Functional Category CP
and Outer Spec-Head Agreement

Se-Young Park
(Chodang University)

Park, Se-Young. 1998. **Functional Category CP and Outer Spec-Head Agreement**. *Linguistics*, Vol 6-2. 387-407. Discussing functional category CP, I will follow Chomsky's(1995) allowing a multiple specifier construction. In this paper, I will suggest Outer Spec-Head Agreement (hereafter, OSHA) and argue that OSHA is optimal to solve the problems of some linguistic phenomena in English and Korean. If we accept OSHA as well as Spec-Head Agreement in functional category CP, explanatory power of formal grammar will be more increased. **(Chodang University)**

1. Introduction

Since Chomsky's (1993) Minimalist Program (MP) , the linguists pay much attention to MP in the current studies of generative syntax. It is because MP bases upon the fact that the minimum of hypotheses provides the best way to the maximum of good explanation for linguistic theory.

In my earlier papers (Park 1995, 1996, 1997), I suggested and argued that if there is some modification of projection of functional categories (DP,IP,CP) under the MP, we'll have better explanatory power for linguistic phenomena. In other words, we need OSHA which comes out through multiple feature-checking in the structures of functional categories. My argument is that accepting OSHA, we can deal with FFs such as [Focus], [Topic], and [Presupposition] which syntax has entrusted to semantics until now in the analysis of syntactic
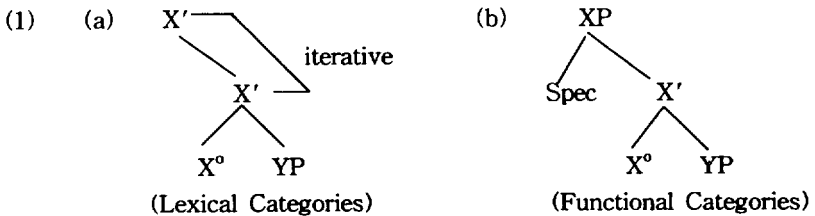
representation.

The purpose of this paper is to explain some linguistic phenomena in English and Korean constructions, by means of OSHA which may develop as a theory for syntactic arguments in Universal Grammar.

In chapter 2, I will discuss the theoretical framework of this paper, from Spec-Head Agreement (SHA) to OSHA. While SHA shows the difference between lexical category and functional category, OSHA displays the effect of multiple feature-checking.

In chapter 3, the previous analyses of CP are discussed and OSHA analysis of CP is suggested and argued for constructions with FF [Presupposition]. Chapter 4 is devoted to the brief summary of what I claim in this study.
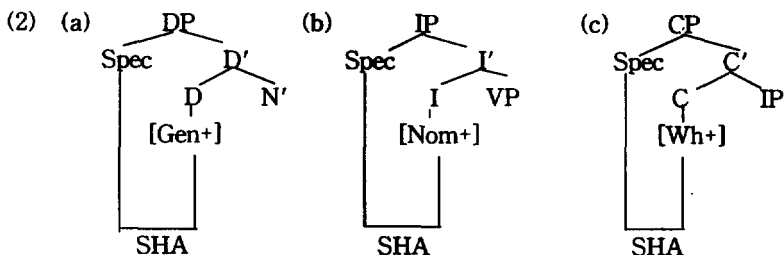
2. From SHA To OSHA

Fukui & Speas (1986) argues that there are two kinds of syntactic categories: one is lexical category and the other is functional category. While all projections of lexical categories are X' which is indefinitely iterable, functional categories project to X'', and limited to a single specifier position and a single complement position. If their argument is represented by the schema, it will be as follows:

(1) (a) X' ⎯⎯
                iterative
          X' ⎯→
         X^0 YP
      (Lexical Categories)

     (b) XP
         Spec X'
              X^0 YP
      (Functional Categories)

Fukui (1986, 1987) and Fukui and Speas (1986) argue that specifier positions of functional categories are licensed by Spec-Head Agreement which will be licensed by F-feature assignment. For example, the basic

set of F-features in English includes [Genetive+] in the D, [nominative+] in the Infl, and [wh+] in the Comp:

(2)   (a)   DP   (b)   IP   (c)   CP

Spec   D'   Spec   I'   Spec   C'

          D   N'   I   VP   C   IP

         [Gen+]   [Nom+]   [Wh+]

   SHA   SHA   SHA

By means of SHA, in (2a) FF [Genitive+] is discharged to [Spec, DP] from Head D and licenses the position [Spec, DP], in (2b) FF [Nominative+] is discharged to [Spec, IP] from Head I and licenses the position [Spec, IP], and in (2c) FF [Wh+] is discharged to [Spec, CP] from Head C and licenses the position [Spec, CP].

Functional categories whose heads and specifiers share features by SHA have been discussed as the means of explanation for linguistic phenomena in cross-language. In other words, all the language vary with the extent of SHA morphologically realized in functional categories. After all, feature composition of functional categories makes each core grammar have its own characteristics. Therefore functional categories have been important subjects in the study of linguistic phenomena with feature theory.

Park(1996) suggests and argues that if we accept OSHA as well as SHA, we can solve the problems of FFs [Focus], [Topic], and [Presupposition].   To be concrete, in order to satisfy Bare Output Condition(BOC) of uninterpretable features ([+Focus] in [SPEC2,DP2], [+Topic] in [SPEC2,IP2], [+Presupposition] in [SPEC2,CP2]), the features of Heads merged to D, I, C) are discharged to [SPEC2,XP2] by multiple feature-checking based on Attract. If this is depicted as schmata, the result is roughly like (3) and (4):
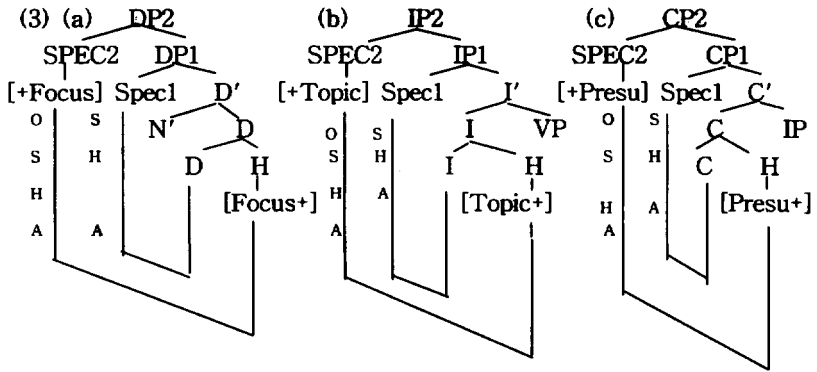
< multiple feature-checking of English >
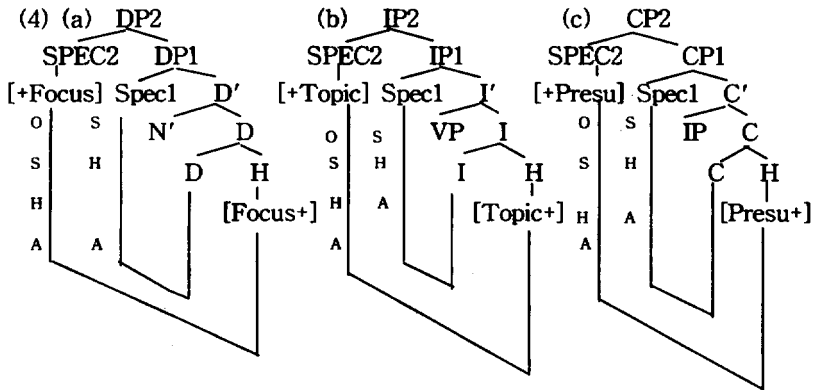
< multiple feature-checking of Korean >

Each SPEC2 of (3) or (4) is derived only when external merged H(ead) or internal merged H(ead) is adjoined to D, I, or C. I postulate that the derivation of [SPEC2, XP2] takes place just after SATISFY, which projects up to the minimal X-bar structure, more exactly, at the moment of the optimal derivation by Affect-α including Delete-α & Insert-α. Also I argue that the derivation of XP2 is optional in that XP2 never sets up without merged H(ead).

On account of space consideration we set the limit of the argument to functional category CP related to FF [Presupposition].[1]

3. Projection of Functional Category CP

3.1. Problems in SHA of CP

Chomsky(1986) argues that SHA takes place in CP as well as in IP, suggesting that SHA may involve the sharing of index in addition to the sharing features of gender, Case, and number. SHA involves transfer of index, index being a crucial element in one type of proper government, antecedent government. Furthermore, SHA involves exactly the right syntactic pieces, Spec XP and X which if they shared index, would nullify the effect of a minimality barrier (here, C').

Above all, *wh*-phrases move to the position of specifier of CP in S-structure and at LF, SHA in CP may treat wh-movement of English, according to Chomsky (1986). Fukui and Speas (1986) claims that the occurrence of a wh-phrase in the Spec of CP must be licensed by a [Wh+] (a notational variation of Q-morpheme) in C. Assume that CP structure is as in (5) tentatively:
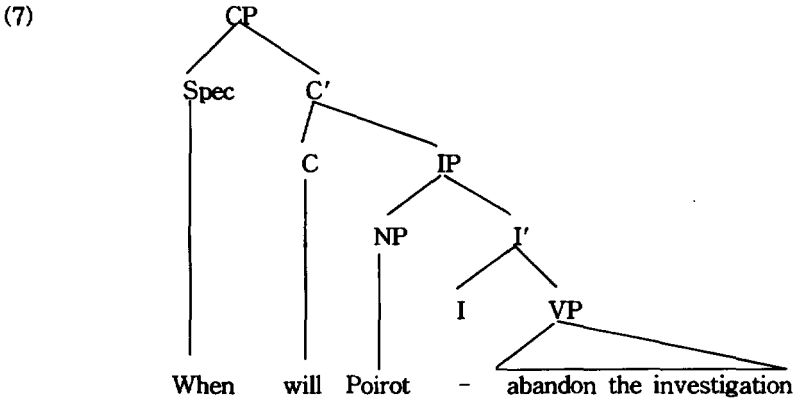
(5)
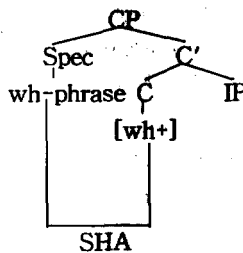
Analyzing the following English sentence, Haegeman (1991) shows

---

1. See Park(1995,1996) for functional category DP dealing with FF [Focus]
   See Park(1996,1997) for functional category IP related to FF [Topic]

SHA in CP with the structure of (5).

(6) When will Poirot abandon the investigation ?

(7)


```
                    CP
                  /    \
              Spec      C'
               |       /  \
               |      C    IP
               |      |   /  \
               |      |  NP   I'
               |      |  |   /  \
               |      |  |  I    VP
               |      |  |  |   /_____\
             When   will Poirot  −  abandon the investigation
```

In (7) we accept that [Spec, CP] is the position to which interrogative constituent *When* is moved, but we cannot but reconsider that *will* is moved to the position C. It is because auxiliaries are not complimentizers like *that*, or *whether* but something related with verbs or Head I. Therefore auxiliary *will* cannot be situated in the position C. After all, SHA leaves much room for improvement.

According to Moon (1989), in Korean unlike in English, the Q-morpheme does not appear in Comp, since this position is reserved for the D-morpheme[2]. She takes the following examples as the evidence that the Q-morpheme in Korean is base-generated in INFL.

---

(2) Moon (1989) assumes that D-morpheme in Comp is arranged for discourse-topic (here, Presupposition) in Korean, unlike English.
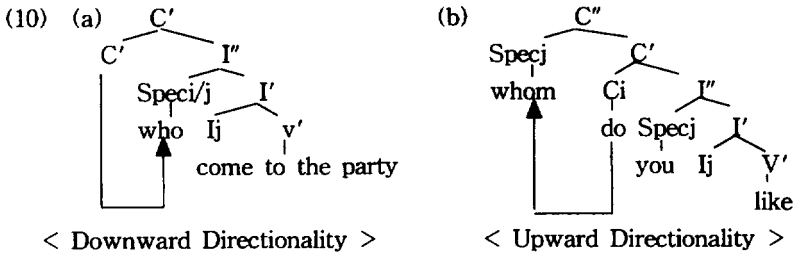
(8) (a) *Tori-ka   chayk-ul   sa-ass   TA NI ?
             -Nom   book-obj buy-past IND Q
          " Tori bought a book? "

    (b) Yenghi-ka   tochakha- yess *(NI)
                -Nom   arrive - past   Q
          " Yenghi arrived? "

According to her, the Q-morpheme and IND (indicative morpheme)
cannot cooccur, and as shown in (8b), the Q-morpheme performs the
same function as IND by fulfilling the cooccurrence requirement of the
tense morpheme. Therefore, she claims that the Q-morpheme is
base-generated under INFL. It seems reasonable to take her claim, but I
assume that (8a,b) are acceptable examples in my intuition.

In 3.2., I argue that Korean WH-movement is realized by SHA in CP,
and D-morpheme can be changed into SPEC2 of CP in that it is the
position for 'discourse -topic' (hereafter, Presupposition). If we assume
that Korean Wh-movement is due to SHA of CP, we can deal with
both Korean Wh-movement and English Wh-movement uniformly.

Kim (1988) assumes that the F-feature [Wh+] in Comp can be
subcategorized as [Wh(NOM)+] and [Wh(ACC)+], but has the "same
index" as "one" F-feature. She proposes that the [Wh+(ACC+)] feature
in Comp is discharged to the Spec I position by right downward
licensing directionality and the [Wh+(ACC+)] feature in the Comp is
licensed to the Spec (C) by upward left licensing directionality.

   (9) (a) Who comes to the party?
        (b) Whom do you like?

(10) (a)

```
        C'
      /    \
    C'      I"
          /    \
      Speci/j   I'
        |      /  \
       who   Ij    v'
              |
          come to the party
```

< Downward Directionality >

(b)

```
              C"
            /    \
        Specj      C'
          |      /    \
        whom    Ci     I"
                 |    /   \
                do  Specj  I'
                     |    /  \
                   you  Ij    V'
                              |
                             like
```
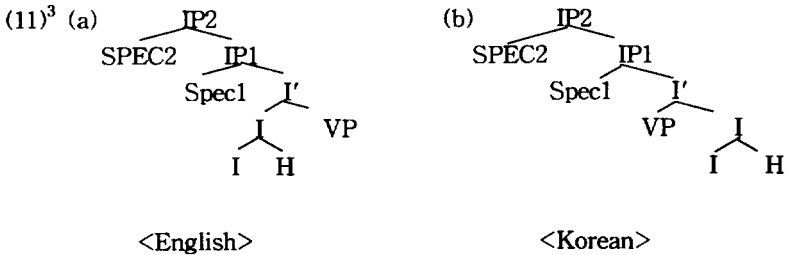
< Upward Directionality >

Unlike Kim (1988), I assume that in Wh-movement, only upward directionality can be taken place. In other words, Wh-movement means that the feature [Wh+] is discharged from C to [Spec, CP] by means of SHA in CP. We will return to this problem in 3.2.

3.2. SHA of CP & OSHA of IP

If we accept OSHA based on multiple feature-checking in IP, we can assume that Wh-movement has only upward directionality in English and Korean uniformly.

For convenience, I will take (3b) and (4b) which are repeated as (11a) and (11b) respectively:

(11)[3] (a)

```
        IP2
       /   \
   SPEC2    IP1
          /    \
       Spec1    I'
              /   \
             I     VP
            / \
           I   H
```

<English>

(b)

```
        IP2
       /   \
   SPEC2    IP1
          /    \
       Spec1    I'
              /   \
            VP     I
                  / \
                 I   H
```

<Korean>

---

(3) In English and Korean, functional category IP has a different structure respectively, which may be due to the difference of language properties which makes core grammar.

In English we can solve the problems of Wh-movement directionality and auxiliaries landing site, by the use of OSHA based on multiple feature-checking. For convenience, (9b) and (6) are repeated as (12a) and (12b).

(12) (a) Whom do you like?

   (b) When will Poirot abandon the investigation ?

(13) (a)

(b)
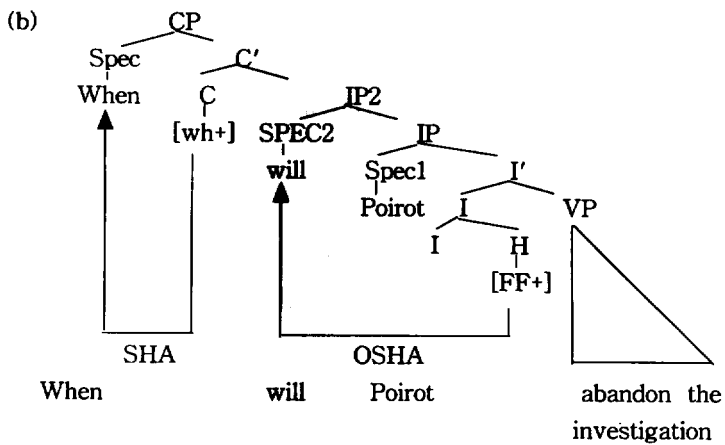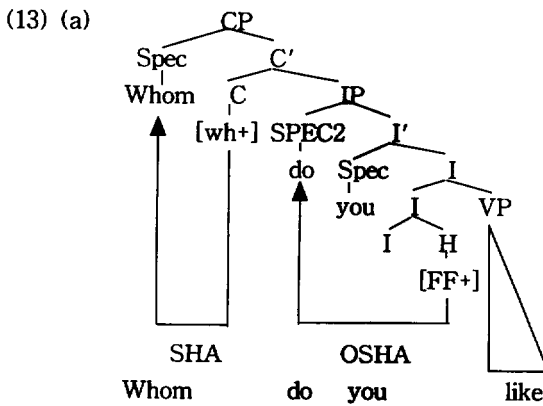
Like (13), if we assume that auxiliaries *do* and *will* are derived on
SPEC2 of IP by OSHA based on multiple feature-checking, we can
represent Wh-movement uniformly by SHA in CP
Park (1996,1997) argue that landing sites of English auxiliaries are in
the position dominated by I, not C, because auxiliaries are not
complimentizers like *that*, or *whether* but something related with verbs
or Head I.

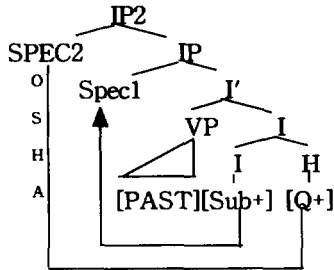Now, let us consider the following Korean examples as which (8a)
and (8b) are repeated, in order to argue the necessity of OSHA in IP.

(14) (a) Tori-ka   chayk-ul   sa-ass   TA NI ?
             -Nom book-obj buy-past IND Q
             " Tori bought a book? "
      (b) Yenghi-ka   tochakha- yess (NI)
             -Nom arrive - past   Q
             " Yenghi arrived? "

(15) (a)
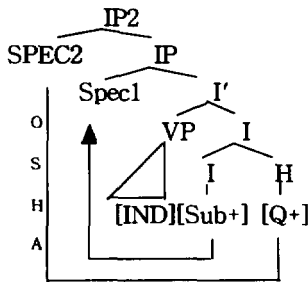
      (b)

In the case of Korean interrogative sentences, unlike English, FF [+Q] in [SPEC, IP] is a weak feature and it is checked at LF by Procrastinate. At LF, FF [Q+] is discharged to [+Q] in [SPEC2, IP] by OSHA.[4]

3.3. Multiple Feature-Checking of CP

In this section, I will argue that OSHA can and should be applicable to CP as well as for IP. Now we will find out the necessity of SPEC2 of CP through Korean topicalization in WH-constructions.

(16) (a) Chelswu-nun, enje   e chip -ulo   tolaol   -kka?
          John   top when   house to return   Q
         ' As for Chelswu, when will (he) return home ? '
     (b) Yenghi-nun,   edese wuli-ga   e chacul- su issul -kka?
          Mary   top where   we-Nom   find   can   Q
         ' As for Yenghi, where can we find (her) ? '

---

(4) Moon(1989) ,without an explicit statement, argues that Q-morpheme is base-generated under INFL, and that (14a,b) are ungrammatical. However, I think (14a,b) are acceptable if we approve of (15) with the position of Q-morpheme. Even if we take the analysis, SHA in CP, it cannot also resolve the problem of Korean topicalization in Wh-construction. Following OSHA, the above structures result in schemata such as (17a,b).

(17) (a)

(b)
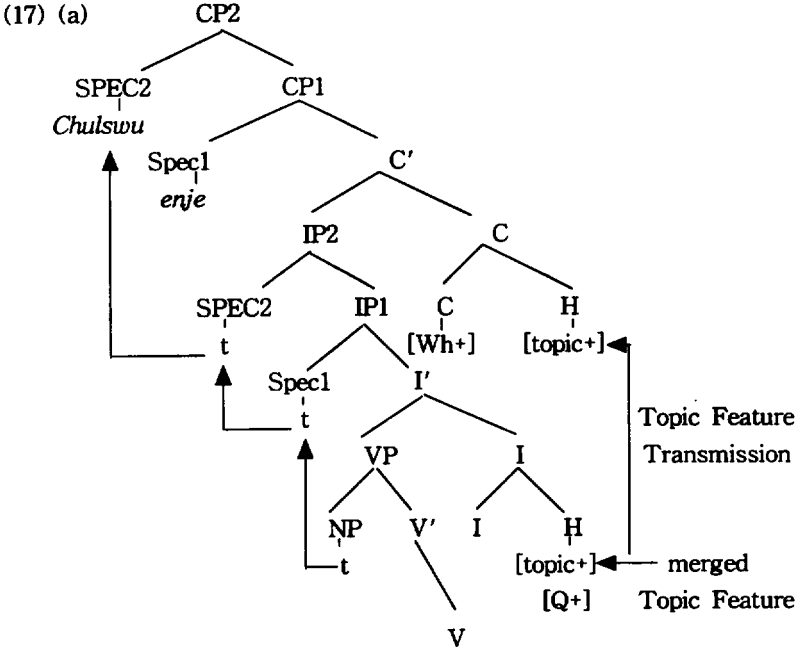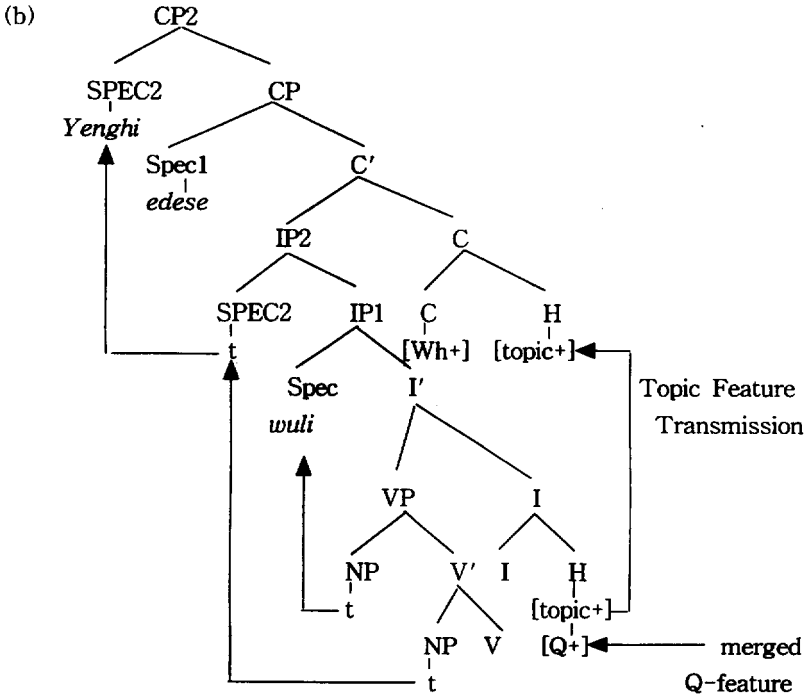
In (17a,b) we can assume that H(ead) of IP is an internal merged site with FF[topic] and H(ead) of CP is an external merged site with FF[topic]. H(ead) of IP is also an internal merged site with Q-feature. After all, [SPEC2, CP] is licensed by FF [topic+] discharged from H(ead) of CP through the OSHA,which is transmitted from H(ead) of IP. H(ead) of IP is a site with both internal merged FF[topic] and internal merged FF[Q]. We assume that all that we need is Merge and Move in multiple feature-checking.

In addition to (17a,b), OSHA can also [1]resolve the problems of Korean structures with Presupposition.

(18) Speaker A: I-saramtul cwung nwu-ka Yenghi-lul
these people   among   who-Nom Yenghi-Obj
poassul-kka?
saw - Q
' Among these people, who saw Yenghi ? '

Speaker B: [Tori-**nun** [e e poassta ko]   malhaysse]
Tori-Cont   saw   Comp   said
' (not others but) Tori said that (he) saw (her). '

(19) Speaker A: Yenghi-ka wuri seymyung cwung nwukwu-lul
Yenghi-Nom we   three persons among who-Ob
poassul-kka j
saw-Q
' Among three of us (Speaker A, Speaker B, and
Tori), who did Yenghi see? '

Speaker B: Tori-**nun** [e [e e poassta ko]   malhaysse]
Tori-Cont   saw   Comp   said
' (Yenghi) said that (she) saw (not others but)
Tori. '

< Moon (1989, 78-79) >

In Speaker B of (18) and (19), the -*nun* marker should be interpreted as
contrastive phrases, rather than topic phrases in the meaning. This
case is not accordant to the fact that a sentence-initial *nun*-marker is a
topic marker. Here we can infer that invisible Presupposition is
followed by Tori-nun and has phi-features moved by FF
[Presupposition]. I argue that SPEC2 of CP is the position to which FF
[Presupposition] is moved. Following OSHA based on multiful
feature-checking, the responses of (18) and (19) may be analyzed as
(20) and (21):

(20)

```
                        CP
            ┌───────────┴──────────┐
        SPEC2                      C′
      (Yenghi-lul)         ┌───────┴──────┐
       [+Phi-F]           IP              C
                     ┌─────┴────┐     ┌────┴────┐
                   Spec1       I′    C         H
                  Tori-nun   ┌──┴──┐          [phi-F] ◄─────
                  [+cont]   VP     I                          phi-feature
                         ┌───┴──┐ [con+] ◄──────             transmission
                        CP2     V
                              malhayss
                     ┌────────┴─────┐
                  SPEC2            C′
                    t_i      ┌──────┴──────┐
                            IP             C
                       ┌─────┴───┐    ┌────┴────┐
                     Spec1      I′   C         H
                       t_i    ┌──┴──┐ -ko    [phi-F+]
                             VP    I
                                  [con+] ──────── contrast-feature
                        ┌────┴───┐                transmission
                       NP      V′-ta
                        t_i  ┌───┴───┐
                           NP        V
                            t_i    poass
```
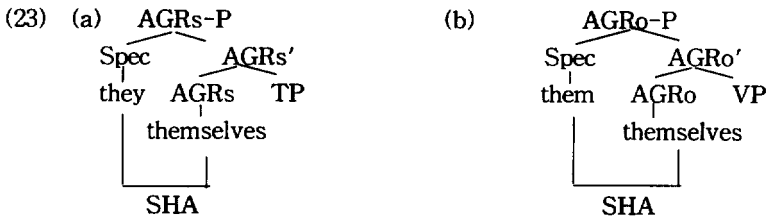
(21)
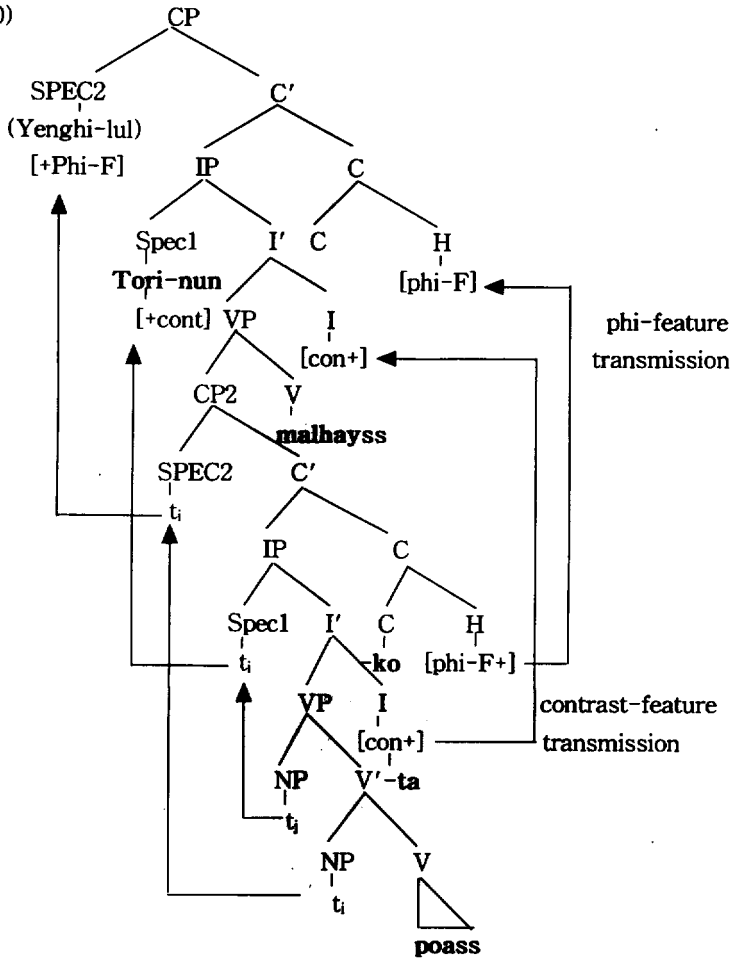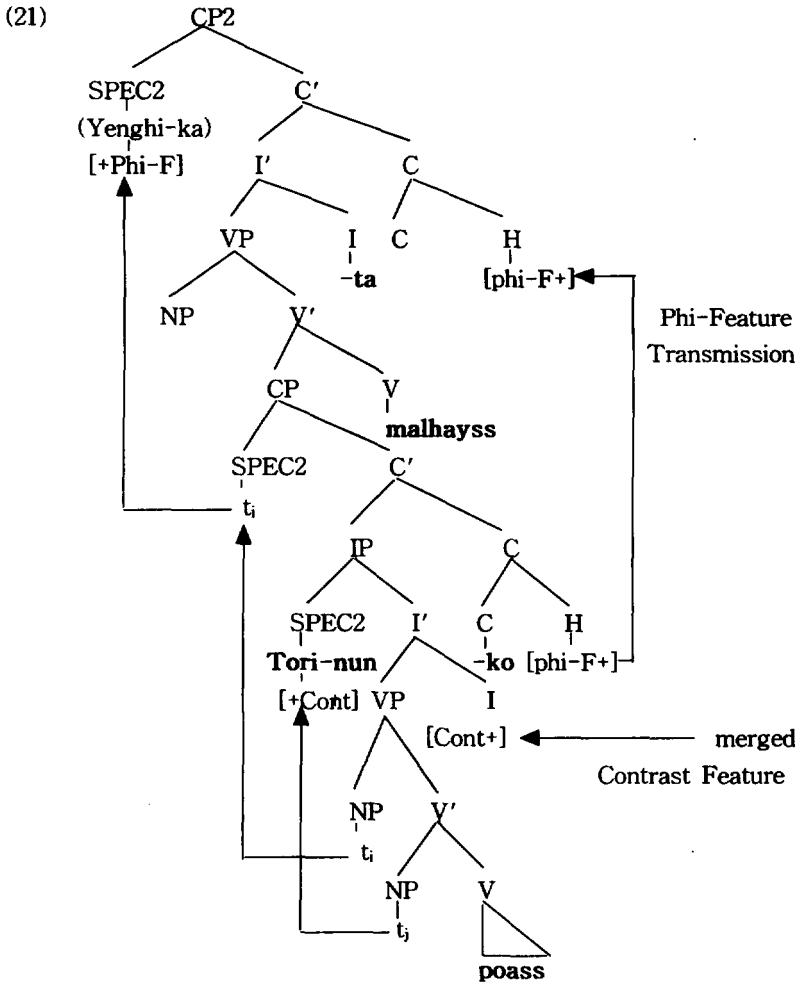
Now we will look into other examples with Presupposition that can be resolved by OSHA. Before mentioning the subject, I assume that anaphora can be treated effectively by Splited Infl (that is, AGRs, T,

AGRo), not by Unified Infl (that is, I^o).

Consider the following examples:

(22) (a) They injured themselves.
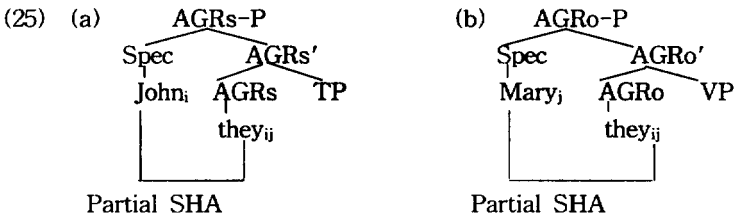   (b) I asked them about themselves.

Following SHA, (22a) and (22b) can be analyzed as (23a) and (23b) respectively:

(23) (a)   AGRs-P   (b)   AGRo-P
        Spec   AGRs'   Spec   AGRo'
        they   AGRs   TP   them   AGRo   VP
               | |
              themselves   themselves
         └──────────┘   └──────────┘
              SHA   SHA

However, we cannot solve the problems of the following examples (24a) and (24b), though we apply SHA to them.

(24)   (a) John$_i$ told Mary$_j$ that they$_{ij}$ should leave.
        (b) John$_i$ told Mary$_j$ that they$_{ijk}$ should leave.

First, Splited Infl Analysis leaves the examples (24a) tangled, like (25a,b):

(25) (a)   AGRs-P   (b)   AGRo-P
          Spec   AGRs'   Spec   AGRo'
          John$_i$ AGRs   TP   Mary$_j$ AGRo   VP
          | they$_{ij}$ | they$_{ij}$
          └───────────┘   └───────────┘
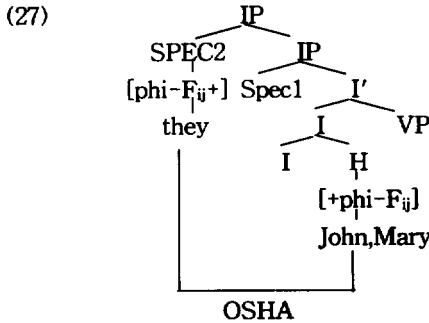   Partial SHA   Partial SHA

Here, I suggest that if partial SHA takes place, Splited Infl is turned into Unified Infl under the constraint called by Unified Infl Constraint, following OSHA.

(26) Unified Infl Constraint (UIC)

If partial (neither unrelated nor complete) SHA takes place at LF, all the features in Specs are discharged into SPEC2 of IP under partial SHA, and then [SPEC2, IP] is licensed by [phi-F+] merged to I° by Attract-F.

Following (26), the example (24a) is analyzed into (27) roughly:

(27)

```
                    IP
              _____|_____
          SPEC2          IP
    [phi-F_{ij}+] Spec1 ___|___
            they     I'
                 ___|___
                I       VP
             ___|___
            I      H
               [+phi-F_{ij}]
               John,Mary
        |_____|
              OSHA
```

Next, we will consider the example (24b) related with FF [Presupposition] and see that UIC needs to be revised as (26'):

(26') Unified Infl Constraint (UIC)

If partial (neither unrelated nor complete) SHA takes place at LF, all the Spec items under partial SHA is discharged into SPEC2 of IP, or SPEC2 of CP (in case of Presupposition), and then [SPEC2, IP] is licensed by [phi-F+] merged to I or [SPEC2, CP] is licensed by [phi-F] moved to C by OSHA.

If we accept revised UIC (26'), the example (24b) can be analyzed into (28):

(28)
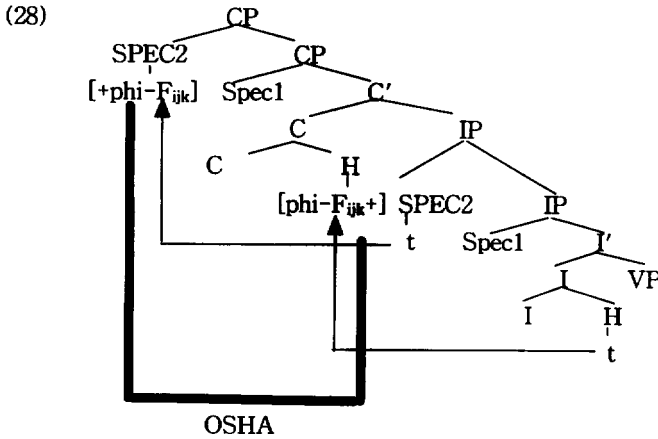
After all, we can see that English constructions with FF [Presupposition] can be effectively treated by OSHA of CP

4. Conclusion

So far we have studied that if we assume the multiple feature-checking in functional category CP, we can have better explanatory power for syntactic argument across languages. To be concrete, OSHA along with SHA in CP can provide a better solution to some linguistic phenomena, particularly constructions with FF [Presupposition].

Throughout this paper we have tried to show that multiple feature-checking including SHA & OSHA may be essencial for some linguistic phenomena that any previous theories can't deal with effectively.

References

Ahn, H. D. & Yoon, H. J. 1989. "Functional Categories in Korean," *Harvard Studies in Korean Linguistics* III. 79-88.

Chomsky, Noam. 1986. *Barriers*, Cambridge, Mass.: MIT Press.

_____. 1993. "A Minimalist Program for Linguistic Theory," in Hale, Kenneth & Keyser, Samuel Jay (eds.): *The View from Building 20: Essays in Linguistics* in Honor of Sylvain Bromberger, MIT Press 1-52.

_____. 1994. "Bare Phrase Structure," in G. Webelhuth (ed.): *Government and Binding Theory and the Minimalist Program:* Principles and Parameters in Syntactic Theory, Blackwell. 383-439.

_____. 1995. *The Minimalist Program*, The MIT Press.

Fukui, Naoki. 1986. "A Theory of Category Projection and Its Theoretical Application," Ph.D. dissertation, MIT.

Fukui, N. and Speas, M. 1986. "Specifiers and Projection," *MIT Working Papers* 8.

Haegeman, Liliane. 1991. *Introduction to Government and Binding Theory.* Oxford: Blackwell.

Kim, Jae-Min. 1990. "Coreference Phenomena in Korean: A Functional Analysis," Ph. D. dissertation, University of Georgia, Hanshin Publishing Co., Seoul.

Kim, Yang-Soon. 1988. "Licensing Principles and Phrase Structure," Ph. D. dissertation, University of Wisconsin, Madison, Hansin Publishing Co., Seoul.

Moon, Gui-Sun. 1989. "The Syntax of Null Arguments with Special Reference to Korean," Ph. D. dissertation, The University of Texas at Austin, Hanshin Publishing Co., Seoul.

Park, S-Y. 1995. "Projection of Functional Category DP," *Linguistics,*3, 129-149.

Park, S-Y. 1996. "Functional Categories in English and Korean," Ph. D. dissertation, Jeonbuk University.

Park, S-Y. 1997. "Multiple Feature-Checking of Functional Category IP," *Theses of Chodang University* 3, 183-199.

Pollock, J.-Y. 1989. "Verb Movement, Universal Grammar, and the Structure of IP." *Linguistic Inquiry* 20: 365-424.

Yang, D.-W. 1989. "On Anaphor Movement," *NELS* 20: 435-452

_____. 1994. *The Theory of Grammar*. Seoul: Hankuk Publishing Co.

_____. 1995. *The Prospect of the Minimalist Program*. Seoul: Hankuk Publishing Co.

_____. 1995. "The Minimalist Theory and the Structure of Korean," in S.-H.Park (eds.): Minimalist Approaches to Syntax and Morphology, 1993. Seoul International Conference on Generative Grammar, Hankuk Publishing Co.

Division of Foreign Studies
Chodang University
419, Sungnam-Ri, Muahn-Eup, Muahn-Gun,
Chonnam, 534-800, Korea
E-mail : sypark@ chodang.ac.kr