A Lexical Approach to English Passive

Kyung-An Song

1. Introduction

In recent studies of linguistics we can find three approaches to passive constructions; sentential, phrasal, and lexical. In generative grammar Chomsky(1981) derived passive sentences from an abstract D-structure through an NP-movement rule. Bach(1980) and Keenan(1981) proposed a phrasal treatment of passive. Freidin(1975) and Bresnan(1982) might be considered adopting lexical approaches.

In Montague's framework Partee(1973) derived passive sentences transformationally on the sentence level. Lee, K(1974) and Thomason(1972) treat the passive sentences with 'by phrase' on the phrasal level and passive sentences without 'by phrase' on the lexical level. Dowty(1978) adopted a phrasal operation for both of these two kinds of passives and postulated a lexical rule for a special reading of agentless passives, the reading 'already happened.' In Dowty(1982) the two kinds of passives are derived syntactically as relation changing rules, which I think is a phrasal approach. Lee, I-H(1982) adopted Freidin's(1975) lexical approach in generative syntax and attempted a lexical analysis of passives in Montague's framework.

In this paper we will first overview the first two approaches briefly and make some comments on them. Then we will review Lee's(1982) approach and show that it may not actually be taken as a lexical approach. We will then attempt another lexical approach to passive sentences in Montague grammar, which I assume is properly lexical.

2. Three Approaches to Passive Construction

2.1. Sentential Approach

One of the prominent linguists who proposed the sentential approach to passive is of course Chomsky(1981). He derives, for example, the passive sentence (1) from the abstract D-structure (2) through NP-movement.

(1)   John is killed.

(2)   [$_{NP}$e] is killed John.

The main arguments for this approach are subcategorisation, idiom chunks, and selectional restriction. We can find examples for each of these arguments in (3).

(3)   a. The car has been put _____ in the garage.
       b. Little heed was paid _____ to her proposal.
       c. New dishes/ *New theories were cooked _____ at the Exhibition.
                              (Radford: 1981, 180ff)

But we can say here that the above three arguments are not of completely different sort from each other. They can be rather counted as a single phenomenon, i.e. distributional.

If we adopt the NP-movement rule, we have the advantage that we need not describe the distribution of a verb and its past participle separately. But in (4) we find an argument against such treatment of distribution.

(4)   a. The window is broken.
       a'. the broken window
       b. The man is tall
       b'. the tall man
       c. *The man is fragile.
       c'. *the fragile man
       d. *The water is broken
       d'. *the broken water

Here we should describe the distribution of past participles in parallel with that of adjectives. Or we should explain the phenomena in (4) two-dimensionally, which does not seem to be very plausible. The distribution of verbs and their past participles should be therefore described seperately and the argument for the sentential approach with this respect is now no more valid.

It does not make our grammar very complex to describe the distribution of past participles seperately. The distribution of past participles is fully predictable from that of the corresponding verbs only through a lexical redundancy rule.

2.2 Phrasal Approach

Bach(1980) argues for a phrasal approach to passive sentences on the basis

of the example (5).

(5)   John was attacked and bitten by a vicious dog.

(5) is ambiguous depending on the scope of 'by phrase.' Bach claims that the case with wider scope of 'by phrase' should be derived on the phrasal level to capture this ambiguity of (5). We'll return to Bach (1980) later in section 5.

Keenan(1981) argues that passivization is neither a sentential nor a lexical, but a phrasal operation. Keenan's(1981) argument against the sentential approach is as follows:

"...., to generate passives, not only in English but in languages quite generally, it is sufficient to derive VPs of a certain sort. Rules independently needed to combine VPs with NPs to form sentences will then generate passive sentences."

Keenan(1981) postulated the Minimal Domain Principle which says that passivization should be taken as a VP-level derivational phenomenon, not a sentence level one.

Keenan(1981) argues against a lexical approach to passives on the basis of the examples in (6-7).

(6)   a. be kissed
       b. be beaten

(7)   a. be kissed by Mary
       b. be beaten by Mary

Suppose (6a) and (6b) will have the same extension in a possible world. According to Keenan(1981) (7a) and (7b) also should have the same extension in this world by the compositionality principle. But in fact this is not true. Keenan(1981) claims here that this paradox results from the lexical approach to passive sentences. To avoid this problem he proposed a phrasal approach as in (8).

(8)   (Pass, kiss by Mary)$_{VP}$ $\Longrightarrow$ kissed by Mary

Lee(1982), however, pointed out that Keenan's(1981) argument against the lexical approach here is not valid. That is, we find this kind of compositionality problem not in passive constructions only. The same problem arises

in the constructions as in (9). (9a, a′) show adverbs followed by adjective. (9b, b′) show verb followed by adjective.

(9)   a.   very happy
       a′. very beautiful
       b.   walk slowly
       b′. sing slowly

     Dowty(1982) considers English passives as relation changing rules, more specifically the agentive passive is a relation rearranging rule and the agentless passive is a relation reducing rule. But it does not seem to be plausible if Dowty(1982) assumes that the past participles in agentless passives is a one-place predicate and that the past participle in agentive passives is a two-place predicate. It would be more plausible to say that the past participle of an n-place predicate is an n-1 place predicate and that 'by phrase' in English passives is an adverb phrase which is both syntactically and semantically optional. And this is the main idea of my paper.

     Dowty(1982) takes two arguments for the syntactic approach to passive.

     First, there are cases in which the TV expression that undergoes passive is a syntactically derived phrase as in (10).

(10)   a.   John *gave* a book *to Mary*.
       a′. A book was given to Mary by John.
       b.   John *gave* Mary *a book*.
       b′. Mary was given a book by John.
       c.   Mary *persuaded* John *to leave*.
       c′. John was persuaded to leave by Mary.
       d.   Mary *painted* the house *red*.
       d′. The house was painted red by Mary.
       e.   Mary *appointed* John *chairman*.
       e′. John was appointed chairman by Mary.

     But these examples will be no more problematic even if we describe the distribution of a verb and its corresponding past participle sepearetly. Note, however, that such a seperate treatment on distribution is crucial for examples in (4).

     As his second argument for the syntactic treatment Dowty(1982) cites the examples from Bach(1982):

(11)   a.   Mary bought the truck (for Bill) to deliver groceries in _____.

b. Max brought in the dean for us to talk to _____.
c. The truck was bought (for Bill) to deliver groceries in _____.
d. The dean was brought in for us to talk to _____.
e. *It arrived (for Bill) to deliver groceries in _____.
f. *The dean came in for us to talk to _____.

In (11) the purpose clauses occur in passive sentences as well as in active ones. But they do not occur with intransitive verbs. Here Dowty(1982) and Bach(1982) argue that the TV expressions that are passivised in (11) must be 'buy for Bill to deliver groceries in' and 'bring in for us to talk to' respectively.

Purpose clauses, however, can also occur with adjectives as in (12), which makes Dowty's second argument invalid and enables us in the presence of example (11) to treat past participles independently from transitive verbs.

(12) a. The truck was available (for Bill) to deliver groceries in _____.
      b. The truck was ready (for Bill) to deliver groceries in _____.

These examples, furthermore, would provide us with some motivations to analyze past participles as adjectives.
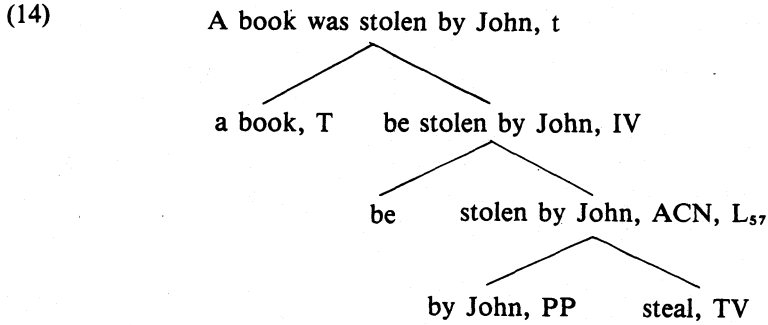
2.3 Lexical Approach

Let's now consider our last alternative. The advantage of the lexical approach is the uniform treatment of 'be', 'past participle's and 'by phrase'. And we'll adopt this point as the fundamental definition on the lexical approach. That is, an analysis of passive is a lexical one iff it can treat the verb 'be' 'past participles' and 'by phrase' uniformly.

In her LFG(= Lexical Functional Grammar) Bresnan(1982) treats passive sentences in the lexicon. We might call this kind of theory as a lexicalist approach. But in terms of our former definition her treatment of passive sentences is not a lexical approach. Because she simply introduces into the lexicon almost the same device as the traditional sentence-level transformation.

Lee(1982) adopted Freidin's(1975) lexical approach in generative syntax and analysed English passive constructions as in (13).

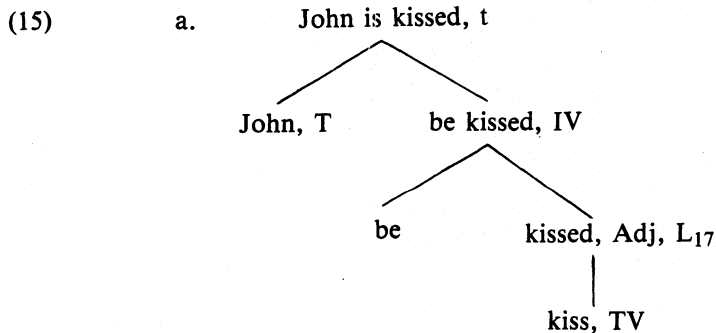(13) stolen: $[_{AP} [_A \quad]_A]_{AP}$
      stolen by Peter: $[_{AP} [_A \quad]_A [_{PP} \quad]_{PP}]_{AP}$

According to the analysis in (13) he presented the tree (14) within the Montague's framework.

(14)

$$A\ book\ was\ stolen\ by\ John,\ t$$

```
         A book was stolen by John, t
                    /\
                   /  \
          a book, T    be stolen by John, IV
                            /\
                           /  \
                         be    stolen by John, ACN, L57
                                    /\
                                   /  \
                          by John, PP    steal, TV
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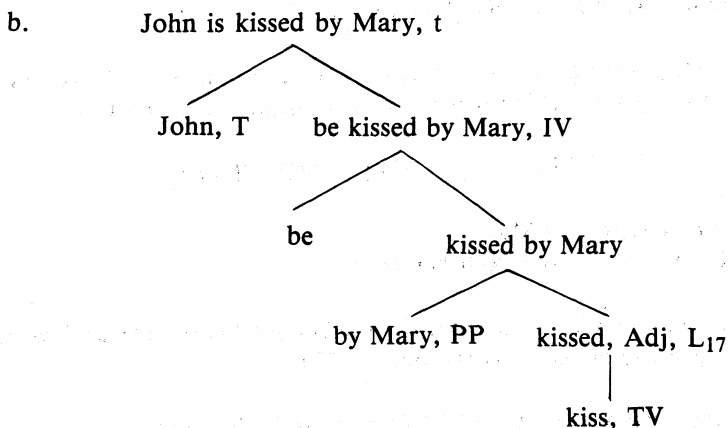
But under our definition of the lexical approach to passive sentences Lee's(1982) analysis is not a lexical but rather a phrasal approach. His L_{57} in (14) is no more lexical than Keenan's(1981) phrasal operation in (8).

3. An Alternative Treatment to the Lexical Approach

We now provide a lexical approach to English passive constructions according to our definition above. Under the definition we analyse English passives as in (15).

(15)   a.

```
         John is kissed, t
               /\
              /  \
        John, T    be kissed, IV
                       /\
                      /  \
                    be    kissed, Adj, L17
                              |
                           kiss, TV
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b.   John is kissed by Mary, t

    John, T   be kissed by Mary, IV

          be   kissed by Mary

              by Mary, PP   kissed, Adj, L_{17}

                                kiss, TV

    In (15) we analysed past participles as adjectives. In the seminar of Linguistic Society of Korea last summer Prof. Yang, D.-W. asserted that the past participles in English passives can't be considered as adjectives because they cannot be motivated. I'll refer here to Jespersen's(1924) examples quoted in (16) as a motivation of my current analysis.

(16) a. He is not worth his salt.
     b. He is like his father.
     c. We are conscious of evil.
     d. We are anxious for our safety.
     e. We were conscious that something had happened.
     f. We are anxious to avoid a scandal.

    Note, however, that the categorization of past participles is not a crucial problem in our lexical approach.
    For the derivation in (15) we need the lexical rule (17).

(17) L_{17}: If $\alpha \in P_{TV}$, then $F_{L17}(\alpha) \in P_{Adj}$,
            where $F_{L17}(\alpha)$ is the past participle form of α.
            Translation: $\lambda x\ \exists y\ [\alpha'(^\cap\lambda PP\{x\})\,(y)]$

Following Dowty(1979) we translate the verb 'be' as in (18).

(18) be $\Longrightarrow \lambda P\ \lambda x\ [P\{x\}]$

Consequently the passive sentence (15a) will be translated as in (19).

(19) John is kissed $\Longrightarrow \exists x$ [kiss'$_*$ (x,j)]

For the agentive passives we translate the preposition 'by' like in (20). The agentive passive (15b) will be then translated as in (21).

(20) by $\Longrightarrow \lambda \mathcal{P} \; \lambda P \lambda x \mathcal{P} \; \{^\wedge \lambda y \; [\; P\{x\} \wedge \text{AGENT (y)}]\}$

(21) John is kissed by Mary $\Longrightarrow$
      $[\exists x \; [\text{kiss'}_* \; (x, \; j)] \wedge \text{AGENT (m)}]$

To prevent the individual x in (21) from being other than 'Mary' we need a meaning postulate such as the one in (22).

(22) MP22: $\forall R \; \forall x \; \forall y \; \forall z \; \square \; [R \; (x,y) \wedge \text{AGENT (z)} \rightarrow x = z]$

4. Quantifiers in our Treatment

In the current treatment passives with quantifiers will be translated as in (23-25). The ambiguity of sentence (25) is captured satisfactorily in our framework.

(23) A man is kissed by Mary $\Rightarrow$
      $\exists x \; [\text{man'(x)} \wedge [\exists y \; [\text{kiss'}_* \; (y,x)] \wedge \text{AGENT(m)}]]$

(24) Mary is kissed by a man $\Rightarrow$
      $\exists x \; [\text{man'(x)} \wedge [\exists y \; [\text{kiss'}_* \; (y,m)] \wedge \text{AGENT(x)}]]$

(25) A woman is kissed by every man $\Rightarrow$
      a. $\exists x \; [\text{woman'(x)} \wedge \forall y \; [\text{man'(y)} \rightarrow [\exists z \; [\text{kiss'}_* \; (z,x)] \wedge \text{AGENT(y)}]]]$
      b. $\forall x \; [\text{man'(x)} \rightarrow \exists y \; [\text{woman'(y)} \wedge [\exists z \; [\text{kiss'}_* \; (z,y)] \wedge \text{AGENT(x)}]]]$
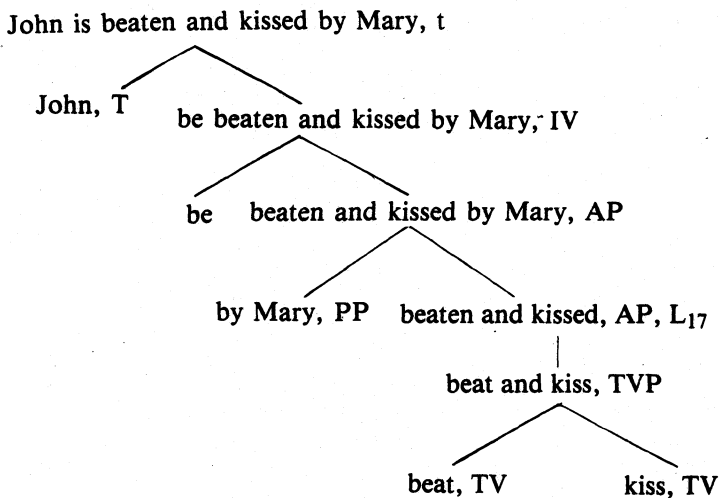
5. Scope Ambiguity of 'by'

The scope ambiguity of 'by phrase' in the sentence (26a) will be represented by two readings (26b, c).

(26) a. John is beaten and kissed by Mary.
      b. $[\text{beat'}_*(m,j) \wedge \text{kiss'}_*(m,j)]$
      c. $[\exists x \; [\text{beat'}_* \; (x,j)] \wedge [\text{kiss'}_*(m,j)]]$
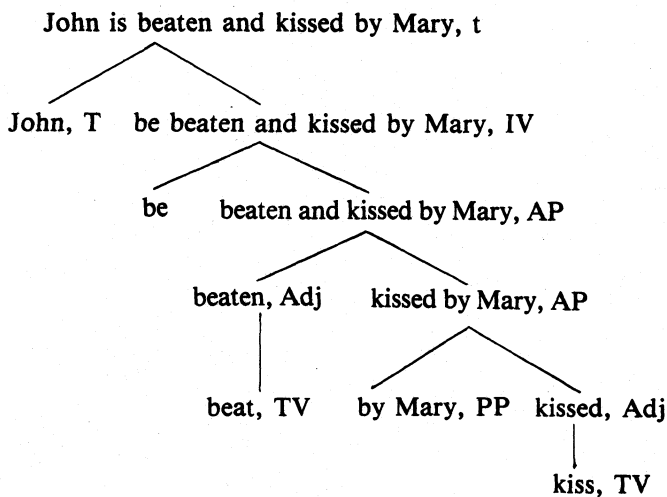
To capture this ambiguity we analyse (26a) in two ways as in (27).

(27)   a.

John is beaten and kissed by Mary, t

John, T   be beaten and kissed by Mary, IV

be   beaten and kissed by Mary, AP

by Mary, PP   beaten and kissed, AP, L$_{17}$

beat and kiss, TVP

beat, TV   kiss, TV

b.

John is beaten and kissed by Mary, t

John, T   be beaten and kissed by Mary, IV

be   beaten and kissed by Mary, AP

beaten, Adj   kissed by Mary, AP

beat, TV   by Mary, PP   kissed, Adj

kiss, TV

These will be translated into (28a, b).

(28)   a. $[\exists x[[\text{beat'}_*(x,j)] \wedge [\text{kiss'}_*(x,j)]] \wedge \text{AGENT}(m)]$
       b. $[\exists x[\text{beat'}_*(x,j)] \wedge [\exists x[\text{kiss'}_*(x,j)] \wedge \text{AGENT}(m)]]$

Here I'll compare my analysis with that of Bach(1980). Bach(1980) might claim that my analysis in (27) is a phrasal approach, because in (27a) I transformed the phrase 'beat and kiss' into their past participles; i.e., I derived the past participle on the phrasal level. But I will call the L_{17} in (27a) a lexical rule, not a phrasal rule. All this rule does is to derive past participles and nothing else. And this is not inconsistent with my definition of the lexical approach above. My L_{17} is the same type of rule as the one that derives the genitive form (29b) from (29a), which I think should be taken as a lexical rule.

(29) a. the man I saw at the party
     b. the man I saw at the party's father

The analysis of Bach(1980) is, on the other hand, different from my analysis here. He treated the 'by phrase' in the same way as in (8) and (14). which is a phrasal approach under our definition.

6. Further Motivations and Residual Problems

As a further motivation for my treatment of agentive phrases I will present two kinds of examples from German.

(30) a. Es wurde von den Zuschauern viel geklatscht.
     b. Heute wird vom Gastegeber bezahlt.
     c. Gehe zum Priest und laß dich von ihm untersuchen.

(30a, b) are so called impersonal passives and (30c) is a reflexive construction with passive meaning. In a phrasal approach we should treat the agentive phrases of the above German examples in some other ways than that of (8) or (14). We should then treat the agentive phrases in two or more ways which are not very desirable. In our analysis we may be able to capture somehow the semantic generalization of the agentive phrases in German passives.

Now we have some residual problems. If we take into consideration the sentences with complex VPs such as (26a), our MP22 should be revised as in (31).

(31) $\forall R_{n \in N} \forall x_{mn}, {}_{m \in N, n \in N} \forall y \square [R_1(x_{11}, x_{12}, \dots x_{1n})$ conj' $R_2(x_{21}, x_{22}, \dots x_{2n})$ conj' $\dots$ conj' $R_n(x_{n1}, x_{n2}, \dots x_{nn}) \wedge \text{AGENT}(y) \rightarrow x_{11} = x_{21} \dots x_{n1} = y]$

Our second residual problem is the ambiguity of the agentless passives which

was designated in Dowty(1978). This ambiguity cannot be captured in a natural way in our framework.

This paper has another problem with such examples as (32).

(32) a. The metal was hammered flat.
      b. [s [NP   ]NP [VP [v   ]v [Adj   ]Adj [Adj   ]Adj]VP]s

In our analysis (32a) should be analysed as (32b). But we do not see a motivation for this structure in English based on the advantage of uniformness. That is, we cannot find this kind of structure of non-passive constructions in English.

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Department of German
Language & Literature
Chonnam National University
Kwang-Ju 500-05
Korea