

Title	A Study on the Prepositional Passive
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Citation	Osaka Literary Review. 26 P.27-P.39
Issue Date	1987-12-20
Text Version	publisher
URL	https://doi.org/10.18910/25541
DOI	10.18910/25541
rights	
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A Study on the Prepositional Passive

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0. Introduction

The prepositional passive construction, which is often called “pseudo-passive”, has been one of the popular topics in the generative grammar. What attracts linguists’ attention is its peculiar collocation which contains the past participle of an intransitive verb and a preposition instead of the past participle of a transitive verb, as is shown in (1):

(1) $NP_1 + be + V-en + P (+ by NP_2)$

In the earlier framework of the generative grammar, Chomsky (1965: 101–106) argues that the prepositional passive is formed by the rule of pseudopassivization. In the present Government and Binding Theory, however, the rule of pseudopassivization is incorporated into NP-movement. Furthermore, the prepositional passive is regarded as one of the phenomena of the preposition stranding. It has been compared with the case of other languages such as Dutch, French, and Italian, and given more general accounts. However, the analyses so far have been mainly syntactic and they cannot fully explain the prepositional passive construction.

Therefore, the aim of this paper is to give the correct analysis to the prepositional passive construction, emphasizing the following three points:

- i. Reanalysis and its domain.
- ii. Lexical property of a verb and the status of PP.
- iii. The θ -roles assigned by the complex verb.

1. Three mechanisms by Hornstein and Weinberg (1981)

Most of the recent syntactic studies on the prepositional passive seem to agree that V+P forms a complex verb. However, they do not agree on the level where the complex verb is formed.

There are two approaches to this problem. One of them is Bresnan

(1982), who proposes that the complex verb is formed in the lexicon by the rule of V-P Incorporation. On the other hand, Chomsky (1981, 1985), Hornstein & Weinberg (1981), and Stowell (1982) advocate that the complex verb is formed by the syntactic rule of Reanalysis.

My opinion is that the complex verb is formed both in the lexicon and in the syntax.

- (2) a. This problem should be accounted for.
 - b. Those children must be looked after.
 - (3) a. The chair was sat on by Sara.
 - b. She's not a woman to tolerate being played with.
- (Cowie & Mackin, 1975)

The complex verbs in (2), *accounted for* and *looked after*, are formed in the lexicon, while the ones in (3), *sat on* and *played with*, are formed in the syntax.

In this paper, I will limit my discussion to the syntactic reanalysis. Among the analyses which support the syntactic reanalysis, I agree on the three mechanisms proposed by Hornstein & Weinberg (1981) (hereafter, H & W (1981)), which are stated as follows:

- (4) a. A universal Case-marking convention.
- b. A universal filter blocking oblique traces.
- c. A language-specific rule of syntactic reanalysis.

Let us look over how these three mechanisms interact. First, a universal Case-marking convention (4a) is stated as (5):

- (5) a. NP is marked [+ nominative] if it is governed by trace, i.e. if it is marked the subject of a tensed sentence.
 - b. NP is marked [+ objective] if it is governed by V.
 - c. NP is marked [+ oblique] if it is governed by P.
 - d. *Wh*-NPs are assigned the case of the closest trace which bears their index and which is in a possible Case position. Both the *wh*-element and the relevant trace are marked with Case.
- (H & W, 1981: 60-61)

Among the four Case-marking rules in (5), (5b) and (5c) are important. That is, V and P give the different Case-marking to NP.

Secondly, (4b) is described as (6):

- (6) * $[\text{NP } e]$ oblique
 oblique (H & W, 1981: 60)

The filter (6) blocks the traces which are marked oblique by the Case-marking rules (5c) or (5d). The filter would block all the preposition stranding constructions if it is used alone. For instance, all the sentences in (7) would be ruled out, for the traces would be governed by a preposition and hence blocked by the oblique trace filter.

- (7) a. Mary_i was counted on t_i.
 b. *Dinner_i was quarreled before t_i.
 c. Who_i will they count on t_i?
 d. *What time_i did John arrive at t_i?

In order to explain the varying acceptability in (7) and to maintain the oblique trace filter, the syntactic rule (4c), which is described as (8) is introduced:

- (8) $V \longrightarrow V^*$ (where V c-commands all elements in V*)
 (H & W, 1981: 60)

The rule applies in the base. Besides it is optional. The D-structure of (7a) is (9a) and it may be reanalyzed as (9b):

- (9) a. [_S ^e was [_{VP} counted [_{PP} on Mary]]]
 b. [_S ^e was [_{VP} [_V counted on [_{NP} Mary]]]]

In (9b), *Mary* is no longer governed by the preposition *on*, but is governed by the complex verb *counted on*. Hence when *Mary* is moved into the empty subject position, the trace is marked [+ objective], and the sentence is acceptable.

The important notion here is the domain of Reanalysis. The rule (8) states that the domain is limited to VP whose head is V itself. Therefore, Reanalysis does not affect PP which is immediately dominated by the S-node. (7b) and (7d) are ruled out for this reason.

2. Problems in Hornstein & Weinberg (1981)

As we have seen, H & W (1981) explain both NP-stranding and *wh*-stranding in terms of Reanalysis and the oblique trace filter. I agree on their three mechanisms described in (4). Their analysis seems to reflect the

recent trend in the syntactic theory, that is, to explain constructions in terms of the general principles rather than the construction-specific rules. On closer inspection, however, there are at least two problems in their analysis.

The first problem lies in the classification of PP. H & W argue that there are two kinds of PP – PP dominated by S and PP dominated by VP. However, there seems to be another PP.

H & W introduce Dresher's test to determine the node immediately dominating PP. Let us apply this test to a set of sentences with semantically different PPs.

- (10) a. On the chair sat a tall, handsome stranger.
 b. In the black castle lived a tall, handsome knight.
 c. ?With this spoon ate the King of France.
 d. ?With Martha played a tall, dark, handsome boy.
 e. *At 50 mph went a long train.
 f. *After dinner quarreled a husband and a wife.

According to Dresher's test, the acceptable sentences, (10a) and (10b), are classified to be dominated by VP-node, while unacceptable sentences, (10c) and (10d), are classified to be dominated by S-node. Then how about (10e) and (10f)? In the next section I will show that the tests other than Dresher's test also suggest the existence of the third type of PP.

The second problem is that the analysis by H & W can not explain all the prepositional passive sentences. Although H & W have succeeded in explaining both NP-stranding and *wh*-stranding through the common principles, their analysis is not sufficient to account for the fact that NP-stranding is accepted in less cases than *wh*-stranding.

- (11) a. *John was talked to Harry.
 b. Who did Sam talk to Harry about?
 c. *The table was put the mouse on.
 d. What table did Harry put the mouse on?

(H & W, 1981: 65)

In order to explain the varying acceptability in (11), H & W resort to a notion "semantic word".¹⁾ H & W argue that (11a) and (11c) are excluded for the reason that the predicates *talked to Harry about* and *put the*

mouse on are not semantic words and therefore cannot be related to arguments.

However, there are sentences which include semantic-word predicates but which are not acceptable.

- (12) a. *Chicago was lived in by Mary.
 b. *This chair was sat near by my mother.

In (12a) the predicate *lived in* seems to be qualified as a semantic word, for *lived in* may be paraphrased into *inhabited*. And yet, the sentence is not acceptable. The same is true of (12b). These facts indicate that it might be necessary to appeal to another semantic account in order to fully account for the difference in the acceptability of the prepositional passive and *wh*-stranding. This problem will be tackled with in the section 4.

3. Classification of PP

In this section, I will demonstrate that there are three kinds of PPs and that their accessibility to Reanalysis plays an important role in the acceptability of the prepositional passive.

The sentences in (10) suggested that there might be the third type of PP in addition to the two proposed in H & W. In addition to Drescher's test, we may apply *do-so* test which was adopted by Jackendoff (1977). According to Jackendoff (1977), the phrase *do so* may be followed only by the elements which are outside PP-node. If PP is a complement of a verb, then it cannot follow *do so* in the test. On the other hand, PP dominated by S can follow *do so* in the same context. Let us apply *do-so* test to the same paradigm as (10). The following is the result of the test:

- (13) a. *He sat on the chair, but Mary did so on the bench.
 b. *She lived in the small cottage, but I did so in the huge mansion.
 c. ?He sometimes ate with this spoon, but I never did so with that spoon.
 d. ?He often played with Martha, but I never did so with her.
 e. ?This train goes at 50 mph, but that one does so at 60 mph.
 f. They often quarreled after dinner, but we did so before dinner.

Let us compare (13) with (10). The results are almost parallel, though *goes at* behaves like *ate with* and *play with* in (13), while it behaves like *quarrel after* in (10).

The results of Drescher's test and *do-so* test may lead us to conclude that the third type of PP actually exists. Then, the question may arise as to how the third type should be placed in the lexicon and syntax. In order to clarify the status of the third type, let us consider *wh*-stranding constructions, whose acceptability seems to depend on the purely syntactic factor, i.e., the internality of PP.

- (7) c. Who_i will they count on t_i?
 d. *What time_i did John arrive at t_i?

The reason we exclude (7d) is that *at what time* cannot be reanalyzed. If we continue to agree on the domain of Reanalysis stated in (8), we may avail ourselves to *wh*-stranding constructions to determine the constituency of PP. In other words, if PP is internal to VP, the *wh*-stranding construction which contains the PP is acceptable. On the other hand, if PP is external to VP, the *wh*-stranding construction will be ruled out.

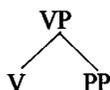
The following paradigm is parallel to (10) and (13):²⁾

- (14) a. Which chair did you sit on?
 b. Which house did you live in?
 c. Which spoon did you eat with?
 d. Who did you play with?
 e. *What did you quarrel after?

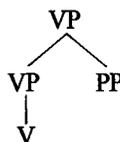
The fact that (14c) and (14d) are acceptable suggest that *with which spoon* in (14c) and *with who* in (14d) are internal to VP at D-structure.

The next step is to explain the difference between PPs in (14a) and (14b), and those in (14c) and (14d). Let us assume that PPs in (14a) and (14b) appear in the structure (15a) and those in (14c) and (14d) appear in the structure (15b):

(15) a.



b.



The structural difference between (15a) and (15b) may be the reflection of the difference in the lexicon. The idea which underlies this assumption is that there seems to be a certain relationship between the subcategorizational status of a phrase and its geometric constituency in the tree. Supposing that only the element which is the sister of the verb is identified as an argument of the verb and thus needs to be specified in the lexicon, PP in (15a), but not PP in (15b), may be specified in the lexical entry of a verb.

In spite of this structural difference, not only PP in (15a) but also PP in (15b) undergoes Reanalysis, for both PPs satisfy the condition concerning the domain of Reanalysis stated in (8).

To summarize, PP may be classified in the following manner:³⁾

(16) Type I: PP which is listed in the lexicon of a verb.

e.g. I sat *on the chair*.

Mary lives *in the house*.

Type II: PP which is not listed in the lexicon of a verb and which is adjoined to its VP.

e.g. I ate *with this spoon*.

Bill played *with Mary*.

Type III: PP which is not listed in the lexicon and which is immediately dominated by S.

e.g. Dan and Mike quarreled *after dinner*.

4. Thematic constraint and θ -role checking convention

In this section, we will consider the second problem pointed out in the section 2 and propose the semantic constraint which leads to the varying acceptability of the prepositional passive construction.

First, consider the sentences with Type III PP.

(17) a. *Dinner was quarreled after.

b. *This hour must be lived during.

In (17), both sentences are excluded for the structural reason. It is impossible to move NP from PP dominated by S. Since Reanalysis does not apply to the D-structure representation of (17), the NP-trace receives the oblique Case, and therefore the sentences are ruled out.

On the other hand, the sentences with Type I PP and Type II PP show diverse acceptability.

- (18) a. The chair was sat on.
 b. *The chair was sat near.
- (19) a. Mary was played with.
 b. *John's mother was traveled with.

According to the analysis in the last section, all the sentences in (18) and (19) contain PP accessible to Reanalysis and hence they should be acceptable. Nevertheless, (18b) and (19b) betray this prediction. At this point, the structural analysis in terms of Case theory seems to stop working. It may be necessary to resort to the semantic factor rather than the syntactic one in order to account for the varying acceptability in (18) and (19).

Apart from Case theory, let us betake ourselves to θ -theory to solve this problem. In the first place, let us consider the θ -role assignment to PP before Reanalysis. With regard to the θ -marking, Chomsky (1981: 37–38) gives its definition as follows:

- (20) ...if α subcategorizes the position β , then α θ -marks β and θ -marks a category C such that C or a trace C occupies β .

According to the definition (20), Type I PP is θ -marked by the verb and a θ -role is assigned to the PP. On the other hand, a θ -role is not assigned to Type II PP before Reanalysis because it is not an argument of the verb.

In the second place, let us consider the θ -role assignment after Reanalysis. Reanalysis we are concerned with is the one which takes place between a verb and PP.

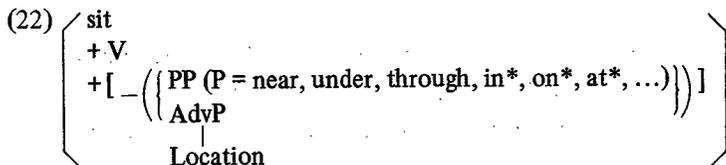
In the case of Type II PP, a verb and a preposition (V + P) undergo Reanalysis and forms a complex verb.

- (21) a. I [$\sqrt{\text{VP}}$ sat [PP on the chair]]
 b. I [$\sqrt{\text{VP}}$ [$\sqrt{\text{V}}$ sat on] [NP the chair]]

The internal structure of (21a) is turned into that of (21b) after going through Reanalysis. In (21a) the verb *sat* assigns the θ -role of Location to the PP *on the chair*.⁴⁾ In (21b) the complex verb *sat on* assigns a new θ -role, Theme.⁵⁾ The two internal structures of the VP *sat on the chair* lead to the ambiguous reading of the VP. Note, however, that (18a) has

only Theme reading, for an acceptable NP-stranding construction must undergo Reanalysis.

The θ -roles given by newly created verbs differ according to the prepositions. For instance, *sit near* and *sit under* give the θ -role of Location. We may assume that the θ -role which a complex verb gives is marked on the prepositions in the lexicon. Therefore, the lexical representation of the verb *sit* may be as follows:



In (22) *in**, *on**, *at** indicate that when those prepositions and the verb *sit* form complex verbs, they assign the θ -role of Theme, which is different from the original θ -role, Location.

Now let us turn to Type II PP.

- (23) a. Bill [$\sqrt{\text{P}}$ played [PP with Mary]]
 b. Bill [$\sqrt{\text{P}}$ [$\sqrt{\text{V}}$ played with] [NP Mary]]

In (23a), the structure before Reanalysis, the verb *played* does not have an ability to give a θ -role. When Reanalysis applies, however, the complex verb *played with* is able to assign a θ -role to its object *Mary*. At first glance it might seem that the creation of a new θ -role is against the Projection Principle, for there is no way to state the possibility of the θ -roleassignment in the lexicon of the verb *play*. However, the problem disappears if we regard Reanalysis as an exceptional operation and that a newly created complex verb obtains a new lexical representation.

Furthermore, let us assume that the label of the θ -role assigned by a reanalyzed complex verb is determined at LF. In order to support this assumption, we may propose the θ -role Checking Convention stated as (24):

- (24) *θ -role Checking Convention*
1. Give semantic interpretation to each constituent of the sentence.
 2. Compile the interpretation of all the constituents.

3. Check the θ -roles against the compiled interpretation and correct the argument structure according to the interpretation.

After the θ -role Checking Convention operates, the complex verb *played with* in (23b), which means “toyed with”, assigns the θ -role of Theme to the trace. On the other hand, the complex verb *traveled with* in (19b) means only “traveled together” and assigns the θ -role of Accompaniment to its object.

It has been shown that (18a) and (19a) which are acceptable sentences contain complex verbs which assign the θ -role of Theme. In addition, the sentences with the θ -role of Goal and Source are also acceptable.⁶⁾

- (25) a. The conclusion was arrived at.
b. *The station was arrived at.

- (26) a. The cage was escaped from.
b. *The airport was departed from.

The complex verb *arrived at* in (25a) assigns the θ -role of Goal, while *arrived at* in (25b) assigns the θ -role of Location. In (26) the complex verb *escaped from* assigns the θ -role of Source, while the verb *departed from* assigns the θ -role of Location.⁷⁾

The observation of the prepositional passive sentences in terms of the θ -roles leads us to assume that the labels of θ -roles may be a key to the acceptability of the prepositional passive sentences. Thus we may propose the following thematic constraint:

(27) *The θ -role Condition*

A chain which consists of NP in the external argument position and its trace in the internal argument position must be assigned the θ -role of Theme, Goal, or Source.

The θ -role Condition, along with the θ -role Checking Convention, enables us to account for the distinction between (28a) and (11a), repeated here as (28b).

- (28) a. Chicago has been lived in by generations of immigrants.
b. *Chicago was lived in by Mary.

The complex verb *lived in* assigns the θ -role of Theme after Reanalysis. At LF, (24) operates and checks whether the θ -role is still consistent with the semantic interpretation of the arguments or not. In (28a) *Chicago* can hold the θ -role of Theme against *by generations of immigrants* with the θ -role of Agent. Therefore (28a) satisfies (27). On the other hand, however, it becomes difficult to maintain the original argument structure in (28b). When we consider the relative balance between *Chicago* and *Mary*, *Mary* as Agent is too small and weak to keep *Chicago* as Theme. In other words, the chain which consists of *Chicago* and its trace cannot hold the θ -role of Theme against *by Mary*. Hence (28b) fails to meet the condition (27) and the sentence is ruled out.

The varying acceptability in (29) can be also explained by (24) and (27).

- (29) a. *The bridge was walked under by John.
 b. The bridge has been walked under by generations of lovers.
 (Bolinger, 1975)

The verb *walk* may have a lexical representation which is similar to *sit* in (22). According to the representation, *walked under* gives the θ role of Location and therefore (29a) is excluded. Then (29b), which also contains *walked under*, seems to violate (27). However, if we assume that when (24) operates at LF, the present perfect and *by*-phrase work as factors to change the θ -role of Location into that of Theme. As a result, (29b) satisfies (27).

The θ -role Condition (27) applies not only to the prepositional passive but also other constructions. Observe the following passive sentences.

- (30) a. The agreement was reached.
 b. *The airport was reached.

In (30a) the verb *reached* assigns Goal, while it assigns Location in (30b). Therefore only (30a) is acceptable.

5. Conclusion

In this paper, I have classified PP and argued that the prepositional passive sentence is the result of NP-movement in the sentence with either

type I PP or type II PP. Besides I have proposed the θ -role Checking Convention (24) and the θ -role Condition (27). The θ -role Condition seems to be fairly general. The θ -role Checking Condition may be also given an important status in that it enables us to account for the problems involving pragmatic phases, such as mode, aspect, and *by*-phrase.

Recent works in the frame of GB theory appear to neglect the labels of θ -roles. However, what we have observed in this paper may suggest that the classification of the θ -roles still plays an important part in the theory of Grammar.

NOTES

*This is a revised version of Chapter II, III, V of my M.A. thesis.

- 1) See H & W (1981: 65) for the definition of a semantic word.
- 2) The example of *wh*-movement that contains *go at 50 mph* was not available. The interrogative counterpart of (13e) may be (i):
(i) How fast did the train go?
- 3) One of Bresnan's counterexamples to H & W is that the purposive *for*, dominated by S, permits *wh*-stranding. However, if we assume that the *for*-PP is Type II, the problems may be solved.
- 4) Location may be defined as the place where Agent or Theme is located.
- 5) Theme may be defined as the object of the action or process denoted by the verb.
- 6) Goal may be defined as the final or target position of Agent or Theme. Source may be defined as the initial position of Agent or Theme.
- 7) The middle construction also appears to observe (27).

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