

A Note on PP-Complements and Θ -Role Assignment*

Michiyo HAMASAKI

Department of Foreign Languages, Aichi University of Education, Kariya 448-8542, Japan

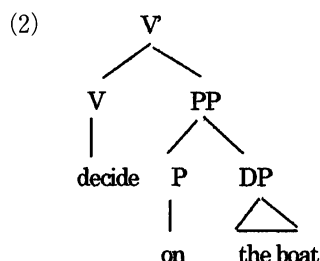
1. Introduction

As Chomsky (1965, pp. 101-106) has pointed out, the constructions consisting of a verb and a prepositional phrase can be classified into several types according to the “degrees of cohesion” between these two elements. Consider the following example:

- (1) He decided on the boat. (Chomsky (1965, p. 101))

Sentence (1) is ambiguous. It can either be interpreted as “he made his decision while on the boat” or “he chose the boat.” In the former case, the prepositional phrase denotes a place. In the latter case, however, the head of the prepositional phrase is in some way selected by the verb and they together represent the meaning of *choose*. I will refer to the former type of prepositional phrase as PP-adjuncts and the latter as PP-complements, following Neeleman (1997).

Neeleman points out that the PP-complement construction is problematic for the theory of Θ -role assignment. I will assume that a PP-complement is a sister of the verb that selects it, following Neeleman (p. 94). See also Chomsky (1965, p. 102). Example (1) then has the following structure if *on the boat* is the complement of the verb *decide*:



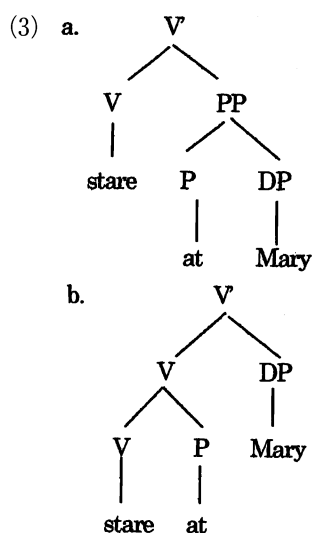
Under the sisterhood condition on Θ -role assignment (Chomsky (1986)), the preposition *on* is a possible Θ -role assigner to *the boat* in (2), but the verb *decide* is not, because only the former is a sister of *the boat*. However, not only the preposition *on* but also the verb *decide* should be participating here in the Θ -role assignment to *the boat*. As I stated above, the verb and the preposition in (2) together represent the meaning of *choose*. It seems as if the verb and the preposition jointly assign a Θ -role to *the boat*.

In this paper I will mainly examine Neeleman’s (1997) approach to the problem of Θ -role assignment in the PP-complement construction, but I will first examine one other possible approach to this problem in the next section and point out some problems with it. I will then review in section 3 Marantz’s (1984) analysis of the PP-complement construction, which is the starting point of Neeleman’s argument, and Neeleman (1997). In section 4, some empirical problems with Neeleman’s analysis will be discussed. Section 5 is a conclusion.

2. P-Incorporation and Pruning

In this section, I will examine a type of reanalysis approach to the PP-complement construction, in which the PP node is pruned with the application of P-incorporation (Radford (1988, p. 429)). The process of the

reanalysis is illustrated in (3):



(adapted from Radford (1988, p. 429))

(3b) is derived from (3a) by the incorporation of *at* into *stare* and the pruning of the PP node. In (3b), the node V dominating *stare* and *at* is a sister of the DP *Mary*. Therefore, they satisfy the sisterhood condition on Θ -role assignment.

There are some problems with the P-incorporation and pruning approach. First, the operation of pruning “surely violates the Projection Principle..., assumed in the GB framework at least until very recently.” Furthermore, “the GB framework has never offered any principle to accomplish the required pruning.” (Baltin and Postal (1996, p. 140)). Second, it is not clear how the Θ -role to be given to *Mary* is composed out of those of the verb and the preposition.

The P-incorporation and pruning approach is empirically problematic, too. That is, there is some evidence that suggests the presence of the PP node at the level of semantic interpretation, where Θ -role assignment will arguably take place. Consider the following examples:

- (4) a. John_i met Mary_j nude_{i/j}
 b. John_i met [_{PP} with Mary_j] nude_{i/*j}
- (Neeleman’s (12))

In (4a), both *John* and *Mary* can be the subject of *nude* but in (4b) only *John* can be the subject of *nude*. Neeleman assumes that a subject must c-command its predicate (Williams (1980)). In (4b), the PP dominating *Mary* prevents it from c-commanding the predicate *nude*. Therefore, *Mary* cannot be the subject of *nude*. The explanation for this contrast then requires the presence of the PP in example (4b) (Neeleman, p. 97). Consider also the following examples:

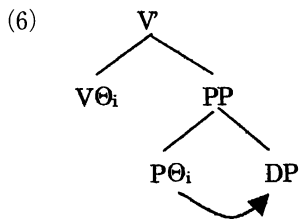
- (5) a. Mike handed the photostats all to Louise.
 b. Mike bought those books all for Louise.
 c. The air force struck (*at) those targets both in the morning.
 d. The lunatic shot (*at) the girls both with a rifle.
- (Baltin and Postal’s (23))

These examples show that a quantifier cannot modify the DP within a PP-complement. In (5a), *all* modifies *the photostats* and in (5b) it modifies *those books*. In (5c), however, *both* cannot modify *those targets* if it is the object of the preposition *at* and in (5d) *both* cannot modify *the girls* if it is the object of the preposition *at*. If LF is the only level of semantic interpretation, the PP must be “visible” or present at that level because

it blocks predication in (4b) and quantifier interpretations in (5c-d). See also Baltin and Postal (1996).¹

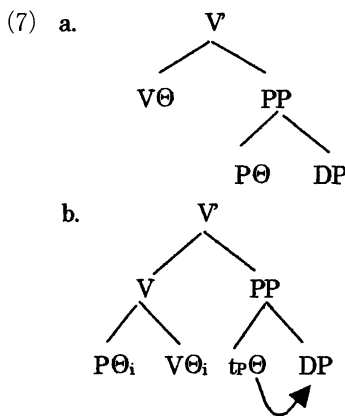
3. Marantz (1984) and Neeleman (1997)

Marantz (1984) assumes that the object of a PP-complement is an indirect argument of the verb. That is, the verb takes the object of the PP-complement as its argument but it does not directly assign a semantic role to it. Rather, the head preposition assigns a semantic role to its object. Neeleman names this type of semantic role assignment indirect Θ -role assignment. He graphically illustrates indirect Θ -role assignment as follows:



The co-indices on the two Θ -roles indicate that the verb's Θ -role is lexically marked as being assigned by the preposition. The verb's Θ -role is "matched" with that of the preposition.

Neeleman criticizes this analysis as follows: the Θ -role matching is a process in which a Θ -role "is discharged by entering into a relation with an element lower in the structure" (p. 100). It does not satisfy the sisterhood condition. He claims that the matching process must be structurally local as other thematic processes are. In order to achieve this result, he proposes that the preposition is incorporated into the verb at LF. (7b) is derived from (7a):



(Neeleman's (20))

In the resulting structure, the Θ -role of the verb is matched with that of the incorporated preposition under the sisterhood condition. The trace left behind assigns a Θ -role to its complement, again under the sisterhood condition, if it retains the thematic properties of the moved element.²

4. Empirical Problems with Neeleman (1997)

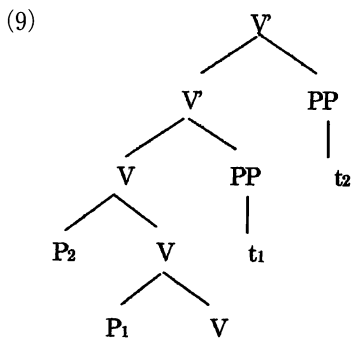
In this section, I will discuss some empirical problems with Neeleman's analysis. One piece of evidence that Neeleman presents as support for the P-incorporation analysis is his observation that there is no double PP-complement construction. Consider the following examples:

- (8) a. to tell someone about something

- a'. to tell something to someone
- a''. *to tell to someone about something
- b. to supply someone with something
- b'. to supply something to someone
- b''. *to supply to someone with something
- c. to ask something of someone
- c'. to ask someone for something
- c''. *to ask of someone for something

(Neeleman's (49))

In (8a''), (8b'') and (8c'') there are two PP-complements and the sentences are unacceptable. Neeleman explains this fact as follows: The heads of the two PP-complements must be incorporated into the verb for the matching of the Θ -roles, as in (9):



(Neeleman's (57))

The relation between the incorporated P_2 and the lowest V does not satisfy the First Order Projection of Selkirk (1982), however, according to which “the internal arguments of a head must be realized... within the first node dominating that head (in a binary-branching structure)” (Neeleman, p. 127). In (9), the incorporated P_2 is not within the first node dominating the lowest V.

Neeleman argues that the construction like *talk to DP about DP* has one PP-complement, *to DP*, and one PP-ad adjunct, *about PP*, and thus is not an exception to the generalization that verbs do not take more than one PP-complement. However, it is by no means an uncontroversial assumption that *about PP* in this kind of construction is a PP-ad adjunct. Consider the following examples:³

- (10) a. I talked to my doctor about the problem.
 b. I talked about the problem to my doctor.

(Radford (1988, p. 352))

In (10a), *about PP* follows *to PP*, whereas in (10b) it precedes *to PP*. The order of the two PPs is free. This kind of free word order is generally taken to be evidence that the two PPs are both complements of the verb (Radford (1988, p. 352), Jackendoff (1990, p. 445)). If one of the PPs is an adjunct, the order of the two PPs is fixed. Consider the following examples:

- (11) a. He worked at the job at the office.
 b. *He worked at the office at the job.
- (12) a. He laughed at the clown at ten o'clock.
 b. *He laughed at ten o'clock at the clown.

(Radford (1988, p. 235))

In (11a), *at the job* is a PP-complement and *at the office* is a PP-adjunct. If *at the office* precedes *at the job*, as in (11b), the sentence is unacceptable. In (12a), *at the clown* is a PP-complement and *at ten o'clock* is a PP-adjunct. If *at ten o'clock* precedes *at the clown*, as in (12b), the sentence is unacceptable. Now if *about* PP were an adjunct, then (10b) would be unacceptable.

It is observed that the object of a PP-adjunct is not passivized whereas that of a PP-complement can be. Consider the following examples:

- (13) a. This job is being worked at quite sincerely.
 b. *The office is being worked at. (Chomsky (1965, p. 105))
- (14) a. This job needs to be worked at by an expert.
 The clown was laughed at by everyone.
 b. *This office is worked at by a lot of people.
 *Ten o'clock was laughed at by everyone. (Radford (1988, p. 233))

The object of *about*, however, can be the subject of a passive sentence, as in (15):

- (15) John was talked about. (Hornstein and Weinberg (1981, p. 65))

It will then follow that *about* PP shows the same property as PP-complements with respect to the so-called pseudo-passivization.

Reinhart and Reuland (1993) also argue that *about* PP is an adjunct. One piece of evidence they offer for their claim is an example such as this:

- (16) We talked with Lucie₁ about her₁. (Reinhart and Reuland (1993, p. 715))

In (16), the pronoun *her* is coreferential with *Lucie*. It is well-known that pronouns may have their antecedents in the clauses containing them if they are contained in PP-adjuncts, with locative or temporal meanings. The followings are some examples:

- (17) a. They had the whole afternoon before them. (Jespersen (1933, p. 112))
 b. John₁ found a dollar bill in front of him₁. (Hestvik (1991, p. 464))
 c. John₁ left Mary behind him₁. (*ibid.*)
 d. John₁ located the treasure right beneath him₁. (*ibid.*)

The judgement of (16) seems to vary among speakers, however. For example, Baltin and Postal (1996, p. 133) judge it to be unacceptable. Furthermore, it seems to be more common for *about* to take a reflexive pronoun than to take a pronoun as its object if its antecedent is in the same clause. Consider the following example:

- (18) John₁ talked about *him₁/himself₁. (Hestvik (1991, p. 474))

In this respect, *about* PP shows the same property as the PP-complements in the following examples:

- (19) a. He looked at himself in the glass. (Jespersen (1933, p. 112))
 b. John₁ always relies on *him₁/himself₁. (Hestvik (1991, p. 474))

In (19a-b), the objects of the prepositions *at* and *on* must be reflexives if they are intended to be coreferential with the subjects.

Neeleman defends his position as follows: First, “there is an idiomatic selectional relation between the verb [and] a PP-complement.” However, “the possibility of inserting a PP headed by *over* ‘about’ is to be expected, since almost any communicative action can be *about something*.”⁴ Second, *over* PP never alternates with a DP, as opposed to other PP-complements. The third point is that “it is typical of PP-complements that the verb and the preposition form a fixed combination. As remarked before, the PP is idiomatically selected. In double PP constructions, however, the PP that I would analyze as an adjunct can be headed by other semantically suitable prepositions...” Finally, “in a potential counterexamples to the ban on double PP-complement constructions, at least one of the PPs can be inserted, without any change of the meaning, in contexts where it must be an adjunct. So the PP headed by *over* ‘about’ in [(20)] must be an adjunct, given that verbs do not select more than two complements, and given that *Mary* and the extraposed CP must be analyzed as such.” (Neeleman (pp. 125-126)).

- (20) Dat Jan Marie over Piet verteld heeft dat hij een leugenaar is
that John Mary about Pete told has that he a liar is

(Neeleman’s (54))

Throughout his discussion summarized in the last paragraph, Neeleman in effect assumes that idiomatic selection is a defining property of PP-complements. It may be true that PP-complements are “typically” selected by the verbs idiomatically, but in principle these two notions should be distinct. It will be the case that of all the PP-complements, only those whose heads are lexically selected by the verbs are idiomatically selected PPs, with the verb-preposition combinations having idiomatic interpretations. Then *about* PP is a PP-complement without an idiomatic lexical selection. As for the final argument in the last paragraph, even if the assumption “that verbs do not select more than two complements” is correct, it would not be correct to assume that a given PP never occurs both as a PP-complement and as a PP-adjunct. For example, in (1), *on the boat* is ambiguously interpreted either as a PP-complement or as a PP-adjunct. The change in meaning, that is, the loss of the locative meaning in the case of the PP-complement, is due to the idiomatic selection by the verb *decide*.

Although the second point, that is, *over* PP never alternates with a DP, still remains to be discussed, it seems that there is as much evidence that *about* PP is a PP-complement as there is evidence that it is a PP-adjunct. If *about* PP is a PP-complement and not a PP-adjunct, then one possible consequence is that Neeleman’s analysis of “indirect Θ -role assignment” is not correct because it wrongly rules out verbs taking double PP-complements. Then we are forced to go back to Marantz (1984),⁵ who claims that “[i]n the unmarked case, an argument-taking item will assign a semantic role to its argument” (The Direct Argument Principle), and “[e]xceptions (to markedness principles) must be encoded in the lexical entries of lexical items” (The Lexical Exception Principle). The fact that a verb takes two PP-complements and assigns semantic roles indirectly through prepositions twice, can simply be encoded in its lexical entry as such. Neeleman’s analysis might be on the right track; it might be that *about* PP is a complement in (15) and (18), where it is the only PP that the verb takes, and an adjunct in (16), where it follows another PP. But then it should be the case that *to* PP is a complement in (10a) and an adjunct in (10b). This is a quite dubious consequence, however.

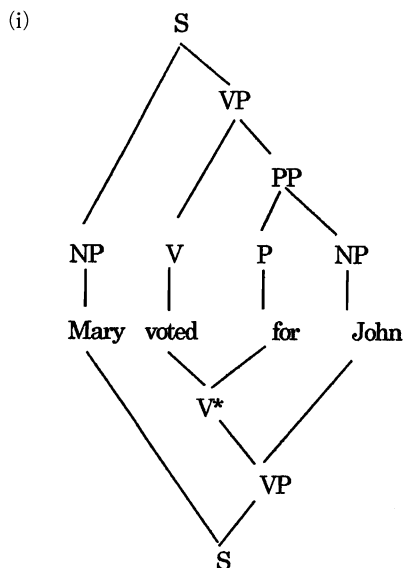
5. Conclusion

If double PP-complement constructions exist, then Neeleman’s approach to the Θ -role assignment in PP-complement construction must be reconsidered, because it excludes those constructions. The argument in this paper is not to deny the presence of P-incorporation itself, but casts doubt on the claim that the LF P-incorporation plays a crucial role in the Θ -role assignment to the DP object of a PP-complement.

Notes

*I would like to thank Professor Tomoko Yasutake and Society for Functional Linguistics in Aichi University of Education for giving me an opportunity to discuss this topic. I would also like to thank Takashi Yoshida for his support. All inadequacies are, of course, of my own.

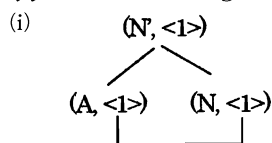
¹A possible solution is to assume that a sentence may have more than one structure at a time (Haegeman and Riemsdijk (1986)). Consider the following diagram:



(quoted from Baker (1988))

If we assume this structure, the analysis would be possible along the following lines: The Θ -role assignment will take place in the lower structure, where the reanalyzed V^* assigns a Θ -role to the NP *John* under the sisterhood condition, whereas the predication and quantifier interpretations will take place in the upper structure, where the PP node is present. I will not examine in detail this type of “reanalysis” approach in this paper, but a possible problem would be that the decision of which structure a given operation or rule applies to is ad hoc. See also Baker (1988). That is, it is not explicated why the PP is “invisible” for Θ -role assignment whereas it is “visible” for predication and quantifier modification. In Neeleman’s analysis, the PP is “invisible” for Θ -role assignment as a result of LF P-incorporation and it is “visible” for predication and quantifier modification because of the presence of the PP at LF even after LF P-incorporation. Of course this is a very rough examination of that approach and much more consideration of it is necessary.

²In this analysis, Neeleman is trying to reduce the notion of Θ -role matching to that of Θ -identification. Θ -identification has originally been intended to explain the semantics of modification (Higginbotham (1985, pp. 562-564)). For example, *a big butterfly* denotes something that is big and is a butterfly. Consider the following diagram:



(Higginbotham’s (44))

The solid line indicates the identification. The whole complex of N' has one open position projected from the N . As I mentioned above, this analysis aims to explain the fact that the whole expression of *big butterfly* denotes something that is both big and a butterfly. This is a kind of conjunction (p. 562). So a possible problem with the reduction of the notion of Θ -role matching to that of Θ -identification might be that in the case of a verb-preposition complex we are discussing here, the meaning of the whole expression is not always just a conjunction of the two elements. For example, the meaning of *decide on* is not just a conjunction of *decide* and *on*. In these cases a specific lexical item selects another specific lexical item. I speculate that for some reason idiomatic reading is more readily accessible to this kind of relation than to other relations. See Neeleman (1997, pp. 116-117), O’Grady (1998), among others.

³I have summarized some properties of *about* PP in Hamasaki (2000). I repeat some of the arguments there in the following paragraphs.

⁴Neeleman’s argument in his paper is mainly based on Dutch data.

⁵Neeleman claims that his analysis explains, among other things, why there is no PP-subject, the complement DP of which is interpreted as an argument of the verb. For example, “a sentence like *under the bed is a good hiding place* does not mean that the bed is a good place to hide (a logical possibility), but rather that the place to which *under the bed* refers has that quality”

(p. 100). For the complement DP of a PP-subject to be interpreted as an argument of the verb, the head of the PP-subject must incorporate into the verb. This is inhibited, however, because the extraction out of a subject violates the Empty Category Principle (pp. 106-107). If we go back to Marantz (1984), this fact requires some explanation. I speculate that there is no lexical selectional relation between the head P of a subject and the verb, and idiomatic interpretation is not available.

References

- Baker, Mark (1988) "Against the Reanalysis of Heads," in *McGill Working Papers in Linguistics*, 35-60.
- Baltin, Mark and Paul Postal (1996) "More on Reanalysis Hypotheses," *Linguistic Inquiry* 27, 127-145.
- Chomsky, Noam (1965) *Aspects of the Theory of Syntax*, MIT Press, Cambridge, Mass.
- Chomsky, Noam (1986) *Barriers*, MIT Press, Cambridge, Mass.
- Chomsky, Noam (1993) "A Minimalist Program for Linguistic Theory," in *The View from Building 20*, eds. by Hale, Ken and Jay Keyser, MIT Press, Cambridge, Mass.
- Haegeman, Lilliane and Henk Van Riemsdijk (1986) "Verb Projection Raising, Scope and the Typology of Verb Movement Rules," *Linguistic Inquiry* 17, 417-466.
- Hamasaki, Michiyo (2000) "About o Syuyobu to suru Zenchishiku no Seishitsu ni tsuite (On the Nature of the Prepositional Phrase Headed by *About*)," *Studies in Foreign Languages & Literature* 35, 37-47.
- Hestvik, Arild (1991) "Subjectless Binding Domains," *Natural Language and Linguistic Theory* 9, 455-497.
- Higginbotham, James (1985) "On Semantics," *Linguistic Inquiry* 16, 547-594.
- Hornstein, Norbert and Amy Weinberg (1981) "Case Theory and Preposition Stranding," *Linguistic Inquiry* 12, 55-91.
- Jackendoff, Ray (1990) "On Larson's Treatments of Double Object Constructions," *Linguistic Inquiry* 21, 427-456.
- Jespersen, Otto (1983(1933)) *Essentials of English Grammar*, Allen and Unwin, London.
- Marantz, Alec (1984) *On the Nature of Grammatical Relations*, MIT Press, Cambridge, Mass.
- Neeleman, Ad (1997) "PP-Complements," *Natural Language and Linguistic Theory* 15, 89-137.
- O'Grady, William (1998) "The Syntax of Idioms," *Natural Language and Linguistic Theory* 16, 279-312.
- Radford, Andrew (1988) *Transformational Grammar: A First Course*, Cambridge University Press, Cambridge.
- Reinhart, Tanya and Eric Reuland (1993) "Reflexivity," *Linguistic Inquiry* 24, 657-720.
- Selkirk, Elizabeth (1982) *The Syntax of Words*, MIT Press, Cambridge, Mass.
- Williams, Edwin (1980) "Predication," *Linguistic Inquiry* 11, 203-238.

(Received September 10, 2001)