

## The Locative Inversion Construction and Preposing around *Be*: Why Do the Sentence-Initial PP and AP Move to the Spec of TP?\*

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### 1. Introduction

In the study of syntax in generative grammar, the EPP plays a very important role. In particular, since Chomsky (2000, 2001) proposed the mechanism for the feature valuation via AGREE, the EPP has been one of the hottest subjects in the minimalist theory and thus a lot of studies have been done on the nature of the EPP. Miyagawa (2005, 2007), for example, parameterizes languages with respect to what satisfies the EPP on T: According to his typological view, the EPP on T in languages like English is satisfied by such a nominal XP as triggers agreement with a finite verb (i.e. the thematic subject).<sup>1</sup> Despite this generalization, however, there are some constructions in English in which the EPP on T is satisfied by the Internal-Merge of the XP that does not show agreement with the verb: The Locative Inversion Construction (henceforth, LIC) and Preposing around *Be* (PAB). The examples of these constructions are given in (1a, b), respectively:

- (1) a. Behind the corner stood a middle-aged man. (Kaga (2007:231))  
 b. More important has been the establishment of legal services.  
 (Emonds (1976:35))

In (1), the locative PP and the comparative AP occupy the so-called “Subject Position,” that is, the Spec of TP. This fact is pointed out in the previous approaches of the LIC, but they do not provide any adequate explanation for it. Similarly, in the previous studies of PAB, very few serious attempts have been made to account for the fact. Moreover, as discussed later, the fact is very problematic for the previous approaches trying to design the mechanism for the movement operation (i.e. Miyagawa (2005, 2007) and Agbayani (2006)). In this paper, through the study of both the constructions, I offer a new descriptive generalization of how to satisfy the EPP on T in English. Furthermore, taking the generalization into consideration, I consider the nature of the EPP on T; particularly, why the sentence-initial PP and AP in these constructions move to the Spec of TP.

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<sup>1</sup> In English there are also some cases where the EPP on T is satisfied by the External-Merge of an XP. In the *there*-construction, for example, the EPP on T is not satisfied by the Internal-Merge of the XP that has an AGREE relation with T, but by the External-Merge of the expletive *there* into the Spec of TP. In this paper, I do not discuss this case any more.

The organization of this paper is as follows: Section 2 briefly reviews two previous approaches of the mechanism for the movement operation. Section 3 examines the basic properties of the LIC and PAB, which suggest that the previous studies discussed in section 2 are not empirically adequate. Section 4 claims that in the constructions, the EPP on T is satisfied by the Internal-Merge of the topical XP without an AGREE relation with T, and clarifies the conditions for such a peculiar case. Section 5, based on the observations in section 3 and section 4, proposes a new generalization with respect to what satisfies the EPP on T in English, and explores the possibility that movements may take place in order to establish some kind of predication. Section 6 makes some concluding remarks.

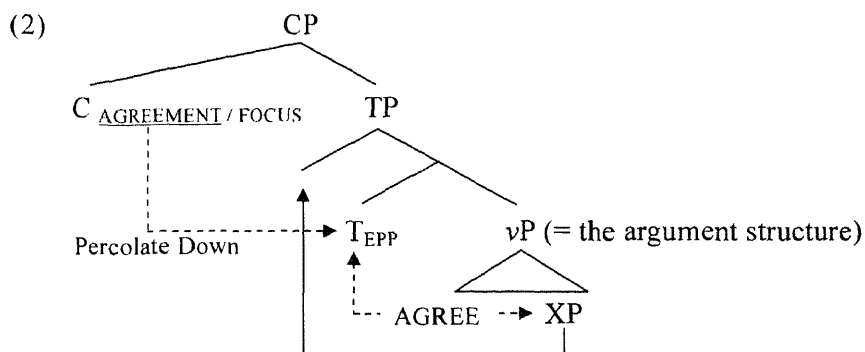
## 2. Previous Approaches

As noted in the introduction of this paper, the EPP plays an important role under a theory of AGREE. For this reason, there have been a lot of attempts to capture the nature of the EPP. In this section, I briefly review two previous studies on the mechanism for the movement operation: Miyagawa (2005, 2007) and Agbayani (2006).

### 2.1. *Miyagawa (2005, 2007)*

Miyagawa (2005, 2007) proposes that the EPP is associated with agreement (cf. Chomsky (2001)): According to his system, a certain functional relation between a probe and a goal is established via AGREE in the narrow syntax, and then the valuation of the probe by the goal takes place in the PF. Note that the valuation in the PF requires the probe and the goal to be adjacent to each other (i.e. the Spec-head configuration), because the operation is morphological in nature, not syntactic. Thus, the movement operation is to take place in the narrow syntax in order to satisfy the PF requirement.

Let us consider the movement to the Spec of TP in English to confirm this. As alluded to in the introduction, Miyagawa (2005, 2007) proposes that the EPP on T is based on a parametric variation between agreement and focus; a certain language is classified into either an agreement-prominent or a focus-prominent type according to the feature which percolates down from C to T. English is, for example, an agreement-prominent language; according to his typological system, the EPP on T, which works in tandem with agreement, picks out the XP having an AGREE relation with T from the argument structure and raises it to the Spec of TP, as schematized in (2):



In (2), the XP which enters into an AGREE relation with T (i.e. the thematic subject) moves to the Spec of TP in the narrow syntax in order to convert the functional relation into an adjacent relation, thereby making it legible to the interfaces.

## 2.2. Agbayani (2006)

Agbayani (2006) proposes that the movement operation is to be decomposed as follows:

### (3) Move = Move F + Pied-Pipe

As shown in (3), the movement operation consists of the two parts: Move F and Pied-Pipe. Move F is the process where the feature F (to be checked) of category  $\alpha$  is extracted from  $\alpha$  and moves to the domain of a functional head H; consequently, the F enters into a checking relation with an uninterpretable feature of H. Pied-Pipe is the process in which category  $\alpha$  is pied-piped to the Spec of HP after the application of Move F due to the PF adjacency condition, which is stated as follows:

### (4) PF Adjacency Condition:

The moved F and the category left behind must be phonologically adjacent at the PF interface.

Thus, the overt movement of some category (i.e. Pied-Pipe) is to be motivated to meet this PF condition.<sup>2</sup>

Now, let us confirm this respect with the following sentence. The nonsubject *wh*-question in (5) is derived as in (6a-c):

(5) What will you eat?

- (6) a. [C' C<sub>[Q]</sub> [TP you [T' will eat what ]]]  
 b. [CP *wh* [C' C<sub>[Q]</sub> [TP you [T' will eat what ]]]] : Move F  
 c. [CP what<sub>i</sub> [C' *wh* [C' C<sub>[Q]</sub> [TP you [T' will eat t<sub>i</sub> ]]]]] : Pied-Pipe

<sup>2</sup> This condition also suggests that Pied-Pipe is to be blocked by a simple economy condition (i.e. avoid superfluous steps) when the category  $\alpha$  is PF-adjacent to the F of its category without the application of Pied-Pipe. For further details of this, see Agbayani (2006).

In (6b), once the functional head C is Merged, as in (6a), it extracts the *wh*-feature out of the *wh*-element and moves it to its Spec; as a result, the uninterpretable feature of C undergoes erasure. Then, in (6c), since the separation of the *wh*-feature and its category in the narrow syntax gives rise to a problem at the PF, C requires the category of the *wh*-element to pied-pipe to its higher Spec. This ensures that the feature and its category are PF-adjacent.

### 2.3 Summary

In this section, I briefly examine Miyagawa (2005, 2007) and Agbayani (2006). Under their mechanisms, the movement operation is required to satisfy a certain condition imposed by the PF interface; consequently, the XP which enters into agreement relation with a functional head must necessarily move to its Spec.

## 3. Basic Facts

In this section, I survey the basic facts of the LIC and PAB and show a lot of similarities between these constructions. The facts lead us to the claim that in the constructions, the sentence-initial PP and AP occupy the Spec of TP for the EPP on T. Furthermore, I show that the facts cannot be accounted for by the previous approaches at all.

### 3.1 The Similarities between the LIC and PAB

In this subsection, I examine the similarities between the LIC and PAB. First of all, in these constructions, the sentence-final DP can trigger agreement with a finite verb, as in (7) and (8), respectively:

- (7) a. In the swamp {was/\*were} found a child.  
 b. In the swamp {\*was/were} found two children.

(Ura (2000:170))

- (8) a. More important are some of the problems implicit in it.  
 b. More effective and certainly more interesting, however, is a structure recently demonstrated by the team at the Bell Telephone Laboratories, using magnetostrictive materials.

(BNC HWG:193)

(Kubota (1981:26))

In (7a) and (7b), the unaccusative verb *be* shows singular and plural agreement with the sentence-final DPs, not the sentence-initial PPs, manifested as *was* and *were*, respectively. In (8), similarly, the equative verb *be* agrees with the sentence-final DPs *some of the problems* and *a structure*, manifested as *are* and *is*.

Secondly, the sentence-final DP in the constructions usually bears nominative

Case, as in (9) and (10), respectively:

- (9) a. In the garden sat {they/\*them}! (Levine (1989:1045))  
 b. Under the garden wall sat {I/\*me}. (Levine (1989:1046))
- (10) a. More powerful is she than your deity.  
 (<http://books.google.co.jp/books?id=6XH3jARxEv4C&pg=PA180&dq>)  
 b. More valuable is she than precious stones; [...]   
 (<http://books.google.co.jp/books?id=0XjTp5XySNEC&pg=PA67&dq>)

In (9a, b), nominative Case, not accusative Case, is assigned to the sentence-final DPs, manifested as *they* and *I*, respectively. In (10), similarly, nominative Case is assigned to the DPs, manifested as *she*. From these two facts, it follows that in the LIC and PAB, T enters into an AGREE relation with the sentence-final DP.<sup>3</sup>

Note here that the XP having an AGREE relation with T usually occupies the Spec of TP for the EPP on T. There are, however, some pieces of evidence to suggest that in these constructions, the sentence-initial PP and AP, not the sentence-final DP, occupy the Spec of TP. First, the PP and AP can occur in the raising construction, as in (11) and (12), respectively:

- (11) a. [Over my windowsills]<sub>i</sub> seems [t<sub>i</sub> to have crawled an entire army of ants].  
 b. [On that hill]<sub>i</sub> appeared [t<sub>i</sub> to be located a cathedral].  
 (Doggett (2004:29))
- (12) [More important]<sub>i</sub> seems [t<sub>i</sub> to be a visceral yearning for change], [...]   
 (The New York Times: October 9, 1994)

In (11), the PPs *over my windowsills* and *on that hill* undergo A-movement out of the A-position in the embedded clause, which suggests that they occupy the Spec of TP at a point in the derivation. In (12), similarly, the AP *more important* also undergoes the same type of movement.

Second, the movement of the sentence-initial PP and AP in the constructions induces the so-called *that*-trace effects, just like that of the subject in (13c), as in (13a) and (13b), respectively:

- (13) a. It's [in the park]<sub>i</sub> we all believe (\*that) t<sub>i</sub> was found a child.  
 (Doggett (2004:29))  
 b. [How much important]<sub>i</sub> do you believe (\*that) t<sub>i</sub> is the establishment of legal services?  
 (Ono, Kimura, and Sano (1982:185))

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<sup>3</sup> Radford (2004) generalizes the nominative Case assignment in the framework of AGREE as follows:

- (i) An unvalued case feature on a goal is valued as nominative by a probe carrying finite tense if probe and goal match in  $\phi$ -feature. (Radford (2004:286))

- c. It's [a child]<sub>i</sub> we all believe (\*that) t<sub>i</sub> was found in the park.  
(Doggett (2004:29))

In (13a) and (13b), only when the complementizer *that* does not exist, the PP and AP in the embedded clause can be extracted, respectively. This behavior of them is similar to that of the normal subject in (13c), which suggests that they occupy the Spec of TP.

To sum up, in the LIC and PAB, T has an AGREE relation with the sentence-final DP, while it is the sentence-initial PP and AP that move to the Spec of TP for the EPP on T.

In passing, judging from these properties of the sentence-initial PP and the sentence-final DP, one would expect that in the LIC, the DP remains in the VP-internal domain without moving to the Spec of TP. Indeed, this expectation is supported by some pieces of evidence. Firstly, when the DP is a bare plural one, it receives only an existential reading, as in (14b):

- (14) a. Lions live in eastern Africa. (generic & existential readings)  
b. In eastern Africa live lions. (only an existential reading)  
(Nakamura (1996:295))

Diesing (1992), based on the hypothesis that there is a correlation between syntactic and logical forms, claims as follows: When bare plural DPs occupy the Spec of TP, they can receive a generic interpretation; in contrast, when they remain within the VP-internal domain, they only receive an existential one. Considering the sentences in (14) with this claim presupposed, in (14a), the subject *lions* can receive both the generic and the existential reading, which means that the subject is raised from the VP-internal subject position to the Spec of TP. In (14b), on the other hand, the DP can receive only an existential reading, which suggests the DP occupies the VP-internal position. This is because the sentence-initial PP moves to the Spec of TP for the EPP on T and thus the sentence-final DP *lions* must stay in its original position in the VP-internal domain.

The second evidence is concerned with the distribution of adverbs modifying VPs. Observe the following sentences:

- (15) a. On the verandah quietly sat two tourists. (Levine (1989:1033))  
b. On the verandah sat two tourists quietly. (Levine (1989:1033))

In (15a, b), the adverb *quietly* occurs to the left and right of the constituents consisting of [V+DP], respectively. Given that adverbs modifying VPs are generally adjoined to *vP*, it is suggested that the constituents are the *vP* and thus the

sentence-final DP remains in the VP-internal domain.<sup>4</sup>

### 3.2. *The Challenge for Miyagawa (2005, 2007) and Agbayani (2006)*

In 3.1, I confirmed the similarities between the LIC and PAB: T enters into an AGREE relation with the sentence-final DP, while it is the sentence-initial PP and AP that occupy the Spec of TP to satisfy the EPP on T. This fact is to cause a very serious empirical problem for the previous approaches reviewed in section 2 (i.e. Miyagawa (2005, 2007) and Agbayani (2006)): Under their mechanisms, where the movement operation takes place to meet a certain adjacency condition imposed by the PF interface, it is inadmissible for the XP entering into agreement relation with T not to move to the Spec of TP for the EPP on T.

## 4. **Proposals: Topical XPs Can Satisfy the EPP on T**

In this section, taking into consideration a lot of similar properties of the LIC and PAB discussed in section 3, I propose the derivation of each construction under a theory of AGREE.

### 4.1. *Theoretical Assumptions*

#### 4.1.1. *A Theory of AGREE and the Reformulation of the Movement*

The theory that I will assume in this paper is a theory of AGREE, which is advocated by Chomsky (2000, 2001). Under this theory, an AGREE operation is introduced as the operation to deal with the feature valuation, and the operation takes place under the structural relation in (16), based on the assumption for probe-goal system in (17):

(16) AGREE

$$P > G$$

AGREE (P, G), where P is a probe and G is a matching goal,  
'>' is a c-command relation: P c-commands G.

(17) Probe-Goal System:

- a. Matching is non-distinctness.
- b. D(P) is the sister of P.
- c. Locality reduces to 'closest c-command'.

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<sup>4</sup> Kathol and Levine (1992), in fact, point out that the sentence-final DP cannot appear in the VP-external domain with the following sentences:

- (i) a. Into the room strode Robin boldly.
- b. \* Into the room strode boldly Robin.

(Kathol and Levine (1992:211))

In (ia), the adverb *boldly* can occur to the right of the DP; in (ib), on the other hand, it cannot appear to the left of the DP. Given the position where this type of adverbs is Merged, the contrast between these sentences also suggests that the sentence-final DP must remain within vP.

(Chomsky (2000:122))

In (16) and (17), it is indicated that the unvalued feature of P and that of G are valued under the following conditions: (i) Features of P and G must match, (ii) P must c-command G, and (iii) there cannot exist a matching intervening element between P and G. Because all the agreement phenomena occur via this operation, the feature valuation is no longer the driving force for movements. Under the theory, thus, the EPP is considered to trigger the movement operation, and the operation is to be decomposed as follows:

(18) Move = AGREE + Copying + Merge

As shown in (18), the movement operation is the complex one consisting of AGREE, Copying, and Merge, and Copying and Merge are driven only if the EPP exists. Note that it has been a standard view that Copying is the process which creates a copy of some category containing the goal of the AGREE operation. This suggests that the EPP requirement on a functional head works at least partially in tandem with the AGREE operation with the head. In this paper, however, to give an explanation for the properties of the LIC and PAB discussed in section 3, I propose that the EPP requirement on a functional head is perfectly independent of the AGREE operation with the functional head: It is not always necessary to create the copy of some category containing the goal of the AGREE operation in the Copying process.

#### 4.1.2. Phase Impenetrability Condition (PIC)

Chomsky (2000, 2001) also proposes a Cyclic Spell-out model: A theory of Phases. Under the theory, it is assumed that the syntactic derivation creates syntactic units, called a phase, and that the output of the syntax is transferred to the LF and PF interfaces not all at once, but at each phase-level (for Chomsky,  $v^*P$  and CP). Once a phase has been sent to the interfaces, its contents are “forgotten” (i.e. inaccessible to the further syntactic derivation), due to the Phase Impenetrability Condition (PIC), which is stated in (19):

(19) For strong phase HP with head H, the domain of H is not accessible to operations outside HP; only H and its *edge* are accessible to such operations. The edge includes the residue outside of H', either Specs or elements adjoined to HP. (Chomsky (2001:13))

With respect to this point, consider the following configuration like (20), where ZP and HP form strong phases:

(20)

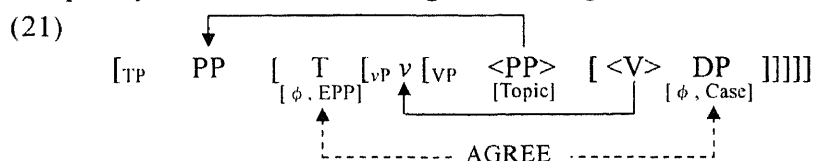
The diagram shows a syntactic tree structure. On the left, a dashed box labeled [ZP] contains a node Z. To the right of Z is an ellipsis "...". To the right of the ellipsis is a dashed box labeled [HP]. Inside [HP], there is a node  $\alpha$  and a node [H]. To the right of [H] is a node YP. A dashed line with an asterisk (\*) above it connects Z to YP, indicating that the domain of H is not accessible to operations outside HP. An arrow labeled "Transfer" points from the HP phase to the right, indicating that the output of the syntax is transferred to the interfaces.



In (20), once the strong phase HP is transferred, its complement YP is inaccessible to operations at ZP; consequently, a functional head Z can enter into an AGREE relation with  $\alpha$  and H, while it cannot have such a relation with any element in YP.

#### 4.2. *The Derivations of the LIC and PAB*

Now let us take a look at the derivations of the LIC and PAB in English, keeping the above assumptions in mind. First of all, I propose that the derivation of the LIC converges in the following fashion: A Theme DP and a Locative PP are base-generated in the Comp and the Spec of VP, respectively.<sup>5</sup> Then,  $\nu$  is Merged and V-to- $\nu$  raising takes place. As soon as T is introduced by Merge, T searches down the tree for a goal, and enters into an AGREE relation with the Theme DP; consequently, the  $\phi$ -feature on T and the case-feature on the DP are deleted.<sup>6</sup> Then, the PP bearing [+Topic] moves to the Spec of TP, satisfying the EPP on T. Now all the features that require agreement for convergence are properly deleted; consequently, the derivation converges, as is diagrammed as follows:<sup>7</sup>



In this proposed derivation, as noted in section 3, T enters into an AGREE relation with the sentence-final DP, while it is the sentence-initial PP that occupies the Spec of TP for the EPP on T, not the DP.

Let us turn now to the derivation of PAB. The derivation converges in the

<sup>5</sup> In this paper, I adopt the two-layered VP-shell for the underlying structure in which Agent, Location (Loc), and Theme are discharged, as in (i):

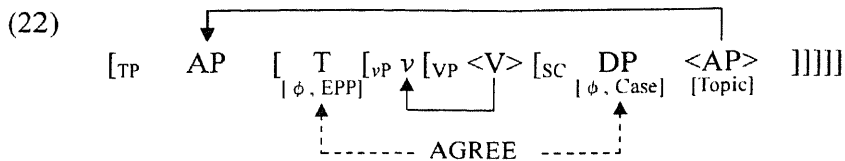
(i) [<sub>VP</sub> Agent [<sub>vP</sub> Loc [<sub>V</sub> Theme ]]]

In this structure,  $\nu$  is a kind of light verb, which has the ability to assign Agent, and Loc and Theme are base-generated in the Spec and the Comp of V, respectively. Note that some linguists posit the structure where Theme and Loc are Merged in the Spec and the Comp of V, respectively. Thus, the positions where Loc and Theme are Merged are a controversial point on which all do not agree. But there is much cross-linguistic evidence that argues for the structure in (i) (see Takano (1996)).

<sup>6</sup> One would think that it is problematic that T enters into an AGREE relation with the Theme DP across the Locative PP, because all the agreement phenomena via AGREE obey the locality condition (cf. (17c)). Note that, however, this relation causes no locality violation, because PPs are  $\phi$ -incomplete in general and thus they do not qualify as an intervener for such a relation.

<sup>7</sup> In the proposed derivation in (21), because the sentence-initial PP bears the topical feature, it would be expected that the functional projection of Topic Phrase (TopP) is Merged, whose head contains an uninterpretable feature. The derivation in (21), however, does not indicate that TopP is Merged and the topical feature on the functional head is properly deleted. This is because in this paper I concentrate on only the movement to the Spec of TP (i.e. the EPP on T), and thus it is irrelevant to this paper how the feature is deleted.

following fashion:



In the derivation in (22), I assume that the equative verb *be* in PAB takes a small clause as its complement, along the lines discussed in Guéron (1994). As soon as T is introduced by Merge, T searches down the tree for a goal, and enters into an AGREE relation with the DP; consequently, the  $\phi$ -feature on T and the case-feature on the DP are deleted. Then, the AP bearing [+Topic] moves to the Spec of TP, satisfying the EPP on T. Now all the features that require agreement for convergence are properly deleted and thus the derivation converges. In this derivation, just like that of the LIC, the EPP requirement on T is perfectly independent of the AGREE operation with T: The EPP on T is not satisfied by the copy of the XP containing the goal of the AGREE operation.

#### 4.3. The Topicality of the PP and AP Satisfying the EPP on T

In the proposed derivations of the LIC and PAB, I claimed that the sentence-initial PP and AP satisfying the EPP on T bear [+Topic]. There are, in fact, some pieces of evidence to suggest that they share some pragmatic and syntactic properties with the topical XP in Topicalization. Firstly, they must appear in the preceding context. Consider the following example with respect to this point:

- (23) a. He unscrews the plate and removes it from the door. *Behind the plate is a chiselled cavity.* (BNC\_J13: 3400-3401)  
 b. It is well known that Columbus made his first voyage to America in 1492. *But less well known is his last voyage.* (Fukuchi (1985:114))

In (23a), the explicit expression that evokes *the plate* in the PP is in the preceding context. In (23b), similarly, *well known* contained in the AP already occurs beforehand. Obviously, this is the same condition as is imposed on Topicalization.

Secondly, it is impossible to extract the *wh*-element out of the embedded clause, which means that the sentence-initial PP and AP create a Topic-island, as in (24a, b):

- (24) a. \* I wonder how<sub>i</sub> [into the room walked John t<sub>i</sub>]?  
 (Rochemont and Culicover (1990:93))  
 b. \* [Which fact]<sub>i</sub> do you think [most surprising of all is t<sub>i</sub>]?  
 (Iwakura (1978:327))

c. \* [Which books]<sub>i</sub> did Lee say that [with great difficulty, she can carry t<sub>i</sub>]?  
In (24a, b), *wh*-elements cannot move across the PP and the AP, respectively. As is well known, this behavior is also observed in the case of Topicalization, as in (24c).

#### 4.4. Two Conditions for the Topical XP to Satisfy the EPP on T

In this subsection, I discuss two conditions for the topical XP without an AGREE relation with T to satisfy the EPP on T: One is concerned with the argument structure of the verbs in these constructions; the other is concerned with the properties of the sentence-final DP, which has an AGREE relation with T.

##### 4.4.1. The Argument Structure and the PIC

In this subsection, as the first condition, I confirm that the verbs found in these constructions must involve the unaccusative structure. Furthermore, I show that this fact can be easily accounted for in terms of the PIC.

First of all, the LIC has often been considered to serve as a diagnosis for the unaccusativity. In fact, unaccusative verbs are generally compatible with the LIC, while unergative and transitive verbs are not, as in (25):<sup>8, 9</sup>

- (25) a. From the kitchen appeared a fat woman. (Kaga (2007:231))  
 b. \* On the corner smoked a woman. (Kaga (2007:231))  
 c. \* On the table has placed a tarte Tatin Susan. (Bresnan (1994:78))  
 cf. Susan has placed a tarte Tatin on the table.

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<sup>8</sup> Some researchers point out that a variety of unergative verbs can enter into the LIC as well, which are exemplified by the following sentences in (i):

- (i) a. Into the room walked John. (Kuwabara (1995:96))  
 b. On the second floor worked two young women. (Oba and Shima (2002:178))

In (i), the unergative verbs *walk* and *work* are compatible with the construction, irrespective of whether the sentence-initial PP is a directional one. There is, however, some evidence to suggest that such verbs found in the LIC change into a kind of unaccusative verbs: The verbs, which can usually co-occur with agent-oriented adverbs like *voluntarily* and *deliberately*, are not compatible with such adverbs when they are used in the construction, as in (ii):

- (ii) a. John walked out of the room voluntarily/deliberately.  
 b. \* Out of the room walked John voluntarily/deliberately.

(Kuwabara (1995:97))

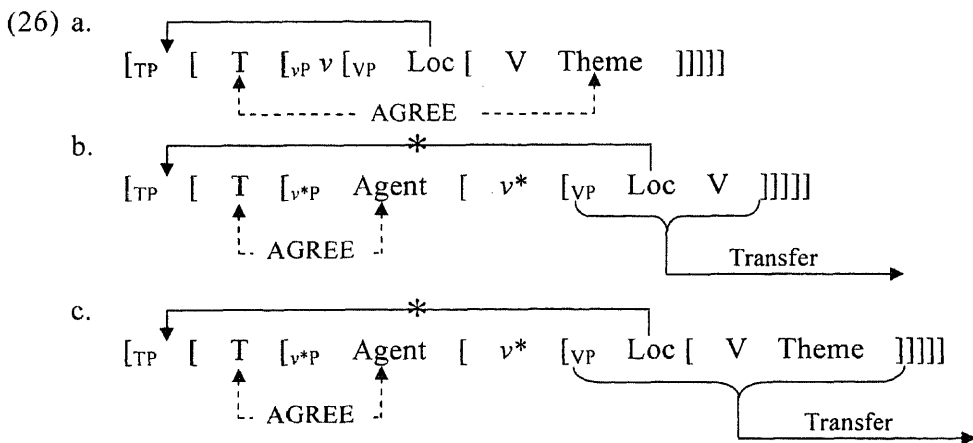
In (iia), the unergative verb *walk* is compatible with the agent-oriented adverbs *voluntarily* and *deliberately* without any difficulty. On the other hand, in (iib), where the same verb is used in the LIC, it is not compatible with the adverbs. It follows from this fact that the function of the LIC as a diagnosis for the unaccusativity is to be maintained.

<sup>9</sup> As discussed in note 8, the unergative verbs *walk* and *work* are compatible with the LIC; in (25b), on the other hand, the unergative verb *smoke* is not. This apparent contradictory fact suggests the possibility that unergative verbs can be further classified into subclasses in terms of whether they can occur in the LIC. However, I leave the issue open, since it is not my concern here.

d. On the table has been placed a tarte Tatin. (Bresnan (1994:78))

In (25a), the unaccusative verb *appear* is found in the LIC. The verb generally assigns an internal  $\theta$ -role to its subject, and the subject does not bear the property of the Agent. In (25b) and (25c), on the other hand, the unergative verb *smoke* and the transitive verb *place* cannot occur in this construction. Such verbs usually select an external  $\theta$ -role, which is assigned to the subject of the sentences. Moreover, in (25d), the passive verb *placed* is compatible with the construction. This is because the external argument of the verb is suppressed and thus the verb has the same argument structure as unaccusative verbs: Location and Theme.<sup>10</sup> These facts, thus, lead to the generalization that only unaccusative verbs can enter into the LIC.

This generalization follows from the PIC. Let us assume that the sentences in (25a-c) have the following structures in (26a-c), respectively:



In (26a), once T is introduced by Merge, it enters into an AGREE relation with the Theme DP. Then, the Locative PP moves to the Spec of TP for the EPP on T. Note that these operations are not problematic for the PIC at all, because the  $v$ P of unaccusative verbs does not form a strong phase. In (26b) and (26c), on the other hand, when T is Merged, it enters into an AGREE relation with the Agent DP. Here, the Locative PP cannot move to the Spec of TP, due to the PIC, unlike (26a): Because the  $v^*$ P of unergative and transitive verbs is a strong phase and thus the PP is already transferred to the interfaces, T cannot establish any relation with the PP.

<sup>10</sup> There are indeed some pieces of evidence to suggest that the passive verbs are like unaccusative verbs. First, the appearance of *by*-phrases expressing Agent makes the sentence less acceptable, as in (i):

(i) ?? On the table has been placed a tarte Tatin by Susan. (Bresnan (1994:79))

Second, the appearance of agent-oriented adverbs also makes it less acceptable, as in (ii):

(ii) ?? On this table were put these books voluntarily/deliberately. (Kuwabara (1995:103))

This explanation also holds true of PAB. In 4.2, I assumed that the equative verb used in the construction takes a small clause as its complement. This suggests that the verb is a kind of unaccusative verb, which does not select any external  $\theta$ -role. From this suggestion it follows that the verb does not constitute a strong phase; consequently, it is possible for T to have a certain relation with the XPs in the small clause without violating the PIC.

#### 4.4.2. *The Status of the Sentence-Final DP*

In this subsection, as the second condition, I claim that the sentence-final DP must be interpreted as the focus of the sentence. In fact, I have some pieces of evidence to support that the DP bears [+Focus]. Firstly, when the LIC and PAB are paraphrased into cleft sentences appropriately, only the sentence-final DP can occupy the focus position, as in (27) and (28), respectively:

- (27) a. At the foot of the stairs was his mother.  
 b. It was his mother that was at the foot of the stairs.  
 (Rochemont (1978:30))
- (28) a. Less fortunate was the girl in the back seat.  
 b. It was the girl in the back seat who was less fortunate.  
 (Rochemont (1978:30))

In (27b), which is an appropriate paraphrase of (27a), the focus position in the cleft sentence is filled by the sentence-final DP *his mother*. In (28b), similarly, it is the DP *the girl in the back seat* that occupies the focus position.<sup>11</sup>

Secondly, the sentence-final DP receives a sentential stress when the LIC and PAB are pronounced, as in (29):

- (29) a. On the wall hangs a portrait of LINCOLN.  
 b. More unfortunate is our DEAN.  
 (Fukuchi (1985:122), with slight modifications)

As is well known, a sentential stress usually falls in the element which serves as the focus of the sentence. In (29a, b), a sentential stress is assigned to a part of the sentence-final DP, *Lincoln* and *Dean*, respectively. Thus, the DPs function as the focus of the sentences.

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<sup>11</sup> In these cases, of course, it is possible for the sentence-initial PP and AP to occupy the focus position, as in (ia, b), respectively:

- (i) a. It was at the foot of the stairs that his mother was.  
 b. It was less fortunate that the girl in the back seat was.

(Rochemont (1978:30))

In (ia, b), the focus position is filled by the PP *at the foot of the stairs* and the AP *less fortunate*, respectively. Rochemont (1978), however, points out that these sentences are not appropriate paraphrases of (27a) and (28a).

## 5. The Nature of the EPP on T in English

### 5.1. *Descriptive Generalization*

In section 2, I saw that under the previous approaches, the movement operation is required to satisfy a certain condition imposed by the PF interface. According to their mechanisms, in English, the XP which enters into an AGREE relation with T (i.e. the thematic subject) must move to the Spec of TP, satisfying the EPP on T. As is clear from the discussion on the LIC and PAB in section 3 and section 4, however, their approaches are empirically insufficient: In the constructions, the EPP on T is satisfied by the XP which does not enter into an AGREE relation with T. In this paper, based on this observation, I generalize how to satisfy the EPP on T in English as follows:

- (30) a. The XP which has an AGREE relation with T (i.e. the thematic subject) moves to the Spec of TP to satisfy the EPP on T.
- b. The XP without an AGREE relation with T moves to the Spec of TP for the EPP on T under the following conditions:
- (i) the unaccusative verbs are used, and (ii) the DP which enters into an AGREE relation with T is interpreted as the focus of the sentence.

From this generalization, in particular (30b), it follows that the EPP requirement on T in English is perfectly independent of the AGREE operation with T: The movement operation is considered to be motivated by other factors than some PF interface conditions.

### 5.2. *The Motivation for the Movement*

#### 5.2.1. *The Movement as the Establishment of a Kind of Predication*

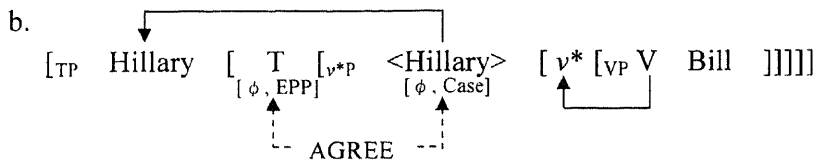
In 5.1, I proposed a new generalization with respect to what satisfies the EPP on T in English. The generalization suggests that the mechanisms for the movement operation proposed by Miyagawa (2005, 2007) and Agbayani (2006) do not work well in the case of the movement to the Spec of TP: The movement operation is not designed to satisfy some requirement imposed by the PF interface. Here, a reasonable question, which figures prominently in current minimalist studies on the EPP, is to arise: “Why does a certain XP (mainly, the thematic subject) move to the Spec of TP?,” that is, “What is the nature of the EPP on T?” In this subsection, I suggest that a key to solving this problem is Oka’s (2007) analysis.

Among a lot of attempts to clarify the nature of the EPP, Oka (2007) presents a different approach from Miyagawa (2005, 2007) and Agbayani (2006): Assuming that a sentence (= TP) is a syntactic form of predication (see Rothstein (1983)), he argues that movements take place to establish some kind of

predication.<sup>12</sup> In this paper, based on his analysis, I claim as follows: The XP which has an AGREE relation with T (i.e. the thematic subject) moves to the Spec of TP in order to establish the subject-predicate articulation.

Let us confirm this respect with the following sentence in (31a). This sentence is derived as diagramed in (31b): An Agent DP is Merged at the Spec of  $v^*P$ , and a Theme DP is base-generated at the Comp of VP. Then, once T is introduced by Merge, it enters into an AGREE relation with the Agent DP and the DP moves to the Spec of TP for the EPP:

(31) a. Hillary kissed Bill.



Sentence (31a), where the EPP on T is satisfied by the XP having an AGREE relation with T, is usually interpreted as a predicational sentence, in the sense of Guéron (1980):<sup>13</sup> More concretely, it is construed as a proposition about the thematic subject *Hillary*, where the sentence-initial element serves as a kind of topic and the rest of the sentence functions as a comment about the topic element. Thus, it is reasonable to claim that the subject-predicate articulation is established by the movement of the XP which has an AGREE relation with T (i.e. the thematic subject) to the Spec of TP.

### 5.2.2. Further Consequences

In 5.2.1, I proposed that the XP which has an AGREE relation with T (i.e. the thematic subject) moves to the Spec of TP in order to establish the subject-predicate articulation, along the lines discussed in Oka (2007), and demonstrated the adequacy of the proposal. If this idea is on the right track, it is to be unsurprisingly expected that the sentence-initial PP and AP in the LIC and PAB move to the Spec of TP in order to establish a kind of predication, although the constructions are generally regarded as a presentational sentence. In this subsection, I show that the proposal makes it possible to give an adequate explanation as to why the topical PP and AP which do not enter into an AGREE relation with T can move to the Spec of TP in the LIC and PAB, and why these constructions are interpreted as a presentational

<sup>12</sup> Rizzi (2006), introducing the criterial position of Subject Phrase (SubjP), which is distinct from and higher than TP, also proposes that a nominal XP moves to the Spec of SubjP for the establishment of the subject-predicate articulation.

<sup>13</sup> Guéron (1980) uses the term 'a predicational sentence' to distinguish it from a presentational sentence.

sentence, not a predicational sentence.

Let us start by discussing the first question: “Why can the topical PP and AP, which do not enter into an AGREE relation with T, satisfy the EPP on T in the constructions?” As noted in the introduction of this paper, this fact is merely pointed out in the previous studies, but their explanations are not conceptually adequate. However, given that the movement operation takes place for the establishment of a kind of predication, I can easily account for the fact, based on a very interesting observation made by Rizzi (2006): Rizzi (2006) indicates that the subject and the topic are similar in that some kind of predication is involved, and then makes the distinction between them with two binary-features, as in (32):

- (32) Topic: +aboutness                      Subject: +aboutness  
                   +D-linking    -D-linking    (Rizzi (2006:122))

According to his classification in (32), it is the aboutness feature that is required to form a kind of predication. Because the sentence-initial PP and AP in the constructions must be understood as the topical XP, as seen in 4.3, they are to contain the aboutness feature necessary for the establishment of a certain predication; consequently, they qualify as the XP that can satisfy the EPP on T, although they are not the thematic subject, which has an AGREE relation with T.

Now let us turn to the second question: “Why are the constructions interpreted as a presentational sentence?” This question may be also accounted for, given that the movement operation takes place for the establishment of a kind of predication. As confirmed in 5.2.1, the sentence in which the EPP on T is satisfied by the XP which enters into an AGREE relation with T is considered as a predicational sentence, which involves the subject-predicate articulation. On the other hand, as mentioned above, the LIC and PAB, where the EPP on T is satisfied by the XP that does not enter into an AGREE relation with T, are interpreted as a presentational sentence, which has a special function of introducing the sentence-final DP to the discourse as the focus of the sentence. These facts suggest that there is a correlation between the predication type of the sentence (i.e. a predicational or presentational sentence) and the way the EPP on T is satisfied. If the correlation is valid, I can explain the special function of the constructions as follows: In the LIC and PAB, the EPP on T is satisfied by the XP which does not have an AGREE relation with T; consequently, they function as a presentational sentence. In the future research, taking into consideration a lot of constructions including the *there*-construction, I will explore further the possibility that the predication type of the sentence is associated with the way the EPP on T is satisfied.



## 6. Conclusion

In this paper, by confirming the properties of the LIC and PAB, I claimed that in these constructions, the EPP on T is satisfied by the Internal-Merge of the topical XP without an AGREE relation with T, and clarified the conditions for such a peculiar case. Moreover, based on the claim, I proposed a new generalization with respect to what satisfies the EPP on T in English, and explored the possibility that movements may take place for the establishment of a kind of predication, thereby making it possible to provide an adequate explanation for the reason why the sentence-initial PP and AP in the constructions move to the Spec of TP and why the constructions are interpreted as a presentational sentence.

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