Subcategorization and Case Marking in Korean

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1. Introduction

The case marking of the so-called small clause construction and raising construction in Korean has been paid much attention to in the literature. Especially the mechanism of Exceptional Case Marking (ECM) has been popularly assumed in order to account for these constructions. Kim (1989) and Lee (1991), respectively, explains the case marking of the so-called small clause construction and raising construction in terms of ECM. In this paper, after some problems with Kim (1989) and Lee (1991) are discussed, it will be examined how these constructions can be dealt with within the framework of HPSG.

If we assume a flat structure for both constructions following Pollard & Sag (1993), the case assignment can be accounted for without an ECM mechanism. However, in this case, the case marking in the raising construction in Korean cannot be explained by a lexical specification of case which is the standard case assignment mechanism in HPSG. To remedy this, the notion of structural case will be adopted and a principle will be proposed to resolve the structural case.

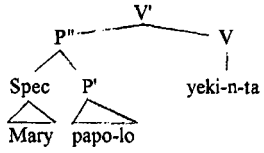
On the other hand, the idea of lexical specification of case will still be maintained for the case marking of the so-called emotion verbs. Therefore, it is assumed that there are two sorts of case, structural and lexical. In the later section of this paper, the present analysis will be extended to the case marking of the complex predicate construction which consists of auxiliary verb(s) and a governed verb.

2. So-Called Small Clause Constructions

2.1. Previous Analysis

The following sentences are analyzed as small clause analogs of ECM structures by Kim (1989):[1]

(1) a. John-i [PP Mary-lul papo-lo] yeki-n-ta.
John-nom Mary-acc fool-as(prep.) consider-pres-dec
'John considers Mary a fool.'



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[1]The abbreviation 'dec' is used for a declarative marker.

b. John-i [$_{AP}$ Mary-lul yeppukey] yeki-n-ta.
John-nom Mary-acc pretty consider-pres-dec
'John considers Mary pretty.'

c. John-i [$_{VP}$ Mary-lul kakey] mantul-ess-ta.
John-nom Mary-acc go make-past-dec
'John made Mary leave.'

d. John-i [$_{NP}$ Mary-lul papo-lul] mantul-ess-ta.
John-nom Mary-acc fool-acc make-past-dec
'John made Mary a fool.'

e. John-i [$_{PP}$ Mary-lul papo-lo] mantul-ess-ta.
John-nom Mary-acc fool-as(prep.) make-past-dec
'John made Mary a fool.'

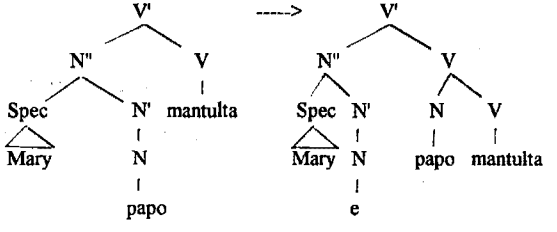
Kim assumes that all categories have subjects and that small clause subjects are in the Spec positions of X", which in turn are projections of small clause predicates, following Stowell (1983). According to her, a small clause subject is assigned an Exceptional Case by a matrix verb since small clauses lack internal case assigners. She also agrees with Stowell (1988) in the respect that small clause subjects have dual characteristics as subjects of small clauses and objects of matrix sentences, and that the objecthood of small clause subjects follows from the fact that small clause subjects are governed by matrix verbs.[2] However, the evidence from binding in Stowell (1988), which is claimed to support the subjecthood of small clause subjects in English, does not apply in Korean, because long distance binding is also possible for reflexive anaphors like *caki*.[3]

A major problem of her analysis is that we can generate ungrammatical sentences like the following, since there is no category difference between a normal XP and a small clause XP:

(2) *Mary-ka [$_{PP}$ John-eykeyse] yeki-n-ta.
Mary-nom John-from consider-pres-dec

Moreover, her 'restructuring' analysis of a sentence like (1d), which is shown in the following, is also problematic:

(3)



[2] Kim (1989) says small clause subjects behave like direct objects in matrix sentences in case marking, pronoun reflexivization, NP-movement and scrambling.

[3] The following examples are given in Stowell (1988):
i) Mary considers Bill kind to himself / *herself.
ii) Mary considers Bill too kind to her / *him.

In (3), the nominal predicate *papo* is argued to be head-to-head adjoined to the matrix verb *mantulta* and to be assigned accusative case from the matrix verb. However, the following sentence cannot be explained by restructuring since the nominal predicate is a phrase and cannot be head-to-head adjoined:

(4) Mary-ka John-ul cangan-eyse uttumka-nun uysa-lul mantul-ess-ta.
Mary-nom John-acc city-in best doctor-acc make-past-dec
'Mary made John the best doctor in the city.'

Another problem with her analysis is that she cannot account for the following sentence in which the small clause verb appears with a nominative NP:

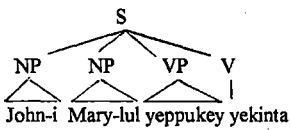
(5) John-i [Mary-ka ttenakey] mantul-ess-ta.
John-nom Mary-nom leave make-past-dec
'John made Mary leave.'

As she assumes that the small clause verb *kakey* in (1c) is not a case assigner and that this fact triggers ECM from the matrix verb, she cannot explain how the NP *Mary* is assigned a nominative case in (5).

2.2. No Small Clauses

A more direct way of explaining the object-like properties of the second NP's in (1) is to say that they are subcategorized for by the matrix verbs and there are no phrasal categories of small clauses. Following Pollard & Sag's (1993) analysis of small clauses in English, we can assume the following structure for (1a):[4]

(6)



In (6), both the NP *Mary-lul* and the VP *yeppukey* are complements of the matrix verb, and the accusative case of *Mary* is assigned in the lexical entry of the verb *yeki-*. Thus we don't need the Exceptional Case Marking mechanism any more. The lexical entry for the verb *yeki-* is described as follows:[5]

(7) yeki- [SUBJ <NP[nom]>
COMPS <[2]NP[acc], { VP[+STATIVE, VFORM -key, SUBJ<[2]>] }>
{ PP[PFORM -lo, SUBJ<[2]>] }]

[4] Whether *Mary-lul yeppukey yekin-ta* forms a VP is a separate issue. I am assuming a flat structure for Korean sentences, following Chung (to appear).
[5] The PP complement in this entry is for the sentence (1a).

A similar lexical entry can be given for the verb *mantul-* in (1c) - (1e) as in (8):[6]

(8) mantul- [SUBJ <NP[nom]>
COMP <[2]NP[acc], { VP[VFORM -key, SUBJ<[2]>] } >
{ PP[PFORM -lo, SUBJ<[2]>] }
{ NP[Case[acc], SUBJ<[2]>] }]

The above account is based on the general assumption in HPSG that only finite forms of a verb assign a case to their subject. As the VP in (6) is always nonfinite, it does not specify a case for the NP *Mary* which is in the SUBJ list of the head of the VP. Therefore, the only source from which *Mary* is assigned a case is the matrix verb. Though this general assumption appears to be tenable for the account of the above examples, there is, however, a problematic case where we need to assume that even nonfinite verbs assign a case to their subjects. Consider the following:

(9) a. Mary-ka John-i hakkyo-ey ka-key mantul-ess-ta.
Mary-nom John-nom school-to go make-past-dec
'Mary made John go to school.'
b. Mary-ka John-ul hakkyo-ey ka-key mantul-ess-ta.
Mary-nom John-acc school-to go make-past-dec
'Mary made John go to school.'

The case for *John* freely alternates in (9). The only apparent ways that *John* in (9a) can get nominative case are either from the verb *ka-* or from the verb *mantul-*. If we assume that *John* is subcategorized for by the matrix verb in (9a) and that *kakey* does not assign case, then we should say the verb *mantul-* assigns either nominative or accusative to its complement NP. On the other hand, if we assume that *mantul-* in (9a) takes the sentential complement *John-i hakkyo-ey ka-key*, then the NP *John* should get nominative case from the nonfinite verb *ka-key*. At this point, I suggest the latter analysis as the preferred one, since there are some other examples where a nominative NP is the subject of a nonfinite verb. Consider the following:

(10) a. Ku-nun [ecey tongsayng-i cwuk-ese] sulphu-ta.
he-top yesterday brother-nom die-because sad-dec
'He is sad because his brother died yesterday.'
b. Ku-nun [ecey tongsayng-i cwuk-ess-umulo] sulphu-ta.
he-top yesterday brother-nom die-past-because sad-dec
'He is sad because his brother died yesterday.'

(11) a. Nay-ka chwumchwu-(ess)-ko tongsayng-i noray-lul pwulu-ess-ta.
I-nom dance-(past)-and sister-nom song-acc sing-past-dec
'I danced, and my sister sang a song.'
b. Na-nun chwumchwu-ess-una tongsayng-un chwumchwuci anh-ass-ta.
I-contrastive dance-past-but sister-contrastive dance don't-past-dec
'I danced, but my sister didn't dance.'

[6]The idea of raising-to-object is represented in (7) and (8) by structure sharing between small clause subjects and matrix objects.

In a subordinate clause with *-ese* in (10a), a finite form of verb is not allowed, but the subject is nominative. (On the other hand, in a subordinate clause with a synonymous conjunction *-umulo* in (10b), only a finite verb is used.) Moreover, a nonfinite verb can be (and usually is) used in a coordinate clause in (11a) with a nominative subject. One might want to explain such facts on the basis that the nonfinite forms in (10a) and (11a) are given by a lexical rule which changes finite verbs into nonfinite verbs when they are used with certain conjunctions. However, in that case, it would be very difficult to generalize as to when this lexical rule is applied, since even synonymous conjunctions take different forms of verbs as in (10).

If we assume that nonfinite verbs also assign nominative cases and that each conjunction selects either finite or nonfinite verbs, (10) and (11) can be accounted for in a much simpler way. Therefore, I will assume that nonfinite verbs as well as finite verbs assign nominative case in Korean. More detailed discussion of (9) will be provided in section 3.3.

When we assume (6) as the structure for (1b), a potential problem is that the order between a complement NP and a complement VP is not free as we usually observe in other sentences in Korean where the arguments of a verb are freely scrambled. Consider the following examples:

(12)a. John-i Mary-lul yeppukey yeki-n-ta.
John-nom Mary-acc pretty consider-pres-dec
'John considers Mary pretty.'
b. Mary-lul John-i yeppukey yekin-ta.
c. ?*John-i yeppukey Mary-lul yekin-ta.

Another interesting fact is that the object NP in a VP complement of a small clause verb can be scrambled out of the VP. (13) and (14) exemplifies this:

(13)a. John-i [$_{NP}$ Mary-lul] [$_{VP}$ sakwa-lul mekkey] mantul-ess-ta.
John-nom Mary-acc apple-acc eat make-past-dec
'John made Mary eat an apple.'
b. (?) John-i sakwa-lul Mary-lul mekkey mantul-ess-ta.
c. ?* John-i sakwa-lul mekkey Mary-lul mantul-ess-ta.

(14)a. John-i [$_{NP}$ Mary-lul] [$_{VP}$ hakkyo-ey kakey] mantul-ess-ta.
John-nom Mary-acc school-to go make-past-dec
'John made Mary go to school.'
b. (?) John-i hakkyo-ey Mary-lul kakey mantul-ess-ta.
c. ?* John-i hakkyo-ey kakey Mary-lul mantul-ess-ta.

To explain the above scrambling facts, I will adopt the linearization approach of Reape (in press). Moreover, to block scrambling between two complements of a small clause verb, the following LP rule is proposed:

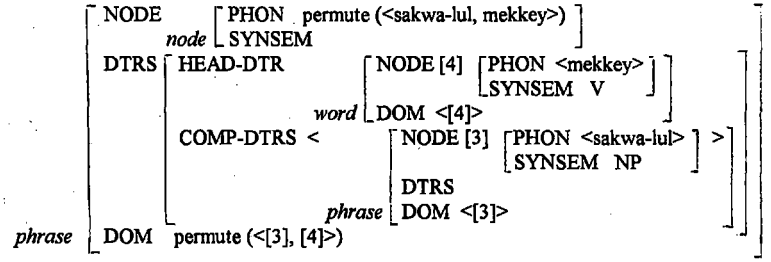
(15) [1] < [SUBJ <[1]>]

Let us see how this works. Reape claims that word order is determined within *word order*

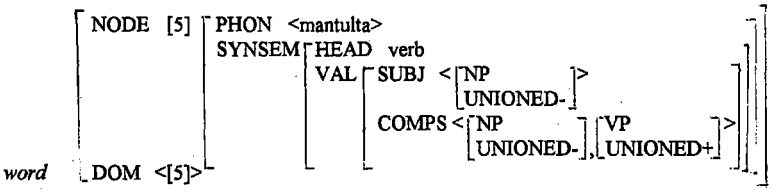
domains and that the word order domain of a daughter may be the same as a subpart of the domain of its mother. Formally this idea is described by the sequence union relation, $\cup_{\langle\rangle}$ (A, B, C), where C contains all and only the elements of A and B and any pair of elements from A or B can be found in the same relative order. (cf. Reape (in press)) On Reape's analysis, it is assumed that phrasal signs bear a DOM feature, and it is further assumed in Pollard, Kasper & Levine (1992) that DOM elements are of type *node* whose only appropriate features are PHON and SYNSEM.[7]

If we follow these assumptions, the feature geometry of the head verb and the VP complement in (13a) can roughly be represented as follows:

(16)



(17)



In (16), though the head and the complement daughter are permutable in principle,[8] a phrase such as *mekkey sakwa-lul* will be blocked by the following LP rule, which is needed to explain the head-final property of Korean (cf. Chung , to appear):

(18) X < head

The use of the feature UNIONED in (17) is adopted from Reape, and verbs are assumed to select complements that are either UNIONED +, -, or unspecified.[9] As the complement VP of

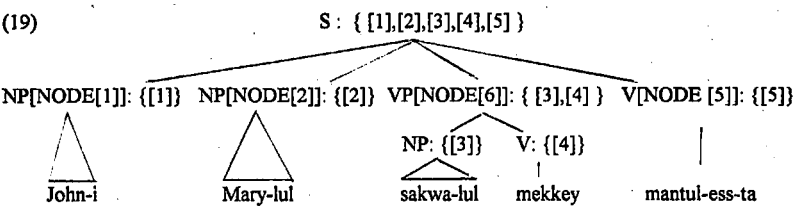
[7]They explain that DTRS or DOM features are not appropriate for the type *node*, since elements of order domains do not refer to internal tectogrammatical (DTRS) structure, or to more deeply embedded levels of phonogrammatical (DOM) structure. (cf. Pollard, Kasper & Levine 1992:14)

[8]Actually, this assumption is necessary for the case where there are more than one complement daughter in a phrase.

[9]The way that I use this feature follows Calcagno (1993) as well.

the verb *mantulta* is specified as UNIONED +, the elements of the word order domain of VP will become elements of the higher word order domain, i.e., domain of the matrix S. Therefore, the word order domain of S consist of five elements:[10]

(19)



The five elements in the DOM of S are permutable with each other, so long as the head [5] is final and [3] precedes [4].[11]

Now the account of (13b) is straightforward. As the NP *sakwa-lul* and the NP *Mary-lul* are in the same word order domain and there is no violation of LP rules, *sakwa-lul* can precede *Mary-lul*. On the other hand, (13c) is blocked by the LP rule in (15).

The LP rule in (15) will limit the freedom of order between complements of a small clause verb to some degree. However it will still allow scrambling in equi verb constructions such as (20):

(20) a. John-i Mary-lul hakkyo-ey ka-ra-ko seltukha-ess-ta.
John-nom Mary-acc school-to go persuade-past-dec
'John persuaded Mary to go to school.'

b. John-i hakkyo-ey ka-ra-ko Mary-lul seltukha-ess-ta.

According to Pollard & Sag (1993), one of the differences between equi verbs and raising verbs is that for equi verbs, the VP complement's unexpressed subject is only coindexed with a NP complement, not structure-shared with it. Therefore, the LP rule (15) does not block the scrambling between *Mary-lul* and *hakkyo-ey ka-ra-ko* in (20).

3. Raising Verbs

3.1. Raising Verb Construction

An interesting case alternation is observed in a construction with a raising verb in the following:[12]

[10]For convenience, the notation { } is used to represent the word order domain of each sign.

[11][3] precedes [4] here, since [3] should precede [4] by (18) in the DOM of the complement VP, and this order is kept when the elements of the VP are sequence unioned into a higher DOM.

[12]Actually, the term 'raising verbs' is not appropriate here, since both the small clause verbs and the *believe*-type verbs are treated as raising verbs in HPSG. However, I will often use this term to refer only the *believe*-type raising verbs to distinguish them from small clause verbs. Unlike in English, Korean *believe*-type raising verbs

(21) Mary-ka John-i ttokttokha-ta-ko mit-nun-ta.
Mary-nom John-nom smart-dec-comp believe-pres-dec
'Mary believes that John is smart.'

(22) Mary-ka John-ul ttokttokha-ta-ko mit-nun-ta.
Mary-nom John-acc smart-dec-comp believe-pres-dec
'Mary believes that John is smart.'

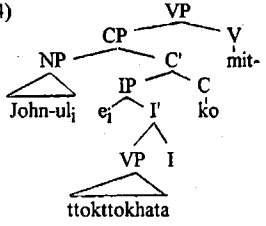
Some verbs which belong to this category are listed in the following:

(23) mit- 'believe' nukki- 'feel'
sayngkakha- 'think' phyengha- 'criticize'
kancuha- 'consider' incengha- 'admit'
chakkakha- 'mistake' carangha- 'take pride in'
pwunsekha- 'analyze'

3.2. Previous Analysis

Lee (1991) proposes the following structure for the VP in (22):

(24)



In his analysis he argues that the NP *John* which was in the Spec of IP in (21) is raised to Spec of CP by 'focalization' in (22). Thus *John* gets case from the matrix verb *mit-* via ECM. He assumes that the A' chain (John-ul$_i$, e$_i$) is not subject to the Chain Condition and can bear dual case (nominative from I, and accusative from *mit-*) following Massam (1985).

However, there is a problem in his analysis. The trace left behind in the SPEC of IP must be properly governed, but it cannot be governed by its antecedent *John-ul*, since C' forms a barrier according to Chomsky's (1986) Minimality Condition. Lee proposes the Case Minimality Condition in (25) to avoid this problem and to explain the contrast in (26):

(25) Case Minimality Condition:
In the configuration ...α...[$_\gamma$ ...δ...β]..., α does not govern β if γ is a minimal Case domain, the (immediate) projection of δ, a Case-assigner, containing a maximal projection that is governed by δ.

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take finite VP complements.

(26) a. John-i [$_{CP}$ Mary-lul$_i$ t$_i$ yeppu-ess-ta-ko] mit-nun-ta.
John-nom Mary-acc pretty-past-dec-comp believe-pres-dec
'John believes that Mary was pretty.'

b.*John-i [$_{CP}$ Mary-lul$_i$ t$_i$ Tom-ul po-ass-ta-ko] mit-nun-ta.
John-nom Mary-acc Tom-acc see-past-dec-comp believe-pres-dec
'John believes that Mary saw Tom.'

In (25), the basic idea is that the case-assigning property of the embedded predicate is relevant to the barrierhood of the embedded IP. According to Lee, the embedded I' is a minimal case domain in (26a), whereas both the embedded VP and the embedded IP are minimal case domains in (26b). Therefore, he says that the trace in (26a) is properly governed, whereas the trace in (26b) is not.

However, contrary to Lee's generalization that ECM is possible in *believe* type constructions only when the embedded predicate is a non-case-assigner, the following sentences are judged to be acceptable by some speakers:[13]

(27) a.(?) John-i Mary-lul sakwa-lul mek-ess-ta-ko mit-nun-ta.
John-nom Mary-acc apple-acc eat-past-dec-comp believe-pres-dec
'John believes that Mary ate an apple.'

b.(?) John-i Mary-lul sicang-ul ka-ss-ta-ko mit-nun-ta.
John-nom Mary-acc market-acc go-past-dec-comp believe-pres-dec
'John believes that Mary went shopping.'

Moreover, when two accusative NPs are separated by other material, acceptability seems to improve:

(28) John-i Mary-lul haru-ey hanpen-ssik cinthongcey-lul pokyongha-n-ta-ko
John-nom Mary-acc day-on once-per pain-reliever-acc take
mit-nun-ta.
believe-pres-dec
'John believes that Mary takes a pain reliever once a day.'

Therefore, it can be assumed that *believe* type raising constructions are possible even with non-stative embedded predicates.[14]

Even if we assume Lee's grammaticality judgment on (26b) and his Case Minimality Condition, there is a serious problem in his analysis. Because an embedded IP is a barrier when it contains a verb which assigns a case to its complement as in (26b), the following relative clause and passive sentences cannot be accounted for:

(29) [$_{NP}$[$_{CP}$ saramtul-i [$_{CP}$[$_{IP}$ t$_i$ tok-ul cinyess-ta]-ko] mit-nun] paym$_i$]
people-nom poison-acc have-dec-comp believe-pres snake
'a snake that people believe to have poison'

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[13]Moreover, for some speakers, (26b) is acceptable, too. For those speakers for whom (26b) is worse than (27), it seems that two consecutive proper names with the same accusative case make processing harder.

[14]If there are speakers for whom (27) and (28) are also bad, we can assume that in their lexicon, *mit-* subcategorizes for a VP whose head is [+stative].

(30) Ku paym-i$_i$ saramtul-eyuyhay [$_{CP}$[$_{IP}$ t$_i$ tok-ul cinyess-ta]-ko] mit-e ci-n-ta.
the snake-nom people-by poison-acc have-dec-comp believe passive-pres-dec
'The snake is believed to have poison (by people).'

In both the above examples, the embedded IP is a minimal case domain according to Lee, so the subject traces cannot be properly governed. Therefore, his Case Minimality approach is problematic. If we come back and assume Chomsky's Minimality Condition, (26a) cannot be accounted for in Lee's raising-to-CP analysis, as it was mentioned before.

In addition, we can provide a piece of evidence that *John* in (22) is a matrix sentence argument rather than an element of the embedded sentence, borrowing Postal's classical argument for raising to subject. In Korean, a matrix adverbial cannot scramble into an embedded S despite its free position within a matrix S. The following exemplifies this:

(31) a. Elisekkeydo, John-i [Mary-ka pwuca-la-ko] mit-nun-ta.
stupidly John-nom Mary-nom rich-comp believe-pres-dec
'Stupidly, John believes that Mary is rich.'
b. *John-i [Mary-ka elisekkeydo pwuca-la-ko] mit-nun-ta.

However, it is possible in raising situations as in (32):

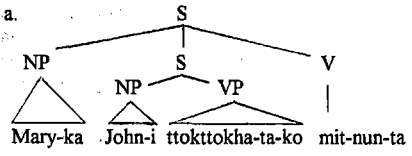
(32) a. Elisekkeydo, John-i Mary-lul pwuca-la-ko mit-nun-ta.
stupidly John-nom Mary-acc rich-comp believe-pres-dec
'Stupidly, John believes that Mary is rich.'
b. John-i Mary-lul elisekkeydo pwuca-la-ko mit-nun-ta.
John-nom Mary-acc stupidly rich-comp believe-pres-dec
'John believes stupidly that Mary is rich.'

(32) is explained straightforwardly if we assume that *Mary-lul* is a matrix argument.

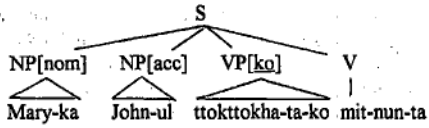
3.3. A Flat Structure for Raising Verbs and its Consequences

Now, what I want to propose is that the case alternation in (21) and (22) arises from different structures due to dual subcategorization of raising verbs. In (21), *mit-* subcategorizes for a sentence as a complement, whereas in (22) it subcategorizes for the two complements NP *John-ul* and VP *ttokttokha-ta-ko*. This is shown in the following:

(33) a.



b.



Accordingly, I assume the following lexical entries (34a) and (34b) for (33a) and (33b), repectively:

(34)a. mit-[SUBJ <NP[nom]>
COMP <S[MARKING -ko]>]

b. mit-[SUBJ <NP[nom]>
COMPS <[2]NP[acc], VP[SUBJ[2], MARKING -ko]>]

(34b) shows that the morpheme *-ko* is not treated as a complementizer attached to an S. Instead, it is analyzed as a marker attached to VP. As both S and VP (which is looking for a subject) are represented as projections of V in HPSG, there is no reason why we cannot consider *-ko* a marker which selects a projection of V via its SPEC feature. Then, a lexical entry for *-ko* is given as follows:

(35) ko-[HEAD marker[SPEC phrase[HEAD V[VFORM -ta, unmarked]
COMPS < >]]
MARKING ko]

However, in fact, the lexical entry in (34b) is problematic, since the complement VP is finite, as (36) clearly shows:

(36) John-i Mary-lul ttokttokhay-ss-ta-ko mit-nun-ta.
John-nom Mary-acc smart-past-dec-comp believe-pres-dec
'John believes Mary to have been smart.'

As the finite verb *ttokttokha-* has a lexical entry in which the SUBJ value is NP[nom], we have a case conflict in (34b). The SUBJ value of the complement VP is NP[acc] on the one hand, because it is structure-shared with the complement NP[acc]. On the other hand, it should be NP[nom], since the VP has the same SUBJ feature as its head *ttokttokha-* by the Valence Principle.

This suggests that the case marking in (22) and other raising verb constructions cannot be accounted for lexically, which is generally assumed to be the case assignment mechanism in HPSG. Instead, what we can see in (33b) is that the accusative case of the NP complement is connected to the fact that it is realized as a complement of the verb *mit-* but is not realized as a subject of the VP *ttokttokha-ta-ko.*

To solve this problem, I want to borrow the notion of structural case which is introduced into HPSG by Pollard (1993) for the account of German passives. His basic idea is that the case of some NPs is not lexically assigned, but just specified as [structural] in the lexicon and surfaces

as either nominative or accusative depending on the syntactic context.

Assuming this, we can treat *Mary* in (22) as a structural NP. Since most verbs in Korean can appear in the complement VP of a raising verb, we need to extend the notion of structural case to almost every verb in Korean. Therefore, most verbs in Korean can be specified in the lexicon in such a way that they subcategorize for structural NPs for both subjects and complements. Accordingly, the lexical entries of *ttokttokha-* and *mit-* should be changed as follows:

(37)a. mit-[SUBJ <NP[str]>]
[COMPS <S>]

b. mit-[SUBJ <NP[str]>
[COMPS <[2]NP[str], VP[SUBJ[2], MARKING -ko]>]

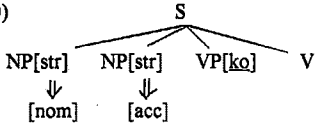
(38) ttokttokha-[SUBJ <NP[str]>]

Now, we need a principle to resolve a structural case to either nominative or accusative in a surface structure. I propose the following principle for this:

(39) Case Principle (for Korean)
A unresolved structural NP which is a daughter of a phrase α is [nom] if it is a SUBJ-DTR of α, and [acc] if it is a COMP-DTR of α.

Let us consider (22) in terms of the lexical entry in (37b) and the above principle. In (37b) both structural NPs are realized as a daughter of a phrase S as follows:

(40)



In (40) the first structural NP is specified as [nom] and the second NP is specified as [acc] by (39). However, the structural NP in the SUBJ list of *ttokttokha-* in (38) will not surface as nominative, since it is not realized as a daughter in any phrasal projection of *ttokttokha-*. Thus we can account for (22) without case conflict.

In 2.2, I provided an example in which we needed to assume that nonfinite verbs are also responsible for nominative case assignment. It is repeated in the following for convenience:

(41)a. Mary-ka John-i hakkyo-ey ka-key mantul-ess-ta.
Mary-nom John-nom school-to go make-past-dec
'Mary made John go to school.'

b. Mary-ka John-ul hakkyo-ey ka-key mantul-ess-ta.
Mary-nom John-acc school-to go make-past-dec
'Mary made John go to school.'

To account for the case alternation in (41), I will assume that the verb *mantul-* has two lexical entries as follows:

(42)a. mantul- [SUBJ <NP[str]> ; COMPS <S[VFORM -key]>]

b. mantul- [SUBJ <NP[str]> ; COPMS <[2]NP[str], VP[SUBJ[2], VFORM -key]>]

Then, I will eliminate the distinction between finite and nonfinite verbs with respect to case assignment capacity in Korean. Thus the nonfinite form *ka-key* has the following lexical entry:

(43) ka- [SUBJ <NP[str]>]

The structural NP which is in the SUBJ list of *ka-* will be specified as nominative in (42a) since it is realized as a subject daughter of the embedded S, whereas it will surface as [acc] in (42b) since it is realized as a complement daughter of the matrix S. It follows from this that the nonfinite verb *yeppukey* in (1b) also subcategorizes for a structural NP for its subject, but as this structural NP is not realized in a phrase it does not cause any case conflict.

Though a large part of case assignment can be covered by the notion of structural NP and the Case Principle, it does not seem that the idea of lexical specification of case should be given up. In the following section, it will be argued that lexical specification of case is necessary for the so-called emotion verbs in Korean.

4. Case Marking of Emotion Verbs

4.1. Emotion Verbs

Korean has a set of verbs called emotion verbs or psych-verbs. Their general characteristics are described as follows in No (1991):[15]

(44)a. They do not occur in a Realis Declarative inflection when the expressed experiencer is any entity other than the speaker.
b. They do not occur in a Realis Interrogative inflection when the expressed experiencer is any entity other than the hearer(s).
c. The restrictions above can lifted in presumptive registers.
d. They denote the property of being in an emotional or sensory state.

He provides a list of emotion verbs in Korean, a few of which are given in (45):

[15] The term 'emotion verb' is adopted from No (1991).

(45) kulip- `miss' mwusep- `be afraid'
pwulep- `envy' mip- `loath'.
yalmip- `hate' silh- `dislike'

These verbs act idiosyncratically with respect to case marking on their complements: the complements have nominative case. (46) exemplifies this:

(46) a. Nay-ka pata-ka kulip-ta.
I-nom sea-nom miss-dec
`I miss the sea.'
b.*Nay-ka pata-lul kulip-ta.
I-nom sea-acc miss-dec
`I miss the sea.'

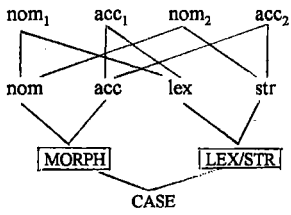
For this group of verbs, lexical specification of case is still needed, and I will assume the following lexical entry for emotion verbs:

(47) emotion verb $\begin{bmatrix} \text{SUBJ} \langle \text{NP[str]} \rangle \\ \text{COMPS} \langle \text{NP[nom]} \rangle \end{bmatrix}$

Therefore, the complements of emotion verbs are treated as non-structural NPs in my analysis and the Case Principle in (39) is not applicable to them.

Now, as it is assumed that there are two kinds of case, structural and lexical, clarification of our case system is in order. In the sort hierarchy of case, I assume that we have two subsorts, lexical and structural, both of which, in turn, have two subsorts, nominative and accusative. As a result, we have four different kinds of case as in the following (48), though morphologically there is no difference between structural case and lexical case:

(48)



4.2. De-emotionization

It has been observed that the morpheme *-ha-* can be attached to all the emotion verbs. Specifically, No (1989) suggests that attachability of *-e-haysse*, which is a past equal intimate form of *-e-ha*, is a sufficient condition for the membership of emotion verbs. This morpheme is treated as an auxiliary verb in some literature (cf. No (1991)), while it is treated as an affix in some Korean dictionaries.

The morpheme *ha* is peculiar in the respect that it is attached to only and all emotion verbs. This is a crucial difference from the other auxiliary verbs. Moreover, whenever it is attached to emotion verbs, it changes emotion verbs to non-emotion verbs.

Due to the above characteristics of this morpheme as a derivational affix, I want to distinguish *ha* from other auxiliary verbs, and assume that non-emotion forms of emotion verbs are derived by a lexical rule. As non-emotion verbs differ from emotion verbs in case marking, this should be specified in the lexical rule, too. The following is the de-emotionization lexical rule:[16]

(49) emotion verb [COMPS <NP[nom$_1$]>]

⇓

non-emotion verb [COMPS <NP[acc$_1$]>]

The PHON value is not given in (49), but we can assume a morphological function which takes the emotion verb as input and gives us a non-emotion verb form with *-e-ha-* as output.[17] (cf. Pollard & Sag (1987:210))

Given this lexical rule, the different case markers in the following examples are accounted for:

(50) a. Nay-ka pata-ka kulip-ta.
I-nom sea-nom miss-dec
'I miss the sea.'

b. Nay-ka pata-lul kuli-e-ha-n-ta.
I-nom sea-acc miss-deemotionizer-pres-dec
'I miss the sea.'

5. Case Marking of Complex Predicates

5.1. Analysis of Complex Predicates

Korean has so-called complex predicates which consist of a verb and one or more auxiliary verbs. Some examples are given in the following:

(51) a. Nay-ka sakwa-lul mek-key toy-ess-ta.
I-nom apple-acc eat become-past-dec
'I came to eat an apple.'

b. Nay-ka sakwa-lul mek-ci anh-ass-ta.
I-nom apple-acc eat don't-past-dec
'I didn't eat an apple.'

---

[16]The output case in (49) is lexical accusative ([acc$_1$]) instead of [str], since lexical case cannot be changed into structural case, given the distinction in (48).

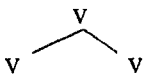
[17]As a result of de-emotionization, non-emotion verbs affixed with *-ha* lose the characteristics in (44).

c. Nay-ka sakwa-lul mek-e po-ass-ta.
I-nom apple-acc eat try-past-dec
'I tasted an apple.'

(52) a. Nay-ka pata-ka kuliw-e ci-ess-ta.
I-nom sea-nom miss become-past-dec
'I came to miss the sea.'
b. Nay-ka pata-ka kulip-ci anh-ta.
I-nom sea-nom miss don't-dec
'I don't miss the sea.'

There have been various analyses of the structure of the above sentences. Among them I will adopt the lexical view presented in Cho (1988), Chan (to appear) and Sells (1991), in which a verb and an auxiliary verb form a compound verb (or complex verb). The basic structure is represented as follows:[18]

(53)



Another assumption that I will make for complex predicate constructions is based on the notion of argument attraction proposed by Hinrichs & Nakazawa (in press, 1993). They claim that auxiliary verbs in German attract all the dependents of the governed verb. This idea is represented in the following lexical entry of the German auxiliary verb *wird* 'will':

(54) wird [SUBCAT append ([1], < V[SUBCAT [1]]>)]

In Chung (to appear), the notion of argument attraction is adopted in an account of Korean complex predicate construction in such a way that an auxiliary verb attracts the complements of its governed verb. The following lexical entry of the auxiliary verb *anh-* shows this:[19]

(55) anh- [SUBJ <$NP_{[1]}$>
COMPS [2]
GOV V[SUBJ <$NP_{[1]}$>, COMPS [2]]]

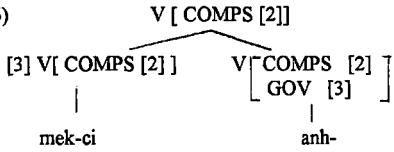
Then, consider the complex verb *mek-ci anh-* in (51b), which has the structure in (53). As the auxiliary verb *anh-* is the head, the Valence Principle requires that the COMPS value of the head matches that of the mother, i.e. the complex verb. As a result the complex verb *mek-ci anh* will have the complement of the governed verb as its complement:

---

[18]Cho's (1988) structure actually differs from (53), since she analyzes the suffixed verb forms with *-e, -key, -ci* or *-ko* as gerundive nominals and treats them as nouns. However, her analysis is basically the same as those of the others in the respect that the suffixed verb and another verb form a compound verb.

[19]The feature GOVERNEE is employed following Chung (to appear) to represent the relationship between head and governed verb in a compound verb. We also need to assume that (56) is licensed by Chung's HEAD-GOV Compounding Schema.

(56)



Before moving on, I would like to mention one more thing. In the section 2.2, I accounted for scrambling out of small clauses by a Reape-style linearization approach, and in this section I assumed Hinrichs-Nakazawa-style attraction for complex predicates. As these two assumptions are useful in formalizing a similar class of linguistic phenomena, our system might appear to be too powerful by assuming both. However, Reape-style linearization is necessary in explaining scrambling in small clause constructions, since in the examples such as (14) in which an adjunct scrambles out of the complement VP, the idea of "argument" attraction is not applicable. On the other hand, it is questionable how a Reape-style approach can account for the constituency in (53) and the inheritance of subcategorization information which comes from non-heads. (See Chan (to appear) and Sells (1991) for the arguments in favor of (53).) As I don't find any strong motivation for choosing just one of them, I assume in this paper.

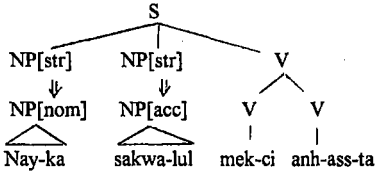
Now we are in a position to examine the examples (51b) and (52b) based on the above assumptions and the discussions on case marking in previous sections. In (51b), the complex verb ***mek-ci anh-*** attracts the complement of the verb ***mek-***, which is specified as [str] :

(57)a. mek- [SUBJ <NP[str]> ; COMPS <NP[str]>]

b. mek-ci anh- [SUBJ <NP[str]> ; COMPS <NP[str]>]

As both structural NPs are realized as daughters in a phrase as in the following, each will be assigned [nom] or [acc] by (39):

(58)



On the other hand, when the auxiliary verb ***anh-*** in (52b) attracts the complement of the verb ***kulip-***, the case for the complement of ***kulip-*** is already specified in the lexicon:

(59)a. kulip- [SUBJ <NP[str]> ; COMPS <NP[nom]>]

b. kulip-ci anh- [SUBJ <NP[str]> ; COMPS <NP[nom]>]

In (59b), the structural NP in the SUBJ list of *kulip-ci anh-* is specified as nominative by (39) in the same way.

Our analysis also enables us to explain case marking of complex predicates that contains more than one auxiliary verbs. Consider the following examples:

(60)a. Nay-ka sakwa-lul mek-ci anh-key toy-ess-ta.
I-nom apple-acc eat don't become-past-dec
'I came not to eat an apple.'

b. Nay-ka pata-lul/*-ka kuliw-e-ha-key toy-ci anh-ass-ta.
I-nom sea-acc/*-nom miss-deemotionizer become don't-past-dec
'I didn't come to miss the sea.'

In (60a) the structural NP *sakwa-lul* surfaces as accusative, since it is in the COMPS list of the complex verb *mek-ci anh-key toy*. On the other hand, in (60b), the accusative case of the verb *kuliw-e-ha* is obtained by a lexical rule in (49) and this information is propagated to the complex verb *kuliw-e-ha-key toy-ci anh-ass-ta*.

5.2. A Remaining Problem

With the auxiliary verb *sip-*, we have an interesting case alternation as follows:

(61)a. Nay-ka sakwa-ka/-lul mek-ko sip-ta.
I-nom apple-nom/-acc eat want-dec
'I want to eat an apple.'

b. Nay-ka sakwa-ka/-lul mek-ko sip-ci anh-ta.
I-nom apple-nom/-acc eat want don't-dec
'I don't want to eat an apple.'

c. Nay-ka sakwa-ka/-lul mek-ko sip-ci anh-key toe-ess-ta.
I-nom apple-nom/-acc eat want don't become-past-dec
'I came to not want to eat an apple.'

What is different in (61) from other complex predicate constructions is that the auxiliary verb *sip-* behaves like an emotion verb. When *sip-* forms a complex verb with its governed verb, it shows the characteristics in (44). Moreover, *-ha-* is attachable to this complex verb changing it to a non-emotion verb. (62) exemplifies this:

(62) John-i sakwa-lul/*-ka mek-ko sip-e-ha-n-ta.
John-nom apple-acc/*-nom eat want-deemotionizer-pres-dec
'John wants to eat an apple.'

Thus the nominative case of the NP *sakwa* in (61) which does not appear in (51) with other

auxiliary verbs can be presumed to come from the emotion auxiliary verb *sip-*. As I assumed that emotion verbs lexically specify case on their NP complements, there is no reason that *sip-* cannot have this property. In fact, it would seem natural to assume *sip-* has the same property as other emotion verbs. However, the fact that we have case alternations in (61) suggests that *sip-*does not always assign lexical nominative case to its complement. In order to represent optional lexical case assignment by *sip-*, we can assume two separate lexical entries for *sip-* as in (63):

(63)a. sip_1- [SUBJ <$NP_{[1]}$>
COMPS [2]
GOV V[SUBJ <$NP_{[1]}$>, COMPS <[2] NP[str]>]]

b. sip_2- [SUBJ <$NP_{[1]}$>
COMPS <$NP[nom]_{[3]}$>
GOV V[SUBJ <$NP_{[1]}$>, COMPS <$NP[str]_{[3]}$>]]

The information in (63a) is the same as that of other auxiliary verbs, while (63b) contains information about lexical case assigned by *sip-* as an emotion verb.

However, it is questionable whether the separate lexical entries in (63) are fully motivated. As the distinction in (63) is primarily based on the difference in case marking, and there is no other significant syntactic or semantic differences between sip_1- and sip_2-, one might ask whether we need to assume separate lexical entries in this case. I leave this question for future study.

6. Conclusion

In this paper, I examined how case marking in so called ECM constructions and complex predicate constructions can be accounted for in HPSG. Though there are still many kinds of constructions for which we need to give a more specific account of case assignment, I proposed that the notion of structural case and the Case Principle presented in 3.3 be the basic mechanism of case marking in Korean, along with the lexical specification of case for emotion verbs.

I believe that this proposal may shed light on the study of case assignment in other constructions such as passive, double nominative, and double accusative. Let me take an example. It has been observed that the HI passive (which is formed by *-i/hi/li/ki* affixation) and the CI passive (which is formed with the auxiliary verb *ci-*) in Korean exhibit an interesting contrast in case assignment as follows:

(64)a. Minswu-ka totwuk-eykey ton-ul ppayass-*ki*-ess-ta.
Minswu-nom robber-by money-acc take away-passive-past-dec
'Minswu was robbed of his money by a robber.'

b. Minswu-ka emma-eyuyhay ot-i/*ul ip-hie *ci*-ess-ta.
Minswu-nom mother-by clothes-nom/*acc wear-causative passive-past-dec
'Minswu was dressed by his mother.'

(Hong, 1991:491)

In the Hi passive in (64a) the complement is marked accusative, whereas in the CI passive in (64b) only nominative case is available. For the account of (64b), we can assume separate lexical rules for HI passive and CI passive, and posit a lexical rule for CI passive in such a way that all complements are passivized and are in the SUBJ list of the passive verb. Then two structural NPs *Minswu* and *ot* in (64b) will surface as nominative by the Case Principle.

This is interesting because (64b) is reminiscent of the double nominative construction in (65), which might perhaps be assumed to have two structural NPs in the SUBJ list of a verb:

(65) Minswu-ka ot-i manh-ta.
Minswu-nom clothes-nom many
'Minswu has many clothes.'

The above discussion is just a little speculation about a possible way of extending my analysis to other constructions. I will leave detailed examination of case marking in other constructions for further study.

References

Calcagno, M. (1993) Toward a Linearization Approach to Word Order Variation in Japanese. In this volume.

Cho, J.O.(1988) Suffixed Verb Forms and Compound Verb Constructions. In E.J. Baek eds., *Papers from the Sixth Conference on Korean Linguistics,* International Circle of Korean Linguistics, 77-106.

Chomsky, N. (1986) *Barriers.* MIT Press.

Chung, C. (to appear) Korean Auxiliary Verb Constructions without VP Nodes. In C.Pollard & I. Sag eds., *Readings in HPSG.*

Hinrichs, E. & T. Nakazawa (in press) Subcategorization and VP structure in German. In Hughes et al eds., *Proceedings of the Third Symposium on Germanic Linguistics.* Amsterdam: Benjamins.

_____ (1993) Linearizing AUXs in German Verbal Complexes. In J. Nerbonne, K. Netter, and C. Pollard eds..

Hong, K.S. (1991) The Passive Construction in Korean. In S. Kuno et al eds., 491-502.

Kang, Y.S. (1986) *Korean Syntax and Universal Grammar.* Doctoral dissertation. Harvard University.

_____ (1991) Adverbial Nominals' Case is Well Explained by the Generalized Case Marking Principle. In S. Kuno et al eds., 295-304.

Kim, Y.S. (1989) Small Clause Analog of ECM Structures. In S. Kuno et al eds., 267-276.

Kuno, S. et al eds. (1989) *Harvard Studies in Korean Linguistics III: Proceedings of the 1989 Harvard Workshop on Korean Linguistics*, Hanshin, Seoul.

_____ (1991) *Harvard Studies in Korean Linguistics IV: Proceedings of the 1991 Harvard Workshop on Korean Linguistics*, Hanshin, Seoul.

Lee, J.S. (1991) Case Minimality: Case Alternation in the Korean ECM Structures. In S. Kuno et al eds., 317-328.

Massam, D. (1985) *Case Theory and the Projection Theory*. Doctoral dissertation, MIT.

Nerbonne, J., K. Netter, and C. Pollard eds. (1993) *German Grammar in HPSG*. Stanford: CSLI Publications

No, Y. (1989) Existential Quantification of Experiencer: Person Constraint on Emotion Verbs and Zero Anaphora. In S. Kuno et al eds., 503-516.

_____ (1991) *Case Alternations on Verb-Phrase Internal Arguments*. Doctoral dissertation, Ohio State University.

Pollard, C. (1993) Toward a Unified Account of Passive in German. In J. Nerbonne, K. Netter, and C. Pollard eds..

Pollard, C., R. Kasper and B. Levine (1992) Linearization Grammar: Research Proposal to the National Science Foundation.

Pollard, C. & I. Sag (1987) *Information-based Syntax and Semantics*. Stanford: CSLI. Publications.

_____ (1993) *Head-Driven Phrase Structure Grammar*. To be published by CSLI Publications and University of Chicago Press.

Reape, M. (in press) Getting Things in Order. In Horck and Wietske eds., *Discontinuous Constituents*. The Hague: Mouton.

Sells, P. (1991) Complex Verbs and Argument Structures in Korean. In S. Kuno et al eds., 395-406.

Stowell, T. (1983) Subjects Across Categories, *The Linguistic Review 2*.

_____ (1988) Small Clause Restructuring. Ms. UCLA.