The Movement Order of the *v*P-Subject and the VP-Object in English

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Lee, Doo-Won. 2004. The Movement Order of the *v*P-Subject and the VP-Object in English. *Korean Journal of English Language and Linguistics* 4-1, 103-116. Chomsky (2001) and Kitahara's (2002) suggestion that object shift occurs prior to movement of the *v*P-subject to SPEC-T is not on the right track with respect to the Merge operation. According to the Merge operation, TP is necessarily created earlier than CP. Chomsky (2001) suggests that the probe-goal relation between T and SUBJ is evaluated in the CP after it is known whether the position of OS has become a trace losing its phonological content. However, the FocP is not a phase (CP). So, Chomsky (2001) and Kitahara's (2002) suggestion is not correct in the case of the movement of OBJ to the spec of Foc in English, either. The aim of this paper is to show that the *v*P-subject must move to SPEC-T prior to the consecutive movement of the wh-object to SPEC-C via object shift in English. This derivation obeys Chomsky's (2001) so-called probe-goal matching condition.

Key Words: Merge, object shift (OS), probe-goal matching condition, syntactic effect

1. Introduction

So far as Agree Move is concerned, the syntactic effect (1), which makes the *v*P-subject with overt Case undergo movement to SPEC-T in Korean, must occur prior to the output effect, which triggers object shift (hereafter, OS), because it cannot apply across a phonologically visible category:

(1) The position [SPEC, T] is created by merging the surface subject by Move (Chomsky, 2001, p. 33).

On the other hand, Chomsky (2001) and Kitahara (2002) suggest that it is vice versa in English and Japanese, which is contrary to fact.

We will show that Chomsky's (2001) suggestion that OS occurs prior to the syntactic effect is not correct in the case of the movement of OBJ to the spec of Foc via OS, because the probe-goal relation between T and SUBJ is evaluated in the CP after it is known whether the position of OS has become a trace losing its phonological content. Note that the FocP is not a phase (CP). Also, based on Chomsky's (1995) Merge and Chomsky's (2001) so-called probe-goal matching condition, we will suggest that the syntactic effect occurs prior to OS in English.

2. Previous Analyses

2.1. Chomsky (2001) & Kitahara (2002)

Chomsky (2000) proposes that lexical subarray LA_i contains exactly one C or v, determining the clause or verb phrase. A syntactic object derived from LA_i is called a phase, and a derivation is generated in a "phase by phase" fashion. Under this assumption, Chomsky formulates the Phase Impenetrability Condition (PIC) as follows:[1]

(2) In phase α with head H, the domain of H is not accessible to operations outside α; only H and its edge are accessible to such operations (Chomsky, 2001, p. 13).

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[1] As for PIC (2) and (5), which will be shown soon, we should note that the consecutive application of the two is necessarily involved in an operation outside a phase (i.e., in a movement out of a phase).

Under PIC, any movement out of α will depart from the edge of α (or H). Thus, in any derivation D involving the scrambling of OBJ to the sentence-initial position, OBJ must undergo OS and occupy SPEC-*v*, prior to the completion of *v*P. Under this assumption, as a result, the probing of T to SUBJ in D necessarily takes place in the following structure (Kitahara, 2002):[2]

(3) [TP [*v*P OBJ-Acc [*v*′ SUBJ-Nom [*v*′ [VP *t*OBJ V] *v*]]] T]

There are three kinds of uninterpretable features in (3): (i) the Φ-set of T, (ii) the EPP of T, and (iii) the Case of SUBJ. The Φ-set of T is taken to be a probe that seeks to match the Φ-set of T, but shifted OBJ intervenes between T and SUBJ in (3). If the first matching Φ-set of OBJ occupying the OS position interferes with the further search of probe T, then, contrary to fact, the derivation will crash due to the failure of the probing of T to SUBJ.

Chomsky (2001) points out that there is no other way to derive (4) if PIC in (2) is correct:

(4) (guess) what_OBJ [TP John_SUBJ T [*v*P *t*′_OBJ [*t*_SUBJ read *t*_OBJ]]]

In (4) OBJ moves first to SPEC-*v*, then to SPEC-C, which means that T must be able to "bypass" the first matching OBJ occupying the OS position to raise SUBJ to SPEC-T. He implements this "bypass" analysis. He first assumes that the subsequent movement of OBJ from SPEC-*v* to SPEC-C, in effect, licenses the probe-goal relation between T and SUBJ. He also

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[2]Kitahara (2002) suggests that scrambling and OS in Japanese provide the setting for the Binding Theory in the course of the derivation. He also assumes that for the Binding Theory to apply to the relevant aspects of the derivation, movement of the VP-object to the outer spec of *v* may occur prior to that of the *v*P-subject to SPEC-T or it may be vice versa.

proposes the so-called probe-goal matching condition (5), for the structure: α⟩ β⟩ Γ, where ⟩ is c-command, β and Γ match the probe α:

(5) The first matching β prevents Match of α and Γ only if β has phonological content.

Chomsky suggests that the probe-goal relation is evaluated for (5) at the next strong phase level, namely, CP, meaning that (5) is no longer a constraint on the application of Agree/Move. He suggests that, optimally, the operation Agree/Move should apply freely. Under this assumption, SUBJ is allowed to move to SPEC-T over shifted OBJ, and the probe-goal relation between T and SUBJ is evaluated for (5) after it is known whether or not the position of OS has become a trace losing its phonological content. If OBJ has no phonological content in the position of OS as in (4), it does not prevent Match of T under (5). Interestingly, Kitahara (2002) applies Chomsky's analysis of (4) to the derivation D involving scrambling in Japanese. Following Chomsky (2001), he assumes that Agree of T and SUBJ can take place in D valuing the Φ-set of T and the Case of SUBJ, provided that, in D, the position of OS becomes a trace losing its phonological content, prior to the next strong phase level.

At this point, we need to look at Icelandic with subject-in-situ construction. Icelandic is a language with subject-in-situ construction (SSCs) (6b) but no OS of type (6a) (Chomsky, 2001, p. 29):

(6) a. John$_{SUBJ}$ T [$_{vP}$ that$_{OBJ}$ [t_{SUBJ} read t_{OBJ}]]
    b. (guess) what$_{OBJ}$ [there T [$_{vP}$ t'_{OBJ} [a man read t_{OBJ}]]]

In Icelandic, with OS and SSCs, the constructions are permitted. Thus, Icelandic has the counterpart of (7):

(7) a. there painted probably the house some students red.
    b. which house painted probably some students red.

<div align="right">(Chomsky, 2001, p. 29)</div>

There is a case of Icelandic OS crossing the subject, for example, constructions of the forms (7) and (8):

(8) there read it (never) [ɑ any students t_{Vb} t_{OBJ}]

<div align="right">(Chomsky, 2001, p. 36)</div>

If the subject remains in situ, the object must escape *v*P (e.g., in the passive form), as Chomsky (2001, p. 20) suggests:

(9) In transitive constructions, something must escape *v*P.

In the English passive case, a direct object (DO) is extracted to the edge of the construction by an obligatory thematization (i.e., strong INT)/ extraction rule Th/Ex. Therefore, *v* is permitted to have an optional EPP-feature, allowing OS in this case:

(10) *v* is assigned an EPP-feature only if that has an effect on outcome (Chomsky, 2001, p. 35).

As shown in Icelandic data (7) and (8), Icelandic is a language with SSC but no OS of type (6a). However, according to (10), if the subject remains in situ, the object must escape *v*P as in Icelandic. So the probe-goal relation between a subject-in-situ and T in (9) and (10) does not violate the so-called probe-goal matching condition (5), since the subject doesn't undergo any operation outside a phase.

2.2. Chomsky (2001) & Kitahara's (2002) Problems

If the VP-object undergoes OS prior to the movement of the vP-subject to SPEC-T (i.e., the syntactic effect) in Korean, PIC (2) and (5) are violated:[3)]

(11) Chelswu-ka   ppang-ul$_i$ [$_{VP}$ Yenghi-eykey t$_i$ cu-ess-ta].
              -NOM bread-ACC   -DAT   give-PST-DC
        'Chelswu gave Yenghi bread.'

The trace position of the shifted object in (11) is in the VP-internal position. Hoji (1985) argues that the goal phrase is higher than the theme phrase in the base structure. If his suggestion is correct in Korean, the indirect object-direct object order is a canonical word order (cf. Lee and Cho, 2003a). We assume that the indirect object is adjoined to VP. If this assumption is also correct, the object preceding the goal phrase has already undergone OS as in (12) (cf. Lee and Cho, 2003a):

(12) a. [$_{TP}$ [$_{vP}$ OBJ-Acc [$_{v'}$ SUBJ-Nom [$_{v'}$ [VP t_{OBJ} V] v]]] T]
      b. [$_{TP}$ SUBJ-Nom [$_{vP}$ OBJ-Acc [$_{v'}$ t_{SUBJ} [$_{v'}$ [VP t_{OBJ} V] v]]] T]

However, the probe-goal relation between T and SUBJ is not licensed, because the shifted object has phonological content as in (12a). At this point of the derivation, movement of the vP-subject from the inner spec of v to SPEC-T crashes: (12b) cannot derive from (12a).[4)] So, Chomsky (2001) and Kitahara's (2002) suggestion that OS of the VP-object occurs prior to the

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[3)]In sub-section 2.2 and section 3, Korean data are not main concern in this paper. Our suggestion that the syntactic effect occurs prior to OS seems to be cross-linguistic. To testify this, we deal with Korean data in brief. In this paper, we focus on the movement order of the vP-Subject and the VP-Object in English.

[4)]In this paper, we suggest that the syntactic effect occurs prior to movement of the VP-object.

syntactic effect should be reconsidered.

The syntactic effect in (1) is not involved in movement of the Icelandic subject. However, in English and Korean, the syntactic effect occurs prior to movement of the VP-object: with respect to Chomsky's (1995) Merge, TP must be created before CP is merged and thus the EPP on T must be checked prior to the merger of CP. So, also, with respect to the Merge operation, Chomsky's (2001) suggestion that wh-movement of the VP-object to SPEC-C via OS in (13a) occurs prior to the syntactic effect, which happens in (13b), should also be reconsidered.

(13) a. (guess) what$_{OBJ}$ [$_{TP}$ [$_{vP}$ t'_{OBJ} [John$_{SUBJ}$ read t_{OBJ}]]]

   b. (guess) what$_{OBJ}$ [$_{TP}$ John$_{SUBJ}$ T [$_{vP}$ t'_{OBJ} [t_{SUBJ} read t_{OBJ}]]]

In (13a), the wh-movement to SPEC-C from the OS position, which is A'-movement, is triggered by the uninterpretable feature on C. This aspect of the wh-movement is in accordance with the movement of the VP-object to SPEC-Foc, because the uninterpretable Foc-feature induces the movement of the VP-object to SPEC-Foc and the movement of the VP-object to SPEC-Foc from the OS position is A'-movement.[5] So, if Chomsky's (2001) suggestion that movement of the wh-object to SPEC-C via OS occurs prior to that of the vP-subject to SPEC-T is on the right track, this movement order must be observed in the case of movement of OBJ to the spec of Foc via OS. However, the suggestion is not correct in the case of movement of OBJ to the spec of Foc via OS, because the probe-goal relation between T and SUBJ is evaluated for (5) in the CP after it is known whether the position of OS has become a trace losing its phonological content.[6] Note that the FocP is not the

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   [5] The movement of the VP-object to SPEC-Foc will be shown in (22) in section 3.

   [6] This will be discussed in section 3 in detail.

phase (CP).

3. An Alternative Analysis

If OBJ has no phonological content in the OS position as in (13a), repeated in (14a), it does not prevent Match of T under the so-called probe-goal matching condition (5). Chomsky (2001) suggests that the structure (13b), repeated in (14b), is derived via (14a):

(14) a. (guess) what$_{OBJ}$ [$_{TP}$ [$_{vP}$ t'_{OBJ} [John$_{SUBJ}$ read t_{OBJ}]]] (13a)

     b. (guess) what$_{OBJ}$ [$_{TP}$ John$_{SUBJ}$ T [$_{vP}$ t'_{OBJ} [t_{SUBJ} read t_{OBJ}]]] (13b)

In Icelandic, the object moves to the sentence-initial position without movement of SUBJ to SPEC-T as in the counterpart (14a). Note that in Icelandic, the syntactic effect doesn't occur, because the subject remains in-situ. Unlike Icelandic, in English, SUBJ undergoes movement to SPEC-T to check the uninterpretable EPP on T. Unlike Chomsky's (2001) suggestion, we propose that for the derivation of the structure (14b) the syntactic effect must occur prior to the consecutive movement of the wh-object to SPEC-C via OS.

We are now in the position to consider Chomsky's (1995) *Merge* operation. Suppose that the derivation has reached the stage Σ, which we may take to be a set {SO$_1$,..., SO$_n$} of syntactic objects. One of the operations of computation is a procedure that selects a lexical item LI into the derivation as SO$_{n+1}$. Call the operation *Select* (Chomsky, 1995, p. 226). Clearly, the computation must include a second procedure that combines syntactic objects already formed. A derivation converges only if this operation has applied often enough to leave us with just a single object, also exhausting the initial numeration. The simplest

operation takes a pair of syntactic objects (SO$_i$, SO$_j$) and replaces them by a new combined syntactic object SO$_{ij}$. Call this operation *Merge* (Chomsky, 1995, p. 226). In this respect, the position [SPEC-T] must be generated prior to the position [SPEC-C]. Let's see movement of the wh-subject to SPEC-C:

(15) a. Who loves Mary?

    b. [$_{TP}$ who$_{SUBJ}$ [$_{vP}$ t_{SUBJ} loves Mary]]?

    c. [$_{CP}$ who$_{SUBJ}$ C [$_{TP}$ t'_{SUBJ} [$_{vP}$ t_{SUBJ} loves Mary]]]?

In the case of movement of the wh-subject, it moves to SPEC-T first as in (15b) and checks the EPP on T. When the position [SPEC, T] is created, a subject should occupy SPEC-T, which originates from Chomsky's (1981) Extended Projection Principle in (16):

(16) T has a specifier and a clause must have a subject.

We assume that although OS doesn't occur, the vP-subject with overt Case necessarily moves to SPEC-T as in (17a). However, if the syntactic effect doesn't occur, the object cannot undergo OS as in (17b):[7]

(17) a. [$_{TP}$ Chelswu-ka$_{SUBJ}$ [$_{vP}$ t_{SUBJ} ka-ss-ta]].

                -Nom   go-PST-DC

   'Chelswu went.'

    b. *[$_{vP}$ pap-ul$_{OBJ}$ [$_{v'}$ Chelswu$_{SUBJ}$ t_{OBJ} mek-ess-ta]]

         rice-ACC   eat-PST-DC.

   'Chelswu ate rice.'

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[7]In Korean, movement of the vP-subject with overt Case (i.e., the syntactic effect) occurs prior to OS, which reflects configurationality of the subject-object canonical order.

Unlike in (17a), the subject *Chelswu* in (17b) is still in the inner spec of *v*, because it cannot undergo movement to SPEC-T. We have suggested that the position [Spec, T] is only created by merging the surface subject with overt Case by Move. Movement of the *v*P-subject with overt Case to SPEC-T is obligatory, which is what movement of the English wh-subject in the inner spec of *v* to SPEC-T in (15b) shows. If the *v*P-subject without overt Case in (17b) moves to SPEC-T, the sentence is out, because the TP-subject without the D-feature cannot check the EPP on T as in (18):[8]

(18) *[$_{TP}$ Chelswu$_{SUBJ}$ [$_{vP}$ pap-ul$_{OBJ}$ [$_{v'}$ t_{SUBJ} [$_{VP}$ t_{OBJ} mek-ess-ta]]]]

Note that the position [SPEC, T] is created, only if the TP-subject is merged. So the structure (14a) cannot be formed,[9] contrary to Chomsky's (2001) suggestion, as mentioned above. There is a difference between the *v*P-subjects in English and Icelandic: the English *v*P-subject undergoes movement to SPEC-T, whereas the Icelandic *v*P-subject doesn't. The wh-subject undergoes movement from the inner spec of *v* to SPEC-T and then the TP-subject checks and licenses the EPP on T in (15b). In this vein, let's see the following examples:

(19) a. John saw Mary.
    b. Did John see Mary?

In (19a), the *v*P-subject *John* moves to SPEC-T and checks the EPP on T. Then, in (19b), the auxiliary verb moves to the position of C, which is in accordance with Chomsky's (1995)

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[8]The D-feature of the TP-subject comes from overt Case.

[9]The verb first raises to *v* and then to Tense (T), which, in effect, has TP formed. At this point, the *v*P-subject must raise to SPEC-T to value its Case in the spec-head relation (Pesetsky's '04 spring course). This process occurs prior to the output effect.

Merge. In the same vein, the *v*P-subject necessarily moves to SPEC-T prior to movement of the wh-object to SPEC-C via OS in the derivation of (20a), as shown in (20b,c,d) (in (21), SE means the syntactic effect):[10]

(20) a. What did John see?

   b. [$_{v}$P John saw what]?

   c. [$_{TP}$ John$_{SUBJ}$ [$_{v}$P t_{SUBJ} saw what]]?

   d. [$_{CP}$ what$_{OBJ}$ [$_{TP}$ John$_{SUBJ}$ [$_{v}$P t_{OBJ} [$_{v'}$ t_{SUBJ} [$_{VP}$ saw t_{OBJ}]]]]]?
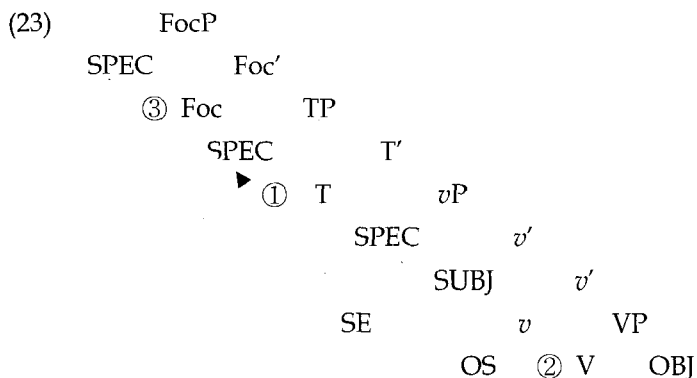
(21)
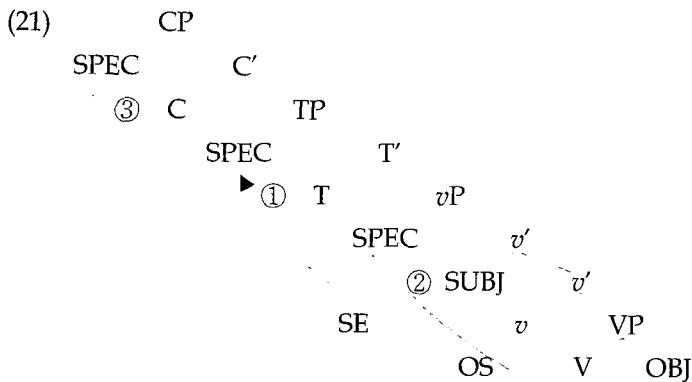
Next, let's consider movement of the VP-object to SPEC-Foc. The uninterpretable Foc-feature induces the movement of the VP-object to SPEC-Foc. The movement of the VP-object from the OS position to SPEC-Foc is A'-movement, which patterns with the wh-movement from the OS position to SPEC-C. Chomsky (2001) suggests that the OS position becomes a trace losing its phonological content, prior to the next strong phase level,

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[10]In (20d), the VP-internal object adjoins to the *v*P. This adjunction of the object doesn't have to obey strictly the extension condition, because it targets an element (i.e., here, a SPEC-*v*) within a large projection (*v*P) (Chomsky, 1995, p. 327). In effect, [SPEC, T] filled with SUBJ is created over a maximal projection of *v*P prior to the adjunction of the object to the *v*P. In this respect, the syntactic effect can occur prior to OS without violating the extension condition.

namely, CP, which obeys the so-called probe-goal matching condition (5). However, the FocP is not the strong phase level. So we can say that Chomsky's (2001) suggestion that OS occurs prior to the syntactic effect is not correct in the case of the movement of OBJ to the spec of Foc via OS, because the probe-goal relation between T and SUBJ is evaluated for (5) in the CP.

We suggest that at the point of the movement of the VP-object to SPEC-Foc, the syntactic effect occurs prior to the movement as in (22):

(22) a. Mary John loves and Jane Ken loves.
  b. [TP John$_{SUBJ}$ [vP t_{SUBJ} loves Mary]] and [TP Ken$_{SUBJ}$ [vP t_{SUBJ} loves Jane]]
  c. [FocP Mary$_{OBJ}$ [TP John$_{SUBJ}$ [vP t'_{OBJ} [v' t_{SUBJ} loves t_{OBJ}]]]] and [FocP Jane$_{OBJ}$ [TP Ken$_{SUBJ}$ [vP t'_{OBJ} [v' t_{SUBJ} loves t_{OBJ}]]]]

(23)   FocP
        SPEC   Foc'
          ③ Foc   TP
              SPEC   T'
              ▶ ① T   vP
                      SPEC   v'
                        SUBJ   v'
                    SE   v   VP
                        OS   ② V   OBJ

As shown in (22b) and (23), the syntactic effect occurs first. Then, as in (22c), the object undergoes movement to the spec of Foc via OS, checks the uninterpretable feature on Foc, and gets contrastive focus. This derivation is in accordance with the Merge operation and obeys Chomsky's (2001) probe-goal matching condition (5).

4. Conclusion

Chomsky suggests that the probe-goal relation is evaluated for the so-called probe-goal matching condition (5) at the strong phase level, namely, CP. However, his suggestion that OS occurs prior to the syntactic effect is not correct in the case of the movement of OBJ to the spec of Foc via OS. Note that the FocP is not the phase (CP). Furthermore, Chomsky (2001) and Kitahara's (2002) proposal that OS occurs prior to movement of the *v*P-subject to SPEC-T is not on the right track with respect to Chomsky's (1995) Merge operation and Chomsky's (2001) probe-goal matching condition. According to the Merge operation, TP is necessarily created earlier than CP. The *v*P-subject must move to SPEC-T prior to movement of the wh-object to SPEC-C via OS. The verb first raises to *v* and then to Tense (T), which, in effect, has TP formed. At this point the *v*P-subject must raise to SPEC-T to value its Case in the spec-head relation (Pesetsky's '04 spring course). This derivation obeys Chomsky's (2001) probe-goal matching condition (5) in English. In conclusion, the syntactic effect that the position [SPEC, T] is created by merging the surface subject by Move must occur prior to movement of the object outside VP.

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