge is A-movement and agreement takes place as in (22a).

(22) a. [$_{CP}$ DP$_i$ C [$_{TP}$ ... [$_{vP}$ t_i′ *v* [$_{VP}$ V-agr t_i]]]]
[P] [EPP]
A′ A

b. [$_{CP}$ DP$_i$ C [$_{TP}$ ... [$_{vP}$ t_i′ *v* [$_{VP}$ V t_i]]]]
[P] [P]
A′ A′

On the other hand, if a P-feature is assigned to *v* as in (22b), the movement is A′-movement and there is no agreement.

This analysis is consistent with the fact that only the initial step of operator movement can trigger agreement. When an operator is extracted out of an embedded CP, agreement does not obtain in the matrix clause. The following examples from Branigan (1992) illustrate this generalization:

(23) a. la lettre qu'il a écrite
the letter that he has written (FEM/SG)

b. *la lettre qu'il a dite que Claire lui a
the letter that he has said (FEM/SG) that him has
envoyée
sent

Since the operator undergoes A′-movement to the embedded CP Spec, the assignment of an EPP-feature to the matrix *v* results in improper movement, as shown in (24).

(24) *... [$_{vP}$ Op$_i$ *v* [$_{CP}$ t_i″ C [$_{vP}$ t_i′ ...]]]

[EPP] [P]

A A′

Hence, a P-feature must be assigned to the matrix *v* and the movement should be A′-movement.

So far, we have captured the optionality of participle agreement by appealing to the two features, EPP and P, that can be assigned to *v* for successive-cyclic movement. However, as noted in Déprez (1998), participle agreement is not always optional. In particular, passive obligatorily triggers agreement as shown in (25).

(25) Ces photos$_i$ seront pris*(es) t_i avec un flash
these pictures will be taken (FEM/PL) with a flash

This is surprising if a passive *v* does not project a strong phase and has no EPP-feature. The movement in (25), then, need not proceed through the *v*P edge at all. On the other hand, the obligatory agreement in (25) is exactly what we expect, given the hypothesis that a passive/unaccusative *v* has an inherent EPP-feature. The movement in (25) proceeds as in (26).

(26) [$_{TP}$ DP$_i$ T [$_{vP}$ t_i′ *v* [$_{VP}$ V t_i]]]

[EPP] [EPP]

A A

The object DP undergoes A-movement to the *v*P edge in order to satisfy the EPP-requirement of *v*. Then, participle agreement should take place with passive.[8]

4. The Third Way to the *v*P Edge: Scrambling

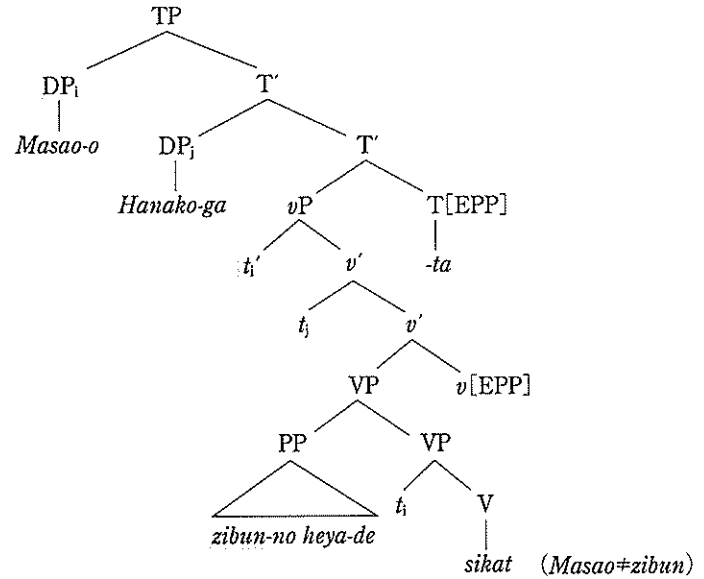
We argued in the preceding sections that *v* has an inherent EPP-feature just like T. We have assumed in the course of the discussion that a P-feature or an additional EPP-feature can be assigned to *v* in order to accommodate intermediate steps of movement. A P-feature triggers A′-movement while an

EPP-feature triggers A-movement. In this section, we argue that this assignment of features to *v* is an option in English and French, but not in Japanese. We first demonstrate that an EPP-feature cannot be used for the initial step of scrambling, and then, show that the P-feature is unavailable for the intermediate steps of operator movement. We suggest that operator movement in Japanese utilizes scrambling up to the final step.

Let us consider again the example of scrambling in (6), repeated below in (27a) together with its structure in (27b).

(27) a. Masao-o$_i$ Hanako-ga zibun-no heya-de t_i sikat-ta (koto)
-ACC -NOM self -GEN room-in scold-Past fact
'Hanako scolded Masao in her room'

b.



As discussed in Section 2, the scrambled object *Masao* is not a possible antecedent for *zibun*, which indicates that it is not a subject. The analysis entertained there was that it is not a subject because it does not check an EPP-feature. The external argument *Hanako* checks the EPP-feature of *v* when it is merged at its θ-position, and then checks the EPP-feature of T when it is raised to TP Spec. *Masao*, on the other hand, moves to the outer Spec of *v*P and then to the sentence-initial position by non-feature-driven scrambling. It never

checks an EPP-feature and consequently, does not qualify as a subject.

This analysis presupposes that an EPP-feature cannot be freely assigned to *v* in Japanese. If an additional EPP-feature can be assigned to *v* in (27b) and this EPP-feature can trigger the first step of the scrambling, then the scrambled object should be a possible antecedent of *zibun*, contrary to the fact. Hence, if this analysis is correct, Japanese does not allow the assignment of an EPP-feature to accommodate intermediate steps of movement.

There is evidence that the assignment of a P-feature to *v* is also impossible in Japanese, but the argument is slightly more involved. Let us first examine the properties of scrambling to the *v*P edge more closely before we present the argument. As we saw in Section 2, this type of short scrambling can be A-movement. The relevant examples in (1) are repeated in (28).

(28) a. ?*Masao-ga [otagai-no sensei -ni] karera-o syookaisi-ta (koto)
-NOM e. o. -GEN teacher-DAT they -ACC introduce-Past fact
'Masao introduced them to each other's teachers'

b. Masao-ga karera-o$_i$ [otagai-no sensei -ni] t_i syookaisi-ta (koto)
-NOM they -ACC e. o. -GEN teacher-DAT introduce-Past fact

c. Karera-o$_i$ Masao-ga [otagai-no sensei -ni] t_i syookaisi-ta (koto)
they -ACC -NOM e. o. -GEN teacher-DAT introduce-Past fact

In (28c), for example, the scrambled object *karera* 'they' first moves to the *v*P edge and then to the sentence-initial position. The initial step cannot be triggered by an EPP-feature and must be scrambling, as we just saw. As the moved object can A-bind the anaphor *otagai* 'each other' from the landing site, this scrambling must be A-movement.

However, a stronger conclusion is drawn for this type of scrambling in Mahajan (1990) and Tada (1993): this type of scrambling not only can be but must be A-movement.[9] The crucial evidence for this claim is shown in (29).

(29) a. Masao-ga [Taroo-to Hanako]-ni otagai-o suisensi -ta
-NOM -and -DAT e. o. -ACC recommend-Past
(koto)
fact
'Masao recommended Taroo and Hanako to each other'

b. * Masao-ga otagai-o$_i$ [Taroo-to Hanako]-ni t_i suisensi -ta
-NOM e. o. -ACC -and -DAT recommend-Past
(koto)
fact

c. * Otagai-o$_i$ Masao-ga [Taroo-to Hanako]-ni t_i suisensi -ta
e. o. -ACC -NOM -and -DAT recommend-Past
(koto)
fact

(29a) is grammatical as *Taroo-to Hanako* 'Taroo and Hanako' A-binds *otagai* 'each other'. (29b-c) show that the scrambling of the anaphor across its antecedent is illicit whether the final landing site follows or precedes the subject.

This paradigm contrasts with the pattern exhibited by scrambling across the subject, shown in (30).

(30) a. Karera-o$_i$ [otagai-no sensei]-ga Masao-ni t_i suisensi -ta
they -ACC e. o. -GEN teacher-NOM -DAT recommend-Past
(koto)
fact
'Lit. Each other's teachers recommended them to Masao'

b. Otagai-o$_i$ [Taroo-to Hanako]-ga Masao-ni t_i suisensi -ta
e. o. -ACC -and -NOM -DAT recommend-Past
(koto)
fact
'Each other, Taroo and Hanako recommended to Masao'

(30a), like (2b), indicates that scrambling to the TP edge can be A-movement, as the preposed object A-binds the anaphor contained within the subject. The grammaticality of (30b), on the other hand, shows that this type of scrambling can also be A′-movement. If the scrambled object is in an A-position, the example should be ruled out by Condition (C) of the Binding theory.

Given this, let us return to (29c) and consider its structure more closely. The movement in this example proceeds as in (31).

(31) [$_{TP}$ ..... [$_{vP}$ ... DP ...]]
2 1

We have just seen, based on (30b), that scrambling to the edge of TP can be A′-movement. This should hold for Step 2 in (31) as well. If Step 1 can also be A′-movement, then (29c) should be grammatical exactly like (30b). Hence, the ungrammaticality of (29c) indicates that scrambling to the *v*P edge is always A-movement. The example, then, is correctly ruled out by Condition (C) of the Binding theory. Mahajan (1990) and Tada (1993) conclude that scrambling exhibits the following A/A′-properties:[10]

(32) [TP ..... [vP ..... [CP ..... [TP ..... [vP .... DP ....]]]]]

A′ A′ A′ A′/A A

With this discussion on scrambling in mind, let us now examine how operator movement takes place in Japanese. Here, we use examples of the cleft construction, which is known since Hoji (1990) and Murasugi (1991) to involve operator movement as in (33b).

(33) a. [Taroo-to Hanako]-wa Masao-ni dare-o suisensi -ta ka
-and -TOP -DAT who-ACC recommend-Past Q
'Who did Taroo and Hanako recommend to Masao'

b. [CP Opi [TP [Taroo-to Hanako]-ga Masao-ni t_i suisensi -ta]
-and -NOM -DAT recommend-Past
no]-wa otagai-oi desu
that-TOP e. o. -ACC is
'It is each other that Taroo and Hanako recommended to Masao'

(33a) sets up the context for (33b). In (33b), the anaphor *otagai* 'each other' is focused and takes *Taroo-to Hanako* 'Taroo and Hanako' as its antecedent through reconstruction. The crucial example for our discussion is (34b), which differs only slightly from (33b).

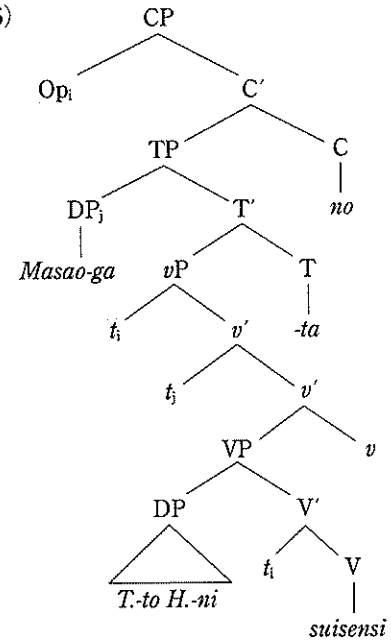
(34) a. Masao-wa [Taroo-to Hanako]-ni dare-o suisensi -ta ka
-TOP -and -DAT who-ACC recommend-Past Q
'Who did Masao recommend to Taroo and Hanako'

b.?*[CP Opi [TP Masao-ga [Taroo-to Hanako]-ni t_i suisensi -ta]
-NOM -and -DAT recommend-Past
no]-wa otagai-oi desu
that-TOP e. o. -ACC is
'It is each other that Masao recommended to Taroo and Hanako'

The only relevant difference between (33b) and (34b) is that the antecedent for *otagai* 'each other' is a subject in the former while it is VP-internal in the latter. (34b) requires a subtle judgment, but it seems clearly worse than (33b).

Let us consider the structure of the embedded CP of (34b) to examine the source of its ungrammaticality.

(35)



The operator originates in the object position, and moves to CP Spec through the edge of the *v*P. If a P-feature can be assigned to *v* to accommodate the initial step of this movement, then we incorrectly predict this example to be grammatical, as illustrated in (36).

(36) [CP Opi [C [..... [vP [v [VP [*Taroo-to Hanako*] [... t_i ...]]]]]]]
[P] [P]
A′ A′

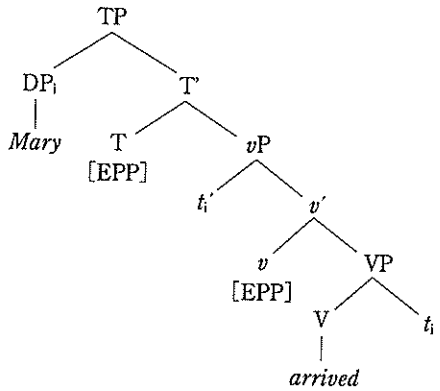
This example, thus, indicates that a P-feature cannot be assigned to *v* in Japanese for successive-cyclic movement.

Then, how does an operator move to the *v*P edge in Japanese? It was shown above that an EPP-feature cannot be employed for this purpose. The only remaining possibility is scrambling. We have seen that scrambling to the *v*P edge is necessarily A-movement. Hence, (34b) is ruled out by Condition (C) exactly like the example of scrambling in (29c).

5. Conclusion

In Sections 2 and 3 of this paper, we argued that *v* is always equipped with an inherent EPP-feature. We hope to have shown that this proposal receives support from a wide range of phenomena. At the same time, it raises some interesting theoretical issues. For example, in a simple unaccusative sentence, the internal argument must move first to the edge of *v*P to satisfy the EPP-requirement of *v*. The relevant example in (19) is repeated below as (37).

(37) a. Marry$_i$ arrived t_i

b.


But what would be the precise mechanism of this EPP-triggered movement? There is clearly no agreement relation between *v* and the moved object. Then, can an EPP-feature attract a DP without agreement? Or can a DP freely move to

satisfy an EPP-requirement at the landing site? Our proposal, if correct, seems to have non-trivial implications for the general theory of movement.

In Section 4, we argued that Japanese, in contrast with English and French, does not allow the assignment of an EPP-feature or a P-feature to *v* for the purpose of successive-cyclic movement. Japanese does not need this mechanism as it can resort to scrambling for the initial steps of operator movement. As noted at the outset of this paper, this suggests a parameter: the free assignment of an EPP feature and a P-feature to a phase head is allowed only in languages without scrambling. This possibility raises an interesting learnability issue. If the assignment of these features to a phase head is an option in UG, it must be a marked option. This is so because it would be difficult for a Japanese-speaking child to discover that this option is not available in her/his language. On the other hand, an English/French-speaking child would receive positive evidence for the availability of the option, i.e., simple successive-cyclic movement out of a phase. It seems then that the assignment of features to phase heads is an option in UG that is activated only by positive evidence. We must leave the exploration of this issue also for future research.

Notes

* We are happy to be able to contribute this paper to a volume in honor of Taro Kageyama, whose original works in morphosyntax have had profound effects on the development of generative grammar in Japan over the past 30 years. The material in this paper was presented in the 2007 Syntax Seminar at Nanzan University, and also at the International Symposium of the Six Universities Consortium (Cambridge, Connecticut, EFL-Hyderabad, Nanzan, Siena, and Tsinghua) held at National Tsinghua University in December, 2007. We would like to thank the audiences at these places for helpful comments and suggestions.

1. See Saito (2006) for a more detailed discussion of the material in this section.
2. Mahajan (1990) mainly considers Hindi scrambling. See Tada (1993) and Nemoto (1993) for detailed discussion on Japanese.
3. See, for example, Murasugi and Hashimoto (2004) for an analysis with *v*P complementation. It is assumed in (9) that *Masao* raises to a position within the projection of the matrix verb *-sase* 'cause' in order to receive the causee role. But this

is not crucial for our discussion.

4. *Simat-ta* 'have-Past' at the end of the sentence adds perfective meaning. It is ignored in the structure in (11).
5. Fox's (1998) discussion is an extension of Lebeaux's (1988), which also examines reconstruction sites based on binding compatibility.
6. Participle agreement in Italian exhibits more complex patterns, as discussed in detail in Belletti (2005). We only deal with French in this paper.
7. Kayne's (1989) analysis is phrased in terms of AGR$_O$, but it can readily be restated in a system with *v*.
8. We predict that agreement is obligatory with unaccusative verbs as well. According to Belletti (2005), this prediction is borne out in Italian but only partially in French: those French unaccusative verbs that take *être* as the aspectual auxiliary exhibit obligatory agreement. We must leave the analysis for future research.
9. See also Nemoto (1993) for extensive discussion on this generalization.
10. Here, we just assume the description in (32) and do not discuss its analysis. See, for example, Saito (2003, 2005) for an attempt to explain this generalization. It is claimed there that scrambling is uniformly A-movement, and that its apparent A'-properties follow from the cyclic interpretation of scrambling chains.

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