Projection of Functional Category(DP)

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Park, Se-Young (1995). **Projection of Functional Category (DP).** *Linguistics*, Vol 3. In the current studies of the Minimalist Program(henceforth, MP), functional categories have been stressed upon feature checking. This paper proposes some modification of projection of functional categories(DP,IP,CP), and mostly discusses the roles of functional category(DP). The purpose of this paper is that this modified projection of functional categories may provide better explanatory power for linguistic phenomena.

1. Introduction

Since Chomsky(1970), syntactic categories have been regarded as bundles of features, which has played an important role in syntactic theory along with morphology. As universal morphological features, Chomsky(1992) mostly discusses the following four features:

(1) (a) ϕ-feature (person,number,gender,etc.)
(b) Case feature
(c) [+WH] feature
(d) tense feature

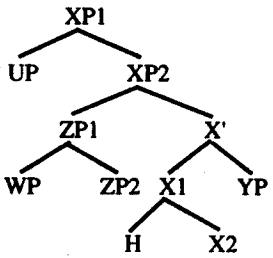
These features are assumed to have parameters as what follows: "The strong features must be checked before Spell-Out since they are visible at PF and

cause the derivation to crash, whereas the weak features must be checked off after Spell-Out due to the Principle of Procrastinate since they are invisible at PF."

Now we will consider the feature checking domain in which the functional head can discharge its features into lexical categories moved in order to be checked.

In the maximal projection category (XP) of the functional head(X), the complement of X is YP and the specifier of X is ZP. Here, a head(H) is adjoined to X, and a maximal projection category(WP) is adjoined to ZP,

(2)



Chomsky (1992: P. 15)

and also a maximal projection category(UP) is adjoined to XP. In this case, the checking domain of X is the whole domain except the interanl domain(complement,YP): H, ZP, WP, and UP. This paper is based on Spec-Head Agreement between UP(SPEC of maximal projection category, XP1 adjoined to XP2) and H(Head adjoined to X) at LF through semantic feature checking. In other words, if H(semantic features' bundle) is base-generated by Affect-α, XP1(a semantic category) is derived by the computations. UP containing [+SF] has Spec-Head Agreement relation with H containing [SF+] at conceptual-intentional level(called C-I level) conncted with LF, through feature checking.[1]

2. Lexical vs. Functioal Categories

With the feature checking theory, projection of syntactic categories (specially, functional categories) has been discussed much as the means of explanation for linguistic phenomena in cross-language. There are two kinds of category in syntactic categories: one is lexical categories and the other,

nonlexical categories (functional categories). In Fukui & Speas (1986), the name of non-lexical categories is changed into that of functional categories, for they are projected from the lexicon and have independent lexical entries.

First, let us have a look at projection of lexical categories simply. Following Chomsky (1970), we will call the following categories the lexical categories:

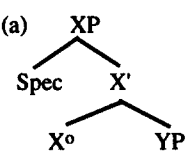
(3) Lexical Categories: [+N - V] (noun)
[+V - N] (verb)
[+N +V] (adjective)
[- N - V] (preposition)

In the framework of Chomsky(1986a,b), all the properties of lexical items, including theta-marking properties, are projected from the lexicon into syntax, constrained by the Projection Principle and the schematic "X-bar" well-formedness conditions on phrase markers.

However, the lexical categories do not exhaustively partition the set of items in the lexicon. In particular, the items such as COMP and INFL, which have been called Non-lexical Categories, act as heads but do not appear to bear the N and V features.

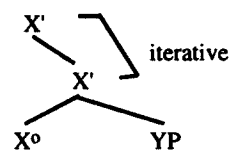
Fukui & Speas (1986) argues that "our theory is based on what we take to be a fundamental asymmetry between lexical categories and functional categories: functional categories project to X", and are limited to a single specifier positi on and a single complement position, while all projections of lexical categories are X', which is indefinitely iterable (in the sense of Harris (1951)), limited only by the Projection Principle and other independent principles of licensing." If their argument is represented by the schema, it will be as follows:

(4) (a)



(Functional Categories)

(b)



(Lexical Categories)

Fukui & Speas(1986) gives us good explanations for the above structure with (5).

(5) (a) *the the old man
(b) *John's the cat
(c) Mary's big red book

Cases such as (5 a,b) are ruled out by the supposed fact that there is only one available specifier position in functional categories (here, DP). In 5 (c), if *Mary's* were not in the DP, we would find that N's are able to be iterable in NP. However, because of insertion of *Mary's* (a specifier), 5(c) comes to be a DP. Only the specifiers of functional categories close off projections, therefore the node dominating the maximal projection of a functional category should be X"(or XP), while all projections of a lexical category are X', since there is no inherent limit to their iteration.

The iteration of a lexical category(X') is easily found in the following examples under the VP-Interal Subject Hypothesis(henceforth, VISH).[2]

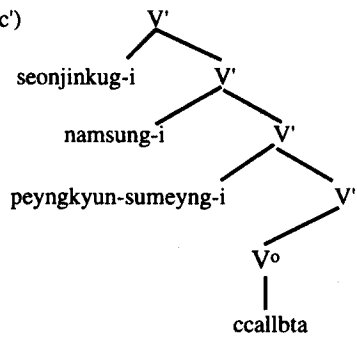
(6) (a) peyngkyun-sumeyng-i ccalbta
average- lifespan-nom is short
'The average lifespan is short. '

(b) mamsung-i peyngkyun-sumeyng-i ccalbta
male-nom average-lifespan-nom is short
'It is men that their average lifespan is short '

(c) Seonjinkug-i mamsung-i peyngkyun-sumeyng-i ccalbta
civilized countries-nom male-nom average-lifespan-nom is short
'It is civilized countries that men, their average lifespan is short in '
(Kuno 1973)

Under the VISH, Korean subjects marked by the suffix '-i', may be iterated like (6c').

(6) (c')

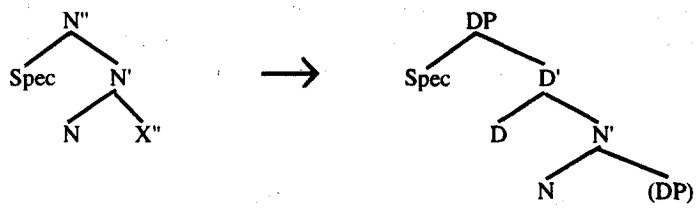


This enables us to find that in Korean, all projections of V are V' (notV") a category within which iteration is permitted.

3. Previous Analyses of DP

The capabilities of functional categories are regularized in Chomsky (1985b); Chomsky suggests extending the X-bar schema so that CP and IP would both have specifier positions. On a par with the functional heads Comp and Infl, recent studies have found that determiners on NPs are functional heads instead of such typical NP structures ,as shown in (7).

(7) Chomsky(1970,1986b) Fukui & Speas(1986), Abney(1987)



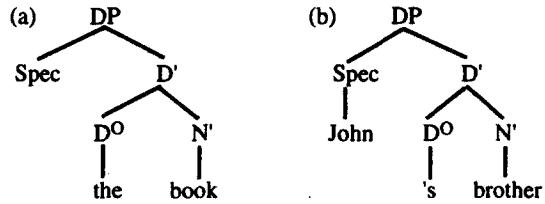
Abney(1987) proposes that the noun phrases should be reanalyzed as determiner phrases(DP) from the two reasons. First, nominals are really headed by determiners which typically take a noun phrase complement. Second, nominals are headed by a specifier which can be occupied by a possessor.[3] Following Abney(1987), I will regard determiners as functional heads and show the appropriateness, taking some examples.

Now, let us consider the following examples with DPs by the basic structure(5a).

(8) (a) The book is difficult.
(b) John's brother is honest.
(c) John -uy pal-i kil-ta.
John 's arm Nom long Dec
'John's arm is long.'
(d) John -i pal -i kil-ta.
John Nom arm Nom long Dec
'It is John whose arm is long.'

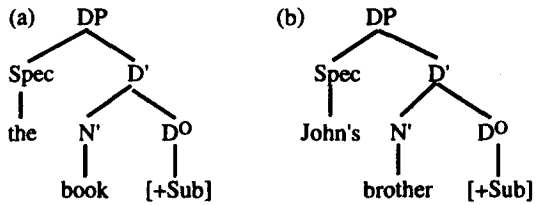
Following Fukui & Speas' (1986) theory, the DP subject phrases of (8a, b) can be analyzed like (9a, b):

(9)



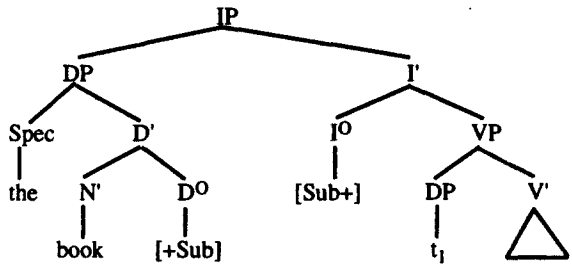
However, there is no consistency between (9a) and (9b), for there is or not a Spec of DP regardless of the identical determiner phrases. Accordingly, following Ahn(1988) and Yang(1995), I will analyze the DP subject phrases of (8a, b) as (10a, b).

(10)

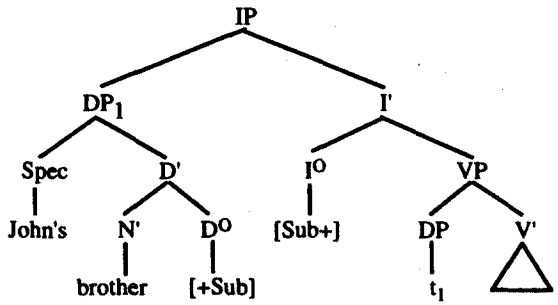


If we represent the pre-Spell-Out structures of (8a, b), using the analyses of (10), we will get the following structures (11), (12), respectively:

(11)

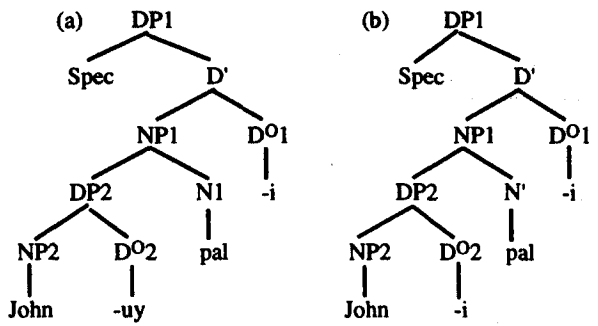


(12)



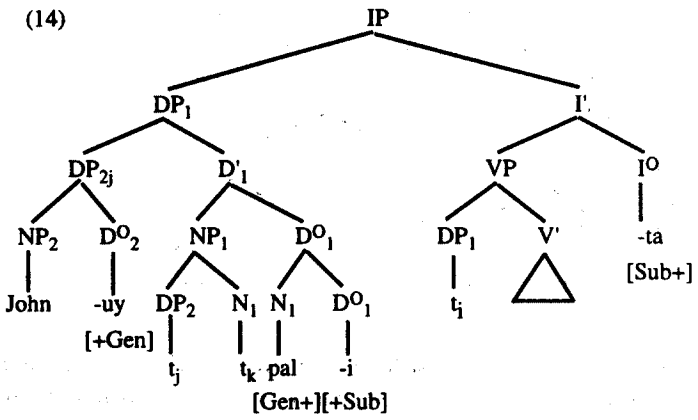
In the subsequent discussion, we will consider Korean DP subject phrases (8c) and (8d), in the way of (10). We find that the two structures are identical and may be similarly represented like (13a, b):

(13)



However, after the movements, the pre-Spell-Out structure of (8c) becomes very different from that of (8d). According to the MP theory that the structural Cases have to be checked off by some functional category, we may assume that in Korean the subjective and genitive Cases are checked off by I and N, respectively. First, let us consider the case of (8c) to be represented like (14).

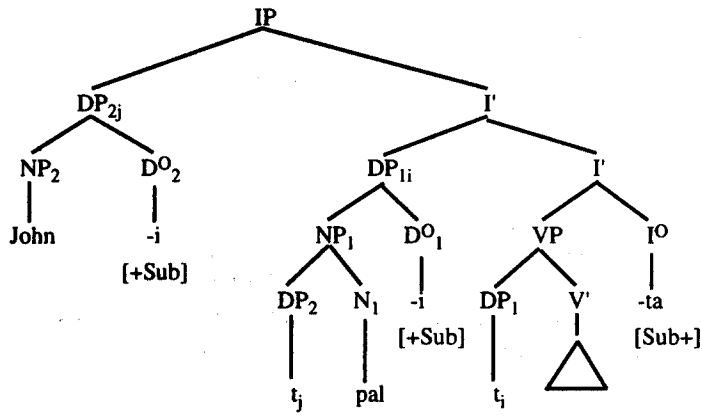
(14)



In (14), the pre-Spell-Out structure of (8c), the subjective Case is checked off by I(nfle) through the movement of DP_1 into the Spec of I, whereas the genitive Case is checked off by N through the movement of DP_2 into the Spec of D_1 along with the movement of N_1 *'pal '* to D_1.

In what follows, we will consider how the double subjective Cases in (8d) are checked off. The following structure (15) is roughly the pre-Spell-Out structure of (8d):

(15)



Here, unlike (14), the structure such as(15) needs two hypotheses for this representation: First, we must accept Chomsky's (1994) claim that the multiple Spec structure should be available for human languages due to conceptual necessity. Second, we have to adopt Chomsky's (1995) idea that the disappearance of the checker feature after checking consists of two stages: Delete and Erase. (cf. Yang(1995) PP 76-77)

4. **Proposal**

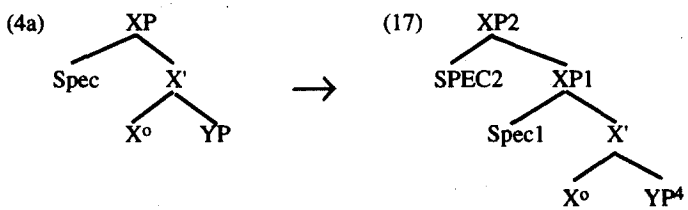
So far, with the hypothesis that DP can have two Specs(WP, ZP in (2)), we have depicted all the DP subject phrases including the double subject-Case structure, relatively clearly.

Now, let us consider DPs with SF[focus] such as (16a) and (16b) which cannot be derived by the basic schema(10).

(16) (a) John -uy dongsayng- cocha kass -ta.
John 's brother Focus go past Dec
'Even John's brother went.'

(b) John- uy dongsayng- man salass -ta
John 's brother Focus survive past Dec
'Only John's brother survived.'

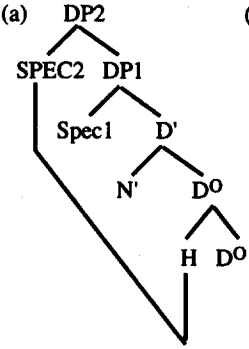
At this point, I will argue that all the functional categories(DP,IP, CP) have the following structure instead of (4a):



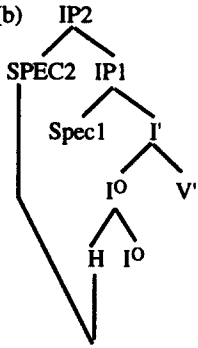
In(17), I argue that all the functional categories(DP,IP,CP) may two Specs(Spec1, SPEC2), respectively, following Chomsky(1994). I postulate that the time of derivation of a maximal projection(SPEC2) is just after Satisfy projecting up to the minimal X-bar structure, and more exactly, at the moment of the optimal derivation by Affect-α with Delete-α and Insert-α.

SPEC2, like Spec1, has Spec-Head Agreement relation with Head(X^O) generated by Target α, I propose. If this is represented by schmata, the result is roughly like (18):

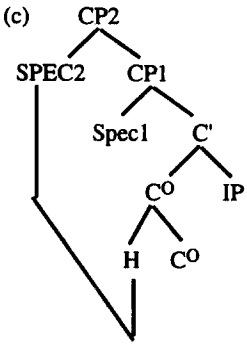
(18) (a)



(b)

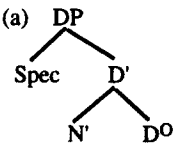


(c)



In (18, a b,c), SPEC2 of DP,IP,or CP contains Sementic Features (that is, Focus, Theme, Presupposition) respectively and has Spec-Head Agreement relation with a head at LF, I propose.[5] Also, I argue that the derivation of XP2 is optional, and in the case of no setting up of XP2, H(ead) adjunction to XO doesn't take place. We can represent these cases through the following structures:

(19) (a)



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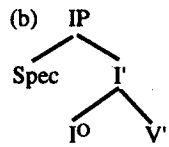
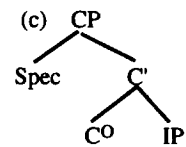


(c)



Following my argument, SPEC2 of (18a) has a SF[+Focus] and D^O has a SF[Focus+],and at LF, [Focus+] of D^O(more exactly, H adjoined to D^O) is discharged to [+Focus] of SPEC2.6 Accordingly, I argue that SPEC2 of DP is essential for any DPs containing a S(emantic) F(eature), including [Focus].

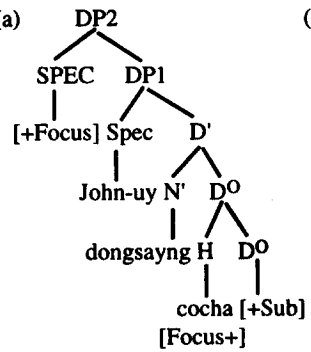
Let us take and discuss the examples (16 a,b), repeated as (20), for convenience' sake.

(20) (a) John -uy dongsayng- cocha kass -ta.
John 's brother Focus go past Dec
'Even John's brother went.'

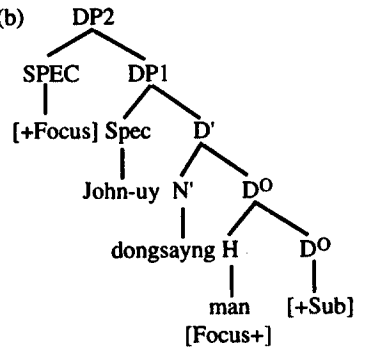
(b) John- uy dongsayng- man salass -ta
John 's brother Focus survive past Dec
'Only John's brother survived.'

In (20a, b), the DPs with a SF[Focus] cannot be represented by the minimal X-bar structure with only one complement and one specifier(namely, (4a)). The DPs with a SF[+Focus] will show the explanatory power of my proposal (18a).

(21) (a)



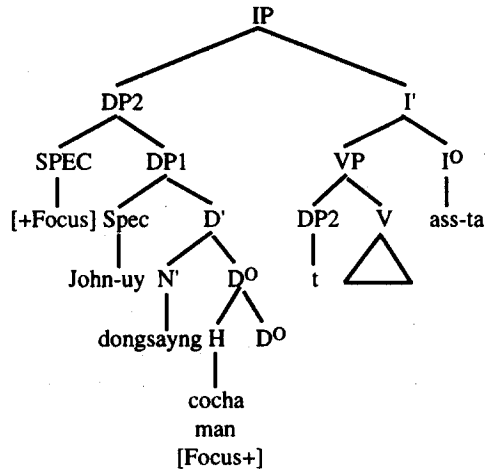
(b)



In (21a,b) 'cocha' and 'man' with SF[Focus+] are base-generated, I argue. At LF, SF[Focus+] is discharged to [+Focus] of SPEC by Spec-Head Agreement. In Korean, SF[+Focus] of SPEC is a weak feature, and Feature Checking works at LF by Procrastinate.

If we are to represent the pre-Spell-Out structures of (20a, b), they are almost like (22):

(22)

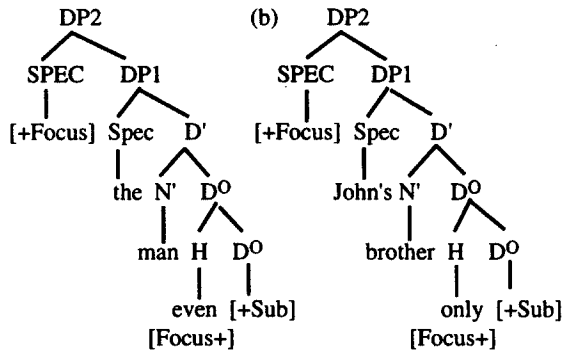


In the subsequent discussion, we will consider English DPs with a SF[Focus]:

(23) (a) Even the man came.
(b) Only John's brother understood.

With respect to DPs with a SF[Focus], there is a noticeable difference between English and Korean: In English, this DP is situated just before focused words, whereas in Korean this DP, just after focused words. We can solve this problem by means of the properties of the strong and weak features in the MP.

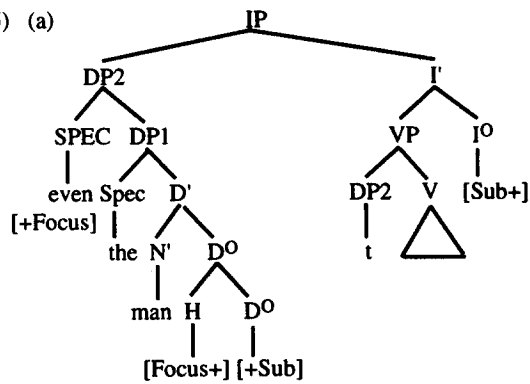
(24) (a) (b)



In (24), we will find that English DPs with SF[Focus] have the same structure as Korean DPs with SF[Focus] except SF Checking system: In English, [+Focus] of SPEC is a strong feature, and so SF Checking must operate before Spell-Out.[7] In (24a), (24b), 'even' and 'only' must move to SPEC of DP2 by Feature Checking, and Categoty (H) is eliminated at LF by 'Erase'.

The following structures are roughly the pre-Spell-Out structures of (23a, b).

(25) (a)



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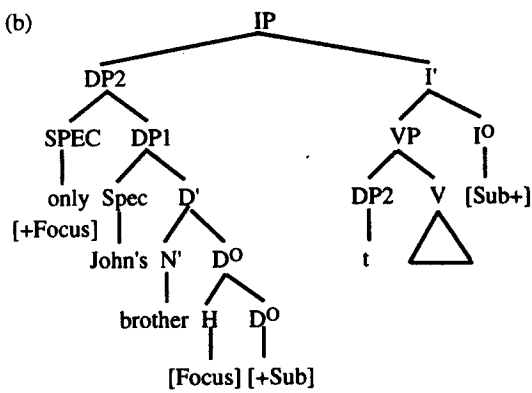


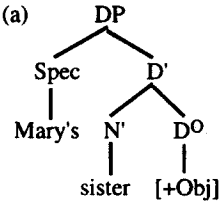
5. More Discussion

Now, let us consider the following DP object phrases:

(26) (a) John likes Mary's sister.
(b) Mary loves the man.

Under the MP theory, the DP object phrases of (26a, b) can be analyzed, like (27a, b).

(27) (a)



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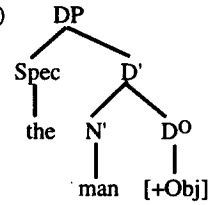
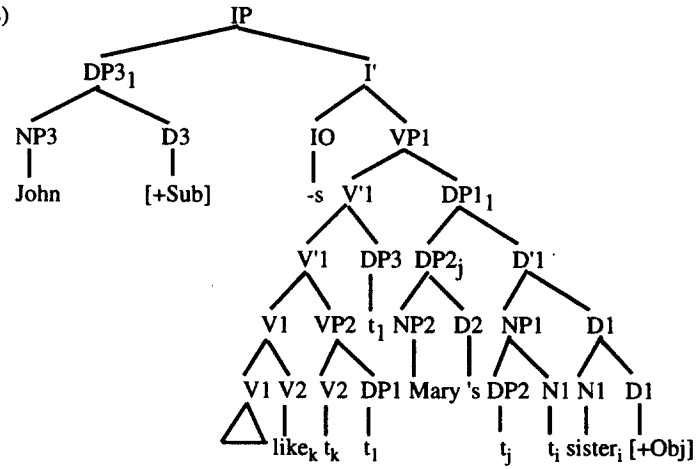


Unlike the case of DP subject phrases, the pre-Spell-Out structures of (26a, b) are roughly like (28) and (29), respectively.

(28)



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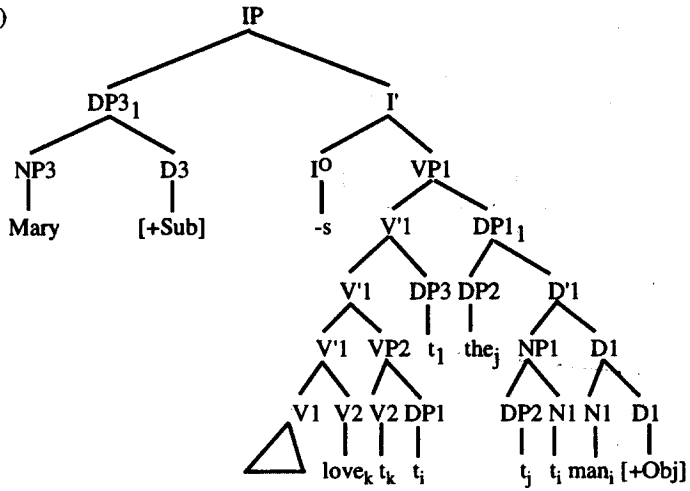
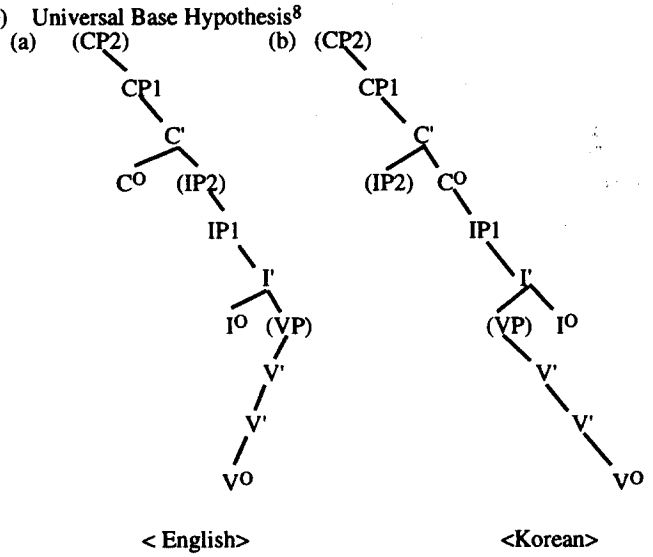


Here, we find that with respect to the DP object phrases, there is a distinct difference, between English structures and Korean structures: English word order is (S)+V+O, whereas Koean word order is (S)+O+V. I will propose that there is a skeleton of universal phrase structure which can comprise both configurational and nonconfigurational languages.

(30) Universal Base Hypothesis[8]



< English> <Korean>

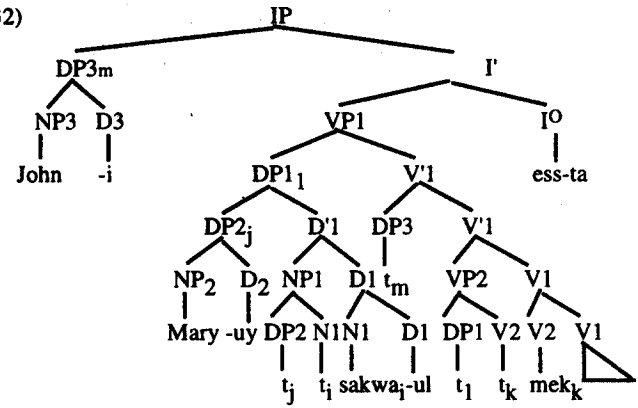
The following examples have Korean DP object phrases:

(31) (a) John-i Mary-uy sakwa-lul mek-ess-ta.
John SM Mary 's apple OM eat past Dec
'John ate Mary's apple.'

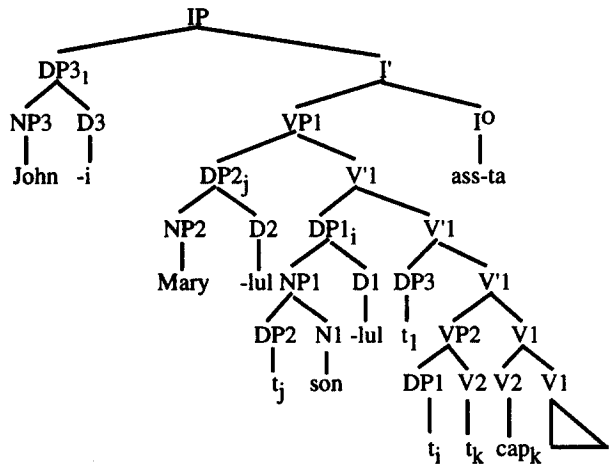
(b) John-i Mary-lul son-lul cap-ass-ta.
John SM Mary OM hand OM catch past Dec
'John caught Mary' hand.'

Following (30b), the above structures can be represented, like (32) and (33).

(32)



(33)



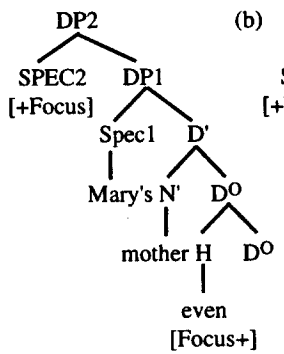
As seen in (28), (29), (32), and (33), the DP object phrases are raised to the Spec of an empty light verb and their accusative Cases are checked, instead of AGR_O, by V whose checker feature is strong [ACC+]. This, Chomsky(1995)argues, leads to the claim that there is no AGR in UG, whereas Chomsky(1992, 1994) argues that the accusative Case is checked in the Spec of AGR_O by V that is raised to AGR_O. We will take Chomsky's (1995) position.

Now, let us take and discuss the examples which can be well represented by my argument(the necessisity for SPEC2 of DP2).

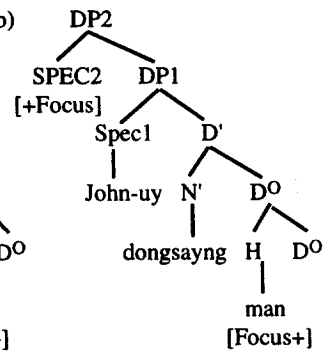
(34) (a) John loves even Mary's mother.
(b) Salamtul-i John-uy dongsayng-man cohahan-ta.
people SM John 's brother Focus like Dec
'People likes only John's brother.'

In (34a) and (34b), the DP object phrases containing a SF[Focus] will be represented as (35a),(35b), respectively.

(35) (a)

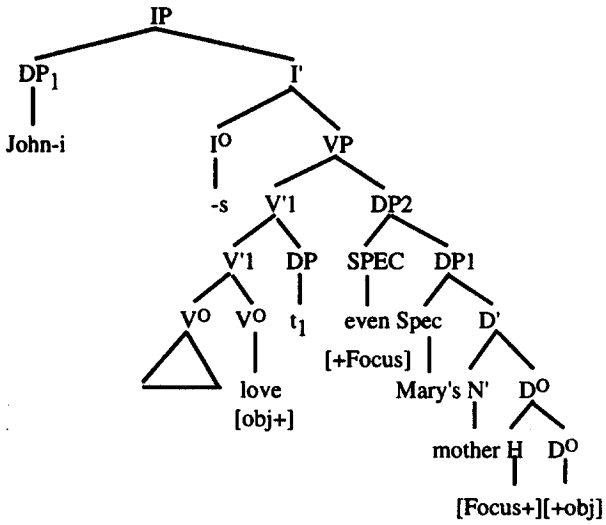


(b)

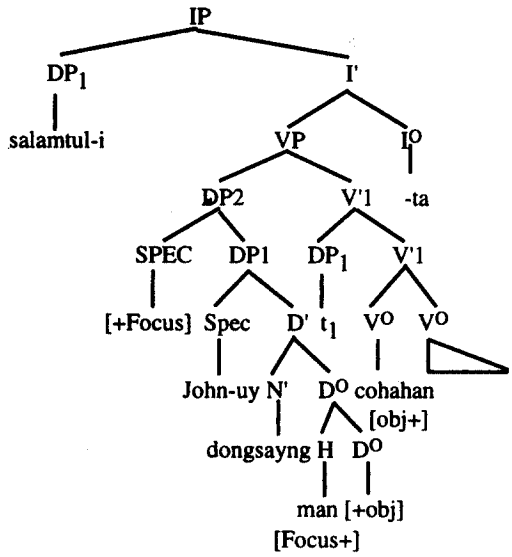


If we represent the pre-Spell-Out structures of (34a), (34b), we get roughly the following schmata such as (36) and (37).

(36)


IP
DP1
I'
John-i
IO
VP
-s
V'1
DP2
V'1
DP
SPEC
DP1
VO
VO
t1
even
Spec
D'
[+Focus]
love
[obj+]
Mary's
N'
DO
mother
H
DO
[Focus+][+obj]

(37)


IP
DP1
I'
salamtul-i
VP
IO
DP2
V'1
-ta
SPEC
DP1
DP1
V'1
[+Focus]
Spec
D'
t1
VO
VO
John-uy
N'
DO
cohahan
[obj+]
dongsayng
H
DO
man
[+obj]
[Focus+]

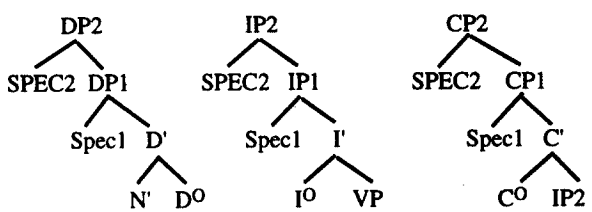
6. Conclusion

So far, under the hypothesis that the SPEC of DP2 may provide explanatory power for the DP (subject or object-phrase) structures between English and Korean, we've discussed the DP (subject or object-phrase) structures containing a SF[Focus], based on Spec-Head Agreement(that is, feature checking between [+Focus] from a maximal projection category (UP) adjoined to XP and [Focus+] from a head(H) adjoined to XO). I argue that the idea of this semantic category can and must extend to other functional categories (IP,CP) as well as DP for providing explanatory power for linguistic theory.

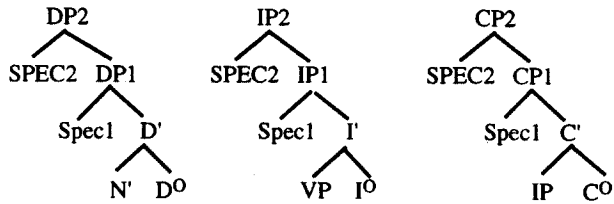
Notes

1. Here, SF means S(emantic) F(eatures) such as Focus, Theme, Presupposition,etc.Following Chomsky(1995), the checker semantic feature is represented as [+SF], whereas the checkee feature, as [SF+].
2. VISH means that all arguments of a verb are base-generated within a projection of the verb. This hypothsis which was called 'the endocentric subect theory' by Bennis(1984) is one of the bases for arguments in the MP theory.
3. Abney(1987) proposes that gerundive NPs can be incorporated into a strict version of X-bar theory from this viewpoint.
4. I will state two points about this structure: First, the capital SPEC represents to be only specifier which closes off projections, unlike the small Spec. Second, this structure depends on the configuration of languages(here, English vs. Korean).

<English>



<Korean>



5. In this paper, I will not be concerned with the cases of IP and CP. See S.Y.Park (1996, to appear) for further reference.

6. The reason why SF[Focus] is base-generated by Head-Adjunction results from the following linguistic phenomena.

(a) Chelswu-uy dongsayng-man-i sal-ass-ta.
Chelswu 's brother [Focus][Sub] survive past Dec
'Only Chelswu's brother survived.'

(b) Only John's brother came.

(c) John's brither only came.

Both (a) and (b) are grammatical sentences. I intend to solve this problem by the properties of strong and weak features, but perhaps may be due to lexical property. I'll leave this problem open for further research.

7. In the MP, strong features which are visible at PF cause the derivation to crash

8. This is some modified structure of Y.S.Kim(1988: 63) according to my argument.

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