

# Study on Preposition Stranding

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Kim, Myungae. 2005. Study on Preposition Stranding. *The Linguistic Association of Korea Journal*, 13(3), 145-162. This paper concerns the phenomena of preposition stranding. In this paper we noted that many scholars have accounted for preposition stranding with the mechanism of barrier or Subjacency condition. Under the theory of phase, however, this devices are no longer available, so we have tried to find out whether it is possible to account for the phenomena of preposition stranding with the phase in Chomsky (2000, 2001).

**Key Words:** preposition stranding, phase, feature-percolation

## 1. Introduction

The main property which differentiates passive sentence from their active counterpart is that the complement of an active verb surfaces as the subject in the corresponding passive construction, as we see examples in (1) and (2):

- (1) a. Hundreds of passers-by saw the attack.  
b. The attack was seen by hundreds of passers-by.
- (2) a. They took everything.  
b. Everything was taken.

In the above examples (1), *the attack* is the complement of *saw* in the active (1a), but is the subject of *was seen by hundreds of passers-by* in passive (1b). The same thing applies to (2a,b).

However, there is evidence that passive subjects play the same thematic role as active complements as in (3):

- (3) a. The students/?The camels/?!The flowers!/The ideas were arrested.  
 b. They arrested the students/?the camels/?!the flowers!/the ideas.

If we adopt Uniformity Theta Assignment Hypothesis proposed by Baker (1988), in which it is assumed there is a uniform mapping between thematic structure and syntactic structure, then it follows that passive subjects must originate in the same position as active complements. Because the passive subject *the students* in (3a) bears theme/patient role, which is assigned to the complement of *arrest*, it follows that *the students* originate as the complement of verb *arrested*.

Now we consider the prepositional passives (pseudopassives) like in (4):

- (4) a. Nothing was agreed on by the committee.  
 b. The information was asked for by the Dean.  
 c. He can be depended on for sound advice.

The examples in (4) show that the passivized subject has moved out of its underlying position as a prepositional object. However, there is a rigid restriction on passivization of the prepositional object. In active sentences like (5a) and (6a) below, other material can be inserted between V and P, whereas in passive like (5b) and (6b), it is not possible:

- (5) a. You can depend entirely on his integrity.  
 b. \*His integrity can be depended entirely on.  
 (6) a. Mary shouted angrily at John.  
 b. \*John was shouted angrily at by Mary.

Similarly, while in active, specifier like *straight* can precede the

preposition, this is not the case in passive as we can see in the below examples (7):

- (7) a. Everybody stared (*straight*) at her.  
 b. She was stared (*\*straight*) at by everybody.

With respect to all the situations so far considered, some scholars such as Hornstein and Weinberg (1981), Radford (1988) suggest that by the optional rule of *Reanalysis*, preposition is incorporated with the immediately preceding verb into 'a compound verb' and *her* in (7a) has the status of a verbal object. Therefore, the prepositional passive is only permitted where reanalysis has applied, whereas if the option of reanalysis is not taken, PP complements can be fronted as a unit as we can see in (8):

- (8) a. There was nothing on which the committee could agree.  
 b. The information for which you are asking is classified.

In this connection, however, note that every prepositional structure does not allow reanalysis and does not allow passivization as in (9):

- (9) a. \*The third round was lost in by Rocky.  
 b. \*His mother is travelled with by John.

As for the examples such as those in (9), the distinction between a complement and an adjunct will be available, in that the P of complement PP can undergo reanalysis, whereas the P of an adjunct PP does not (Chomsky 1965). In (9a,b), the NP of an adjunct PP was passivized into a subject of a sentence so the resulting sentence is ungrammatical. Also, Van Riemsdijk (1986) argues that if a verb and a preposition do not form a 'natural predicate', then the prepositional passive would not be acceptable as in (10):

- (10) a. Bill drinks brandy after dinner.  
b. \*Dinner is drunk brandy after by Bill.

With respect to preposition stranding, however, there remains one major problem. Consider the following examples.

- (11) Who did John talk to Harry [about t]?  
(12) \*Which vacation did John go to Hawaii [during t]?

In (11) and (12), *wh*-phrase has been moved out of the PP leaving the preposition stranded. In this case, the problem is how to explain this grammatical difference.

In the next section, first of all, we review syntactic analyses such as Hornstein and Weinberg (1981) and Chomsky (1981, 1986b) and discuss the problems they have in dealing with the preposition stranding.

## 2. Syntactic Analyses

Preposition stranding has attracted considerable attention especially in 1980s, and many syntactic analyses have been proposed to capture the difference between strandable and unstrandable prepositions.

### 2.1. Reanalysis Approach

Let us first consider the following examples.

- (13) a. Who did John talk to Harry [about t]?  
b. Who did John give the book [to t]?  
(14) a. \*What inning did the Yankees lose the ball game [in t]?  
b.\*Which vacation did John go to Hawaii [during t]?

Hornstein and Weinberg (1981) and Chomsky (1981, 1986b) assume that subcategorizing PPs like sentences in (13a,b) are dominated under

VP, while temporal and locative PPs like those in (14a,b) under S. As we see, only prepositions whose maximal projections are immediately dominated by VP can be stranded. In order to account for the above observation, Hornstein and Weinberg propose a filter<sup>1)</sup> and a rule of Reanalysis. (14a,b) are adequately ruled out by the filter but, in this case Reanalysis is cannot apply to (14a,b), since the rule states that 'in the domain of VP, a V and any set of contiguous elements to its right can form a complex V' (Hornstein and Weinberg 1981:60). In (13a,b), on the other hand, Reanalysis can apply to PPs, which are immediately dominated by VP. Therefore, *talk to Harry about* and *give the book to* in (13a,b) are all reanalyzed as complex verbs, which govern the traces and assign them objective Case.

Returning now to Chomsky's (1981) approach, he proposes the Empty Category Principle (ECP) to deal with the phenomenon of preposition stranding.

(15) ECP : [<sub>α</sub> e] must be properly governed

(Chomsky 1981:250)

According to Chomsky, the traces in (14a,b) are governed but not properly governed, since he excludes the prepositions from the category of proper governors. In (13a,b), in contrast, Chomsky also depends on the Reanalysis, and therefore the traces are properly governed.

The notion Reanalysis, however, has been argued in the literature. Some scholars such as Zwisky (1987), Baltin (1995), Baltin and Postal (1996) claimed that there is a good reason to believe that the operation of reanalysis in English pseudopassives is unmotivated. Among others, Baltin and Postal (1996) especially argued that in English pseudopassives, the stranded preposition retains a syntactic status of preposition

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1) (i) \*[<sub>NP</sub> e ]  
oblique

This filter states that noun phrases with no lexical content, such as traces which are assigned oblique Case by the Case-marking conventions, are to be ruled out.

independent of V.

He has presented three cases as a supporting evidence of his arguments. We consider first the examples of Heavy NP Shift in (16):

- (16) a. I discussed  $t_1$  with Lorenzo\_\_ [the problems he was having with deliveries]<sub>1</sub>.  
b.\*I argued with  $t_2$  about such problems\_\_ [the drivers' union leader]<sub>2</sub>.  
c. I described  $t_3$  to himself<sub>3</sub>\_\_ [the victim whose sight had been impaired by the explosion]<sub>3</sub>.  
d.\*I talked to  $t_4$  about himself<sub>4</sub>\_\_ [the victim whose sight had been impaired by the explosion]

He noted that while the object of verb can undergo heavy NP shift, this is not with the object of PP and the context of reanalysis, as we can see in the above examples.

- (17) a. Frank called Sandra and Arthur \_\_\_\_ Louise.  
b. Frank talked to Sandra and Arthur \_\_\*(to) Sally.  
c. Frank called Sandra more often than Arthur did \_\_\_\_ Louise.  
d. Frank talked to Sandra more often than Arthur did \_\_\*(to) Louise.

Baltin and Postal (1996) also observed that under gapping, the head of PP cannot be omitted without its object as in (17) and this also holds of Ps in (18).

- (18) a. The bridge was flown (both) over and under.  
b. Communism was talked, argued, and fought about.  
c. The bridge was flown over and then, but only then, under.  
d. Fascism was fought for by Goebbels and (then) against by De Gaulle.

Finally, they pointed out that with regard to subdeletion, there is a

difference between the object of PP and direct object as we see in (19) and (20):

- (19) a. Larry screamed more of those words than he did \_\_\_ of these words.  
 b. \*Larry screamed about more of those words than he did \_\_\_ about of these words.
- (20) a. Jane read more of these books than Sally read \_\_\_ of those books.  
 b. \*Jane read from more of these books than Sally read from \_\_\_ of those books.

In this connection, they demonstrated that subdeletion is not possible with the object of preposition which can be passivized as in (21):

- (21) a. \*Jane talked to more of these people than Sally talked to \_\_\_ of those people.  
 b. \*Jane talked about more of these people than Sally talked about \_\_\_ of those people.  
 c. \*Jane put books on more of these tables than she put magazines on \_\_\_ of those tables.  
 d. \*Jane read from more of these magazines than Sally read from \_\_\_ of those magazines.

So far, we reviewed how Baltin and Postal (1996) demonstrated their arguments against the reanalysis operation. According to them, there is no evidence of accepting the reanalysis hypothesis, because prepositions in PP maintain the syntactic status of preposition itself, without the PP object obtaining the status of a direct object of a complex verb. However, as we noticed, their arguments are based on the active construction, not on the passive.

Bresnan (1982) claims that Hornstein and Weinberg's (1981) account fails to explain contrast between (22a) and (22b):

- (22) a. What did Harry talk to John about?  
 b. Something was talked to John about by Harry.

(Bresnan 1982:59)

To account for this contrast, Hornstein and Weinberg stipulated that the VP predicate containing the prepositional passive must be a 'semantic word' which should be contiguous syntactic strings.

She points out that contrary to Hornstein and Weinberg's assumption that the NPs of PPs dominated by VP can be extracted by movement rules, and those of PPs immediately dominated by S cannot, there are PPs in VP that do not permit stranding as in *\*the skill he worded this with*.

We agree with Bresnan's argument that there is no reason why the passive predicates, not the active predicates, should be 'semantic words'. Furthermore there are many instances of noncontiguous syntactic strings like *take. . . to task* (reprove), *bring . . . to* (revive) which are semantic units.

As we have seen so far, Reanalysis appears to be fraught with defects and it doesn't seem to be independently motivated.

## 2.2. Barrier Approach

Before investigating the barrier approach, let us consider the properties of preposition stranding in English.

Preposition stranding appears to be rather free in English, whereas in Dutch it shows only in restricted contexts. Moreover, certain language like French does not allow preposition stranding at all as we can see in (23):

- (23) a. \*Jean a été compté sur par tout le monde  
       Jean has been counted on by everybody  
 b. \*Qui est-ce que tout le monde a compté sur?  
       who is-it that everybody has counted on



The above examples demonstrate that a language like French has no possibility of making pseudopassive and in case of Wh-movement the pied-piping is obligatory as in (24):

- (24) Sur qui est-ce que tout le monde a compté?  
 On who is it that everybody has counted

Another remarkable thing with preposition stranding is that it affects both pseudopassive and Wh-movement alike. However, if we look at this more carefully it reveals that preposition stranding is much freer with Wh-movement than with NP-movement as we can see in (25)-(27):

- (25) a. What did you talk to Bill about ?  
 b. \*This problem was talked to Bill about by no one  
 (26) a. How many hours did you argue for?  
 b. \*Many hours were argued for  
 (27) a. Which president did you read a book about?  
 b. \*President de Gaulle was read a book about

Let us now turn to a more recent syntactic analysis of preposition stranding by Chomsky (1986b). Consider the following examples.

- (28) a. Which city did you witness [<sub>NP</sub> the [<sub>destruction</sub> [<sub>PP</sub> of t]]]?  
 b. \*Which city did you meet [<sub>NP</sub> the [<sub>man</sub> [<sub>PP</sub> from t]]]?  
 (Chomsky 1986b:80)

According to Chomsky, since the PP in (28a) is L-marked by the N *destruction*, it is not a blocking category BC, and therefore not a barrier. In addition, since the whole NP *the destruction of* is also L-marked by the V *witness*, this is not a barrier. Therefore the extraction from the PP does not violate the Subadjacency condition.

In contrast, the PP in (28b) is not L-marked because the sister to the PP is not the lexical category N but its projection N'.<sup>2)</sup> Hence the PP

is a barrier since the NP inherits barrierhood, two barriers are crossed and a Subjacency violation.

Let us next consider the following examples.

- (29) a. Who did John give the book [to t]?
- b. \*Which vacation did John go to Hawaii [during t]?

In (29a), the NP moves successive-cyclically, first to the VP by adjunction and then to the specifier of CP. Since the PP under V' is L-marked by V and hence is neither a BC nor a barrier, then the VP is not a barrier, either.

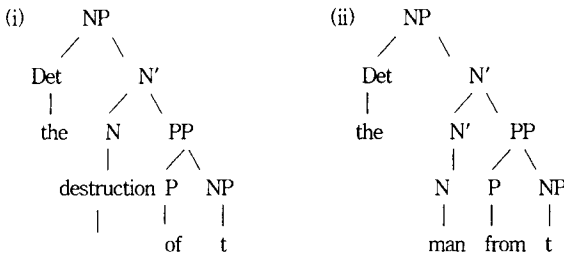
In contrast, the NP in (29b) crosses two barriers, one being the PP which is not L-marked and the other the IP which inherits barrierhood from the PP. Thus the sentence (29b) is ungrammatical because it violates the Subjacency condition.

In the next section we will consider the functional analysis.

### 3. Functional Analysis

With respect to the phenomenon of preposition stranding, Takami (1988) suggests that analyses of preposition stranding based on syntactic conditions only fail to account for it fully. He, instead, argues that whether a preposition can be stranded or not is mainly dependent upon whether that prepositional phrase (more specifically, the NP

2) The structure for each of the NPs is given in (i) and (ii):



complement of the preposition) functionally conveys *more important (newer) information*<sup>3)</sup> than the rest of the sentence.

Consider the following examples which he presents as counterexamples to the syntactic analyses.

- (30) a. John gave the book to a young girl.  
 b. John was still a small boy in 1950. (Kuno 1975:168)
- (31) a. Which girl did John give the book [to t]?  
 b. \*Which year was John still a small boy [in t]?

To account for the grammatical difference, Takami suggests that in (30a), the PP *to a young girl* carries more important information than the other part of the sentences, while in (30b), the PP *in 1950* carries less important information than the rest of the sentence. In connection with this, he proposes the following hypothesis (Takami 1988:322).

- (32) An NP can only be extracted out of a PP which may be interpreted as being more important (newer) than the rest of the sentence.

According to him, the above hypothesis (32) can correctly predict the grammaticality of (31a) and ungrammaticality of (31b). While the *wh*-element of (31a), observing (32), is extracted out of the PP that is interpreted as being more important, in (31b), it is extracted out of the PP that is not interpreted as being more important, violating (32).

As we have seen in section 2, many syntactic analyses claimed that temporal and locative prepositions cannot be stranded. Takami, however, attributes this to the fact that temporal and locative PPs are not

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3) According to Takami (1988:313), the definition of *more important (newer) information* can roughly given like this:

- (i) An element in a sentence represents *new (more important) information* if the speaker assumes that the hearer cannot predict or could not have predicted that the element will or would occur in a particular position within the sentence.

considered to carry more important information than the remaining part of the sentence.

Consider the following examples.

- (33) a. ??Which year did you go on a holiday [in t]?  
 b. ??/\*Which date did he die [on t]?  
 (34) a. ??Which stage did John hit Mary [on t]?  
 b. \*Which country was the plane still carrying more than 300 passengers [in/over t]?

He, furthermore, says that it doesn't seem that the speaker of (33a.b) already knows that 'you' went on a holiday or that 'he' died if there is no context. Therefore, the information 'you went on a holiday' or 'he died' could be thought to become more important than the PPs.

Turning to (34a), he admits that it is not immediately clear which is more important, the PP or the remaining part of the sentence. In (34b), in contrast, the information 'the plane was still carrying more than 300 passengers' would be understood as more important, and the preposition resists stranding.

Consider the following examples.

- (35) a. Which party did John write the letter [after t]?  
 b. ??/\*Which party did John bury the letter [after t]?  
 (36) a. Which desk was the cat sleeping [under t]?  
 b. ??Which desk was the cat sleeping [under t]?

According to Takami, in (35a) and (36a), 'writing a letter', 'a cat's sleeping somewhere' are so very common that the speaker would pay attention to the PPs. The *wh*-elements, therefore, can be extracted out of these PPs, observing the hypothesis (32). In the (b) examples of (35) and (36), in contrast, this is not the case and therefore the *wh*-elements cannot be extracted out of the less important PPs.

We claim that what Takami have stated concerning more/less information is however, unclear and far from satisfactory. That kind of

concept is likely to be subject to personal judgement and intuition, since there are many sentences where the PPs are potentially ambiguous with respect to more/less important information, especially without any contextual background as we see in (37).

- (37) a. \*What did John eat salad [without t]?  
 b. What did John eat salad [with t]?

We, therefore, point out that the claim that the acceptability status of preposition stranding is indeed contingent on context or the speaker/hearer's shared knowledge will not lead to a consistent and convincing explanation of preposition stranding.

In the next section, we will try to account for preposition stranding in the Minimalist Program.

## **4. Preposition Stranding in the Minimalist Program.**

### **4.1. Phase**

Chomsky (2000, 2001) argues that derivations proceed in a cyclic way. When a sentence is derived, the derivation itself can be divided into several phases and the computation can access one phase at a time. When one phase is completed, it is sent to LF and PF. Thus, when the computation starts to build a new phase, it no longer access the old phase.

In case of wh-movement, when wh-phrases move away from its landing site, they move successive-cyclically, in other words, the movement always involves a number of short local steps.

Under the theory of phase, wh-phrase cannot move to the designated CP at one fell swoop but must drop at intermediate CP, first, because CPs are phases. This is because syntax cannot attract phrases out of completed phases except their heads and specs according to the Phase Impenetrability Condition:

(38) *Phase Impenetrability Condition (PIC)*

In the structure [<sub>ZP</sub> Z . . [<sub>HP</sub> α [H YP]]], where HP=strong phase and ZP=immediate higher strong phase, the domain of H(D(H)=YP) is not accessible to operation at ZP, but only H and its edge (E(H)=α).

In order to account for the successive cyclicity of wh-movement, Chomsky (2000,2001) and others assume that the head of every phase-inducing category has some uninterpretable feature, which triggers successive cyclic movement.

#### 4.2. PP as a Phase

According to Chomsky (2000,2001), the head and spec of phases are accessible to the computations. He assumes that CP and vP are phases. Specifically, he suggested that CP or vP is a phase but not TP or a verbal phrase headed by H lacking  $\bar{\phi}$ -features and therefore not entering into Case/agreement checking. Thus, if phases move via spec of CP and vP, they are allowed to move up further into new phases, and wh-movement can move successive cyclically.

With the emergence of a theory of phase, the previous mechanisms such as barriers and Subjacency condition have disappeared. That mechanism was regarded as an available device preventing a long-way movement at one fell swoop.

As we have seen before, many scholars have accounted for preposition stranding with the mechanism of barrier or Subjacency condition. In the theory of phase, however, these devices are no longer available, so we will try to find out whether it is possible to account for the phenomenon of preposition stranding with the phase concept. Consider the following examples which were shown in the previous section.

- (39) a. What did you speak to Bill [about t]?  
 b. \*Which vacation did John go to Hawaii [during t]?

The sentence in (39b) was given to show that preposition cannot be stranded. In connection with ungrammatical status of the sentences, we propose that PPs should be added as another phase.

In connection with the above sentence, we adopt the idea of feature percolation proposed by Welbelhuth (1989). According to him, the operator feature of a specifier or a complement can percolate up to the maximal projection. This kind of feature percolations, however, is not possible from an adjunct. Since the percolated *wh*-operator feature makes the whole projection into a *wh*-phrase, we can predict that *wh*-specifiers or complements of a phrase can move along preposition, whereas *wh*-adjuncts can not.

As we have already mentioned, Webelhuth (1989) proposed that pied-piping involves percolation of *wh*-feature from the Spec of XP to be moved along with preposition and thus any elements which take up the Spec of XP either by base-generation or by movement can move away along the preposition.

We, furthermore, pointed out that preposition stranding can be optional, which was shown in Radford (1997):

- (40) a. Who were you talking to?  
 b. To whom were you talking?

In connection with this optionality, he says that in consequence of the economy principle, operator movement moves only the minimal elements needed to check [*wh*] specifier-feature of *Q*. Therefore, we suggest that the feature percolation proposed by Webelhuth will be done optionally.

Consider the following examples again.

- (39) a. What did you speak to Bill [about *t*]?  
 b. \*Which vacation did John go to Hawaii [during *t*]?

I think that this data might suggest that PP is a phase. In this examples, PPs seem to behave like a kind of island, in that it is easier to extract elements from a PP if the PP occurs as a complement of a

verb, but not as an adjunct.

In (39a), it seems that the wh-complement of P moves to the Spec of PP and percolates its wh-feature to the Spec and next up to the whole PP. So the whole PP can move into the Spec of CP in the next cycle. If this kind of feature percolation, however, does not occur, then only the wh-constituent moves out into the Spec of CP. In contrast, the PP in (39b) is an adjunct and if the wh-constituent moves out again into spec of CP, then it results in the violation of *Phase Impenetrability Condition (PIC)*.

So far, following the phase in Chomsky (2000,2001) and feature percolation of Webelhuth (1989), we could account for the phenomenon of preposition stranding.

## 5. Conclusion

Preposition stranding is crosslinguistically very rare, and in particular, is more free in English. Another peculiar thing is that preposition stranding affects both pseudopassive and wh-movement alike. However a close look reveals that preposition stranding is much freer with wh-movement than with NP-movement.

In this paper we noted that many scholars have accounted for preposition stranding with the mechanism of barrier or Subjacency condition. Under the theory of phase, however, this devices are no longer available, so we tried to find out whether it is possible to account for the phenomenon of preposition stranding with the phase in Chomsky (2000, 2001). I think there are many thing to be done with related to preposition stranding.

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