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# Subjects-in-situ and Cyclic Linearization in Japanese

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## Abstract

This paper addresses the verification of the structural positions for variety of nominative determiner phrases (DPs) in Japanese. There have been many proposals on the subject positions in Japanese, but the analyses conducted in this paper show that the subject DPs staying in Spec  $\nu$  is both theoretically and empirically plausible. It is further argued that while the agentive subjects occupy Spec  $\nu$  position, the non-agentive subjects are located in the lower VP. Possible consequences of the proposals are shown, based on Cyclic Linearization (Fox and Pesetsky 2005) and  $\nu$ P coordination in Japanese.

## 1. Introduction

This paper addresses the verification of the structural positions for variety of nominative determiner phrases (DP) in Japanese, and some important consequences for the structure preserving properties of predicate-internal constituents associated with those different types of ‘subjects’.<sup>1</sup> There have been many works concerning the structural positions of subjects in Japanese, but the discussion does not yet seem to have converged into a unified account. One possible reason for that is the fact that Japanese is a strictly head-final SOV language, and therefore there is no occurrence of auxiliaries in the vicinity of the subjects, contrary to English, which makes it difficult to determine the structural

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<sup>1</sup> Throughout the paper I use the term DP to refer to the traditional notion of NP.

positions of the DPs located at the leftmost edge of a sentence. The issue gets more complicated if we assume syntactic movements in Japanese; raising of subjects and verbs in Japanese are both purely string-vacuous, thus the derivational steps of constituents are even more hard to detect.<sup>2</sup> Taking these characteristics of Japanese into consideration, I argue, along with Hirata (2006) and Takano (2004) that the nominative DPs stay within Spec *v*. To supplement the lack of explanation by Hirata and Takano as to why those subjects can stay within *v*P, I extensively argue that the agentive subjects in *v*P are in a position accessible to T through the Probe-Goal Agree mechanism proposed by Chomsky (2001), while those that are not agentive are located in the lower VP domain to which T does not have access and therefore fails to establish an Agree relationship.

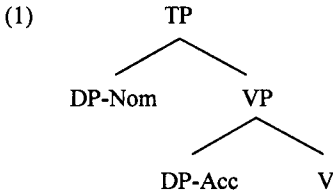
The organization of the paper is as follows. In section 2, I briefly review the different proposals on the subject positions in Japanese, and show that each of them have either empirical or conceptual problems. Section 3 provides a theoretical background assumed throughout the paper, namely, the Probe-Goal Agree system and the notion of the “edge” position that is inevitable for both assignment of theta-role AGENT and checking of [*u*Case] on nominative subjects. Section 4 deals with the types of predicate fronting in Japanese and shows that T plays a crucial role in licensing of agentive-nominative DPs. The consequences of the discussion are provided in section 5, based on the Spell-out domain for Cyclic Linearization proposed by Fox and Pesetsky (2005), and on *v*P coordinated structures in Japanese. Section 6 summarizes the paper.

## 2. A Debate on the “Subject Positions” in Japanese

The positions for the subjects in Japanese and their theoretical implications have been a much debated topic in the literature. In the Government and Binding era, Saito (1985) argued that the subjects are directly merged into Spec T (Spec I in his terms) and does not move throughout derivation. Saito’s proposal was based on quantifier float and object scrambling over the position of subject, and he independently reached a conclusion that subjects do not scramble. This is illustrated in the diagram below.

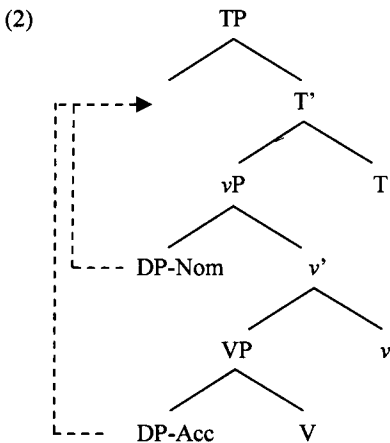
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<sup>2</sup> See Koizumi (2000) for a convincing argument on verb-raising in Japanese. But for a counter-argument for the verb-raising approach, see Fukushima (2003).



However, we now have more plausible motivation in the predicate internal subject hypothesis (hereafter PISH, cf. Sportiche 1988) that subjects receive their theta-roles within VP and then move into Spec T for Case-theoretic reasons. Additionally, Ko (2005) recently proposed that the subjects in Japanese and Korean do scramble over other elements, such as Wh-phrase *naze* ('why' in Japanese) and *way* ('why' in Korean). Therefore, we cannot ignore the possibility of subject scrambling, both empirically and conceptually.

An important analysis of Japanese subjects based on the PISH is the one by Kuroda (1988). He assumed that the subject is first base-generated in the Spec of VP (Spec of  $\nu$ P, in more recent accounts), and once it picks up a theta-role, it can stay there throughout the derivation. The major premise for this proposal is based on a comparative study between English and Japanese that, while the subjects in English *must* agree in TP, those in Japanese need not agree in the Spec of TP as far as the operation causes some sort of derivational violation. Consider the derivation in the following diagram.

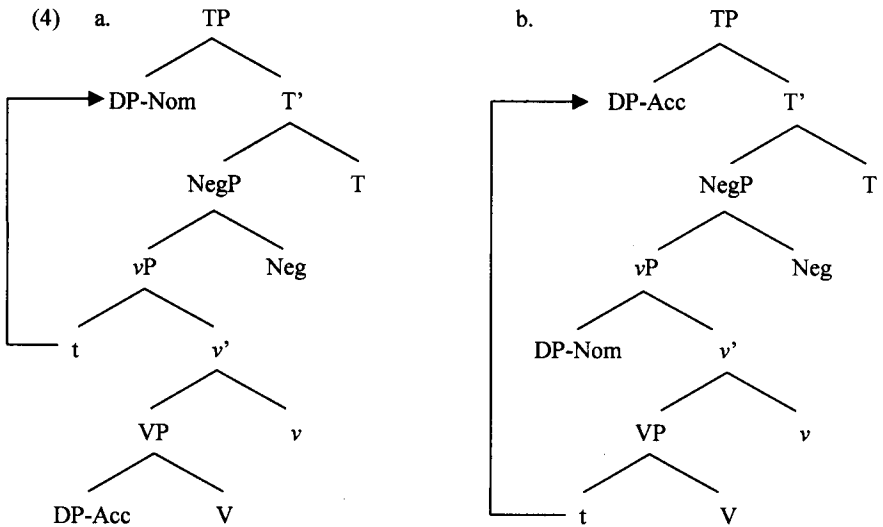


Although this approach to subject movement (scrambling) may seem plausible, it is incompatible with the framework in the Minimalist Program in which every movement has its own motivation. Hence we still have a conceptual weakness if we are to take such a ‘free’ movement approach to the subject scrambling.

Miyagawa (2003) proposed an obligatory movement analysis for DPs in Japanese, based on an observation of interpretations involving *zen'in* ‘all’ and total / partial negation. He starts out with an assumption that any constituent included in the scope of negation is in the c-command domain and receives the interpretation of partial negation. Miyagawa assumes that the negation structurally occurs higher than vP but lower than TP (cf. Pollock 1989). In his examples, the nominative NP *zen'in-ga* ‘all-Nom’ in SOV order yields total-negation interpretation but not in the OSV order.

- (3) a. Zen'in-ga sono tesuto-o uke-nakat-ta.  
       all-Nom that exam-Acc take-Neg-Past  
       ‘All did not take the exam’ (Total Negation / \*Partial Negation)
- b. Sono tesuto-o zen'in-ga t uke-nakat-ta.  
       that exam-Acc all-Nom take-Neg-Past  
       ‘Not all took the exam’ (\*Total Negation / Partial Negation)

He takes this as evidence that the subject first merges at Spec v, and then moves to Spec T, a position which is hierarchically outside the c-command domain of negation, to satisfy EPP feature on T. Let us call this a ‘Movement-Approach’. The configurational structure including NegP and the derivation of the subject / object DPs can be illustrated as in (4).



However, this proposal again encounters some conceptual problems. Miyagawa considers the c-command relationship between the negation and the quantifier *zen'in* to be a relationship established in the overt syntax, but there is no reason to assume that it is established in LF rather than in the overt syntax, since it involves quantifiers and scope interpretation that are the typical LF phenomena (May 1978). It is also against the notion of 'Procrastinate' (Chomsky 1995) in the sense that movement should be delayed whenever possible. Miyagawa's examples are based on a purely string-vacuous movement, so the subject might have moved at LF rather than at the level of overt syntax in which a movement operation is more costly.

The previous studies on subject positions in Japanese can be summarized as follows:

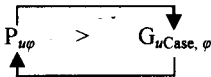
- (5) a. Subjects are directly merged into Spec T and do not move throughout the derivation (Saito 1985).
- b. Subject first merges into Spec V (Spec *v*) and may freely move into Spec T (Kuroda 1988).
- c. Subject merges in Spec *v*, and moves overtly into Spec T (Miyagawa 2003).

Most recently, Hiarata (2006) and Takano (2004) independently argued that subjects in Japanese can stay in Spec *v*. Let us call this a ‘Non-movement Approach’. However, they do not provide precise explanation as to *why* subjects can stay there in the overt syntax. In the following section I argue that the Agree operation through the Probe-Goal relationship (Chomsky 2001) can capture the licensing of Case and theta-role assignment on the subject in Spec *v*.

### 3. Theoretical Background: Probe-Goal System and Agree

According to Chomsky (2001), an agreement relationship can be established through bidirectional matching between Probe and Goal, where the former c-commands the latter. This can be schematically shown below.

#### (6) Agree (Chomsky 2001)



(‘>’ indicates c-command relations, ‘P’ for Probe, ‘G’ for Goal)

There are three conditions to check the unvalued  $\phi$ -features on P and the unvalued Case on G: i) c-command relations, ii) feature matching, and iii) locality. Under this concept, Spec-Head checking system for Case and  $\phi$ -features is no longer assumed as an independent constraint. What plays a crucial role along with Agree matching is the Phase Impenetrability Condition (PIC).

#### (7) Phase Impenetrability Condition (Chomsky 2001)

The domain of H is not accessible to operations, but only the edge of HP.

The edge “may (or sometimes must) raise” (Chomsky 2001: 6) so it serves as a base-generated position for the subjects under PISH, or as an ‘escape hatch’ for successive cyclic movements. Let us see how this system works through the licensing of so called ‘Quirky-NOM’ case assignment in Japanese. Japanese allows a nominative case-assignment on DPs that grammatically functions as objects. This is restricted to the cases

when predicate includes potential morphemes, which indicates the ability of someone doing something.<sup>3</sup>

- (8) a. John-ga eigo-o hana-se-ru.  
 John-Nom English-Acc speak-can-Pres  
 ‘John can speak English’
- b. John-ni eigo-ga hana-se-ru.  
 John-Dat English-Nom speak-can-Pres  
 ‘John can speak English’

Notice that the English translation is exactly the same for both of the sentences. Although Chomsky (2001) does not clearly address how nominative Case is assigned to the object DP, he does point out the possible derivation for the example in (8b). Here, let us extend Chomsky’s assumption. In the case of (8b), the quirky nominative object first moves into the edge of vP from the lower VP, with the dative subject DP ‘tucking in’ the object, in the sense of Richards (2001). Since the nominative object is in the edge position, it is accessible from T and successfully receives nominative case, while it still serves as an object by staying within the domain of vP which typically assigns THEME theta-role to the object DP. These processes can be shown as in (9):

- (9) [CP [TP John-Dat<sub>1</sub> [vP t<sub>1</sub> English-Nom<sub>2</sub> [VP t<sub>2</sub> speak-can ] v ] T ] C ]
- 

In this manner, T can modify the feature structure of vP and its own feature as well, to search for another appropriate ‘subject’, namely, the dative DP. What is important here is that T has access to the edge of the vP.

In the following sections, I assume that nominative-agentive subjects have an unvalued [*u*Case] that has to be valued at the edge of vP, which is a theta-position for AGENT (theta-role given from v) and also an accessible position from T to establish Probe-Goal relations for the valuation of [*u*Case]. This bears an important prediction; the

<sup>3</sup> A list of abbreviations is as follows: S=subject, V=verb, O=object, Nom=nominative case, Acc=accusative case, Dat=dative case, Gen=genitive case, Pres=present tense, Past=past tense, Neg=negation marker, Adj=adjective.



AGENT DPs in transitive sentences can be licensed by T, while DPs that are not (i.e. inanimate subjects, and subjects in adjectival copular sentences) can never be licensed by T. On the assumption that their base-generated positions are different, let us see if this is correct, from the observations based on the various types of predicate fronting in Japanese.

#### 4. Predicate Fronting: Theoretical Implications

Japanese is a free word order language, which allows the order of SOV to change freely into OSV by displacing the object DP into sentence initial position.

- (10) a. John-ga ringo-o tabe-ta.  
           John-Nom apples-Acc eat-Past  
           ‘John ate the apples’  
       b. Ringo-o John-ga tabe-ta.  
           apples-Acc John-Nom eat-Past  
           ‘John ate the apples’

However, a VP containing an object and a verb cannot be fronted by itself.

- (11) \*<sub>[VP</sub> Ringo-o tabe] John-ga t<sub>VP</sub> -ta.  
           apple-Acc eat John-Nom -Past  
           ‘Eat an apple John did’

A possible reason for this is because the past tense morpheme *-ta* is a bound morpheme and thus cannot stand alone without a verb. Interestingly, if we insert focus particles such as *-mo* (also), *-sae* (even), and *-dake* (only) at the end of VP (“Adjunct Clitics”, cf. Aoyagi 1998b), the fronting of VP can be made possible.<sup>4</sup>

<sup>4</sup> The attachment of the focus particle in Japanese induces two different interpretations. One is that the particle taking scope over VP, yielding the first interpretation of ‘John also ate the apples’. The other one is that the particle taking scope over subject as well as VP, which brings out an interpretation of ‘Also John ate the apples’. The example in (12b) induces only the former reading.

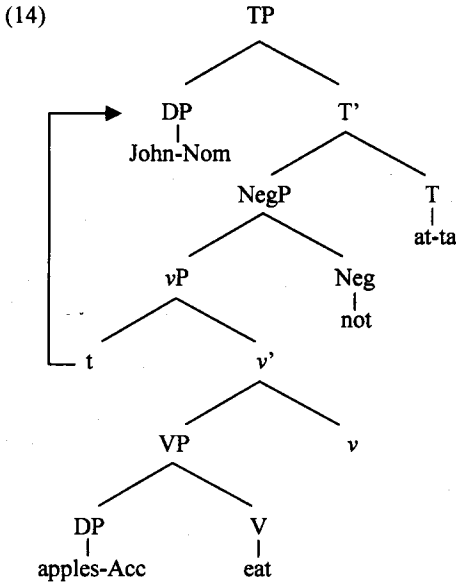
- (12) a. John-ga [v<sub>P</sub> ringo-o tabe-mo] si-ta.  
 John-Nom apple-Acc eat-also do-Past  
 ‘John also ate the apples / Also John ate the apples’
- b. [v<sub>P</sub> Ringo-o tabe-mo] John-ga t<sub>VP</sub> si-ta.  
 apple-Acc eat-also John-Nom do-Past  
 ‘Also eat the apples John did’

One might wonder what the morpheme *-si* (or *-su*, if the tense morpheme was a present tense *-u*) attached to the past tense morpheme stands for. It has been assumed that since the focus particle *-mo* blocks the raising of the verb into T, a light predicate *-su* ‘do’ must be inserted for the morpho-phonological requirement on the tense morpheme (Kuroda 1965). In this sense, it is similar to English *do*-insertion, which occurs in certain cases where the tense representation on verbs is blocked by other elements such as negation. I assume, following Halle and Marantz (1993) and Nishiyama (1998), that the insertion of the morphemes *-si/-su* is a post-Spell-out operation, and that those light predicates work together with the tense morpheme to supplement T. There are at least two types of such morphemes in Japanese; *-su* is selected when the focus particle was inserted after the verbs, and *-ar* is inserted for adjectival inflections.

At this point, we are certain that the nominative-agentive subject is at least higher than VP, because the subject in (12b) is apparently left stranded by the fronted VP. The question is whether the subject is in vP position or it has already moved into the TP domain. The next example crucially shows that the subject is in vP, but not in TP.

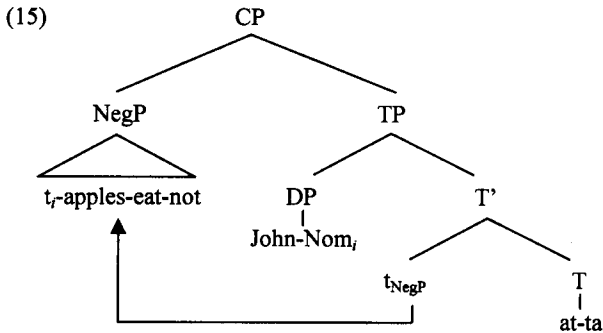
- (13) a. John-ga ringo-o tabe-naku-mo at-ta.  
 John-Nom apple-Acc eat-Neg-also be-Past  
 ‘John also did not eat the apples’
- b. \*[<sub>NegP</sub> Ringo-o tabe-naku-mo] John-ga t<sub>NegP</sub> at-ta.  
 apples-Acc eat-Neg-also John-Nom be-Past  
 ‘Do not eat the apples John did’

Since the negative marker *-nai* in Japanese inflects like adjectives, *-ar* is selected for the support of tense. I further assume that the fronted constituent in (13b) is a NegP, because the removed constituent is headed by a negation marker *-naku* combined with a focus particle *-mo*.<sup>5</sup> Now, there are at least two ways to derive the surface word order of (13b) from (13a). Consider the following diagram.



The tree diagram in (14) shows a possible derivation if we take the movement approach to the subject DP. Following Pollock (1989) and Miyagawa (2003), I assume that Neg exists at least higher than *vP* but lower than TP. Now, to get a word order with the predicate fronting as in (13b), a remnant NegP containing a trace of the subject at Spec *v* must move into a higher domain than TP, namely, CP (or possible landing site within Split CP complex as proposed by Rizzi (1997)).

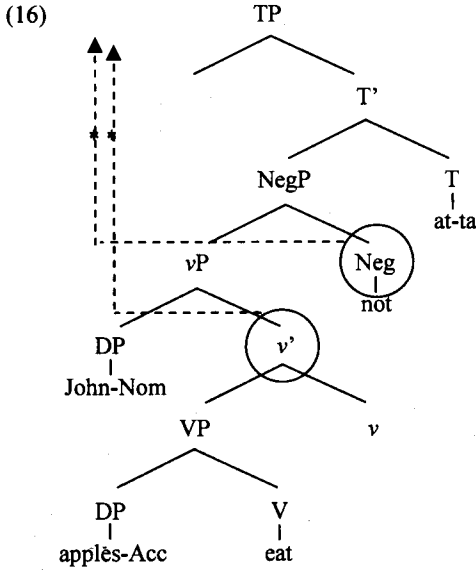
<sup>5</sup> Focus particles in Japanese does not project their own projections, but rather they are grammatically dependent on constituents that they are attached to, thus 'transparent'. See Aoyagi (1998a) for the discussion in detail.



This derivation seems to be fine, and does not violate any constraints; the nominative DP *John* moves into the domain of TP where it can get its [ $\mu$ Case] valued.<sup>6</sup> In other words, it does not precisely explain the ungrammaticality of (13b) at all. Therefore the DP-raising approach cannot be the correct option.

Let us consider the non-movement approach. In this case, the subject stays in Spec  $v$ , but at the same time the derivational constraints must be able to account for the ungrammaticality of (13b). To derive a surface order of (13b) from (13a) we must dislocate  $v'$  and the head Neg to some higher domain than TP, leaving the subject at the Specifier position of  $v$ P.

<sup>6</sup> The diagram in (15) seems to violate Proper Binding Condition (PBC). However, following Koizumi (2000) and Müller (1996), I assume that PBC does not apply to the S-structure representation derived from A-bar movements.



However, this derivation clearly violates the constraint on movements for maximal projections and the constraint on head movements (Chomsky 1995). In this sense, the non-movement approach to the subject in Spec *v* correctly predicts the ungrammaticality of (13b). To summarize just briefly up to this point, the observation based on VP fronting and NegP fronting have led us to assume that the agentive-nominative subjects stay in Spec *v*, rather than moving overtly up into Spec T.

Let us return to the VP fronting, this time with a sentence containing an inanimate subject DP. Surprisingly, the VP cannot be fronted by leaving the subject adjacent to T (The example originally discussed in Hirata 2003, slightly modified):

- (17) a. Kaze-ga      ki-o      taosi-mo      si-ta.  
          wind-Nom    tree-Acc    blow down-also    do-Past  
          'The wind also blew down the tree / Also the wind blew down the tree'
- b. \*<sub>[VP</sub> Ki-o      taosi-mo]      kaze-ga      t<sub>VP</sub>    si-ta.  
          tree-Acc    blow down-also    wind-Nom      do-Past  
          'Also blow down the tree the wind did'

As can be seen in the following examples, for adjectival predicates with the predicate separated by adjunct clitics, it seems impossible to move the predicate into the sentence initial position.<sup>7</sup>

(18) Copular sentences, with inanimate nominative subjects

- a. Yama-ga                    utukusi-katta.  
mountains-Nom        beautiful-Past  
'Mountains were beautiful'
- b. Yama-ga                    utukusiku-mo        at-ta.  
mountain-Nom        beautiful-also        be-Past  
'Mountains were also beautiful / Also mountains were beautiful'
- c. \*[<sub>AP</sub> Utukusiku-mo]    yama-ga                    t<sub>AP</sub>    at-ta.  
   beautiful-also    mountain-Nom                                    be-Past  
'Also beautiful the mountains were'

(19) Copular sentence, with animate nominative subjects (Nishiyama 1999)

- a. Dansaa-ga                    utukusi-katta.  
dancer-Nom                    beautiful-Past  
'The dancers were beautiful'
- b. Dansaa-ga                    utukusiku-mo        at-ta.  
dancer-Nom                    beautiful-also        be-Past  
'The dancers were also beautiful / Also the dancers were beautiful'
- c. \*[<sub>AP</sub> Utukusiku-mo]    dansaa-ga                    t<sub>AP</sub>    at-ta.  
   beautiful-also    dancer-Nom                                    be-Past  
'Also beautiful the dancers were'

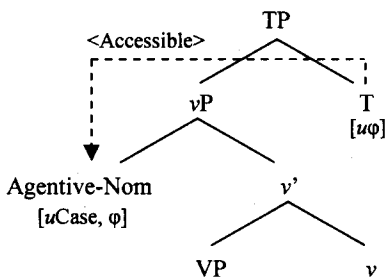
<sup>7</sup> At this point, one might simply notice the possibility that the light predicate *-ar* cannot co-occur adjacent to the animate nominative DP. However, this is not the case. Consider the following examples.

- (i) Tonari-kara    koe-o            kakeru    hito-ga            at-ta.  
next to-from    voice-Acc    say        person-Nom        be-Past  
'There was a person who talked to me from beside me'
- (ii) Mukasi        hitori-no            otoko-ga            at-ta.  
Long ago        one person-Gen    man-Nom            be-Past  
'Long time ago, there was a man'

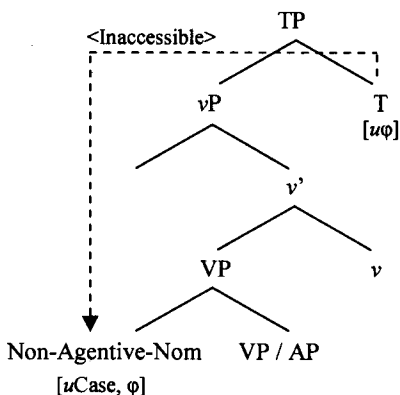
Here, the examples show that the DPs 'person' or 'man' can appear at the adjacent position to the *-ar* predicate.

(17)-(19) differ from (12a) and (12b) in that the former examples do not have voluntary (agentive), transitive interpretation. Let us assume that the transitivity is induced by the head  $v$ , as discussed earlier in this paper. Then the natural consequence would be that the animate/inanimate non-agents are not generated at Spec  $v$ , but rather licensed in the lower VP.<sup>8</sup> The ungrammatical examples (17b), (18c) and (19c) show that T fails to access those subject DPs. The difference between the licensing of the agentive and the non-agentive subjects can be summarized as in (20).

(20) a. Agentive-Nominative DP



b. Non-Agentive Nominative DP



The predicate fronting occurs if we displace the lower VP in (20a), and VP or AP in (20b). In (20a), the agentive nominative successfully gets its  $[u\text{Case}]$  valued by T because it is located at the edge position accessible from the Probe T. It also receives AGENT theta-role from  $v$  within the minimal domain of  $v\text{P}$ . On the other hand, the non-agentive nominative DP fails to get its  $[u\text{Case}]$  checked from T since the defective  $v\text{P}$  intervenes between VP and TP, and then the DP is too far away from T to establish the Probe-Goal Agreement. In this case, subject DP does not carry AGENT theta-role; it is not in the licensing domain of the theta-AGENT. Therefore the data provided in this section can be

<sup>8</sup> A question arises as to what specifically assigns the structural nominative case to the non-agentive DPs. I assume that perhaps V does, but there is no independent motivation for this. I leave this question for future research.

neatly accounted for by the difference in the structural positions for agentive / non-agentive subjects, together with the concept of Probe-Goal Agreement system. It is also theoretically plausible because the checking of [ $\mu$ Case] on subjects can be done without costly movement of subjects from Spec  $\nu$  to Spec T. A summary of the discussion in this section is given below.

- (21) a. The agentive nominative subject can stay in  $\nu$ P ('edge') in overt syntax, and can get its [ $\mu$ Case] valued by T through Probe-Goal matching relations.  
 b. The non-agentive nominative subject is located in VP, and it cannot have its [ $\mu$ Case] valued by T.

In the following section I discuss some extensions of the structural differences between agentive / non-agentive subjects and the Probe-Goal system of T and Spec  $\nu$ .

## 5. Consequences

### 5.1 Cyclic Linearization

Fox and Pesetsky (2005, henceforth F&P) discuss the interaction between word order and Spell-out domain. Based on the facts observed in Scandinavian Object Shift (cf. Holmberg 1998) and Quantifier Movement, they argue that once a word order is established within the Spell-out domain, it is sent out to Linearization, which is a mapping of syntax onto linear order, and the order has to be never deleted during the course of derivation. They call it an Order Preservation, and a word order in VP (Spell-out domain, for F&P) must be kept all the way until the CP is introduced at the end of the derivation. This concept can be applied to the data of Japanese predicate fronting discussed in the previous section, by slightly modifying the Spell-out domain for Cyclic Linearization. Up to this point, I have employed a relatively loose definition of the 'Phase' and the Spell-out domain. For the syntactic structure building and Cyclic Linearization to work properly for the data in this paper, I modify the definition as follows:<sup>9</sup>

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<sup>9</sup> This is, of course, inconsistent with F&P's approach to Holmberg's Generalization. My definition here differs also from Ko's (2005) definition of the 'Phase' and the Spell-out domain for Cyclic Linearization; she considers the Spell-out domain to be  $\nu$ P, not VP. At this point, I put aside the difference of the 'Phase' in the cross-linguistic view.



(22) A Spell-out domain for the Linearization is the complement of a Phase head H.

My definition here is closer to the one originally given by Chomsky (2001). With this definition in mind, let us look at the examples in (17) and (18), repeated here as (23) and (24).

- (23) a. [<sub>TP</sub> [<sub>VP</sub> Kaze-ga [<sub>VP</sub> ki-o taosi-mo] si-ta].  
           wind-Nom           tree-Acc   blow down-also   do-Past  
           ‘The wind also blew down the tree / Also the wind blew down the tree’
- b. \* [<sub>CP</sub> [<sub>VP</sub> Ki-o taosi-mo] [<sub>TP</sub> [<sub>VP</sub> kaze-ga t<sub>VP</sub>] si-ta]].  
           tree-Acc   blow down-also           wind-Nom           do-Past  
           ‘Also blow down the tree the wind did’

Spell-out of VP = Ordering: Nom < Acc < V Further domain = *Acc < V < Nom
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- (24) a. [<sub>TP</sub> [<sub>VP</sub> Yama-ga [<sub>AP</sub> utukusiku-mo]] at-ta].  
           mountain-Nom           beautiful-also           be-Past  
           ‘Mountains were also beautiful / Also mountains were beautiful’
- b. \* [<sub>CP</sub> [<sub>AP</sub> Utukusiku-mo] [<sub>TP</sub> [<sub>VP</sub> yama-ga t<sub>AP</sub>] at-ta]].  
           beautiful-also           mountain-Nom           be-Past  
           ‘Also beautiful the mountains were’

Spell-out of VP = Ordering: Nom < Adj Further domain = *Adj < Nom
--

Roughly speaking, the relation ‘A < B’ indicates that the order of ‘A preceding B’ cannot be changed once it is established at the point of Spell-out. We have seen, in the previous section, that the non-agentive DPs are located within VP, not in vP. Since the order ‘Nom < Adj’ in (24) has been already established within the Spell-out domain, namely the VP (or some domain lower than vP such as PredP of Bowers (1993)), the word order cannot be altered even after a CP is introduced. The same thing happens for the non-agentive subject with accusative DP, as in (23). The order of ‘Nom < Acc < V’ has been already linearized at the point of Spell-out, and therefore the VP-fronted order cannot be allowed.

Cyclic Linearization can account for the normal transitive sentences with animate subjects as well. Consider the example (12), repeated here as (25).

- (25) a. John-ga [VP ringo-o tabe-mo] si-ta.  
 John-Nom apple-Acc eat-also do-Past  
 'John also ate the apples / Also John ate the apples'
- b. [CP [VP Ringo-o tabe-mo] [TP [VP John-ga t<sub>VP</sub>] si-ta]].  
 apple-Acc eat-also John-Nom do-Past  
 'Also eat the apples John did'

Spell-out of VP = Ordering: Acc < V  
 Further domain = <sup>OK</sup>Acc < V

In both cases above, the ordering within VP is fixed in 'Acc < V'. The VP fronting does not induce any ungrammaticality since the linear order of 'Acc < V' in VP has already been Spelled-out. However, if we permute the VP internal word order into 'V < Acc', the sentence becomes ungrammatical (regardless of whether the VP moves or not).

- (26) a. \*John-ga [VP tabe-mo ringo-o] si-ta.  
 John-Nom eat-also apple-Acc do-Past
- b. \*[CP [VP Tabe-mo ringo-o] [TP [VP John-ga t<sub>VP</sub>] si-ta]].  
 eat-also apple-Acc John-Nom do-Past

Spell-out of VP = Ordering: \*V < Acc  
 Further domain = \*V < Acc

The examples above show that the Linearization of VP and its word order strictly affect the grammaticality of a sentence, even when the VP is moved into the sentence-initial CP domain. Traditionally, sentences such as (26b) have been considered to violate Proper Binding Condition (PBC). It has been assumed that the derivation of (26b) from (26a) looks like the one below (cf. Saito 1989).

- (27) a. [TP [DP Ringo-o]<sub>i</sub>] [TP [VP John-ga t<sub>i</sub> tabe-mo] si-ta]].  
 apple-Acc John-Nom eat-also do-Past  
 'John also ate the apples / Also John ate the apples'

- b. \* $[_{CP} [_{VP} t_i \text{ Tabe-mo } ] [_{TP} [_{DP} \text{ ringo-o}]_i [_{TP} [_{vP} \text{ John-ga } t_{VP} ] \text{ si-ta}]]]$ .  
 eat-also                  apple-Acc                  John-Nom                  do-Past

First, the object DP moves into the sentence initial position, by adjoining to TP, as in (27a). PBC predicts that further movement of the VP containing the trace of the object is not allowed, because in that case the trace will not be properly governed by the displaced antecedent, namely the DP *ringo-o* ‘apple-Acc’. Although both Cyclic Linearization and PBC can account for the ungrammaticality of the word order in (26b), it would be desirable if we could eliminate independent constraint such as PBC, since the concept of ‘trace’ is no longer assumed as a distinct syntactic unit in the Minimalist Program. Consequently, I strongly suggest that the data above be handled by Cyclic Linearization rather than PBC.

This section has focused on the consequence of the order-preserving properties in VP, given that the non-animate subjects occur within the same domain of accusative DPs and the verbs. In the next section I provide one more consequence, from the analysis of Agree relationship between Spec *v*, and T.

## 5.2 *vP* Coordination

I have argued that the valuation of [ $\mu$ Case] on the nominative DPs can be done without movement into Spec T. This bears an important consequence for the subject positions in the coordinate structure. Hirata (2006) raises a problematic example for *vP* coordinated structure as in (28) below.

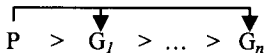
- (28)  $[_{TP} [_{vP} \text{ John-ga } [_{VP} \text{ ringo-o } \text{ tabe} ] v ] \text{ (sosite)}$   
           John-Nom                  apple-Acc                  eat                  (and)  
 $[_{vP} \text{ Bill-ga } [_{VP} \text{ banana-o } \text{ tabe} ] v ] \text{ -ta}$   
           Bill-Nom                  banana-Acc                  eat                  -Past  
           ‘John ate apples, and Bill ate bananas’

As the English translation of (28) indicates, the first conjunct somehow receives the past tense interpretation despite its lack of a tense morpheme. This leads us to assume that the two *vP* conjuncts are dominated by a single TP. Let us assume that this is correct. In the

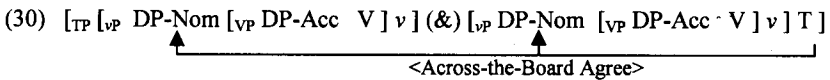
structure like (28), the problem is the subject positions; the first DP can be moved into a vacant Spec T (if we take the movement approach) but no landing site is available for the second subject. Thus the movement approach to the vP coordination fails to account for the nominative Case checking from T.

Here, I will adopt Hiraiwa's (2005) Multiple Agree system for the feature matching between T and the subjects. Under Multiple Agree, a single Probe can simultaneously search for more than one Goal at a same time, and establish the matching relationship. This can be schematically represented as below.

(29) Multiple Agree (Hiraiwa 2005)



Multiple Agree can explain the matching of T with more than one nominative DP in (28). A Probe T has access to the subjects in the edge positions, and can value their [*u*Case] without movements, in an Across-the-Board manner.



Thus Multiple Agree, together with our earlier proposal that the subject DPs can stay within vP, can solve the apparent problem of vP coordination and the valuation of nominative Case on subjects in Japanese.<sup>10</sup>

## 6 Conclusion

In this paper I argued that the agentive-nominative DPs in Japanese can have their features valued at Spec v, through Probe-Goal matching system between T and Spec v.

<sup>10</sup> To establish Multiple AGREE relations between T and the two nominative DPs without violating the original proposal by Hiraiwa (2005), it has to be posited that either one of the DPs is c-commanding the other. Following Kayne (1994), I assume that the coordinated constituents have a structure as in (ii), not as in (i).

- (i) [a boy] (&) [a girl]  
(ii) [a boy [ (&) [a girl]]]

By assuming (ii), Multiple AGREE in (29) does not violate the c-command requirement on the two DPs.

This enables us to avoid the costly operation of overt subject movement from Spec *v* to Spec T in Japanese: a language in which such movement is a purely string-vacuous operation. My proposal is also consistent with the one by Johnson (1996) who argued that T can assign nominative Case to subjects which are c-commanded by T at Spec *v*. The proposal was supported by the observation of predicate fronting, including VP, NegP, and AP fronting. Possible consequences of the analysis were shown, based on Fox and Pesetsky's (2005) Cyclic Linearization and Hirata's (2006) *v*P coordination.

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