Agreement and Movement*

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Lee, Hong Bae. 2001. **Agreement and Movement**. *Korean Journal of English Language and Linguistics* 1-1, 145-162. The operation Move is defined in Chomsky (1999, 2000) as a composite operation consisting of three components: Agree, Identify and Merge, taking Agree as a necessary condition for Move. Therefore, I call this definition of Move as the Agree-based Move. In this paper, I argue that the Agree-based approach to Move cannot be maintained; I claim that the Selection-based approach to Move, in which the EPP-feature is analyzed as an s-selectional property of a head, offers a more natural account of the sentences under consideration. I believe that the three components of Move as defined in (6) happen to co-occur in the derivation of certain sentences, as the composite transformation called *Passivization* does in the derivation of a passive sentence like "the city was destroyed by the enemy." On the basis of these observations, I conclude that Agree and Move should be regarded as separate computational operations; the task of Agree is to erase uninterpretable features of both probe and goal, and that of Move is to satisfy the EPP-feature, which should be taken as an s-selectional feature.

1. Formal features

According to Chomsky (2000), there are two kinds of "imperfections" in human language: *uninterpretable formal features* and *displacement property*. He claims that no language-like systems or symbolic systems of special purposes have such properties. Then, why do such "imperfections" happen to be in human language? Perhaps, they have to do with minimal design specifications of natural language. In other words, they have something to do with the way of expressing meanings in human language.

In the early generative tradition, the structure of an expression

*This work was supported by the Brain Korea 21 Project in 2000.

generated without application of displacement is called underlying structure, whereas that with application of displacement is called surface structure; the *underlying* structure becomes the input to semantic interpretation, and the *surface* structure becomes the input to phonological interpretation, under the assumption that displacement preserves meaning. The subsequent linguistic investigations have proved that there are certain aspects of meaning that can be attributed to surface structures of linguistic expressions. Then, it is claimed that underlying structures enter into determining semantic properties related to thematic structure and entailment, while surface structures enter into characterizing such properties as topic-comment, pre-supposition, focus, specificity, new/old information, etc. Chomsky (2000) claims that the aspects of meaning expressed by surface structures are specific to human language. If this is true, human language must have been designed to accommodate them in some systematic way. According to Chomsky (2000:121), the displacement property was put into human language to accommodate, at least in part, these aspects of meaning expressed by surface structures.

As mentioned above, another imperfection in human language is "uninterpretable" formal features. While interpretable features are legible to the external systems at the interface, uninterpretable features are "features that receive no interpretation at LF and need receive none at PF" (Chomsky 2000:119). Accordingly, these features are subject to the Interpretation Condition at the PF- and LF-interfaces:

(1) The Interpretation Condition
LIs have no features other than those interpreted at the interface, properties of sound and meaning
(Chomsky 2000:113)

One of the most typical uninterpretable formal features is structural Case of nominals, which must be erased in the process of deriving interface representations to meet (1). Agreement features, frequently

called ϕ-features, are also uninterpretable for verbs and adjectives, but interpretable for nouns.

Chomsky(2000:119) says, "agreement features ... phonetically optional throughout," meaning that agreement features are sometimes phonetically interpretable. If we say that LF-interpretable features are those features that can make semantic contributions, PF-interpretable features are the features that can differentiate pronunciation of lexical items. For instance, we pronounce [hij] the 3rd person singular masculine *nominative* English pronoun *he*, [him] the 3rd person singular masculine *accusative* English pronoun *him*, and [hiz] the 3rd person singular masculine *genitive* English pronoun *his*. Since we pronounce differently *he, him,* and *his,* according to their Case-features, we may say that structural Case is a PF-interpretable feature, although it is not an LF-interpretable feature. The same argument seems to hold in the case of ϕ-features of verbs and adjectives. We say, 'we walk' and 'he walks', but not 'we walks' and 'he walk', because of their [person] and [number] features. These features are PF-interpretable in the sense that we pronounce the verb differently according to their ϕ-features.

If this line of argument is correct, we may wonder whether there are "genuine" uninterpretable formal features in human language. We generally postulate grammatical or formal features when a *semantically identical* lexical item shows *phonetically different* forms depending on the positions in which it occurs. Consider again the case of *he, him* and *his*. We describe their formal differences in terms of structural Case. Traditional grammar hypothesizes that there are such grammatical features as tense, aspect, voice, mood, Case, person, number, gender, and so on in human language. Among them, some are LF-interpretable, and some LF-uninterpretable, but it seems that all are PF-interpretable.

2. Agreement

Agreement or concord is one of the topics that every traditional

grammar book should not afford to dispense with. However, modern syntactic studies have generally ignored the topic, treating it as a relatively unimportant morphological phenomenon. As far as I know, Baker (1988) was the first generative study which explicitly claims that (inflectional) morphology is directly related to syntax.

(2) The Mirror Principle
Morphological derivations must directly reflect syntactic derivations (and vice versa).
(Baker 1988:13)

Chomsky (1993:195) incorporates Baker's Mirror Principle in his minimalist program by saying:

> Suppose, for example, Baker's Mirror Principle is strictly accurate. Then we may take a lexical item—say the V to be a sequence V = (α, $Infl_1$, . . ., $Infl_n$), where α is the morphological complex [R-$Infl_1$- . . .-$Infl_n$), R a root and Infli an inflectional feature. . . . When V is adjoined to a functional category F (say, Agr_o), *the feature $Infl_1$ is removed from V if it matches F;* and so on. If any $Infl_i$ remains at LF, the derivation at LF. The PF form α always satisfies the Mirror Principle in a derivation that converges at LF. [Emphasis is mine.]

Chomsky (1993, 1995) calls "checking" the process by which the formal feature Infl is deleted if it matches some formal feature F of a functional category α.[1] In Chomsky (2000, 1999), the job of checking is taken over by the computational operation, called **Agree**,[2] which is defined in Chomsky (2000:101) as, ". . . Agree,. . . establishes a relation

[1]Checking, however, is not regarded as one of the major computational operations in Chomsky (1993, 1995), but an "ancillary" effect produced by "checking relations". A checking relation. is defined as follows: Suppose that K attracts F to form {H(K), {α, K}} and each feature of FF[F] is in the checking domain of each sublabel f of K. We now say that: feature F′ of FF(F) is in a checking relation with f if F′ and f match (Chomsky 1995: 310).

[2]Here, I am not claiming that Agree plays the exactly same role as checking.

(agreement, Case checking) between an LI[= lexical item: HBL] α and a feature F in some restricted search space (its *domain*)." We have to know what the phrase "establishes a relation" exactly means in the definition given above to understand the operation Agree. For that purpose, consider the derivation of the sentence in (3):

(3) a new building was built

(3) is supposed to have an intermediate structure like (4):

(4) T-be built a new building

It is assumed that there are three types of *uninterpretable* formal features in (4):[3]

(5) (a) ϕ-features of T
    (b) EPP-feature of T
    (c) structural Case of DP a young man

In (4) the operation Agree applies between (formal features of) T and DP *a new building*. We call the ϕ-feature set of T a **probe**. The probe looks for a **goal**, that is, "matching"[4] features to establish a relation, that is, *agreement*. In (3) the goal is the ϕ-feature set of *a new building*, including its "uninterpretable" structural Case-feature. Then, a question may be raised at this point: why the operation Agree applies, or rather what the operation Agree does to a structure like (4). It applies to delete "uninterpretable" formal features of both the probe

[3]Uninterpretable features are those features that contribute nothing to the interpretation of the expressions containing them at LF- and PF-interfaces.

[4]Here, we have to make it clear what "matching" means in Chomsky's (2000:122) claim that '"matching" features. . . establish agreement.' Matching is not feature identity but rather *nondistinctiveness* in the sense that it is established between probe and goal if they contain "identical" features but not "identically valued" features.

(that is, the ϕ-set of T) and the goal (that is, the nominative Case-feature of DP a new building) to meet the Interpretation Condition in (1). The uninterpretable EPP-feature must also be erased. The job is carried out by another computational operation, called **Move**, which will be discussed shortly below.

Since the operation Agree applies in order to erase uninterpretable formal features of both probe and goal, they have to contain uninterpretable features for Agree to apply, which we call the Activization Hypothesis:

(5) The Activization Hypothesis
Probe and goal must both be active for Agree to apply
Chomsky (1999)

In other words, suppose Agree applies to (4) and removes uninterpretable features of both T and DP. Then, they cannot participate in Agree any more.

3. Movement

The grammatical operation, called *movement*, has played a major role in generative grammar from its beginning. In the *Aspects*-model of grammar, it was one of the three elementary transformations: movement, insertion and deletion. In the Government-Binding (GB) Theory of grammar, all, but movement, transformational rules were eliminated from the grammar (at least from syntax). The movement operation, labelled as Move-α, acted as one of the major modules of the grammar, interacting with every other module: Case theory, Binding theory, θ-theory, and the ECP.[5]

[5]For instance, let's consider how A-movement interacts with various modules of the grammar. A-movement is supposed to apply to an argument so that it can be assigned a relevant Case in the moved position; it can move an argument to a position from which it can bind its original position; it can move an argument only to non-θ-position to observe the θ-

In the early Minimalist Program (Chomsky 1993, 1995), the movement operation, designated as Move,[6] expands its role in the grammar, being able to move not only categories but features. The operation Move, however, is defined as a composite operations of Agree, Identify and Merge in Chomsky (1999, 2000), returning to the notion of Move-α in GB in the sense that it can only move categories, but not features. Chomsky (2000: (54)) defines that Move of β, targeting α, consists of the following three components:

(6) (a) A probe P in the label L of α locates its closest matching G in its domain[7]
(b) A feature G′ of the label containing G selects a phase β as a candidate for "pied-piping"
(c) β is merged to a category K

The definition given above about Move implies that Match/Agree must take place between an attracting lexical item α and a formal feature F contained in a phrase P(F), before Move (that is, the operations that erase the EPP-feature of α) applies to raise P(F) and merges it to αP, a projection of α. To understand how Agree and Move operate, let's consider the derivation of sentence (3), repeated here as (7):

(7) a new building was built

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criterion; it can move an argument whose trace can be properly governed. There are too many books to refer to for the discussion of the subject. See Chomsky (1981, 1986), Culicover (1997), Haegeman (1994), Ouhalla (1998), and Radford (1981, 1988) among others.

[6]The symbol α was eliminated from Move-α, because in GB α refers to a category but in the minimalist program not only a category but features are allowed to move. In Chomsky (1995), Move is sometimes referred to as Move-F or Attract-F. It is assumed that a category consists of only a set of formal (and semantic) features after the Spell-Out point. The name "Attract" is posited to indicate that features moves to check features carried by a constituent in the target.

[7]The domain of a head H is the domain c-commanded by H.

As we have seen, at some stage of the derivation of (7) we obtain the following intermediate structure:

(8) T-was built a new building

In (8) the ϕ-set of T, acting as probe, seeks "matching" features, named goal, to establish agreement, eventually erasing uninterpretable features of both probe and goal. This is called Agree. In (8) the goal is the ϕ-feature set of *a new building*, including the nominative Case. But the EPP feature of T must also be satisfied; in this case, by raising the phrase P(G), *a new building*, identified by the goal, to SPEC-T. Chomsky (2000:122) claims, "The combination of selection of P(G), Merge of P(G), and feature-deletion under match (Agree) is the composite operation Move, which dislocates [*a new building*], eliminating all uninterpretable features." I do not believe that Move is a composite operation combining the processes of seeking a goal for Agree, determining a phrase for Move, and moving a phrase to satisfy the EPP feature. As it is claimed in the earlier model of generative grammar that the three elementary transformations (i. e., movement, insertion, and deletion) happen to co-occur in English passive constructions, but there is no such thing as Passivization (see Chomsky 1970), I claim that the three processes, Agree, Identify and Merge, happen to occur together in the derivation of sentences like (7), but there is no such thing as a composite operation Move assumed in Chomsky (1999, 2000).

Consider the expletive construction in (9), which shows that the moved category is not a phrase identified by the goal for Agree:

(9) There seems [$_{TP}$ *t* to be a man in the room]

We will have an intermediate structure like (10) at some point of the derivation of (9):

(10) T-seems [$_{TP}$ there to be a man in the room]

According to the definition of Move in (6), the operation Agree must apply first to derive (9) from (10): the probe, the ϕ-set of T, seeks a goal (matching features of a man) for agreement, eliminating the uninterpretable ϕ-set of T and the structural Case of *a man*. But what raises to SPEC-T in this case is not a phrase determined by the goal, but the expletive *there*. In other words, in (10) T agrees with *a man*, but identifies the expletive *there* as a phrase for dislocation. This expletive construction clearly shows that Move does not necessarily presuppose Agree. In other words, a candidate for Move is not always determined by the goal of a probe.

Chomsky (2000) proposes a different derivation for (9). The probe, the ϕ-set of T, locates its "matching" features not in *a man* but in the expletive *there*, which Chomsky (1999, 2000) assumes contains [person] feature as its only formal feature. Therefore, the phrase that is to be raised to [SPEC, T] is not the nominal a man, but the expletive *there* selected by its [person] feature. However, the uninterpretable ϕ-features of T cannot be valued and erased by matching the [person] feature of *there*, because the ϕ-feature set of the expletive is "defective/ incomplete." Chomsky (1999) proposes the following condition for matching of probe-goal to induce Agree, which we call **the Complete ϕ-feature Hypothesis**:

(11) The Complete ϕ-feature Hypothesis (CPH)
α must have a complete set of ϕ-features (it must be ϕ-*complete*) to delete uninterpretable features of the paired matching element β

According to (11), only the uninterpretable [person] feature of the expletive deletes in the matching pair (T, *there*) in (10), but the uninterpretable ϕ-features of T *remains intact*, further looking for its second goal. Another agreement then takes place between T and *a man*, deleting uninterpretable ϕ-features of T and the structural Case of the nominal. Only the expletive *there*, but not the associate

nominal, can raise to [SPEC, T] to delete the EPP-feature of T in (10).

(12) *a man T-seems [$_{TP}$ there to be *t* in the room]

It seems that Chomsky's analysis of (9) goes directly against the **Defective Intervention Constraint** (Chomsky 2000):

(13) The Defective Intervention Constraint (DIC)
In a structure [α > β > γ] where > is c-command, β and γ match the probe α, but β is inactive, the effects of matching are blocked

Then, Chomsky (2000:123) says, "The operations Agree and Move require a goal that is both local and active." Chomsky's analysis of (9) shows that only the operation Move obeys DIC; the intervening element *there* does not block the application of Agree between T and *a man* in (10). If my line of argument is correct, it seems that there are two different kinds of Match/Agree: one for Agree and another for the operation of deleting EPP-feature.

Another expletive construction like (14) also shows that the P(G) containing a goal for Agree is not identical with the phrase that is to merge with SPEC-T to meet the EPP:

(14) There is a man in the room

Before we merge the expletive *there* to SPEC-T, we will have the following structure:

(15) T-is a man in the room

In (15) the probe ϕ-set in T takes matching features of *a man* as its goal, but the expletive *there* merges to SPEC-T instead of raising *a man* to SPEC-T. The phrase selected to satisfy the EPP-feature has nothing to do with Match/Agree in this case.[8] We may wonder

why the EPP-feature of T must be satisfied differently in (10) and (15). In (10), the EPP-feature of T is satisfied by the composite operation Move as defined in (6), while it is satisfied by selecting a relevant category in (15) (in this case, the expletive DP *there*).

4. EPP-feature and Move

In this section, I am going to argue that Move and Agree should be treated as separate operations. Agree applies to delete "uninterpretable" formal features, but Move applies to meet the selectional properties (that is, the EPP-feature) of a head.[9] As we have seen in (15), the EPP-feature of a head can also be met by Merge. I believe that Move and Merge are the same operation, but they are only different from each other in that they seek a relevant category to fill the SPEC position of the head in a different fashion. If an operation applying to a head locates the category for its EPP-feature in its domain, it is Move; otherwise, it is Merge.

I have said that Move applies to meet the selectional properties of a head. For the sake of exposition, Chomsky's (1999, 2000) account of Move is *Agree-based Move*, and the present account is *Selection-based Move*. What the Selection-based Move is trying to say is that the functional category C, for example, s-selects a *wh*-phrase as its specifier,[10] as it invariably s-selects TP as its complement as in (16).

(16) Who do you like?

We know that C cannot select a nominal phrase like *someone* as its

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[8]Chomsky (2000) assumes that the [person] feature of the expletive merged with [SPEC, T] in (15) acts as a probe, while the ϕ-set of T acts as the goal, deleting the probe.

[9]See Kim (1999) and Lee (1999), in which an EPP-feature is analyzed as an uninterpretable selectional feature.

[10]If we assume that SPEC-C is also position for topic, focus, scope-marking operator, etc., we may have to say that C with [Q]-feature selects a wh-phrase as its specifier.

specifier:

(17) *Someone do you like?

Now, consider the derivational processes of (16). We may say that (16) has (18) as its argument structure:

(18) [$_{v}$P you v [$_{VP}$ like who]]

It seems that the direct object *who* must move to SPEC-v, before it moves to SPEC-C because of the **Phase-Impenetrability Condition** (Chomsky 2000):[11]

(19) The Phase-Impenetrability Condition (PIC)
In phase α with head H, the domain of H is not accessible to operations outside α, but only H and its edge. where, given HP = [α [H β]], β is the domain of H, and α its edge.

According to (19), Move applying to phase C cannot access to *who* in the domain of the lower phase v in (20):

(20) [$_{C'}$ C [$_{TP}$ you T [$_{v}$P t_{you} like-v [$_{VP}$ t_{like} who]]

If it moves to SPEC-v as in (21), however, Move applying to C can see *who* in the SPEC position (i.e., edge) of phase v:

(21) [$_{C'}$ C [$_{TP}$ you T [$_{v}$P who t_{you} like-v [$_{VP}$ t_{like} t_{who}]]

The derivation presented above raises an interesting question: English is one of the typical languages that does not allow overt Object Shift (OS), as we can see in (22); then, how do we explain the

[11]A phase is defined in Chomsky (1999:9) as "verbal phrases with full argument structure [vP] and CP with force indicators, but not TP alone or "weak" verbal configurations lacking external arguments (passive, unaccusative)."

fact that OS is required to derive sentences like (16)?

(22) (a) *John [her likes *t*]
(b) *Mary [a book bought *t*]

The answer seems to be very simple, if we assume the EPP-feature is a selectional feature. In other words, if we assume that in English the functional category *v* may select a phrase with [wh]-feature as its Specifier, as the functional category C, then we can account for the fact that only *wh*-phrases, not other nominals, may undergo OS in English.

Another fact that we have to explain in connection with English *wh*-questions like (16) is that the *wh*-phrase OSed to [SPEC, *v*] may not remain there, but moves all the way to [SPEC, C]. The Agree-based Move has to account for the fact that the operation Move applying to meet the EPP-feature of head *v* raises only those nominals (that is, *wh*-phrases, but not other nominals) that will raise all the way to [SPEC, C] later. It raises a serious "look-ahead" problem.[12] For the Selection-based Move, this is simply another example of successive-cyclic movement, requiring no special treatment.

The Agree-based approach to Move also experiences difficulties in explaining English locative inversion constructions. It is generally known that T allows the expletive *there* as its specifier in case it has a projection of an unaccusative verb (e.g., *arise, appear, arrive, be, come, happen, go, occur, roll, stance, sit,* passive verbs, etc.) as its complement. Compare the following sets of sentences:

(23) (a) *There appeared* a ghostly face at the window
(b) *There stands* a stature of the explorer in front of the building

(24) (a) *When the train arrived late, *there complained* many passengers

[12] I am not going to discuss how Chomsky (1999) handles this problem.

(b) **There apologized* Mr. Smith for his son's impoliteness

Another characteristic of unaccusative verbs is that they allow locative inversion as in (25):

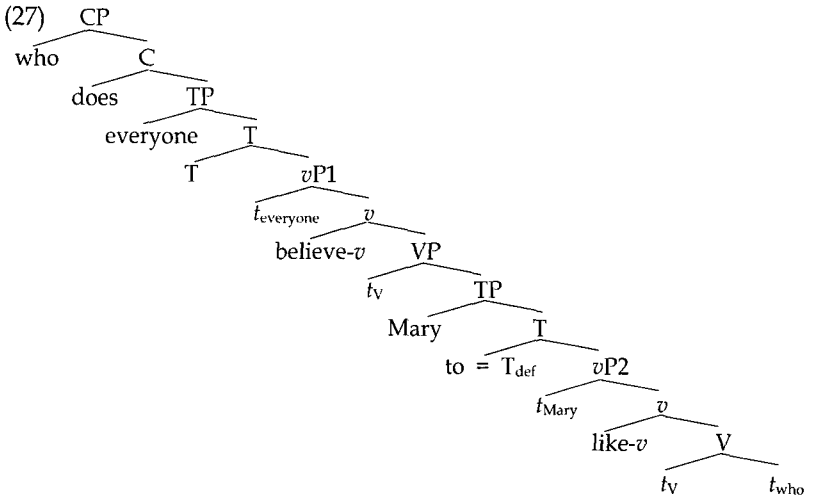
(25) (a) *Down the hill* rolls the rock
(b) *At the table are sitting* three judges wearing dark robes

Collins (1997) points out that in a locative inversion construction the locative PP moves to [SPEC, T]. If this is true, it is obvious that in (25) T Agrees with a post-verbal nominal, but what raises to [SPEC, T] to meet the EPP-feature is a "locative" adjunct.

Another interesting example that seems to support the Selection-based approach to Move is (26):

(26) Who does everyone believe Mary to like t?

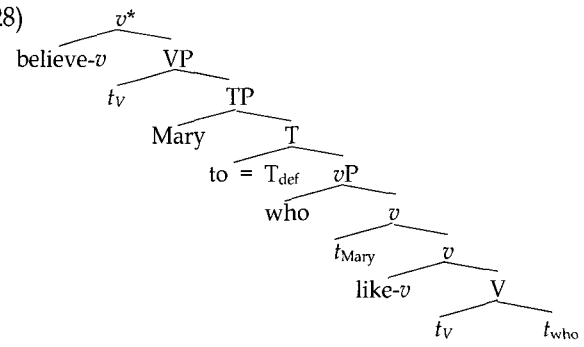
Suppose that who has *directly* moved from the position of *t* to the present position without dropping in anywhere between. Then, (26) would probably have (27) as its surface structure.

(27)


A structure like (27) is possible in English. English is a typical non-OS language, and an ECM verb like *believe* selects TP as its complement (see Chomsky (1999:6). Therefore, there is no position for the word *who* to stop by before it reaches its final destination [SPEC, C]. This kind of "one fell swoop" derivation is not allowed even in a non-OS language like English because of the PIC in (19). The interrogative word *who* jumped over two phases *v*P1 and *v*P2 in (27).

Then, as I have argued above, we have to choose the derivational process in which the object *who* is OSed to the outer SPEC of *v*P. In this case, we will have the following partial intermediate structure for (26):

(28)



(28) is the structure in which the embedded direct object *who* has moved to the outer SPEC of embedded *v*P. Now, we are ready to apply relevant operations to *v** in (28). The probe (that is, the "complete" ϕ-feature set of the verbal complex *believe-v*) Agrees with the goal (that is, the "complete" ϕ-feature set of the nominal *Mary*), so that the uninterpretable ϕ-features of *believe-v* and the accusative Case of *Mary* get erased. Notice, however, that the phrase *who* that has nothing to do with Agree has to Move to the outer SPEC of *v** to meet the EPP-feature of the verbal complex. Then, it is clear that there are cases in which the phrase for EPP is not identical with the phrase containing goal for Agree, posing difficulties for the Agree-

based approach to Move.

As we have discussed already, if we assume that in English the functional category *v* may select a nominal with [wh]-feature as its specifier, as the functional category C, and that Move is an independent computational operation, it is quite natural for a wh-phrase to raise to [SPEC, *v**] in (28), requiring no particular explanation.

5. Conclusion

The operation Move is defined in Chomsky (1999, 2000) as a composite operation consisting of three components: Agree, Identify and Merge (see (6)): a probe P in α *agrees* with its goal G in its domain; an uninterpretable feature G′ in G *identifies* a phrase β as a candidate for "pied-piping"; finally, the phrase β *merges* to SPEC-α. I have argued that this Agree-based approach to Move in (6) cannot be maintained, because there are cases (see (9), (25) and (26)) where the phrase for "pied-piping" is not identified by an uninterpretable feature in a goal for Agree. I claim that the Selection-based approach to Move, in which the EPP-feature is analyzed as an s-selectional property of a head, offers a more natural account of the sentences under consideration. I believe that the three components of Move as defined in (6) happen to co-occur in the derivation of sentences like (7), as the composite transformation *Passivization* does in the derivation of a passive sentence like "the city was destroyed by the enemy." On the basis of these observations, I have argued that Agree and Move should be regarded as separate operations; the task of Agree is to erase uninterpretable features of both probe and goal, and that of Move is to satisfy the EPP-feature, which should be taken as an s-selectional feature.

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접수일자: 2000. 12. 7.
게재결정: 2001. 1. 15.