

A Semantic Analysis of Preposition Stranding on Historical Principles

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0. Abstract

The purpose of this paper is to analyze 'preposition stranding' from both semantic and historical points of view. Our main concern is with the analysis of the phenomenon in terms of semantic interpretability based on language processing, and with an attempt, in historical perspective, to solve the problem of preposition stranding to which little attention has been given. The cases we will deal with might be exceptional or peripheral phenomena in syntax, but throughout the analysis of such cases from a semantic point of view, we will find the real conditioning factor of preposition stranding.

1. Introduction

In English we often come across the construction in which *wh*-phrase extraction of an object NP from the PP is possible so that the *wh*-interrogative sentence is yielded. (1) and (2), for example, are derived from (1') and (2') respectively:

- (1) Which subject did you read a book about?
- (1') Did you read a book about which subject?
- (2) Who did you write a letter to?
- (2') Did you write a letter to whom?

In (1) and (2), the preposition can be 'stranded' at the end position, so the phenomenon of this kind is referred to as 'preposition stranding.'

A large number of studies on preposition stranding have so far been made. What seems to be lacking, however, is to make an approach on semantic grounds. That is to say, it is well-known that a variety of approaches have so far been made to the phenomenon in terms of syntax. However, it does not seem to be possible that a purely syntactic approach provides a plausible explanation for the cases such as (3):

- (3) *Which subject did you *burn* a book about?
- (4)=(1) Which subject did you read a book about?

In relation to (1), (3), needless to say, both of the pied-piped sentences below are perfectly acceptable:

- (5) About which subject did you read a book?
(cf. (1) Which subject did you read a book about?)
- (6) About which subject did you burn a book?
(cf. (3) *Which subject did you burn a book about?)

And also it is generally accepted that the sentence (5) is more frequent in style than its counterpart (1) is.

Let us now turn to the problem of preposition stranding. Dealing with the cases such as (3), we will take up a semantic approach with which the phenomenon can and should be explained since there seems to be no syntactic approach to make a plausible analysis of the phenomenon. The approach proposed in this paper involves cognitive considerations. In addition to the semantic analysis of preposition stranding, there is one further point that we must not ignore: Historical considerations, in some cases, play an important role to solve the problem of the phenomenon.

Thus, in section 2, on cognitive-semantic grounds, we will discuss the relationship between the strandability of the prepositions and the semantic interpretation. Moreover, section 3 surveys the phenomenon with special emphasis on the *history of prepositions*. What has to be noticed is, for example, that a group of prepositions such as *during*, *concerning* can NOT be stranded in any case as in the following:

- (7) *Which vacation did John go to Hawaii *during*?
- (8) *Which literature did you read the book *concerning*?

These cases seem to necessitate the analysis of the phenomenon also from a historical point of view.

Subsequently, in section 4, some cases will be pointed out which seem not to have so far been dealt with in the previous studies of the phenomenon. In the *wh*-interrogatives where the prepositions begin the sentences, some of them receive more than one interpretations. Such ambiguity seems to stem from the lexical properties of both of the prepositions and the verbs. Thus, to clarify it, we will offer a semantic explanation classifying these prepositions and verbs.

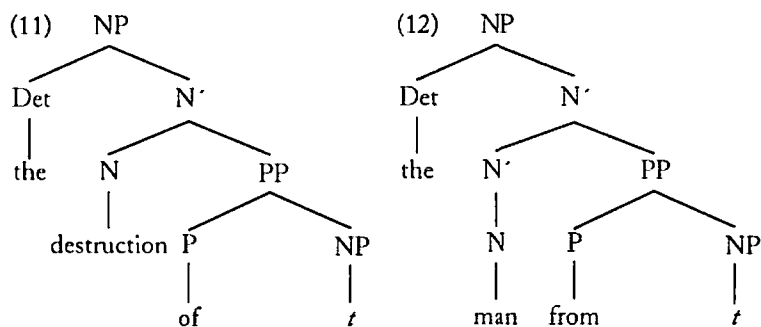
2. An Approach on Semantic Grounds to Preposition Stranding

Before discussing preposition stranding itself in terms of semantics, we will briefly review how the phenomenon can be dealt with from a purely syntactic point of view.¹ Let us consider the following analysis, which is presented in Chomsky (1986a):

- (9) Which city did you witness [_{NP} the [destruction [_{PP} of *t*]]] ?
- (10) *Which city did you meet [_{NP} the [man [_{PP} from *t*]]] ?

We can see that the structures for the NPs in (9) and (10) are presented in the diagrams (11) and (12), respectively:

¹We made reference to Takami (1992).

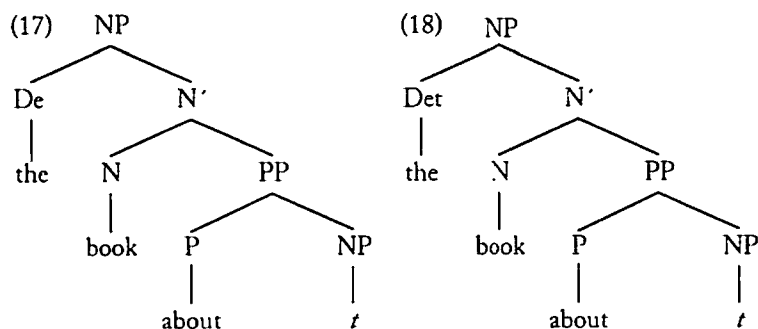


Following Chomsky's proposal, the PP in the diagram (11) is not a 'blocking category' because it is L-marked by the N *destruction*, and therefore it is not a 'barrier.' And then since the whole NP is also L-marked by the V *witness*, this is not a barrier, either. Thus the extraction from the PP does not violate the 'subjacency condition.' On the other hand, since the sister to the PP in the diagram (12) is not the lexical category N but its projection N', the PP is not L-marked. Therefore the PP is regarded as a barrier. Two barriers are crossed and the subjacency condition is violated because the NP inherits barrierhood (cf. Takami, 1992)

Having taken a brief look at Chomsky's argument, how can we account for the following contrastive cases?

- (13)(=1) Which subject did you read a book about?
 (14)(=3) *Which subject did you burn a book about?
 (15) Which party did John write the letter after?
 (16) *Which party did John bury the letter after? ((15)-(16) in Takami, 1992, p.40))

In each pair above the verbs used are different though the structures are identical. The structure for each of (13) and (14) are, for example, shown briefly as the diagrams (17) and (18), respectively.



As shown in the diagrams (17) and (18), since the structures are the same, but make sentences different in acceptability, we can not handle a case of preposition stranding such as (14) and (16) along the same line.

As to the sentences such as (14) and (16), Chomsky (1977, p.114) argues that the idiosyncratic lexical properties of verbs play an important role in deciding the acceptability of preposition stranding. He assumes that an extraction rule of an object NP from the PP applies to *see*, *find*, etc., but not to

destroy, *burn*, and he presents the well-known examples as follows:

- (19) a. Who did you see a picture of?
b. *Who did you destroy a picture of?

It follows from Chomsky's argument that the extraction rule applies to *read*, *write* as in (13) and (15), but not to *burn* and *bury* in (14) and (16), respectively.

However, this claim seems to be too strong since it happens that the same syntactic structures with **Which party did John bury the letter after?* / **Who did you destroy a picture of?* as in (16) and (19b) can be perfectly acceptable as follows:

- (20) Which attack did the pirates *bury the treasure* after? (Takami, 1992, p. 40)
(21) Which actress did the lunatic *burn a picture* of? (Takami, 1992, p. 60)

As we have seen, a syntax-oriented approach fails to capture the real conditioning factors of preposition stranding. Its unsatisfactory results are clearly considered to have come from an absence of the semantic considerations of the phenomenon. Syntax can not be autonomous and it forms part of a single fabric with other human abilities as an aspect of general intelligence. We make an attempt to discern what such a working counter-example to the syntactic explanation might be. The capacity to process syntactic structures has basically much to do with semantic-cognitive structures and processes. Preposition stranding is a quintessentially syntactic phenomenon but some close observations of it reveal significant correlations and interactions between extraction processes and a variety of semantic factors.

Now, as we observe below, we make an explanation of the interrelation between the strandability and the semantic interpretation. It seems that the degree of the strandability is dependent on *whether or not the sentence can be readily interpreted*. This is a factor relative to human psychology. That is to say, the hearer can more readily imagine, for example, the word *doctor* after the word *nurse* is uttered than he/she can do after the word *butter* is (This is called *semantic priming effect* in human psychology).

Moreover, on the level of a context-directed interpretation of language, a particular context-setting word, e.g., *fishing*, may never have been explicitly mentioned beforehand in the text or discourse, but if the utterance *John spent his weekend at a riverside* is made, *fishing* may nonetheless be readily inferred by the hearer, supposing he/she knows that John likes fishing. Thus, the interpretation of natural language requires that cooperative application of many systems of knowledge and real-world knowledge about stereo-typical situations (cf. Waltz and Pollack, 1985).

Here, let us look at the following pair of examples:

- (22)=(15) Which party did John write the letter after?
(23)=(16) *Which party did John bury the letter after?

In (22), because *write the letter* is a very natural activity and is not at all an unusual nor abnormal one, (22) can be readily and, therefore, naturally interpreted. On the other hand, in (23) *bury the letter* is so rare an activity in everyday life that if (23) is uttered unexpectedly, it can NOT be readily interpreted. In other words, hearers (unprepared minds) are generally supposed to expect normal and natural sequence of words in meaning. Thus in circumstances like this, the hearer can readily interpret (or process) (22) even if it is uttered unexpectedly:

(22') Which party did John write the letter after?

—————→
sentence processing

As shown in (22'), the sentence can be readily and smoothly processed to the end of it. On the other hand, in (23), because *bury the letter* is an unusual or abnormal activity, the sentence can not be readily processed toward the end of it:

(23') *Which party did John bury the letter after?

—————→.....
sentence processing

As shown in (23'), the verb phrase *bury the letter* acts as a 'semantic barrier' to the ready and natural processing. That is, *bury the letter* does not allow the preposition *after* to be stranded since there is a barrier between *bury the letter* and *after* to prevent any natural semantic interpretation. It is clear that the degree of acceptability comes from the difference in the semantic interpretability between *write the letter* and *bury the letter*.

In relation to the arguments above, it is worth taking up A. Lehrer's (1970) argument of verbs and deletable objects. Let us take a brief look at her argument, and see how it is related to the present analysis.

Lehrer argues that all the objects are identical to the objects marked in the lexicon as deletable. For example,

(24) Mary writes a letter to him every week.

(24) conveys the same information as (25) does:

(25) Mary writes to him every week.

When the object of the verb is deleted in (24), then we can get the sentence (25). When the speaker utters (25), the hearer is able to make an *inference* that (25) is identical in meaning to (24). That is, with real-world knowledge, the hearer recognizes that *write* and *letter* are readily linked or connected to each other. So we can consider that the words are semantically close-linked, so that the sentence is readily interpreted (or processed). Lehrer proposes as follows:

The object may be deleted only when it is identical to the object marked in the lexicon as deletable (*op. cit.*, p. 249).

If we follow her proposal, we will see the verbs below belong to the same kind of classes as *write (a letter)*:

bury (a dead body/ a treasure), drive (a car), expropriate (property), read (a book), sing (a song)

From this, we can conclude that there is a semantically highly close relationship between the verb and its object. The sentence with a verb phrase such as *bury a dead body/ a treasure* or *drive a car* is

readily interpreted whether or not there exists a preceding context. In other words, the object of the verb phrase of this kind is allowed to be deleted without loss of information, to such an extent that the sentence can be readily interpreted by means of its semantic force of the verb phrase. If we hear the verb *read* or *drive*, a sequence such as *read a book* or *drive a car* is produced without any difficulty. As a further example of such close relatedness within a verb phrase, let us consider the sentence *Mary began a book* cited in Pustejovsky and Boguraev (1993). They argue that in the verb phrase *began a book*, the prototypical ellipsis-predicate is *to read/reading* since the noun *book* contains information of the 'reading activity'. Clearly, the argument above is considered to be another illustration of the semantically close relationship between *read* and *book*. The point is that from the semantic force of the verb phrase as such, it becomes clear how *Mary began a book* receives a default interpretation of *Mary began to read/reading a book*. On the analysis above, therefore, we can predict the differences in acceptability in each of the following (26)-(29):

- (26) Which composer did she $\left\{ \begin{array}{c} \text{sing} \\ \text{*destroy} \end{array} \right\}$ the song for?
- (27) Which island did he $\left\{ \begin{array}{c} \text{bury} \\ \text{*eat} \end{array} \right\}$ a dead body on?
- (28) Which place did she $\left\{ \begin{array}{c} \text{write} \\ \text{*tear} \end{array} \right\}$ a letter in?
- (29) Which company did they $\left\{ \begin{array}{c} \text{drive} \\ \text{*steal} \end{array} \right\}$ a car of?

Now let us examine the contrastive cases as follows:

- (30) *Which attack did the pirates bury the letter after?
- (31) Which attack did *the pirates bury the treasure* after? (Takami, 1992, p. 40, italics, mine)

Obviously, the difference in acceptability between (30) and (31) is caused by the choice of the object of the verb. The unacceptable (30) becomes perfectly acceptable as in (31) when the object *the letter* is replaced by *the treasure*, though the verb used in both sentences is the same. As we have seen above, because *bury* and *the treasure* are so semantically close-linked to an extent that owing to the semantic force exercising on the combination of the two constituents, (31) can be readily interpreted or processed. Thus a combination as such facilitates the semantic interpretation of the sentence when the combination of the constituents in it is semantically so tight. As to (31), it should also be added that *pirates* and *bury the treasure* are considered to be so closely related since we can easily imagine "Pirates bury the treasure" in a story line such as "the treasure island." It is reasonable to say that such information or knowledge facilitates the semantic interpretation of the sentence. This claim can easily be confirmed by the following observations:

- (32) *Which actress did you $\left\{ \begin{array}{c} \text{destroy} \\ \text{tear up} \\ \text{burn} \end{array} \right\}$ a picture of?

- (33) Which actress did the lunatic $\left\{ \begin{array}{l} \text{destroy} \\ \text{tear up} \\ \text{burn} \end{array} \right\}$ a picture of? (Takami, 1992, p.62)

(32) is in sharp contrast with (33). The unacceptable (32) becomes perfectly acceptable as in (33) when the subject NP *you* is replaced by *the lunatic*, though the VPs are the same in the pair. Clearly, the acceptability difference is attributed to the subject NPs: that is, *lunatic* can be defined in the lexicon, for example, as insane or a wildly foolish person. Thus we can reasonably consider or imagine that the lunatic can destroy/ tear up/ burn a picture. The semantic interpretation in (33) but not in (32) is facilitated by such information or knowledge, and (33) is readily accepted. Along the same line, the next case can be explained:

- (34) Which building did the Godzilla $\left\{ \begin{array}{l} \text{destroy} \\ \text{burn} \end{array} \right\}$ the tower of?

As we know, the Godzilla is a destructive monster and can destroy or burn the tower of a building. Such information about the sentence subject NP facilitates a smooth semantic interpretation, so that (34) can be readily interpreted.

We have observed the phenomenon of preposition stranding in terms of semantic interpretability which is based on whether or not a sentence can be readily interpreted. It is clear that the tight combination of the constituents is an important factor in the analysis of preposition stranding.

However, in certain circumstances, semantic relatedness observed in word sequences such as *write the letter* or *bury the treasure* can NOT help to facilitate the semantic interpretation of a sentence. The important point to note is that there are situations where an intervening element between the constituents in a sentence works as an unwelcome factor to the smooth semantic interpretation. Consider the following:

- (35) Which party did John write the letter after?
 (36) * Which party did John *write the letter to Mary* after?
 (37) Which attack did the pirates bury the treasure after?
 (38) *Which attack did the pirates *bury the treasure on the island* after?
 ((35)-(38) in Takami, 1992, p. 40)

Note that (36) and (38) are NOT acceptable though *write the letter* and *bury the treasure* are used in the acceptable (35) and (37) respectively. Thus (36) and (38) are counter-examples to the present analysis only *apparently*.

They are not real counter-examples, however: In sentences such as (35) or (37), the hearer can not actually grasp the sentence completely until he/she goes as far as the preposition used in it. In circumstances like this, the longer the element between the verb's object and the preposition after it is, the more difficulty with the semantic interpretation arises:

- (39) *Which city did you sleep *in your bed* in?
 (40) *Who did Mary sing the song *she was composing at early age* in front of?

We are now led to the conclusion that there is nothing but to assume that (36) and (38) can not be

readily interpreted owing to such inserted elements as *to Mary* or *on the island*. Thus (36) and (38) are marked to be unacceptable. This analysis can be supported by the following bunch of sentences:

- (41) Who did John write the letter *to* after the party?
 (42) Which island did the pirates bury the treasure *on* after the attack?
 (43) Which bed did you sleep *in* in New York?

In (41)-(43), there is no element (before the stranded preposition) that blocks the readiness of interpretation, and (41)-(43) are marked to be acceptable. From the observations above, we are led to conclude that the *wh*-interrogative sentence in which the preposition is left at its end is in itself an unstable, or fragile construction. It is because the construction meets an immediate corruption, as in (36), only if an element intervenes between the verb's object and the preposition.

Here, on the basis of the observations of the phenomenon under discussion, we try to propose a generalization concerning the strandability of the prepositions:

- (44) low $\longleftrightarrow$ high
 strandability
 low $\longleftrightarrow$ high
 interpretability

As we noted above, preposition stranding can be explained in terms of semantic interpretability. Moreover, in our opinion, the concept of semantic interpretability seems to play an important role in other domains of linguistic phenomena. On the relation of the semantic interpretability to linguistic phenomena, we close this section with Stucky's suggestive statement:²

... we cannot afford to ignore the fact that grammaticality seems to shade into interpretability...
 Note that this would be just the sort of effect one would expect if the grammar itself were not the sole repository of constraints. (Stucky, 1987, p. 386)

3. Categorization: From Verbs to Prepositions

3.1 History of Some Prepositions

As we have mentioned in section 1, some prepositions can not be stranded in any case. Consider the following:

- (45)(=7) *Which vacation did John go to Hawaii *during*?
 (46)(=8) *Which literature did you read the book *concerning*?

²Stucky also states as follows:

I claim that the limits are not imposed by the grammar *per se*, but by human limitations on processing (Stucky, 1987, p. 391)

The syntax would not provide the structures normally considered useful as guides to semantic interpretation.

(*op. cit.*, p. 381)

And moreover, Chomsky (1986b) proposes the *Principle of Full Interpretation*. The following sentence violates the principle, because every constituent in a sentence must receive full interpretation:

*Who John saw Bill?

This principle is considered to be based on a semantic interpretability.

The cases such as (45) and (46) are intriguing ones. Here, the prepositions which have so far been dealt with can be regarded as normal ones whereas the prepositions referred to in this section as anomalous ones. A diachronical research of the prepositions such as *during*, *concerning* helps to explain the mechanism of the present linguistic phenomenon, because some historical considerations provide us with a key to the problem of preposition stranding. Here let us enter into discussion on the basis of the history of the prepositions.

Of the Modern English prepositions, some are derived from other parts of speech and others from different sources; some are derived from adverb, adjective, noun, present participle, past participle, etc., while the others appeared when the inflectional endings in OE disappeared. Let us look at some examples of the prepositions derived from the inflectional endings in OE;

- (47) *mund-um* brugdon
(= you brandished *with your hands*)
(48) *worhte* Ælfred cyning *lytl-e wered-e geweorc*
(= king Alfred built a defence-work *with a small force*) (Ueno, 1995, p.83)

The inflectional endings, *-um* and *-e* in (47) and (48) respectively correspond to the Modern English preposition *with*. And both of them functioned as 'instrumental' with the meaning of 'means.' But the meanings expressed by the inflectional endings in older English seem to have been as weak, for example, as the meaning of *-s* in *John walks to me*. Hence inflectional endings as such had not been playing no important part. In such a situation, it came about that the inflectional endings were replaced by the prepositions. *With*, *to*, *at*, and *from* are the prepositions which replaced functionally their own respective inflectional endings.

Next, let us look at the process of the derivation of the prepositions from the adverb. Consider, the next example:

- (49) He is the town *in*

In (49), the adverb *in* was placed after the NP *the town*, and was connected to the verb but not to *the town*. And *the town* between the adverb and the verb could denote the location just like *at a place* by virtue of the inflectional ending. But as the inflectional endings were leveled, they were replaced by adverbs which denoted the location more clearly. As we mentioned above, however, inflectional endings had such weak meanings that the adverb *in* which denotes the location more clearly is placed after the NP. It was because the adverb *in* had the meaning of 'inside.'

In Modern English there are prepositional adverbs which were originally adverbs and are now used both as a preposition and an adverb. Thus prepositional adverbs have now double-sided character. For example, *across*, *in*, *over* are the prepositions of this kind. And even if the NPs following a prepositional adverb are deleted in a sentence, the sentence is still grammatical; that is:

- (50) Jack went across the street.
(51) Jack fell in the water.
(52) Jack jumped over the fence.

In each sentence above the object of the PP can be deleted because the preposition can also be used as an adverb:

- (50') Jack went across.
 (51') Jack fell in.
 (52') Jack jumped over.

On the other hand, the prepositions which were derived from the inflectional endings can not function as an adverb. So if the object of the PP is deleted in a sentence, the sentence becomes ungrammatical. Compare, for example, sentences (53)-(55) with ungrammatical (53')-(55'), where the objects of the PP is deleted, respectively:

- (53) Jack shot at the target.
 (54) Jack came from Texas.
 (55) Jack cut an apple with a knife.
 (53') *Jack shot at.
 (54') *Jack came from.
 (55') *Jack cut an apple with.

It follows from the fact that *at*, *from*, *with* have a function only as a pure preposition. Therefore, it is clear from the arguments above that every pure preposition has its own history, being traced back to its inflectional endings.

3.2 Categorization and Strandability of Prepositions

Now let us take up the preposition *during*. *During* was, as we can predict, the present participle in origin. The Oxford English Dictionary tells:

during vbl. sb. [f DURE v. + -ING]
 1. The action of the verb DURE: duration
 C 1374....

during pres. pple, and prep.
 1. The pres. pple. of DURE v....
 2. Prep. Throughout the whole continuance of ; ...
 C 1440....

(OED II, p. 1134)

That is to say, *during* was derived through the course as shown in the diagram (56):

- (56) *dure* (transitive verb) + *ing* → *during*

Also, what should be emphasized here is that the preposition *during* can not be left behind in any situation.

- (57)(=7) *Which vacation did John go to Hawaii *during*?

As we mentioned above, because it was derived from a transitive verb, *during* is reasonably considered to reach for its object in its nature as transitive verbs do.

There is one further point that we cannot ignore; *during* as a preposition functions as adjective or present participle, but it can be intuitively felt by native speakers of English, so that it still requires its own object. So *during* always requires a noun to occur in the following position. Thus, we can see that *during* and its object are considered to be closely bound as one unit. Looking at (57), we must notice that *dur(ing)* and its object are separated contrary to such a close relation as we mentioned above. In (57) the separation of *during* from *during which vacation* is considered to be the cause of lower semantic interpretability, so that (57) can not be readily interpreted and, therefore, is marked to be unacceptable. From this reason, when *during* and its object are linked, we can correctly predict that the sentence with it is perfectly acceptable:

(58) During which vacation did John go to Hawaii?

It follows from the arguments above that all the other prepositions which were derived from the transitive verbs are predicted to behave exactly as *during*:

Concerning, prep. [The pres. pple. of CONCERN v....] (OED III, p. 657)

Considering, prep. [An absolute use of the pres. pple....] (OED III, p. 770)

Notwithstanding, prep. [not adv. + pres. pple. of WITHSTAND....] (OED X, p. 556)

Actually, those prepositions also can NOT be stranded in any situation:

(59) *Which literature did she read the book *concerning*?

(60) *What did he write the letter *considering*?

(61) *What did she climb the mountain *notwithstanding*?

We can say that native speakers of English today will still feel strongly that the prepositions such as *during* were originally present participles.

In analyzing preposition stranding, it seems to be necessary and vitally important to take historical aspects of the prepositions into consideration. Of course, such a historical consideration will play a very important role and work well in explaining other kinds of linguistic phenomena.

4. The Ambiguity of *Wh*-interrogative Sentences

This section will point out that the ambiguity of the cases in which the sequence of “preposition + *wh*-interrogative word” occurs at the beginning of the sentence. First, let us look at the following example in which the verb used refers to locomotion of an entity:

(62) Which room did you move in?

(62) receives only one interpretation.

In (62), however, if the preposition *in* is moved to the sentence initial, as in (63):

(63) In which room did you move?

then the sentence can receive two interpretation;

1. Inside which room did you move around?
2. Into which room did you move?

Furthermore, it is interesting to look into the cases in which the verbs used are stative ones:

- (64) In which bed did you sleep?
- (65) In which room did you $\left\{ \begin{array}{l} \text{write the letter} \\ \text{read the book} \end{array} \right\}$?

Note that the sentences above receive only one interpretation. That is, there occurs ambiguity in the sentence with a locomotional verb, whereas there doesn't occur any ambiguity in the sentence with stative verb. Here let us turn eyes for a moment to the following:

- (66) Into which room did you move?

In (66) the verb used is a locomotional one, but it receives only one interpretation. The preposition *into* is analyzed historically as a compound preposition as follows:

$$in + to \rightarrow into$$

The diagram above indicates that *into* is composed of the prepositions *in* and *to*. The preposition *to* indicates a 'goal,' so that *into* explicitly shows the movement from one place to another. This is why (66) can receive only one interpretation.

These considerations lead us to the conclusion that the preposition *in* inherently denotes the following semantic features:

$$in \left[\begin{array}{l} +\text{locomotion} \\ +\text{location} \end{array} \right]$$

On the other hand, the preposition *into* denotes the semantic features such as:

$$into \left[\begin{array}{l} +\text{locomotion} \\ -\text{location} \end{array} \right]$$

In contrast with the case of *in*, *into* is not considered to denote the semantic feature [+location] (Note; *into* can imply "the resultant location" of a locomotion). Regarding the phenomenon of preposition stranding, we have pointed out the ambiguity in the *wh*-interrogative with the stranded preposition. To put it more clearly, it is caused by the properties of both the prepositions and the verbs. Again, it is important to recognize that the lexical properties of the words are closely related to such ambiguity.

5. Concluding Remarks

We have analyzed the phenomena of preposition stranding in terms of semantics. In this paper, our approach is based upon whether or not a sentence is readily interpreted. A semantic interpretability

as such captures the real conditioning factor of preposition stranding which no syntactic approaches can. Moreover, throughout the present analysis, it is found that the preposition stranding construction is so *fragile* and *unstable* that the intrusion of some unwelcome elements upon the construction can easily cause the *immediate deconstruction*. Subsequently, we have dealt with the phenomenon from a historical perspective; some prepositions are not strandable in any case, and in the present analysis we have focused on the historical derivations of some prepositions to explain the behaviors of the prepositions of this kind. Finally, we have pointed out the ambiguity in *wh*-interrogative sentences in which the preposition is located at the initial position of the sentence. It is now clearly understood that the ambiguity can be produced by the lexical properties of prepositions and verbs.

References

- Bresnan, Joan (1976). "Evidence for a theory of unbounded transformations." in *Linguistic Analysis*, 2, pp. 353-393.
- Chomsky, Noam (1977). "On *wh*-movement." in Peter Culicover, Thomas Wasow, and Adrian Akmajian, eds. (1977), pp. 71-132.
- _____. (1986a). *Barriers*. Cambridge, MA: M.I.T. Press.
- _____. (1986b). *Knowledge of Language: Its Nature, Origin and Use*. New York: Praeger.
- Culicover, Peter, Thomas Wasow, and Adrian Akmajian, eds. (1977). *Formal Syntax*. New York: Academic Press.
- Pustejovsky, James and Branimir Boguraev (1993). "Lexical knowledge representation and natural language processing." *Artificial Intelligence*, 63, pp. 193-223.
- Hornstein, Norbert and Amy Weinberg (1981). "Case theory and preposition stranding." *Linguistic Inquiry*, 12, pp. 55-91.
- Huck, Geoffrey J. and Almerindo E. Ojeola, eds. (1987). *Syntax and Semantics, Vol. 20; Discontinuous Constituency*.
- Lehrer, Adrienne (1970). "Verbs and deletable objects." *Lingua*, 25, pp. 227-253.
- Mitchel, Bruce (1985). *Old English Syntax: Concord, the Parts of Speech, and the Sentence 1*. Oxford: Clarendon Press.
- Stucky, Susan (1987). "Configurational variation in English: A study of Extraposition and related matters." in Geoffrey J. Huck, and Almerindo E. Ojeola, eds. (1987), pp. 377-404.
- Takami, Ken-ichi (1992). *Preposition Stranding: From Syntactic to Functional Analysis*. Berlin/ New York: Mouton de Gruyter.
- Ueno, Yoshikazu (1995). *Eigo No Shikumi: Imironteki Kenkyu*. Tokyo: Eichousha.
- Waltz, David L. and Jordan B. Pollack (1985). "Massively parallel parsing: A strongly interactive model of natural language interpretation." *Cognitive Science*, 9, pp. 51-74.