Multiple Subject Constructions in Korean Reconsidered

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The 'multiple subject constructions' (=MSCs) in Korean and Japanese display peculiar language specific phenomena which can not be easily explained, either syntactically or semantically. These phenomena are syntactically interesting in that all NPs in MSCs have a unique syntactic case, namely nominative case. From the semantic point of view, it is also interesting to note that there are various semantic and pragmatic relationships between the NPs in MSCs. Until now we have seen no plausible explanation as to why there are MSCs in Korean and Japanese and why they are necessary. I propose in this paper that MSCs are derived due to the incompleteness of the meaning of the subject. If the subject is semantically incomplete, it requires another NP for semantic saturation. This process continues until no NP can be added upon past a certain point; at this stage the MSC has become semantically complete. I assume further that the nominative case of the NPs in MSCs is due to the case assignment of the AGR of INFL category in the underlying structure. This conflicts with the assumption of quite a few GB-grammarians, who treat the MSCs as a result of scrambling phenomena of NPs, i.e. via cyclic NP movement from the attribute position of the subject NP into the IP-adjunction position. Detailed descriptions of syntactic derivation and semantic interpretation of MSCs are given in this paper.

* I am indebted to R. Dietrich, W. Klein, and A. von Stechow for their helpful suggestions on my first version of this paper. I would like also to thank M. Bierwisch, B. Comrie and J. Weissenborn for their comments given during the conference at the Max Planck Institute for Psycholinguistics.

Theo Vennemann suggested a discourse analysis on MSCs in Korean for which I am exceedingly grateful but which is unfortunately beyond the scope of this paper. I will treat this problem in a future work.

1. Introduction

It is well known that Korean and Japanese have so called "multiple subject" constructions (=MSCs) in which more than one NP can appear with nominative case marker '-i/-ka' (and in Japanese '-ga'). In this paper I try to treat the following three problems concerning the MSCs. First, how can the syntactic structure of MSCs be described? Second, what kind of syntactic and semantic restrictions are given on deriving the MSCs? Third, in what way do we bring together the syntax and semantics of MSCs in Korean and Japanese? Up to now quite a few articles have been written on the topic of the first problem, however we do not find yet any effective explanation with respect to the second and third problem. In Section 1 of this paper I will introduce some of the important syntactic treatments within the GB-Theory which have been brought by some Korean and Japanese linguists. Then I will handle the second and third problems in Section 2 and 3 of this paper, and try to give some solutions for them by way of a synthesis of syntactic and semantic methods.

2. Some Approaches in the Transformational Grammar

There are some sentences to be cited if anything is to be said about MSCs.

(1) a. nambangu-ka munmyŏnbggug-i
southern hemisphere-NOM(inative) civilized country-NOM

namja-ka p'yŏnggyunsumyŏng-i cchalp-ta.
man-NOM average-lifespan-NOM short-DEC(larative)

'The average lifespan of man in the civilized countries in the southern hemisphere is short.'

b. Seoul-i Tobonggu-ka Miary-ka ingu-ka
Seoul-NOM Tobonggu-NOM Miary-NOM people-NOM

manh-ta.
a lot-DEC

'There are lots of people at Miary in Tobonggu in Seoul.'

c. Yŏngsu-ka kudu-ka padak-i
Yŏngsu-NOM shoe-NOM sole-NOM

kumŏng-i nass-ta
hole-NOM has been mde-DEC

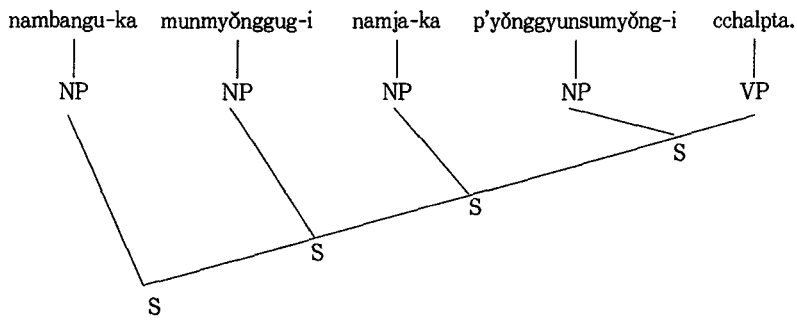
'A hole has been made on the sole of Yŏngsu's shoe/'

d. Ch'ŏlsu-ka mŏri-ka hok-i nass-ta.
Ch'ŏlsu-NOM head-NOM bump-NOM was gotten-DEC

'Ch'ŏlsu got a bump on his head.'

In Korean grammar these sentences are explained traditionally such that they have more than one predicate clause(Nam & Ko, 1985: 240), i.e. there are subject-predicate clause relationships as shown in the following structure.

(2)



In the recent Transformational Generative Grammar(GB theory), we find two kinds of approaches to these constructions. One is an explanation via cyclic NP movement out of the subject NP, the other is via predicate linking similar to (2) above. For intance, Choe (1987) suggest that (3)a. is derived through NP-movement from the underlying structure of (3)b.

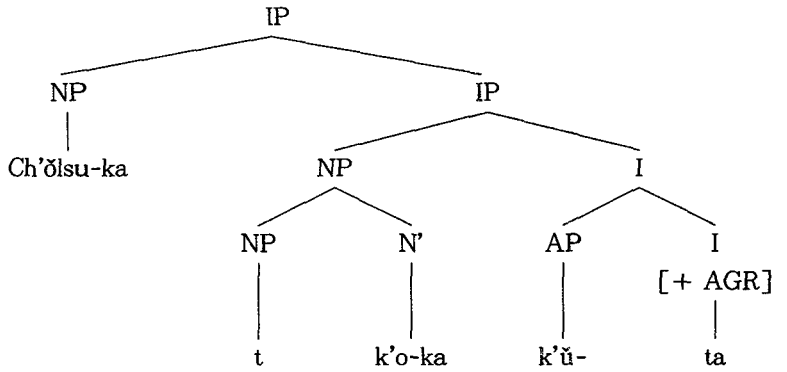
(3) a. Ch'ŏlsu-ka k'o-ka k'ŭ-ta
Ch'ŏlsu-NOM nose-NOM big-DEC

'Ch'ŏlsu's nose is big.'

b. Ch'ŏlsu-ŭy k'o-ka k'ŭ-ta.
Ch'ŏlsu-GEN(itive) nose-NOM big-DEC

'Ch'ŏsu's nose is big.'

(4) a.



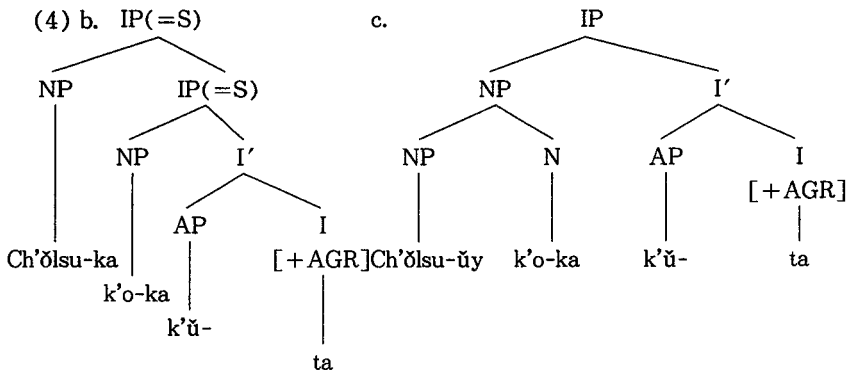
One may assume that (3)a. and b. have the same semantic truth value and the NP movement into the position of IP adjunction is motivated due to the pragmatic factors such as focus, theme, contrast etc. In (4)a. we might be able to explain, by way of I-government and N-government, why NP *Ch'ŏlsu-* has a nominative case marker '*-ka*' in (3)a. and a genitive case marker '*-ŭy*' in (3)b. The mechanism of the case assignment through the government and c- (or m-) commanding makes it possible that the AGR of I gives a NOM case to all of the NPs in the adjunction position of IP. There is, however, a very serious problem of case assignment in this kind of NP-movement. The NP movement to the position of the IP adjunction shows a nonargument movement. In (4)a. a genitive case is already assigned to the specifier NP *Ch'ŏlsu* by the head noun *k'o-* of the subject NP before the specifier NP moves to the position of IP adjunction. Thus if a nominative case is assigned again to the NP in the IP adjunction position by AGR, then a case conflict arises inevitably.[1]

Besides the problem of case conflict there are also significant differences in semantic relationship between the syntactic constituents on each surface

[1] Even if one may assume the derivation of the MSC by the NP-movement to the IP-adjunction the subjacency condition should not be violated. The derivation of the following examples violates the subjacency condition strongly and thus ungranmmatical.

structure of (3)a. and b. For instance, (3)a. can reflect the argument-predicate clause relationship between the first NP marked with NOM case and the rest of the sentence in accordance with the intuition of Korean correctly. (3)b. is, however, entirely lack of this kind of relationship, and thus it does not seem plausible to establish the same underlying syntactic structure for (3)a. as that of (3)b. Consequently the methods of NP movement to the position of NP adjunction does not give any adquate explanation for MSC phenomena.

The alternative analysis suggests that (3)a. and b. are derived not from the same DS structure but from the following different DS structures:



(4)b. is a structure of (3)a., which shows an approach of argument-predicate clause analysis like that of (2). It is argued here that there are two argumet-predicate relations. First, NP *Ch'ŏlsu-ka* is linked as a focus of the sentence to a predicate clause, IP *k'o-ka k'ŭ-ta* which is considered in itself

[1] continued

a. *nambangu-ka munmyŏnggug-ŭy namja-ŭy
-NOM -GEN -GEN
p'yonggyunsumyŏng-i ccahp-ta.
-NOM -DEC

b. *Yŏngsu-ka kudu-ŭy padak-ŭy kumŏng-i nass-ta.
-NOM -GEN -GEN -NOM -DEC

The a.-sentence which is derived from the same base structure for (1)a. is accepted by some Korean linguists (e. g. Choe, 1987) as grammatical. However, this is against the intuition of the native speaker. The a.-sentence is ungrammatical with the same reason as the b.-sentence is. See Section 3 in this paper for detailed discussion.

unsaturated. Second, within IP *k'o-ka k'ŭ-ta*, NP *k'o-ka* is also linked to a predicate, AP *k'ŭ-*. It can show at least structurally how more than two NPs with the nominative case marker '-i/-ka' appear in a sentence. That is, AGR of I in (4)b. can govern all the NPs that it c-commands so that it can assign nominative cases to them.

This analysis, however, should expain, how we can get the same semantic value of (3)a. and b. from their different DS-structures. It is clear for Korean that the two different sentences (3)a. and b. have the same semantic interpretation, i. e. the same truth condition, and we cannot imagine circumstances in which one is true while at the same time the other is false. I will come back to this problem again is Section 3 of this paper.

Let us summarize the approaches in the GB theory as follows:

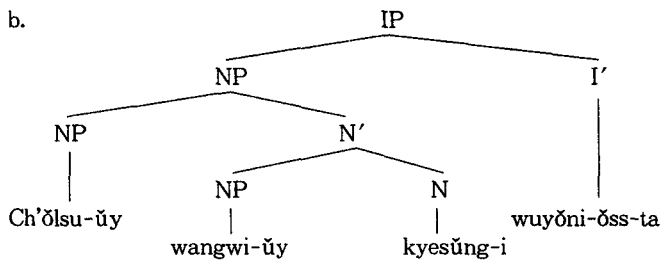
(5) (i) (3)a. and b. are derived from the same DS structure; (3)a. derived through NP movement from DS (4)a. on account of the pragmatic factors e.g. focus, and (3)b. is derived in case there is no such movement.[2]

(ii) (3)a. and b. are derived respectively from the different DS structures. (3)a. reflects the argument-predicate clause relationship between the first NP marked with NOM case and the rest of the sentence, whereas (3)b. is lack of such kind of relationship.

[2] The counterpart of MSCs, namely the complex NP constructions marked with GEN case, which did not undergo the derivation of MSCs, must be differentiated from the nominalized NP structures marked with GEN case, even though they show the same surface word order with respect to the head noun of the subject. Yoon (1987:144) did not make such a distinction. Thus her structural description for the following sentence a. as b. is simply wrong.

a. Ch'ŏlsu-ŭy wangwi-ŭy keysŭng-i
-GEN throne-GEN succession-NOM
wuyŏni-ŏss-ta.
happened by chance-DEC
'Ch'ŏlsu's succession to the throne happened by chance.'

b.



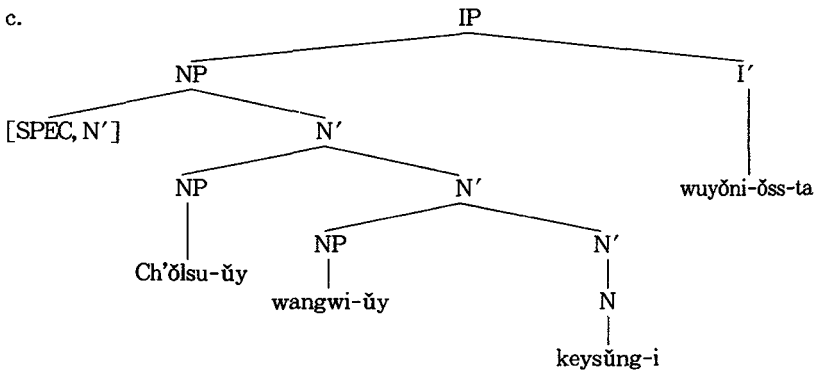
Among the recent works in GB theory, Fukui's version of X'-scheme looks very attractive for Japanese (and also for Korean). He argues that there are no functional categories like C, I, D and there is no SPEC to close off the projections of lexical categories in Japanese. Thus, lexical categories like N, V, A, P in Japanese may be projected only up to X' and can be iterated.

(6) a. so-no koogi
the lecture

b. Yamada-sensei-no so-no koogi
teacher-GRN the lecture
(Prof. Yamada's that/the lecture)

[2] continued
The a.-sentence should be described as c.:

c.



In a nominalized NP structure we can not extract any argument NP from the head N because in this case the N′ builds a strong barrier according to the minimality condition of Chomsky (1986a). All of the following sentences which are derived against the minimallity condition are thus ungrammatical:

a. *Ch'ŏlsu-ka wangwi-ŭy keysŭng-i wuyŏniŏss-ta.
-NOM -GEN -NOM -DEC

b. *wangwi-ka Ch'ŏlsu-ŭy keysŭng-i wuyŏniŏss-ta.
-NOM -GEN -NOM -DEC

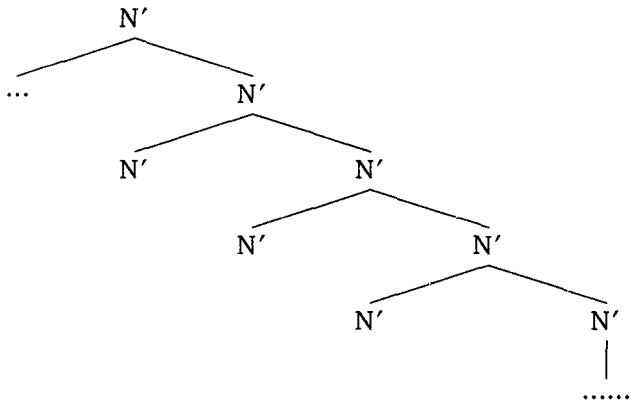
c. *Ch'ŏlsu-ka wangwi-ka keysŭng-i wuyŏniŏss-ta.
-NOM -GEN -NOM -DEC

c. kyonen-no Yamada-sensei-no so-no koogi
last year-GEN -GEN
(last year's Prof. Yamada's that/the lecture)

d. tokyo taigakku-no kyonen-no Yamada-sensei-no so-no koogi
-GEN -GEN -GEN
(Tokyo University's last year's Prof. Yamada's that/the lecture)

Structures of these sentences might be given as in(7), using Fukui's X'-scheme.

(7)



As noted in Fukui's (1986, 1988), N' can be iterated infinitely. If we follow the line of Fukui's arguments, the so called MSC is possible in Japanese, since N' is so iterated as to provide base-generated adjunction positions for nominative case marked NPs. Now, we can adopt fukui's X'-scheme for Korean MSCs in (8) which is illustrated as in (9).

(8) a. p'yŏnggyunsumyŏng-i cchalp-ta.
average-lifespan-NOM short-DEC
'The average liferspan is short.'

b. namkja-ka p'yŏnggyunsumyŏnog-i cchalp-ta.
man-NOM average lifespan-NON short-DEC
'The average lifespan of man is short.'

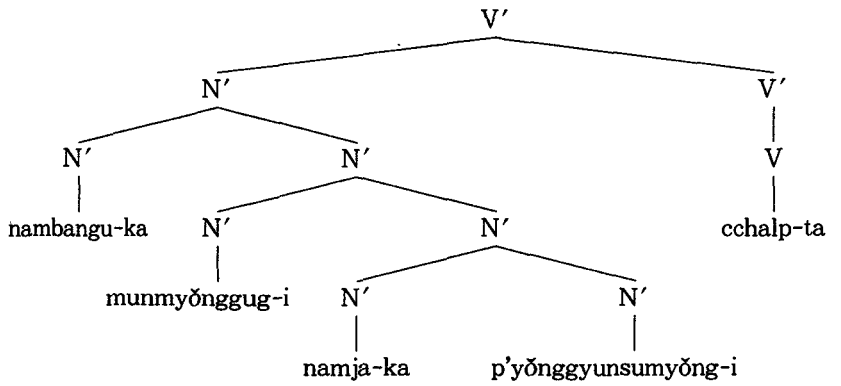
c. munmyŏnggug-i namja-ka
civilized country-NOM man-NOM

p'yŏnggyunsumyŏng-i cchalp-ta.
average-lifesan-NOM short-DEC
'The average lifespan of man in the civilized countries is short.'

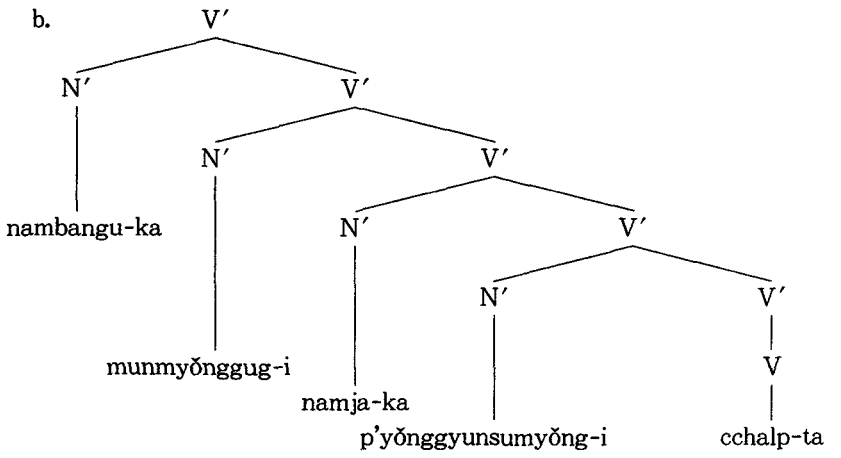
d. nambangu-ka munmyŏnggug-i
southern hemisphere-NOM -NOM

namja-ka p'yŏnggyunsumyŏng-i cchalp-ta
-NOM -NOM -DEC
'The average lifespan of man in the civilized countries in the southern hemisphere is short.'

(9) a.



b.



Problems arise in that any of these two structures assumed in Fukui (1986, 1988) cannot explain why there is and should be MSCs in Japanese (and Korean) and why they are necessary. At first the syntactic structures (9)a. and b. are inappropriate for Korean MSCs since Japaness examples (10)a.-c. turn out to be grammatical when scrambled, but (11)a.-d. do not.

(10) = (6)

a. Yamada-sensei-no kyonen-no so-no koogi
b. kyonen-no tokyo taigakku-no Yamada-sensei-no so-no koogi
c. tokyo taigakku-no Yamada-senei-no kyonen-no so-no koogi

(11) = (8)

a. (*)p'yŏnggyunsumyŏng-i namja-ka cchalpta.
b. *namja-ka munmyŏnggug-i p'yŏnggyunsumyŏng-i cchalpta.
c. *namja-ka p'ŏnggyunsumyŏng-i munmyŏnggug-i cchalpta.
d. *munmyŏnggug-i namja-ka nambangu-ka p'yŏnggyunsumyŏng-i cchalpta.

The structure (9)a. and b. in which N's can be iterated infinitively are not appropriate because the following sentences are good counter examples. Which hint that Korean NPs should be closed off anyway.

(12) a. (*)k'o-ka k'ŭ-ta.
nose-NOM big-DEC
* 'Nose is big.'

b. Ch'ŏlsu-ka k'o-ka k'ŭ-ta.
Ch'ŏlsu-NOM nose-NOM big-DEC
'Ch'ŏlsu's nose is big.'

(13) a. (*)pak'-ui-ka jak-ta
wheeel-NOM small-DEC
* 'Wheel is small.'

b. Hyundaijadongch'a-ka pak'ui-ka jak-ta.
Hyundai car-NOM -NOM -DEC
'Hyundai's car wheel is small.'

(14) a. (*)kumŏng-i nass-ta
hole-NOM has been made
*'Hole has been made.'

b. (*)padak-i kumŏng-i nass-ta
sole-NOM -NOM -DEC
*'Hole has been made on the sole.'

c. (??) kudu-ka padak-i kumŏng-i nass-ta.
shoe-NOM -NOM -NOM -DEC
??'A hole has been made on the sole of the shoe.'

d. Ch'ŏlsu-ka kudu-ka padak-i kumŏng-i nass-ta.
Ch'ŏlsu-NOM -NOM -NOM -NOM -DEC
'A hole has been made on the sole of Ch'ŏlsu's shoe.'

(12)a. could be understood in the special context. Otherwise some supplementary questions like "Whose nose?" would follow it. (12)b. is grammatical enough to get semantic value from it and it does not allow any more NPs with '-i/-ka'. (13)a. is as ungrammatical as (12)a., but it turns out to be grammatical when NP *Hyundaijadongch'a-ka* is added as in (13)b. (14)a.-c. are not grammatical and are semantically incomplete even though they have more than one NPs with '-i/-ka'. However, once NP *Ch'ŏlsu-ka* is added like (14)d., they form a grammatical sentence which allows no more NPs marked with nominative case.

Here we can stipulate that NP (or N') is not allowed to be iterated infinitely but it should be closed off in some way. As seen in (12)b., (13)b., and (14)d., NP with '-i/-ka' can not be added upon past a certain point at which stage the sentence has become semantically complete so that we can get truth value for that sentence. Fukui's phrase structures do not show why a particular sentence has two nominative case marked NPs ((8)b.), the other three ((8)c.) or four ((8)d.).

3. Syntactic and Semantic Restrictions on Deriving MSCs.

Up to now we have discussed the problems of the syntactic derivation mainly restricted on the GB-Theory. In this section I will treat the problems of the syntactic, semantic (and also some pragmatic) restrictions in deriv-

ing the MSC in Korean. In order to treat these problems we have to answer the following very important question first of all: what are the syntactic and semantic criteria by which the grammaticalness of the MSCs can be decided? Concerning this question let us see the following sentences:

(15) a. Ch-ŏlsu-ka/-ŭy ŏlgul-i k'ŭ-ta
-NOM/-GEN -NOM big-DEC
'Ch'ŏlsu has a big face.'

b. Ch'ŏlsu-ka/-ŭy p'al-i cchalp-ta.
-NOM/-GEN arm-NOM short-DEC
'Ch'ŏlsu has short arms.'

c. Ch'ŏlsu-ka/-ŭy tari-ka kil-ta.
-NOM leg-NOM long-DEC
'Ch'ŏlsu has long legs.'

(16) a .*Ch'ŏlsu-ka kabang-i mugŏpa-ta.
-NOM bag-NOM heavy-DEC

a′. Ch'ŏlsu-ŭy kabang-i mugŏp-ta.
-GEN -NOM
'Ch'ŏlsu's bag is heavy.'

b . *Ch'ŏlsu-ga computer-ka bissa-ta.
-NOM computer-NOM expensive-DEC

b′. Ch'ŏlsu-ŭy computer-ka bissa-ta.
-GEN -NOM -DEC
'Ch'ŏlsu's computer is expensive.'

c . *Ch'ŏlsu-ka ch'eksang-i tunggŭl-ta.
-NOM table-NOM round-DEC

c′. Ch'ŏlsu-ŭy Ch'eksang-i tunggŭl-ta.
-GEN -NOM -DEC
'Ch'ŏlsu's table is round.'

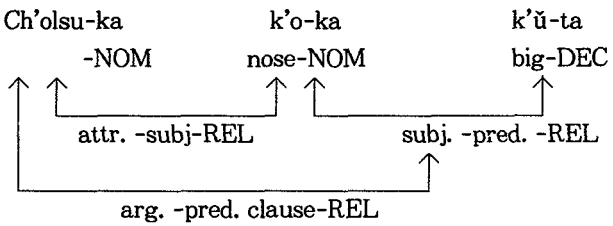
(17) a. Ch'ŏlsu-ka/-ŭy ch'ek-i manh-ta.
-NOM/-GEN book-NOM a lot-DEC
'Ch'ŏlsu has a lot of book.'

b. Ch'ŏlsu-ka/-ŭy chipŭ-i kananha-ta.
-NOM/-GEN -NOM poor-DEC
'Ch'ŏlsu's familiy is poor.'

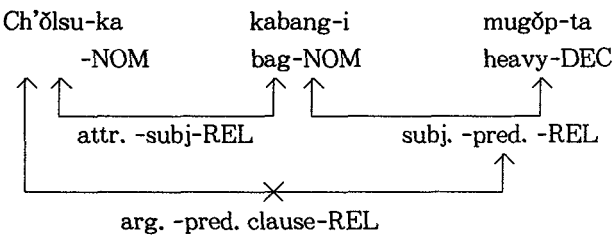
c. Ch'ŏlsu-ka/-ŭy nuna-ka yeppŭ-ta
-NOM/-GEN -NOM pretty-DEC
'Ch'ŏlsu's sister is pretty.'

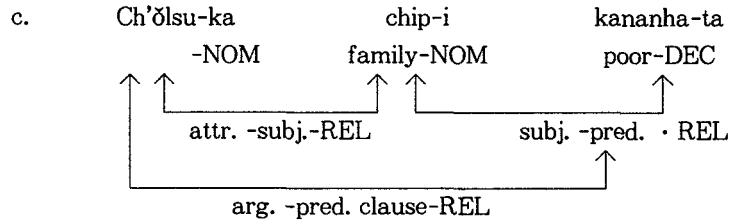
In some of the literature treating the MSCs (e. g. Kang Myung-Yoon (1987)) we find that only inalienable possession NPs could be extracted from the head NPs. Thus the extraction of the inalienable possession NP from the head NP might be possible in (15)a.-c. This criterion works also well for (16)a.-c. because if the alienable possession NPs are extracted, then ungrammatical MSCs are derived. However, this criterion is very unsatisfactory because there are a lot of cases in which the extraction of an alienable possession NP from its head does not make the sentence ungrammatical at all. The examples in (17)a.-c. are good candidates for that case. Contrary to the criterion of "inalienable possessor" I would rather introduce semantically and pragmatically appropriate relationship among the attributive NPs marked with NOM case, the subject NP with NOM case, and the predicate as follows:

(18) a.



b.



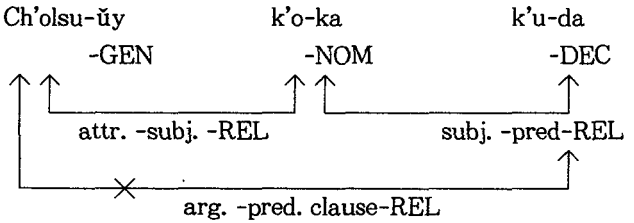


Roughly I have described in the above that semantically and pragmatically appropriate relationships might be given to the syntactic constituents. If there is no syntactic motivation which makes the MSC ungrammatical and nevertheless it would be ungrammatical, then we have to make clear how the semantic composition under the syntactic constituents has been performed. All of the MSC examples in (18)a.-c. show syntactically correct structures, thus I assume that the ungrammaticalness of (18)b. might be reduced to the wrong semantic composition. As a native speaker of Korean one might consider in (18)a. that there is a close semantic relationship between the attributive NP *Ch'ŏlsu-ka* and the subject NP *k'o-ka*. We call this relationship as 'atttribute-subject-relationship'. On the other hand the subject NP *k'o-ka* must stand in a semantically compatible relationship with the predicative adjective *k'ŏ-ta*. We call this 'subject-predicate-relationship'. Besides these two relationships I assume some kind of pragmatic relationship such as focus, theme, etc. between the attributive NP marked with NOM case as an argument and the rest of the sentence as a predicate. We call this relationship as 'argument-pred. clause-relationship'. Under the condition that these three relationships are all satisfied, the MSCs are, as I assume, grammatical. (16)a.-c. are all ungrammatical because even though the attribute-subject-relationship and the subject-predicate-relationship are satisfied, we do not find any appropriate pragmatic relationship between the first NP *Ch'ŏlsu-ka* as an argument on the one hand and the predicate clause *kabang-i mugŏp-ta*, *computer-ka bissa-ta*, and *Ch'eksang-i tungŭl-ta* on the other hand. (17)a.-c. are all correct because all of the three relationships above are satisfied. In (17)a., for instance, the attribute-subject-relationship of *Ch'ŏlsu-ka* and *ch'ek-i*, and the subject-predicate-relation of *ch'ek-i* and *manh-ta* do not give any problem. The argument-pred. clause relationship is also quite all right because *Ch'ŏlsu-ka* and *ch'ek-i manh-ta* can stand in a semantically appropriate relationship (in English: As far as *Ch'ŏ*

lsu concerned, he has a lot of books.).

In the above we assumed that the attribute-subject-relationship and the subject-predicate-relationship are a sort of semantic relationship; however, the argument-pred. clause relationship belongs to a pragmatic relationship. We will come back to the treatment of the semantic relationship very soon. The sentences of (15)a.-c. which have the complex NP structures marked with GEN case have also the same semantic relationships as those of the corresponding MSCs. However, they do not show any such pragmatic relationship beween the first NP marked with GEN case and the rest of the sentence as described in the following structures:

(19)



After this discussion we come to know that the whole meaning of MSCs is partly overlapped with that of the corresponding NP structures marked with GEN case even though they show the same semantic truth condition. Now we try to find out if there are any other similar MSCs in which the three relationships above are also satisfied. The following MSCs might be correct candidates:

(20) a. Ch'ŏlsu-ka ŏmŏnim-i tolagasiŏss-ta.
-NOM mother-NOM died-DEC
'Ch'ŏlsu's mother died.'

b. Ch'ŏlsu-ka tongsaeng-i chukŏoss-ta.
-NOM brother-NOM died-DEC
'Chŏlsu's brother died.'

The predicates *tolagasiŏss-ta* and *chukŏss-ta* are intransitive verbs. However, we find in the following that the most of intransitive verbs do not allow the double or multiple NPs marked with NOM case as the following expamples show:

(21) a. Ch'ŏsu-ka tongsaeng-i
-NOM brother-NOM
{ *ulgoiss-ta is crying-DEC
*usgoiss-ta is laughing-DEC
*gagoiss-ta is coming-DEC
. . . . . }

b. Ch'ŏlsu-ka nuna-ka
-NOM sister-NOM
{ *kongbuhagoiss-ta is studying-DEC
*ch'ongsohagois-ta is cleaning-DEC
*sanbohagois-ta. is taking a walk-DEC
. . . . . }

Consequently we can say from the examples in (21)a. and b. that only few of the intransitive verbs belonging to the "stative class" of the Vendler's (1967) or Dowty's (1982) aspectual classification could allow the double NPs marked with NOM case. The grade of grammaticalness becomes even worse if we derive the MSCs from the transitive verbs.

(22) a. Ch'ŏlsu-ka tongsaeng-ŭl
-NOM broyther-ACC(usative)
{ tterin-ta. beat-DEC
saranghan-ta love-DEC
nollin-ta tease-DEC
. . . . . }

b. Ch'ŏlsu-ka *tongsaneng-i
-NOM -NOM

c. tongsaeng-ŭl Ch'ŏlsu-ka
-ACC -NOM

d. *tongsaeng-i Ch'ŏlsu-ka
-NOM -NOM

'Ch'ŏlsu beats/teases/loves/... his brother.'

(23) a . Ch'ŏlsu-ka tongsaeng-eke ch'ek-ŭl chun-ta
-NOM -DAT book-ACC give-DEC

b . tongsaeng-eke Ch'ŏlsu-ka ch'ek-ŭl ponen-ta
-DAT -NOM -ACC send-DEC

b′. *tongsaeng-i Ch'ŏlsu-ka ch'ek-ŭl sonmulhan-ta
-NOM -NOM -ACC present-DEC

c . ch'ek-ŭl Ch'ŏlsu-ka tongsaeng-eke . . . . . .
-ACC -NOM -DAT

c′. *ch'ek-i Ch'ŏlsu-ka tongsaeng-eke
-NOM -NOM -DAT

d . *tongsaeng-i ch'ek-i Ch'ŏlsu-ka
-NOM -NOM -NOM

d′. *ch'ek-i tongsaeng-i Ch'ŏlsu-ka
-NOM -NOM -NOM

By way of scrambling or movement of the subjects and complements of two place or three place transitive verbs we can not derive any grammatical MSCs as shown in (22) and (23). This phenomena indicate that each predicate assigns some syntactic case(s) to its complement according to its own lexical property and a nominative case indirectly through AGR once for all. Such syntactic case(s) can not be changed by any movement or scrambling except the topicalization which has some specific topic marker *nŭn*. In contrast to the case assignment of transitive verbs, adjectives and a few intransitive verbs show lexical properties assigning a unique syntactic case, namely a nominative case as shown in the following examples of psychological adjectives: [4]

(24) a. Ch'ŏlsu-ka koyangi-ka musŏp-ta.
-NOM cat-NOM be affraid-DEC
'Chŏlsu is affraid of cats.'

[4] I assume in this paper that the double NPs marked with NOM case in (24)a. -c. do not belong to MSCs. See Note (5) for detailed explanation of the property of psychological adjectives.

b. Ch'ŏlsu-ka Yŏnghi-ka choh-ta
-NOM -NOM be fond of -DEC
'Ch'ŏlsu is fond of/likes Yŏnghi.'

c. Ch'ŏlsu-ka ŏmŏni-ka kŭrip-ta.
-NOM mother-NOM be missed for -DEC
'Ch'ŏlsu is missed for his mother.'

Now we treat the problem of the semantic restriction on the MSCs in Korean by discussing the grammaticalness of the following sentences.

(25) a. Ch'ŏlsu-ka kŭ-ka
Ch'ŏlsu-NOM big-DEC
'Ch'ŏlsu is big.'

b. (*) k'okkiri-ka k'ŭ-ta
elephant-NOM big-DEC
*'Elephant is big.'/'Elephants are big.'

c. *k'o-ka k'ŭ-ta
nose-NOM big-DEC
*'Nose is big.'

As defined in Montague Semantics I assume that any expression belonging to the term phrase has the semantic type of the set of properties of individuals, i. e. $\langle\langle s, \langle e, t\rangle\rangle, t\rangle$ and any expression of Ⅳ phrases has the semantic type of the set of individuals, i. e. $\langle e, t\rangle$. The term phrase and the Ⅳ phrase can be concatenated syntactically to form a sentence. They translate into the language of intensional logic in which they are combined by a functional application in order to offer a truth value for the sentence of natural languages. These processes are described with the following syntactic and translation rules of Montague Grammar.

(26) a. If $\alpha \in P_T$ and $\beta \in P_{IV}$, then $F_{105}(\alpha, \beta) \in P_t$ whereas $F_{105}(\alpha, \beta) = \alpha\hat{}\beta$

b. If α, β translate into α', β' of the language of intensional logic, then $F_{105}(\alpha, \beta)$ translate into $\alpha'(\hat{}\beta')$

According to (26)a. and b. we have the following derivational tree for (25)a.

(27) Ch'ŏlsu-ka k'ŭ-ta t $\lambda P^{\vee} P(c)\ (^{\wedge}\lambda x\ big'(x)) \Rightarrow big'(c)$

Ch'ŏlsu-ka: $\lambda P\ P(c)$ T; k'ŭ-ta: $\lambda x\ big'(x)$ IV

The result of the translation *big'(c)* can receive model theoretic interpretation.

Next we try to treat the other examples in (25). The sentence (25)b. can be understood as either grammatical or ungrammatical. We first see the derivation of the grammatical sentence (25)b.

(28) k'okkiri-ka k'ŭ-ta t $\lambda P^{\vee} P(k)\ (^{\wedge}\lambda x\ big'(x)) \Rightarrow big'(k)$

k'okkiri-ka: $\lambda P\ P(k)$ T; k'ŭ-ta: $\lambda x\ big'(x)$ IV

In (28) we have a translation $\lambda P^{\vee} P(k)$ for *k'okkiri-ka*, i. e. a set of properties which a generic entity k of elephants has. There seems to be no difference in the semantic type between the individual entity c for the proper noun *Ch'olsu-ka* and the generic entity k for the common noun *k'okkiri-ka*. Both show the same semantic type of a set of properties which either an individual entity or a generic entity has. Of course the individual entity c differs from the generic entity e in that the former indicates a rigid designator whereas the latter indicates a kind name representing an individual set whose elements can vary from index to index.

Finally we turn to the problem of the ungrammaticalness of the sentence (25)b. and c. The syntactic derivations are as follows:

(29) a. k'okkiri-ka k'ŭ-ta?

k'okkiri-ka CN: $\lambda x\ elephant'(x)$; kŭ-ta IV: $\lambda x\ big'(x)$

(24) b. k'o-ka k'ŭ-ta?

k'i-ka CN: $\lambda x\ nose'(x)$; k'ŭ-ta IV: $\lambda x\ big'(x)$

The CN phrases and the IV phrases in (29)a. and b. have the same semantic type of the set of individuals. In this case we can not use a fundtional application for them, and thus we are not able to get the truth value for (25)b. and c. because of the type mismatching. Consequently a common

noun alone can not constitute a term phrase, and for that matter it must be modified by a determiner or quantifier phrase. In Montagues PTQ the determiner does not translate directly into the language of intensional logic, but it translates syncategorematically as follows:

(30) a. If $\alpha \in P_{CN}$, then $F_1(\alpha)$, $F_2(\alpha)$, $F_3(\alpha) \in P_T$
where $F_1(\alpha)$ = every α,
$F_2(\alpha)$ = the α,
$F_3(\alpha)$ = a α

b. If $\alpha \in P_{CN}$ and α translates into α', then
every α translates into : $\lambda P\, \lambda Q\, \forall x[\check{}P(x) \rightarrow \check{}Q(c)]$
a α translates into : $\lambda P\, \lambda Q\, \exists x[\check{}P(x) \wedge \check{}Q(x)]$
the α translates into : $\lambda P\, \lambda Q\, \exists x[\forall y\,[\check{}P(x) \leftrightarrow x=y] \wedge \check{}Q(y)]$

As there is no determiner category in Korean or in Japanese (according to Fukui (1986, 1988)) common nouns in these languages can be introduced into a syntactic structure if modified by an NP with the genitve case marker. Thus the following sentences are all grammatical.

(31) a. Indo-ŭy k'okkiri-ka k'ŭ-ta.
Indo-GEN CASE elephant-NOM CASE big-DEC
'Indian elephants are big.'

b. Ch'ŏlsu-ŭy k'o-ka k'ŭ-ta
Ch'ŏlsu-GEN CASE nose-NOM CASE big-DEC
'Ch'ŏlsu's nose is big.'

Apparently there is no semantic restriction in deriving (31)a. and b. the constructions of which are both grammatical in English and in Korean.

Let us now turn to the semantic problem of the synonymous sentence of (3)a. and b. I assume that both NPs *Ch'olsu-ŭy* and *Ch'ŏlsu-ka* belong to the syntactic category of term phrases and to the semantic type of the set of the properties of individuals, i. e. $\langle\langle s, \langle e, t\rangle\rangle, t\rangle$. I assume further that there is some kind of SPEC(ifier) which accepts both NPs *Ch'ŏlsu-ŭy* and *Ch'ŏlsu-ka* and then accepts common nouns for forming a term phrase. And this term phrase seems in Korean and also in Japanese to close off the NP structure semantically as in Englisch determiners or quantifier phrases syntactically do. As in Montague Grammar a determiner or a quantifier

phrase does not translate directly into the language of intensional logic but is introduced syncategorematically, the SPEC also has its own logical translation.

(32) SPEC(ifier) : $\lambda\not P\lambda P\,\lambda Q\;\exists S\not P\{\,\hat{}\lambda x\exists y\,[\check{}S(x,y)\wedge\;\check{}P(y)\wedge\check{}Q(y)]\}$

We understand the SPEC as a complex function which makes the following translation for (3)b. into the language of intensional logic possible:

(33) a. Ch'ŏlsu$\Rightarrow\lambda P\check{}\,P(c)$

b. Ch'ŏlsu-ŭy $\Rightarrow \lambda\not P\lambda P\,\lambda Q\;\exists S\not P\{\hat{}\lambda x\exists y\,[\check{}S(x,y)\wedge\check{}P(y)\wedge\check{}Q(y)]\}\,(\hat{}\lambda P\check{}\,P(c))$
$\Rightarrow \lambda P\,\lambda Q\;\exists S\;\exists y\,[\check{}S(c,y)\wedge\check{}\,P(y)\wedge\check{}Q(y)]$

c. k'o-ka $\Rightarrow \lambda x$ nose′(x)

d. Chŏlsu-ŭy k'o-ka $\Rightarrow \lambda Q\;\exists S\;\exists y\,[\check{}S(c,y)\wedge$ nose′(y) $\wedge\check{}Q(y)]$

e. k'ŭ-ta $\Rightarrow \lambda x$ big′(x)

f. Ch'ŏlsu-ŭy k'o-ka k'ŭ-ta $\Rightarrow \exists S\;\exists y\,[\check{}S(c,y)\wedge$ nose′(y) $\wedge$ big′(y)]

The result of the translation reflects our intuition correctly. It means roughly that there is some entity y of '*nose*' which has some extensional relation with the entity c of *Ch'ŏlsu* and this entity y is '*big*'.

We try now to derive the sentence (3)a. which has the same truth value as (3)a. We have already discussed in the above that the subject NP of CN phrases can not stand alone in a sentence and needs another NP which should be semantically supplemented if it does not constitute a term phrase. In this case the supplemented NP with either GEN case or NOM case should be a term phrase in order for the whole NP structure to be closed off. Thus we have two different syntactic structures such as (3)a. and b. Now we are able to explain why the MSC exist in Korean and Japanese. The MSC-phenomena is dependent purely on the semantic reason, and concerning the morphological realization of a nominative case marker I will come back again in Section 3 of this paper.

Using the mechanism of Montague Grammar let us now test the grammaticalness of (1)a. and see what kind of semantic restrictions are given if we derive it.

(34) a. *p'yŏnggyunsumyŏng-i cchalp-ta.
average-lifespan-NOM short-DEC
'The average livespan is short.'

b. *namja-ŭy/-ka p'yŏnggyunsumyŏng-i cchalp-ta.
man-GEN/-NOM average-lifespan-NOM short-DEC
'The average lifespan of man is short.'

c. *munmyŏnggug-ŭy/-i namja-ŭy/-ka
civilized countries-GEN/-NOM man-GEN/-NOM
p'yŏnggyunsumyŏng-i cchalp-ta.
average-lifespan-NOM short-DEC
'The average lifespan of man in the civilized countries is short.'

d. nambangu-ŭy/-ka munmyŏnggug-ŭy/-i
southern hemisphere-NOM civilized country-GEN/-NOM
namja-ŭy/ka p'yŏnggyunsumyŏng-i cchalp-ta.
man-GEN/NOM average lifespan-NOM short-DEC
'The average lifespan of man in the civilized countries in the southern hemisphere is short'

The ungrammaticalness of (34)a. can be explained exactly as that of (25)b. and c. The CN phrase *p'yonggyunsumyong-i* and the IV phrase *cchalp-ta* have the same semantic type. Thus there is no possible way to obtain a truth value for (34)a. The CN phrase should be supplemented by another NP for a semamtic reason. (34)b. can be understood as grammatical on the one hand and as ungrammatical on the other hand. In the grammatical case the supplemented NP *namja-ŭy/-ka* does not have a semantic type of the set of individuals '*namja*' but rather a semantic type of the set of the properties of individuals '*namja*'. It has a generic meaning and does not need any NP supplement for the semantic saturation of the subject. The translation of (34)b. into the language of intensional logic is as follows:

(35) a. p'yŏnggyunsumyŏng-i $\Rightarrow \lambda x$ average-lifespan'(x)
b. cchalpta $\Rightarrow \lambda x$ short'(x)
c. namja $\Rightarrow \lambda \check{P} P(m)$ (m=generic entity for 'man')
d. namja-ŭy/-ka $\Rightarrow \lambda \mathcal{P} \lambda P \lambda Q \exists S \mathcal{P}\{\hat{\ }\lambda x \exists y [\check{\ }S(x, y) \wedge \check{\ }P(y) \wedge \check{\ }Q(y)]\} (\hat{\ }\lambda P \check{\ }P(m))$

$\Rightarrow \lambda P\, \lambda Q\, \exists S\, \exists y[\check{}S(m, y) \wedge \check{}P(y) \wedge \check{} Q(y)]$

e. namja-ŭy/-ka p'yŏnggyunsumyŏng-i $\Rightarrow \lambda Q\, \exists S\, \exists y\, [\check{}S(m,y) \wedge$ average-lifespan′(y) $\wedge$ $\check{}Q(y)]$

f. namja-ŭy/-ka p'yŏnggyunsumyŏng-i cchalpta $\Rightarrow \exists S\, \exists y[\check{}$ S(m, y) $\wedge$ average-lifespan′(y) $\wedge$ short′(y)]

The result of the translation shows a certain extensional relation between the generic entity m of 'man' and some individual entity y such that y is 'average-lifespan' and y is 'short'. The extensional relation S introduced in (35)f. can be defined appropriately according to given contexts.

Let us turn to the problem of the ungrammaticalness of (34)b. The hypothsis states that the supplemented NP *namja-ŭy/-ka* and the subject CN phrase together can not constitute a term phrase. In this case they form a complex nominal. The syntactic and translation rules for deriving complex nominals are as follows:

(36) (i) If $\alpha \in P_{CN}$, $\beta \in P_{CN}$, then $F_{107}(\alpha, \beta) \in P_{CN}$, where $F_{107}(\alpha, \beta) = \alpha \hat{} \beta$.

(ii) $F_{107}(\alpha, \beta)$ translates into the language of intensional logic:
$\lambda x[\beta'(x) \wedge \exists R\, \exists y\, [\alpha'(y) \wedge \check{}R(y, x)]$

According to (36) we have the translation for the complex nominal *namja-ŭy/-ka p'yŏnggyunsumyŏng-i* as follows.

(37) λx[average-lifespan′(x) $\wedge$ $\exists R\, \exists y$(man′(y) $\wedge \check{}R(y, x)$]

As the translation (37) shows a type of the set of individuals again, the complex nominal *namja-ŭy/-ka p'yŏnggyunsumyŏng-i* need another supplement of NP for semantic saturation. This process continues until we get a term phrase for which the complex function SPEC can be applied. The translation of the most complicated construction in (34)d. which includes three supplemented NPs to the subject is given as follows:

(38) $\exists S\, \exists x\, [\check{}S(s, x) \wedge$ civilized countries′(x) $\wedge\, \exists R\, \exists y$ man′(y) $\wedge \check{}R(x, y) \wedge \exists T\, \exists z$ [average-lifespan′(z) $\wedge \check{}T(y, z) \wedge$ short′(z)]]]

The tranlation (38) corresponds roughly to the meaning of (34)d., if it obtains model-theoretic interpretation. If the variable of the relational predicate S, R, and T in (38) can not be appropriately interpreted, then we get

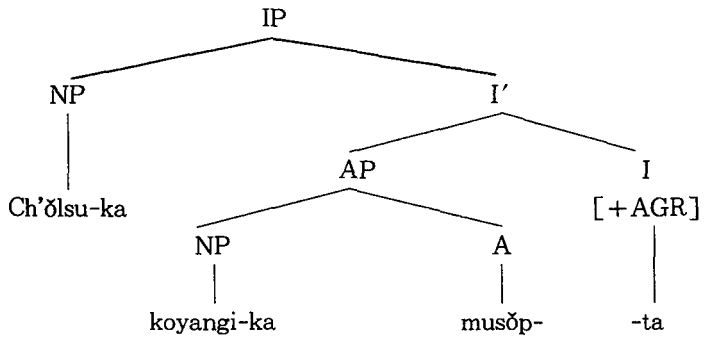
a very awkard or anomalous meaning for the sentence.

4. Synthesis: Syntax and Semantics for MSCs in Korean

After the discussion of syntactic derivation of the MSCs by GB-Theory in Section 1. and the syntactic and semantic restrictions on the MSCs in Section 2. we try in this section to answer the following question: How can we develop a synthesis of the syntax and semantics for MSCs in Korean and Japanese? It is assumed in Section 1 that the truth value of (3)a. and b. must be the same, and thus the complex NP marked with GEN case and the '-i/-ka'-MSCs should be brought somehow into the same semantic representation. The syntactic derivation of the MSCs by NP movement to the position of IP adjunction (="possessor raising") discussed in Section 1. does not give a correct explanation for the MSC phenomena.

For solution we may suppose that there should be involved for MSCs some kind of category changing process such as an incorporation of Baker (1988). In (24) of Section 2. we briefly handled the psychological adjectives of Korean. We did not mention there what their syntactic structures look like. The following structure might be assumed for (23).

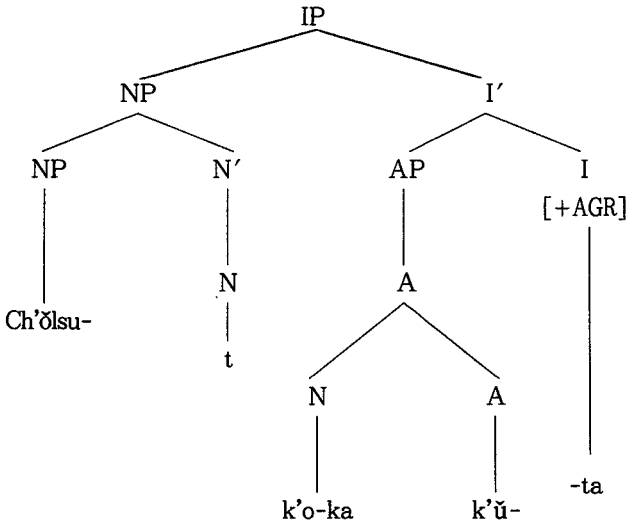
(39)



It is clear that the AGR assigns a NOM case to the subject NP *Ch'ŏlsu-ka*. Now we have to speculate where the NOM case of NP *koyangi-ka* comes from. As the psychological adjective *musŏp-ta* needs two arguments semantically, namely one for its complement and the other for its subject, it might be plausible to describe the structure for (24) as that of (39). We could speculate then that the adjective *musŏp-ta* directly assigns a NOM case to

its complement. Now, as most of the MSCs which we have handled here have adjectives and few intransitive verbs with the aspectual feature [+ stative] as their predicates, we might assume that a similar process of case assignment happens here as in the case of psychological adjectives.[5] For this purpose let us try to derive the following structure from the base structure (4)a. in Section 1. by incorporating the head noun of the subject NP with the adjective predicate.

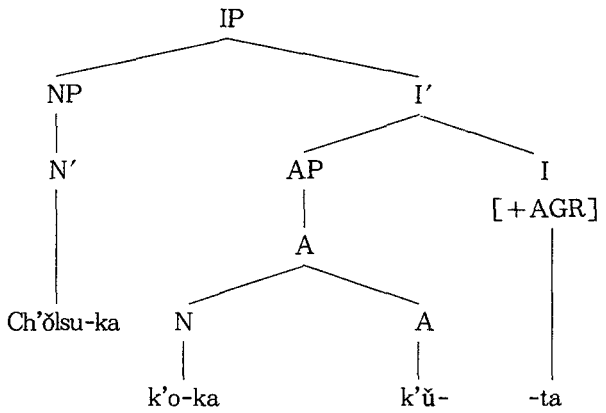
(40)



If we assume further that after the incorporation of $[_{A}N+A]$ the trace of the head noun of the subject might be deleted by some conventicon, and the process of the syntactic case assignment goes on, then we have the following derived structure from (40).

[5] The psychological adjective predicates *musŏp-ta* 'be affraid of', *gŭrip-ta* 'be longed for', *choh-ta* 'like' etc. take two arguments, one for their subject and the other for their complement. Thus they are semantically quite different from the adjective predicates of MSCs which take only one argument as their subject but no complement. The problem of the nominative case assignment to the complement of psychological adjectives in Korean is, as far as I know, not satisfactorily explained yet.

(41)



Now the AGR of I can assign a NOM CASE to the NP *Ch'ŏlsu-ka* by way of SPEC-HEAD-agreement, and adjective predicate *k'ŭ-* also assigns a NOM case to its complement according to its lexical property. Thus the case assignment of the MSCs could be motivated purely in accordance with that of the psychological adjectives.

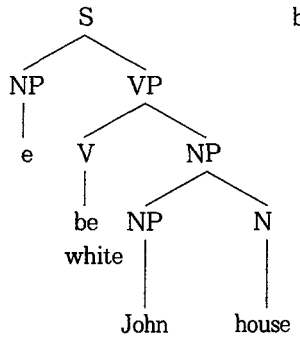
The stipulation given above may look plausible, since most of the MSCs in Korean have adjectives or a few intransitive verbs as their predicates. Furthermore one might give some empirical evidence for incorporation of the subject with the adjective (or intransitive verb) predicate, for instance, *k'o-ka k'ŭ-ta* 'nose is big' can be abbeviated as *k'o k'ŭ-ta* or *ton- i manh-ta* 'a lot of moneny' can be abbreviated as *ton manh-ta.* However, these explanations prove themselves to be wrong. First of all, the trace of the head noun of the subject NP must violate the 'Head-Movement-Constraint' (HMC) of Baker (1988) which says that an X_0 may only move into Y^0 which properly governs it. According to this HMC the head *k'ŭ-* of the adjective predicate can not properly govern the head noun of the subject NP because of the barrier category AP. Secondly we cannot find any similar linguistic phenomena such as a subject-predicate incorporation in other languages. Let us see the following examples of Baker (1988):

(42) a. Mohawk (Baker, 1988: 20)
hrao-nuhs-rakv ne sawatis
3M-house white John
(John's house is white.)

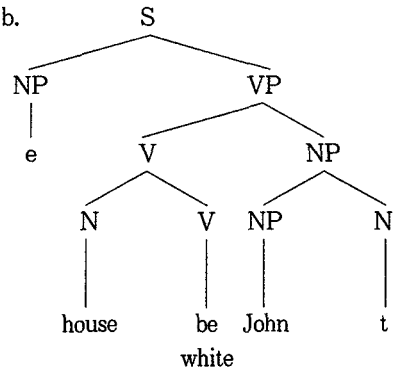
b. Oneida (Baker, 1988: 97)
wa -hi -nuhs -ahni: nu: John
aor -1sS/3M house -buy
(I bought John's house.)

First the incorporation process in (42)a. can be given in the following structures:

(43) a.

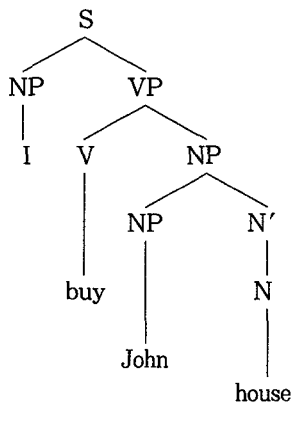


b.

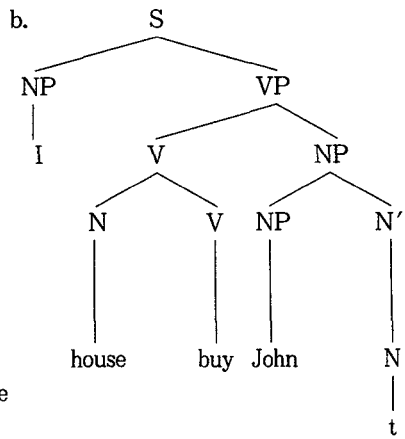


(43)a. shows an underlying structure in which the subject NP has an empty category. Now the head noun of the direct object NP moves to combine with the governing verb on the syntactic level. By way of this incorporation process the possessor NP *John* within the object construction becomes a direct object of the complex predicate *house+be white*. Let us examine the other example (42)b., whose incorporation process is given in the following structure:

(44) a.



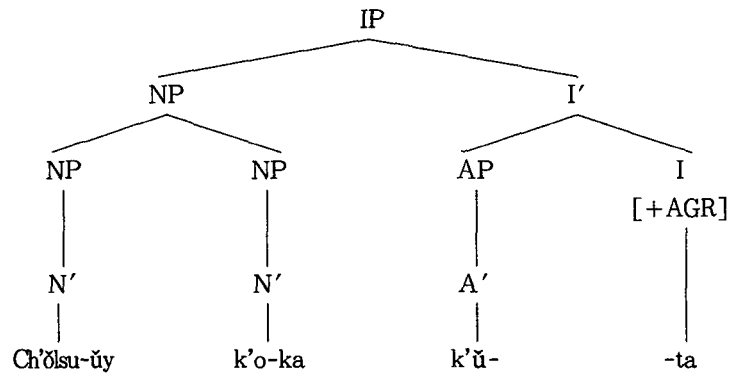
b.



Here again the noun root *house* of the direct object NP incorporates with the governing verb *buy*, which results in a complex predicate *house+buy*. Now the possessor NP *John* becomes a direct object of this complex predicate. Thus (40)a. and b. both show that the head noun of the object NP incorporates with the governing verb and the possessor NP within the direct object NP construction becomes a direct object of the incorporated complex verb. Consequently it is really an unusual case if in Korean the head noun of the subject NP incorporates with the head of adjective or intransitive verb phrase.

Let us look into another alternative. We assume two separate structures for (3)a. and b. such as (4)b. and c., which are ultimately supposed to have the same semantic value at the other representations (for instance Logical Form). (4)b. and c. are given again as follows:[6]

(45) a.



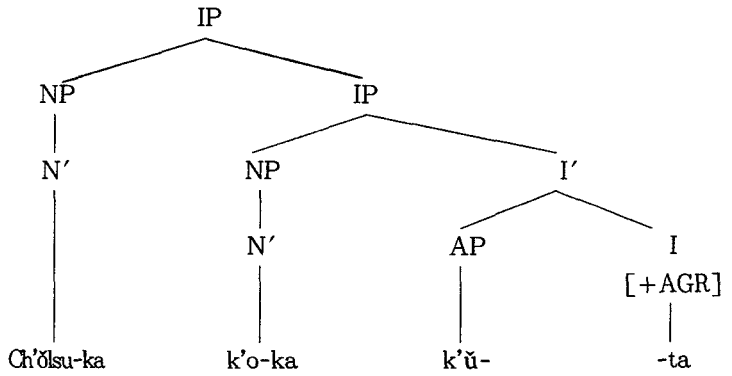
[6] The argument for deriving MSCs by IP-adjunction can be supported by the fact that adverbial phrases can appear freely supported by the fact that adverbial phrases can appear freely between the NPs with the NOM case but not between the NPs with GEN case as in the following sentences:

a. Ch'ŏlsu-ka chinanchue tongsaeng-i chuk-ŏss-ta.
-NOM last week brother-NOM died -DEC
'Ch'ŏlsu's brother died last week.'

b. *Ch'ŏlsu-ŭy chinanchue tongsaeng-i chuk-ŏss-ta.
-GEN -NOM -DEC

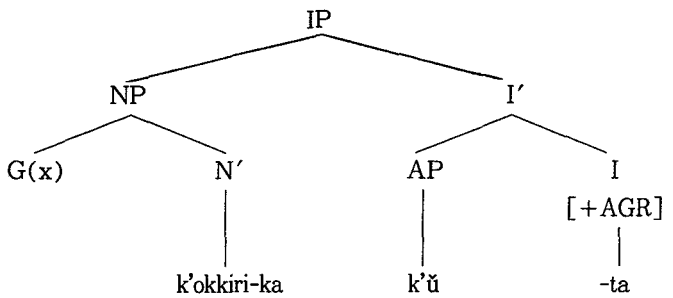
(See also Yoon, 1987: 148)

b.



(45)a. shows a correct syntactic structure in which the head noun *k'o* of the subject NP assigns a genitive case to its specifier NP *Ch'ŏlsu-ŭy*. Now, the head noun *k'o-ka* of the subject NP belongs to the common noun which semantically shows a type of 'a set of individuals', and thus it must be referentially specified by some term phrase as discussed in Section II. The appearance of the specifier NP within the subject NP construction is dependent solely on the semantic type of the head noun. If the head noun has a generic meaning and can alone constitute a term phrase, then it does not need any further specifier NP. In this case the head noun is bound by a generic operator as in the following structure:

(46)



Because of the generic operator G(x) we can assume that the *k'okkiri-ka* 'elephant' accept the semantic type of the 'set of properties of individual' and can function not as a common noun but as a term phrase.

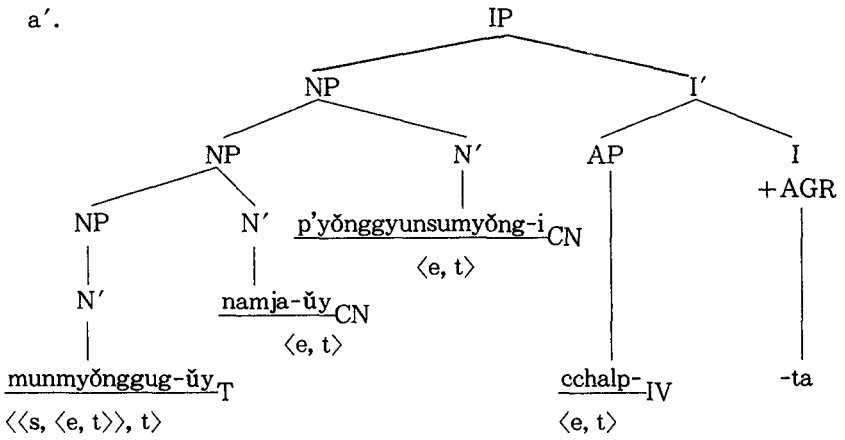
On the other hand, if the common noun *k'o-ka* as the head of subject NP can also be specified by some term phrase such as *Ch'ŏlsu-ka* in (3)a., then we can not but choose the adjunction position of IP such as in (45)b. for

that term phrase because of the following semantic and syntactic reason: Semantically the term phrase *Ch'ŏlsu-ka* stands in an attribute relationship with the head noun *k'o-ka* of the subject NP and it specifies some entity from the set of individuals indicated by the head noun of the subject NP. The term phrase *Ch'ŏlsu-ka* stands also pragmatically in an argument-pred. clause relationship with the rest of the sentence, which we have discussed in detail in Section II. Syntactically, however, the NOM case of the term phrase is assigned not by the head noun of the subject NP (which can only assign a genitive case to its specifier NP) but by the AGR of I-category through its c-commanding channel. Thus (45)b. shows a correct structure in which all the syntactic and semantic requirements of the MSC of (3)a. can be described appropriately. Let us turn to the problem of describing a little complicated MSC and its corresponding complex NP structure with GEN case. We write here again the example (34)c. from Sectrion II, and this time we also introduce semantic types for each lexical item:

(47) a. munmyŏnggug-ŭy namja-ŭy p'yŏnggyunsumyŏng-i
civilized country-GEN man-GEN average-lifespan-NOM

cchalp-ta.
short-DEC
'The average-lifespan of a man in the civilized country is short.'

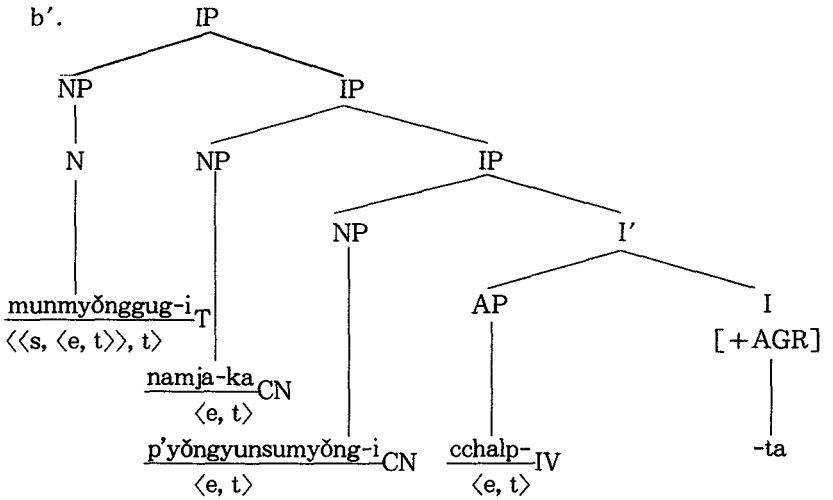
a'.



(47) b. munmyŏnggug-i namja-ka p'yŏnggyunsumyŏng-i
civilized country-NOM man-NOM average-lifespan-NOM

cchalp-ta.
short-DEC

b'.



Now we are able to derive the same semantic translation into the language of intensional logic from the different syntactic structures (47)a'. and b'. as follows:

(48) ∃S ∃X[$^{\vee}$S(c, x) ∧ man'(x) ∧ ∃R ∃y[average-lifespan'(y) ∧ $^{\vee}$R(x, y) ∧ short'(y)]

In (47)a. and b. *munmyŏnggug-ŭy/-i* 'civilized country' constitutes a term phrase and can be translated as a proper noun, i. e. a set of properties which an individual constant c has. This entity c stands in some special relationship S (i. e. attribute or possessor relationship) with some variable x which is an element of the set of individuals of *namja-ŭy/ka* 'man'. Furthermore the individual x stands in some special relationship R (i. e. also attribute or possessor relationship) with some variable y which is an element of the set of individuals of *p'yŏnggyunsumyŏng-i* 'average-lifespan'. Finally the individual y belongs to the set of individuals of *cchalp-ta* 'short', i. e. y belongs to the intersection set of *p'yŏnggyunsumyŏng-i* 'average-lifespan' and *cchalp-* 'short'. In a reverse order the mapping from the semantic translation in (48) to the two quite different syntactic structures (47)a. and b.

will be also possible. This process can be performed in accordance with an appropriate interpretation of the relational variables S, R, etc. in the semantic translation on the one hand and the attr. -subj.-relationship, subj.-pred.-relationship, and arg.-pred. clause-relationship among syntactic constituents on the other hand. The interpretation of the relational variable S or R lies, however, under strong syntactic constraints. The following sentences derived from the underlying structures from (1)b.-c. show different grades of grammaticalness:

(49) a. *Seoul-i Tobonggu-ŭy Miary-ŭy ingu-ka manh-ta.
-NOM -GEN -GEN people-NOM a lot-DEC
'There are lots of people at Miary in Tobonggu in Seoul.'

b. ??(?)Seoul-i Tobonggu-ŭy Miary-ka ingu-ka manh-ta.
-NOM -GEN -NOM -NOM -DEC

c. Seoul-ŭy Tobonggu-ka Miary-ka ingu-ka manh-ta.
-GEN -NOM -NOM -NOM -DEC

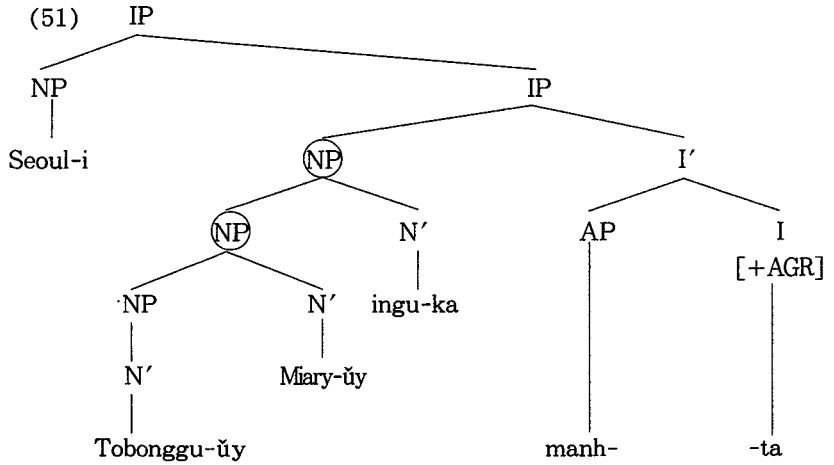
(50) a. *Yŏngsu-ka kudu-ŭy padak-ŭy kumŏng-i nass-ta
-NOM shoe-GEN sole-GEN hole-NOM has been made-DEC
'A hole has been made on the sole of Yongsu's shoe.'

b. ??(?)Yŏngsu-ka kudu-ŭy padak-i kumŏng-i nass-ta
-NOM -GEN -NOM -NOM -DEC

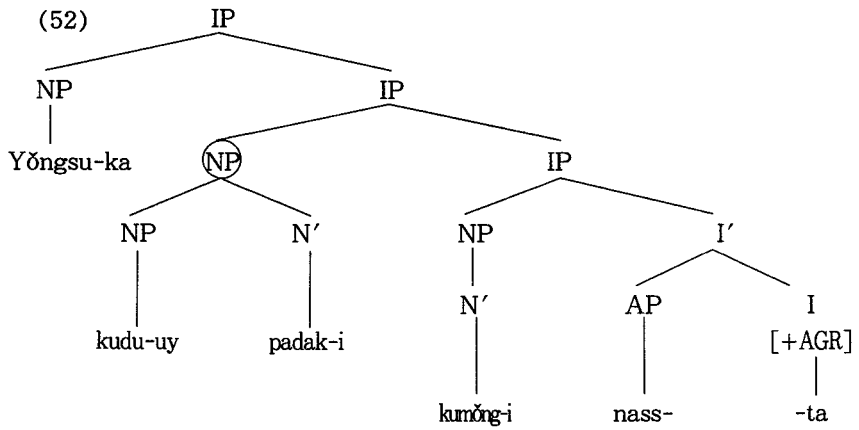
c. Yŏngsu-ŭy kudu-ka padak-i kumŏng-i nass-ta.
-GEN -NOM -NOM -NOM -DEC

The a.-sentences in (49) and (50) has the following structure in which the attribute relationship between the first NP marked with NOM case and the second NP marked with GEN case can not be easily grasped because of the encircled double NP barriers (here we assume that IP is a defective catego-

ry for barrierhood). Thus They are ungrammatical.

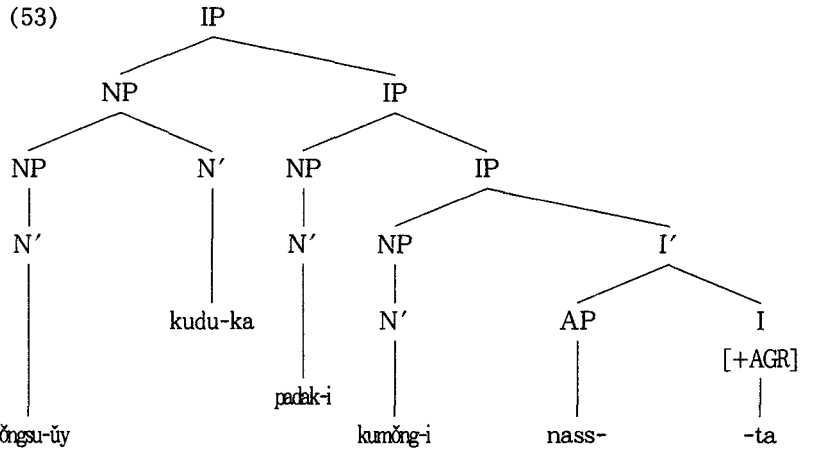


The grammaticality of b.-sentences in (49) and (50) is little better in comparison with the a.-sentences because there appears only one barrier between the first NP marked with NOM case and the second NP marked with GEN case. We look at the following structure:



Finally we do not see any violation of barrierhood between the NP categories in c.-sentences of (49) and (50) as the following structure shows. Thus there is no problem to interpret the relational variable S or R for those sentences in the sense of (48) and they are all grammatical.

(53)



In (53) The term phrase *yŏngsu-ŭy* stands in an attribute-relationship with *kudu-ka* 'shoe'. The *kudu-ka* stands in an attribute relationship with *padak-i* 'sole' which in turn stands also in an attribute relationship with the subject *kumŏng-i* 'hole'. We do not see any barrier category between these nominal cagegories, and thus structure (53) is grammatical.

Now we have answered all the three questions given in the introduction of this paper. The derivation of MSCs is described by a successive IP adjunction of NP category which can be marked with NOM case by way of c- or m-commanding channel. MSCs are derived only from adjectives and very few intransitive verbs, and their existence is due to the process of semantic saturation of the subject of the sentence. This process continues until the MSCs have become semantically complete. The MSCs represent the same semantic translation into the language of intensional logic as that of the corresponding complex NP structures marked with GEN case, even though they show quite different syntactic structures. Concerning other pragmatic factors such as focus, theme, intonation, contrast etc. which may influence on syntax and semantics of MSCs I just let them open for the future research.

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