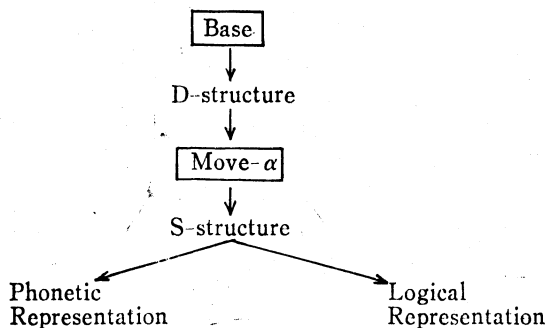# D-structure and S-structure in Korean Syntax

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1. One of the characteristics of the theory of transformational grammar is the assignment of dual syntactic structures to sentences of a language, and the characterization of the processes that connect these two syntactic structures. These syntactic structures, which have been traditionally called deep structure and surface structure, have undergone some noticable changes in their properties and roles associated with other parts of a grammar. Grammatical transformations, which interconnect the dual structures of sentences, have also undergone considerable changes in what they can do to the constituent structures of sentences.[1]

At present, the most popular model of formal grammar is as follows:

(1).

$$
\boxed{\text{Base}} \\
\downarrow \\
\text{D-structure} \\
\downarrow \\
\boxed{\text{Move-}\alpha} \\
\downarrow \\
\text{S-structure}
$$

Phonetic Representation ← S-structure → Logical Representation

As in early work of generative grammar, D-structures (i.e., deep structures) of sentences are generated by the base, which consists of a set of categorial rules and the lexicon. The transformational component, which has once been a very powerful device and considered to be able to do almost anything to syntactic structures, deleting, inserting and building

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1) See "Introduction" of Heny (1981) for a fine summary on differences between the classical generative grammar and the extended standard theory.

structures, is reduced to the rule schema Move-α, where α is a category.

The application of Move-α (i.e., transformation) to D-structure produces S-structure. S-structure, however, is different from the traditional surface structure in that the former may contain *empty* constituents, some being generated by the categorial rules, like PRO in (2a), and some by moved elements, like the trace t in (2b).

(2) (a) John$_i$ tries [PRO$_i$ to be happy]

(b) John$_i$ seems [t$_i$ to be happy]

In certain respects, S-structure is characterized with properties of both traditional deep and surface structures.

The level of phonetic representation is very close to the notion of surface structure, which is derived from S-structure by applying certain deletions like *for*-deletion and perhaps stylistic rules. The level of logical representation, on the other hand, is minimally different from S-structure and produced by application of certain movement rules, whose exact nature is yet to be discovered.

As we know, the extended standard theory of grammar illustrated in (1) is the product of research on configurational languages like English, French, etc. What I aim to do in the present study is to inquire whether the same theory of grammar is also applicable to non-configurational languages like Korean, Japanese, etc. In particular, I intend to investigate the question of whether there is any need to distinguish between D-structure and S-structure in a non-configurational language like Korean, but I will say nothing more about the levels of PR and LR.

2. In the traditional generative grammar, it is assumed that there are transformational rules such as passivization, relativization, question formation, etc.. In the extended standard theory of grammar, these rules are considered to be decomposable into more fundamental types of rules and principles (cf. Chomsky 1981). Consider the following sentences as illustration:

(3) (a) John is believed to be very smart.

(b) John seems to be very smart.

Traditionally, the underlying structures of sentences (3a) and (3b) are represented as in (4a) and (4b), respectively.

(4) (a) Someone believes [sJohn to be very smart]

(b) [sJohn to be very smart] seems

To derive sentence (3a) from its underlying structure (4a), we first apply Subject-to-Object Raising and then Passivization to the latter, not to mention Agent Deletion. However, Subject-to-Subject Raising is required to derive sentence (3b) from (4b).

Then, let us consider how the sentences in (3) are treated in the model (1). In this theory their D-structures are roughly represented as in (5):

(5) (a) [NPe] is believed [s̄[sJohn to be very smart]]

(b) [NPe] seems [s̄[sJohn to be very smart]]

The only transformation required to derive both sentences in (3) from their respective D-structures in (4) is *NP-movement*, which moves the subject of the complement sentence into the position of empty NP (i.e., [NPe]).

Another example of showing how the notion of transformation has changed in the extended standard theory is found in the following sentences:

(6) (a) Whom did you talk with?

(b) This is the man whom I talked with.

The underlying structures of (6a) and (6b) may be represented as in (7a) and (7b), respectively, in the early generative grammar.

(7) (a) Q you Tense talk whom

(b) this is the man [sI Tense talk with the man]

The rule necessary to derive the question sentence (6a) from its deep structure (7a) is called Question Formation, which moves the interrogative word *whom* to the left of Q. To derive (6b) from (7b), however, the so-called Relativization applies, which not only moves *the man* in the

embedded sentence to the left of the embedded subject *I* but also transforms it into the relative pronoun *whom*.

In the grammatical theory under consideration, the D-structures of the sentences in (6) may be roughly represented as in (8a) and (8b), respectively.

(8) (a) [$_{\bar{s}}$[COMP+WH] [$_s$you Tense talk with whom]]

(6) this is the man [$_{\bar{s}}$[COMP−WH] [$_s$I Tense talk with whom]]

The transformational rule needed for the derivation of both sentences in (6) from their respective D-structures in (8) is *WH-movement*, which moves and Chomsky-adjoins the *WH*-phrase to the left of COMP. In short, passivization, relativization, etc., are no longer regarded as rules of grammar.

3. In Hale, Jeanne, and Platero (1977), they suggest that a language belong to one of two major typological categories: configurational and non-configurational. Characteristically, a configurational language like English, French, etc., has relatively strict word order, whereas a non-configurational language like Korean, Japanese, etc., has highly variable surface word order. Another characteristic difference between these two language types, they point out, is that the categorial rules of the former define not only a labelled constituent structure of a sentence but a concatenation (i.e., linear ordering) of its constituents, but in the latter they specify only a labelled constituent structure of a sentence, linear ordering of constituents being defined independently by some other mechanism. Thus, they propose that the base rules of a non-configurational language are generally of the form:
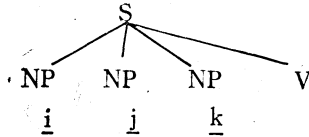
(9) $X^n \longrightarrow \cdots, A, X^{n-1}$

Specifically, the base rule of the type (9) will generate structures like (10):

(10) [$_s$NP$_1, \cdots$, NP$_n$, V]

Suppose that $n=3$. Then, the rule will generate the following tree:

(11)

```
                    S
           ┌────┬───┴──────┐
         · NP    NP    NP      V
           i     j     k
```

Unlike English, the assignment of GF's (i.e., grammatical functions)[2] to NPs is assumed to be random. In other words, any NP in (11) may become subject or object. Let us further suppose that $i=1$, $j=2$, and $k=3$ (but note that the assignment of numbers to the indices are random), and assume $NP_1=[NP,S]$ (i.e., subject), $NP_2=[NP^2,VP]$ (i.e., indirect object), and $NP_3=[NP^1,VP]$ (i.e., direct object). Assuming the assignment of GFs to be random, we will be able to do away with the so-called *Scrambling Rule*, which was considered to be responsible for the variety of sentences in (12).

(12) (a) John-i Mary-eke senmul-il cu-ess-ta. ($_i=1$, $j=2$, and $k=3$)
                     present give
  (b) Mary-eke John-i senmul-il cu-ess-ta. ($i=2$, $j=1$, and $k=3$)
  (c) Mary-eke senmul-il John-i cu-ess-ta. ($i=2$, $j=3$, and $k=1$)
  (d) senmul-il Mary-eke John-i cu-ess-ta. ($i=3$, $j=2$, and $k=1$)
  (e) senmul-il John-i Mary-eke cu-ess-ta. ($i=3$, $j=1$, and $k=2$)
  (f) John-i senmul-il Mary-eke cu-ess-ta. ($i=1$, $j=3$, and $k=2$)
    'John gave Mary a present.'

If the observation and conclusion by Hale, et al., (1977) are correct, which I believe they are, what implications do they have for other parts of grammar? Since a grammatical transformation, current or traditional, is *a structure-dependent operation on concatenated constituents*, it naturally follows that a non-configurational language like Korean does not have rules like Move-α, which tempted Hale, et al., to conclude that a non-configurational language does definitely not have a transformational component.[3]

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2) In a configurational language like English, the GF of an NP is determined by its position it occupies in the configurational structure of the sentence.
3) See Hale, et al. (1977:410).

A grammar without the transformational component necessarily implies that it does not require any distinction between D-structure and S-structure, because the former is derivable from the latter by abstracting from it all effects of Move-α.

Chomsky, however, claims that the extended standard theory of grammar can also be generalized to accommodate non-configurational languages.[4] To understand how the notion of transformations fits in with the analysis of non-configurational languages, let us compare the derivational processes of Korean and English passives:

(13) (a) The thief was arrested.
     (b) totuk-i cap-hi-ess-ta.

The D-structures of the sentences in (13) may be represented as in (14a) and (14b), respectively.

(14) (a) [$_S$ [$_{NP}$e] [$_{VP}$was [$_{\overline{+V}}$arrested [$_{NP}$the thief]]]]
     (b) [$_S$[$_{NP}$totuk] cap-hi-ess-ta]

The derivation of sentence (13a) from its D-structure (14a) is accounted for by the following principle:

(15) (a) [NP,S] does not receive a θ-role
     (b) [NP,VP] does not receive Case within VP, for some choice of NP in VP

In (13a), for example, the subject (i.e., the NP containing the GF [NP,S]) does not receive a θ-role according to (14a), and it is empty. This means that a certain argument may move into this subject position without violating the θ-criterion.[5] According to (15b), the NP with the GF [NP,VP] (i.e., object) cannot receive Case; therefore, it must find

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4) To show how his theory can accommodate non-configurational languages, Chomsky (1981:127 34) discusses Japanese passives and causatives.

5) The θ-criterion may be defined as follows: Each argument bears one and only one θ-role, and each θ-role is assigned to one and only one argument. (Cf. Chomsky 1981:36) Accordingly, the position into which an NP may move must be the one devoid of a θ-role.

another place to receive an appropriate Case so that it does not violate the Case Filter.[6] The only place where the NP with [NP,VP] *the thief* can move in (14a) is its empty subject position, in which it can receive Case and is assigned a θ-role through the medium of its trace, which is in a θ-position. Accordingly, the simplified S-structure may be represented as in (16):

(16) [$_S$ [$_{NP}$the thief] was [$_{+\overline{V}}$ arrested *t*]]

Next, let us consider how the Korean passive (13b) is derived from its D-structure (14b), following Chomsky's account of Japanese passives. The subcategorization feature of the verb *cap(ta)* stipulates that it requires an NP complement; thus, the NP *totuk* receives the GF [NP,VP] at the level of D-structure, but it cannot receive Case (in this case, the objective Case) because it (=case) is absorbed by the passive morpheme *hi*. In the surface structure (13b), the NP *totuk* is marked with the nominative Case *-i*. In English passives, it is accomplished by moving the object NP deprived of its Case to the empty subject position, where it can receive the nominative Case.

According to Chomsky (1981: 129), what makes possible the assignment of the nominative Case to the NP in (14b) is the rule (17):

(17) Assume a GF

In general, the rule (17) assigns to an NP the function chain (GF*, GF_1,..., GF_n), where (GF_1,...,GF_n) is the function chain that the NP already possesses and GF* is an *arbitrary* GF.

As we have already discussed, the GF [NP,VP] must be assigned to the NP *totuk* in (14b) in order not to violate the θ-criterion, since it is its GF-θ. If we apply the rule (17) to (14b), then we obtain an S-structure identical in form with the D-structure (14b) but different in the assignment of GFs. In other words, the NP in (14b) will be assigned the function

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6) The Case Filter says: *NP if NP has phonetic content and has no case. That is, an NP with phonetic matrix must receive Case in order to be grammatical.

chain (18) by the rule (17).

(18) (GF*, [NP,VP])

What is GF*? Chomsky says, "It must be a GF that lacks a θ-role and that will permit Case to be assigned to NP, so as to satisfy the Case Filter...., so GF* must be [NP, S], just as the rule Move-α must always move α to the subject position. Therefore, NP is assigned the function chain ([NP,S], [NP,VP]) in S-structure, exactly as in English,...." (Cf. Chomsky 1981:130) On the contrary, I cannot find any reason that GF* must be [NP,S]. Unlike the English example (14a), in (14b) there is no NP with [NP,S], whose θ-role may be deprived of by virtue of (15a); as we can see, there is only one NP with [NP,VP] but without Case. Why does the Case have to be [NP,S] instead of say, [NP^2,VP]?

I believe that, to make Chomsky's account of passives applicable to Korean, we have to represent the D-structure of the sentence (13b) as in (19):

(19) [$_{NP_1}$e] [$_{NP_2}$ totuk] cap-hi-ess-ta

where NP$_1$ stands for subject, and NP$_2$ object. In (19) the subject NP cannot receive a θ-role because of (15a), while the object NP cannot receive Case due to (15b). Thus, as Chomsky claims, the GF that will permit Case to be assigned to the object NP so as to satisfy the Case Filter has to be [NP,S] in (19). However, the representation of the D-structure of the passive sentence (14b) as in (19) necessarily presupposes that the language has not only a rule like Move-α but also empty categories. Thus, unless we come up with sound linguistic evidence to support it, it seems unreasonable to claim that the structure (19) is a possible D-structure in Korean. We will return to this problem shortly.

Chomsky also discusses Japanese causatives to support his claim that the counterpart to Move-α in a configurational language is Assume-a-GF in a non-configurational language. Since Japanese causatives are similar to Korean causatives, it is not difficult to apply Chomsky's account of the analysis of

the latter. Consider the following sentences:

(20) (a) ai-ka cec-il mek-nin-ta.
   child milk eat
   'The child takes the breast.'
   (b) emeni-ka ai-eke cec-il mek-i-n-ta.
   mother child milk eat
   'Mother gives the breast to the child.'

The lexical properties of the transitive verb *mek(ta)* in (20a) require that it take an NP complement with the GF [NP¹, VP], which forms a VP with the verb. This VP will assign the θ-role agent to the subject (i.e., the NP with [NP, S]). Thus, the D-structure of sentence (20a), which is also its S-structure, may be given as in (21).

(21)
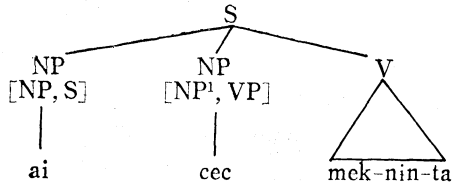
Since the causative sentence (20b) entails (20a), the D-structure of the former may be roughly represented as in (22).

(22)
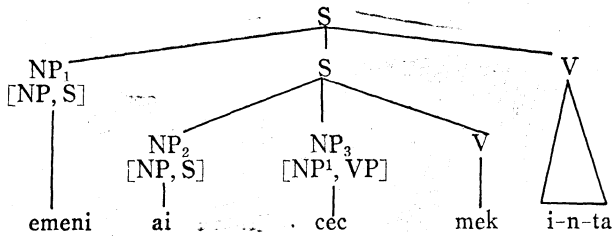
As we can observe in (20b), the NP₂ *ai* is assigned the dative Case *-eke* rather than the nominative Case *-i/-ka*, as we may expect from the structure (22). Chomsky explains this fact by simply saying, "a general property of causative is to assign the GF indirect object to the subject of

a clausal complement." (cf. Chomsky 1981:132) His proposal certainly helps to explain why the second NP in (20b) is assigned the dative Case, but it does not help to explain the fact that the second NP is maked with the objective Case *-lil* in (23b). Note that it is the subject of the clausal complement.

(23) (a) ai-ka ca-n-ta.

　　　　 child sleep

　　　　 'The child sleeps.'

　　(b) emeni-ka ai-lil cae-u-n-ta.

　　　　 mother　　child sleep

　　　　 'Mother puts the child to sleep.'

　4. Before we return to the problems of Korean passives and causatives, let us briefly consider the GF assignment convention of the language. First of all, examine predicate argument structures in (24), which are generated by the rule schema (9).

(24) (a)

　　(b)

　　(c)
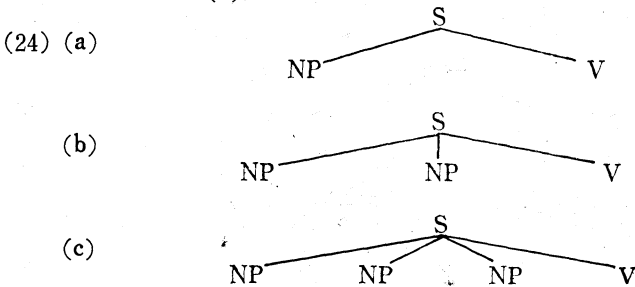
I propose that appropriate GFs be assigned to arguments (i.e., NPs) in (24) by the following GF-assignment principle:[7]

(25) *GF-assignment Principle*

　　Assign [NP, S] to a monadic predicate argument structure; [NP, S], [NP^1,VP] to a dyadic predicate argument structure; [NP, S], [NP^1,VP], [NP^2,VP] to a triadic predicate argument structure.

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7) See Bresnan (1981) for the assignment of GFs to a predicate argument structure.
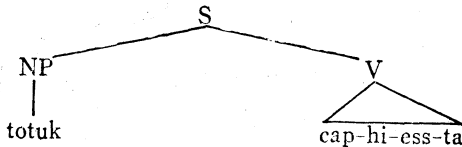
Note that the assignment of GFs to NPs is random; in other words, the structures like (24) do not define that a certain NP is assigned a specific GF.

With the GF-assignment Principie in mind, let us return to the passive sentence (13b), which I repeat here as (26).

(26) totuk-i cap-hi-ess-ta.

To account for the assignment of the nominative Case *-i* to the NP *totuk*, we have assigned the GF [NP,S] to it in addition to its D-structure GF [NP,VP] by means of the rule Assume-a-GF, following Chomsky's suggestion. As we have discussed in section 3, this process of derivation does not work. Thus, I propose that sentence (26) be a simple intransitive sentence: that is, a sentence with the intransitive verb *cap-hi(ta)*. The base rules of the language will directly generate the D-structure (27) for (26).

(27)

```
                       S
            _____/_____
         NP                          V
         |                          /____\
       totuk                    cap-hi-ess-ta
```

Since (27) is a monadic predicate argument structure, the NP *totuk* has to be assigned the GF [NP,S] by the GF-assignment Principle (25), but not by Chomsky's Assume-a-GF. In the lexicon, passive verbs like *cap-hi (ta)* will have subcategorization features identical with those of simple intransitive verbs. This proposal naturally presupposes that the relationship between passive verbs and their active counterparts will be treated not by syntactic rules but by lexical rules,[8] which I am not going to discuss further in this paper.

The proposal that the active-passive relation in Korean be lexical rather

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8) See Bresnan (1978) for the lexical analysis of the relationsip between active and passive verbs.
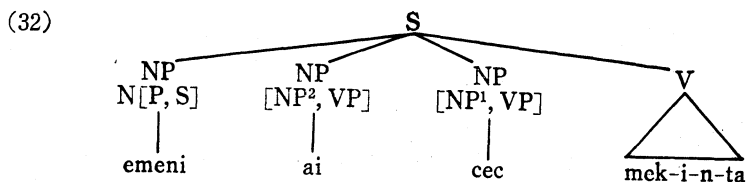
than syntactic is supported by the following facts: first, only a small number of active verbs have their passive counterparts. As Wasow (1977) suggests, the active-passive relation in Korean is too unproductive to be treated as a syntactic phenomenon. Second, there is no syntactic evidence that we must assign the GF [NP,VP], for example, to the subject NP of the passive sentence (26). In other words, as far as I know, no syntactic rules require the information that the subject NP of (26) also contains the GF [NP,VP]. Third, the relationship that we find between an active sentence and its corresponding passive sentence (that is, active object becomes passive subject, and active subject appears optionally in a passive sentence with the postposition -eke) is also found beween causative sentences and corresponding decausativized sentences. Compare the following sets of sentences:

(28) (a) kae-ka John-il mul-ess-ta.   'A dog bit John.'
           dog   bite
      (b) John-i kae-eke mul-i-ess-ta.   'John was bitten by a dog.'
(29) (a) John-i totuk-il cap-ass-ta.   'John caught a thief.'
           thief   catch
      (b) totuk-i John-eke cap-hi-ess-ta. 'A thief was caught by John.'
(30) (a) John-i Mary-lil cuk-i-ess-ta.   'John killed Mary.'
           kill
      (b) Mary-ka John-eke cuk-ess-ta.   'Mary was killed by John.'
           die
(31) (a) John-i Mary-lil sok-i-ess-ta.   'John deceived Mary.'
           deceive
      (b) Mary-ka John-eke sok-ass-ta.   'Mary was deceived by John.'

If the syntactic passive rule relates (a) sentences and (b) sentences in (28) and (29), what would be the syntactic rule that relates (a) sentences and (b) sentences in (30) and (31)?

Now, let us return to the causative sentence (20b), where the subject NP of the clausal complement is assigned the dative Case -eke. As was

the case in passives, I do not believe that the subject of the complement somehow assumes the GF [NP², VP] in causatives. The reason that the second NP is marked with the dative Case *-eke* in (20b) is that the sentence has the following D- as well as S-structure:

(32)

```
                         S
        ┌──────────┬──────────┴──────────┐
      NP          NP          NP          V
    N[P, S]    [NP², VP]   [NP¹, VP]     /\
       │          │           │        /    \
     emeni        ai         cec      mek-i-n-ta
```

In (32), GFs are assigned to argguments by the GF-assignment Principle (25).

As passive verbs are regarded as being identical with regular intransitive verbs, causative verbs like *mek-i(ta)* will have subcategorization features identical with those of regular transitive verbs like *cu(ta)* 'give', *kalichi (ta)* 'teach', etc. in the lexicon. The fact that the second NP *ai* has the objective Case *-lil* in (23b) can be accounted for straightforwardly: in the lexicon, causative verbs like *cae-u(ta)* will be treated as dyadic predicates such as *mek(ta)*, *po(ta)* 'see', etc.. In short, I suggest that causative sentences like (20b) and (23b) be directly generated by the base rules rather than by rules like Assume-a-GF from some abstract structures.

5. The examples we have been discussing in previous sections seem to indicate that there is little reason to distinguish D-structure from S-structure, at least, for passives and *lexical* causatives in Korean. In this section, we will consider *clausal* causative sentences as opposed to *lexical* causative sentences. In particular, we will inquire whether clausal causatives, too, are to be directly generated in the base or they need rules like Assume-a-GF.

Compare the following sentences, taken from Yang (1974), in which (a) sentences are clausal causatives, while (b) sentences lexical causatives:

(33) (a) John-i Mary-eke os-il *ppalli* ip-ke ha-ess-ta.

      clothes quickly wear cause

 (b) John-i Mary-eke os-il *ppalli* ip-hi-ess-ta.

(1) 'John quickly caused Mary to put on clothes.'

(2) 'John caused Mary to quickly put on clothes.'

(34) (a) kamtok-i yepaeu-lil *maelyekcekilo* us-ke ha-ess-ta.

      director   actress   attractively   smile cause

    (b) kamtok-i yepaeu-lil *maelyekcekilo* us-ki-ess-ta.

      (1) 'The director attractively made the actress smile.'

      (2) 'The director made the actress attractively smile.'

Yang says that clausal causatives and lexical causatives in (33) and (34) are not only synonymous but ambiguous, as shown in English translations, in the sense that the manner adverbs may modify either the causer's activity or the causee's activity.

Contrary to Yang's claim made above, I think Shibatani is correct in claiming that lexical causatives are not ambiguous; the manner adverbs in (33b) and (34b) modify only the causer's activity.[9] Even with the help of particular contexts Yang provides for lexical causatives, to me (33b) and (34b) do not have meanings in which the manner adverbs modify the causee's activity. Examine the following sentences:

(35) (a) Mary-lil towacu-ci ani ha-ko,

               help   not do

     John-i Mary-eke os-il ppalli ip-hi-ess-ta.

    (b) cangmyen-i maelyekcek i-yeyahamilo,

      scene   attractive

      kamtok-i yepaeu-lil maelyekcekilo us-ki-ess-ta.

Further, let us examine the following negative sentences:

(36) (a) (i) kamtok-i yepaeu-lil mot us-ke ha-ess-ta.

                       not

      (ii) kamtok-i yepaeu-lil us-ci mot ha-ke ha-ess-ta.

    (b) (i) kamtok-i yepaeu-lil mot us-ki-ess-ta.

      (ii) kamtok-i yepaeu-lil us-ki-ci mot ha-ess-ta.

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9) K. D. Lee (1975) makes the same conclusion on this subject.

The sentence (36ai) is certainly ambiguous: it means either 'the director could not make the actress smile' or 'the director made the actress not to smile'. To me, at least, the sentences in (36b) mean only the latter; they never have the meaning of (36aii). If you are not convinced, then compare the sentences in (37).

(37) (a) kamtok-i yepaeu-lil cenhye us-ci mot ha-ke ha-ess-ta.
                           at all

        'The director made the actress not to smile at all.'

    (b) kamtok-i yepaeu-lil cenhye us-ki-ci mot ha-ess-ta.

        'The director completely failed to make the actress smile.'

If you still think that the two sentences in (37) have an identical meaning, I advise you to disregard examples discussed previously in this section.

Next, consider the sentences in (38) which contain the reflexive *caki*.

(38) (a) (i) John$_i$-i Mary-eke caki$_i$-e kwanhaese malha-ess-ta.
                              self   about   tell

           'John told Mary about himself'.

      (ii) *John-i Mary$_i$-eke caki$_i$-e kwanhaese malha-ess-ta.

           'John told Mary about herself'.

    (b) (i) John$_i$-i Mary-eke caki$_i$-ka ceyil i-lako malha-ess-ta.
                                best   that tell

           'John told Mary that he (=self) was the best'.

      (ii) *John-i Mary$_i$-eke caki$_i$-ka ceyil i-lako malha-ess-ta.

           'John told Mary that she (=self) was the best'.

Observing the sentences in (38), we may make the following generalization for the use of *caki*:

(39) The antecedent of the reflexive *caki* must be the NP with the GF [NP,S] c-commanding the reflexive.

    Having (39) in mind, let us consider the sentences in (40).

(40) (a) (i) Bill$_i$-i John-eke caki$_i$ os-il cu-ess-ta.
                          clothes give

'Bill gave his own clothes to John.'

  (ii) Bill$_i$-i John$_j$-eke ki$_{i,j}$-iy os-il cu-ess-ta.

        clothes give

  'Bill gave John his (=Bill's or John's) clothes'.

 (b) (i) Bill$_i$-i Jonn-eke caki$_i$ os-il ip-hi-ess-ta.

  (ii) Bill$_i$-i John$_j$-eke ki$_{i,j}$-iy os-il ip-hi-ess-ta.

No one seems to disagree that in (40) the reflexive *caki* may refer to subject, and the pronoun *ki* either subject or object. But not everyone, including myself, seems to accept the sentences in (41) as possible in Korean.

 (41) (a) Bill-i John$_i$-eke caki$_i$ os-il cu-ess-ta.

   (b) Bill-i John$_i$-eke caki$_i$ os-il ip-hi-ess-ta.

Whether one accepts (41) as possible or not, it is clear that the sentences in (40ai) and (40bi) are much more natural than those in (41), and that there seems to be no one who accepts (41a) but rejects (41b), and vice versa, indicating that the lexical causative verb *ip-hi(ta)* behaves just like the regular transitive verb *cu(ta)*. Furthermore, it seems to be the case that those who do accept (41) also regard (42) as possible, but that those who do not accept (41) consider (42) to be impossible.

 (42) (a) na-nin John$_i$-eke caki$_i$ os-il cu-ess-ta.

   (b) na-nin John$_i$-eke caki$_i$ os-il ip-hi-ess-ta.

We may suggest for those who accept (41) and (42) that the constraint (36) be relaxed so that the reflexive *caki* may refer to non-subject NP too.

Now, let us compare (40bi) with (43a), (41b) with (43b), and (42b) with (43c).

 (43) (a) Bill$_i$-i John-eke caki$_i$ os-il ip-ke ha-ess-ta.

   (b) Bill-i John$_i$-eke caki$_i$ os-il ip-ke ha-ess-ta.

   (c) na-nin John$_i$-eke caki$_i$ os-il ip-ke ha-ess-ta.

Why does every Korean readily accept the sentences in (43)? The only suggestion we may make at present is that the indirect object *John* in (43)

was subject of the verb *ip(ta)* at some level of syntactic representations: perhaps, at D-structure level. In other words, NP *John* in (43) is assigned the function chain ([NP^2, VP], [NP, S]), where the GF [NP, S] is determined at D-structure and the [NP^2,VP] by the rule Assume-a-GF.

The question is why and how the GF [NP^2, VP] is assigned to the subject NP of the complement? Suppose the D-structure of, say, the sentence (43) is represented as in (44).

(44) [$_S$ Bill [$_S$ John [$_{NP}$caki os][$_V$ip-ke]][$_V$ha-ess-ta]]
    [NP,S] [NP,S] [NP^1,VP]

I believe there are two ways of assigning the GF [NP^2,VP] to *John* in (44).

The first approach is that we assume there is a *restructuring rule* which combines the matrix verb with the constituent verb to form some kind of complex verb, restructuring (44) as in (45).

(45) [$_S$ Bill   John   [$_{NP}$caki os] [$_V$ ip-ke ha-ess-ta]]
    [NP, S] [NP,S] [NP^1,VP]

The restructured (45) is violating the *GF-Constraint*, specified as in (46):

(46) *GF-Constraint*
    No two arguments in an S may have the same GF.

In other words, the GF [NP,S] is assigned to two NPs in (45): the matrix subject and the constituent subject. The latter yields the subject role to the former (perhaps, because it is a constituent subject) and has to assume a new GF. According to the GF assignment Principle (25), the only GF that can be assigned to it is [NP^2,VP], since [NP, S] and [NP^1, VP] are already taken by other NPs. This process will yield the structuie (possibly, the S-structure) (47) for the sentence (43a).

(47) [$_S$ Bill   John   caki os [$_V$ip-ke ha-ess-ta]]
    [NP, S] [NP, S] [NP^1, VP]
          [NP^2, VP]

This approach naturally accounts for the fact that the complement subject is marked with the objective Case *-lil* in (48b), whose D-structure may be given as in (49).

(48) (a) ai-ka ca-n-ta.   'The child sleeps.'
        child sleep
    (b) emeni-ka ai-lil ca-ke ha-n-ta. 'Mother puts the child to sleep.'
        mother   child sleep cause

(49) $[_S[_{NP}$emeni$]$ $[_S[_{NP}$ai$]$ $[_V$ca-ke$]]$ $[_V$ha-n-ta$]]$

The restructuring rule will convert (49) into (50):

(50) $[_S[_{NP}$emeni$]$ $[_{NP}$ai$]$ $[_V$ca-ke ha-n-ta$]]$

In (50), the constituent subject has to yield its role to the matrix subject in order not to violate the GF-constraint (46), and assume the GF $[NP^1,$ VP$]$ according to (25).

This restructuring approach to the problem is not entirely an invention of my own. Consider the following sentences:

(51) (a) They took advantage of John.
    (b) Advantage was taken of John.
    (c) John was taken advantage of.

As we can see in (51), the sentence (51a) han two passives. Let us assume that the structural analysis of a VP like *take aduantage of someone* is given as in (52):

(62) $[_V$take$]$ $[_{NP}$advantage$]$ $[_{PP}$of someone$]$

Since the passive rule moves the object of a verb and makes it the subject of the sentence, we will get the sentence (51b), but there is no way to derive the sentence (51c) from (52). Here, the restructureing rule applies, restructuring (52) as in (53), from which the sentence (51c) is easily derivable:

(53) $[_V$take advantage of$]$ $[_{NP}$someone$]$

Another way of assigning the GF $[NP^2,$ VP$]$ to John in (44) is to

assume that there is an *S-deletion* rule in Korean, just as English has an S̄-deletion rule.[10] The S-deletion will convert (44) into (54).

(54) [$_s$ Bill   John   caki os   [$_v$ip-ke] [$_v$ha-ess-ta]]
       [NP, S] [NP, S] [NP^1, VP]

The rest of derivational processes is straightforward, which does not require a further explanation.

I do not know which approach is better and correct. Perhaps, the first approach may be intuitively correct, because it combines the matrix verb and the constituent verb as a constituent, while the S-deletion approach simply concatenates the two verbs. I would like to leave this question open for further research.

6. We have so far discussed three kinds of constructions: passive, lexical causative and clausal causative. We have made a suggestion that passives and lexical causatives be lexical phenomena, whereas clausal causatives be a syntactic phenomenon. In particular, I have tried to prove that there is no syntactic evidence that suggests the subject of a passive and the NP *ai* in sentences like (20) be assigned the GF [NP, S]. On the other hand, I have presented the evidence that clausal causatives are naturally accounted for in terms of rules like Assume-a-GF, conforming Chomsky's proposal on non-configurational languages.

Does this mean that there must also be distinction between D-structure and S-structure in the Korean language? I would like to reserve the positive answer to this question, until we find more evidence to support it. Since there is a possibility that one may devise a lexical rule by which we can account for clausal causatives in a simple, natural way, the clausal causative argument alone is too weak to say "yes" to the question.

References

Bresnan, J. 1978. A realistic transformational grammar. Linguistic theory and psychological reality, ed. by Halle, Bresnan, and Miller. Cambridge, Mass.:

10) According to Chomsky, the so-called "raising" predicates trigger the deletion of S̄ of their complement sentences.

MIT Press.

Bresnan, J. 1981. Polyadicity: Part I of a theory of lexical rules and representations. Lexical grammar, ed. by Hoekstra, van der Hulst, and Moortgat, 97-121. Dordrecht, Holland: Foris.

Chomsky, N. 1981. Lectures on government and binding. Dordrecht, Holland: Foris.

Hale, K., L. M. Jeanne, and P. Platero 1977. Three cases of overgeneration. Formal syntax, ed. by Culicover, Wasow, and Akmajian. Academic Press.

Heny, F. ed. 1981. Binding and filtering. London: Croom Helm.

Lee, H. B. 1976. Notes on pronouns, reflexive, and pronominalization. Language Research 12. 2.

Lee, K.D. 1975. Lexical causatives in Korean. Language Research 11. 1.

Shibatani, M. 1973. Lexical versus periphrastic causatives in Korean. Journal of Linguistics 9.

Wasow, T. 1977. Transformations and the lexicon. Formal syntax, ed. by Culicover, Wasow, and Akmajian. Academic Press.

Yang, I. S. 1974. Two causatives in Korean. Language Research 10. 1.