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The Layered Internal Structure and the External Syntax of PP

Seiki Ayano

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Submitted in partial fulfillment of the degree of Doctor of Philosophy

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Department of Linguistics & English Language

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- 3 MAY 2002

ABSTRACT

The Layered Internal Structure and the External Syntax of PP

Seiki Ayano

This thesis examines the properties of spatial (i.e., locational and directional) Ps within the minimalist framework (Chomsky 1995, 1998, 1999), which has put an ultimate emphasis on economy in terms of derivation and representation. The principal goals of this thesis are (i) to investigate how the syntax of such nature derives PPs in accordance with the properties of Ps and (ii) to show how the internal PP structure interacts with the external syntax of PP.

Chomsky's minimalist framework assumes two syntactic operations, i.e., Merge and Move, and two different types of outcome of the operations, depending on the properties of lexical items involved in each operation executed. One outcome results from a merger of two items, of which one selects the other. The other results from a merger of two items, neither of which selects the other.

I propose that there are three heads involved in deriving a layered PP structure: functional *p*, lexical P and locative N. This analysis is shown to be empirically supported from languages such as Dutch, English, Hungarian, Japanese and K'ekchi. I also claim that there are also intransitive Ps that adjoin to either *pP* or PP.

The internal structure of PP interacts with its external syntax. One apparent area of grammar that shows desirable consequences for the layered PP analysis is P-to-V incorporation. For instance, the incorporability versus the unincorporability of Ps in Dutch can be accounted for by the principle (i.e., Minimal Link Condition) that forbids skipping over an intermediate head, thus supporting the layered structure of PP. Another area offering support is locative inversion: the presence versus the absence of locative N head in PP can account for a contrast observed in locative inversion facts. Provided that an EPP-feature of T is category-specific, a contrast between PPs that can undergo movement to [Spec, T] and those that cannot stems from their respective internal structures.

No part of this thesis has previously been submitted for a degree at the University of Durham or any other university.

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Besides my two supervisors, I would like to thank other departmental faculty members for their help and encouragement on many occasions: Mike Davenport, Peter Grundy, S. J. Hannahs, Bonnie Schwartz and Martha Young-Scholten. I am especially indebted to Angela Taylor for all the paperwork which made it easier for me to plan occasional research trips back to Durham after spending thirteen months there in 1997-1998.

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To Mari and Fumi

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CHAPTER ONE

Introduction

1.1. Preliminaries

Jackendoff (1973) wrote at the outset of his paper that P(preposition and postposition)s had never been treated seriously in studies of grammar. Twenty-eight years later, we have seen some landmark studies that have contributed to further our understanding of Ps (Emonds 1976, 1985, Van Riemsdijk 1978). In addition, Ps have attracted much attention in a series of studies on language particular and specific areas of grammar. Thanks especially to a number of studies (in various theoretical frameworks) devoted to examining the properties of Ps and the internal structure of PP, Jackendoff's remark on the neglect of Ps does not correctly capture the state of our understandings of Ps. This thesis is an attempt to examine 'spatial' (namely, locational and directional) Ps under the minimalist framework (Chomsky 1995, 1998, 1999),¹ which has put an ultimate emphasis on economy in terms of representation and derivation. The principal goals of this thesis are (i) to investigate the internal structure of PP and (ii) to examine its effects on the external syntax of PP.

The thesis is organized in the following way. Chapter 1 will provide a brief introduction to the theoretical framework adopted in the present thesis. Chapter 2 will deal with the properties of Ps and the internal structure of PP. I will propose (i) that Ps

¹ Although there are [-locational] Ps such as [+benefactive], [+instrument], [+accompaniment], and [+agent] in language, I will not discuss them here. See Emonds (1985:230) for a possible table of syntactic features on prepositions and their realizations in English.



are of two kinds: lexical and functional and (ii) that PP has a layered structure. Then, I will investigate what syntactic operations take place within PP and how, following the feature-based checking theory developed within the minimalist framework. Chapter 3 will extend the proposal and argument put forth in Chapter 2 and will examine adjuncts within PP, which will shed further light on the internal structure of PP. In Chapter 4, I will focus on one syntactic phenomenon known as incorporation. Ps have been observed to incorporate into other categories just like any other category (Baker 1988b:Ch. 5, 1998c). I will examine this interesting linguistic phenomenon mainly in Dutch, Japanese and English. Chapter 5 will re-examine a linguistic phenomenon in English known as locative inversion, which has been extensively studied across languages in the literature, with reference to the properties of Ps and the internal structure of PP examined in Chapters 2 and 3.

1.2. Theoretical framework

The minimalist framework, which I adopt in the present thesis, has been proposed by Chomsky in a series of works (1995, 1998, 1999). Its basic assumption is that syntax should be 'bare' or minimal. The derivation proceeds in a strict bottom-up fashion, and syntax has been reduced to the extent that what it does is simply (i) to select two lexical items (LIs) from a set of LIs that have been drawn from the Lexicon (the set is called a Numeration), (ii) to merge selected LIs and merge the output of previous mergers and (iii) to move syntactic objects only when necessary. I will not try to provide a detailed introduction to minimalist technicalities, but rather will give a brief sketch of the issues that are relevant to the present work. The issues to be introduced here are derivational steps (basic structure), formal features (FF), movement and

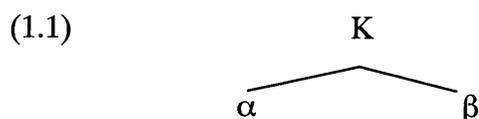
feature-deletion. Other minimalist details will be introduced when they become relevant as the thesis proceeds.

1.2.1. Derivational steps

Syntax is responsible for generating a legitimate derivation by executing two operations, namely, Merge and Move. Let me first illustrate how Merge works, following Chomsky (1995: Ch. 4).

1.2.1.1. Merge

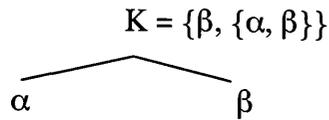
The syntactic operation Merge applies to two objects, which can be lexical items selected from the Numeration and/or syntactic objects already formed. Suppose that α and β are selected from the Numeration. Merge applies to these two objects as in (1.1), which forms K:



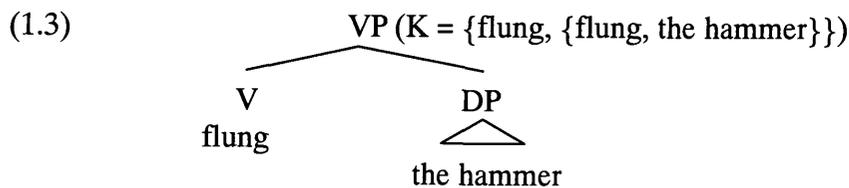
According to Chomsky (1995:244), if it is β that projects in (1.1), then K can be represented as $K = \{\beta, \{\alpha, \beta\}\}$, which indicates that β is the label of the newly formed category K and that $\{\alpha, \beta\}$ is a derived constituent. Which of the two categories projects depends on their respective properties. In cases where α is an obligatory category (or an argument) of β , it is β that projects, which is illustrated in (1.2):²

² See Chomsky (1998:51-52) for his argument for two cases of Merge, namely, set-Merge and pair-Merge.

(1.2) α as an argument of β



Take, for example, the transitive verb construction *flung the hammer* in order to illustrate (1.1) more specifically. (1.3) shows that the operation Merge takes the transitive V *flung* and its DP complement *the hammer*, and forms VP. Since it is the V that selects the complement, the V projects to form a VP with the label (flung).³



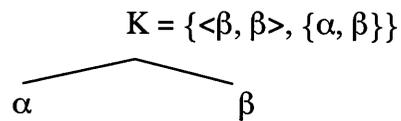
In contrast to the above case of Merge, in which one category α is an argument of the other β , when α is an optional element (i.e., an adjunct) of β , the outcome of merging α and β is different from the one illustrated in (1.2). Merge applies to α and β and it does not create a new syntactic category, but a two-segment category. That is, K in (1.4) is not a category in itself, but is an element or a segment of a category β .

Chomsky (1995:248) claims that the label for K is an ordered pair $\langle \beta, \beta \rangle$, in which the

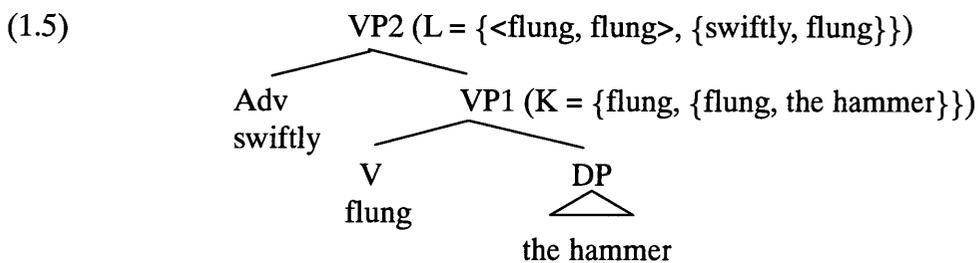
³ Chomsky (1995:242) argues that according to bare output conditions in the minimalist framework, which determine which items are visible for computations, only maximal and minimal projections are visible for computations. The X-bar level is invisible at the interface and for computation. He further maintains that given the inclusiveness condition, which states that any structure formed by the computation should consist of only the items that are selected for a given numeration (Chomsky 1995:228), minimal and maximal projections do not have distinctive properties, but can only be determined by their relative positions in the structure.

first β represents K .⁴ In other words, this ordered pair is one category that consists of two segments.

(1.4) α as an adjunct of β



Let me illustrate (1.4) with a concrete example. Suppose that *swiftly* is in the Numeration and it merges with the VP *flung the hammer*.⁵



In (1.5), VP1 bears the label V since it is V that projects when the V *flung* and its DP complement *the hammer* are merged to form VP1. Call VP1 a category K (= {*flung*, {*flung*, *the hammer*}}). VP2, which is formed by the merger of the Adv *swiftly* and VP1, is a two-segment category (i.e., L = {<math>\langle \text{flung}, \text{flung} \rangle, \{ \text{swiftly}, \text{flung} \} \}).

The operation Merge applies in a cyclic manner at the root and it keeps doing

⁴ Uriagereka (1998:278) refers to this segment as a dummy copy of β .

⁵ See Chomsky (1995:329-334) for his discussion on adjuncts and shells. Precisely, the Adv *swiftly* adjoins to vP , not VP. I will return to this issue of shells later in this section.

so until the Numeration is exhausted (Chomsky 1995:226).⁶

1.2.1.2. Move

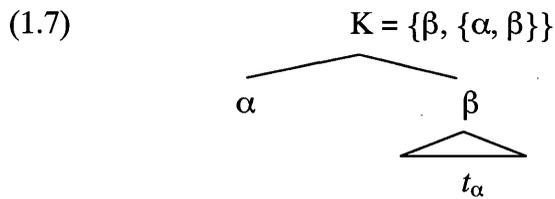
The operation Move takes place as follows. Suppose that there is a syntactic object α embedded in a syntactic object β as in (1.6):



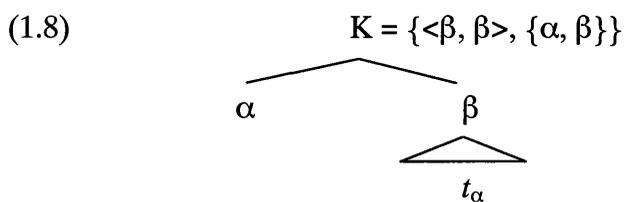
Suppose further that α raises to β . According to Chomsky (1995:248), this operation Move is of two kinds: substitution and adjunction. These two cases of Move form two distinct types of syntactic object. In fact, the distinction arises from the two types of Merge as we have seen above; Move involves merger of α , which is raised, and β , to which α is raised.

First, when the substitution operation applies to α and β , the syntactic object β is replaced by the new syntactic object K . Note that it is β that projects (Chomsky 1995:249-260), not α . Therefore, the newly formed syntactic object K can be represented as $K = \{\beta, \{\alpha, \beta\}\}$, where β is the label of the newly formed category (Chomsky 1995:248). (1.7) illustrates the structure after the substitution operation is applied:

⁶ To be more precise, each lexical item selected from the lexicon into a Numeration is indexed, e.g., (arrived, 1) and (Mary, 1). The index on a lexical item represents the number of time(s) it has to be selected from the Numeration in the course of a given derivation. See Collins (1997:3-4) for an excellent illustration of this procedure.



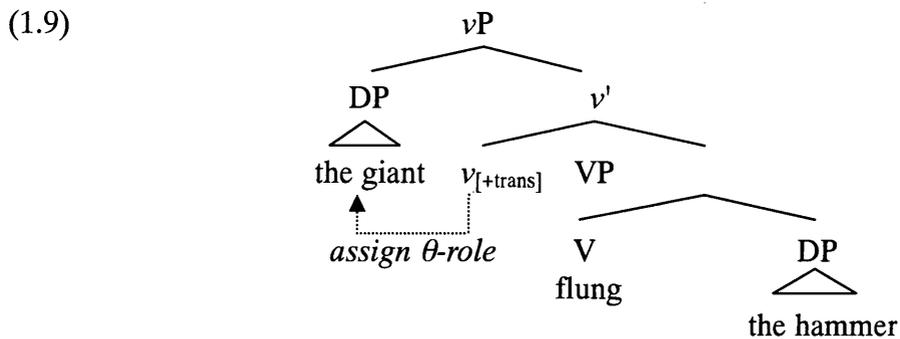
As opposed to substitution, which forms a new category (i.e., a non-segment category (Kitahara 1997:7)), adjunction forms a two-segment category, as has been already introduced. That is, the label of K in (1.8) is distinct from that of β (i.e., β), namely, an ordered pair $\langle\beta, \beta\rangle$ (Chomsky 1995:248):



In what follows, let me illustrate the above two movement operations by using a transitive verb structure. First of all, a short introduction to the structure in question follows.

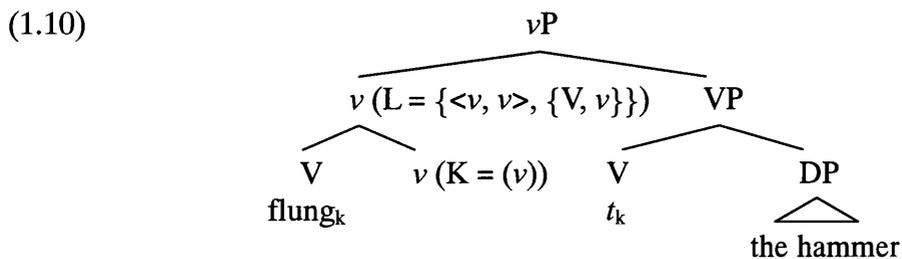
Under the influence of the Larsonian shell analysis of the ditransitive construction (Larson 1988), in which the external argument and the internal argument are base-generated in two separate VPs (the former in the upper VP and the latter in the lower VP), a number of studies (Bowers 1993, Chomsky 1995, Collins and Thráinsson 1996, Collins 1997, Nishiyama 1998) have proposed that there is an additional V , notated v , that introduces the external argument. Following Chomsky (1995: Ch. 4), I assume that $[+trans] v$ selects the subject in its Spec position and assigns it a θ -role,

namely, an agent role, in that position¹ as illustrated in (1.9):

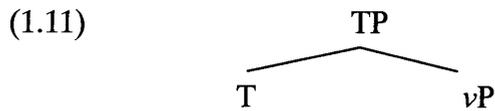


Given that (1.9) represents the basic transitive verb structure, let us now return to the two operations: adjunction and substitution.

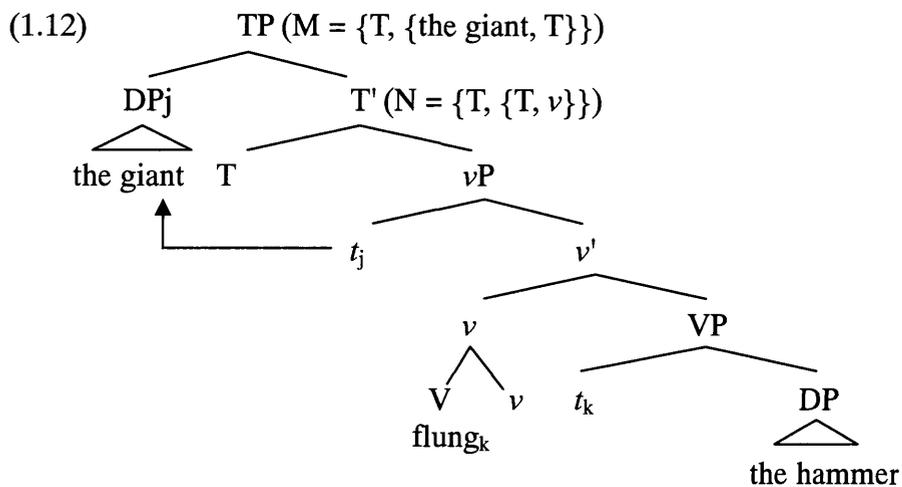
Let me begin with adjunction. Following Chomsky (1995: Ch. 4), I assume that V raises to v . This is an instance of head-to-head movement. Chomsky (1995:260) argues that it is the target of the movement that projects. Therefore, the structure in (1.10) obtains:



With regard to the other operation, substitution, let us see how the external argument *the giant* in (1.9) moves. It must be noted first that after (1.10), T is selected from the Numeration and the syntax merges T and vP as in (1.11):



At this point in the derivation, the subject raises from [Spec, v]. Thus, we obtain the following derivation. As shown in (1.12), the substitution operation creates a new category M , which is distinct from N , as opposed to adjunction whose outcome is a two-segment category, as we have seen before.



Thus far, I have introduced the ways in which a basic structure is built up in the minimalist framework. In the following subsection, I will introduce how movement is motivated under the minimalist approach.

1.2.2. Feature-motivated movement

Under a minimalist analysis, the syntactic operation Move needs to be motivated; things do not move unless they are motivated to do so. According to Chomsky (1995: Ch. 4), Move is triggered by abstract morphological features. Of the features that a given

lexical item is made up of, namely, π features to be read at PF, λ features at LF and formal features (FFs) in syntax, it is FFs that are relevant here. FFs can be either [-interpretable] or [+interpretable], depending on their legibility at the interface. What syntax does is to delete all the [-interpretable] features. If any [-interpretable] feature survives, the derivation results in ungrammaticality. Let me illustrate the above; I will only deal with substitution as illustrated in (1.12), returning to adjunction later in Chapter 3.

Following Chomsky (1998, 1999), I will call T the probe and the subject *the giant* the goal. A [-interpretable] feature of a functional head triggers movement of some element. In the case of subject-raising, it is the [-interpretable] EPP-feature of T that causes the subject to raise to [Spec, T] and it is in this configuration that the EPP-feature of T, which is category specific, i.e., [D-]/[N-], is deleted against the categorial feature [D] of the subject.⁷ It should be noted that this operation Delete is asymmetric, in that only the EPP-feature of T is deleted, while the categorial feature of the subject remains intact. This is because the categorial feature [D] of *the giant* is subject to interpretation at the LF interface. Consider (1.13), in which it is shown that the EPP-feature of T is deleted along with other [-interpretable] features such as the Case-feature of T and that of the subject, the ϕ -features of T.⁸

⁷ EPP here stands for Extended Projection Principle. Following Chomsky (1998:15), I call corresponding properties of other functional heads EPP-features, e.g., an EPP-feature of v . EPP-features are nonsemantic, hence the name [-interpretable], but the resulting configurations they establish have effects for interpretation (Chomsky 1998:15).

⁸ Note that ϕ -features consist of three different features: number, person and gender. As for the ϕ -features on the DP, a gender-feature does not seem to be [+interpretable]; it is doubtful whether it has any LF outcome. Since this issue is not directly relevant to the present discussion, I will follow Chomsky (1999) and collectively treat the ϕ -features of the DP as [+interpretable] throughout this thesis.

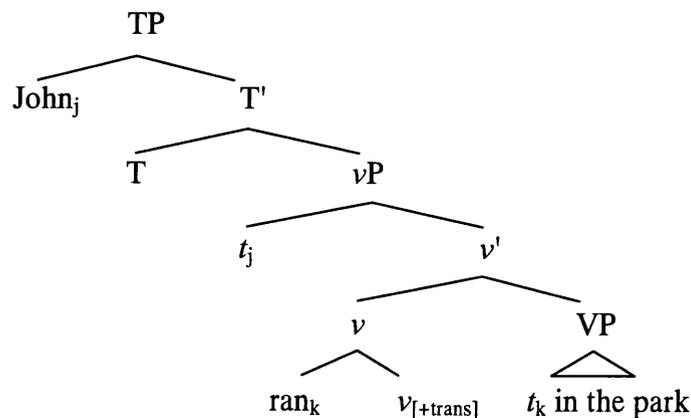
issue at this point.

1.2.3 A note on a light verb ν

As the last topic of this section, I will present a short note on the light verb ν , which becomes relevant at various places in the present thesis. There are two issues to be noted: (i) unergative verbs, e.g., *run*, and (ii) unaccusative verbs, e.g., *arrive*.

Under the Larsonian VP shell analysis, transitive verb structures have been argued to contain a light verb. Call this light verb [+trans] ν . Following Hale and Keyser (1993), whose idea is adopted by Chomsky (1995:247-248) and Collins (1997:79-81), I assume that unergative verbs are transitive, not intransitive. That is, an ergative verb takes an abstract cognate object and assigns it an internal θ -role; the unergative verb *run* merges with the abstract cognate object *run*. Further, a light verb [+trans] ν merges with the VP formed by the unergative verb and the abstract cognate object, introduces an external argument in its Spec position and assigns an external θ -role to it. Then, T merges with the ν P; the EPP-feature of T requires the external argument in its Spec position, namely, [Spec, T] in order to have this [-interpretable] feature deleted. Thus, *John ran in the park* has the following structure:

(1.15)



1.2.4. Concluding remarks on 1.2.

In this section, I have provided a brief introduction to the minimalist framework with regard to its basic assumptions and operations. First, I introduced the two syntactic operations Merge and Move and the two types of outcome arising from applying these operations: deriving (i) a new category and (ii) a two-segment category. Second, I showed how movement is motivated in the minimalist framework, i.e., feature-motivated movement. Finally, I provided a note on a light verb v , which will become relevant at various places in the following chapters.

In the following chapters, I will attempt to develop my analyses of the internal structure and the external syntax of PP within this theoretical framework.

CHAPTER TWO

Layered PP

Functional *p*, lexical P and locative N

The main goal of this chapter is to show that Ps are of two kinds: lexical and functional, namely, P and *p*. Similar proposals have been made in the literature from different perspectives. The one that concerns us here is a layered PP structure, in which functional *p* takes PP as its complement. As has been discussed in the previous chapter, this parallels a *v* that takes VP as its complement. Further, I will show that the layered PP involves yet another head called locative N. I will examine the properties of the above three heads and will argue that these heads constitute a layered structure within a PP.

This chapter is organized as follows. Section 1 will provide a preliminary sketch of how lexical P and functional *p* can be motivated both conceptually and empirically. Section 2 will elaborate and extend the preliminary framework introduced in Section 1 by examining ‘circumpositions’ in Dutch and German and ‘P-P-DP combinations’ in English. In Section 3, I will focus on the properties of functional *p* and its role played in syntax as a locus of feature-deletion. In Section 4, I will propose that there is yet another head involved in the layered structure of PP, namely, locative N. I will show that the presence of this additional head is supported by facts from English and Sranan. I will further show that the proposed analysis can be applied to PPs in other languages such as Japanese and K’ekchi.

2.1. Lexical P versus functional *p*: A preliminary sketch

This section will present a preliminary sketch of the properties of pre/postpositions and the internal structure of PP. First, I will review Van Riemsdijk (1990) and Fukui (1995) to see how lexical P and functional *p* can be motivated in terms of feature-specifications. Second, a review of Watanabe (1993) concerning the properties of pre/postpositions will show that the notion of two types of P has empirical support.

2.1.1. Motivating lexical P and functional *p*: A conceptual aspect

Van Riemsdijk (1990) and Fukui (1995), among others, have attempted to characterize the distinction between lexical and functional categories in terms of features. It has been proposed that besides defining categorial features, i.e., [$\pm V$] and [$\pm N$], the feature [$\pm F$ (unctional)] should be added in order to distinguish functional categories from lexical categories. For example, the three sets of features, i.e., [$\pm V$], [$\pm N$] and [$\pm F$], define N and V as follows (Van Riemsdijk 1990):^{1, 2}

¹ Grimshaw (2000) defines lexical and functional categories in terms of similar categorial specifications to those proposed by Van Riemsdijk (1990). However, as Caink (1998:109) points out, her system poses a problem in defining Ps since Ps include both lexical Ps and functional Ps. This leads Grimshaw to propose that P is possibly neutral between both verbal/nominal and functional/lexical specifications.

² Fukui (1995) proposes that the feature specifications of the functional categories are as follows:

- (i)
- | | |
|------|--------------|
| Agr: | [+F, +N, +V] |
| T: | [+F, -N, +V] |
| D: | [+F, +N, -V] |
| C: | [+F, -N, -V] |

Moreover, he suggests that another feature [$+/-L$ (exical)] defines categories further as follows:

- (ii)
- | | |
|-----------|--|
| [+F, -L]: | Pure functional elements |
| [-F, +L]: | Lexical categories |
| [-F, -L]: | 'Minor categories' (particles, etc.) |
| [+F, +L]: | Functional elements with a lexical feature |

Takano (1996:51) claims that the category defined as [+F, +L] characterizes the class of light heads, such as *v*. He argues that the light head *v* is both [+L] and [+F] in that (i) it has a theta-role assigning property and (ii) it provides a domain for feature-checking.

- (2.1) [+N, -V, -F] = N
 [+N, -V, +F] = *n* (=D)
 [-N, +V, -F] = V
 [-N, +V, +F] = *v* (=I)

Van Riemsdijk's proposal is based on his arguments that as far as [$\pm N$] and [$\pm V$] are concerned, a functional category F selects XP of the same feature-specification.³ It should be noted that I disagree with Van Riemsdijk's above proposal of identifying *v* with I (i.e., T), in that for me, *v* is associated with transitivity, rather than I. As has been noted in Chapter 1, [+trans] *v* is a light verb that introduces an external argument given the VP shell configuration. Further, [+trans] *v* bears [-interpretable] features to be deleted against those of the internal argument. Emonds (1976:Ch. 6, 2000:37, n. 2) implicitly disagrees with Van Riemsdijk's proposal of regarding [+F] V as I (as well [+F] N as D). He claims that V and I share no syntactic behavior, in that languages such as Chinese, English, Indonesian and certain Kru languages have a class of free morphemes of I, which suggests that they are separate categories.

Applying Van Riemsdijk's defining features introduced above, P can be characterized in the following way. Call P a lexical P and *p* a functional P.

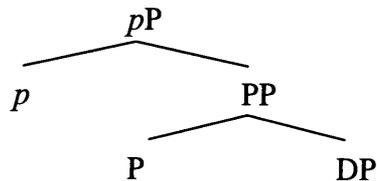
- (2.2) [-N, -V, -F] = P
 [-N, -V, +F] = *p*

³ The following is Van Riemsdijk's proposal (1990:230):

Category Identity Thesis: In the unmarked case the lexical head and the corresponding functional head have the same categorial features.

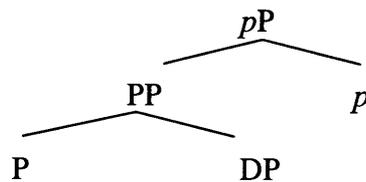
Furthermore, Van Riemsdijk (1990) proposes that PP has a layered structure as follows. Most typically, P selects and merges with DP and projects and *p* then takes PP as its complement.

(2.3)



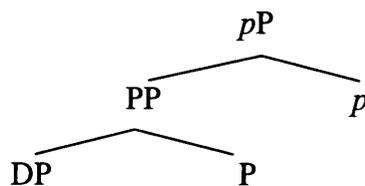
In (2.3), both P and *p* are prepositional. Van Riemsdijk proposes that in Dutch and German, P is a preposition, while *p* is a postposition, which can be illustrated as follows:

(2.4)



I will return to this issue when examining Dutch Ps and *ps* later in this chapter. Note in passing that there are languages, e.g., Japanese, in which both P and *p* are postpositional, to which I will also return later.

(2.5)



At this point, two questions immediately arise: (i) whether *p* is present in all PPs and (ii) which prepositions and postpositions fill the two head positions, which I will attempt to answer in the present chapter.

The next section will argue how the P versus *p* distinction can be empirically supported, and argue that they constitute a layered structure as illustrated above. My discussion begins with a review of Watanabe's (1993) argument concerning the structure of PP under an Agr-based Case theory.

2.1.2. Empirical support for lexical P and functional *p*

This subsection presents a review of Watanabe (1993) and shows that functional *p* can be empirically supported, and that P and *p* constitute a layered PP structure.

2.1.2.1. Layered PP: Evidence from Navajo and K'ekchi

Drawing on Kaufman (1975), Watanabe argues that Navajo has two kinds of P: enclitics and postpositions. Enclitics can only co-occur with spatial nouns, while postpositions do not show such a selectional restriction. Furthermore, enclitics do not display agreement with their objects, while postpositions do. In addition, both enclitics and postpositions can express similar spatial relations. Consider (2.6):

- (2.6) a. hooghangóne' sidá. [enclitic]
 house.in 3rd.sit
 ‘He is sitting in the house.’

b. *hooghan yii' sidá.* [postposition]

house **3rd.in** 3rd.sit

‘He is sitting in the house.’

(Kaufman 1975:70, cited in Watanabe 1993:431)

Most interestingly, an enclitic and a postposition co-occur as follows:

(2.7) *kinyii'góne' sidáhígí shil yáát'ééh.*

house 3rd.in.into 3rd.sit.Comp 1st.with 3rd.be.good

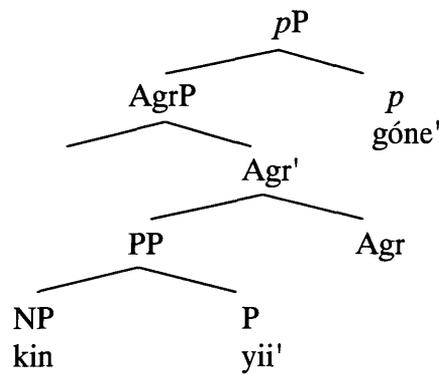
‘I like the house he is sitting in.’

(Kaufman 1975:78, cited in Watanabe 1993:431)

Watanabe claims that given that Navajo is a head-final language, the PP *kinyii'góne'* ‘house 3rd.in.into’ can be regarded as the enclitic *góne'* ‘into’ taking the PP *kinyii'* ‘house 3rd.in’ as its object. He proposes that the enclitic is a functional category, namely, *p*, and that the postposition is a lexical category. The following is the structure for the PP in question. Note that the following structure is based on Watanabe’s (1993) Agr-based Case Theory:⁴

⁴ According to the model of grammar assumed in this thesis based on Chomsky (1995:Ch. 4, 1998, 1999), agreement is captured as [-interpretable] features that appear on functional heads such as *v* and T.

(2.8)



Concerning functions of enclitics and postpositions, Kaufman (1975:73) claims that enclitics do not turn words into locatives, but provide directional or spatial information, while postpositions turn any noun into a locative. Further, based on the fact that postpositions display agreement which is identical with possessor agreement on nouns (Young and Morgan 1987), Watanabe (1993:434) maintains that the lexical category P must be a locational noun in origin. He claims that Mayan provides further evidence that there are Ps that are of lexical category origin.

Based on Berinstein (1984), Watanabe shows that oblique relations in K'ekchi, one of the Mayan languages, are expressed with the help of relational nouns. The examples in (2.9) show that a P complex is composed of P, agreement and a relational noun *-e* 'mouth':⁵

- (2.9) a. *chi r-e* *li cuink*
 at 3rd.sg-mouth the man
 'with the man'

⁵ The agreement prefixes on relational Ns are identical to those on Vs. There are two sets of agreement prefix in K'ekchi. Those on relational Ns belong to Set A (ergative) that also appear on Vs when agreeing with agentive Subject. See Berinstein (1984:Ch. 1) for further detail.

b. chok' r-e li cuink

for 3rd.sg-mouth the man

'for the man'

c. chi r-ix li cuink

at 3rd.sg-back the man

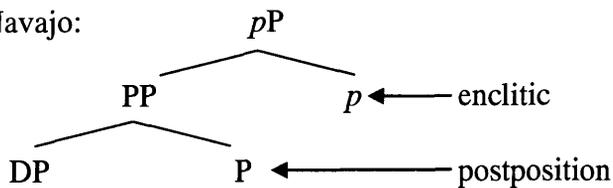
'behind the man'

(Berinstein 1984:36)

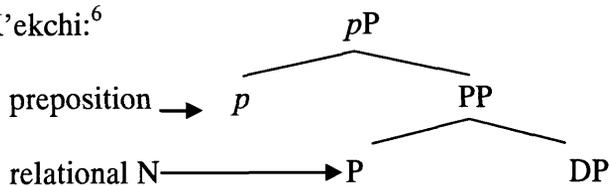
Watanabe claims that these facts from K'ekchi confirm that lexical Ps are actually of locational noun origin. Summarizing the above, he argues that while the postposition in Navajo is a lexical P, the preposition in K'ekchi is a functional *p*.

The internal PP structure in Navajo can be represented as in (2.10) and that in K'ekchi as in (2.11).

(2.10) Navajo:



(2.11) K'ekchi:⁶



⁶ Agreement appears on the relational N. I will return to how agreement is 'licensed' by functional *p* in minimalist terms later in this thesis.

To sum up, Watanabe (1993) has analyzed the facts from Navajo and K'ekchi and supported the layered PP structure that contains two types of pre/postpositions. In the next subsection, I will turn to his analysis of Ps in English and Japanese.

2.1.2.2. Layered PP: Evidence from English and Japanese

As Watanabe further points out, facts from Japanese and English support the proposed distinction between lexical P and functional *p*. Consider (2.12) in Japanese (Watanabe 1993:435):

- (2.12) a. tukue-no ue-ni
 desk-GEN top-LOC 'on top of the desk'
- b. tukue-no sita-ni
 desk-GEN under-LOC 'under the desk'
- c. tukue-no mae-ni
 desk-GEN front-LOC 'in front of the desk'
- d. tukue-no usiro-ni
 desk-GEN back-LOC 'behind the desk'
- e. tukue-no yoko-ni
 desk-GEN side-LOC 'beside the desk'

In the Japanese examples, a PP consists of a DP with the genitive case-marker, a locative N, and a postposition. On the basis of the above facts, Watanabe argues that the locative Ns shown above are lexical Ps, while the postpositions are functional *ps*. Note that postpositions do not necessarily co-occur with locative Ns:

- (2.13) a. John-wa kuruma-**kara** ori-ta.
 John-TOP car-from get.off-PAST
 ‘John got off from the car.’
- b. Mary-wa Tokyo-**e** it-ta.
 Mary-TOP Tokyo-to go-PAST
 ‘Mary went to Tokyo.’

Watanabe suggests that in cases such as this, it can be either (i) that lexical Ps are null or (ii) that lexical Ps are incorporated into functional *ps*. I will leave this matter open at this point, but there are two points to be noted in conjunction with Watanabe’s argument concerning lexical Ps and functional *ps* in Japanese.

First, Watanabe (1993:435) notes that the above locative Ns can also function as plain Ns:

- (2.14) a. John-wa tukue-no ue-o fui-ta.
 John-TOP desk-GEN top-ACC wipe-PAST
 ‘John wiped the top of the desk.’
- b. John-wa tukue-no sita-o nozokikon-da.
 John-TOP desk-GEN under-ACC peep-PAST
 ‘John looked under the desk.’

The facts in (2.14) suggest that lexical Ps such as *ue* ‘top’ and *mae* ‘front’ are derived from a lexical category.

The second point concerns the functions of Ps and *ps* within PP. Watanabe

notes (i) that a lexical P turns the DP-GEN into a locative (recall that Navajo postpositions function in the same way) and (ii) that a functional *p* provides a reference point, namely, a special relation between a location expressed by PP and something else.

Turning to English, we also notice that a PP may consist of a preposition, a locational noun, and *of*-DP:

- (2.15) a. on top of the chair
 b. in front of the car

It can be observed in (2.15) (i) that the locational nouns are bare and, more importantly, they are not referential, and (ii) that they turn the PPs *of the chair* and *of the car* into locatives. Watanabe claims that the majority of prepositions such as *from* and *after* come without locational nouns, and that with those prepositions, there is either a null functional *p* employed or a lexical P being incorporated into a functional *p*, an issue to which I will return later in the present chapter.

To summarize Watanabe's argument, pre/postpositions are of two kinds, namely, functional *p* and lexical P, and they have the following distributions in the four languages examined:

(2.16) **Functional and lexical pre/postpositions**

	<i>p</i>	P
Navajo:	enclitics	postpositions
K'ekchi:	prepositions	relational Ns
Japanese:	postposition	locative N
English: ⁷	preposition	locative N

Although Watanabe's argument briefly reviewed above is far from being exhaustive, it provides a plausible framework to be further revised and elaborated. The remainder of this chapter will investigate the properties of *p* and P and the structure of PP in detail.

2.2. Lexical P and functional *p*

The previous section has reviewed the literature and seen how lexical P and functional *p* can be motivated both conceptually and empirically. I will begin this section with semantic decomposition of P on the basis of Jackendoff's (1987, 1990) conceptual structure. The rest of the section confirms that the proposed internal structure of PP has empirical support.

2.2.1. Proposal

A question naturally arises as to how functional *p* can be defined in terms of its semantic content. All the viable functional categories, e.g., T and D, are considered to

⁷ Watanabe (1993:436) notes that prepositions such as *aboard* 'a (i.e., on) + board', *inside* 'in +side' also allow morphological decomposition.

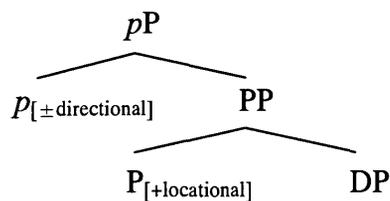
have intrinsic semantic features and they provide instructions at the LF interface (some bear phonological features that are manifested at PF as well) (Chomsky 1995:349-355). Chomsky (1999:35, n. 10) claims that functional categories without semantic features require complication of phrase structure theory. Therefore, functional *p* should bear some semantic feature, if it is a viable functional category.

I propose that functional *p* carries with it a semantic feature [+directional]. Furthermore, lexical P bears a feature [+locational]. This proposal is in line with Jackendoff's (1987, 1990) conceptual structure, in which P is decomposed into two heads: [+path] and [+place].⁸ For example, the P *into* has the following conceptual structure:

(2.17) ([_{Path} TO ([_{Place} IN ([_{Thing} THE HOUSE]))])

Note (i) that Path in Jackendoff's framework corresponds to a feature [+directional] in mine, which can be either [+source], [+goal] or [+path] and (ii) that his Place corresponds to a feature [+location] in mine. Thus, my proposed layered PP structure can be illustrated as follows:

(2.18) Layered PP:



⁸ Jackendoff's (1990:16-17, among others) organization of grammar consists of three autonomous levels of structure: phonological, syntactic and conceptual. Each level is linked by sets of correspondence rules. Jackendoff (1990:18) points out that the level of conceptual structure is not language-dependent. Thus, the conceptual structure does not necessarily reflect the actual surface order of a sentence or word, as illustrated by (2.17).

I claim that with [+locational] PP, functional *p* can be feature-specified as [-directional]. Notice that the above structure parallels that of VP proposed in Chapter 1, in which *v* is present either as [-trans] or [-trans]. I will return to the justification for the presence of functional *p* as shown in (2.18) in Section 2.3.

In the following subsection, I will show that the above proposal has empirical support from facts in Dutch and English.

2.2.2. Multiple Ps in a PP: ‘Circumpositions’ in German and Dutch

There are constructions in Dutch, German and English, in which there seem to be multiple Ps present within a single PP. I will examine such constructions in this subsection and show that they support the layered PP structure proposed in (2.18).

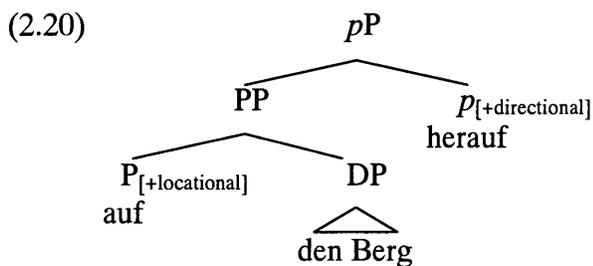
In German (as well as in Dutch), there are constructions known as ‘circumpositions’ in which the DPs are sandwiched by prepositions and postpositions as illustrated in (2.19) (Van Riemsdijk 1990:233):⁹

(2.19) German circumpositions:

- a. auf den Berg herauf
 on the mountain up
- b. hinter der Scheune hervor
 behind the barn from
- c. unter der Brücke durch
 under the bridge through

⁹ Van Riemsdijk (1990:233) mentions that German *hin-* and *her-* are deictic prefixes attached to postpositions, ‘indicating movement away from or towards the point of reference (generally the speaker)’.

In fact, Van Riemsdijk (1990) proposes that in the circumpositions illustrated above, the preposition is lexical *P*, while the postposition is functional *p*, having a layered structure [_{*p*P} [_{PP} *P* NP] *p*]. Recall that the notion of layered PP structure fits well with the one proposed by Watanabe (1993). It should be noted that the prepositions in the above circumpositions are [+locational], while the postpositions are [+directional], which supports the feature-specifications proposed in (2.18).¹⁰ Therefore, the circumposition in (2.19a) can be represented as follows:



In what follows, I will summarize four of the several points that Van Riemsdijk (1990) notes in justifying the layered PP structure for the above circumpositions in German.

First, Van Riemsdijk (1990:236-237) points out that in German, it is prepositions that agree with DPs with respect to Case, i.e., assign them Case. Consider the ways in which the following four Ps agree with their respective DPs in terms of Case:

¹⁰ Helmantel (1998) argues that postpositions in Dutch are inherently [+directional], while prepositions can be construed as [+directional] when they co-occur with motion verbs. See footnote 11 for further details concerning this issue.

(2.21)	Ps	Case on DPs
	auf:	ACC
	zu:	DAT
	unter:	DAT/ACC
	durch:	ACC

Turning now to circumpositional phrases, we notice that the DP complements agree with the prepositions, not with postpositions (Van Riemsdijk 1990:236) as illustrated in (2.22):

- (2.22) a. auf mich zu
 towards me[ACC] to
 ‘towards me’
- b. unter der Brücke durch
 under the bridge[DAT] through
 ‘through under the bridge’

The second point concerns the subcategorization of prepositions and postpositions. (2.23) illustrates that the DP complements are subcategorized for by the prepositions, not by the postpositions (Van Riemsdijk 1990:236).

- (2.23) a. auf dem Berg oben
 on the mountain up
 ‘up on the mountain’

- b. im Tal unten
 in-the valley down
 ‘down in the valley’
- c. *DP oben/unten; *oben/unten DP

(2.23c) shows that *oben/unten* ‘up/down’ is not subcategorized for a DP complement, which indicates that both *oben* and *unten* are intransitive Ps.

Third, Van Riemsdijk points out that there are idiosyncratic selectional restrictions imposed by the prepositions on the deictic affixes *her-/hin-* attached to postpositions. For example, (2.24a) shows that the preposition *zu* selects *hin-*, while *hinter* selects *her-* as shown in (2.24b) (Van Riemsdijk 1990:237):

- (2.24) a. zu alledem hinzu/*herzu
 to all.the in.addition
 ‘in addition to all of this’
- b. hinter der Scheune hervor/*hinvor
 behind the barn out
 ‘out behind the barn’

Fourth, facts such as in (2.25) also support the proposed structure of the circumpositional construction in German.

- (2.25) a. hoch auf dem Berg oben
 high on the mountain up
 ‘high up on the mountain’
- b. *auf hoch dem Berg oben
 on high the mountain up
- c. ??auf dem Berg hoch oben
 on the mountain high up

(2.25) shows that *hoch* ‘high’ can only modify the circumpositional phrase at the leftmost position. As has been illustrated in the layered PP structure in (2.20), functional *p* in German is head-final. (2.25c) results in near ungrammaticality since in that position, *hoch* can only modify the *p* head, not *pP*.

Turning to Dutch, given that circumpositions in Dutch are not essentially different from those in German (Van Riemsdijk 1990:232, fn. 7), I assume the same analysis for Dutch circumpositions. Examples of circumpositions in Dutch (Koopman 2000:230) follow:

(2.26) **Dutch circumpositions:**

- | | |
|----------------------------|------------------------|
| a. onder de brug door | b. tegen het huis op |
| under the bridge through | against the house up |
| ‘through under the bridge’ | ‘up against the house’ |

Koopman (2000:230-231) observes that postpositions in circumpositions in Dutch are [+path] (i.e., [+directional] in my notation). Thus, applying Van Riemsdijk’s

In (2.28a), the PP headed by the preposition *in* is [+locational]. As for (2.28b), when the P appears as a postposition, the PP is [+directional], rather than [+locational].

(2.28c) shows that the PP can be construed as either [+locational] or [+directional].¹¹ I argue that (2.28) can be accounted for as follows.

First of all, the PP in (2.28a) is [+locational] because its functional *p* is feature-specified as [-directional]. In the absence of [+directional] *p*, the PP is unambiguously [+locational]. Second, as for (2.28b), I argue that there is a morphologically covert [+directional] *p* in the derivation. In the course of the derivation, the lexical P *in* adjoins to this functional *p*, hence, deriving the postpositional phrase; I will return to the details of P-to-*p* incorporation in Chapter 4. And finally, the PP in (2.28c) can be represented by two different structures. With the unergative motion verb, we have a structure with [-directional] *p* just like the one in (2.28a). On

¹¹ Koopman (2000:224-225) notes that the prepositional *in* is unambiguously [+directional] with the auxiliary V *zijn* ‘be’ and is unambiguously [+locational] with the auxiliary V *hebben* ‘have’:

- (i) a. Zij is meteen **in** het water gesprongen. [+directional]
 She is immediately in the water jumped
 ‘She jumped into the water immediately.’
 b. Zij heeft **in** het wather (op en neer) gesprongen. [+locational]
 She has in the water (up and down) jumped
 ‘She jumped (up and down) in the water.’
 (cf. *Zij heeft het water **in** gesprongen. ‘She jumped in the water’)

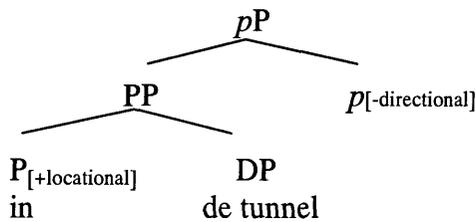
(i) illustrates that prepositions can only be [+directional] when selected by unaccusative motion verbs (see 5.4.2. for a review of Coopmans’ (1989) analysis of motion verbs in Dutch in connection with the two auxiliary Vs). In other words, it is only with unaccusative motion verbs that a preposition can stay in the base position even with the presence of a morphologically covert [+directional] *p*, not incorporating into it. This is confirmed by the preposition-postposition alternation within DP (Koopman 2000:224):

- (ii) a. de weg **in** het bos [+locational]
 the road in the forest
 ‘the road in the forest’
 b. the weg het bos **in** [+directional]
 the road the forest in
 ‘the road into the forest’

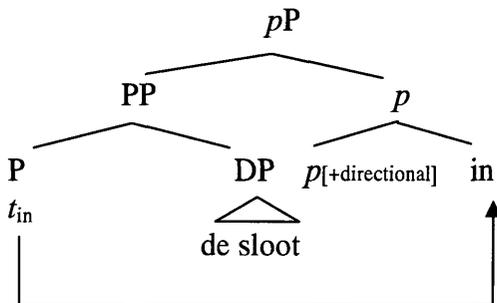
(ii) shows that in other environments, a preposition must incorporate into a null [+directional] *p*.

the other hand, with the unaccusative motion verb, there is null [+directional] *p* in the structure, but unlike the lexical P in (2.28b), the lexical P does not undergo head-to-head movement. The structures of the respective PPs in (2.28a), (2.28b) and (2.28c) are illustrated as follows:¹²

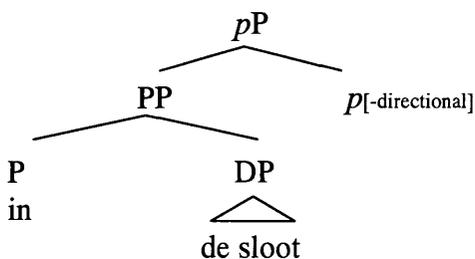
(2.28a') [-directional] *p* = [+locational]



(2.28b') [+directional] *p* & P-to-*p* movement = [+directional]

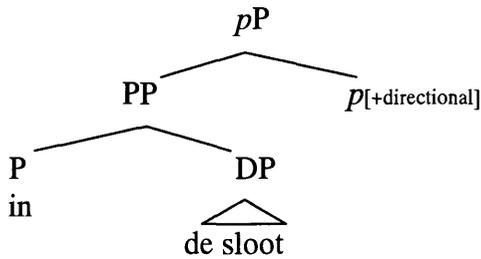


(2.28c') [-directional] *p* = [+locational]



¹² P-to-*p* incorporation is motivated by a P-feature of *p* and an affix-feature of P. These two features are deleted by P adjoining to *p* in syntax. The details of this analysis will be provided in 4.2.2.

(2.28c'') [+directional] *p* & no P-to-*p* movement



I have argued in this subsection that the layered PP proposed in (2.18) has empirical support from circumpositions in German and Dutch. Furthermore, I have argued that the structure I propose for circumpositions can account for the prepositional-postpositional alternation in Dutch. In the next subsection, I will turn to facts in English.

2.2.3. Multiple Ps in a PP: ‘P-P-DP combinations’ in English

English also displays constructions in which multiple Ps seem to be contained within a PP. Let us call those constructions in English ‘P-P-DP combinations’. I will show that the underlying structure of some (not all) P-P-DP combinations in English involves the proposed layered PP in (2.18) with [\pm directional] functional *p* taking a PP headed by lexical [+locational] P.

(2.29) illustrates the constructions in question (Emonds 2000:11).

- (2.29) a. Mary moved a car from behind/near the barn.
 b. Mary took the cat (to) by the fence.

Given the proposed analysis for PP in (2.18), the PPs in (2.29) appear to conform to the

layered PP structure since *from* is [+directional] and *behind* [+locational]. Indeed, Emonds (2000) maintains that the first Ps, *from* and *to*, are semi-lexical heads (i.e., functional ps in my framework) and that the above P-P-DP combinations have a recursive structure.¹³

One set of facts that supports the layered PP structure concerns the positions in which *right* can appear in the above PPs. It is well established that *right* can only modify Ps of space and time in standard American English (Emonds 1972:551, 1985):

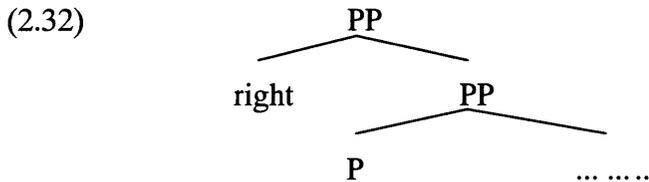
- (2.30) a. Make yourself right at home.
 b. We went right along that road.
 c. Bill put the spices right on the meat.
 d. He lives right up the street.
 e. Some people can't work right before dinner.
- (2.31) a. *Bill visits Europe right often, frequently, etc.
 b. *Those girls were right attractive.
 c. *A proposal of that sort seems right unjust, wise, etc.
 d. *He ironed his shirt right wet.
 e. *Some right ignorant students asked those questions.

¹³ In fact, Emonds (2000) argues that the PPs in (2.29) contrast with those in (i):

- (i) a. He left a coat over near the couch.
 b. Put the linens up behind the books.
 c. Mary pushed her toys back under the chair.
 d. They ordered more agents out into the Rockies.

He claims that the first Ps in the P-P-DP combinations in (i) are sort of modifiers, and that the PPs in (i) have a flat structure instead of a recursive one. In Chapter 3, I will show that they are indeed modifiers, but will propose a different structure from his.

It should be noted in passing that because *right* is an optional element in the above PPs, it is plausible to assume that the modifier is an adjunct, which is adjoined to the respective PPs:



As illustrated in (2.32), *right* adjoins to PP. I have shown in Chapter 1 that the syntactic operation Merge leads to two different outcomes: (i) a new category or (ii) a two-segment category. It is the latter outcome that obtains in (2.32). Since it is the category that is adjoined to which projects, as discussed in Chapter 1, P projects as illustrated in (2.32). Having argued that *right* is an adjunct to PP, let us see where it can appear in the P-P-DP combinations illustrated in (2.29).

Emonds (2000) shows that *right* can intervene between the first preposition and the second preposition in the P-P-DP combinations and can modify the second prepositions:

- (2.33) a. Mary moved a car from right behind/near the barn.
 b. Mary took the cat (to) right by the fence.

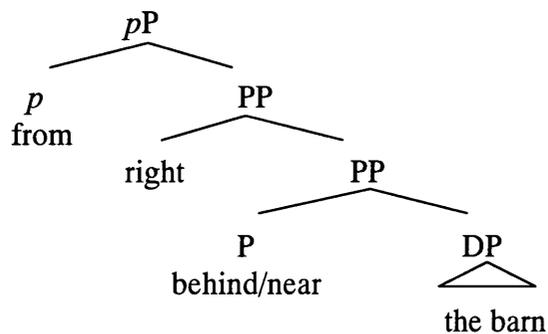
Note that *right* can also appear before the first Ps as follows:

- (2.34) a. Mary moved a car right from behind/near the barn.

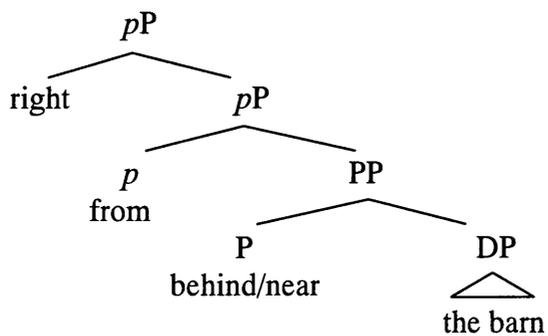
b. Mary took the cat right (to) by the fence.

The above facts can be accounted for if we postulate that *right* can adjoin either to PP or to *pP*. This would give the following structure for (2.33a) and (2.34a):

(2.33a')



(2.34a')



Emonds (2000:12) further argues that the recursive structure for the PPs in (2.29) is supported by the following facts:

(2.35) a. Where they moved it from was near the barn.

b. It's by the fence that they should move it (to).

(2.36) a. *What they moved it from near was the barn.

b. *It's the fence that they should move it (to) by.

Emonds (2000:12) claims that the facts in (2.35) and (2.36) show that the PPs *near the barn* and *by the fence* have a phrasal status. He points out six properties that a phrase is supposed to exhibit and argues that of the six properties, two are relevant to the above facts.¹⁴ First, in the structure $[_X \text{ X } [_{ZP} \text{ Z WP}]]$, ZP can move as a unit. Second, in that structure, ZP can block certain extractions. Under the first property, the grammaticality of the sentences in (2.35) indicates that both *near the barn* and *by the fence* are PPs that are embedded in a phrase headed by a [+directional] preposition. Further, the ungrammaticality of (2.36) shows that according to the second phrasal property, the DPs cannot be extracted from within their respective PPs.

Thus far, the layered PP proposed in (2.18) has been empirically supported from PP in English in which multiple Ps appear. In the remainder of this subsection, I will explore the ways in which the layered PP analysis can be extended to account for other PPs in English, focusing on morphologically covert functional *p*.

Functional *p*, which takes PP complements, has been observed to systematically express a common feature [\pm directional] from the facts in Dutch and English as illustrated in the previous two subsections. Crucially, it has been shown that *p* can be morphologically covert in Dutch, which can account for the

¹⁴ The phrasal properties are as follows (Emonds 2000:4-6):

- (i)
 - a. In a structure $[_X \text{ X}^0 [_{ZP} \text{ Z}^0 \text{ WP}]]$, ZP can move as a unit.
 - b. ZP can under certain conditions be ellipted as a unit.
 - c. ZP can block certain extractions.
 - d. Only X^0 and not Z^0 enter into selection as head of X.
 - e. X^0 can have semantic features *f*, as defined in (ii) below.
 - f. Complements of Z^0 sometimes cliticize onto Z^0 but never onto X^0 .
- (ii) defines semantic features *f* as in (ie) (Emonds 2000:2):
- (ii) Full lexical heads are X^0 whose lexical entries contain non-syntactic, purely semantic features (lower case *f*) which play a role in selection/interpretation but not in derivations.

preposition-postposition alternation in this language. Recall that in Dutch, some prepositional phrases are ambiguous, namely, [+directional] or [-directional], and postpositional phrases are unambiguously [+directional]. The alternation between the [+directional] prepositional phrase versus the [+directional] postpositional phrase is considered to be respectively the presence versus absence of P-incorporation into morphologically covert [+directional] *p*; note that functional *p* is head-final in Dutch. The data in (2.37) suggests that morphologically covert *p* is also available in English.

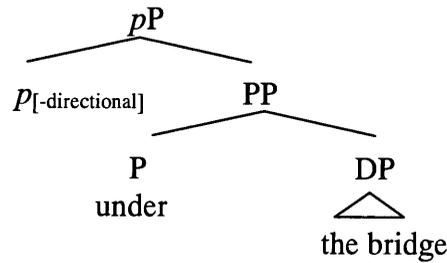
(2.37) The bottle floated under the bridge. [+directional]/[-directional]

(2.37) is ambiguous between [+directional] and [-directional]. When it is construed as [-directional], namely, purely [+locational], the bottle was floating in the vicinity underneath the bridge. As for the [+directional] reading, it is two-ways ambiguous: the sentence can be construed either as (2.38a) or (2.38b):

(2.38) a. The bottle floated through under the bridge. [+path]
 b. The bottle floated to under the bridge. [+goal]

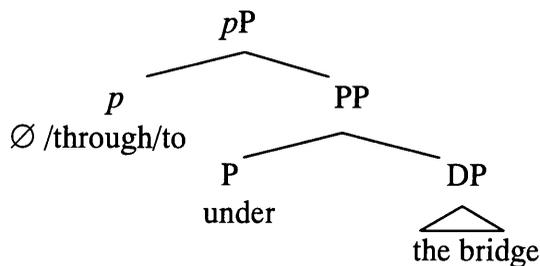
Therefore, (2.37) can be represented in two ways, as follows. First of all, *p* can be [-directional], as in (2.39):

(2.39) [-directional]:



Second, *p* can be [+directional], as in (2.40). Note that [+directional] can be subdivided into [+goal], [+source] and [+path]. As for [+directional] *p* in (2.37), it can be either [+goal], i.e., *to*, or [+path], i.e., *through*. This can be illustrated as follows:

(2.40) [+directional]:



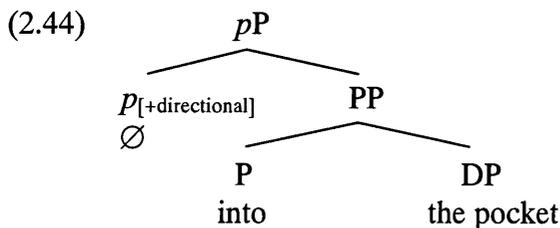
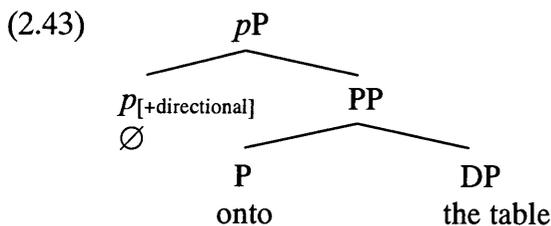
(2.40) indicates that [+directional] functional *p* can be morphologically covert.

The final issue to be discussed regarding morphologically covert *p* concerns compound Ps such as *onto* and *into* in English, in which [+directional] *p*, i.e., *to*, is morphologically realized. More specifically, having argued that PPs in English also have the layered PP structure, two questions need to be addressed as to (i) where those compound prepositions are base-generated and (ii) whether or not they are subject to any movement within PP.

Let me begin with the first question. The selectional restrictions show that it is the first P that is selected by Vs. Consider (2.41) and (2.42):

- (2.41) a. John put the book onto the table.
 b. John put the book on the table.
 c. *John put the book to the table.
- (2.42) a. Mary put the pen into the pocket.
 b. Mary put the pen in the pocket.
 c. *Mary put the pen to the pocket.

The above facts suggest that in *onto* and *into*, it is the lexical Ps *on* and *in* that serve as heads. Thus, it is plausible to assume that *onto* and *into* are both P. Furthermore, since they are [+directional], they need to co-occur with [+directional] *p*. This parallels the structure of a transitive verb discussed in Chapter 1: a [+trans] V must appear with [+trans] *v*. The respective structures for (2.41a) and (2.42a) are as follows:



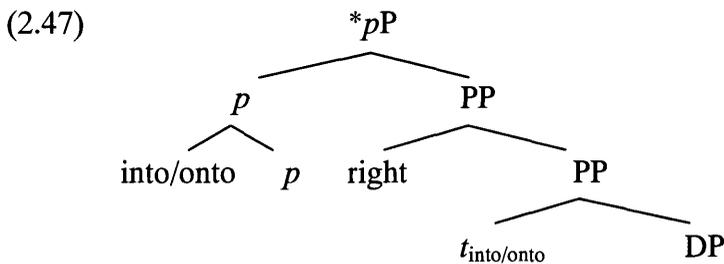
Given (2.43) and (2.44), we turn to the second question as to whether *onto* and *into* undergo head-to-head movement. There is a set of facts that suggests that neither

onto nor *into* moves to adjoin to *p*.

Suppose that they undergo head-to-head movement to adjoin to *p*, *right* should be able to modify both *pP* and PP. However, there is a contrast as illustrated in (2.45) and (2.46):

- (2.45) a. John put the book right onto the table.
 b. *John put the book onto right the table.
- (2.46) a. Mary put the pen right into the pocket.
 b. *Mary put the pen into right the pocket.

The ungrammaticality of the (b) sentences shows that the following structure is not available in English.¹⁵



(2.47) illustrates that *into* and *onto* cannot move to adjoin to morphologically covert [+directional] *p*, as observed in (2.45b) and (2.46b).

In this subsection, I have argued that functional *p* in English bears a semantic

¹⁵ Rooryck (1996) argues that *to* in *onto* and *into* is base-generated under *p*. His analysis has two major problems. First, he claims that *p* is to the right of its PP complement, which is difficult to justify given that English is strictly head-initial. Second, in his analysis, *on* and *in* in *onto* and *into* do not undergo head-to-head movement in syntax to adjoin to *p*, namely, *to*. Supposing that the movement in question takes place at PF, it incorrectly allows PPs such as (2.45b) and (2.46b).

feature [+directional] or [-directional], and that this *p* can be morphologically covert, as in Dutch.

2.2.4. Summary of 2.2.

In this section, I have proposed that the layered structure for PP proposed in subsection 2.2.1. is strongly confirmed by a range of quite different facts in Dutch and English. Most importantly, I have argued that functional *p* can be motivated in terms of its semantic content [\pm directional]. In addition, I have shown that functional *p* can be morphologically covert, which accounts for the preposition-postposition alternation in Dutch and for the [+directional] reading of a given PP in English in the absence of any morphologically overt [+directional] *p*.

2.3. Functional *p* and agreement within PP

This section will attempt to motivate functional *p* in terms of agreement. We have briefly observed in the discussion of Watanabe (1993) that Navajo displays agreement between the postposition and the NP/DP and that K'ekchi has a similar relation between the locative N and the NP/DP. In what follows, I will look at further cases of 'inflecting' pre/postpositions in various languages. The present section is organized as follows. First, the next subsection will examine Nahuatl and Welsh inflecting prepositions. These prepositions show that the prepositional phrase contains a functional head, namely, *p* that carries [-interpretable] features and serves as a locus of feature-deletion within PP. The second subsection deals with Case-features. I will show that the dative-accusative alternation available in languages such as Croatian further provides strong evidence for [\pm directional] functional *p* and its role in bearing a

[-interpretable] Case-feature and the subsequent operation of feature-deletion. Finally, I will turn to inflecting postpositions and case-markers in Hungarian, which provide further support for the role of [\pm directional] functional *p* with respect to feature-deletion.

2.3.1. Inflecting prepositions in Nahuatl and Welsh

From the studies by Baker (1996) on Nahuatl, which is based on an earlier study by Launey (1981), McCloskey and Hale (1984) on Irish and Rouveret (1991) on Welsh, we know that there are pre/postpositions in languages that exhibit agreement with their object. Agreement in the minimalist framework after Chomsky (1995:Ch. 4) is captured as a set of formal features on the probe, e.g., T, and those on the goal, e.g., subject DP.¹⁶ Inflecting pre/postpositions represent morphological realization of such formal features on Ps. This subsection will review the literature on inflecting pre/postpositions in Nahuatl and Welsh and recast them in the framework of the analysis proposed so far.

Nahuatl is one of the polysynthetic languages, in which incorporation is a regular and productive grammatical process.¹⁷ Among other types of incorporation, N-to-P incorporation is regular and productive in this language. In (2.48), the Ns are

¹⁶ As shown in 1.1.2., the goal is the category that is raised and the probe is the category to which the goal is raised.

¹⁷ Baker (1988a) defines incorporation as a grammatical process by which two lexical items with independent meanings and functions can combine into one morphological unit (Baker 1988a). More precisely, he defines incorporation as X^0 -movement to adjoin to its X^0 governor. P-incorporation will be discussed in detail in Chapter 4.

incorporated into the respective Ps (Launey 1981, cited in Baker 1996:407):¹⁸

(2.48) a. **Tēc-pan** Ø-ca’.

lord-LOC 3sS-be

‘It’s at the palace (the lord’s place).’

b. **Tepē-ti-cpac** Ø-ca’ cē cal-li.

mountain-LINK-above 3sS-be one house-NSF

‘There is a house on top of the mountain.’

c. **No-cal-ti-tlan** Ø-ca’ cē mīl-li.

1sP-house-LINK-beside 3sS-be a field-NSF

‘There is a field beside my house.’

For Baker (1996:17), in a type of languages such as Mohawk and Nahuatl, a given phrase XP can become visible for θ -role assignment from a head Y^0 only if it is coindexed with a morpheme in the word containing the head Y^0 via (i) an agreement relationship or (ii) a movement relationship (i.e., incorporation). In this type of language, for example, a verb assigns a θ -role to its argument phrase, and the phrase must be coindexed with a morpheme on the verb. It is either (i) an agreement

¹⁸ The abbreviations used for the Nahuatl examples are as follows:

<i>Person</i>	<i>Number</i>	<i>Series</i>
1 first person	s singular	S subject agreement
2 second person	p plural	O object agreement
3 third person		P possessor agreement
IMPER imperative	LINK linking morpheme	NSF noun suffix
PERF perfective	REFL reflexive	

Note that NSF stands for noun suffixes that are meaningless and appear on morphologically independent nouns (cf. Baker (1996:247) for a note on similar noun suffixes in Mohawk).

morpheme on the verb and the phrase or (ii) an element of the phrase that is incorporated into the verb and its trace that have to be coindexed. That is, either agreement or incorporation makes a phrase visible for θ -role assignment.

Baker (1996) proposes that P is monadic in the polysynthetic languages examined. That is, it takes a single argument and assigns it a referential role (Jackendoff 1983). Thus, when incorporation does not take place, a single agreement morpheme appears on P. Consider (2.49) in Nahuatl (Launey 1981, cited in Baker 1996):

(2.49) a. \bar{o} to-pan quiyāuh.

PAST 1pP-LOC rain/PERF

‘It has rained on us.’

b. No-cpac \emptyset -ca’ quetzal-li.

1sP-above 3sS-be feather-NSF

‘Feathers are on top of me.’

c. No-tlan xi-mo-tlāli.

1sP-beside 2sS.IMPER-2REFL-sit

‘Sit beside me.’

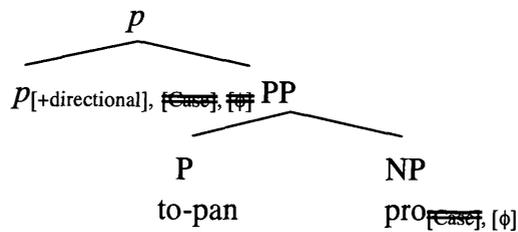
The above examples show that P agrees with its null pronoun (i.e., pro) complement.¹⁹

Take, for example, (2.49a). The P *-pan* ‘on’ takes pro as its complement and agrees with it in person and number.

¹⁹ With regard to the kind of agreement morphemes found on Ps, Baker (1996:407) notes that they are identical to those that appear on Ns to indicate agreement with their possessors.

On the basis of the above data, Baker proposes that there must be a functional head (Func) above P. Recasting his idea in terms of the layered PP in (2.18), (2.49a) can be represented as follows:

(2.50)



Provided that functional heads serve as a locus for feature-deletion, the morphologically covert *p* in (2.50) bears [-interpretable] features, namely, Case-feature and ϕ -features, as well as a [+interpretable] feature [+directional].²⁰ All of the [-interpretable] features are deleted in the above configuration.

Turning to Welsh, here we find both inflecting prepositions and non-inflecting prepositions. Inflecting prepositions show agreement with both overt and covert pronouns, while they do not agree with non-pronominals. Here are the paradigms for three inflecting Ps, *yn* ‘in’, *at* ‘to’, and *o* ‘of’ (Williams 1980:128, cited in Watanabe 1993:426-427):

²⁰ Note that the ϕ -features surface on P, which means that the formal features and the phonological features associated with them can be on two different heads: the former on functional *p* and the latter on lexical P.

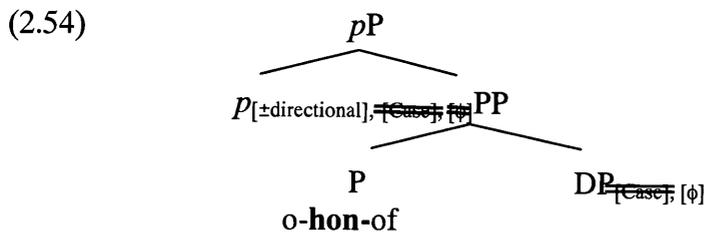
(2.51)	yn ‘in’	sg.	pl.
	1st	ynof	ynom
	2nd	ynot	ynoch
	3rd	ynddo (masc.)	ynddynt
		ynddi (fem.)	

(2.52)	at ‘to’	sg.	pl.
	1st	ataf	atom
	2nd	atat	atoch
	3rd	ato (masc.)	atynt
		ati (fem.)	

(2.53)	o ‘of’	sg.	pl.
	1st	ohonof	ohonom
	2nd	ohonot	ohonoch
	3rd	ohono (masc.)	ohonynt
		ohoni (fem.)	

Take, for example, the 3rd person plural form of *yn* ‘in’, namely, *ynddynt*, which consists of the P *yn* ‘in’, an unglossed infix *-dd-* and the agreement suffix *-ynt*. Following Rouveret’s (1991) observation, Watanabe (1993) notes that in the above paradigms, the infixes are *-dd-* for *yn* ‘in’, and *-hon-* for *o* ‘of’, which are highlighted in bold. Notice that the infix is missing for *at* ‘to’. Rouveret (1991:357) claims that this infix is a functional head on the basis of his proposal that agreement morphology can

only be affixed to a functional head. Watanabe (1993) argues that Rouveret's claim is very close to the spirit of his Case theory, in that in his theory, Case-checking requires a functional head above an agreement head Agr.²¹ Thus, Watanabe (1993:429) proposes that the inflecting preposition *o-hon-of* 'of-hon-1sg' can be decomposed as follows: the infix *hon* as functional *p*, the agreement suffix *of* as Agr, and *o* as lexical P and can be represented as [_{PP} *p* [_{AgrP} Agr [_{PP} P DP]]].²² Agr plays no role in the present study since it has no semantic content. Thus, I propose that the structure of the inflecting prepositional phrase can be represented as follows:²³



The relevant [-interpretable] features are deleted in the above configuration.

2.3.2. [+directional] versus [-directional] PP and Case-alternation

In the previous subsection regarding agreement, I have assumed that functional *p* bears a Case-feature as well as other [-interpretable] and [+interpretable] features and that the Case-feature is deleted against that of the DP. The principal goal of this subsection is to confirm the above. At the same time, I will show that there are languages that exhibit a contrast between Case-deletion and inherent Case-assignment.

²¹ Watanabe proposes a Case theory that can be briefly summarized as follows. First, a Case -feature of a lexical category is passed on to Agr, where Case-checking is done. This creates a [F] feature on Agr. This [F] feature is finally checked off by a functional head above Agr.

²² It should be noted that Ps such as *at* 'to' have a morphologically covert functional head.

²³ I leave the question open as to whether these inflecting Ps undergo head-to-head movement.

Slavic languages such as Russian, Polish and Croatian display a correlation between the [+directional]-[-directional] distinction and Case-alternation.²⁴

Specifically, [-directional] prepositions are generally associated with dative/oblique Case and [+directional] with accusative Case. Consider the following examples from Croatian (Brlobaš and Šarić 2000):

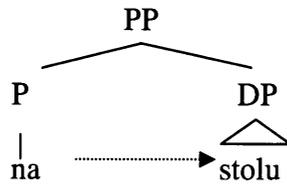
- | | | |
|--------|----------------|------------------|
| (2.55) | a. na stolu | b. na stol |
| | on table [DAT] | on table [ACC] |
| | ‘on the table’ | ‘onto the table’ |
| (2.56) | a. na zidu | b. na zid |
| | on wall [DAT] | on wall [ACC] |
| | ‘on the wall’ | ‘onto the wall’ |

In the (a) examples, the PPs are [-directional] and the DP complements of the P *na* ‘on’ bear the Case-feature [DAT]. On the other hand, the PPs in the (b) examples are [+directional] and the DP complements bear the Case-feature [ACC].

As for dative Case assignment in (2.55a) and (2.56a), I propose that it is assigned by the P *na* ‘on’ as inherent Case. Drawing on Chomsky’s (1986b) idea that P assigns inherent Case at D-Structure, I propose that under the minimalist approach, P assigns inherent Case at merger of P and its DP complement. (2.57) illustrates this instance of inherent Case-assignment:

²⁴ It is the same in other languages such as German.

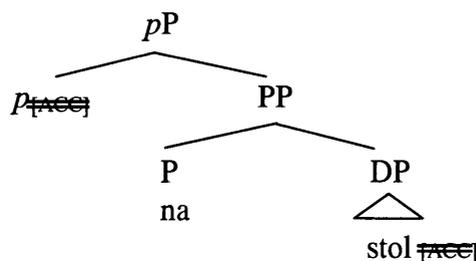
(2.57) Inherent Case-assignment in a [-directional] PP:



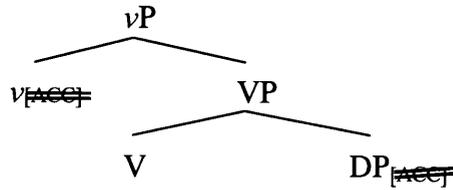
A question remains as to whether a [-directional] functional *p* is involved in the [-directional] PP in (2.57). As far as its conceptual necessity is concerned, the Case for *stolu* cannot be available for Case-deletion because of its inherent nature. Since there is no compelling empirical evidence either for or against the presence of [-directional] *p*, I opt for a single-layered PP analysis for (2.55a) and (2.56a).

Turning to (2.55b) and (2.56b), the DP complements bear a Case-feature [ACC]. This feature is [-interpretable] and must be deleted against the identical Case-feature of [+directional] *p*. Note that this parallels Case-deletion in a transitive-verb structure, in which a Case-feature [ACC] of the DP complement of a transitive verb is deleted against the identical Case-feature of [+transitive] *v*. Consider (2.58a) and (2.58b):

(2.58) a. [+directional]



b. [+transitive]



Although it remains to be seen whether *na* undergoes head-to-head movement in syntax as illustrated above, it seems plausible to conclude that [+directional] *p* provides a locus for feature-deletion with regard to Case.

To summarize, the correlation between the [+directional]-[-directional] dichotomy and Case-alternation suggests a contrast between PPs with an accusative complement and those with a dative complement. I claim that in the former PPs, a functional *p* bears a Case-feature, which is deleted against the same Case-feature of the complement.

2.3.3. Hungarian inflecting postpositions

This subsection deals with another language with inflecting Ps, namely, Hungarian. The close examination of such Ps confirms the role of functional *p* played within the minimalist framework.

In Hungarian, there are postpositions that inflect in person and number (Ackerman 1987, Marácz 1986). However, not all postpositions inflect; there are inflecting postpositions and non-inflecting postpositions, which are referred to in the literature (e.g., Marácz 1986) as ‘dressed postpositions’ and ‘naked postpositions’, respectively. The differences between inflecting postpositions and non-inflecting postpositions in Hungarian pointed out by Marácz are as follows. First, inflecting

postpositions appear with an Infl node, while non-inflecting postpositions do not. Second, inflecting postpositions assign nominative Case to their DP complements, whereas non-inflecting postpositions assign oblique Case. Third, inflecting postpositions can only appear in the post-nominal position, while non-inflecting postpositions can appear either pre- or post-nominally. Fourth, in the unmarked case, no extraction is allowed for PPs headed by inflecting postpositions, while both complements and heads can be extracted out of PPs headed by non-inflecting postpositions. Finally, only non-inflecting postpositions can be ‘intransitive’ postpositions without complements. Although these differences are important aspects of postpositions in Hungarian, in this subsection, I will focus only on inflecting postpositions since they are relevant to the present discussion; I will return to non-inflecting postpositions in the next chapter.

I must note at first that inflecting postpositions are of two kinds: those that participate in the [+directional]-[-directional] paradigm and those that do not. There are thus two issues that concern us at this point, namely, (i) the [+directional]-[-directional] paradigm and (ii) the inflecting paradigm. Let me begin with the first issue.

First, consider the following paradigm of the three inflecting postpositions in Hungarian (Ackerman 1987:217), in which [+directional] postpositions are further subcategorized into two types, namely, [+goal] and [-goal] (= [+source]):²⁵

²⁵ In Ackerman (1987), the ‘inflecting’ Ps are captured under different terms: [-motion] (e.g., *mögött* ‘behind’); [+motion] and [+goal] (e.g., *mögé* ‘to behind’); [+motion] and [-goal] (e.g., *mögül* ‘from behind’).

(2.59)	[-directional]	[+directional]	
		[+goal]	[-goal]
a.	mögött 'behind'	mögé 'to behind'	mögül 'from behind'
b.	alatt 'under'	alá 'to under'	alól 'from under'
c.	előtt 'before'	elé 'to before'	elől 'from before'

Second, as mentioned earlier, inflecting postpositions in Hungarian agree with their complements in person and number. For example, the Ps *mögött* 'between', *mögé* 'to between' and *mögül* 'from between' display the following paradigm (Ackerman 1987):^{26, 27}

²⁶ What have been considered to be case-markers in Hungarian are like postpositions, in that they also participate in the tripartite paradigms, but not all of them (Ackerman 1987). Take, for example, the case-marker that expresses 'on'. This case-marker is realized in terms of [-directional]/[+directional] and the [-goal]/[+goal], as in (i):

(i)	[-directional]		[+directional]	
		[+goal]		[-goal]
	-n/Vn	-ra/re		-ról/ről

Furthermore, this case-marker inflects in person and number:

(ii)	1sg.	rá-m	1pl.	rá-nk
	2sg.	rá-d	2pl.	rá-tok
	3sg.	rá/reá	3pl.	rá-juk

See Appendix in Chapter 3 for more discussion on this matter.

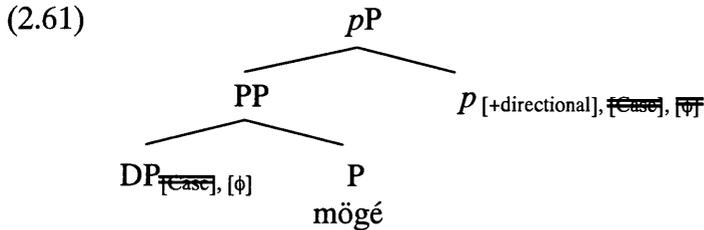
²⁷ Following Szabolsci (1981, 1983) on the structure of possessive construction in Hungarian, Marác (1986) claims that the inflection suffix consists of two independent suffixes, namely, the possessive suffix and the agreement suffix. As opposed to this analysis, I follow Ackerman's (1987) analysis, in which the two suffixes are collapsed into one as a possessive suffix. From the crosslinguistic point of view, I regard this suffix simply as an agreement suffix.

(2.60)	[-directional]	[+directional]	
		[+goal]	[-goal]
1sg.	mögött-em	mögé-m	mögül-em
2sg.	mögött-ed	mögé-d	mögül -em
3sg.	mögött-e	mögé-(je)	mögül-e
1pl.	mögött-ünk	mögé-nk	mogul-ünk
2pl.	mögött-etek	mögé-tek	mogul-etek
3pl.	mögött-ük	mögé-jük	mogul-ük

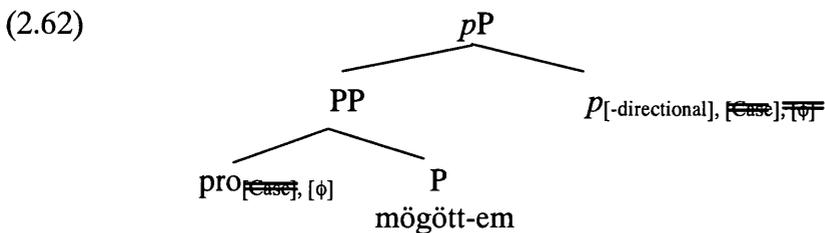
I argue that the above facts can be readily accounted for under the layered PP structure proposed in (2.18). Let me begin my analysis with [+directional] postpositions.

These [+directional] postpositions can be captured in the same way as English compound Ps such as *into* and *onto* have been analyzed in the previous section. That is to say, the [+directional] postpositions are actually compound Ps; they consist of [+locational] lexical P and [+directional] functional *p*, which are merged in the lexicon. For instance, the [+locational] P meaning ‘behind’ merges with the [+goal] feature in the lexicon, which generates *mögé* ‘to behind’. As for its syntactic derivation, I claim that morphologically covert *p* is selected from the lexicon with *mögé* ‘to behind’ in order to license the [+directional] P compound. Earlier I proposed that for *into* and *onto*, a morphologically covert [+directional] *p* is selected from the lexicon into a Numeration; the [+directional] feature of *p* ensures that the compound P in question carries the feature [+directional] with it as a lexical item and at the same time serves as a head that bears [-interpretable] features, although in English, they are not

morphologically realized. Similarly, the Hungarian compound P *mögé* has the following structure:



Let me now turn to the [-directional] postpositions in (2.60). The fact that the [-directional] P *mögött* ‘between’ inflects suggests that there is functional *p* (plausibly [-directional] *p*) in the PP internal structure, and that *p* serves as a locus of feature-deletion. Notice that Hungarian inflecting postpositions behave in the same way as Welsh Ps: Ps show agreement only with overt and covert pronouns. Thus, (2.62) represents the structure of *mögött* with its complement:

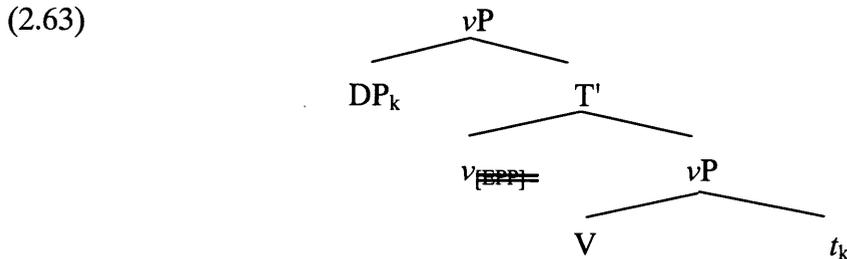


2.3.4. EPP-feature of *p* in Dutch: [Spec, *p*] and beyond

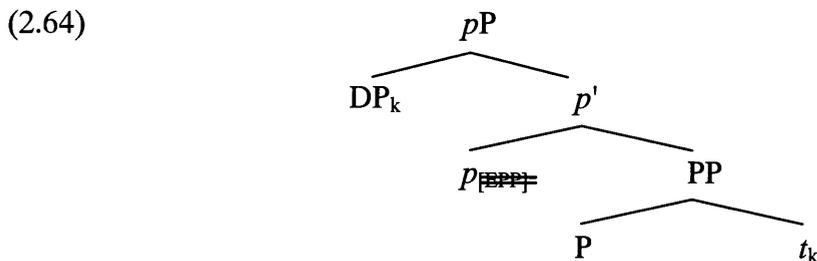
Among the [-interpretable] formal features that a functional head is supposed to bear in languages, thus far one feature has not been paid any attention with regard to functional *p*, namely, the EPP-feature.

As introduced in Chapter 1, the dislocation of a given phrase can be triggered by an EPP-feature on a functional head. Thus, if *v* bears an EPP-feature, it can trigger

dislocation of the DP object of V. (2.63) shows that an EPP-feature of v requires an overt category to occupy its Spec position and is deleted in this configuration:



Likewise, it is predicted that p in some languages bears an EPP-feature for language-particular morphological reasons. When it does, it can trigger movement of the DP complement of P to [Spec, p].



Drawing on Van Riemsdijk (1978), I will show that (2.64) is available in Dutch.

Van Riemsdijk (1978) observes that there are prepositions in Dutch that require some complements to obligatorily move to the pre-P position, which are listed in (2.65) (Zwarts 1997:1093-1094):²⁸

²⁸ Van Riemsdijk (1978) calls this obligatory movement rule 'the r-movement rule'. It should be noted that there are Ps that are not subject to this movement, e.g., *aangaande* 'concerning', *behoudens* 'barring', *benevens* 'in addition to', *niettegenstaande* 'notwithstanding', *ondanks* 'despite', *volgens* 'according to' (see Zwarts (1997:1094-1095) for a complete list of those Ps).

(2.65) aan ‘at’	achter ‘behind, after, beyond’
bij ‘by, near, with’	binnen ‘within, inside’
boven ‘above, over’	buiten ‘outside’
door ‘through, by’	in ‘in, inside, into’
langs ‘along, past’	met ‘with’
na ‘after’	naar ‘to, toward, for’
naast ‘next to, beside, alongside’	om ‘around, about’
onder ‘under, underneath, beneath’	op ‘on, upon, at’
over ‘over, across, about’	tegen ‘against’
tegenover ‘opposite’	tot ‘til, until, as far as, up to’
tussen ‘between, among, amid’	uit ‘out of, from’
van ‘of, from’	voor ‘before, in front of, for’
voorbij ‘past, beyond’	

However, it must be noted that not all complements of the above Ps undergo movement; only R-pronouns (Van Riemsdijk 1978) in Dutch (i.e., pronouns with a [+locational] meaning, e.g., *er* ‘there’, *daar* ‘there’, *waar* ‘where’, *ergens* ‘somewhere’) can move to the pre-P position.²⁹ I will call such R-pronouns [+locational] pronouns in what follows. Consider (2.66) through (2.68), in which *waar* ‘where’ and *er* ‘there’ are subject to the obligatory movement rule in question, while *wie* ‘whom’ is not:³⁰

²⁹ All of these pronouns contain the r-sound, hence the name R-pronouns.

³⁰ As the following examples show, R-pronouns can be extracted out of PP (Koopman 2000:208):

- (i) a. Ik heb **er** dat boek **op** gelegd.
 I have there that book on put
 ‘I have put that book on it.’

- (2.66) a. *op waar ‘on where’
 b. waar op ‘where on’
- (2.67) a. op wie ‘on whom’
 b. *wie op ‘whom on’
- (2.68) a. *op er ‘on there’
 b. er op ‘there on’

(2.66) and (2.68) show that *waar* and *er* are [+locational] and both of them obligatorily move, while (2.67) shows that *wie* ‘whom’ is [-locational] and stays in the base position. I propose that functional *p* in (2.66) and (2.68) bears an EPP-feature, which needs to be deleted by overt movement of the [+locational] pronoun to [Spec, *p*], while functional *p* in (2.67) does not bear such feature. In essence, my proposal is in parallel to Zwarts’ (1997). He proposes that the R-pronoun carries a feature [+R], which can be deleted in a [+R] Spec position of the prepositions that allow r-movement.

One might find the above approach undesirable because of the restricted distribution and nature of the EPP-feature on functional *p*. In fact, Koopman (2000) argues that other DPs also move to the Spec position of functional *p* (the functional

-
- b. **Waar** heb jij dat boek **op** gelegd.
 Where have you that book on put
 ‘Where did you put that book on?’

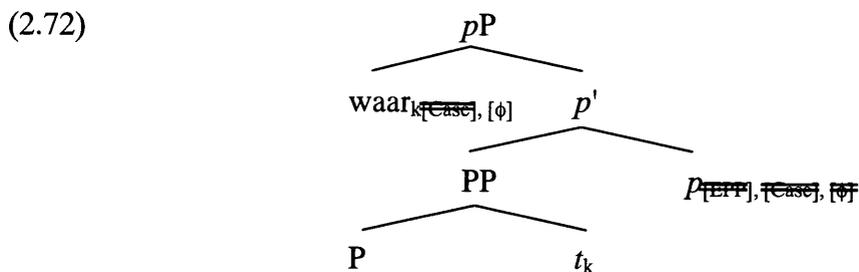
The above facts have been regarded as evidence for R-pronouns occupying some Spec position within PP and then escaping farther from within PP (Van Riemsdijk 1978). Thus, (i) can be represented as follows:

- (ii) a. Ik heb **er**_k dat boek [*t*'_k [**op** *t*_k]] gelegd.
 I have there that book on put
 ‘I have put that book on it.’
 b. **Waar**_k heb jij dat boek [*t*'_k [**op** *t*_k]] gelegd.
 Where have you that book on put
 ‘Where did you put that book on?’

- (2.71) a. *er met er mee
 there with there with
- b. *waar tot waar toe
 where to where to

I consider (2.71) to be the evidence for the restricted distribution of the EPP-feature in question. That is, the morphological change of the prepositions in the presence of the [+locational] pronouns represents the morphological realization of the EPP-feature, which requires [+locational] pronouns to move to [Spec, *p*].

On the basis of the above discussion, I argue that the structure of (2.66a) can be represented as follows. Note that functional *p* in Dutch is head-final, as has been shown in Subsection 2.2.2.



(2.72) illustrates that [-interpretable] features of *p* other than the EPP-feature are also deleted against those of the [+locational] pronoun. Furthermore, it confirms that [-directional] *p* exists in Dutch and it can carry a [-interpretable] feature, given the [-directional] reading of (2.66).

2.3.5. Summary of 2.3.

It has been shown in this section that functional *p* can be motivated in terms of agreement within PP. Like other functional heads, I have argued that functional *p* serves as a locus of agreement, i.e., feature-deletion within the minimalist framework. I have examined inflecting prepositions in Nahuatl and Welsh, a correlation between the [+directional]-[-directional] distinction and Case-alternation in Croatian, and inflecting postpositions in Hungarian. The facts examined have all confirmed my proposal that was stated at the outset of this section concerning the layered PP structure that contains lexical P and functional *p*, especially the role played by functional *p* as a locus of feature-deletion. Finally, I have claimed that the [-interpretable] features carried by functional *p* are expected to include an EPP-feature, depending on language-particular morphological requirements. Analyzing r-movement in Dutch, I have argued that R-pronouns are subject to movement to [Spec, *p*] because of an EPP-feature on *p*.

2.4. Extending the layered structure: Locative Ns

In this section, I will propose that we can decompose lexical P into two separate heads. Empirical evidence for the proposal comes from English, K'ekchi, Japanese and Sranan. I will begin this section with a revised proposal for the internal structure of PP.

2.4.1. Proposal: Revised layered PP structure

Thus far, I have shown that functional *p* in the layered PP structure proposed in (2.18) can be supported empirically. However, I have not paid much attention to the properties of lexical P. The main goal of this subsection is to propose a tri-layered structure for PP. Let me begin my discussion with Watanabe's (1993) analysis of

English PP mentioned earlier in this chapter.

As has been introduced earlier, Watanabe proposes a hierarchical structure for PP. As for English, he claims that prepositions in English (e.g., *in*, *on* and *at*) are functional *ps* and locative Ns (e.g., *top*, *front*, and *back*) are lexical Ps. However, under my analysis presented so far, [+locational] prepositions in English are lexical Ps. Therefore, a question immediately arises as to where those locative Ns are base-generated and as to what properties they have.

Locative Ns in English such as *top*, *front* and *back* appear in the bare form immediately following [+locational] Ps. Consider (2.73):

- (2.73) a. John put the book on top of the table.
 b. Mary parked the car in front of the store.
 c. The tree is in back of the bench.³¹ (Gruber 1976:46)

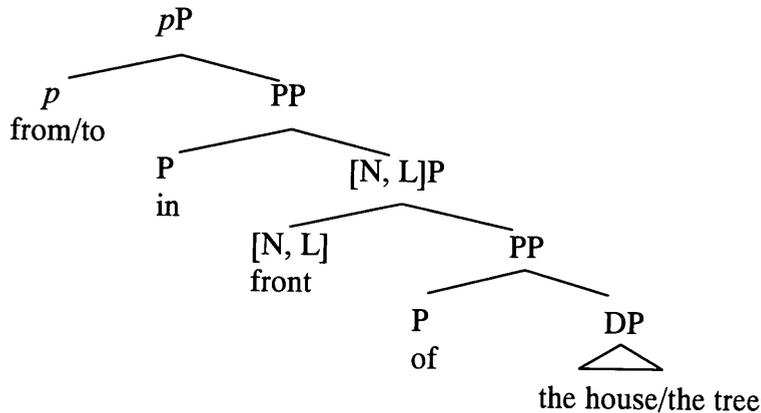
In (2.73), the lexical Ps *on* and *in* co-occur with the locative Ns *top*, *front* and *back*.

Further, *in front of* can be preceded by *from* or *to* as in (2.74).

- (2.74) a. The dog scooted from in front of the house.
 b. The horse galloped from in the tent to in front of the tree.

Given that *from* and *to* are [+directional] functional *ps*, I propose that the structure for *from/in front of DP* can be represented as follows.

³¹ M. Tallerman and R. Maylor have pointed out to me that the PP *in back of the bench* is unacceptable in British English.

(2.75) Revised layered PP³²

There are two points to be noted about the locative N in the revised layered PP structure illustrated in (2.75). First, I keep Watanabe's proposal of regarding *front* as a lexical head. Given the above tri-layered PP structure, I propose that it is base-generated as the lowest head.³³ Second, this lexical head carries a categorial feature [N]. This is supported by the presence of *of* in *in front of* as the head P of the PP complement of the locative N *front* (*of* as a genitive P (cf. Emonds 1985: Ch. 1)).

In the following subsection, I will examine the properties of locative Ns in some more detail.

³² J. Emonds (personal communication) asks why free modification such as the one observed in (i) is blocked with locative N:

- (i) *from in the fronts of the houses

I simply note here that as shown in this chapter, only P can select [N, L] and merge in syntax because of the feature-specifications of [N, L].

³³ There is an alternative analysis to the one presented in (2.75). That is, *top of* and *front of* are analyzed as constituting a single lexical P with *on* and *in*, respectively. That is to say, *on top of* and *in front of* are amalgamated lexical units just like *out of* and *because of* as has been proposed in Hendrick (1976) and Emonds (1985). Applying this analysis, the example in (i) taken from Gruber (1976:83) can be represented as follows:

- (i) The dog scooted [_{pP} from [_{PP} [_P in front of] the house]]

Under this analysis, *out of* and *off of* as in *out of the room* and *off of the carpet* also constitute amalgamated lexical P. However, I will show in what follows that my proposed analysis has crosslinguistic support.

2.4.2. Properties of Locative Ns

A motivation for the proposed PP internal structure in (2.75) comes from the fact (i) that they appear as a bare head and (ii) that they lack the ability to refer. However, the following examples show that Ns such as *top*, *front* and *back* are ambiguous between locative (or non-referential) Ns and referential Ns:

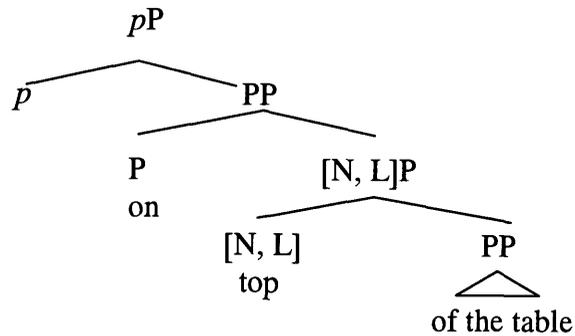
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| (2.76) | a. John was standing on top of the table. | [bare N] |
| | b. John was standing on the (very) top of the table. | [D + N] |
| (2.77) | a. Bill stood in front of the bus. | [bare N] |
| | b. Bill sat in the (very) front of the bus. | [D + N] |
| (2.78) | a. I put a cart in back of the tool shed. | [bare N] |
| | b. I sat in the (very) back of the car. | [D + N] |

The locative Ns in the above examples are non-referential and, thus, they are construed as part of the preposition complex. This is reflected by *in back of* in (2.78a), which can be paraphrased by a single preposition, namely, *behind*. On the other hand, the (b) examples above show that the Ns can be referential. The contrast can be easily observed in (2.77) and (2.78). While in the (a) examples, the subject is outside *the bus* or *the car*, the subject in the (b) examples is inside *the bus* or *the tool shed*. This meaning difference suggests that the bare N in the (a) examples are structurally different from the Ns preceded by D in the (b) examples.

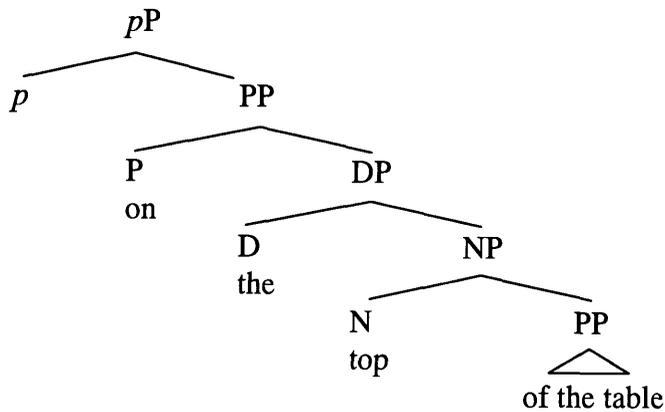
Given the above difference between the Ns in the (a) examples and those in the (b), the PPs can be analyzed as follows. The PPs in the (a) sentences have a tri-layered structure as in (2.75). On the other hand, the PPs in the (b) sentences do not. Take,

for example, (2.76). The PP in (2.76a) and that in (2.76b) can be represented as in (2.79) and (2.80), respectively:

(2.79)



(2.80)



Crosslinguistic support for the above analysis comes from Sranan, an English based creole spoken in Surinam.

In Sranan, *baka* ‘back’ and *tapu* ‘top’ appear with the locative preposition *na* ‘in/on/at’ (Plag 1998):³⁴

³⁴ Both *baka* ‘back’ and *tapu* ‘top’ can appear without *na* ‘in/at’. I claim that in such cases, it is not that P is absent from the structure, but that P is morphologically covert.

- (2.81) a. na baka a oso
 in/at back the house
 ‘behind the house’
- b. na tapu mi tafra
 on top my table
 ‘on top of my table’

The translations for the above two PPs show that *baka* ‘back’ and *tapu* ‘top’ are non-referential just as *back* in *in back of the tool shed* and *top* in *on top of the table* in English. From the above facts alone, the categorial status of *baka* and *tapu* is not certain; they can be either N or P. However, evidence available in Sranan indicates that *baka* and *tapu* carry the categorial feature [N]. Consider the following examples:

- (2.82) a. na baka fu a oso
 in/at back of the house
 ‘behind the house’ [non-referential]
 ‘at the back part of the house’ [referential]
- b. na tapu fu mi tafra
 in/at top of my table
 ‘on top of my table’ [non-referential]
 ‘on the top part of my table’ [referential]

There are two points to be noted concerning the above facts.

First, as can be seen from (2.83), *fu* ‘of’ in Sranan is parallel to English *of* (Plag

1998:341). That is, it is a genitive P.

- (2.83) a. *mi sisa oso*
 my sister house
 ‘my sister’s house’
- b. *a oso fu mi sisa*
 the house of my sister
 ‘my sister’s house’

Therefore, the presence of *fu* ‘of’ in (2.83) suggests that both *baka* and *tapu* carry the categorial feature [N].³⁵

Second, both *baka* and *tapu* display the same referential/non-referential ambiguity we have observed with *top*, *back* and *front* in English. The ambiguity indicates that there are two different underlying structures for each PP in (2.82). In contrast to the referential *baka* and *tapu*, which probably involve D in their respective

³⁵ The example *mi sisa oso* ‘my sister’s house’ seems to suggest that as opposed to English, genitive Case is not morphologically realized in Sranan. Plag (1998) observes that *baka* and *tapu* not only appear in the prenominal position, but also in the postnominal position. Note that when they appear postnominally, both *baka* and *tapu* are ambiguous between locative Ns and referential Ns, which are shown in the two translations for each PP in (i).

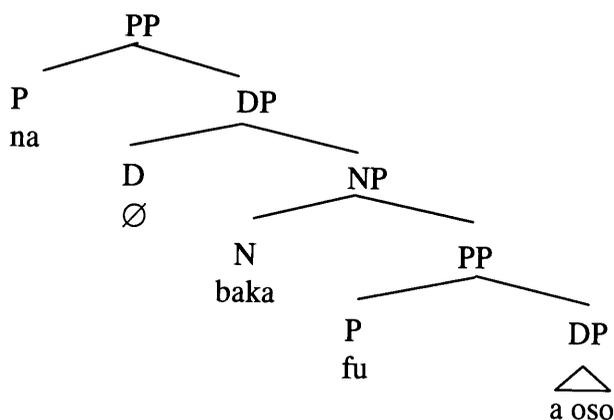
- | | | |
|-----|---------------------------------|-------------------|
| (i) | a. <i>na a oso baka</i> | |
| | in/at the house back | |
| | ‘behind the house’ | [non-referential] |
| | ‘at the back part of the house’ | [referential] |
| | b. <i>na mi tafra tapu</i> | |
| | in/at my table top | |
| | ‘on top of my table’ | [non-referential] |
| | ‘on the top of my table’ | [referential] |

Provided that *a oso* and *mi tafra* bear a genitive-Case, the facts in (i) also support the locative N analysis proposed for *baka* and *tapu*. It needs to be noted in passing that when *baku* appears in the postnominal position, it can also mean ‘again’ (Plag 1998).

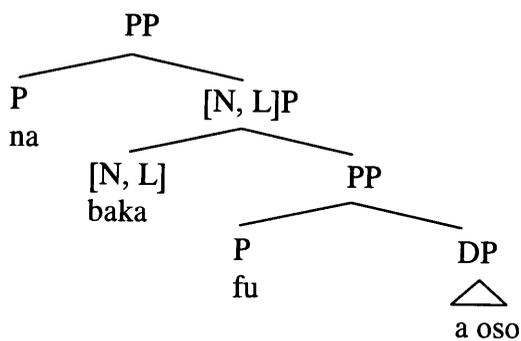
structures, *baka* and *tapu* as locative Ns are bare Ns as have been analyzed so far.

Thus, the structures for (2.82a) and (2.82b) can be represented as in (2.84a) and (2.84b), respectively:

(2.84) a. [+referential], e.g., *na baka fu a oso* ‘in/at the back part of the house’



b. [+locational], e.g., *na baka fu a oso* ‘behind the house’



In summary, I have shown in this subsection that the properties of locative heads support the revised layered PP structure proposed in (2.75). It follows from the above analysis that it is now necessary to revise Watanabe’s treatment of locative Ns in Japanese and K’ekchi as well.

2.4.3. Locative Ns in Japanese and K'ekchi and the tri-layered PP structure

Under Watanabe's analysis, Japanese locative Ns such as *ue* 'top', *sita* 'under', *mae* 'front', and *yoko* 'side' are base-generated under lexical P. Keeping with the tri-layered PP structure proposed in (2.75), I assume that these locative Ns in Japanese are base-generated under [N, L] just as English and Sranan locative Ns are.

First of all, consider the set of facts in (2.12), repeated below as (2.85), that represent PPs with the locative Ns in question:

- (2.85) a. *tukue-no ue-ni*
 desk-GEN top-LOC 'on top of the desk'
- b. *tukue-no sita-ni*
 desk-GEN under-LOC 'under the desk'
- c. *tukue-no mae-ni*
 desk-GEN front-LOC 'in front of the desk'
- d. *tukue-no usiro-ni*
 desk-GEN back-LOC 'behind the desk'
- e. *tukue-no yoko-ni*
 desk-GEN side-LOC 'beside the desk'

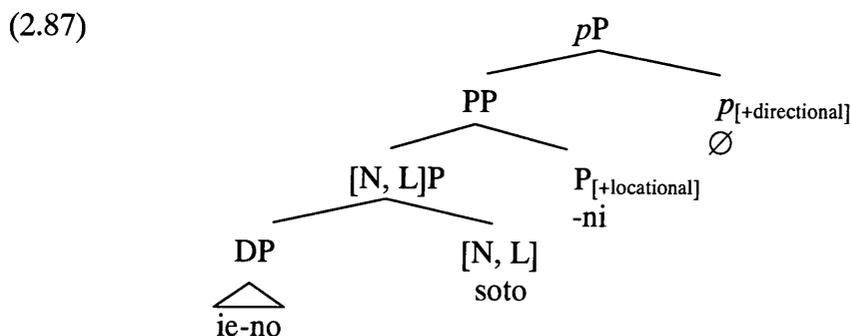
As summarized earlier, Watanabe (1993) argues that the above four PPs share the internal structure: [_{PP} [_{DP} DP locative N]-*ni*]. It is certainly the case that *ue* 'top', *sita* 'under', *mae* 'front' and *yoko* 'side' in the above PPs carry a categorial feature [N], in that pre-nominal noun phrases e.g., *kinoo-no koogi* 'yesterday's lecture' and *Doi-sensei-no ronbun* 'Doi-teacher-GEN thesis' must appear with the genitive

case-marker. Those locative Ns are under the lowest head in the structure. However, a question remains as to the properties of *-ni* ‘LOC’ and where it is base-generated within the proposed tri-layered PP structure.

Just like Watanabe (1993), Emonds (2000) also proposes that a locative N and *-ni* should be analyzed as constituting a layered PP structure. Consider (2.86):

- (2.86) [PP [PP ie-no soto] -ni] neko-o das-u.
 house-GEN outside-LOC cat-ACC take.out-PRES
 ‘They take the cat outside the house.’

The PP in (2.86) is [+directional]. The question remains, however, as to whether (i) *-ni* ‘LOC’ is [+directional] functional *p* or (ii) *-ni* is [+locational] lexical P (with a morphologically covert [+directional] *p*). I propose that the latter is the case. That is, a closer look at *-ni* reveals that it is inherently [+locational]. Thus, the PP in question can be represented as follows:



To begin with, notice that the *-ni*-phrases in (2.85) do not express [+directional]. Notice also that the entire PP in (2.86) is [+directional] since it co-occurs with the

[+motion] verb *das-u* ‘take out’. In cases where it co-occurs with [-motion] verbs, the PP *ie-no soto-ni* ‘house-GEN outside-LOC’ is [+locational]:

- (2.88) a. Taroo-ga ie-no soto-ni tat-ta.
 Taroo-NOM house-GEN outside-LOC stand-PAST
 ‘Taroo stood outside the house.’
- b. Mary-ga ie-no soto-ni i-ru.
 Mary-NOM house-GEN outside-LOC be-PRES
 ‘Mary is outside the house.’

(2.88) indicates that the PP *ie-no soto-ni* ‘outside the house’ is [+locational] with the [-motion] verbs *tat-ta* ‘stand-PAST’ and *i-ru* ‘be-PRES’. In Japanese, PPs with *-e* ‘to’ are invariably [+directional]:

- (2.89) a. ie-no soto-e
 house-GEN outside-to
 ‘to outside the house’
- b. tukue-no mae-e
 desk-GEN front-to
 ‘to in front of the desk’

Moreover, [+goal] can be expressed by DP-internal PPs with *-e* ‘to’, not with *-ni* ‘LOC’.

(2.90) illustrates the contrast in question.³⁶

- (2.90) a. *Tokyo-ni-no ressyā
Tokyo-LOC-GEN train
'a train to Tokyo'
- b. Tokyo-e-no ressyā
Tokyo-to-GEN train
'a train to Tokyo'

The above facts support my proposal presented in (2.87). On the other hand, *-e* is inherently [+directional] as in (2.90b) and it is under functional *p*.³⁷ Therefore, I claim that the PP *tukue-no mae-e* 'desk-GEN front-to' can be represented as follows:

³⁶ The ungrammaticality of *-ni*-phrases within DPs comes from the fact that *-ni* cannot occur with case-markers. Consider the following examples:

- (i) a. *NY-ni-no huraito
NY-LOC-GEN flight
'a flight to NY'
- b. *Pari-ni-ga too-i.
Paris-to-NOM far-PRES
'Paris is far.'

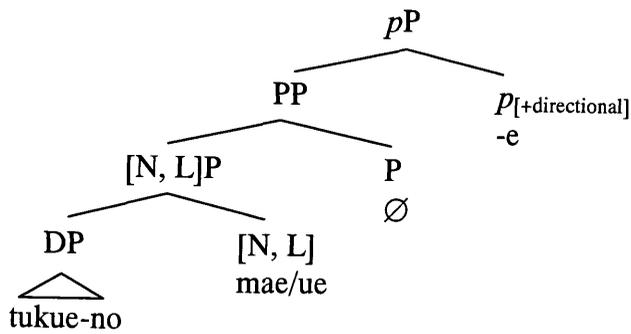
Notice that postpositions such as *-e* 'to' and *-kara* 'from' appear with the case-markers *-no* 'GEN' and *-ga* 'NOM'.

- (ii) a. NY-e-no huraito
NY-to-GEN flight
'a flight to NY'
- b. Pari-kara-ga too-i.
Paris-from-NOM far-PRES
'From Paris (it) is far.'

The above contrast indicates that *-ni* is different from *-e* and *-kara*. The fact that it does not appear immediately after the case-markers shows that *-ni* is more like a case-marker in this respect (e.g., **John-o-no* 'John-ACC-GEN'). I note here that *-ni* contrasts with *-e* and *-kara* in terms of its feature specifications.

³⁷ Two issues need to be pointed out here with regard to the two postpositions *-ni* and *-e*. First, neither of them can be morphologically covert for language-particular morphological reasons. In contrast, the [+source] postposition *-kara* has a morphologically covert counterpart, which will be discussed in 4.4. Note that the covert [+source] P is always affixal and must undergo P-to-V incorporation. Second, [+locational] *-ni* and [+directional] *-e* cannot co-occur, barring *soto-ni-e* 'outside-LOC-to'. This is because a postposition can be suffixed to neither a case-marker nor another postposition in Japanese.

(2.91)



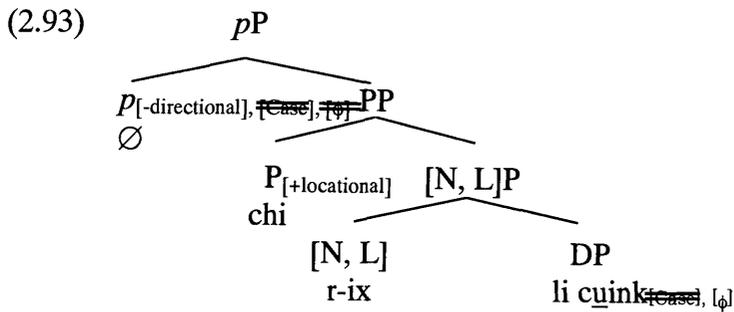
Having shown that the tri-layered PP analysis can be applied to PPs in Japanese, let me now turn to locative Ns in K'ekchi.

As has been mentioned above, oblique relations in K'ekchi are expressed with the help of relational Ns or more precisely body part Ns such as *e* 'mouth', *ix* 'back', *u* 'face'. The example in (2.9c) repeated below as (2.92) shows that the PP is composed of P, agreement and a relational noun:

- (2.92) *chi r-ix li cuink*
 at 3rd.sg-back the man
 'behind the man'

In the above example, the agreement affix appears on the relational N *ix* 'back', not on the preposition *chi* 'at'. Recall that on the basis of this observation, Watanabe has argued that *chi* and *r-ix* are separate heads and constitute a layered PP structure.

Recasting his analysis into the tri-layered PP structure, I propose that *r-ix* 'back' is locative N, *chi* is lexical P, and a [-directional] functional *p* is morphologically covert, which is illustrated as follows:



As mentioned in Chapter 1, feature-deletion can take place without dislocation. Thus, the [-interpretable] features on [-directional] functional *p* are deleted against those of the DP complement in situ, as shown in (2.93).³⁸

2.5. Concluding remarks on Chapter 2

To summarize this chapter, I have proposed that the full structure of a layered PP can be represented as follows in head-initial structures:

³⁸ It has been observed that Welsh has compound prepositions, which consist of P and N, as follows (see King 1993:293-295):

- (i) a. ar ben b. yn ôl c. ar ôl
 on top in trace on trace
 ‘on top’ ‘according to’ ‘after’

Facts in (i) suggest that they have the tri-layered PP structure. However, that does not seem to be the case. Consider (ii), in which it is shown that pronominal clitics (in bold) appear between P and N in the presence of either overt or covert pronouns:

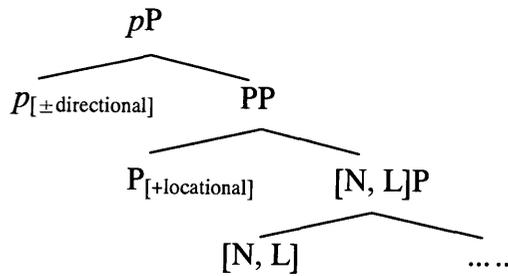
- (ii) *ar gyfer* ‘for’
- | | sg. | pl. |
|----------|-------------------------------|--------------------------------|
| 1st | ar y nghyfer ‘for me’ | ar ein cyfer ‘for us’ |
| 2nd | ar dy gyfer ‘for you’ | ar eich cyfer ‘for you’ |
| 3rd masc | ar ei gyfer ‘for him’ | ar eu cyfer ‘for them’ |
| fem | ar ei chyfer ‘for her’ | |

Rouveret (1991:380-381, fn. 54) argues that the pronominal clitics in Welsh adjoin to phonologically null D (or occupy the D-position itself). Given this analysis, the compound preposition in (ii) does not have the tri-layered structure, but has the following structure:

- (iii) [_{PP} ar [_{DP} [_D clitic-D] gyfer]].

Note that compound prepositions in (i) have the same underlying structure as that in (iii) without pronominal clitics.

(2.94)



Each head position in (2.94) can be filled with a morpheme class such as *from in front of the house*, i.e., [_{pP} *from* [_{PP} *in* [_{[N, L]P} *front* [_{of the house}]]]]. The lowest head, i.e., locative N, takes either a DP or PP complement. It is represented as [N, L] because it carries a categorial feature [N]. As for its semantic property, Watanabe (1993:434) argues that this head turns its complement into a locational phrase. As for the properties of P, I have argued that it is a lexical head and it further specifies a location expressed by a locational phrase (i.e., [_{[N, L]P} [N, L] DP]) ‘in relation to another phrase in the clause’ (Watanabe 1993:434). Concerning the highest head *p*, I have shown that it is a functional head and it participates in feature-deletion. Further, the [+directional] functional *p* provides additional information with a locational phrase (i.e., [_{PP} P[+locational] [_{[N, L]P} [N, L] DP]]) with respect to direction, namely, [+path], [+goal] or [+source].

CHAPTER THREE

Layered PP and adjunct Ps

In Chapter 1, I have shown that the operation Merge results in two different types of outcome, depending on the properties of the items to which Merge applies. In the previous chapter, we have focused on cases where one of the two items is subcategorized for the other. If that is the case, then the operation Merge generates a new category. For example, consider the ways in which the tri-layered PP structure is built up, e.g., [_PP *from* [_{PP} *in* [[_[N, L]P *front* [_{PP} *of the house*]]]]. First, [N, L] merges with its PP complement. The merged object is a new category J (= {[N, L], {[N, L], PP}}). Then, P merges with J and forms another new category K (= {P, {P, J}}). Finally, *p* merges with K, resulting in yet another new category M (= {*p*, {*p*, K}}). In the present chapter, I will focus on the other kind of outcome, i.e., formation of a two-segment category. I have already introduced one instance of this type of merger in the previous chapter, namely, *right* adjoining to *pP/PP*.¹ In order to form *right from in front of the*

¹ The principal reason for the adjunct status of *right* is based on its optionality. D. Adger (personal communication) has pointed out to me that *right* may not be an adjunct, but is a functional head, e.g., a degree head (see Koopman (2000) for her treatment of *vlak* ‘right’ and *pal* ‘right’ in Dutch). This is because (a) it is not extractable (e.g., **It is right that Sam disappeared down into the darkness*), (b) does not strand (e.g., **It was out into the Rockies that they ordered more agents right*) (c) does not recur (e.g., **right right over near the couch*), and (d) displays strict positioning (e.g., *right over near the couch* versus **over right near the couch*). However, the above behaviors of *right* do not rule out my idea of treating it as an adjunct. First, phrase-internal adjuncts resist extraction (e.g., **It was from Japan that I met a student*). Second, phrase-internal adjuncts cannot be left behind (e.g., **It was a student that I met in linguistics*). Third, more than one of the same type of adjunct cannot occur within a phrase (e.g., **the students from London from England* (Oga 2000:101)). As to the final point, if the strict positioning of *right* and *over* suggests that they are both heads (i.e., a degree head and a [+directional] *p*, respectively), then the following facts, which I have discussed in Chapter 2, pose a problem:

- (i) a. from right behind the barn
- b. right from behind the barn

house, right merges with the category M (= {*p*, {*p*, K}}). The outcome of this merger is a two-segment category N (= {<*p*, *p*>, {right, *p*}}, whose label <*p*, *p*> indicates that it is an ordered pair. This can be represented as follows:

$$(3.1) \quad \begin{array}{c} \text{N} = \{ \langle p, p \rangle, \{ \text{right}, p \} \} \\ \swarrow \quad \searrow \\ \text{right} \quad \text{M} = \{ p, \{ p, K \} \} \end{array}$$

The main goal of Chapter 3 is to show that Ps can adjoin to *pP/PP*. I will examine facts from three languages, English, Dutch and Hungarian. This chapter is organized as follows. First, I will begin my discussion of adjunct Ps in English by examining P-P-DP combinations in English. I will show that there is one type of P-P-DP combination in English in which the first preposition can be regarded as an adjunct P, adjoining to either *pP* or *PP*. Second, I will show that the proposed analysis can be extended to account for similar constructions in Dutch and Hungarian.

3.1. P-P-DP combinations in English

In this section, I will show that P-P-DP combinations in English are of three types with different underlying structures. The first type of P-P-DP combination has already been introduced and analyzed as constituting a layered PP structure in 2.2.3. The second

I do not know exactly why *right* is required to appear at the edge of *PP/pP*.

Concerning evidence for the adjunct status of *right*, J. Emonds (personal communication) has pointed out to me that (ii) and (iii) indicate that it is not *right* that is selected by the respective verbs, but *onto* and *off*:

- (ii) a. He sewed it right onto the cloth.
b. *He sewed it right off of the cloth.
- (iii) a. *He stripped it right onto the wall.
b. He stripped it right off of the wall.

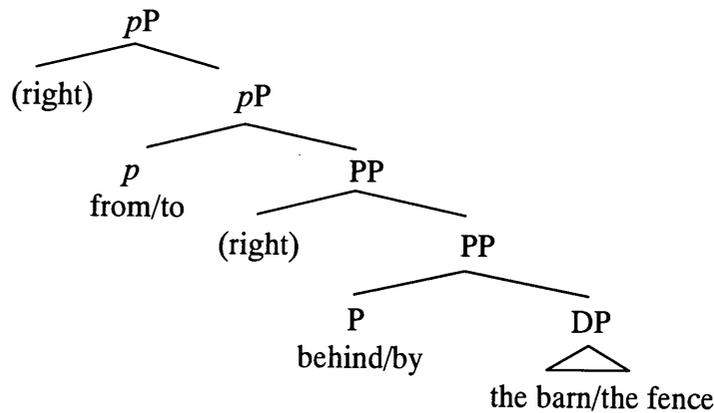
type of P-P-DP combination is to be pursued in the present chapter. I propose that in those combinations, the first preposition is an adjunct preposition. The third type of P-P-DP combination radically departs from the first two, in that the P-P-DP combinations that belong to this type do not form a single phrasal constituent. Let me begin my discussion by reviewing the first type of P-P-DP combination.

3.1.1. P-P-DP combinations: First preposition as a functional *p* (FuncPC)

Emonds (2000) has argued that the PPs in (3.2) have a recursive structure and that the first preposition (i.e., *from*, *to*) in the combination is an archetypal grammatical head. Recasting his idea in terms of my analysis of layered PP structure, I have argued that the first preposition is [+directional] functional *p* and the second one [+locational] lexical P. I have also argued that the fact that *right* can appear in the two positions as illustrated in (3.2) can be captured in such a way that it can adjoin to either *pP* or *PP*, which can be illustrated as in (3.3). Note in passing that *right* in the parentheses can optionally appear in one of the two positions, but it can appear only once within a *PP*.

- (3.2) a. They moved the car (right) from (right) behind the barn.
 b. They should move the car (right) to (right) by the fence.

(3.3)



Let us call this type of P-P-DP combination FuncPC.

In contrast to the P-P-DP combinations that fall under this type, there are similar combinations. However, they display different syntactic behaviors.

3.1.2. P-P-DP combinations as adjunct P + [P DP] (AdjunctPC)

There is another set of seemingly similar P-P-DP combinations available in English. As has been mentioned above, the first preposition in the P-P-DP combination is an adjunct P.

3.1.2.1. Basic facts

Based on Jackendoff's (1973) analysis, Emonds (2000) argues that the PPs in (3.4) display different behaviors to those in (3.2) with respect to the position(s) where *right* is allowed to appear.

- (3.4) a. He left the coat (right) over (*right) near the couch.
 b. Put the linens (right) up (*right) behind the books.
 c. Mary pushed her toys (right) back (*right) under the chair.

d. They ordered more agents (right) out (*right) into the Rockies.

According to Emonds, the first prepositions in the P-P-DP combinations in (3.2) and (3.4) are semi-lexical heads (or closed-class grammatical heads) with no purely semantic features as opposed to lexical heads with full semantic features. For him, there are two types of semi-lexical head: (i) closed class grammatical heads that take XP complements; (ii) closed class grammatical heads that modify lexical heads of the same category. Emonds refers to the first type of semi-lexical head as an archetypal grammatical head: the prepositions *to* and *from* belong to this type of head; my proposal of treating these prepositions as functional *p*, as has been seen in Chapter 2, is in line with Emonds' analysis. The grammatical head takes the PP headed by the second preposition as its complement.

With regard to the second type of semi-lexical head, Emonds argues that the first prepositions in (3.4) belong to this type, and that the P-P-DP combinations in (3.4) form a flat structure, e.g., [PP [P over] [P near] [DP the coach]]. Although I agree with him with respect to his treatment of the P-P-DP combinations in (3.4) as being internal to a single PP, Emonds' analysis cannot be readily accommodated into my analysis in which I assume that structure building is strictly binary branching due to the nature of syntactic operations Merge and Move.

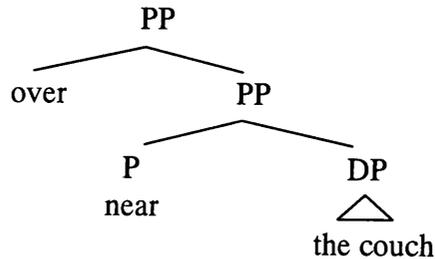
3.1.2.2. Proposal

Instead, I propose that the first preposition is an adjunct P adjoining to either PP as in

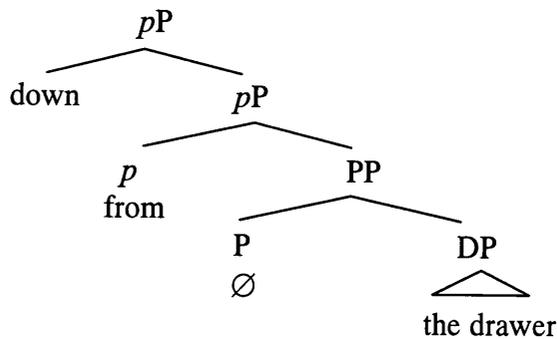
(3.5a) or *pP* as in (3.5b).²

(3.5) Adjunct P

a.



b.



I should note that the PP structure in (3.5a) extends further with the merger of morphologically covert functional *p* in accordance with the layered PP structure proposed so far.

The above proposal is based on Hendrick's (1976) analysis of the following

² As in the case of *right*, D. Adger raises questions concerning the idea of adjunct Ps. Since they are the same questions, I do not repeat my discussion here (see footnote 1 of this chapter). In addition, he asks whether it is *over* in *over near the couch* that provides a [+directional] reading, suggesting that *over* may be a [+directional] head. In (i), it appears that *over* directly contributes the [+directional] reading of the PP:

- | | | |
|-----|-----------------------------------|----------------|
| (i) | a. He walked near the couch. | [-directional] |
| | b. He walked over near the couch. | [+directional] |

However, the PP in (iib) shows that it is construed as [-directional] even in the presence of *over*, which suggests that it is a morphologically covert [+directional] *p* in (ib) that provides a [+directional] reading:

- | | | |
|------|--|----------------|
| (ii) | a. The linens are near the couch. | [-directional] |
| | b. The linens are over near the couch. | [-directional] |

example:

(3.6) Sam disappeared down into the darkness.

In contrast to Jackendoff's (1973) proposal that the above example involves a recursive structure, in which the first preposition takes a PP complement headed by the second preposition, Hendrick (1976:98) argues that the first preposition *down* in the P-P-DP combination in (3.6) occupies the specifier position of the second preposition. This analysis is based on his observation of the optionality of the first preposition in the P-P-DP combination in question (Hendrick 1976:97):

- (3.7) a. *Sam disappeared down.
b. Sam disappeared (down) into the darkness.

He claims that the contrast observed in (3.7) illustrates the optionality of the first preposition.

Further, Hendrick (1976:98) argues that if Jackendoff's proposal were correct, then *right* could intervene between the two prepositions, thus modifying the complement PP. However, as (3.8) shows, *right* cannot appear in the putative position, but can only appear before the first preposition.

- (3.8) a. *Sam disappeared down right into the darkness.
b. Sam disappeared right down into the darkness.

The above facts support Hendrick's proposal that the first preposition *down* occupies the specifier position of the second preposition. Moreover, he maintains that *right* in (3.8b) is generated as an intensifier to the left of [Spec, P].

Recasting Hendrick's analysis in terms of the two types of outcome of the operation Merge, the first preposition in the P-P-DP combination under discussion can be captured as an adjunct P because of its optionality. Furthermore, *right* is also an adjunct that must appear in the leftmost position within PP. Returning to the facts in (3.4), they are parallel to those in (3.8), which suggests that the P-P-DP combinations in (3.4) have the same structure as that in (3.8). I will show in the following subsection that the diagnostics that Emonds (2000) has proposed in support for his flat-structure analysis of the P-P-DP combinations in question can in fact provide evidence for my adjunct P analysis of the first preposition in this second type of P-P-DP combination. Call this type of P-P-DP combination AdjunctPC.

3.1.2.3. Reinterpreting Emonds' (2000) empirical evidence for the flat structure

The following six diagnostics have already been introduced in Chapter 2 with reference to the first type of P-P-DP combination, namely, FuncPC. Emonds claims that in the second type of P-P-DP combination, namely, AdjunctPC, the sequence *second P-DP* (e.g., the sequence *near the couch* in *over near the couch*) does not display phrasal properties. However, I will show in what follows that the same diagnostics can also be used to support my analysis.

First, the *right* diagnostic has already been introduced in (3.4). Following Hendrick's analysis that *right* can only appear to the leftmost position within PP, the facts in (3.4) indicate that the intervening position between the first preposition and the

second one is not the leftmost position within PP.

Second, as Emonds (2000) claims, the following examples in (3.9) show that the P-P-DP combinations in question form a constituent and can move to focus positions.

- (3.9) a. Where he left a coat was [over near the couch].
b. It's [up behind the books] that the linens are usually put.
c. Where Mary pushed her toys was [back under the chair].
d. It was [out into the Rockies] that they ordered more agents.

Notice that the facts in (3.9) are also consistent with my proposal that the P-P-DP combinations in question form a single constituent.

Third, Emonds argues that the facts in (3.10) indicate the non-phrasal properties of the underlined sequences. However, in light of my proposed analysis, the same facts can be taken to show that the ungrammaticality is rooted in the unavailability of adjunct-P stranding.

- (3.10) a. *Where he left a coat over was near the couch.
b. *It's behind the books that the linens are usually put up.
c. *Where Mary pushed her toys back was under the chair.
d. *It was into the Rockies that they ordered more agents out.

Likewise, I argue that his fourth diagnostic concerning ellipsis can be seen in the same way as above and can be considered to support my proposed analysis. That

is, adjunct P cannot be left alone.

- (3.11) a. Some agents from Chicago have flown out to the Rockies. *Should others from Salt Lake go over \emptyset ?
b. *Put the boys down \emptyset and the girls up in the guest rooms.

Fifth, he argues that the extractability of the DP from within the PP as shown in (3.12) shows that DP is not deeply embedded in the PP within PP structure.

- (3.12) a. What he left the clothes over near was the couch.
b. It's the books that the linens are usually put up behind.
c. What Mary pushed her toys back under was the bathtub.
d. It was the Rockies that they ordered more agents out into.

Recall that the above facts are in contrast to those in (2.36), repeated here as (3.13). The ungrammaticality of the sentences in (3.13) has been accounted for as follows. In the structure [_X X [_{ZP} Z WP]], ZP can block certain extractions.

- (3.13) a. *What they moved it from near was the barn.
b. *It's the fence that they should move it (to) by.

Given my analysis that the first preposition is an adjunct P, the grammaticality of the sentences in (3.12) can be readily accounted for since the first preposition and the second one do not form a double layered PP structure.

Finally, Emonds points out that the verb selects and assigns a semantic role to the second preposition in the P-P-DP combinations in (3.14):

- (3.14) a. Sam placed the books ({down/back/over}) {in/?into/*to/*from} the drawer.
 b. Sam put the books ({down/back/over}) {in/into/*to/*from} the drawer.
 c. Sam moved the books ({down/back/over}) {in/into/to/from} the drawer

Again, the above facts support my analysis (as well as Hendrick's as we have seen above). That is, the first preposition is optional since it is an adjunct P and the second preposition is selected by the verb since it heads the PP.

I have argued above that under a minimalist analysis, Emonds' flat structure analysis of the kind of P-P-DP combination in question can be recast by having the first preposition adjoining to the PP headed by the second preposition. Notice that the set of prepositions that have been observed to appear as adjunct Ps have been considered as intransitive Ps (Emonds 1972, 1985). Before concluding this subsection on the AdjunctPC, I will provide an explanatory note on the properties of such Ps.

3.1.2.4. Intransitive Ps

The set of prepositions which I have analyzed so far as adjunct Ps are observed to appear in combination with verbs and are called particles (Prt). Emonds (1972, 1985) argues that what have been regarded as particles (Prt) are in fact Ps (or more precisely, 'intransitive' Ps) in English. He observes that there are three main uses for those Prts: (i) directional adverbs, (ii) idiomatic V-Prt combinations and (iii) completive V-Prt combinations. (3.15) illustrates two representative examples of each (Emonds

1985:252-253).

(3.15) (i) **As directional adverbs:**

a. John carried the trunk up. a'. John carried up the trunk.

b. Mary threw a book out. b'. Mary threw out a book.

(ii) **In idiomatic V-Prt combinations:**

a. John will turn that job down. a'. John will turn down that job.

b. You shouldn't put such tasks off. b'. You shouldn't put off such tasks.

(iii) **In 'completive' V-Prt combinations:**

a. John fixed a drink up. a'. John fixed up a drink.

b. Cut the meat up. b'. Cut up the meat.

There are advantages in treating Prts as prepositions. Three diagnostics are relevant to identifying the properties of Prts in English: (i) the *right* diagnostic, (ii) an expletive construction and (iii) P-preposing.

First of all, as we have seen already, the *right* diagnostic is the standard test for identifying Ps in English; no categories other than Ps can be modified by *right*. Prts can be modified by *right* (Emonds 1985:259), which confirms that Prts are of the same category as Ps:

(3.16) a. John lives right outside.

b. I heard something right overhead.

The second diagnostic concerns the following expletive construction in English, which consists of a directional PP introduced by *with* (Emonds 1985:259):

- (3.17) a. Into the dungeon with that traitor.
b. To the river with those sandbags.

(3.17) shows that PPs can appear in the construction. Likewise, Prts can also appear in the same construction, which suggests treating both as bearing the same categorial feature [P] (Emonds 1985:259):

- (3.18) a. Off with his head!
b. Away with him!

Finally, P-preposing serves as the third diagnostic. Prts can be preposed just as PPs are. Consider (3.19) and (3.20) (Emonds 1985:260):

- (3.19) a. Into the house he ran!
b. Down the street rolled the carriage!

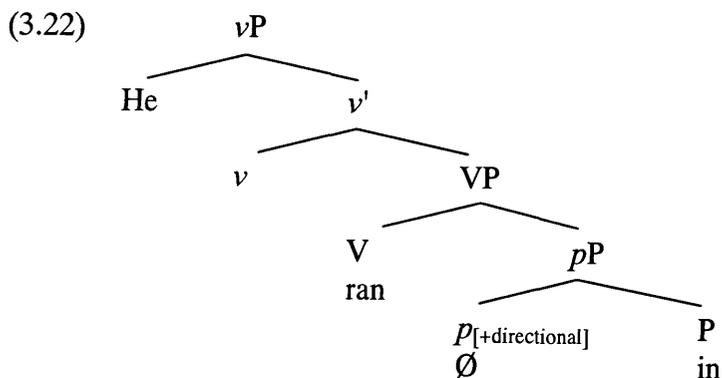
- (3.20) a. In he ran!
b. Down rolled the carriage!

The above examples show that PPs and Prts can be both preposed, which provides further evidence for regarding Prts as Ps.

Having established the properties of Prts, let us now return to the question as to how those ‘intransitive’ Ps should be captured within the framework proposed so far. One crucial fact displayed by those Ps is that they can be [+directional]. This is shown by the parallel constructions in (3.21):

- (3.21) a. He ran in.
 b. He ran into the room.

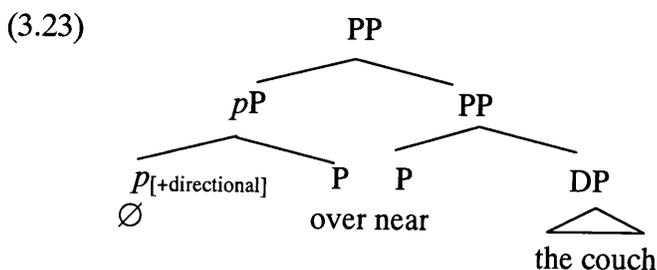
Given that the intransitive P in (3.21a) and the PP in (3.21b) display almost the same behavior in syntax with regard to preposing as illustrated in (3.20a) and (3.19a), respectively, I assume that they share the same structure except the absence and the presence of the DP argument, respectively. For (3.21b), the [+directional] meaning comes from *to* as has been argued in discussing the structure of *into* in Chapter 2. It has the structure [_{PP} P [_{PP} into [the room]]]. Since the intransitive P has the [+directional] meaning as well (Emonds 1985), I maintain that it has the following structure, which is parallel to the [+directional] PP as in (3.21b):



Supposing that (3.22) is the right structure for the intransitive P, the fact that it is

construed as [+directional] can be accounted for. Likewise, intransitive Ps such as *off*, *down*, *away* and *up* are considered to have the same structure as illustrated in (3.22) above.

Returning to Ps such as *over*, *up*, *back* and *out* in the type of P-P-DP combinations analyzed in this subsection, it is now plausible that they also have the layered PP structure. Thus, what appears to be a P head in the second type of P-P-DP combination is actually a *pP* headed by a morphologically covert functional *p* taking the intransitive P as its complement.



3.1.3. P-P-DP combinations: The first P can be outside the PP headed by the second P (PrtC)

Certain P-P-DP combinations in English pose further problems, especially those that take intransitive Ps such as *down*, *away*, *up* and *out* as their first Ps. This subsection deals with cases where the first preposition and the second preposition are not within the same PP.

3.1.3.1. Not all intransitive Ps are adjuncts in P-P-DP combinations!

Consider the following P-P-DP combinations, namely, *down into the darkness* and *up into the clouds*:

- (3.24) a. Sam disappeared down into the darkness.
 b. The kite went up into the clouds.

Although both *down into the darkness* and *up into the clouds* seem to belong to the AdjunctPC, in which the first preposition has been shown to adjoin to the PP headed by the second preposition, I will show that only the combination in the (3.24a) example does; the (3.24b) example has a different structure.³ There are four points to be noted concerning their different syntactic behaviors.

First, *right* cannot intervene between the first P and the second P in the P-P-DP combination in (3.24a) as illustrated in (3.25b), but it can in the one in (3.24b) as shown in (3.26b):

- (3.25) a. Sam disappeared right down into the darkness.
 b. *Sam disappeared down right into the darkness.
- (3.26) a. The kite went right up into the clouds.
 b. The kite went up right into the clouds.

Recall that the AdjunctPC does not allow *right* to appear between the first preposition and the second preposition, in that (i) the first one is an adjunct to the PP headed by the second preposition and (ii) *right* can only appear in the leftmost position within the PP. Thus, the P-P-DP combination in (3.24a) seems to share the same underlying structure

³ The difference between the two P-P-DP combinations in question has been observed by Jackendoff (1973) and Hendrick (1976).

with those in (3.4). On the other hand, (3.24b) displays a behavior that suggests that the first preposition is not an adjunct to the PP headed by the second preposition.

Second, there is a contrast between (3.27) and (3.28) with regard to focus movement. The results in (3.27) suggest that this P-P-DP combination has the same underlying structure as those in (3.4). Turning to (3.28), these facts are parallel to the first type of P-P-DP combination, namely, the layered PP structure. However, it is unlikely that the intransitive preposition *up* shares much with the [+directional] functional *ps from* and *to*.

- (3.27) a. It's down into the darkness that Sam disappeared.
 b. *It's into the darkness that Sam disappeared down.
 c. Where Sam disappeared was down into the darkness.
 d. *Where Sam disappeared down was into the darkness.
- (3.28) a. It's up into the clouds that a riderless broomstick shot.
 b. It's into the clouds that a riderless broomstick shot up.
 c. Where a riderless broomstick shot was up into the clouds.
 d. Where a riderless broomstick shot up was into the clouds.

Third, the two P-P-DP combinations at issue display a contrast with regard to preposing options. As for (3.24a), the only option available is for the entire combination to prepose as shown in (3.29). Turning to (3.24b), there are two options available. That is, (i) the P-P-DP combination preposes as in (3.30a) or (ii) only the first preposition preposes as in (3.30b):

- (3.29) a. Down into the darkness disappeared Sam.
b. *Down disappeared Sam into the darkness.
- (3.30) a. Up into the clouds went the kite.
b. Up went the kite into the clouds.

The facts in (3.29) confirm that the combination in (3.24a) has the structure that is identical to the structure proposed for the P-P-DP combinations in (3.4), i.e., the AdjunctPC. On the other hand, the facts in (3.30) suggest that the first preposition and the second preposition in the P-P-DP combination in (3.24b) are not within the same PP. Or alternatively, the combination is ambiguous between the AdjunctPC and yet another type. I will show that the latter is the case.

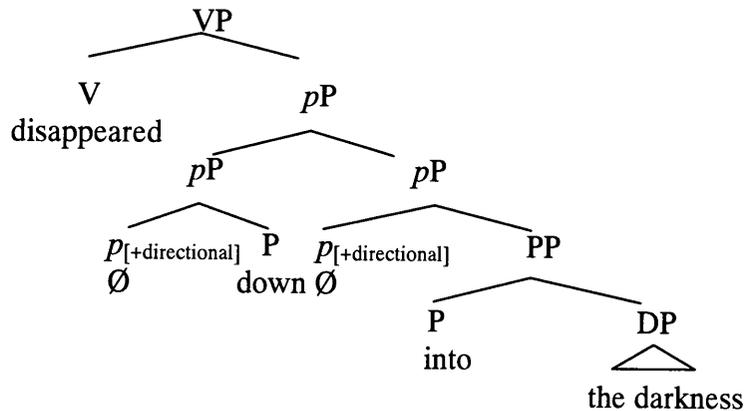
Finally, the subcategorization diagnostic supports the argument so far.

Consider (3.31) and (3.32):

- (3.31) a. *Sam disappeared down.
b. Sam disappeared into the darkness.
- (3.32) a. The kite went up.
b. The kite went into the clouds.

(3.31) shows that in (3.24a), the second P, not the first P, is selected by the V, which is also the case with the P-P-DP combinations in (3.4). I argue, therefore, that (3.33) represents the structure of *disappeared down into the darkness*, in which *down* adjoins to *into the darkness*.

(3.33) AdjunctPC



Turning to the facts in (3.32), I argue that the P-P-DP combination in (3.24b) is structurally ambiguous. Given the subcategorization facts in (3.32) and the two preposing options available for the P-P-DP combination *up into the clouds* as shown in (3.30), I support Jackendoff's (1973) analysis, in which it is proposed that the P-P-DP combination at issue is ambiguous between two underlying structures: (i) the combination as a single PP, and (ii) the first P and the second P heading respective PPs.⁴ Note in passing that intervening adverbs such as *slowly* further support this analysis:

- (3.34) a. The kite went up slowly into the clouds. (Jackendoff 1973:349)
 b. The kite went slowly up into the clouds.

The two opposing structures can be represented as follows. As for (3.34a), it

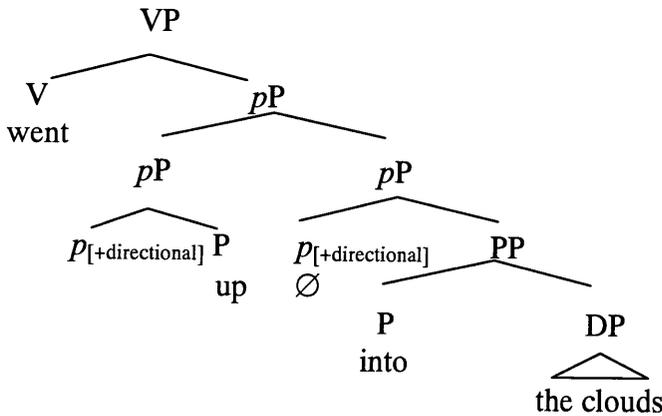
⁴ Jackendoff's proposed structures are as follows:

- (i) a. [_{VP} went [_{PP} up [_{PP} into the clouds]]]
 b. [_{VP} went [_{PP} up] [_{PP} into the clouds]]

As (ib) illustrates, the structure is ternary branching. I will recast his analysis in terms of a strictly binary structure below.

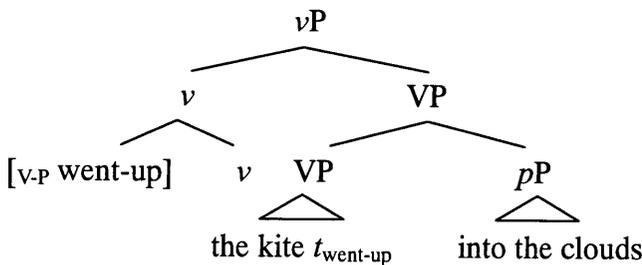
belongs to the AdjunctPC. That is, the *pP* containing *up* adjoins to the *pP* *into the clouds*, whose head *into* is selected by the V *went*:

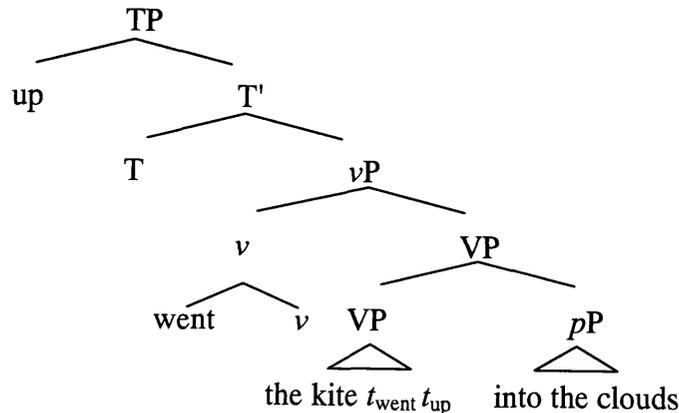
(3.35) AdjunctPC



Concerning (3.34b), for the adverb *slowly* to be able to intervene between the first P and the second P, these Ps cannot be within the same PP. I propose that the first P *up* is base-generated in the complement position of the V *went*. *Up* can either (i) incorporate into the V and the V-P complex moves to adjoin to the higher ν as shown in (3.36a) or (ii) prepose as in the example, *Up went the kite into the clouds*, whose structure is illustrated in (3.36b). Call this PtoC.

(3.36) a. PtoC with P-to-V incorporation



b. **PrtC with preposing**

I have thus just re-examined a type of P-P-DP combination in English that has been observed to be structurally ambiguous (Jackendoff 1973, Hendrick 1976). I have argued that intransitive Ps such as *up* can be either base-generated as an adjunct to PP or as a complement of V.

The above analysis can account for the following examples as well, which involve *away* as the first preposition in a P-P-DP combination:⁵

⁵ There is one issue that needs to be addressed with regard to the properties of *away*. Gruber (1965, 1976) has noticed that the sentences in (i) are ungrammatical, while after adding *away* in front of *from*, they become grammatical as in (ii).

- (i) a. *The statue was standing from the wall.
- b. *The book was lying from the chair.
- (ii) a. The statue was standing away from the wall.
- b. The book was lying away from the chair.

He further shows that *away* can be replaced by 'bare-NP adverbs' (Larson 1985) such as *two feet* and *ten meters* and the sentences are still grammatical as illustrated in (iii):

- (iii) a. The statue was standing ten meters from the wall.
- b. The book was lying two feet from the chair.

Details aside, the above facts seem to suggest that *away* has properties that are on a par with the bare-NP adverbs *ten meters* and *two feet*. I will return to the issue of the categorical status of this type of P in Chapter 5 with reference to locative inversion in English.

- (3.37) a. Chico raced away from Mrs. Claypool.
 b. Otis T. Flywheel raced away in a battered Ford.

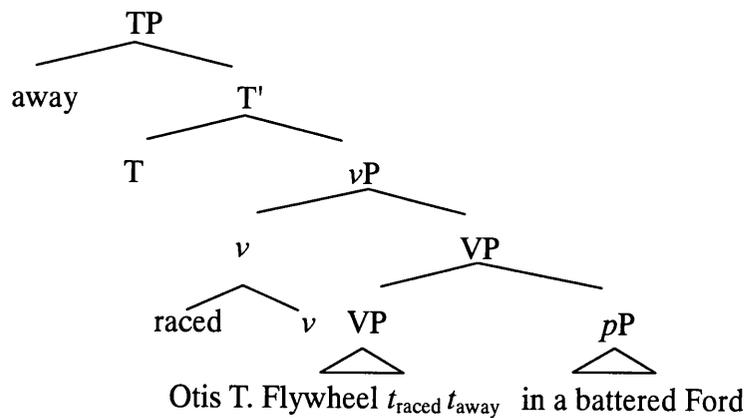
Jackendoff (1973) has observed that the above two P-P-DP combinations display different behaviors with respect to (i) preposing and (ii) adverbs intervening between the first P and the second P.

First, while the P-P-DP combination *away from Mrs. Claypool* can be preposed as shown in (3.38a), *away in a battered Ford* cannot as in (3.38b). Furthermore, the first P in the former P-P-DP combination cannot be preposed alone as illustrated in (3.39a), whereas the first P in the latter P-P-DP combination can as shown in (3.39b).

- (3.38) a. Away from Mrs. Claypool raced Chico.
 b. ?*Away in a battered Ford raced Otis T. Flywheel.
- (3.39) a. ?*Away raced Chico from Mrs. Claypool.
 b. Away raced Otis T. Flywheel in a battered Ford.

Jackendoff's analysis of the two P-P-DP combinations is (i) that *away from Mrs. Claypool* constitutes a PP, in which *away* takes the PP *from Mrs. Claypool* as its complement, and (ii) that *away in a battered Ford* consists of two separate PPs. As I have argued above, Jackendoff's two structures have been reanalyzed as follows:

(3.42)



Let us now turn to the second diagnostic.

It can be predicted that adverbs cannot intervene between the first preposition and the second preposition in *away from Mrs. Claypool* since the first preposition *away* adjoins to the *pP from Mrs. Claypool*. However, adverbs can intervene in *away in a battered Ford* because *away* and *in a battered Ford* are not within a single PP. This prediction is borne out. Consider (3.43):

- (3.43) a. ?*Chico raced away quickly from Mrs. Claypool.
 b. Otis T. Flywheel raced away quickly in a battered Ford.

(3.43a) is severely degraded since the VP adverb *quickly* cannot appear within PP. On the other hand, the same adverb can intervene between *away* and *in* since they are two separate PPs as shown by (3.43b).

The above analysis faces one problem. Consider (3.44) and (3.45), in which it is shown that both P-P-DP combinations do not allow *right* to intervene between the first preposition and the second preposition (Hendrick 1976:99):

- (3.44) a. Chico raced right away from Mrs. Claypool.
 b. *Chico raced away right from Mrs. Claypool.
- (3.45) a. Otis T. Flywheel raced right away in a battered Ford.
 b. *Otis T. Flywheel raced away right in a battered Ford.

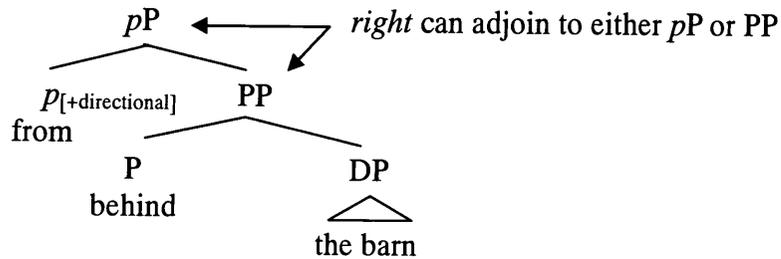
The ungrammaticality of (3.44b) is expected since *right* has to adjoin to the PP and it needs to adjoin to the highest position if there are other adjuncts within the same PP (e.g., [_{PP} *right* [_{PP} *down* [_{PP} *into the lake*]]]) versus *[_{PP} *down*[_{PP} *right*[_{PP} *into the lake*]]]). On the other hand, the ungrammaticality of (3.45b) is unexpected; nothing should block *right* adjoining to *in a battered Ford*. Note, however, that (3.45b) improves by turning the complement of *in* into a [+definite] expression. Consider (3.46):

- (3.46) a. Otis T. Flywheel raced away right in this very car.
 b. Mary raced away right in her boyfriend's car.

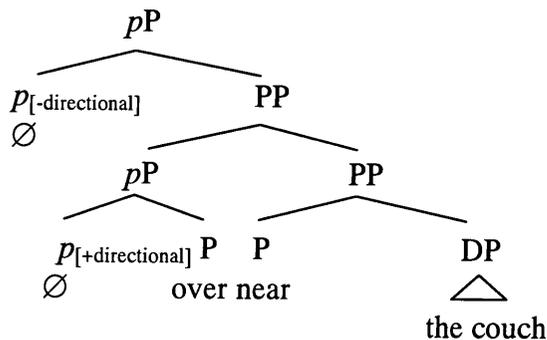
The grammatical sentences in (3.46) seem to show that (3.46b) is blocked for some other reason than syntactic ones. Although it is an interesting issue, I leave this matter open for future research.

3.1.4. Summary of 3.1.

In this section, I have proposed that P-P-DP combinations have different underlying structures. The FuncPC has a structure, in which *p*, e.g., *from*, selects PP headed by P, e.g., *behind*. In this structure illustrated in (3.47), the modifier *right* can adjoin to either *pP* or PP:

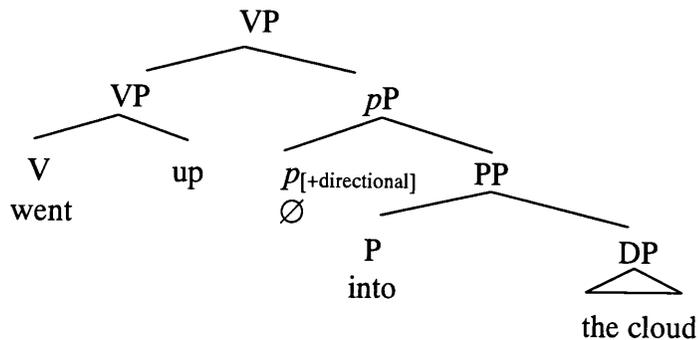
(3.47) **FuncPC**

In the AdjunctPC, the first preposition is within an adjunct pP as illustrated in (3.47).

(3.48) **AdjunctPC**

In this structure, *right* cannot intervene between *over* and *near* since *right* can only adjoin to the leftmost position within a PP , hence the contrast *right over near the couch* versus **over right near the couch*.

Finally, I have shown that there are cases where P-P-DP combinations display ambiguous behaviors: the structure of the second type and that of yet another type. It has been shown that the $PrtC$ has the following structure.

(3.49) **PrtC**

In sum, the first preposition in P-P-DP combinations is of three classes: (i) functional *ps*; (ii) adjunct Ps; (iii) particles. I have presented arguments that in English, there are some prepositions which have members in only one class (*from* and *to* belonging to the first class) and others which are ambiguous (intransitive Ps such as *away* and *up* belonging to either the second class or the third).

Since the main goal of this chapter is adjunction to *pP/PP*, the following section will see if the structure proposed for the second type of P-P-DP combination has crosslinguistic support.

3.2. Dutch and Hungarian intransitive Ps

In this section, I will show that the above analysis regarding adjunct intransitive Ps in English has crosslinguistic support from languages such as Dutch and Hungarian. Let me begin my discussion with Dutch Ps.

3.2.1. Dutch P-P-DP combinations

Motivated by Jackendoff's (1973) study investigating the underlying structure of P-P-DP combinations in English, Van Riemsdijk (1978) studies what appears to be their

(3.53) *Deze cognac is voor de oorlog [+temporal]

Van Riemsdijk notes that the PP in (3.53) can only mean [+benefactive].

Turning to (3.51), the first Ps in the P-P-DP combinations in (3.51) serve as a modifier of the second P. Van Riemsdijk (1978:59) claims that the first P ‘serves to further specify the location expressed’ by the second P. He notes that if *onder* ‘down’ were the head of the PP in (3.51a), the sentence would be construed in such a way that the socks in question are beneath the drawer. From the fact that (3.51a) cannot be construed that way, it would follow that *onder* is a modifier of the PP, not its head. Within the theoretical framework in which he works, the position that this first P occupies is the Spec of the second P.⁶ As has been argued so far, this can be captured in the present framework in such a way that the first P adjoins to the PP headed by the second.

The above descriptive account by Van Riemsdijk has empirical support, namely, incorporability versus non-incorporability of Ps.

Ps such as *boven* ‘high/upstairs’ have been considered to be intransitive Ps in the literature (see Van Riemsdijk (1978) and more recently Koopman (2000)). Van Riemsdijk observes a contrast between particles (e.g., *op* ‘up’) and intransitive Ps (e.g., *boven* ‘high’ or ‘upstairs’). That is, the Prt *op* can incorporate into the infinitival

⁶ Recall that working in the same theoretical framework as Van Riemsdijk (1978), Hendrick (1976) also proposes the same structural position for *down* in the following P-P-DP combination in English:

(i) Sam disappeared down into the darkness.

I have assumed so far that cast in the theoretical framework adopted here, *down* can be regarded as occupying an adjunct position to *pP*, which is [+directional].

marker *te* as in (3.54), whereas the intransitive P *boven* cannot as shown in (3.55) (Van Riemsdijk 1978:54). Note that he proposes (i) that P_{rt} is P, following Emonds (1972), (ii) that it is generated immediately to the left of the verb, and (iii) that it can undergo incorporation into the V.

- (3.54) a. omdat hij [mij op te bellen] probeert [underlying structure]
 because he me up to call tries
 ‘because he tries to call me up’
- b. omdat hij [mij op t_k] probeert te bellen_k [no incorporation]
 because he me up tries to call
 ‘because he tries to call me up’
- c. omdat hij [mij t_j t_k] probeert op_j te bellen_k [incorporation]
 because he me tries up to call
 ‘because he tries to call me up’
- (3.55) a. omdat hij [tegenwoordig boven te wonen] schijnt [underlying structure]
 because he nowadays upstairs to live seems
 ‘because he seems to live upstairs nowadays’
- b. omdat hij [tegenwoordig boven t_k] schijnt te wonen_k [no incorporation]
 because he nowadays upstairs seems to live
 ‘because he seems to live upstairs nowadays’
- c. *omdat hij [tegenwoordig t_j t_k] schijnt boven_j te wonen_k [incorporation]
 because he nowadays seems upstairs to live
 ‘because he seems to live upstairs nowadays’

In (3.54), the (a) sentence shows the underlying structure. (3.54b) illustrates that the verb *te bellen* ‘to call’ moves rightward. In (3.54c), the particle *op* ‘up’ incorporates into the verb *te bellen* and the whole complex moves rightward in the structure. In (3.55), the (c) sentence shows that the intransitive P *boven* cannot undergo movement to incorporate into the verb *te wonen* ‘to live’.⁷

The above contrast between *op* and *boven* is suggestive of their respective properties in the structure. More precisely, *op* should be regarded as an X^0 category since it can adjoin to another X^0 . On the other hand, *boven* is not X^0 . It can be considered to be XP. This contrast between them is naturally reflected in the structural positions of the respective lexical items in P-P-DP combinations. I will return to the precise mechanism of incorporation for Dutch and other languages in Chapter 4.

This subsection has shown that in Dutch, certain intransitive Ps appear in P-P-DP combinations as the leftmost P and they seem to display a similar contrasting behavior to those in English with respect to the headedness in a given P-P-DP combination. It has also been observed that those intransitive Ps cannot undergo

⁷ Van Riemsdijk (1978) states that there are ambiguous cases. (i) shows that the P *voor* is ambiguous between an intransitive P and a particle. He claims that the former expresses semantically the more predictable reading, while the latter the more idiomatic reading.

- | | | |
|-----|---|--|
| (i) | omdat hij [voor te staan] schijnt
because he (it) in front to stand seems
‘because it seems to stand in front’
‘because it (the team) seems to be leading (in the game)’ | [underlying order]

(intransitive P reading)
(particle reading) |
|-----|---|--|

In (ii), *voor* does not incorporate into *te staan* and provides two kinds of reading:

- | | | |
|------|---------------------------------|------------------------------------|
| (ii) | omdat hij voor schijnt te staan | [no incorporation] (both readings) |
|------|---------------------------------|------------------------------------|

Given that intransitive Ps are not incorporable, it is predicted that in sentences such as (iii) with incorporated *voor*, only the particle reading should be available. This prediction is borne out as (iii) indicates that only the particle reading is possible:

- | | | |
|-------|---------------------------------|---|
| (iii) | omdat hij schijnt voor te staan | [incorporation] (only particle reading) |
|-------|---------------------------------|---|

incorporation, unlike particles. I have maintained that this syntactic behavior is suggestive of their phrasal status.

3.2.2. Hungarian non-inflecting Ps

As has been shown in Chapter 2, there are inflecting Ps and non-inflecting Ps in Hungarian (known in the literature as ‘dressed Ps’ and ‘naked Ps’, respectively). I have studied the properties of inflecting Ps in the previous chapter and have proposed (i) that functional [+directional]/[-directional] *p* plays a role in syntax as a locus of agreement with the object and (ii) that from the fact that both [+directional] and [-directional] postposition inflect, it would follow that there is not only [+directional] *p*, but also [-directional] *p*. In this subsection, I will focus on the properties of the non-inflecting Ps, not discussed in the previous chapter. I will propose that non-inflecting Ps in Hungarian can appear as adjunct Ps just as intransitive Ps in English and those in Dutch do.

3.2.2.1. Basic facts

Non-inflecting Ps in Hungarian have been observed to co-occur with oblique objects as in (3.56) and (3.57) (Marác 1984):⁸

(3.56) a. *vel-em együtt*

INST-1sg along

‘along with me’

⁸ SUPER stands for superessive and INST, for instrumental.

b. INST-ed együtt

INST-2sg along 'along with you'

c. vel-e együtt

INST-3sg along 'along with she/he/it'

(3.57) a. a híd-on át

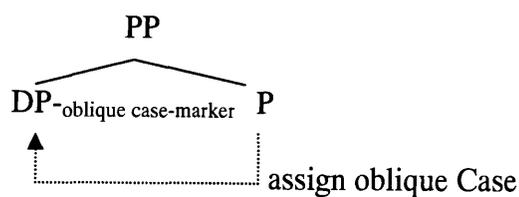
the bridge-SUPER over 'over the bridge'

b. Árpád-dal együtt

Árpád-INST along 'along with Árpád'

Marác (1986) observes that in (3.56), the non-inflecting P co-occurs with the oblique personal pronouns and that in (3.57), the non-inflecting Ps co-occur with the oblique DPs. As noted in Chapter 2, *vel-*, *-on* and *-dal* have been regarded as case-markers (Ackerman 1987). Further, according to Marác (1986), the PPs in (3.56) have a structure in which the non-inflecting P *együtt* 'along' takes the oblique personal pronoun as its complement and assigns oblique Case to it. The same analysis is proposed for the PPs in (3.57); there are a variety of oblique Cases in Hungarian that can be assigned by non-inflecting Ps. The PP structure of non-inflecting Ps above proposed by Marác can be represented as follows.

(3.58)

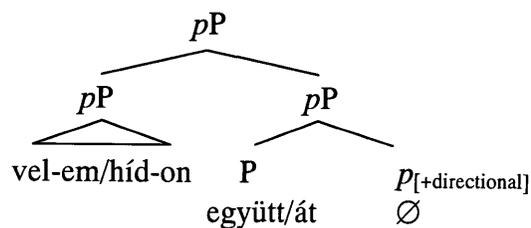


I will show in this section that in contrast to Marácz’s analysis mentioned above, my P-adjunct analysis provides an alternative analysis of the above facts in Hungarian which is fully consistent with the broader range of crosslinguistic PP structures developed so far in this chapter and in Chapter 2.

3.2.2.2. Proposed analysis for Hungarian

With regard to the Hungarian facts in (3.56) and (3.57), I propose (i) that case-markers are Ps, (ii) that what have been regarded as oblique pronouns and noun phrases are actually PPs, and (iii) that the non-inflecting Ps in (3.56) and (3.57) can be best captured as intransitive Ps that are adjoined to PPs. (3.59) illustrates the proposed structure of the PPs *vel-em együtt* ‘along with me’ and *híd-on át* ‘over the bridge’ in (3.56a) and (3.57b), respectively. Note (i) that P and *pP* are head-final and (ii) that adjunction is to the right:

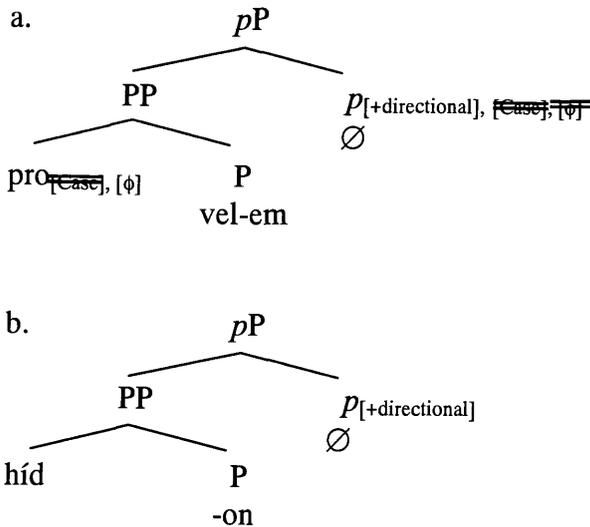
(3.59) Proposed structure of PP in Hungarian



(3.59) illustrates that *vel-em* and *híd-on* are *pP*. As I will show below, the properties of these case-markers are parallel to those of inflecting postpositions. The

internal structure of *vel-em* and *híd-on* can be represented as follows:⁹

(3.60) **Case-marker in Hungarian PPs:**



I will show in what follows that the analysis has empirical support.

3.2.2.3. Empirical evidence for the proposed analysis

In order to support my proposal, let me begin with exploring the properties of case-markers in Hungarian.

Notice that like inflecting postpositions, case-markers participate in the same tripartite paradigm where their morphological realization is determined by the following features: [+directional]/[-directional] and [+goal]/[-goal]. Moreover, they also inflect in terms of person and number (Ackerman 1987). Take, for example, the case-marker that expresses ‘on’. As has been noted above, [-directional]/[+directional] and [-goal]/[+goal] are defining features of this case-marker. Consider (3.61):

⁹ I will not discuss the contrast between (3.60a) and (3.60b) here with respect to the presence versus the absence of agreement, respectively, but will return to this issue in Appendix at the end of this chapter.

(3.61)	[-directional]		[+directional]
		[+goal]	[-goal]
	-n/Vn	-ra/re	-ról/ről

I will take the case marker *-ra* as an example. (3.62) illustrates how this case-marker inflects in terms of person and number.

(3.62)	1sg.	rá-m	1pl.	rá-nk
	2sg.	rá-d	2pl.	rá-tok
	3sg.	rá/reá	3pl.	rá-juk

The paradigms exhibited in (3.61) and (3.62) exactly parallel those of inflecting Ps.

On the basis of these facts alone, it does not seem necessary to distinguish case-markers from inflecting postpositions in terms of their respective structures.¹⁰

Second, DPs with oblique case-markers can appear without non-inflecting Ps in sentences as in (3.63):

(3.63)	a.	men-t-Ø	[az út-on]
		walk-PAST-3sg	the road-SUPER
		‘He walked on the road.’	

¹⁰ See Appendix 1 in this chapter for further analysis of Hungarian case-markers and postpositions.

(3.64) A: át men-t-él?
 over walk-PAST-2sg
 ‘Did you walk over?’

B: át
 over
 ‘Yes.’

(3.65) gyere át
 come-IMP-2sg over
 ‘come over!’

The non-inflecting P *át* appears as an intransitive P for ‘yes/no’ answering in (3.64) and functioning as an imperative in (3.65). On the basis of my analysis of intransitive Ps in English and Dutch, the above facts suggest that the non-inflecting P under discussion has a phrasal status in the above two instances. This phrasal status of these Ps can be further supported by a second piece of evidence.

A second set of facts concerns movement to focus positions. It has been observed that non-inflecting Ps can move to focus positions, while inflecting Ps cannot. The contrast between (3.66a) and (3.66b) illustrates this (MarácZ 1986:236-237):¹³

¹³ I have adopted MarácZ’s (1986) movement analysis for the focused phrase. É. Kiss (1994) argues that their landing site in Hungarian is in [Spec, V]. She claims that the feature [+F(ocus)] is inherently associated with VP in Hungarian, and that by moving to [Spec, V], which is a surface A-bar position for the focus operator, a given constituent receives this feature through percolation. Since I consider non-inflecting Ps to be base-generated in the adjunct position, the movement of non-inflecting Ps at issue involves A’-to-A’ movement. An alternative analysis of the phenomenon is base-adjunction, but I leave this issue open.

- (3.66) a. *mögött_k men-t-Ø János-Ø [PP a híd-Ø t_k]
 behind walked-PAST-3sg John-NOM the bridge-NOM
 ‘**BEHIND** the bridge walked John’
- b. át_k men-t-Ø János-Ø [PP a híd-on t_k]
 over walk-PAST-3sg John-NOM the bridge-SUPER
 ‘**OVER** the bridge walked John’

(3.66) indicates that the inflecting P *mögött* ‘behind’ cannot move to the focus position, whereas the non-inflecting P *át* ‘over’ can. Assuming that only a phrasal element can occupy such positions (cf. É. Kiss 1994 with regard to focus movement), (3.66) further supports the claim that a given non-inflecting P in Hungarian constitutes a phrase in the same way as intransitive Ps in English and Dutch do.

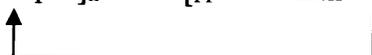
In contrast to (3.66a), when an inflecting P with an inflection morpheme appears with its DP complement followed by the dative case-marker, focus movement is allowed for the inflecting P. Consider (3.67) (É. Kiss 1994:57):

- (3.67) János-Ø után-a futott Mari-nak.
 John-NOM after-3sg ran Mari-DAT
 ‘John ran after Mari.’

(3.67) illustrates that the inflecting P *után* ‘after’ can be subject to movement, leaving its complement in the base position. With regard to (3.67), É. Kiss (1994) proposes that the head P *után* ‘after’ moves to the focus position after its complement DP is extracted

out of the PP.¹⁴ However, following Baker’s (1996) analysis of PPs in Nahuatl outlined in subsection 2.3.1., I argue that the inflecting P in (3.67) is indeed a head, but it forms a phrasal constituent with its morphologically covert complement, namely, *pro*. The structure of the PP in (3.67) is illustrated in (3.68):

(3.68) János-Ø [_{PP} után-a *pro*]_k futott [_{PP} Mari-nak *t_k*].



The above analysis of the focus movement observed in (3.67) uniformly accounts for the focus movement of non-inflecting Ps and inflecting Ps without resorting to the unnecessary movement of both the inflecting P and its dative complement proposed by É. Kiss (1994) with regard to (3.67).

Returning to (3.66a), it follows from the above analysis that *mögött* “behind” is a head and that it cannot move to the focus position. Thus, the ungrammaticality of

¹⁴ This proposal is based on the observation that extraction of DP out of PP as illustrated in (ii) parallels extraction of a possessor DP out of DP (Szabolsci 1983) as shown in (i). In (ia), the possessor DP, which bears nominative Case, remains in the base position within DP, while (ib) shows that when the possessor DP bears a dative case-marker, it can move to [Spec, D]. Likewise, the DP complement with a dative case-marker can be taken to be in [Spec, P] in (iib), while in (iia), the DP in nominative Case is in the base position within PP:

- (i) a. a Mari-Ø kalap-ja
the Mari-NOM hat-3sg
‘Mari’s hat’
b. Mari-nak a kalap-ja
Mari-DAT the hat-3sg
‘Mari’s hat’
- (ii) a. egy bokor-Ø mögött
a shrub-NOM behind
‘behind a shrub’
b. egy bokornak mögött-e
a shrub-DAT behind-3sg
‘behind a shrub’

There is one difference between the facts in (i) and (ii). Unlike in the possessive construction in (ia), in (iib), the P does not agree with the DP complement bearing nominative Case in terms of person and number. It should be noted that the construction in (iib) was used in literary works in the nineteenth century, but is not used in modern Hungarian (Mar ácz 1986:240).

(3.66a) results.

Having examined the properties of non-inflecting Ps, the alternating positions of the non-inflecting P *át* ‘over’ as shown in (3.69) seem to be readily accounted for.

- (3.69) a. a *híd-on* *át*
 the bridge-SUPERover ‘over the bridge’
- b. *át* a *híd-on*
 over the bridge-SUPER ‘over the bridge’

Given that (3.69a) represents the underlying order (Marác 1986:236), in which the non-inflecting P *át* ‘over’ adjoins to *a híd-on* “the bridge” to the right, the P *át* can be considered to move to the position illustrated in (3.69b). Although a detailed discussion of this movement is not provided here, Marác proposes that *át* in (3.69b) moves to the Comp position within PP (i.e., a Spec position within the current framework) and that through this position, elements within PP can be extracted. In addition, the non-inflecting P *át* can be given primary stress in this position, resulting in a focus reading (capitals in bold represent primary stress).¹⁵

¹⁵ Marác argues that the non-inflecting P such as *át* ‘over’ as in *a híd-on át* ‘over the bridge’ is the head. The argument is based on the focus principle (Horvath 1976:197), which claims that ‘a focus-marked, i.e., contrastively stressed, complement constituent must immediately precede the head of its phrase, and a focus marked head can appear in any position in its phrase; it is not subject to any focusing constraint’. (i) illustrates this principle:

- (i) a. **HEAD** complement b. complement **HEAD**
 c. *head **COMPLEMENT** d. **COMPLEMENT** head

Marác observes the following facts:

- (ii) a. **ÁT** a *híd-on* b. a *híd-on* **ÁT** c. **át* **A HÍD-ON** d. **A HÍD-ON** *át*

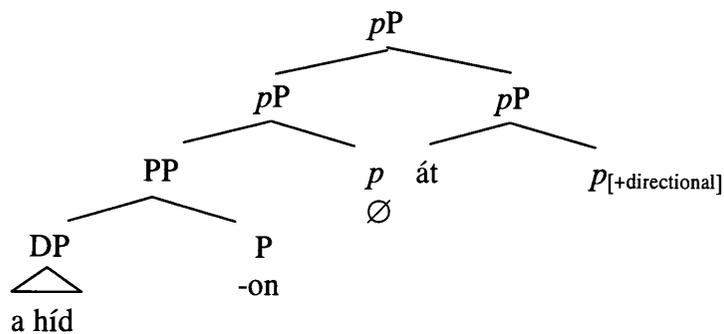
Marác claims that from the facts in (ii), it would follow that non-inflecting P is the head of the phrase.

- (3.70) **ÁT** a híd-on
 over the bridge-SUPER
 ‘over the bridge’

This suggests that the non-inflecting P in question is in the focus position.

The properties of Hungarian non-inflecting Ps examined so far thus support my proposed analysis of PP structure. I summarize with an example, *a híd-on át* ‘the bridge-SUPER over’. First, *a híd-on* is a PP headed by the head-final P *-on*, and functional *p* takes this PP as its complement. Second, a morphologically covert *p* takes the non-inflecting P as its complement. Then, the uninflected P *át* (more precisely, [_{pP} P *át*]) adjoins to [_{pP} *a híd-on*]. The proposed structure, for example, is repeated in (3.71):

(3.71)



3.2.3. Summary of 3.2.

In this section, I have shown that my analysis for the structure of the second type of P-P-DP combination in English, namely, the AdjunctPC, has cross-linguistic support from Dutch and Hungarian. For Dutch, I have claimed that in one type of P-P-DP

combination, the first P is an intransitive P and it exhibits phrasal status and is optional, which suggests that it shares the same underlying structure with the second type of P-P-DP combination in English, namely, AdjunctPC from 3.1.2. Further, I have shown that the Hungarian non-inflecting postposition displays properties that are similar to intransitive Ps found in the second type of P-P-DP combination in English and in the Dutch counterpart. That is, non-inflecting Ps in Hungarian are intransitive and optional and they have a phrasal status. Given these properties of non-inflecting Ps, I have concluded that they provide crosslinguistic support for the analysis of adjunct P proposed at the outset of this chapter, namely, Ps can adjoin to *pP/PP*.

3.3. Concluding remarks on Chapter 3

In Chapter 3, I have explored what elements other than *right* can adjoin to PP in languages. First, the examination of P-P-DP combinations in English has revealed that they can be categorized into three types, depending on their syntactic behaviors. Of the three, the AdjunctPC from 3.1.2 indicates that the intransitive P appearing as the first preposition in the combination is an optional element in the PP structure. On the basis of properties of intransitive Ps in English, I have maintained that the first intransitive P found in the Adjunct PC in English has a phrasal status. Second, I have shown that my proposed analysis for this AdjunctPC in English has crosslinguistic parallels in intransitive Ps that appear in one type of P-P-DP combination in Dutch and in non-inflecting postpositions in Hungarian.

Appendix

An explanatory note on Hungarian inflecting postpositions and case-markers

In this appendix, I will present my analysis of the properties of inflecting postpositions and case-markers in Hungarian and their syntactic structures. I will do so by comparing and contrasting Hungarian with Nahuatl. I have chosen Nahuatl since its Ps share some common properties with Hungarian inflecting postpositions and case-markers with regard (i) to the nominal origin of Ps and (ii) to agreement between N head and its complement.

In Nahuatl, locative Ns come from relational Ns or place Ns. Such Ns can be either Ns or Ps as in (3A.1) and (3A.2), respectively:¹⁶

- (3A.1) a. *ī-pan tēuc-tli* (Launey 1981:119, cited in Baker 1996:407)
 3sP-LOC lord-NSF
 ‘the lord’s place’
- b. *ī-pan ō-ni-calac* in Pedro. (Launey 1981:119, cited in
 3sP-LOC PAST-1sS-enter/PERF IN Pedro Baker 1996:407)
 ‘I entered Pedro’s place.’

¹⁶ Again the abbreviations used for the Nahuatl examples are as follows:

<i>Person</i>	<i>Number</i>	<i>Series</i>
1 first person	s singular	S subject agreement
2 second person	p plural	O object agreement
3 third person		P possessor agreement
IMPER imperative	LINK linking morpheme	NSF noun suffix
PERF perfective	REFL reflexive	

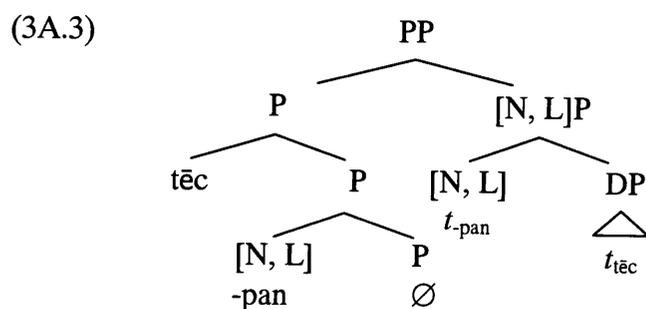
(3A.2) *Tēc-pan* \emptyset -ca'. (Launey 1981:118, cited in Baker 1996:407)

lord-LOC 3sS-be

'It's at the palace (the lord's place).'

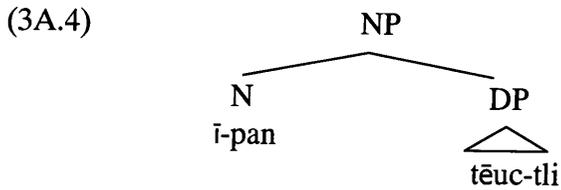
In (3A.1), the locative N *-pan* 'place' appears as N, while in (3A.2), the same N seems to be P as its translation indicates. Note also that in (3A.2), the P *-pan* serves as a host into which the N *tēc* 'lord' incorporates. Applying my layered PP structure, the above contrast can be accounted for as follows.

The ambiguity of *-pan* observed above is rooted in the presence or the absence of head P. In (3A.2), the locative N *-pan* moves to adjoin to P. In addition, as Baker (1996) argues, *tēc* 'lord' adjoins to the [L, N]-P complex. (3A.3) represents the incorporated structure of the PP in (3A.2).¹⁷



The two examples in (3A.1) simply lack lexical P. Therefore, *-pan* remains N in both of the examples in (3A.1). (3A.4) illustrates the structure of (3A.1a) *-pan tēc-tli* 'the lord's place':

¹⁷ Note that the structure contains a functional *p*, which is not included in the diagram for the reason of space. The same applies to the other diagrams in this appendix.



Notice that the agreement marker is found on the locative N in (3A.1), while it is absent in (3A.2). Baker (1996) observes that Nahuatl agreement markers on locative Ns are identical to those that are found on Ns in possessive constructions. As (3A.5) illustrates, the agreement markers appear on locative Ns when N does not incorporate:

(3A.5) a. \bar{o} to-pan quiyāuh.

PAST 1pP-LOC rain/PERF

‘It has rained on us.’

b. No-cpac \emptyset -ca’ quetzal-li.

1sP-above 3sS-be feather-NSF

‘Feathers are on top of me.’

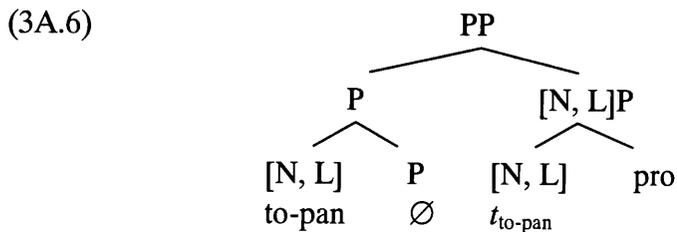
c. No-tlan xi-mo-tlāli.

1sP-beside 2sS-IMPER-2REFL-sit

‘Sit beside me.’

Following Baker (1996), I propose that the locative N takes a morphologically covert complement, namely, *pro*, in each of the PPs in (3A.5), and it agrees with the complement. The agreement is morphologically realized on the locative N. For example, the structure of (3A.5a) can be captured in such a way that the locative N takes *pro* as its complement and the locative N moves to adjoin to P.

Now, (3A.5) differs from (3A.2) in one crucial way. That is, the complement of the locative N does not adjoin to P in the course of its derivation. Consider the structure represented in (3A.6):



Returning to (3A.1), Baker claims that *pro*, which is proposed for (3A.5), is also present in the respective PP structures in (3A.1), and it licenses an adjunct DP possessor such as those in (3A.1). The fact that such DPs can be in an adjunct position is particularly illustrated by (3A.1b), in which the verb can intervene between the head N and the possessor DP.

To summarize, locative heads in Nahuatl uniformly bear the categorial feature [N]. When P is available in the structure, a locative N moves to adjoin to the higher P head, forming the [L, N]-P complex. Furthermore, a locative N takes two types of complement. When the locative N selects a morphologically covert pronominal complement, namely, *pro*, it agrees with it in person and number; the agreement is morphologically realized on the locative N. In addition, *pro* in the complement position of a locative N can license an adjunct DP possessor. On the other hand, in cases where the locative N takes a non-pronominal DP complement, the N head of the DP complement obligatorily raises to adjoin to the [L, N]-P complex. I will show in what follows that the above analysis of locative Ns in Nahuatl provides clues in analyzing Hungarian inflecting postpositions and case-markers. What concerns us

here is why a given inflecting postposition/case-maker inflects in one linguistic context, but not in another.

As (3A.7) and (3A.8) illustrate, inflecting postpositions and case-markers in Hungarian take *pro* as their complements in unmarked contexts. When they appear with nominative pronominal clitics, these clitics can express focus (Ackerman 1987:218).

- | | | |
|--------|-------------------------|------------------------|
| (3A.7) | a. <i>pro mögött-em</i> | b. <i>én-mögött-em</i> |
| | pro behind-1sg | I-behind-1sg |
| | ‘behind me’ | ‘behind ME’ |
| (3A.8) | a. <i>pro rá-m</i> | b. <i>én-rá-m</i> |
| | pro onto-1sg | I-onto-1sg |
| | ‘onto me’ | ‘onto ME’ |

The facts in (3A.7) and (3A.8) contrast with the following facts in (3A.9a) and (3A.10a), in which it is shown that non-pronominal DP complements in nominative Case cannot co-occur with inflected postpositions and case-markers. Instead, inflecting postpositions and case-markers can only appear in their respective uninflected forms as in (3A.9b) and (3A.10b):

- | | | |
|--------|-------------------------------|----------------------------|
| (3A.9) | a. <i>*az asztal mögött-e</i> | b. <i>az asztal mögött</i> |
| | the table behind-3sg | the table behind |
| | ‘behind the table’ | ‘behind the table’ |

As noted earlier in this chapter, the PPs in (3A.9) and (3A.11) parallel that of the possessive construction. (3A.13a) shows that the possessor *a Mari* bears nominative Case when it remains in the base position, while in (3A.13b), the possessor has dative Case when it raises from the base position to [Spec, D].

- (3A.13) a. *a Mari-Ø kalap-ja*
 the Mari-NOM hat-3sg
 ‘Mari’s hat’
- b. *Mari-nak a kalap-ja*
 Mari-DAT the hat-3sg
 ‘Mari’s hat’

In order to understand the above facts, two points must be noted here.

First, both postpositions and case-markers are derived from nouns. Szabolsci (1994:208) states that historically, a postposition is a case-marked form of a nominal. This can be illustrated as follows:

(3A.14) Decomposition of Inflecting postpositions in Hungarian

[_{postposition} *N-case-maker-agreement*]

Recall that case-markers are Ps as I have argued in this chapter. I will return to this issue after exploring the internal structure and the derivation of inflecting case-markers.

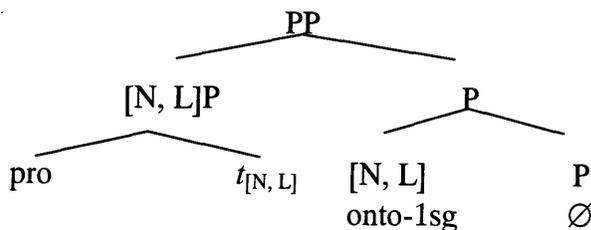
Likewise, case-markers are also derived from nouns, which can be represented as in (3A.15):

(3A.15) **Decomposition of Case-markers in Hungarian**[_{case-marker} *N-agreement*]

Second, both inflecting postpositions and case-markers historically involve a possessive construction as the above Hungarian facts indicate.

Given the analysis outlined for Nahuatl and the above facts in Hungarian, I propose that the contrast between the inflected form in (3A.8a) and the uninflected form exhibited in (3A.10b) can be accounted for as follows, which explains the presence versus the absence of agreement on a given inflecting postposition/case-marker. Let me begin with inflecting case-markers.

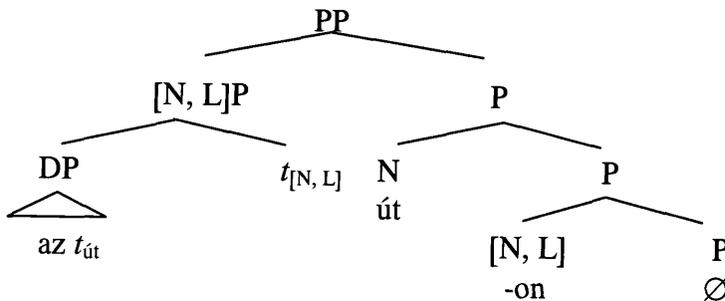
As for the inflected form illustrated in (3A.8a), from the syntactic analysis of Nahuatl PP as illustrated in (3A.6) it follows that Hungarian locative N, which takes *pro* as its complement, can move to adjoin to P in syntax. Notice that the locative N displays overt morphological agreement with the complement. (3A.16) illustrates the derivation of (3A.8a). The derivation further extends with functional *p*, which is not represented in the following structure as well as in the others that follow.

(3A.16) **Derivation of inflected case-markers in Hungarian**

Turning to the uninflected form in (3A.10b), I claim that its structure parallels

that in (3A.3) in Nahuatl. Recall in (3A.3), the locative N as well as the head N of the complement of the locative N incorporate into P. That is, the case-marker taking a non-pronominal DP complement in (3A.17) involves head-to-head movement, in which an uninflected case-marker is a locative N. This locative N incorporates into P and the head N of the DP complement of the locative N incorporates into the [L, N]-P complex. The derivation of (3A.10b) can be illustrated as follows:

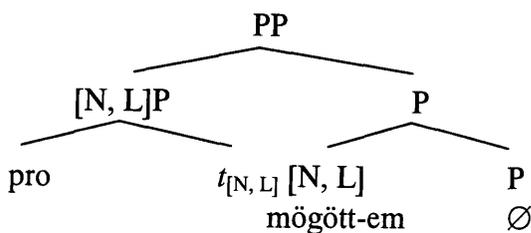
(3A.17) Derivation of uninflected case-markers in Hungarian



Having examined the internal structure of Hungarian inflecting case-markers, let me now turn to Hungarian inflecting postpositions.

First of all, the derivation of the inflected form of an inflecting postposition such as (3A.7a) parallels that of the inflected form of an inflecting case-marker as illustrated in (3A.16) (cf. the syntactic analysis of Nahuatl PP in (3A.6)):

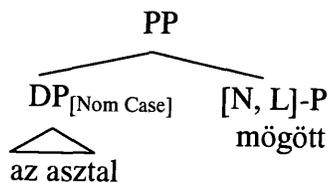
(3A.18) Inflected form of an inflecting postposition in Hungarian



In (3A.18), locative N agrees with its complement *pro* and this agreement is morphologically realized. Further, *pro* can license adjunct non-pronominal DP with a dative case-marker (e.g., *Péter-nek mögött-e* ‘Peter-DAT behind-3sg (behind Peter)’) and pronominal clitic possessors (e.g., *én-mögött-em* ‘I-behind-2sg (behind ME)’ and *én-rá-m* ‘I-onto-1sg (onto ME)’). Since pronominal clitics have been observed to express focus in (3A.7b) and (3A.8b), they may be in a peripheral position, possibly an adjoined position.

On the other hand, we have observed that the same inflecting postpositions do not inflect when they co-occur with a non-pronominal DP. Such DPs bear nominative Case and are considered to be base-generated in an argument position within PP and remain there (Marácz 1986).¹⁸ The most straightforward analysis is to treat these postpositions as Ps, which parallels neither of the two internal structures of PP in Nahuatl. More precisely, [N, L] is incorporated into these Ps in the lexicon, not in syntax.¹⁹ (3A.19) illustrates the derivation of (3A.9b).

(3A.19) Uninflected form of an inflecting postposition in Hungarian



¹⁸ Marácz (1986) proposes that the DP is in the subject position of PP and is assigned nominative Case there by an agreement head, namely, Infl. However, I adopt the view (Baker 1996, Jackendoff 1983) that has been introduced in Chapter 2. That is to say, Ps are monadic and take a DP argument in their complement position.

¹⁹ This process of incorporation in the lexicon is called fusion in Chapter 5, where I will examine its effect on locative inversion in English.

In this appendix, I have provided an explanatory note on the properties of inflecting postpositions and case-markers in Hungarian and their internal structures. On the basis of the analysis of the Nahuatl facts, I have proposed a movement analysis of such postpositions and case-markers, which accounts for the presence versus the absence of overt morphological agreement with their complement.

CHAPTER FOUR

Interplay of the internal structure and the external syntax of PP, part 1

P-to-V incorporation

This chapter examines the interplay of the internal structure and the external syntax of PP, focusing on P-to-V incorporation, which has already been sporadically introduced in the previous two chapters. The present chapter explores the ways in which P-to-V incorporation takes place in syntax under the minimalist approach, drawing upon the syntactic theory of incorporation developed by Baker (1988b:Ch. 5, 1988c).

4.1. Introduction

P-to-V incorporation has been observed to take place at various levels in grammar. One level at which this grammatical process is considered to be productive is a pre-syntactic level, namely word-formation. For example, Gruber (1976:Ch. 1) argues that the process of incorporation that induces the alternation between (4.1a) and (4.1b) takes place at the level which he calls ‘prelexical’.

- (4.1) a. The pencil pierced the cushion.
b. The pencil pierced through the cushion.

Gruber (1976) observes that (4.1a) implies the preposition *through* despite the fact that it is absent. He claims that the P *through* can be optionally incorporated into

the V *pierce*. In other words, the incorporated *through* is morphologically covert in (4.1a).

In contrast to the alleged case of pre-lexical incorporation illustrated by (4.1a), in languages such as Chicheŵa, a Bantu language, an incorporated P is morphologically realized as an applicative (APPL) (Baker 1988b, 1988c). In these languages, Ps are of two kinds: those that can appear independently as a preposition and those that are affixial and must undergo incorporation, namely, applicatives. Ps that undergo incorporation are of four kinds. They are (i) dative/goal, (ii) benefactive/malefactive, (iii) instrumental and (iv) locative, of which dative/goal P incorporation is the most common and regular.¹ Consider (4.2) through (4.5):²

(4.2) **Dative/Goal** (Chicheŵa, Bantu; Baker (1988b:229)):

a. Mbidze zi-na-perek-a msampha **kwa** nkhandwe.

zebras SP-PAST-hand-ASP trap to fox

‘The zebras handed the trap to the fox.’

b. Mbidze zi-na-perek-**er**-a nkhandwe msampha.

zebras SP-PAST-hand-**APPL**-ASP fox trap

‘The zebras handed the fox the trap.’

¹ Shibatani (1990:64-67) reports that Ainu exhibits regular incorporation with respect to locative Ps.

² ASP aspect APPL applicative OBL oblique case PN proper noun marker
SP subject agreement prefix

(4.3) **Benefactive/malefactive** (Chamorro, Austronesian; Gibson (1980), cited in Baker (1988b:237)):

a. Ha punu' si Miguel i bäbui **pära** guahu.

3sS-kill PN Miguel the pig for me

'Miguel killed the pig for me.'

b. Ha punu'-i yu' si Miguel nu i bäbui.

3sS-kill-**APPL** me PN Miguel OBL the pig

'Miguel killed the pig for me.'

(4.4) **Instrumental** (Chicheŵa, Bantu; Baker (1988b:238)):

a. Fisi a-na-dul-a chingwe **ndi** mpeni.

hyena SP-PAST-cut-ASP rope with knife

'The hyena cut the rope with a knife.'

b. Fisi a-na-dul-**ir**-a mpeni chingwe.

hyena SP-PAST-cut-**APPL**-ASP knife rope

'The hyena cut the rope with a knife.'

(4.5) **Locative** (Kinyarwanda, Bantu; Kimenyi (1980), cited in Baker (1988b:238)):

a. Abaana b-iica-ye **ku** meeza.

children SP-sit-ASP on table

'The children are sitting on the table.'

b. Abaana b-iica-ye-**ho** ameeza.

children SP-sit-ASP-**APPL** table

'The children are sitting on the table.'

Take, for example, (4.2). (4.2) indicates that there are two kinds of goal preposition in this language; one non-affixal and the other affixal. Following Baker's treatment of the above examples of applicative constructions as instances of P-to-V incorporation, I will examine the syntax of P-to-V incorporation in non-polysynthetic languages such as Dutch, English and Japanese.

This chapter is organized as follows. First, I will introduce Baker's (1988b, 1988c) syntactic analysis of P-to-V incorporation, which is based on his extensive work on agglutinative and polysynthetic languages, and I will show how Baker's account of incorporation, which is developed under GB theory, can be captured in terms of the minimalist framework. Second, I will argue that my incorporation analysis and the layered PP hypothesis can account for P-to-V incorporation facts in Dutch. Third, it will be shown that the incorporation analysis can be extended to Japanese to account for the [+source] DP that alternates with the [+source] postpositional phrase. Finally, I will present a case study on P-stranding in English. In this case study, I will re-examine the discrepancy between P-stranding derived by the pseudo passive and that by WH-movement, which will provide further support for the incorporation analysis as well as the layered PP analysis proposed in Chapter 2.

4.2 Syntactic analysis of P-to-V incorporation

Marantz (1984) proposes that applicative constructions in Chicheŵa can be regarded as arising from the applicative merging with the V to form a single word. Baker (1988c:360) considers this a 'structure-destroying process'. Instead, he proposes under GB theory that the applicative construction represents an instance of Move α .

More precisely, the movement in question involves a head X^0 adjoining to another head Y^0 . Thus, it is an instance of head-to-head movement. In what follows, I will briefly summarize Baker's syntactic incorporation theory, focusing on P-to-V incorporation.

4.2.1. Baker's (1988b, 1988c) syntactic incorporation theory

In polysynthetic languages, there is a grammatical process known as incorporation, by which two lexical items with independent meanings and functions can combine into one morphological unit (Baker 1988a). Incorporation can be considered an instance of head-to-head movement, namely, adjunction of X^0 to Y^0 . However, it is not the case that a given head X^0 can adjoin to any other head. Baker (1988c) shows that there are two principles at work to restrict head-to-head movement: the Projection Principle and the Empty Category Principle (ECP) (Chomsky 1981). Baker (1988b:49-50) claims that the first principle requires that the structure be preserved at all levels of syntax, which in the case of X^0 movement, implies that it does so by leaving a trace.

Concerning the latter principle, it requires that the trace be properly governed. Baker (1988b:53) notes that for α to be properly governed, α needs to be governed by an element that is either θ -coindexed with it (i.e., a head) or chain-coindexed with it (i.e., an antecedent). Since a head can never be θ -marked, it follows from the ECP that the trace must be governed by its antecedent. Baker (1988c) adopts the definition of government in (4.6), following Johnson (1988) and Chomsky (1986a):

(4.6) A governs B if and only if

(i) A c-commands B, and

(ii) no more than one maximal projection dominates B but not A, and

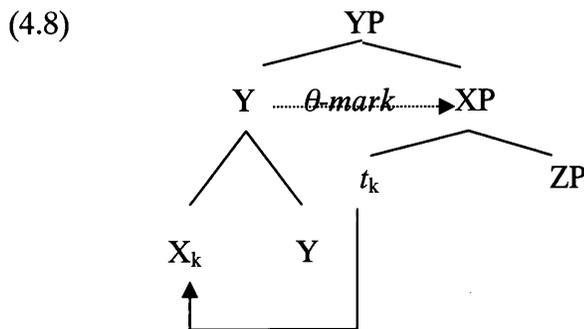
- (iii) any maximal projection that dominates B but not A is θ -marked by a lexical category

It follows from (4.6) that for the trace of a given moved X^0 to be governed, the moved X^0 must move from the complement position of Y^0 and adjoin to Y^0 . Hence, Baker (1988b) proposes the following constraint, following Travis (1984):

(4.7) **The Head Movement Constraint**³

X^0 may move into Y^0 , where X^0 and Y^0 are zero level categories, only if Y^0 properly governs the position of X^0 .

Therefore, head-to-head movement is allowed as in (4.8), in which it is shown that XP is θ -marked by Y^0 , and X^0 moves to adjoin to Y^0 :



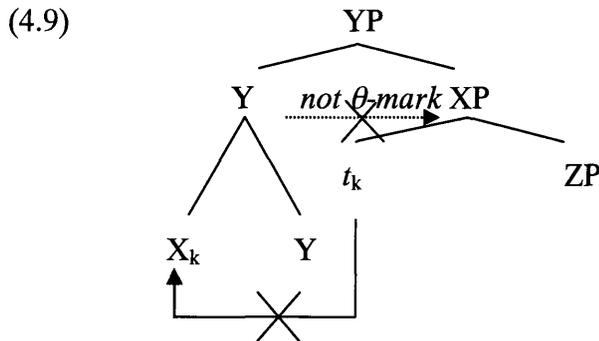
³ See Travis (1984) for her discussion of this constraint with regard to V2 effects in Germanic languages, in which V moves to adjoin to T and the V-T complex moves to adjoin to C. The Head Movement Constraint can be derived from Rizzi's (1990, 2001) notion of Relativized Minimality:

Relativized Minimality (Rizzi 2001:90)

- Y is in a Minimal Configuration with X iff there is no Z such that
- (i) Z is of the same structural type as X, and
 - (ii) Z intervenes between X and Y.

In the case of head-to-head movement, because a head intervening between two heads is of the same structural type, it blocks head-to-head movement.

On the other hand, in cases where Y^0 does not θ -mark XP as in (4.9), the incorporation of X^0 into Y^0 is banned:



Baker shows that the constraint on incorporation has empirical support as follows. Consider (4.10), which illustrates that N-incorporation out of an adjunct DP is banned.⁴

Ban on N-to-V incorporation from an adjunct NP (Niuean; Baker 1988b:87):

(4.10) a. Gahua a-ia he pō, ka e mohe he aho.

work ABS-he at night but ABS sleep at day

‘He works nights, but sleeps days.’

⁴ Contrast with (i), in which N-incorporation is allowed out of an argument DP (Niuean; Seiter 1980, cited in Baker 1988b:82):

- (i) a. Volu nakai he tau fānau e fua niu?
grate Q ERG PL children ABS fruit coconut
‘Are the children grating (the fruit of the) coconut?’
b. Volu niu nakai e tau fānau?
grate coconut Q ABS PL children
‘Are the children grating coconut?’

ERG ergative ABS absolutive

b. *Gahua-pō a-ia, ka e mohe aho.

work-night ABS-he, but ABS sleep-day

‘He works nights, but sleeps days.’

In (4.10a), both *he pō* ‘at night’ and *he aho* ‘at day’ are adjuncts. If they incorporate into the respective Vs, the Head Movement Constraint would be violated, and so the derivation results in ungrammaticality as illustrated in (4.10b).

Turning to P-to-V incorporation, Baker (1988b) claims that sentences such as (4.11b) should be unavailable.⁵

Ban on P-to-V incorporation from an adjunct PP (Baker 1988b:236)⁶

(4.11) a. Mbuzi zi-na-dy-a [kalata [kwa Mavuto]].

goats SP-PAST-eat-ASP letter to Mavuto

‘The goats ate the letter to Mavuto.’

b. *Mbuzi zi-na-dy-er-a [kalata [t Mavuto]].

goats SP-PAST-eat-APPL(to)-ASP letter Mavuto

‘The goats ate the letter to Mavuto.’

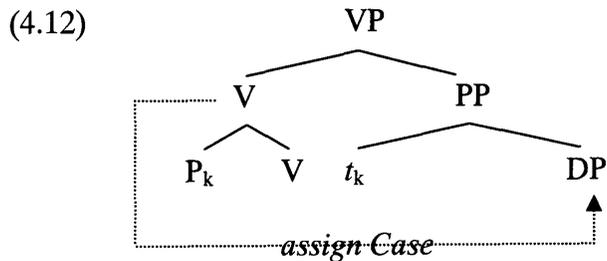
According to Baker, P-incorporation is one of the ways in which the

⁵ Baker (1988b:236) notes that the unavailability of the sentence in question has not been attested.

⁶ Baker (1988b) cites a contrast reported in Belletti and Rizzi (1981). Provided that the movement analysis of *ne* ‘of them’ holds for (ib), (ib) involves illegitimate head-to-head movement that parallels (4.11b):

- (i) a. Gianni é rimasto [tre settimane] a Milano.
Gianni has remained three weeks in Milan.
b. *Gianni **ne** é rimasto [tre t] a Milano.
Gianni **of-them** has remained three in Milan
‘Gianni has remained three of them in Milan.’

complement of P becomes visible by receiving Case from the P-V complex at S-Structure. That is, it satisfies the ‘Visibility Condition’ on the complement of P and can be assigned a θ -role at LF. Consider (4.12) as an instance of (4.9):



In (4.12), the P-V complex can assign Case to the DP complement of the incorporated P because of the government extension mechanism called the Government Transparency Corollary (Baker 1988b):

(4.13) **Government Transparent Corollary**

A Y which has an X incorporated into it governs everything which X governed in its original structural position.

In the case of P-to-V incorporation, P governs its DP complement in the original structural position. Then, it incorporates into V, which forms a P-V complex. According to the Government Transparent Corollary, the P-V complex now governs the DP complement of the incorporated P, which is called ‘the applied object’. As a result of the government extension, the applied object behaves like the direct object of the V in terms of word order, morphological case-marking, verbal agreement, and passivization (see Marantz 1982, 1984). For instance, in Chicheŵa these properties

appear as follows:

First, Baker (1988b:247) notes that the direct object in Chicheŵa is usually immediately postverbal as in (4.14a). The applied object also appears in the postverbal position as shown in (4.14b). If the order of the applied object and the basic object (i.e., the original direct object) is reversed, the sentence becomes degraded as illustrated in (4.14c).

- (4.14) a. Mikango yanu i-na-thamangits-a **mbuzi zathu.** [direct object]
 Lions your SP-PAST-chase-ASP **goats our**
 ‘Your lions chased our goats.’
- b. Amayi a-ku-umb-ir-a **mwana mtsuko.** [applied object]
 woman SP-PRES-mold-for-ASP **child waterpot**
 ‘The woman is molding the waterpot for the child.’
- c. ??Amayi a-ku-umb-ir-a **mtsuko mwana.** [applied object]
 woman SP-PRES-mold-for-ASP **waterpot child**
 ‘The woman is molding the waterpot for the child.’

Second, he (1988a:247) observes that the applied object agrees with the P-V complex and may optionally pro-drop, so that it is phonologically null. (4.15a) displays agreement between the applied object *mwana* ‘child’ and the complex V. In (4.15b), it is shown that the applied object can pro-drop.⁷

⁷ OP object agreement (clitic) prefix

- (4.15) a. Amayi a-ku-**mu**-umb-ir-a mtsuko **mwana**. [**object agreement**]
 woman SP-PRES-**OP**-mold-APPL-ASP waterpot **child**
 ‘The woman is molding the waterpot for the child.’
- b. Amayi a-ku-**mu**-umb-ir-a mtsuko. [**object agreement**
 woman SP-PRES-**OP**-mold-APPL-ASP waterpot and **pro-drop**]
 ‘The woman is molding the waterpot for him.’

Finally, Baker points out that the applied object can be passivized. (4.16) shows the active sentence and its passive counterpart.

- (4.16) a. Kalulu a-na-gul-ir-a mbidzi nsapato. [**active**]
 hare SP-PAST-buy-for-ASP zebras shoes
 ‘The hare bought shoes for the zebras.’
- a. Mbidzi zi-na-gul-ir-idw-a nsapato (ndi kalulu). [**passivized**]
 Zebras SP-PAST-buy-for-PASS-ASP shoes by hare
 ‘The zebras were bought shoes by the hare.’

The fact that the applied object functions as the direct object in the applicative construction means that the status of the basic object must be downgraded to that of a secondary object of the V. In particular, Baker (1988b) observes that the basic object can no longer trigger object agreement on the V with the presence of the applied object, which leads to the unavailability of pro-drop for the basic object, nor can it be passivized. Baker (1988b:248-249) claims that a similar grammatical function change of the direct object takes place in other languages such as Chamorro and Bahasa

Indonesian. He argues that the grammatical function change of the two objects stems from a difference in satisfying the Case-filter that requires DPs to get Case. He proposes that while the applied object is adjacent to the V and thus is assigned accusative Case, the basic object abstractly incorporates into the V. This abstract incorporation of the basic object obviates the need for it to get Case and, therefore, satisfies the Case-filter. I will return to this issue in the following subsection and will propose an appropriate analysis under a feature-based movement theory.

Thus far, I have introduced Baker's analysis of syntactic incorporation. As mentioned above, his proposal is based in the GB framework; it is necessary at this point to capture the type of movement under discussion within the minimalist framework.

4.2.2. A minimalist approach to incorporation

Under a minimalist analysis, the syntactic operation Move needs to be motivated; things do not move overtly unless they are motivated to do so (Chomsky 1995:225-235). This is because economy in terms of derivation as well as representation is one of the major concerns of this framework. Chomsky argues that a given syntactic object is subject to movement by virtue of a [-interpretable] formal feature (FF). More precisely, overt movement is induced by a strong [-interpretable] FF on a functional head X^0 (Chomsky 1995:232). Thus, overt movement takes place when a given FF of a syntactic category, which is attracted by a strong [-interpretable] FF on a certain functional head, pied-pipes phonetic features as well as other features. However, in his later works (Chomsky 1998, 1999), the notion of strength of features has been discarded. This is because the notion of strength is unnecessary if a [-interpretable] FF of a given

syntactic object can be deleted without movement. Here, I simply assume that the mere presence of a [-interpretable] categorial feature on X^0 must trigger syntactic movement. There are two types of movement: movement of a phrase and that of a head.

When Y^0 bears a [-interpretable] EPP-feature, it induces movement of XP to its Spec position, i.e., [Spec, Y^0], as has been introduced in Chapter 1. Syntactic movement of the XP deletes this EPP-feature on Y^0 . According to Chomsky (1995), this EPP-feature is category specific, e.g., the EPP-feature on T is [D]/[N], attracting a DP/NP to its Spec position. I will adopt this framework and maintain the claim that categorial specificity is relevant to syntax. I will return to the issue of XP movement in the following chapter with regard to locative inversion in English, since incorporation is our main concern in the present chapter.

In cases where X^0 moves to adjoin to another head Y^0 , I assume that Y^0 bears a [-interpretable] categorial feature that attracts X^0 and X^0 also bears a [-interpretable] affix-feature.⁸ In the case of P-to-V incorporation, the host V bears a P-feature, which attracts [P] along with other features, and the incorporating P bears an affix-feature. I note that proposing such a P-feature is in line with the V-feature of T and that of C; this

⁸ This affix-feature is the minimalist interpretation of the Stray Affix Filter (Baker 1988b, originally ‘the Stranded Affix Constraint’ (Lasnik 1981)):

- (i) **Stray Affix Filter:** *X if X is a lexical item whose morphological subcategorization frame is not satisfied at S-structure.

In minimalist terms, when X bears a [-interpretable] affix-feature, it needs to adjoin to Y for the feature to be deleted. This departs from the notion of the same feature in the literature, in that it has been regarded as a feature on the probe/attractor, not on the goal/attractee (see Bobaljik 1995:Ch. 5 for a review and an argument against an affix-feature as a syntactic feature with reference to V-movement).

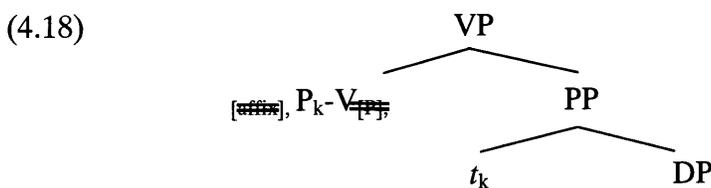
Note that in the minimalist framework, S-structure is not available as a level of representation. Thus, a question arises as to where the feature is deleted. It has been proposed that head-raising takes place at PF for language particular morphological reasons (see Nishiyama 1998 for an analysis regarding V-V compounding in Japanese as a PF operation). However, the present chapter shows that there are cases where head-raising does not necessarily take place at PF. I propose below that an affix-feature can be satisfied at the level of syntax.

abstract morphological V-feature triggers V-to-T and V-to-C movement, respectively (Chomsky 1995). Further, both of the features, namely, a P-feature of V and an affix-feature of P, are [-interpretable] since they do not have any semantic content and do not undergo any interpretation at LF. Therefore, they need to be deleted in syntax by P adjoining to V. I will illustrate the derivation in a step-by-step manner in what follows.

First of all, consider (4.17), in which a P with an affix-feature selects its DP complement, and the P projects to form a PP.



As the next step, V with a [-interpretable] P-feature merges with the PP. As mentioned above, the P-feature of V attracts P. With this instantiation of the operation Move, the two [-interpretable] features are deleted, which is illustrated in (4.18):

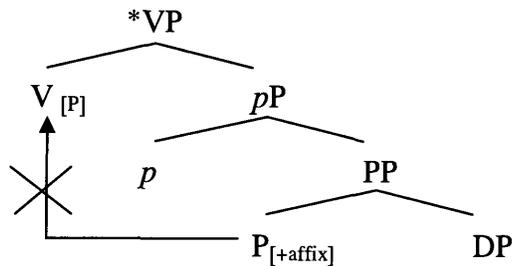


However, this cannot be the whole story. According to the layered PP structure proposed in Chapter 2, there is a functional head *p* that intervenes between the P and V in (4.18). In addition, there is another functional head above V, namely, *v*.

As shown in (4.19), P cannot incorporate into V, skipping an intervening head,

due to the HMC.

(4.19)



The notion of government is crucial to the definition of the HMC, but does not form part of the minimalist framework (Chomsky 1995). I therefore recapture the ban on movement in (4.19) in the following way.

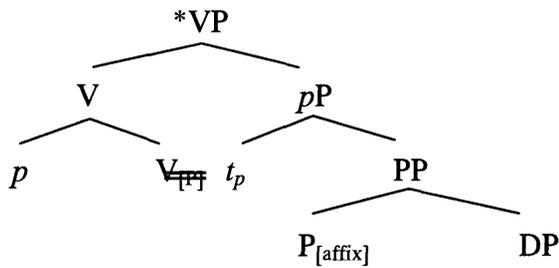
In light of the feature-based locality condition, P-to-V movement in (4.19) is blocked because V attracts the categorial feature [P] of *p* which is closer to V than P is. This is based on the Minimal Link Condition (MLC).

(4.20) **Minimal Link Condition (MLC)**

K attracts α only if there is no β , β closer to K than α , such that K attracts β .

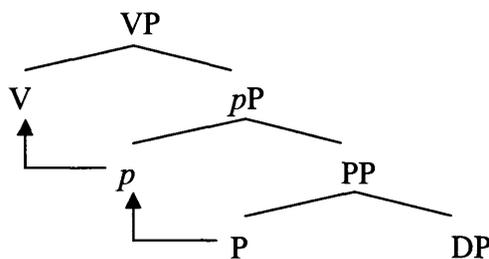
According to the MLC, the P-feature of V selects *p* rather than P. The incorporation of *p* into V deletes the [-interpretable] P-feature of V. However, this operation leaves the affix-feature of P non-deleted. Due to the non-deleted [-interpretable] affix-feature of P, the derivation does not converge as illustrated in (4.21):

(4.21)



Due to the MLC, therefore, for P to incorporate into V, it needs to move through the intermediate head position. Note that we arrive at the same result as with the HMC; the following movement avoids the HMC:

(4.22)

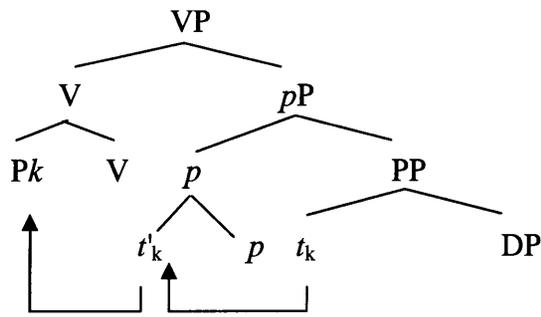


The remaining issue that needs to be addressed at this point is how P moves through the intermediate position. There are two options available: (i) P incorporates into *p*, forming a P-*p* complex, and it excorporates out of the complex to incorporate into V or (ii) P incorporates into *p* and the P-*p* complex incorporates to V.⁹

I claim that excorporation is not desirable. The process of excorporation is illustrated in (4.23), in which P adjoins to *p*, raises out of the P-*p* complex and adjoins to V:

⁹ See Roberts (1991) for an argument for excorporation and Zwart (1997) for the complex-movement analysis I adopt in this thesis. Zwart (1997) bases his argument on a feature-based movement analysis. As will be discussed below, he points out that a non-deleted feature results if a given head skips over an intermediate head.

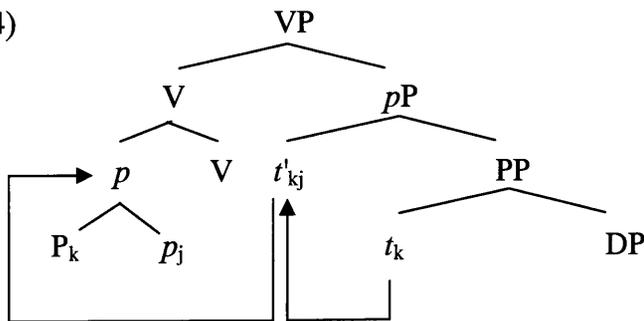
(4.23)



I will argue in what follows that both within the GB and minimalist framework, analysis (ii) is preferable to analysis (i).

Under the GB analysis, Baker (1988b) argues that the above derivation involving excorporation is ruled out by morphological theory, in that Move α cannot apply to part of a word to move to some other place in the string.¹⁰ Instead of the excorporation analysis, Baker maintains that the derivation illustrated in (4.24), in which the P-*p* complex moves to adjoin to the V, represents a licit derivation.

(4.24)



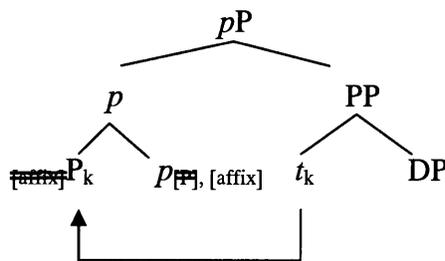
¹⁰ The following example in Dutch, which involves both verb raising and verb second, has been argued to possibly represent a counterexample against Baker's ban on excorporation (Roberts 2001:119):

- (i) Gisterren had_j ik [mijn vriendin op t_k] [[t_j] [willen bellen]_k].
 Yesterday had I my girlfriend up want call
 'yesterday I wanted to call my girlfriend up.'

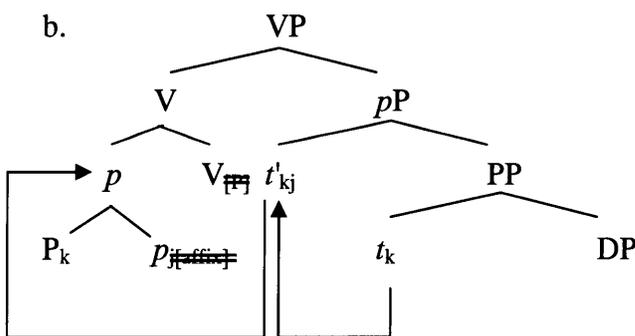
In (i), the verbal cluster *willen bellen* 'want call' right-adjoins to T, forming an uninterruptible cluster, i.e., [[_T had] [willen bellen]]. Then, verb second applies and *had* 'had' excorporates from the above cluster.

Second, feature-based movement also precludes excorporation. The derivation from the minimalist perspective proceeds as follows. As has been argued above, P-to-*p* movement is triggered by a P-feature of *p*. By this instantiation of the operation of head-to-head movement, the P-feature of *p* as well as an affix-feature of P are deleted. Next, *p*-to-V (more precisely, the movement of the P-*p* complex into V) is again motivated by a P-feature of V. The above head-to-head movement deletes the P-feature of V and an affix-feature of *p*. In this successive cyclic movement, all of the relevant [-interpretable] features are successfully deleted. The above derivation can be illustrated as follows:

(4.25) a.

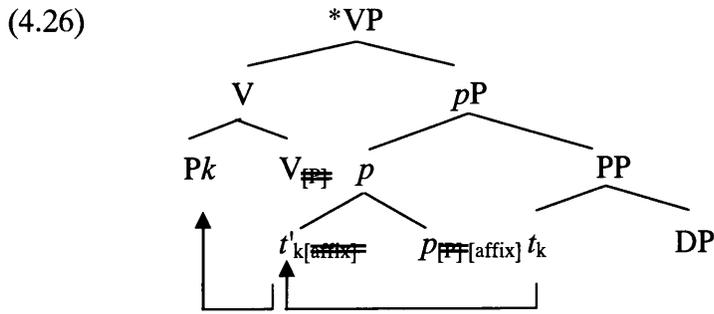


b.



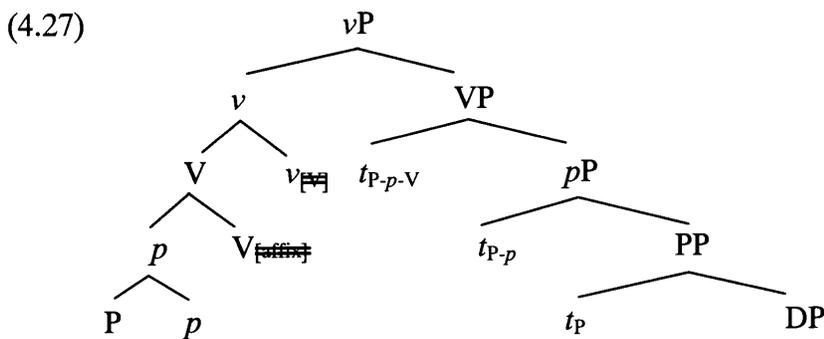
Given the above analysis, if P moved through *p* by way of excorporation, the affix-feature of *p* would remain non-deleted and, thus the derivation would not converge.

This non-convergent derivation is illustrated as in (4.26):



(4.26) indicates that the affix-feature of P is deleted by adjunction to *p* and the P-feature of V is deleted by P. However, since *p* does not undergo movement to adjoin to any higher head, it remains non-deleted. Therefore, excorporation is not an option available in the minimalist framework.

Finally, let us consider further movement of the now formed P-*p*-V complex into yet another higher head *v*. The movement is motivated by a V-feature of *v*. Consider (4.27) as to how the relevant [-interpretable] features are deleted by syntactic incorporation.



So far, I have only dealt with the issue of head-to-head movement in applicative constructions. One issue that remains to be discussed concerns how the applied object is licensed under the minimalist approach. I assume that the applied

object satisfies argumenthood by being assigned a θ -role from the incorporating P and by its Case-feature, which is [-interpretable], being deleted by the identical Case-feature of the head X^0 . This way, the applied object is considered to satisfy the Argument Chain Condition, which requires an argument to be assigned a θ -role in the base position and to have its Case-feature deleted in the raised position (see Kitahara 1997 for his review of the literature). Furthermore, depending on the presence or the absence of an EPP-feature of X^0 , the Case-feature along with other [-interpretable] FFs of the applied object is deleted in the Spec position of X^0 or in situ, respectively. I will return to this issue of licensing applied objects at various places in this chapter where it becomes relevant to my discussion.

In this subsection, I have outlined a minimalist analysis of P-to-V incorporation. In the following subsection, I will show how facts from Dutch P-to-V incorporation support my analysis.

4.3. P-to-V incorporation in Dutch

In this section, I will show that the incorporation analysis outlined in the previous section and the layered PP hypothesis can account for P-to-V incorporation facts in Dutch. To start our discussion, I will first introduce some of the relevant P-to-V incorporation facts in this language.

4.3.1. P-to-V incorporation facts in Dutch

Van Riemsdijk (1978) claims that incorporation is productive in Dutch, which includes

P-to-V incorporation.¹¹ However, not all Ps incorporate into Vs. He observes that only real particles (Prts) and motional (i.e., [+directional]) postpositions can undergo incorporation.¹² In contrast, prepositions, intransitive Ps and some postpositions (e.g., *vandeen* ‘from’) cannot. I will illustrate the above by representative examples.

First of all, consider (4.28), in which the Prt *op* ‘up’ incorporates into the V *bellen* ‘call’:

- (4.28) a. dat ik [Jan op bellen] wil [underlying structure]
 that I John up call want
 ‘that I want to call John up’
- b. dat ik [Jan op t_k] wil bellen_k [V-movement
 & no P-incorporation]
 that I John up want call
 ‘that I want to call John up’
- c. dat ik [Jan t_k t_j] wil op_k bellen_j [incorporation]
 that I John want up call
 ‘that I want to call John up’

¹¹ Van Riemsdijk (1978) observes that N and A can also undergo incorporation into V. Consider (i) and (ii):

- (i) a. omdat hij de kamer schoon wilde maken
 because he the room clean wanted to make
 ‘because he wanted to clean the room’
 b. omdat hij de kamer wilde schoon maken
 because he the room wanted clean make
 ‘because he wanted to clean the room’
- (ii) a. omdat hij auto kan rijden
 because he car can drive
 ‘because he can drive a car’
 b. omdat hij kan auto rijden
 because he can car drive
 ‘because he can drive’

He claims that the (ib) and (iib) exhibit A-to-V incorporation and N-to-V incorporation, respectively.

¹² Recall that following Emonds (1972) and Van Riemsdijk (1978), the present thesis treats Prts as P.

Van Riemsdijk (1978) maintains that (4.28a) represents the underlying structure.

(4.28b) shows that only the V *bellen* ‘call’ moves rightward, while the P *op* stays in the base position. In (4.28c), *op* is considered to be incorporated into the V, as indicated above.

Furthermore, with regard to P-to-V incorporation of the P *te*, he further shows that it can also incorporate into V in the following way as well, in which *te* ‘to’ intervenes between the P and the V.

- (4.29) a. omdat hij [mij op te bellen] probeert [underlying structure]
because he me up to call tries
‘because he tries to call me up’
- b. omdat hij [mij op t_k] probeert te bellen_k [no P-incorporation]
because he me up tries to call
- c. omdat hij [mij $t_j t_k$] probeert op_j te bellen_k [P-incorporation]
because he me tries up to call

Van Riemsdijk (1978:54) claims that both in (4.29b) and (4.29c), *te bellen* ‘to call’ undergoes movement. In (4.29b), *te bellen* alone moves rightward. Turning to (4.29c), *op* ‘up’ incorporates into *te bellen* and the whole complex moves rightward.

Second, let us now turn to postpositions that can undergo incorporation. As illustrated in (4.30), the postposition *in* ‘into’ can incorporate into V.¹³ Note that the

¹³ Note that I represent the incorporated P and its host V as two separate morphological units in accordance with the Dutch generative literature. However, such P and V actually form one morphological unit as illustrated in (i):

postposition *in* is [+directional], as given in its interlinear translation.

- (4.30) a. omdat hij [de boom in] is geklommen [no P-incorporation]
 because he the tree into is climbed
 ‘because he climbed into the tree’
- b. omdat hij [de boom t_k] is in_k geklommen [P-incorporation]
 because he the tree is into climbed
 ‘because he climbed into the tree’

In (4.30b), Van Riemsdijk considers the [+directional] postposition *in* to undergo

-
- (i) Jan is de sloot ingesprongen
 Jan is the ditch into-jumped
 ‘Jan jumped into the ditch’

Note further that the DP object of the incorporated P displays object behaviors. It has been observed that indefinite objects in Dutch can appear in two different positions, i.e., in the base, or unscrambled, position (right of the adverb) or in a scrambled position (i.e., left of the adverb) (see Diesing 1992, 1997, de Hoop 1992, among many others), and display a contrast as to how they are interpreted in these positions. According to de Hoop (1992:139), the indefinite object in the base position as illustrated in (iia) has either a partitive or an existential reading, while the one in the scrambled position as shown in (iib) has only a partitive reading:

- (ii) a. dat de politie **gisteren** veel taalkundigen opgepakt heeft. [base position]
 that the police yesterday many linguists arrested has
 ‘that the police arrested many (of the) linguist yesterday’ (partitive)
 ‘that the police arrested many linguists yesterday’ (existential)
- b. dat de politie veel taalkundigen **gisteren** opgepakt heeft. [scrambled position]
 that the police many linguists yesterday arrested has
 ‘that the police arrested many (of the) linguists yesterday’ (partitive)

Now consider (iii), in which the indefinite object *veel bomen* ‘many trees’ of the incorporated P *in* ‘into’ exhibits the same contrast with respect to the ways in which it is interpreted:

- (iii) a. omdat hij **gisteren** veel bomen is ingeklommen [base position]
 because he yesterday many trees is climbed
 ‘because he climbed into many (of the) trees’ (partitive)
 ‘because he climbed into many trees’ (existential)
- b. omdat hij veel bomen **gisteren** is ingeklommen [scrambled position]
 because he many trees yesterday is climbed
 ‘because he climbed into many (of the) trees’ (partitive)

The examples in (iii) suggest that the stranded DP of the incorporated P behaves like indefinite objects of Vs.

movement to adjoin to the V. Moreover, as we have observed in the case of the Prt *op*, *in* can incorporate into *te klimmen* ‘to climb’ as well. Consider (4.31):

- (4.31) a. omdat · hij [de boom in] probeert te klimmen [no P-incorporation]
because he the tree in tries to climb
‘because he tries to climb the tree’
- b. omdat hij [de boom t_k] probeert in_k te klimmen [P-incorporation]
because he the tree tries in to climb
‘because he tries to climb the tree’

Third, as can be easily predicted from the incorporability of [+directional] postpositions introduced above, postpositions in the circumpositional phrase can also undergo P-to-V incorporation. Recall that the following examples from 2.2.2., repeated here in (4.32), illustrate the construction in question, in which we find the preposition and the postposition (Koopman 2000:230):

- (4.32) a. onder de brug door
under the bridge through
‘through under the bridge’
- b. tegen het huis op
against the house up
‘up against the house’

Notice that the postpositions in the above examples are [+directional] and can

incorporate into V as in (4.33) (Koopman 2000:231):

- (4.33) a. dat zij gisteren onder de brug t_k is door_k gelopen
that she yesterday under the bridge is through walked
'that she waked under the bridge yesterday'
- b. dat de plant tegen het huis t_k is op_k gegroeid
that the plant against the house is up grown
'that the plant grew up the side of the house'

Having introduced the basic facts of P-to-V incorporation in Dutch, I will now analyze them in the framework I have proposed in Section 4.2.

4.3.2. Analysis of P-to-V incorporation in Dutch

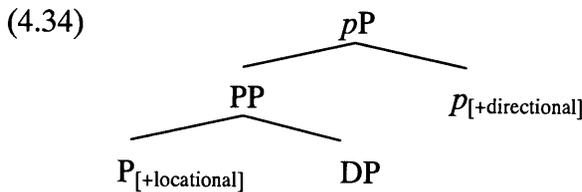
In this subsection, I will present my analysis of P-to-V incorporation in Dutch as follows. First, I will review the internal PP structure in Dutch. Second, I will examine P-to-V incorporation of [+directional] postpositions. Third, I will turn to Prts that can incorporate into V. Finally, I will examine two cases where P-to-V incorporation is not available in Dutch, namely, prepositions and intransitive Ps. I will show that these cases provide further support for my proposed analysis.

4.3.2.1. Review of the internal structure of PP in Dutch

I have shown in Chapter 2 that PPs in Dutch have a layered structure, which involves [+directional] p and [+locational] P, on the basis of the observation of the circumpositional phrase in this language. In the circumpositional phrase, the

[+directional] postposition has been considered to be the head of the entire phrase.

The postposition in the circumpositional phrase is base-generated under *p* (Van Riemsdijk 1990). Thus, we have seen that the structure of the circumpositional phrase can be represented as follows:



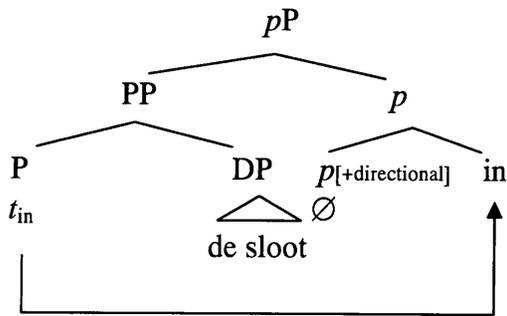
Based on this internal structure of PP, I have also shown in Chapter 2 (i) that [+directional] PP in Dutch can be either prepositional or postpositional and (ii) that this alternation is rooted in head-to-head movement. That is, P-to-*p* incorporation derives the [+directional] postpositional construction. Consider the following facts again:

- (4.35) a. Jan is de sloot in gesprongen. Postposition: [+directional]
 Jan is the ditch into jumped
 ‘Jan jumped into the ditch.’
- b. Jan heeft/is in de sloot gesprongen. Preposition: [-directional]/[+directional]
 Jan has/is in the ditch jumped
 ‘Jan jumped in the ditch. [-directional]/into the ditch [+directional]’

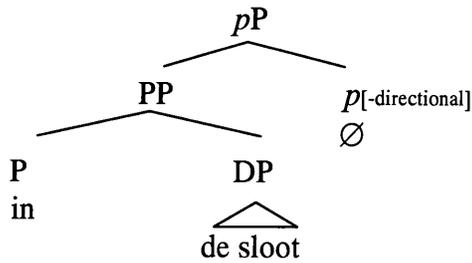
I have argued that (4.35a) can be analyzed in such a way that *in* is base-generated under head-initial P and then undergoes head-to-head movement to adjoin to [+directional] *p* as illustrated in (4.36). As for (4.35b), the ambiguity stems from the alternation

between [-directional] *p* and [+directional] *p*, both of which are morphologically covert, as shown in (4.37) and (4.38), respectively:

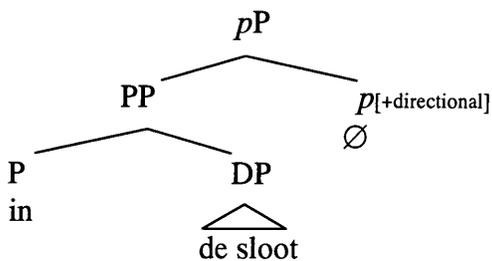
(4.36) [+directional] postposition



(4.37) [-directional] preposition



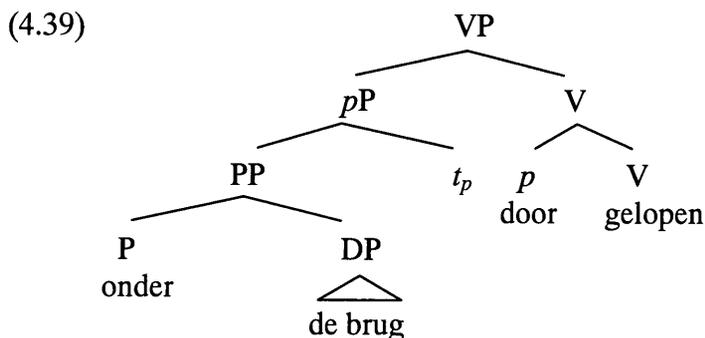
(4.38) [+directional] preposition



I will show in what follows that the proposed internal PP structure in Dutch can have desirable consequences when examining P-to-V incorporation facts in this language.

4.3.2.2. Incorporation of [+directional] postpositions into V

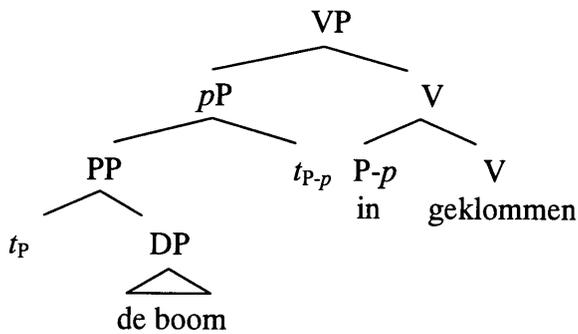
I begin my analysis with P-to-V incorporation with respect to the circumpositional phrase. In (4.39), the [+directional] postposition in the circumpositional phrase is under *p*. Since there is no intervening head between the incorporating *p* and the host V, I claim that the [+directional] postposition in the circumpositional phrase in (4.33a) can undergo incorporation into the V:¹⁴



Given this analysis, the [+directional] postposition *in* ‘into’ in a simple postpositional phrase undergoes incorporation in the following way. Unlike the postposition in the circumpositional phrase, the postposition *in* is base-generated under P as a preposition when it merges with the DP. Therefore, it starts out as a preposition. Then, it incorporates into morphologically covert *p*. Finally, the P-*p* complex undergoes incorporation into V. The chain of head-to-head movement proposed above is illustrated in (4.40):

¹⁴ J. Emonds (personal communication) suggests that in Dutch, VP has a parallel structure to the one I propose for PP, namely, V-initial and *v*-final: [_{VP} [_{VP} V ...] *v*]. Thus, V-to-*v* movement explains V-final in this language. This analysis of Dutch VP does not pose any problem for my P-to-V incorporation analysis presented here. However, I assume the traditional V-final analysis originally proposed by Koster (1975). Note that Zwart (1997) proposes the underlying VO order for Dutch just like English in a minimalist study of verb movement. However, in his Agr-based theory of grammar, all the functional heads are head-initial. He argues that the surface OV order is derived by obligatory object movement to [Spec, ArgO]. Since this is beyond the scope of this study, I leave this issue here.

(4.40)



The analysis proposed in (4.40) can account for the unincorporability of [-directional] prepositions in Dutch. Take, for example, *op*. As can be observed in (4.41), *op* can appear as either a preposition or a postposition. The PP in (4.41a) and that in (4.41b) are construed as [-directional] and [+directional], respectively (den Dikken 1995:31):¹⁵

- (4.41) a. dat Jan [op de berg] heeft gereden [-directional]
 that Jan on the mountain has driven
 ‘that Jan drove on the mountain top’
- b. dat Jan [de berg op] is gereden [+directional]
 that Jan the mountain up is driven
 ‘that Jan drove up the mountain’

(4.42) shows the contrast between the preposition and the postposition with regard to the unavailability of and the availability of P-to-V incorporation, respectively (den Dikken 1995:30):

¹⁵ The alternation between *hebben* ‘have’ and *zijn* ‘be’ is an interesting issue to pursue (see Hoekstra 1984). I simply note here that the verb *rijden* ‘drive’ can be either an unergative verb (i.e., transitive, following Chomsky 1995) or a motional verb (unaccusative).

(4.42) a. *dat Jan de berg heeft op gereden

that Jan the mountain has on driven

‘that Jan drove on the mountain top’

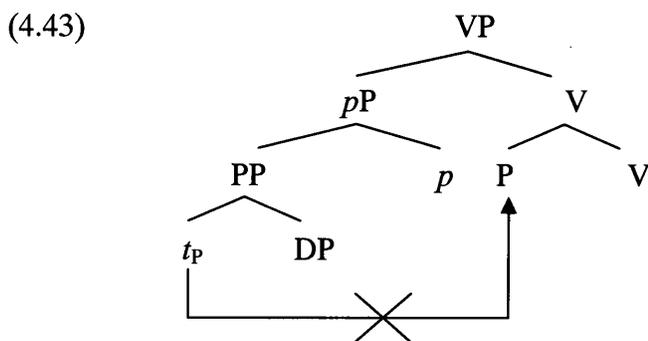
b. dat Jan de berg is op gereden

that Jan the mountain is up driven

‘that Jan drove up the mountain’

Given the analysis in (4.40), unincorporability can be accounted for as follows.

Contrary to my proposal, if [-directional] P were able to incorporate into V as in (4.42a), it would have to cross the intermediate head *p*. That is, [-directional] P would not undergo head-to-head movement to *p*, as has been argued. Therefore, if it did incorporate into V, it would move across the intervening head *p*. This is illustrated in (4.43):



The skipping of the intermediate head shown in (4.43) violates the MLC and is not an option available under the feature-based movement analysis outlined in the previous section.

Concerning the postposition *op* in (4.42b), the analysis proposed in (4.40) can

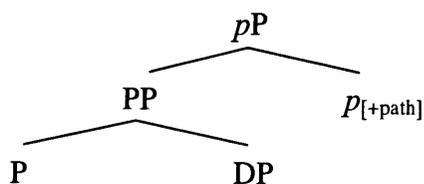
account for its incorporability. That is, *op* is base-generated under P as a preposition, undergoes P-to-*p* incorporation and the P-*p* complex moves to adjoin to V. Having examined the ways in which [+directional] postpositions in the simple postpositional phrase and the circumpositional phrase undergo incorporation into V, let me now turn to the incorporation of a particle (Prt) into V.

4.3.2.3. Prt incorporation

Verb-Prt constructions in Dutch have been treated in the literature in two opposing ways. First, under the base-generation analysis along the lines of Koster (1975), it has been argued that V and Prt form a compound verb in the lexicon. Hence, V-Prt constructions are considered to involve no P-to-V incorporation at least in syntax. Second, Van Riemsdijk (1978) has proposed that V-Prt constructions involve a movement rule; Prts undergo head-to-head movement to form V-Prt constructions. This movement analysis has been supported in various studies, e.g., Bennis (1992), den Dikken (1995) and Koopman (2000). I support the movement analysis and briefly examine the ways in which Prts incorporate into V in Dutch, drawing upon Koopman's (2000) analysis. Following Koopman, I only deal with two types of Prts here: idiomatic Prts and [+directional] Prts, both of which can undergo incorporation. Consider the following examples:

(4.44) Idiomatic Prt (Koopman 2000:244)

- a. omdat ik het op heb gezocht [no incorporation]
because I it up have looked
'because I looked it up'

(4.47) [+directional] Prt¹⁷

As opposed to her proposal of two distinct structures for idiomatic Prts and [+directional] Prts, I propose that Prts uniformly have a single-layered structure without a functional head *p*. This is supported by the fact that Prts (both idiomatic and [+directional]) do not select [+locational] pronouns that undergo r-movement (Koopman 2000). I have argued in Chapter 2 that [+locational] pronouns such as *er* ‘there’ are base-generated in the complement position of P and then move to the Spec of *p*, where their [-interpretable] features, e.g., a Case-feature, are deleted. Thus, the inability of movement of [+locational] pronouns indicates the absence of a functional head that serves as a locus for r-movement. The examples in (4.48) show that the [+locational] pronouns, *er* ‘there’ and *nergens* ‘nothing+*er*’ cannot be licensed by the Prt *op*.¹⁸

¹⁷ Koopman’s [+path] head parallels the [+directional] head proposed in this thesis. However, the internal PP structure in Dutch proposed by Koopman differs from mine in three ways. First, she proposes other functional heads than the [+path] P. Second, her [+path] P is head initial, not head final. Third, in her proposed analysis, a [-path] head is missing, which corresponds to [-directional] *p* in my proposed analysis.

¹⁸ However, Van Riemsdijk (1978:56) shows that some Prts can license [+locational] pronouns and can undergo incorporation at the same time. Consider (i):

- (i) a. omdat ze er erg leuk schijnt uit te zien
 because she there very pretty seems out to look
 ‘because she seems to look very pretty’
 b. omdat de trein er elk moment kan aan komen
 because the train there any moment can at come
 ‘because the train may be approaching at any moment’

- (4.48) a. *omdat ik er heb opgezocht [idiomatic Prt]
 because I there have uplooked
 ‘because I looked it up’
- b. *Ik heb nergens opgepakt. [[+directional] Prt]
 I have nothing-er uppicked
 ‘I have picked up nothing.’

In contrast to (4.48), (4.49) shows that the same Prts can sometimes take a DP complement and can undergo incorporation into V:

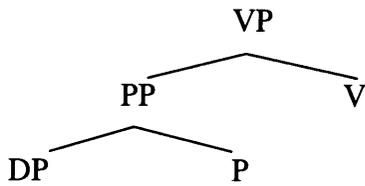
- (4.49) a. omdat ik het heb opgezocht [idiomatic Prt]
 because I it have uplooked
 ‘because I looked it up’
- b. Ik heb niets opgepakt. [[+directional] Prt]
 I have nothing uppicked
 ‘I have picked up nothing.’

Based on the above observations, idiomatic and [+directional] Prts uniformly have a single-layered structure as in (4.50) and can undergo P-to-V incorporation as illustrated in (4.51):¹⁹

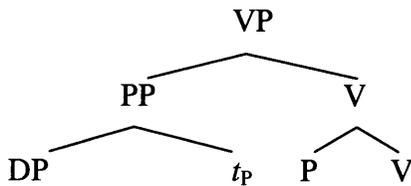
I simply claim that the Prts such *uit* ‘out’ and *aan* ‘at’ in the above examples have different syntactic specifications from other Prts that do not license *er*. The facts in (i) suggest that the above Prts have the multi-layered structure.

¹⁹ These Prts in Dutch with a single layered structure contrast with Prts in English, which can be preposed as shown in 3.1.3., and with intransitive Ps that adjoin to *pP/PP* in English, Dutch and Hungarian, as analyzed in Chapter 3.

(4.50) **Idiomatic & [+directional] Prts**



(4.51) **P-to-V incorporation of idiomatic & [+directional] Prts**



As shown in (4.51), there is no intervening head between the Prt and the V, which accounts for the incorporability of the two kinds of Prt under discussion.

Next, I will examine two cases in which P-to-V incorporation is blocked. They will provide further support for the analysis proposed so far.

4.3.2.4. Two cases in which P-to-V incorporation is not available

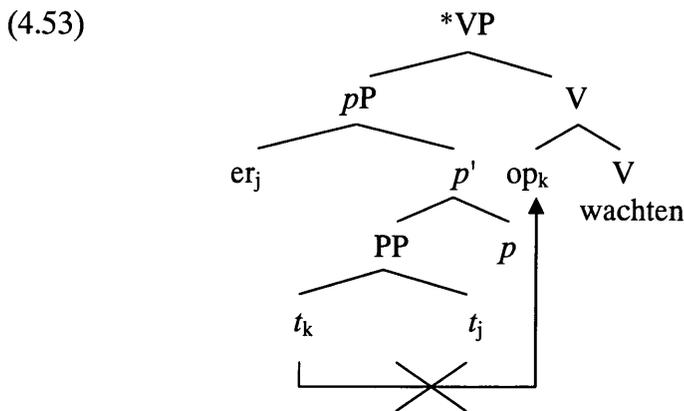
As mentioned earlier, two types of P that are not incorporable are (i) prepositions and (ii) intransitive Ps. Let me begin my discussion with prepositions, which I have briefly touched upon above.

As has been observed in (4.42a), prepositions do not incorporate into V since they do not undergo P-to-*p* incorporation, which is a necessary condition for further movement into V (except for Prts that have a single layered structure). Surface postpositions that host [+locational] pronouns do not undergo P-to-V incorporation since they actually remain under P. Consider the following examples (Van Riemsdijk

1978:102):

- (4.52) a. omdat hij er op wilde wachten
 because he there for wanted wait
 ‘because he wanted to wait for it’
- b. *omdat hij er wilde op wachten
 because he there wanted for wait
 ‘because he wanted to wait for it’

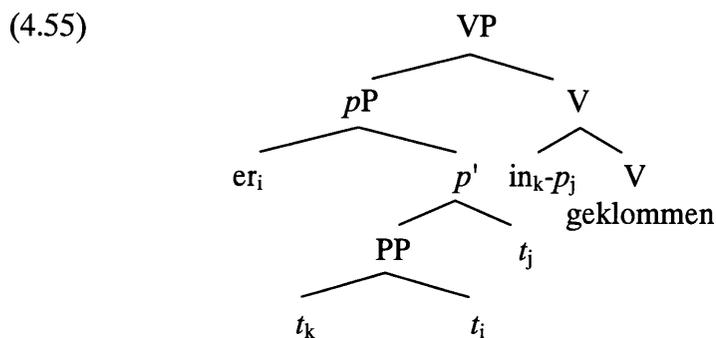
In (4.52a), *er* ‘there’ moves to [Spec, *p*] and the P *op* stays in the base-position. What this means is that *op* cannot incorporate into V as in (4.52b), since the intervening head *p* is closer to V and the P-feature of V attracts *p* rather than P. This ungrammatical derivation is illustrated in (4.53):



The facts in (4.52) contrast with those in (4.54), where a [+directional] postposition co-occurs with *er* ‘there’ and can undergo P-to-V incorporation:

- (4.54) a. omdat zij de boom in is geklommen
 because she the tree in is climbed
 ‘because she climbed into the tree’
- b. omdat zij er in is geklommen [r-movement]
 because she there in is climbed
 ‘because she climbed into it’
- c. omdat zij er is in geklommen [r-movement and P-incorporation]
 because she there is in climbed
 ‘because she climbed into it’

Following my analysis, (4.54c) can be analyzed as in (4.55) (only what is relevant to the present discussion is included in the structure):

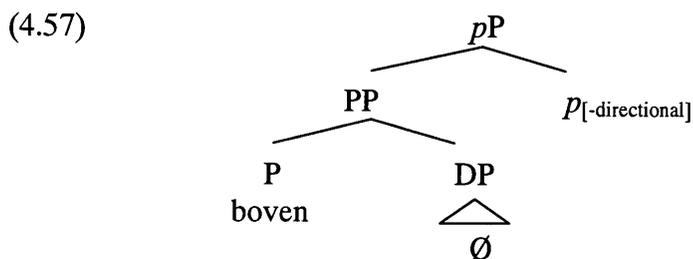


Thus far, I have shown that the analysis of non-incorporability of prepositions in terms of a layered PP structure provides further support for my analysis. Let us now consider intransitive Ps that also cannot undergo P-to-V incorporation.

As touched upon in 3.2.1., intransitive Dutch Ps do not undergo P-to-V incorporation. Consider the following examples again:

- (4.56) a. omdat hij [tegenwoordig boven te wonen] schijnt [underlying structure]
because he nowadays upstairs to live seems
‘because he seems to live upstairs nowadays’
- b. omdat hij [tegenwoordig boven t_k] schijnt te wonen_k [no incorporation]
because he nowadays upstairs seems to live
‘because he seems to live upstairs nowadays’
- c. *omdat hij [tegenwoordig t_j t_k] schijnt boven_j te wonen_k [incorporation]
because he nowadays seems upstairs to live
‘because he seems to live upstairs nowadays’

I have argued in subsection 3.2.1. that this unincorporability is due to the fact that intransitive Ps such as *boven* ‘upstairs, above’ have phrasal status. I propose that the structure of *boven* can be represented as in (4.57):



Given (4.57), if *boven* moved to adjoin to V as in (4.56c), it would need to cross over the intervening head *p*. In what follows, I will show that the structure proposed in (4.57) is desirable both conceptually and empirically, which thus supports the impossibility of incorporation.

The structure of *boven* illustrated in (4.57) parallels that of intransitive (or more precisely, unergative) Vs proposed by Collins (1997). Drawing upon Chomsky's (1995) proposal of regarding unergative Vs as transitive Vs, Collins (1997) argues that unergative Vs take null complements in cases where morphologically overt cognate objects (e.g., the object *a dream* as in *dream a dream*) are not available. I argue that intransitive Ps in Dutch have a structure parallel to unergative Vs, in that they can take a morphologically covert complement. This is supported by the fact that *boven* can be 'transitive' and take a complement as illustrated in (4.58) and (4.59) (Van Riemsdijk 1978:52):

(4.58) a. Jan woont boven.

Jan lives upstairs

b. Jan woont boven de winkel.

Jan lives above the store

(4.59) a. De auto staat achter

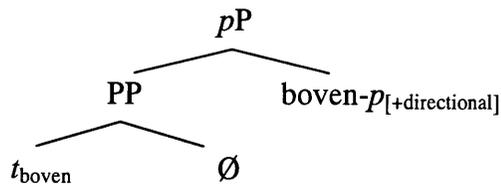
the car stands behind

b. De auto staat achter het huis

the car stands behind the house

Under this analysis, in cases where *boven* selects a morphologically covert complement and this PP merges with [+directional] *p* as illustrated in (4.60), it is predicted that *boven* undergoes P-to-V incorporation since *boven* can incorporate into [+directional] *p*:

(4.60)



(4.61) verifies the above prediction.²⁰

(4.61) a. dat Jan boven wil komen [no incorporation]

that Jan upstairs wants come

‘that Jan wants to come upstairs’

b. dat Jan wil boven komen [incorporation]

that Jan wants upstairs come

‘that Jan wants to come upstairs’

The argument so far should suffice to justify the structure proposed for *boven* in (4.57).

4.3.3. Summary of 4.3. and a remaining issue

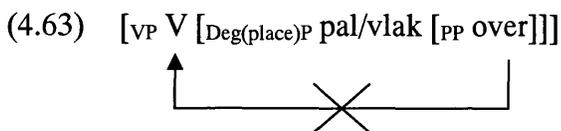
In this section, I have shown that P-to-V incorporation is productive in Dutch and takes place in syntax. There is, however, a set of facts that have not been dealt with in the discussion of Dutch P-to-V incorporation in the present section, but have been given a fair amount of attention in the literature concerning P-to-V incorporation. Before concluding this section, I will briefly review the facts and the arguments relating to them.

²⁰ Bennis (1991), which is cited in den Dikken (1995:30), claims that the incorporability of *boven* depends on aspectual factors. My analysis provides an alternative to such a view.

Consider the contrast as shown in (4.62) (den Dikken 1995:108):

- (4.62) a. dat Jan de bal pal/vlak/twee meter over heeft geschoten [no incorporation]
 that Jan the ball right/right/two meters over has shot
 ‘that Jan shot the ball right two meters over’
- b. dat Jan de bal *?pal/*vlak/twee meter heeft over geschoten [incorporation]
 that Jan the ball right/right/two meters has over shot
 ‘that Jan shot the ball right over’

Koopman (2000) argues that the contrast in (4.62) indicates that *pal* and *vlak*, both of which semantically correspond to *right* in English, are both Deg(ree)(place) heads. Thus, the incorporation of *over* is blocked as in (4.62b) since *pal* and *vlak* intervene between *over* and the V into which the P in question incorporates, i.e., in violation of the Head Movement Constraint. Based on Koopman’s analysis, the unavailability of P-to-V incorporation in the examples with *pal* and *vlak* in (4.62b) can be represented as follows:



(4.63) shows that the Deg(place) head *pal/vlak* blocks *over* from incorporating into the V.

Den Dikken (1995) notes that the above account is most felicitous. However, it would follow that *pal* and *vlak* in Dutch differ from *right* in English, which is optional

and thus has been considered to adjoin to PP as in Chapter 2 and 3. This indicates that Dutch and English are different in two respects: (i) properties of *pal* and *vlak* on the one hand and those of *right* on the other, and (ii) more crucially, the presence of yet another functional head besides *p* in Dutch and its absence in English. If we opt for a unified analysis, there are at least two options available. The first is to postulate that *right* in English is also a functional head, which is counterintuitive and cannot be motivated. This leaves the other option of regarding *pal* and *vlak* as optional items within PP, i.e., an adjunct. Taking this latter option leads us to conclude that the ungrammaticality of the examples in (4.62b) does not stem from the unavailability of P-to-V incorporation, but from the non-strandability of modifiers. That is, *pal* and *vlak* cannot be left behind since they are PP-internal adjuncts; note that phrase-internal adjuncts cannot be stranded (e.g., **It was a student that I met in linguistics* (as opposed to *It was a student in linguistics that I met*)). On the other hand, *twee meter* is a phrase-external modifier. Neeleman (1994:67, n. 10) suggests that *twee meter* is a VP-modifier, which accounts for its strandability in (4.62).²¹ Although it is an interesting topic to pursue, I will leave this matter here.

Having examined P-to-V incorporation in Dutch, the next section will show that Japanese also displays P-to-V incorporation, but in a different manner from both polysynthetic languages and Dutch.

4.4. P-to-V incorporation in Japanese: A case of null affixal P

In this section, I will propose that P-to-V incorporation is available in Japanese. This section is organized as follows. First, I will introduce some linguistic facts of Japanese

²¹ See Den Dikken (1995:108, fn. 84) for his argument against Neeleman's analysis of *twee meter*.

that arguably support P-to-V incorporation. Second, I will present my proposed analysis of these facts. Finally, I will provide empirical evidence that supports my analysis.

4.4.1. A basic contrast

I will start my discussion with comparing and contrasting DP/PP alternation in Japanese and that in Kinyarwanda (Kimenyi 1980, cited in Baker 1988b:238). In the following examples in Kinyarwanda, it appears that PP alternates with DP. In (4.64a), *ku meeza* ‘on table’ is a [+locational] PP, while in (4.64b), *ameeza* ‘table’ appears without the preposition *ku* ‘on’ but still translates a [+locational] PP, as shown below.

- (4.64) a. Abaana b-iica-ye ku meeza.
children SP-sit-ASP on table
‘The children are sitting on the table.’
- b. Abaana b-iica-ye-ho ameeza
children SP-sit-ASP-APPL table
‘The children are sitting on the table.’

Following Baker’s (1988b) analysis, I have maintained so far that the alternation at issue is rooted in P-to-V incorporation. That is, affixal *-ho* ‘on’ in Kinyarwanda shown in (4.64b) must undergo head-to-head movement into the V.

Japanese also displays alternation between PP and DP. In (4.65a), the source is expressed by the PP *heya-kara* ‘room-from’, whereas in (4.65b), *heya* ‘room’ appears with the accusative case-marker *-o*, not with the postposition *-kara* ‘-from’, even though

it translates a [+source] PP.²²

- (4.65) a. Taroo-ga heya-kara de-ta.
 Taroo-NOM room-from go.out-PAST
 ‘Taroo went out of the room.’
- b. Taroo-ga heya-o de-ta.
 Taroo-NOM room-ACC go.out-PAST
 ‘Taroo went out of the room.’

The alternation observed in (4.64) is parallel to that in (4.65), in that the respective DPs in the (b) examples can translate PP. Provided that there is a null applicative involved in the Japanese example in (4.65b), it is plausible to apply the same incorporation analysis to the Japanese facts. I will argue in this section that a P-to-V incorporation analysis does indeed capture the facts shown in (4.65).

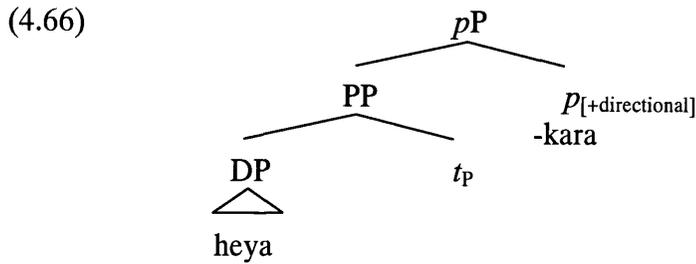
4.4.2. Proposed analysis

Following Watanabe (1993), which was outlined in Chapter 2, I consider it established that the postpositional phrase in (4.65b) has the following multi-layered structure:²³

²² Miyake (1996:158) reports that the same alternation is available in Korean.

- (i) a. Cholsu-ga bang-**eso** nawatta.
 Cholsu-NOM room-**from** left
 ‘Cholsu left the room.’
 b. Cholsu-ga bang-**ul** nawatta.
 Cholsu-NOM room-**ACC** left
 ‘Cholsu left the room.’

²³ Miyagawa (1989) argues that a postposition in Japanese such as *-kara* ‘from’ with lexical semantic content takes a DP complement, assigns a θ -role to it and projects its maximal projection, while a case-marker such as *-ga* ‘nominative’ with no semantic content does not take a DP complement, nor does it project its maximal projection. Further, it may be possible to analyze *-kara* like *-e* ‘to’ as in (2.91),

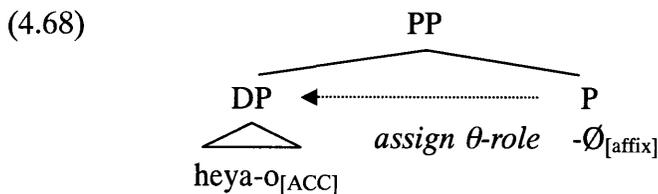


(4.67) **Proposals**

- a. There is [+source] P in Japanese with full syntactic and semantic feature specifications, but with no phonological features (cf. morphologically covert Ps in English (Emonds 1976, 1985)).
- b. Null P incorporates into V in syntax.
- c. The P-V complex is a transitive V and licenses [+trans] ν . As a result, the external argument is introduced in [Spec, ν].

(4.65b) is derived as follows.

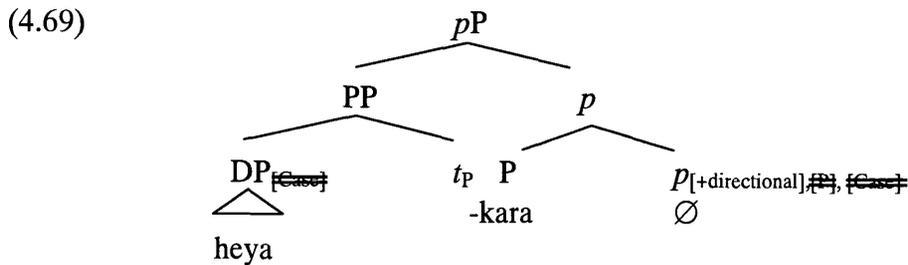
First, the morphologically covert P (with an affix-feature) and its DP complement (with a Case-feature) merge as shown in (4.68).



Baker (1988b: 469, fn. 22) claims that P can have a structural Case assigning

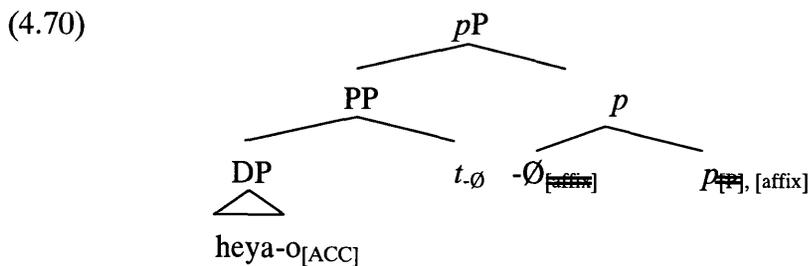
namely, as a functional *p*. However, since it is uncertain whether *p* has a θ -role assigning property and *p*-to-V incorporation turns an unaccusative V into a transitive V, I postulate that *-kara* is a lexical P with a θ -role assigning property.

property in languages such as English. Recasting his idea in terms of the minimalist framework, I claim that functional *p* in Japanese can carry with it a Case-feature when P does not incorporate into V. The Case-feature of *p* is deleted against that of its complement DP. As illustrated in (4.69), I assume that *-kara* ‘from’ is base-generated under lexical P and moves to adjoin to morphologically covert [+directional] *p*.



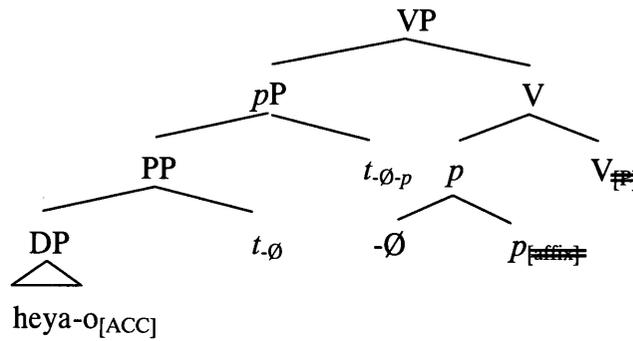
However in the case of (4.65b), in which lexical P is null and undergoes P-to-V incorporation, the Case-feature of *heya-o* ‘room-ACC’ is deleted by the Case-feature of [+trans] *v*.

As the next step in the derivation, the P incorporates into [+directional] *p*, which deletes an affix-feature of P and a P-feature of *p*:



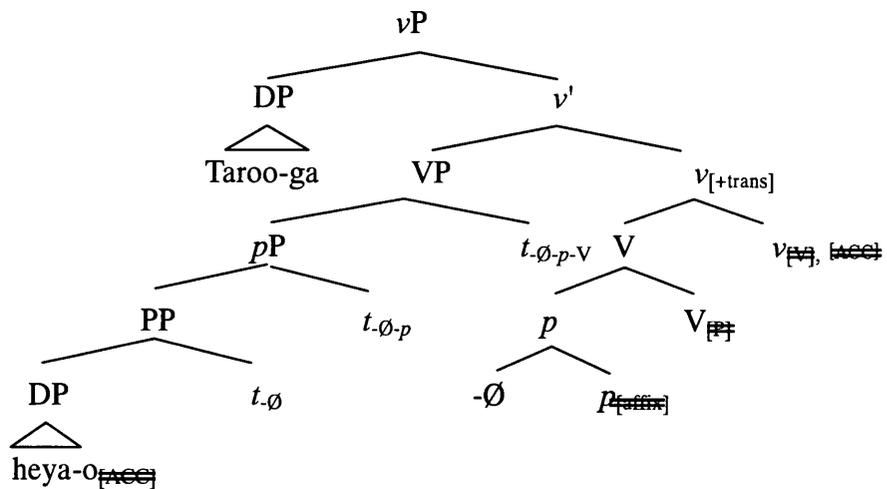
Then, the V, which bears a P-feature, merges with this PP and the P incorporates into the adjacent V *de-ta* ‘go.out-PAST’. This is illustrated in (4.71):

(4.71)



As proposed in (4.67), the P-V complex is a transitive V. Thus, [+trans] *v* takes the VP and introduces an external argument in its Spec position. V bears an affix-feature and undergoes further movement to adjoin to *v*. With this movement, all the [-interpretable] features are deleted successfully, including the Case-feature of the DP *heya-o* ‘room-ACC’ and that of *v*. (4.72) illustrates the derivation discussed so far.

(4.72)



The following subsection will show that the proposed analysis outlined above has empirical support.

4.4.3. Empirical support for P-to-V incorporation in Japanese

In this subsection, I will first present empirical evidence to support a transitive verb analysis of the proposed P-V complex. Then, I will provide evidence that supports the syntactic P-to-V incorporation analysis.

4.4.3.1. Evidence in support of the P-V complex as a transitive V

There is empirical evidence to support the idea that a [+trans] *v*, which assigns a θ -role to the subject, is included in the derivation of (4.65b).

Miyake (1996) reports a contrast between the subject in a sentence without P-to-V incorporation and that with P-to-V incorporation, as illustrated in (4.73). These examples show that the subject of a sentence with P-to-V incorporation is assigned an external θ -role, while the subject of a sentence without P-to-V incorporation seems to be purely an internal argument of the V (Miyake 1996:145):²⁴

²⁴ Korean also has a contrast between the subject of a sentence involving P-to-V incorporation and that of a sentence that does not involve P-to-V incorporation. Consider the contrast between (i) and (ii) (Miyake 1996:158):

- (i) a. Cholsu-ga bang-**eso** nawatta.
Cholsu-NOM room-**from** left
'Cholsu left the room.'
b. Cholsu-ga bang-**ul** nawatta.
Cholsu-NOM room-**ACC** left
'Cholsu left the room.'
- (ii) a. Yongi-ga gulttug-**eso** nawatta.
smoke-NOM chimney-**from** went.out
'Smoke went out of the chimney.'
b. *Yongi-ga gulttug-**ul** nawatta.
smoke-NOM chimney-**ACC** went.out.
'Smoke went out of the chimney.'

The contrast illustrates that with the accusative object, namely, the applied object under the P-to-V incorporation analysis, the subject must be agentive just like the parallel facts in Japanese.

- (4.73) a. Taroo-ga heya-kara/-o de-ta.
Taroo-NOM room-from/-ACC go.out-PAST
'Taroo went out of the room.'
- b. Taroo-ga kuruma-kara/-o ori-ta.
Taroo-NOM car-from/-ACC get.off-PAST
'Taroo got off the car.'
- (4.74) a. Kemuri-ga entotu-kara/*-o de-ta.
smoke-NOM chimney-from/*-o go.out-PAST
'Smoke went out of the chimney.'
- b. Namida-ga me-kara/*-o kobore-ta.
tears-NOM eye-from/*-ACC come.out-PAST
'Tears came out of the eyes.'

The above examples show that the Vs with an incorporated P can only take an agentive subject, while those without an incorporated P cannot. According to Miyake (1996), this follows from Burzio's Generalization, which states that unaccusative Vs cannot assign accusative Case to the structural object, so that the subject of a sentence without P-to-V incorporation is an internal argument of an unaccusative V, while the subject of a sentence with P-to-V incorporation is an external argument of a transitive V with the accusative applied object functioning as its internal argument.

There is further empirical evidence to support the presence of [+trans] *v* in the examples in (4.73) with P-to-V, which introduces the external argument in its Spec position, namely, the floating quantifier diagnostic (Sportiche 1988). This diagnostic shows that a floating quantifier marks the position where an argument DP is

base-generated. Sportiche argues that in (4.75), the DP *les enfants* ‘the children’ and the quantifier *tous* ‘all’ form a single constituent in the base position (i.e., the subject position within VP) and the DP alone moves from the VP-internal subject position to [Spec, T], leaving the quantifier *tous* ‘all’ in the base position:

- (4.75) Les enfants ont tous vu ce film.
the children have all seen this film
‘The children have all seen the film.’

Based on Miyagawa (1989), who attempts to show that the diagnostic can also apply to Japanese, Takezawa (2000:181) shows that the facts in (4.76) and (4.77) indicate that the subject in a sentence with an accusatively marked internal argument seems to originate in a higher position than the subject in a sentence with the [+source] PP.

- (4.76) a. Gakusei-ga huta-ri kyoositu-o/kara tobidasi-ta.
student-NOM two-CL classroom-ACC/-from dash.out-PAST
‘Two students dashed out of the classroom.’
- b. Gakusei-ga kyoositu-kara huta-ri tobidasi-ta.
Student-NOM classroom-from two-CL dash.out-PAST
‘Two students dashed out of the classroom.’
- c. ?*Gakusei-ga kyoositu-o huta-ri tobidasi-ta.
student-NOM classroom-ACC two-CL dash.out-PAST
‘Two students dashed out of the classroom.’

- (4.77) a. Syuppatu-tyokuzen, zyookyaku-ga hito-ri basu-o/-kara
departure-immediately.before, passenger-NOM one-CL bus-ACC/-from
tobidasi-ta.
dash.out.PAST
‘Immediately before the departure, one passenger dashed out of the bus.’
- b. Syuppatu-tyokuzen, zyookyaku-ga basu-kara hito-ri
departure-immediately.before, passenger-NOM bus-from one-CL
tobidasi-ta.
dash.out-PAST
‘Immediately before the departure, one passenger dashed out of the bus.’
- c. ?*Syuppatu-tyokuzen, zyookyaku-ga basu-o hito-ri
departure-immediately.before, passenger-NOM bus-ACC one-CL
tobidasi-ta.
dash.out-PAST
‘Immediately before the departure, one passenger dashed out of the bus.’

Following Chomsky’s (1995) VP-shell analysis, Takezawa (2000) claims that the subject of a sentence with accusative objects is base-generated in [Spec, ν]. In this position, the light verb ν assigns an external θ -role to the subject. It is this position which is responsible for the interpretation as an agentive subject.

Thus far, I have provided evidence for the transitive verb analysis of a P-V complex. In the following subsection, I will turn to evidence for the P-to-V incorporation analysis proposed in (4.67): subcategorization and secondary predication facts.

4.4.3.2. Empirical evidence for the syntactic P-to-V incorporation analysis:

Subcategorization

The second piece of evidence for the P-to-V incorporation analysis for the Japanese example in (4.65b) comes from subcategorization facts. I will show that the morphologically covert [+source] P with an affix-feature and a Case-feature in Japanese displays syntactic behavior similar to applicatives in Kinyarwanda.

As mentioned above, Baker (1988b) shows that only P that heads subcategorized PP can undergo P-to-V incorporation. (4.78) shows that the [+source] PP *Tokyo-kara* ‘Tokyo-from’ is not subcategorized by the V, and the P fails to incorporate into the V.

- (4.78) a. *Taroo-ga Tokyo-kara modot-ta.*
Taroo-NOM Tokyo-from return-PAST
‘Taroo returned from Tokyo.’
- b. **Taroo-ga Tokyo-o modot-ta.*
Taroo-NOM Tokyo-ACC return-PAST
‘Taroo returned from Tokyo.’

The V *modor-u* ‘return’ is not subcategorized for [+source] PP; a [+source] PP is an adjunct. Consider another contrast between [+source] V + [+source] PP in (4.79) and

[+goal] V + [+source] PP in (4.80) and (4.81):²⁵

(4.79) a. Hikooki-ga Pari-kara syuppatusi-ta.

plane-NOM Paris-from depart-PAST

‘The plane departed from Paris.’

b. Hikooki-ga Pari-o syuppatusi-ta.

plane-NOM Paris-ACC depart-PAST

‘The plane departed from Paris.’

(4.80) a. Mary-ga Rondon-kara ki-ta.

Mary-NOM London-from come-PAST

‘Mary came from London.’

b. *Mary-ga Rondon-o ki-ta.

Mary-NOM London-ACC come-PAST

‘Mary came from London.’

(4.81) a. Otooto-ga Kobe-kara tui-ta.

brother-NOM Kobe-from arrive-PAST

‘(My) brother arrived from Kobe.’

b. *Otooto-ga Kobe-o tui-ta.

brother-NOM Kobe-ACC arrive-PAST

‘(My) brother arrived from Kobe.’

²⁵ Lee (1992) claims that the morphologically covert P can be captured in such a way that it behaves like an operator, i.e., a verbal operator. That is to say, every motion V that hosts an incorporating P has an empty slot to be filled. The incorporated P provides such motion Vs with meanings such as DESTINATION and DIRECTION (see Walinska de Hackbeil 1989). For Lee, subcategorization means feature-matching the host V and the incorporated P. More specifically, the feature of the motion V *come* and that of the [+source] P do not match in that the V bears the feature [+arrival] and the P [+departure].

The above subcategorization facts show that P-to-V incorporation is optionally available to a subcategorized [+source] PP, but is not to an adjunct [+source] PP. Thus, P-to-V incorporation in Japanese is constrained in the same principled way as P-to-V incorporation is in Kinyarwanda.²⁶

4.4.3.3. Empirical evidence for the syntactic P-to-V incorporation analysis:

Secondary predication

The third piece of evidence is based on secondary predication. Consider the following facts:

- (4.82) a. Taroo-ga heya-kara niwa-ni de-ta. [no incorporation]
 Taroo-NOM room-from garden-LOC go.out-PAST
 ‘Taroo went out of the room into the garden.’

²⁶ Korean displays facts parallel to Japanese. The following data in Korean involve P-to-V incorporation (Lee 1992:217):

- (i) a. John-i Boston-eyse ttena-ass-ta.
 John-NOM Boston-from leave-PAST-DEC
 ‘John left Boston.’
 b. John-i Boston-ul ttena-ass-ta.
 John-NOM Boston-ACC leave-PAST-DEC
 ‘John left Boston.’

In contrast to (i), in which the V is subcategorized for by [+source] PP, the V in (ii) is not subcategorized for by the [+source] phrase. Thus, we have the following contrast (Lee 1992:216), which parallels the Japanese subcategorization facts:

- (ii) a. John-i Boston-eyse o-ass-ta.
 John-NOM Boston-from come-PAST-DEC
 ‘John came from Boston.’
 b. *John-i Boston-ul o-ass-ta.
 John-NOM Boston-ACC come-PAST-DEC
 ‘John came from Boston.’

- b. *Taroo-ga heya-o niwa-ni de-ta. [incorporation]
 Taroo-NOM room-ACC garden-LOC go.out-PAST
 ‘Taroo went out of the room into the garden.’

(4.82) shows that with the addition of a goal phrase *niwa-ni* ‘garden-LOC’ to (4.65b), the sentence with P-to-V incorporation becomes ungrammatical (Miyake 1996).

However, the restriction imposed on (4.82b) is lifted when *niwa* ‘garden’ and *heya* ‘room’ are replaced with the WH-phrase *doko* ‘where’:²⁷

- (4.83) ?Taroo-ga doko-o doko-ni de-ta-no?
 Taroo-NOM where-ACC where-LOC go.out-PAST-Q
 ‘Where did Taroo leave to go where?’

I will argue that the contrast observed between (4.82b) and (4.83) can be taken to show evidence for syntactic P-to-V incorporation.²⁸ I will show in what follows that

²⁷ *Doko-o* can be construed as [+path], i.e., ‘Taroo left through where to where’. Following Ayano (1999), (4.83) is structurally ambiguous in that the morphologically covert P that incorporates into the V can be either [+path] P or [+source] P.

²⁸ Miyake (1996) argues that the ungrammaticality of (4.82b) suggests that P-to-V incorporation in Japanese is subject to a certain movement restriction. For him, (4.82b) represents a Relativized Minimality effect (Rizzi 1990) in the lexical conceptual structure. He argues that the [+goal] P is closer to the V than the [+source] P is. Thus, in order for the [+source] P to undergo incorporation into V, it would have to move across the [+goal] P (Miyake 1996:155). This underlying structure is on the basis of the diagnostic proposed by Moriyama (1988): the default reading of a given motion V that appears in the *tokoro* ‘place’ relative clause. The motion V, which can co-occur with a [+goal] PP and a [+source] PP in the relative clause in question, expresses either [+goal] or [+source] as its default reading, depending on the subcategorization frame of a given motion V. Miyake claims that the default reading indicates whether it is [+goal] P or [+source] P that is closer to the V in the lexical conceptual structure. Applying the *tokoro* relative clause diagnostic to the motion verb *tuk-u* ‘arrive’, we obtain the following result as in (i):

- (i) Taroo-ga tui-ta tokoro
 Taroo-NOM arrive-PAST place
 ‘The place where Taroo has arrived at’

(i) secondary predication (Takezawa 2000) and (ii) overt WH-movement in Japanese (Watanabe 1992) can account for the facts in (4.82) and (4.83). Let me begin with secondary predication.

Takezawa (2000:165-183) claims that a locational PP, which is subcategorized by V and is base-generated within VP, functions as the secondary predicate of a DP argument. Based on the literature concerning predication (Williams 1980, among others), he notes that for a predication relation to be established between a DP and its modifying phrase, strict structural conditions need to be satisfied, namely, mutual c-command or mutual m-command.²⁹ He claims that in (4.84), there is a secondary predication relation between the subcategorized locational PP *mukutekiti-ni* ‘destination-LOC’ and the internal argument of a motional V *Taroo-ga* ‘Taroo-NOM’:³⁰

As shown in the translation, the default reading of (i) concerns the place where *Taroo* ‘arrives at’, not where he ‘arrives from’. The above result suggests that it is the [+goal] P that is closer to the V. However, there are cases where the diagnostic is indecisive. Notice that with the verb *de-ru* ‘leave’, the result turns out to be ambiguous, as illustrated by the two -way translation of (ii):

- (ii) Taroo-ga de-ta tokoro
 Taroo-NOM go.out-PAST place
 ‘The place where Taroo has left/went out to’

The ambiguity shown in (ii) suggests that with the V *de-ru* ‘leave’ either the [+goal] P or the [+source] P can be closer to the V in the lexical conceptual structure proposed by Miyake. In any case, (4.83) suggests that the ungrammaticality of (4.82b) does not stem from the blocking of P-to-V incorporation. That is, if P cannot incorporate into V either at the level of word formation or in syntax, the derivation can never be saved.

²⁹ Williams (1980:204) claims that the facts in (i) illustrate the c-command restriction in question. He notes that in (ic), *hay*, which is inside PP, does not c-command *green*, which is outside PP. Likewise, in (id), *the wagon* is within PP, but *full* is outside PP. Therefore, in both cases, the c-command restriction cannot be satisfied and the derivations result in ungrammaticality:

- (i) a. John [_{VP} loaded the wagon full] [_{PP} with hay]]
 b. John [_{VP} loaded the hay] [_{PP} into the wagon] green]
 c. *John [_{VP} loaded the wagon [_{PP} with hay] green]
 d. *John [_{VP} loaded the hay [_{PP} into the wagon] full]

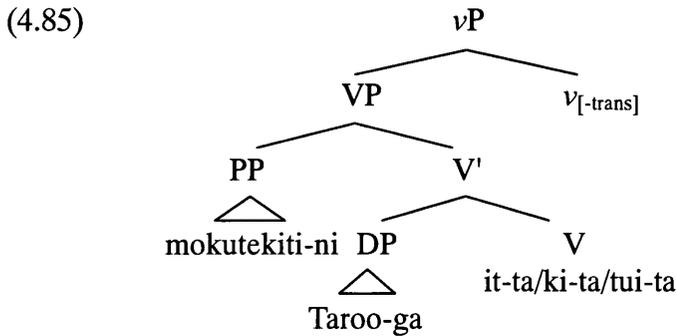
³⁰ I follow Takezawa’s proposal that *-ni* in (4.84) is a postposition that projects its maximal projection (cf. Kuroda (1965) and Miyagawa (1989)). See also Takezawa (1987) and Sadakane and Koizumi (1995) for their discussion of the syntactic properties of *-ni*.

(4.84) Taroo-ga mokutekiti-ni it-ta/ki-ta/tui-ta.

Taroo-NOM destination-LOC go-PAST/come-PAST/arrive-PAST

‘Taroo went/came/arrived to/at the destination.’

On the basis of his earlier work (Takezawa 1993), he maintains that the subcategorized locational PP in (4.84) is base-generated within VP. Furthermore, the subject *Taroo-ga* ‘Taroo-NOM’ is also base-generated within VP. Given that all of the three Vs in (4.84) are unaccusative, the subject is an internal argument of the V. The structure is represented as follows:



Thus, a predication relation is established between the DP and the PP in question.

Takezawa (2000:169) observes that the facts in (4.84) contrast with those in (4.86):

(4.86) *?Taroo-ga mokutekiti-ni hasit-ta/arui-ta/oyoi-da.

Taroo-NOM destination-LOC ran/walked/swam

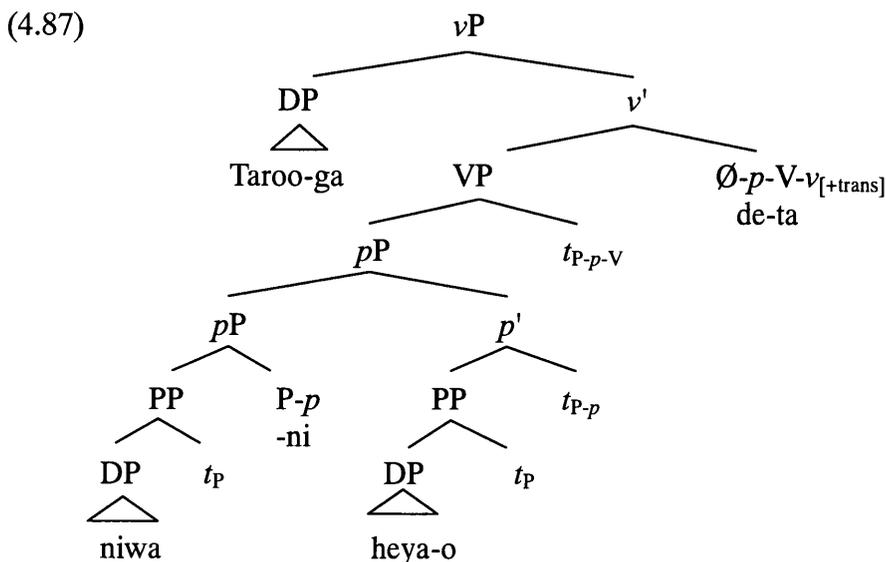
‘Taroo ran/walked/swam to the destination.’

He argues that the examples in (4.86) are severely degraded since a predication relation

cannot be established between the subject *Taroo-ga* and the locational PP in (4.86).

This is because the Vs in (4.86) are unergative Vs and the subject of an unergative V is base-generated outside VP, i.e., [Spec, ν]. Under a secondary predication analysis, Takezawa attributes the ungrammaticality of (4.82b) to the unavailability of a predication relation between the subject and the [+goal] PP.

Recall that I have shown that the V *de-ta* ‘left’ with an incorporated P is a transitive V and its subject *Taroo-ga* ‘Taroo-NOM’ is base-generated outside VP, namely, in [Spec, ν]. The structure can be illustrated as in (4.87). Note that in (4.87), the [+goal] pP is base-generated in Spec of the [+source] pP.³¹



³¹ I have adopted the following PP structure proposed by Takezawa (2000:208, fn. 17):

- (i) [PP [PP heya-kara] [P' niwa [P -ni]]]
 room-from garden -to
 ‘from the room to the garden’

The structure illustrated in (i) shows that it is the [+goal] P that heads the PP. However, as I have shown in footnote 28 in this chapter, it can be either the [+goal] P or the [+source] P that can be subcategorized for by the V *de-ru* ‘leave’. I assume, therefore, that when the [+source] P incorporates into the V, it is the head of the PP and the [+goal] PP is in the Spec of the [+source]. An alternative to this type of analysis is to treat the two PPs as occurring in two independent positions within VP. Since this issue is not directly relevant to the present discussion, I will leave it open. See Hendrick (1976) for an analysis of the parallel construction in English, namely, *from* XP *to* YP.

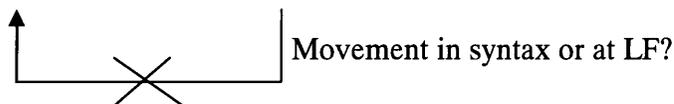
The question that remains to be answered at this point is why with the WH word *doko* ‘where’ in (4.83), a predication relation can be established between the subject and the [+source] PP. Following Watanabe’s (1992) proposal for overt movement of the WH-operator in Japanese I propose that the null WH-operator within the [+source] PP undergoes movement above VP in syntax and, thus, can enter into the predication relation with the subject.

Watanabe (1992) proposes that the null WH-operator moves overtly. He observes that WH-island effects exist in Japanese as well as in English and other languages. Consider (4.88):

- (4.88) ??Bill-wa [Kate-ga nani-o kat-ta ka dooka] siritagatte iru no?
 Bill-TOP Kate-NOM what-ACC bought whether know-want Q
 ‘What does Bill want to know whether Kate bought?’

He claims that (4.88) is degraded since the null WH-operator of *nani-o* ‘what-ACC’ moves out of the embedded clause that constitutes a WH-island:

- (4.89) ?? OP Bill-wa [Kate-ga nani-o kat-ta ka dooka] siritagatte iru no?



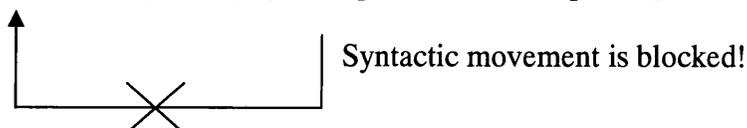
- (4.89) can be taken to represent Subjacency effects either at LF or in syntax.³² As

³² OP stands for the WH operator. Watanabe proposes without justification that OP moves to [Spec, C] to the right in Japanese. In the present study, however, I follow the standard notation that the Spec position is to the left of the matrix clause.

Watanabe points out, it is desirable that LF should be universal, not parameterized.

Ideally, (4.88) is degraded since the null WH-operator moves in syntax out of the WH-island to [Spec, C]. (4.90) shows this overt movement of the null WH-operator:

(4.90) ?? OP Bill-wa [Kate-ga [nani-o] kat-ta ka dooka] siritagatte iru no?



Assuming the above overt movement of the null WH operator in Japanese, the effect of such movement with respect to Subjacency is just as if the entire WH-phrase underwent movement as shown above. Watanabe provides further evidence to support such overt movement of a null WH-operator in Japanese, in particular, an interesting contrast illustrated in (4.91):

(4.91) a. ??Bill -wa [Kate-ga nani-o katta ka dooka] John-ni tazuneta no?

Bill-TOP Kate-NOM what-ACC buy whether John-DAT asked Q

‘What did Bill ask John whether Mary bought *t*?’

b. Bill-wa [Kate-ga nani-o kat-ta ka dooka] dare-ni tazuneta no?

Bill-TOP Kate-NOM what-ACC buy whether who-DAT asked Q?

‘Who did Bill ask *t* whether Kate bought what?’

Adding another WH to the matrix clause in (4.91a) improves the sentence as shown in (4.91b). Watanabe claims that this is because, in (4.91a), the null WH-operator of *nani-o* ‘what-ACC’ overtly moves out of a WH-island in order to satisfy the Q-feature of C in the matrix clause, while in (4.91b), the null WH-operator of *dare-ni* ‘who-DAT’

overtly moves to [Spec, C] in the matrix clause, which satisfies the Q-feature of C, and the null WH-operator of *nani-o* ‘what-ACC’ in the WH-island moves at LF. Provided that Watanabe’s account of overt movement of the null WH-operator is on the right track, this provides an account for the grammaticality of (4.91b). Now let us return to (4.83).

I have claimed above that following Takezawa (2000), the ungrammaticality of (4.82b) (i.e., **Taroo-ga heya-o niwa-ni de-ta*. ‘Taroo-NOM room-ACC garden-LOC go.out-PAST’) stems from the unavailability of the predication relation between the subject *Taroo-ga* ‘Taroo-NOM’ and the [+goal] PP *niwa-ni* ‘to the garden’ because they do not satisfy the locality condition. The subject is base-generated outside VP, namely, in [Spec, *v*] and the PP in question within VP. If Japanese WH-phrases move overtly in the form of overt movement of a null WH-operator, then the subject and the null WH-operator out of the [+goal] PP should be able to enter into the predication relation. This structure is illustrated in (4.92).³³

³³ Recall the contrast observed between (ia) and (ib) mentioned in footnote 29 in this chapter. It has been pointed out that in (ib), *wagon* inside the PP does not c-command *full* outside of it. Because the c-command restriction cannot be satisfied, the derivations result in ungrammaticality:

- (i) a. John [_{VP} loaded the wagon full [_{PP} with hay]]
 b. *John [_{VP} loaded the hay [_{PP} into the wagon] full]

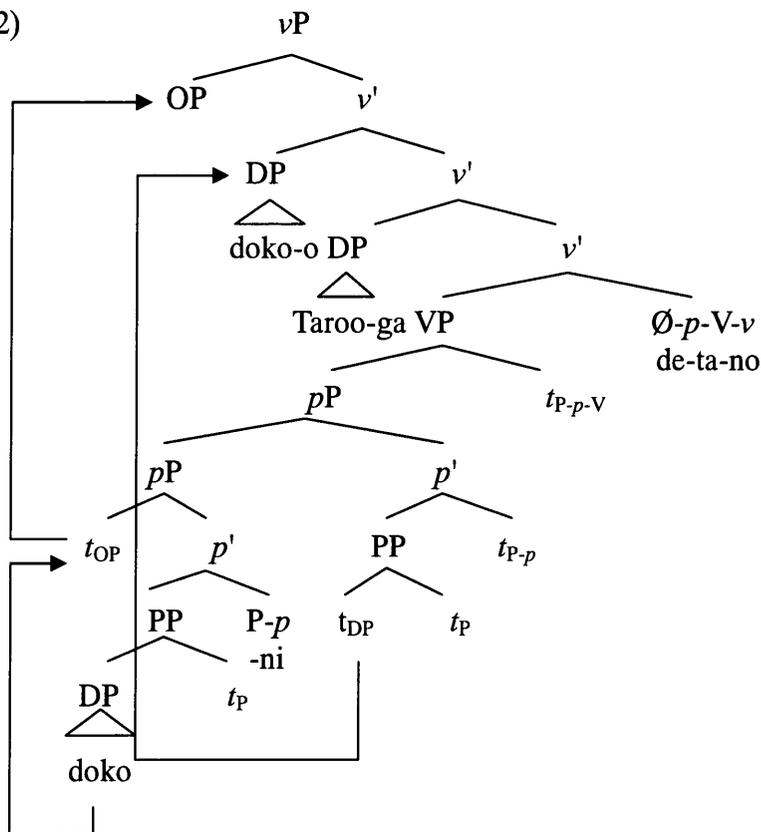
It follows from my analysis of secondary predication and overt movement of a null WH-operator in Japanese that once the complement of P in (ib) raises out of PP, the derivation should result in improved grammaticality. Consider the contrast between (iia) and (iib):

- (ii) a. *_{[PP} Into what]_k did John load the hay *t_k* full.
 b. ?What_k did John load the hay [_{PP} into *t_k*] full.

(iia) is ungrammatical since *what* is within PP. On the other hand, in (iib), *what* raises out of PP and can enter into a secondary predication relation with *full* on its way to [Spec, C], hence the improved grammaticality of (iib). (iii) provides further evidence for my analysis:

- (iii) a. Henry drained the vase empty [PP of water].
 b. *Henry drained the water [PP from the vase] empty.
 c. *_{[PP} From what]_k did Henry drain the water *t_k* empty?
 d. ?What did Henry drain the water [_{PP} from *t_k*] empty?

(4.92)



The structure illustrated above merits several comments.³⁴

First, according to my analysis of movement through [Spec, *p*], it is plausible that the null WH-operator within the [+goal] PP, i.e., [_{*p*} *doko-ni*], could also raise via [Spec, *p*]. Note that the PP-internal DP *doko-o* ‘where-ACC’ moves out of the PP

³⁴ It is predicted that scrambling the [+goal] phrase to the sentence initial position should be able to improve the ungrammaticality of (4.82b) under the phase analysis, in that the [+goal] phrase in question should raise via the edge of *v*P, satisfying the locality condition to be predicated of the subject *Taroo-ga* ‘Taroo-NOM’. (ia) shows that this prediction is correct:

- (i) a. ?Niwa-ni Taroo-ga heya-o de-ta.
garden-LOC Taroo-NOM room-ACC go.out-PAST
‘Taroo went out of the room into the garden.’
- b. *Heya-o Taroo-ga niwa-ni de-ta.
room-ACC Taroo-NOM garden-LOC go.out-PAST
‘Taroo went out of the room into the garden.’

Note that (ib) is ungrammatical since the [+goal] phrase remains within the VP.

without going through this position because of P-to-V incorporation.

Second, I assume that the null WH-operator of *doko* ‘where’ in the [+goal] phrase moves through [Spec, *v*] on their way to [Spec, C].³⁵

Third, Watanabe (1992) claims that, in a multiple question sentence, there is only one operator that can overtly move to [Spec, C], and the rest of them move at LF. Given that Japanese is parameterized for multiple Specs (Ura 1996, among others), I claim that it is plausible for C to have more than one Spec position in syntax to accommodate more than one WH-operator, if overt movement is not blocked. Thus, I assume that the null WH-operator of *doko-o* ‘where-ACC’ raises to [Spec, C] in syntax as well as that of *doko* ‘where’ in the [+goal] phrase as mentioned above.

I am now in a position to conclude that at the point of the derivation illustrated in (4.92), the [+goal] phrase and the subject can enter into a predication relation and that the grammaticality of (4.83) results.³⁶

³⁵ Chomsky (1999) argues that a given derivation proceeds in small units called ‘phases’ and PF evaluates them at the end of each phase. A syntactic object that undergoes overt movement beyond a phase in which it is base-generated is placed at the edge of a phase, and it is triggered to move at the next phase with some [-interpretable] feature on a head, e.g., an EPP-feature on T.

³⁶ A question arises as to why (i) is bad. The null WH-operator should be able to raise out of the [+goal] PP and enter into a predication relation with the subject as has been proposed so far.

- (i) ??*Taroo-wa heya-o doko-ni deta-no.*
 Taroo-TOP room-ACC where-to left-Q
 ‘Where did Taroo leave to go where?’

For reasons I do not understand, (i) is somehow blocked. However, there is at least a contrast between (i) and (ii):

- (ii) **Taroo-wa doko-o niwa-ni deta-no.*
 Taroo-TOP where-ACC garden-to left-Q
 ‘Out of where did Taroo leave into the garden.’

The ungrammaticality of (ii) is expected since the complement of *-ni* ‘to’ is a DP rather than the WH word *doko*.

4.4.4. Summary of 4.4.

To sum up, I have argued in this section that the contrast observed in Japanese between a [+source] DP with the accusative case-marker and a [+source] PP with the postposition *-kara* ‘from’ is rooted in the presence and the absence, respectively, of P-to-V incorporation. I have proposed in this section (i) that there is null P in Japanese, (ii) that this null P undergoes syntactic P-to-V incorporation. I have provided empirical support for the above proposals.

First, I have shown that in the examples that arguably involve P-to-V incorporation, the subject with the nominative case-marker is agentive, which suggests that it is an external argument. Furthermore, the floating quantifier diagnostic shows that the subject in a sentence with an accusative-marked internal argument seems to originate in a position higher (possibly in [Spec, *v*]) than the subject in a sentence with the [+source] PP.

The second evidence shows that P-to-V incorporation in Japanese obeys the same syntactic restriction as P-to-V incorporation in polysynthetic languages. That is, only subcategorized Ps can undergo P-to-V incorporation.

The third evidence is drawn from the contrast observed in (4.82b) and (4.83) which shows that P-to-V incorporation in Japanese is a syntactic process. Following Takezawa (2000), I have argued that the ungrammaticality of (4.82b) with the [+goal] PP is due to failure of establishing a predication relation between the subject and the [+goal] PP. I have shown that the grammaticality of (4.83), in which the predication relation obtains between the two syntactic objects in question, indicates that P-to-V incorporation takes place in syntax because if it were a lexical process, the derivation could never improve at the level of syntax as I have shown.

In the next section, I will present a case study of English. I will show that P-stranding in English can be derived by two different operations discussed so far in this thesis, i.e., P-to-V incorporation on the one hand and movement through [Spec, *p*] on the other.

4.5. P-stranding in English revisited: P-to-V incorporation versus WH-movement through [Spec, *p*]

This section will show that syntactic P-to-V incorporation is available in English. It will deal with one area of grammar in English where P-to-V incorporation is productive, namely, P-stranding derived by the pseudo passive. Drawing upon Van Riemsdijk's work, I will show that this construction involves P-to-V incorporation, and that it contrasts with P-stranding derived by WH-movement.

Numerous studies have contributed to our understanding of P-stranding in English in different theoretical frameworks. One of the central issues regarding P-stranding since Van Riemsdijk's (1978) work has been the contrast between (i) P-stranding derived by the pseudo passive and (ii) P-stranding derived by WH-movement with respect to the strict adjacency requirement. Let me begin my discussion with the basic stranding facts.

4.5.1. Basic facts of P-stranding in English

It has been observed that strict adjacency to the V is required for P-stranding derived by the pseudo passive, while it is relaxed for P-stranding derived by WH-movement (Van Riemsdijk 1978). Consider the contrast displayed in (4.93) and (4.94). In (4.93a), *talked* and *about* are adjacent. So are *sung* and *to* in (4.94a). In both cases,

P-stranding is allowed. On the other hand, in (4.93b), *to Mary* intervenes between *talked* and *about* and in (4.94b), *a lullaby* between *sung* and *to*, and in both cases, the formation of the pseudo passive is banned.³⁷

- (4.93) a. Bill was talked about.
 b. *Bill was talked **to Mary** about.
- (4.94) a. The baby was sung to by his mother.
 b. ??/* Bill was sung **a lullaby** to by his mother.

As for P-stranding derived by WH-movement as shown in (4.95) and (4.96), the strict adjacency requirement is relaxed. Note that (4.95a) and (4.96a) observe the strict adjacency requirement and that P-stranding is allowed in each sentence, while in (4.95b) and (4.96b), the respective Ps can be also stranded despite the fact that *to Bill* and *a lullaby* intervene between the respective Vs and Ps:

³⁷ The question arises as to why (ib) is not as bad as (4.93b) and (4.94b). It is plausible that *write a letter* is construed as an idiom chunk and is taken as a single verb. In this way, (ib) satisfies the adjacency requirement:

- (i) a. Mary was written to.
 b. ?Mary was written letters to.

Compare (i) with (ii):

- (ii) John was taken advantage of.

J. Emonds (personal communication) has pointed out the ungrammaticality of (i ii), which shows that the above idiom chunk is interpreted as a single verb only with bare indefinites:

- (iii) *Mary was written that letter to.

The above contrast between (ib) and (iii) can be taken to suggest that some kind of N -to-V incorporation takes place in (ib).

- (4.95) a. What did Mary talk about?
b. What did Mary talk **to Bill** about?
- (4.96) a. Who did the mother sing to?
b. Who did the mother sing **a lullaby** to?

Not much attention has been paid to the contrast shown in (4.97), which sheds light on the long-standing problem concerning the discrepancy between P-stranding derived by the pseudo passive as in (4.93) and (4.94) and P-stranding derived by WH-movement as in (4.95) and (4.96).

- (4.97) a. What was talked about?
b. ??/* What was talked **to Mary** about?

The two sentences in (4.97) involve the pseudo passive. In (4.97a), *talked* and *about* are adjacent and *about* can be left stranded, while in (4.97b), *to Mary* intervenes between *talked* and *about*, and P-stranding is blocked. The contrast shown in (4.97) suggests that P-stranding derived by the pseudo passive in English uniformly obeys the strict adjacency requirement even if WH-movement is involved.

I will show (i) that P-stranding in the pseudo passive is induced by P-to-V incorporation and (ii) that P can be stranded by WH which moves out of *pP* through [Spec, *p*]. In other words, Ps that are seemingly left stranded in the pseudo passive are not stranded but incorporated into V, while Ps that are stranded by WH-movement are truly stranded. This proposal is partly in line with Van Riemsdijk (1978), who claims that P in the pseudo passive becomes part of V by the grammatical process of

‘reanalysis’, and that P, which is stranded solely by WH-movement, is left behind by WH moving out of PP through the COMP position, i.e., [Spec, *p*] under my analysis.³⁸ In contrast, I will follow Baker’s (1988a) proposal, which claims that instances of P-stranding derived by the pseudo passive should be captured in terms of P-to-V incorporation.

The rest of this section is organized in the following way. First, I will argue that P-stranding derived by the pseudo passive is a case of P-to-V incorporation. Second, I will show that Ps that are stranded solely by WH-movement are indeed stranded with WHs moving out of PP through [Spec, *p*]. Finally, it will be shown that my analysis accounts for more complicated data, in which we can observe the two types of P-stranding in a single sentence.

4.5.2. Pseudo passive in English as P-to-V incorporation

As mentioned above, it has been proposed that stranded P in the pseudo passive is incorporated into V in the same way as P is incorporated into V in the applicative construction in languages such as Kinyarwanda (Baker 1988a, Fujita 1996, among others), as illustrated in (4.98):³⁹

³⁸ Van Riemsdijk (1978) regards reanalysis as a grammatical process that selects two categories, here, V and P, and turns them into a single category [_v V P]. His account has been extended to cover all of the P-stranding phenomena by Hornstein and Weinberg (1981), Kayne (1981) and Stowell (1981). Both the original reanalysis account by Van Riemsdijk and the extended reanalysis accounts mentioned above have been criticized by Inada (1981), Levine (1984) and Koster (1987).

³⁹ Although it is not represented in (4.98), given the multi-layered PP structure proposed here, *to* in the (a) example is *p* which incorporates into the V *talked* and *about* in the (b) example is possibly P, which moves to *p*, and this *p*-P complex moves to adjoin to the V *dealt*.

(4.98) a. John was [_{V-P} talked to_k] t_k by Mary.



b. The issue was [_{V-P} dealt with_k] t_k at the meeting.



According to the P-to-V incorporation analysis, the incorporation illustrated above is head-to-head movement motivated by a language particular morphological requirement in English such as a [-interpretable] P-feature on V. As Baker (1988a) maintains, although the incorporated Ps and their host Vs do not form a single morphological unit in (4.98), they do act like a single verb, in that the DP objects of the Ps now become the subjects of the pseudo passive. As has been pointed out in the literature and in this section's introduction, a strict adjacency requirement is imposed upon a P and V that arguably act like a single verb. Consider (4.99):

(4.99) a. *John was talked **to** **Mary** about.

b. *The table was put **the mouse** on. (Baker 1988a)

In (4.99a), the PP argument *to Mary* intervenes between *talked* and *about*, and in (4.99b), the DP argument *the mouse* intervenes between *put* and *on*. In both cases, P-to-V incorporation is blocked. With varying unacceptability, other intervening phrases such as adverbs also block incorporation as shown in (4.100) (Baker 1988a):

(4.100) a. ??John was voted **eagerly** for by most conservatives.

b. ??Bill was talked **bitterly** to.

Furthermore, assuming that P-to-V incorporation also takes place in the case of WH-movement in the pseudo passive, the contrast in (4.97) can be readily accounted for. In (4.97b), the PP argument *to Mary* intervenes between the V and the P. Therefore, *about* cannot incorporate into *talked*. Thus, the ungrammaticality of (4.97b) results.

If this argument is on the right track, we predict that an incorporated P alone is not subject to further movement because it is now part of the V-P complex and excorporation is banned, as has been argued in section 4.2. This prediction is borne out by pied-piping facts.

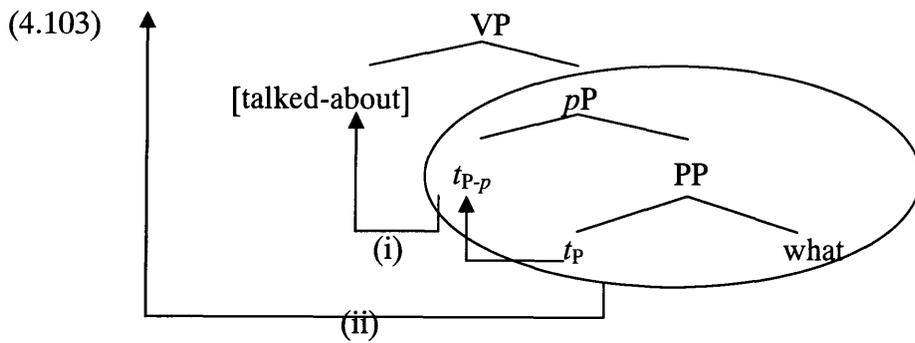
First of all, English displays optionality as to whether P is pied-piped with WH or not, as shown in (4.101):

- (4.101) a. What did Mary talk about?
b. About what did Mary talk?

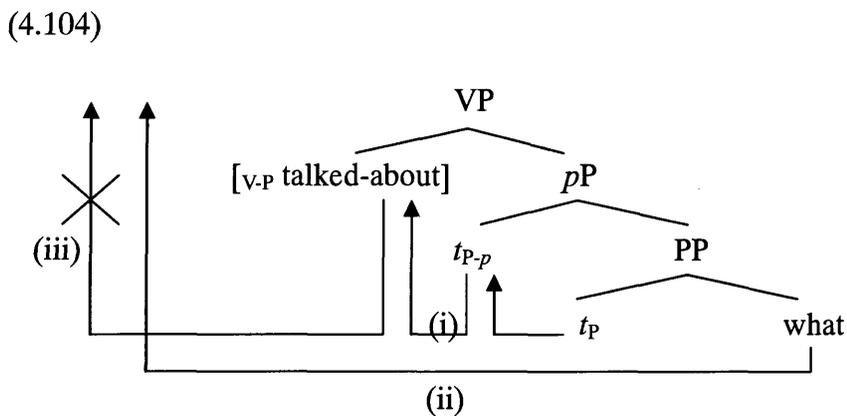
(4.101a) *about* is left stranded, while in (4.101b), *about* is pied-piped along with *what*. As mentioned earlier, in the pseudo passive, P cannot be pied-piped along with WH. This prediction is borne out in (4.102):

- (4.102) a. What was talked about?
b. *About what was talked?

The ungrammaticality of (4.102b) can be accounted for as follows. Consider what happens when *about* incorporates into *talked* and *what* raises along with its host P, when it overtly moves to [Spec, C]. The derivation is illustrated in (4.103).



(4.103) shows (i) that *about* incorporates into *talked* and (ii) that *what* can only raise with the trace of *about*, if pied-piping applies at all, because *about* has already moved to adjoin to *talked*. Now, if *about* was to move along with *what*, it would have to raise out of the adjoined position in the V-P complex as illustrated in (4.104), which cannot be motivated in any possible way.



This explains why (4.102b) is ungrammatical.

Facts from gapping also support my claim that P-to-V incorporation takes place in the pseudo passive in English. It should be noted at this point that the notion that P and V form a single unit in the pseudo passive has been argued against on the grounds that the active counterpart does not treat V and P as a single unit as in (4.105) (Koster

1987, Newmeyer 1998):^{40, 41}

- (4.105) a. *John looked at Mary and Bill ___ Sue.⁴²
 b. John looked at Mary and Bill ___ at Sue.

Koster (1987:279) argues that (4.105) indicates that *at* cannot be gapped with the verb *looked*, and thus, they do not form one constituent. However, gapping facts in the

⁴⁰ The idea that active sentences involve P-to-V incorporation (Van Riemsdijk and William 1986) has come from the following binding facts:

- (i) John_i talked to Bill_j about himself_{ij}.

(i) shows that either *John* or *Bill* can bind *himself*. This ambiguity has been accounted for first by the absence of incorporation as in (iia) and second by the presence of incorporation as in (iib) (Van Riemsdijk and William 1986).

- (ii) a. John_i talked [to Bill] about himself_i.
 b. John [talked to] Bill_j about himself_j.

However, in (iii), the two-way binding displayed in (ii) is absent (Baltin and Postal 1996:132). The ungrammaticality of (iii) means that P-to-V incorporation is not an optional operation with regard to (iii):

- (iii) *I talked to Thelma_i about her_i

That is, if the incorporation is optional as observed in (i) in the active sentence, (iii) should be ambiguous between being grammatical and ungrammatical. This suggests that the binding fact observed in (i) does not necessarily point towards P-to-V incorporation in the active sentence.

⁴¹ See Abe and Hoshi (1997) for a movement analysis of gapping. Following Jayaseelan (1990), they claim that in (i), both *Mary* and *about Susan* in the second conjunct undergo movement out of the lowest TP, which makes the lowest TP of the first conjunct to be copied into that of the second conjunct:

- (i) [_{TP} John₁ [_{TP} [_{TP} *t*₁ talked *t*₂] about Bill₂]] and [_{TP} Mary [_{TP} [_{TP} e] about Susan]].

Further, Abe and Hoshi (1991:103) claim that the ungrammaticality of (ii) and (iii), which are taken from Saito and Lasnik (1991), is rooted in the unavailability of rightward movement which leaves a preposition behind; leftward movement is not prohibited from doing so as illustrated in (iv). That is, for the same reason that *about* cannot be left behind by rightward movement of the DP *the man I recently met* as shown in (ii), *Bill* in (iii) cannot move rightward, leaving *about* in the lowest TP.

- (ii) *I talked about *t*_i yesterday [the man I recently met]_i.
 (iii) ?* [_{TP} John₁ [_{TP} [_{TP} *t*₁ talked [_{PP} about *t*₂]] Bill₂]] and [_{TP} Mary [_{TP} [_{TP} e] Susan]].
 (iv) [The man I recently met]_i I talked about *t*_i yesterday.

⁴² M. Tallerman (personal communication) finds this example completely grammatical. Further, she notes that (4.106a) is no better than (4.105a). Crucially, she observes that there is a clear contrast between (4.106a) and (4.106b), which supports my proposal that the pseudo passive involves P-to-V incorporation, while the active sentence does not.

pseudo passive show that P and V are gapped together because P cannot be left stranded as shown in (4.106):

- (4.106) a. John was talked to by the chemistry teacher, and Bill and Mary ____ by the geography teacher.
- b. *John was talked to by the chemistry teacher, and Bill and Mary ____ to by the geography teacher.

The above facts thus support my argument that P-stranding derived by the pseudo passive involves P-to-V incorporation, forming a V-P complex.⁴³

The absence of P-to-V incorporation in the active sentence and its presence in the pseudo passive can be confirmed by the contrast shown between (4.107) and (4.108). (4.107) shows that intervening adverbs block P-to-V incorporation, while (4.108) indicates that the intervening adverbs exert no influence on the grammaticality of the two active sentences, which points towards the fact that no such incorporation is involved in (4.107):

⁴³ Baltin and Postal (1996:130) point out that there are counterexamples as follows:

- (i) a. The bridge was flown (both) over and under.
b. Fascism was fought for by Goebbels and then, but, I assure you, only then, against by De Gaulle.

They argue that facts such as (ia) and (ib) suggest that the Ps *under* in (ia) and *against* in (ib) are not incorporated into their respective verbs. However, they also mention a referee of their paper has pointed out the existence of the following example (ii) that goes against their analysis, in that conjunction may need a different treatment.

- (ii) pre- and post-World War II automobiles

(ii) shows that even word-internal particles can be ‘stranded’ in conjunction, and suggests that the examples in (i) do not necessarily represent counterexamples to the incorporation analysis of the pseudo passive proposed in the present chapter. Note that M. Tallerman (personal communication) points out to me that (ib) is out.

- (4.107) a. *This matter must be looked very carefully into. (Van Riemsdijk 1978:94)
b. *The submitted manuscript was talked endlessly about by the committee.
- (4.108) a. John looked very carefully into this matter.
b. The committee talked endlessly about the submitted manuscript.

I have argued thus far that P that looks as if it is stranded in the pseudo passive in English is not indeed stranded, but rather it has a host into which it is incorporated. This P-to-V incorporation is triggered by a [-interpretable] P-feature of *p* and V and a [-interpretable] affix-feature of P and *p*. These [-interpretable] features need to be deleted by successive cyclic movement: P to *p* and P-*p* to V, the details of which has been shown in 4.2.2.⁴⁴ In addition, T bears an EPP-feature to be deleted by the DP complement of the incorporated P.

Having examined P-stranding derived by the pseudo passive, I will now turn to the second case of P-stranding.

4.5.3. Ps that are actually stranded! WH-movement through [Spec, *p*]

Recall from 4.5.1. that while the strict adjacency requirement is imposed upon P-stranding derived by the pseudo passive, the same requirement is lifted for P-stranding derived by WH-movement. Consider again the contrast shown in (4.93)

⁴⁴ D. Adger (personal communication) suggests that the pseudo passive involves passive *v*, which motivates P-to-V incorporation. In my theory of incorporation, P-to-V incorporation is triggered by the [-interpretable] features on P, *p* and V. Since passive *v* is above V, a [-interpretable] categorial feature on this head, if there is one, does not have any direct effect on P-to-V incorporation per se. Having said the above, I have no objection to passive *v*. In fact, its presence seems to be supported by the ungrammaticality of an ECM construction in (5.21), to which I will return.

and (4.95) repeated below as (4.109) and (4.110), respectively:⁴⁵

(4.109) a. Bill was talked about.

b. *Bill was talked **to Mary** about.

(4.110) a. What did Mary talk about?

b. What did Mary talk **to Bill** about?

The ungrammaticality of (4.109b) with the PP argument intervening between the host V and the incorporating P has been accounted for in the previous section. The grammaticality of (4.110b) suggests that there is an important structural difference between (4.109b) and (4.110b). I argue in what follows that *what* in (4.110b) moves through [Spec, *p*] as illustrated in (4.111):⁴⁶

⁴⁵ In contrast to (4.110b) which is grammatical, (i) is considered to be rather bad (Hornstein and Weinberg 1981):

(i) ??Who did Mary talk about the paper to?

They claim that of the two sentences given below, (iia) represents the underlying order:

(ii) a. Mary talked to John about the paper.
b. Mary talked about the paper to John.

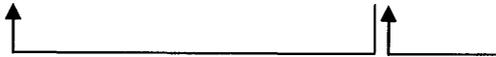
Given that (iia) is the underlying order, *to John* in (iib) is scrambled to adjoin to some XP. Thus, the ungrammaticality of (i) would be accounted for as WH-movement out of the PP in an adjunct position (see Koster (1987:289) for his argument concerning the impossibility of WH-movement from within scrambled PPs). However, three of my informants report that (i) is either perfectly grammatical or slightly degraded. If *the paper* in (i) is replaced by *her paper*, all of the informants find the sentence perfectly grammatical as in (iii):

(iii) Who did Mary talk about her paper to?

The grammaticality of (i) and (iii) suggests that Hornstein and Weinberg's analysis did not ascertain the accurate judgment for (i).

⁴⁶ There are two options available concerning the movement of *what*. First, if *about* is base-generated under P and remains in this position, *what* may have to move through [Spec, P] as well as [Spec, *p*]. Second, if *about* incorporates into *p*, *what* moves only through [Spec, *p*] on its way to [Spec, C]. I will leave this matter open.

(4.111) What_k did Mary talk to Bill [_{PP} t'_k [about t_k]]?



Recall that facts from Dutch (Van Riemsdijk 1978) have suggested that [Spec, *p*] is available to allow [+locational] pronouns to move from within PP. Let me first review some relevant Dutch facts again:

(4.112) a. *op waar ‘on where’

b. waar op ‘where on’

(4.113) a. op wie ‘on whom’

b. *wie op ‘whom on’

(4.114) a. *op er ‘on there’

b. er op ‘there on’

Waar and *er* are [+locational] and both of them obligatorily move as shown in (4.112) and (4.114), while *wie* ‘whom’ is [-locational] and stays in the base position as illustrated in (4.113). Van Riemsdijk (1978) has proposed that the above [+locational] pronouns move to the COMP position of P (i.e., a Spec position within the current framework (see Watanabe 1993:429)).⁴⁷

⁴⁷ For Van Riemsdijk, this movement through [Spec, P] is necessary to circumvent his ‘Head Constraint’. Another way to avoid this constraint is by P becoming part of V by reanalysis. Note in passing that in Dutch, the pseudo passive is not available as shown in (i) (Van Riemsdijk 1978:137):

- (i) *Jouw vrienden_k worden op t_k gerekend
 your friends are on counted
 ‘Your friends are being counted on.’

The ungrammaticality of (i) indicates that the P *op* cannot incorporate into the V and therefore *jouw vrienden* cannot move from the base object position to the subject position.

In addition, the [+locational] pronouns can move further out of PP via the Spec position of P (Van Riemsdijk 1978). Consider the following example, in which he proposes that the [+locational] pronoun *er* moves through the Spec position of *p*.⁴⁸

(4.115) Ik heb *er* deze plaat [_{PP} *t'* [voor *t*] gekocht.

I have there this record for bought

‘I have bought this record for it.’

Furthermore, in contrast to WH-movement in English, only [+locational] WH can move out of PP in Dutch. Thus, there is a contrast in WH-movement out of PP in Dutch as shown in (4.116):

⁴⁸ The same movement is available in Old English. Unlike Dutch, not only [+locational] pronouns but also personal pronouns can undergo r-movement (Wende 1915, cited in Van Riemsdijk 1978:286-288, Allen 1977, Van Kemenade 1987, Fischer, Van Kemenade, Koopman and Van der Wurff 2000), as in (i) and (ii).

Personal pronoun (Van Kemenade 1987:145)

- (i) a. and hi ne dorston *him fore* gebiddan
and they not dared them for pray
‘and they dared not pray for them’
b. tha wendon hi *me* heora bæc to
then turned they me their backs to
‘then they turned their backs to me’

[+locational] pronoun (Van Kemenade 1987:146)

- (ii) a. and com ... to tham trewe, sohte wæstm *thæron*
and came to the tree, sought fruit therein
‘he got to the tree, sought fruit in it ...’
b. ... that thu *thær* nane myrththe *on* næfdest
that you there no joy in not-had
‘that you have no joy in that’

The (a) examples show that both the personal pronoun and the [+locational] pronoun undergo movement to [Spec, *p*]. Furthermore, just like the [+locational] pronoun in Dutch, they undergo further movement from [Spec, *p*] as shown in the (b) examples. The lexical items such as *whereupon*, *wherewith*, *wherefore*, *therefore*, *thereupon* and *thereafter* in present-day English represent remnants of Old English, when English looked much more like Modern Dutch.

(4.116) a. Waar heb je op gerekend?

where have you on counted

‘What did you count on?’

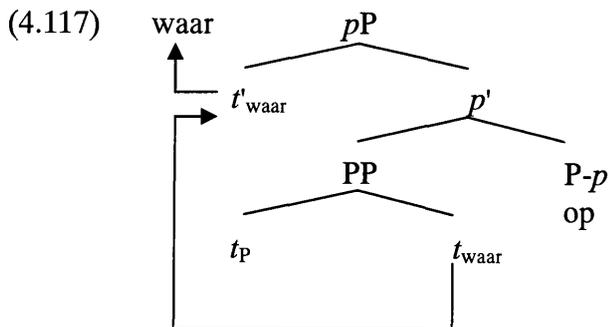
b. *Wie heb je op gerekend?

who have you on counted

‘Who did you count on?’

(4.116a) shows that when *waar* is [+locational], WH-movement out of PP is allowed.

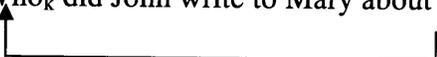
On the other hand, (4.116b) displays the unavailability of the same movement with the [-locational] WH *wie* ‘who’. Applying the same analysis proposed for *er* raising out of *pP*, the movement of *waar* can be illustrated as follows:



Turning to English, WHs can raise out of PP regardless whether they are [+locational] or [-locational], as illustrated in (4.118):

(4.118) a. Which store_k did John buy that book from t_k?



b. Who_k did John write to Mary about t_k?


(4.118) shows that *which store* and *who* have moved out of their respective PPs.

However, it is not clear whether *which store* and *who* in (4.118) move through [Spec, *p*] or directly to the topmost [Spec, C]. There are two points that need to be taken into account with regard to this issue.

First, note that English does not have placement in the pre-P position as follows:

- (4.119) a. From which store did you order the fish for the party.
 b. *Which store from did you order the fish for the party.
 c. About who did you write.
 d. *Who about did you write.

(4.119) indicates that WHs cannot stay in [Spec, *p*].

Second, when WHs are induced to move, they move all the way to [Spec, C] as (4.120) shows:

- (4.120) a. What did John talk to Mary about t_k?
 b. *Did John talk to Mary what about t_k?

There are two ways to interpret (4.120). Either there is [Spec, *p*] in English, but *what* cannot stop at [Spec, *p*], namely, halfway between the base position and [Spec, C]. Or, there is no [Spec, *p*] in English and *what* raises directly to the topmost [Spec, C]. I

provide arguments that the first possibility is the case in English.

The first piece of evidence is pointed out by Van Riemsdijk (1978). He proposes that *who* in the following example is in the Spec position within PP:

(4.121) He has left and one can only guess *who* with. (Van Riemsdijk 1978:232)

His proposal that *who* in (4.121) occupies the Spec of PP is against Ross's (1969) proposal that the example in (4.121) involves overt movement of WH and deletion, i.e., sluicing. According to Ross's analysis, *he left* in (4.122) is deleted to derive (4.121):

(4.122) He has left and one can only guess ~~who he left~~ with.

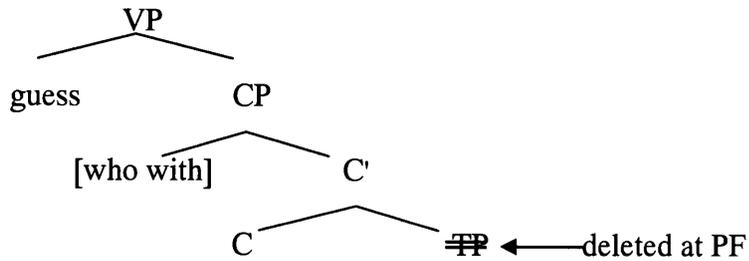
However, the deletion analysis proposed by Ross as illustrated in (4.122) does not account for the fact that *who with*, for example, can be left-dislocated as a unit, as shown in (4.123):

(4.123) ..., but *who with* I don't know

The fact in (4.123) indicates that *who* and *with* form a constituent and provides evidence for the proposal that *who* is in the Spec position of *with*. Lobeck (1991) has proposed that sluicing illustrated in (4.124) involves TP deletion (see Saito and Murasugi (1990)

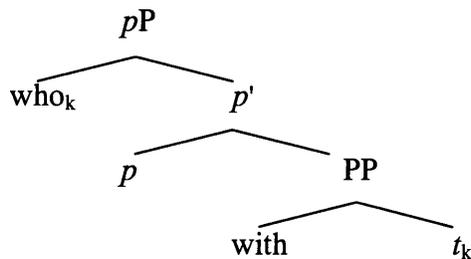
and Takahashi (1994) for a TP deletion analysis applied to sluicing in Japanese).⁴⁹

(4.124)

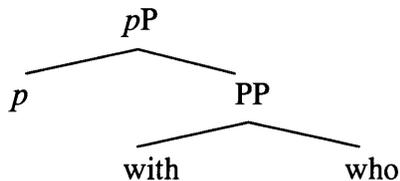


(4.124) shows that the constituent *who with* in (4.121) undergoes movement to [Spec, C] and the TP is deleted at PF. Provided that *who* is in the Spec of PP, the question naturally arises as to why in the case of sluicing only, *who* can move to the Spec of PP as illustrated in (4.125a), while in the indirect question *who* stays in the complement position of P as in (4.125b):⁵⁰

(4.125) a.



b.



⁴⁹ On the basis of Fukui and Speas (1987), Lobeck (1991) claims that a constituent can be deleted only if it is selected by an agreeing head (agreement between a Q-feature of C and a wh-feature of WH in minimalist terms). C agrees with a WH-phrase in its Spec position and it selects TP. Thus, TP can be deleted. An alternative analysis is copying (Williams 1977). Under the copying analysis, WH is base-generated in the Spec of CP and the TP is left empty. It is only at LF that the appropriate TP is copied onto the empty slot. I assume that movement and deletion are involved in sluicing in English because sluicing displays island effects (Ross 1969).

⁵⁰ Another possibility is that WH is base-generated in [Spec, p].

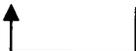
Despite the fact that the full motivation for the movement in (4.125a) is not clear, sluicing facts such as in (4.123) serve as evidence that WH is in [Spec, *p*].⁵¹

As for the second piece of evidence, Watanabe (1993) claims that there is one instance of ECM or raising with PP, citing examples from Postal (1974). He argues that in (4.126a), *tabs* moves from its base position to some Spec position within PP (i.e., [Spec, AgrP] under Watanabe’s framework). (4.126b) shows that *advantage* undergoes the same movement.

- (4.126) a. ?I prevented *tabs* from being kept on Lucy. (Postal 1974:159)
 b. ?I prevented *advantage* from being taken of John.

(4.127) illustrates the movement of *tabs* to the Spec position within PP:

(4.127) I prevented $tabs_k$ from t_k being kept on Lucy.



In contrast to Watanabe’s (1993) analysis, I suggest that *tabs* in (4.127) has moved out of PP through [Spec, *p*] based on the fact that (4.128) is as equally acceptable as (4.126a):⁵²

⁵¹ It should be noted that (i) is ungrammatical:

- (i) *What about did Mary talk.

When WH is in [Spec, *p*], PF is required to delete TP. (i) is out since PF fails to obey the instruction given.

⁵² The judgment for (4.128) is by J. Emonds (personal communication). In contrast, Watanabe (1993:428, fn. 1) claims on the basis of the ungrammaticality of (4.128) (Postal 1974:159) that *tabs* is in the Spec position within PP, not in the object position of the V.

(4.128) ?Tabs were prevented from being kept on Lucy.

The example in (4.128) suggests that [Spec, *p*] is also available for this particular construction in English in which DP can raise out of PP.

As for WH-movement, when WHs move out of PP, they cannot remain in intermediate positions, e.g., [Spec, *p*].⁵³ Let us now return to the issue of P-stranding derived by WH-movement.

Recall that in contrast to P-stranding derived by the pseudo passive, the strict adjacency requirement is relaxed in P-stranding derived by WH-movement. I have argued in the previous section that in the pseudo passive, P must incorporate into V and for this to take place, the strict adjacency requirement is necessary. However, with regard to P-stranding derived by WH-movement, there is no P-to-V incorporation and WHs are allowed to raise out of PP through [Spec, *p*]. (4.129) illustrates this:

(4.129) What_k did the student write **to her supervisor** *t'*_k about *t*_k?

The diagram consists of a horizontal line representing the Spec,CP position. An upward-pointing arrow is at the left end of this line. Another upward-pointing arrow is located below the text 'to her supervisor'. A vertical line extends from the base of this second arrow up to the horizontal line, and another vertical line extends from the base of the first arrow up to the horizontal line, forming a rectangular shape that indicates the movement path.

(4.129) shows that *what* first moves from its base position to [Spec, *p*] and then it further raises to [Spec, C]. Within the minimalist framework, C in (4.129) has a Q-feature (while P does not) and this feature induces overt movement of *what* all the way to the Spec of CP.

Before concluding this section, it needs to be pointed out that the above

⁵³ See Chomsky (1999) for his argument concerning object-movement to [Spec, *v*] in English under his phase analysis. He suggests that if the position is to be vacated at a later point of derivation, [Spec, *v*] can be filled, for example, by WH.

analysis has crosslinguistic support. For example, our analysis of P-stranding derived by WH-movement can account for the Swedish facts in (4.130) and (4.131):⁵⁴

- (4.130) a. Vad talade du med henne om?
what talked you with her about
'What did you talk with her about?'
- b. Om vad talade du med henne?
about what talked you with her
'About what did you talk with her?'
- (4.131) a. Vilken park fann du kaninen i?
which park found you the rabbit in
'Which park did you find the rabbit in?'
- b. I vilken park fann du kaninen?
In which park found you the rabbit
'In which park did you find the rabbit?'

(4.130) and (4.131) show that *om* 'about' and *i* 'in' can either be stranded or pied-pied with *vad* 'what' and *vilken park* 'which park', respectively. Applying the analysis provided in the present section, we can say that [Spec, *p*] is available and the WHs move through this position in (4.130a) and (4.131a). Takami (1992) observes that Danish also allows P-stranding derived by WH-movement. Cast in this light, WH-movement through [Spec, *p*] is available in these Northern Germanic languages, and is not unique to English.

⁵⁴ M. Whitfield has provided the Swedish data.

In the next subsection, I will show that seemingly complex facts can be readily accounted for by applying the P-to-V incorporation analysis to the pseudo passive in English and the [Spec, *p*] analysis to WH-movement out of PP with reference to P-stranding derived by WH-movement

4.5.4. Two in one: P-to-V incorporation and WH-movement out of PP in a sentence

I propose that the analysis offered thus far can account for more complicated sentences such as (4.132):⁵⁵

(4.132) What was Mary talked to secretly about?

On the basis of the analyses proposed for P-stranding derived by the two grammatical operations, (4.132) can be analyzed as follows.

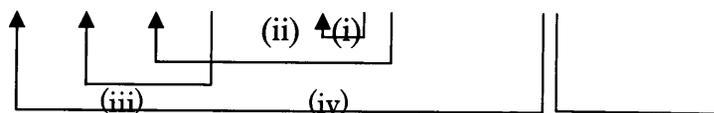
First, note that (4.132) involves the pseudo passive. Thus, (i) *to* incorporates into *talked*. Then, (ii) *Mary* moves from its base position within PP to the subject position. Then the rest of the derivation proceeds in order to form a WH-question in English. That is, (iii) *was* moves to adjoin to C and (iv) *what* moves to [Spec, C] through [Spec, P]. (4.133) illustrates this derivation:

⁵⁵ Hornstein and Weinberg (1981:74, fn. 21) note that the following sentences pointed out by Van Riemsdijk and Williams are problematic for their reanalysis account of P-stranding:

- (i) a. Which problems has Harry been talked to about?
- b. Who do you like to be sung to by?

In their reanalysis account, for *Harry* and *you* to move out of their base positions in (ia) and (ib), respectively, these operations involve ‘looking inside’ the reanalyzed units: [_v talked to Harry about] in (ia) and [_v sung to you by]. With regard to the grammaticality of the two examples in (i), Hornstein and Weinberg claim that they are not degraded at all. Levine (1984:25, fn. 6) supports Hornstein and Weinberg’s judgments on the two sentences and claims that they are not degraded. Note that the grammaticality of (i) can be accounted for by the analysis presented in this section.

(4.133) What_k was_i Mary_j t₁ talked-to_i t_i t_j secretly [_{PP} t'_k [_{P'} about t_k]]?



All of the derivational steps illustrated in (4.133) are legitimate and the grammaticality of (4.132) results. Most importantly, it is *about* that is stranded in the structure and *to* has a host to be incorporated into.

Finally, I argue that the present analysis of P-stranding can also explain the ungrammaticality of (4.134).

(4.134) *Who was the situation talked to secretly about?

(4.134) involves the pseudo passive. Recall the strict adjacency requirement, in which the head P of a PP must be strictly right adjacent to the verb. In (4.134), for *the situation* to raise to the subject position from within the PP headed by *about*, *about* must incorporate into *talked*. However, the PP *to who*, out of which *who* moves later in the course of derivation, and the adverb *secretly* intervene between *talked* and *about*.

(4.135) illustrates the derivation before *who* moves:

(4.135) talked to **who** secretly about the situation?



In (4.135), the strict adjacency requirement is not observed and *about* cannot

incorporate into *talked*. Therefore, (4.134) results in ungrammaticality.

4.5.5. Summary of 4.5.

I have argued in the present section that the P that seems to be stranded in the pseudo passive is not stranded, but is incorporated into its host V adjacent to the ‘stranded’ P. I have provided empirical support of various sorts for this argument. That is, some new facts from pied-piping and gapping suggest that seemingly stranded Ps should be considered to form constituents with their adjacent Vs. With regard to Ps that are stranded by WH-movement, I have shown that those Ps are indeed stranded, since their objects undergo WH-movement through [Spec, *p*] and no P-to-V incorporation.

It has been pointed out in Van Riemsdijk (1978) and Stowell (1981) among others that P-stranding derived by the two different grammatical operations discussed in the present chapter is observed only in a limited number of languages. However, once the pseudo passive is regarded as a case of P-to-V incorporation, this is not at all a peculiar phenomenon.⁵⁶ With respect to P-stranding by WH-movement out of PP, movement to and through [Spec, *p*] is also available in other Germanic languages besides English, e.g., Dutch (with a limited number of lexical items), Swedish and Danish.

4.6. Concluding remarks on Chapter 4

This chapter has dealt with the interplay between the internal structure and the external syntax of PP. I have shown that the multi-layered PP structure proposed in the previous chapters and the P-to-V incorporation analysis proposed by Baker (1988b) can

⁵⁶ See King and Roberge (1990) for their work on P-stranding in Prince Edward Island French.

account for a variety of linguistic facts in Dutch, Japanese and English.

To conclude this chapter, there is one last point that needs to be addressed. That is, within the minimalist framework, Chomsky (1999:30) claims with special reference to V-second that head-to-head movement that does not instigate any LF effect may fall within the PF component. At the same time, Chomsky (1999:30) admits that incorporation in the sense of Baker (1988b) is relevant to syntactic analysis. I have shown in this chapter that there is empirical evidence to show that P-to-V incorporation is an issue that concerns syntax, not only PF.

CHAPTER FIVE

Interplay of the internal structure and the external syntax of PP, part 2

Locative inversion

This chapter continues to examine the interplay between the internal structure and the external syntax of PP. More specifically, I will focus on locative inversion in English, a construction in which the locational/directional PP (henceforth, locative PP) undergoes movement to clause-initial position, while the theme DP appears to remain within VP.¹ (5.1) illustrates:²

- (5.1) a. Down the hill rolled the baby carriage.
b. Into this room ran a number of boys.
c. Out of the barn ran a horse.
d. Down the hill seemed to have rolled the baby carriage.

The problem that I will examine in this chapter concerns the contrast between instances of locative inversion as observed in (5.1) and cases where locative inversion is less acceptable to varying extents as in (5.2):

¹ I assume without discussion that the position of the theme DP in the locative construction is within VP, following the secondary predication analysis proposed in the previous chapter (see Hoekstra and Mulder (1990) for their small clause analysis of the theme DP and the locative PP). Alternatively, the theme DP moves out of VP, e.g., to a position adjoined to VP (see Rochemont 1986 for syntactic analysis of such movement in the effect of presentational focus and Coopmans 1989 for the LF movement to that position). See also Branigan (1998) for his heavy NP-shift analysis of the theme DP and its locative inversion construction (right adjunction to V').

² Typically locative alternations can be observed with unaccusative Vs. However, as (5.1) shows, unergative Vs also allow locative inversion. I will return to this topic in subsection 5.4.2 which deals with the unaccusative analysis.

- (5.2) a. *To the room ran a number of boys.
b. ??From the barn ran a woman.
c. *To the house appears to have walked an alcoholic.

(5.2) shows that inversion of locative PPs headed by *to* and *from* results in ungrammaticality.³

This chapter will show that the contrast observed above can be accounted for in terms of the internal PP structure proposed in Chapter 2. I will propose that the EPP-feature of T is category-sensitive, namely, to [N]/[D]. In the previous chapter, I proposed that head-to-head movement is category-specific and have empirically supported this proposal. The study of locative inversion will confirm this category-sensitive motivation for movement in syntax.

The present chapter is organized as follows. First, I will review the literature concerning the properties of the preposed locative PP. I will focus on whether it occupies the subject position or some other place. The first half of the review concerns the empirical argument put forth by Bresnan (1991, 1994). The second half reviews theory-internal considerations on the status of the preposed PP in locative inversion. Second, I will provide my proposed analysis of the contrast between (5.1) and (5.2). I will propose that the internal PP structure plays a crucial role in deriving the contrast. Third, I will provide empirical evidence for my analysis. Finally, I will deal with two remaining issues with respect to locative inversion: control facts and the unaccusative

³ The judgments vary from speaker to speaker. All the native speakers of English I have consulted agree that, of the three examples in (5.2), the (c) example, in which the locative PP moves out of the embedded clause, is the worst.

analysis.

5.1. Where does the preposed locative PP move to?

There have been a number of studies dedicated just to identifying the position of preposed locative PPs in the structure. One issue concerns whether the preposed locative PPs in (5.1) are in the subject position or in some other place, e.g., in the topic position. In what follows, I will review Bresnan's (1991, 1994) empirical argument concerning this issue, which provides a succinct summary of the facts related to the subject-topic properties of the preposed PP.

A few words are necessary about the theoretical framework assumed by Bresnan: *Lexical Functional Grammar*. This grammar assumes (i) that there are three parallel informational structures, namely, a(rgument)-structure, c(ategorial)-structure and f(unctional)-structure and (ii) that they are linked by functional correspondences (Bresnan 1994:73). The linking of these structures corresponds to movement in standard generative theory. As for the preposed PP in locative inversion, Bresnan (1994) proposes that the preposed PP is generated in the topic position in c(ategorial)-structure, and is linked to the subject position in f(unctional) structure.⁴ She claims that because of this mixed status at two different levels, the preposed PP in locative inversion displays both subject and topic properties. I will begin with the evidence that supports the subject properties of the preposed PP. I will then turn to evidence for the topic status of the PP in question.

⁴ This proposal is in line with Stowell (1981) and den Dikken and Næss (1993), in which it is proposed under standard generative theory that the locative PP moves to the topic position via the subject position. The details of this analysis will be introduced later in this chapter.

5.1.1. Preposed locative PP as a subject

Three sets of facts have been pointed out by Bresnan (1991, 1994), which suggest that the preposed PP occupies the subject position, i.e., [Spec, T]. The first comes from tag questions. These consist of an auxiliary verb and a pronoun, and the pronoun must agree with the subject of the assertion:

- (5.3) a. Bill often teases Mary, doesn't he/*she?
b. Mary is often teased by Bill, isn't *he/she?

Bowers (1976:237) observes that in the following example, it is the locative PP *in the garden* that serves as the subject of the sentence, not the DP *a beautiful statue*, since the preposed PP agrees with the locational pronoun *there*, as shown in (5.4):

- (5.4) In the garden is a beautiful statue, isn't there?

The second set of facts is based on the *that-t* effect. It has been observed that with the presence of the complementizer *that*, a sentence is degraded when its subject is extracted, while it is not when non-subject elements, i.e., objects and locatives, are extracted (Bresnan 1977, Stowell 1981). (5.5) indicates that in the absence of *that*, the subject is extractable, while it is not in its presence:

- (5.5) a. It's this cuisine_k that we all believe *t_k* can be found in these villages.
b. *It's this cuisine_k that we all believe that *t_k* can be found in these villages.

Further, (5.6) shows that the postverbal locative PP can be extracted either with or without *that*. However, in contrast to the results in (5.6), the locative PP in (5.7) displays the same contrast observed in (5.5), namely, the subject extraction; the locative PP cannot be preposed when *that* is present as in (5.7b). Therefore, the preposed locative PP is considered to have subject properties (Bresnan 1994:97):

- (5.6) a. It's in these villages_k that we all believe the finest examples of this cuisine can be found *t*_k.
 b. It's in these villages_k that we all believe that the finest examples of this cuisine can be found *t*_k.
- (5.7) a. It's in these villages_k that we all believe *t*_k can be found the best examples of this cuisine.
 b. *It's in these villages_k that we all believe that *t*_k can be found the best examples of this cuisine.

Third, English has a class of subject-raising verbs, e.g., *seem*, whose subject is raised from the embedded infinitival clause, as in (5.8):

- (5.8) John_k seems *t'*_k to be *t*_k a good student.


Following Postal (1977), Bresnan (1994:96) argues that the preposed PP can undergo movement to the matrix subject position since it occupies the subject position in the embedded clause. This is illustrated in (5.9):

(5.9) On that hill appears to be located a cathedral.

Under a minimalist analysis, the locative PP *on that hill* in (5.9) is considered to move from its base position to the subject position of the matrix clause via the subject position of the embedded infinitival clause. Moreover, Bresnan (1994) claims that no nonsubject constituent can be raised to the matrix subject position, as the contrast between the (a) example and the (b) example in (5.10) illustrates:

- (5.10) a. In these villages are likely to be found the best examples of this cuisine.
b. *John seems you to like. (cf. It seems that John, you dislike)

Having reviewed the facts that support the subject status of the preposed locative PP, I will now turn to three sets of facts against its subject status, but for its topic status.

5.1.2. Preposed locative PP not in the subject position

Other facts suggest that the preposed PP moves beyond [Spec, T]. The first set of facts is based on the unavailability of auxiliary inversion. Bresnan (1991) maintains that the facts in (5.11) show that the preposed locative PP has moved to a position higher than

the subject position, resulting in the unavailability of auxiliary inversion:⁵

- (5.11) a. Do you remember? *Did on the wall hang a Mexican serape?
b. *Was among the ruins found a skeleton?

The second set of facts comes from raising asymmetries (Bresnan 1991).

Bresnan (1991:56) points out that a locative PP cannot be a raised object as shown in (5.12a), while it can be a raised subject as shown in (5.12b). It has been proposed that the locative PP in (5.12b) is in the topic position rather than in the subject position because only in a finite clause are topicalized phrases allowed. Thus, the ungrammaticality of (5.12a) results. Moreover, as den Dikken and Næss (1993) point out, if *on this wall* is raised to the topic position in the matrix clause as shown in (5.12c), it becomes perfectly

⁵ Rochemont and Culicover (1990) argue that the unavailability of auxiliary inversion in the locative inversion construction is based on a Focus Principle, in which canonical government is defined in the sense of Kayne (1984). That is, in English, canonical government is to the right. They assume that in the case of canonical government, the adjacency requirement on Case assignment applies. Because the DP is not adjacent to a Case-assigner, auxiliary inversion in locative inversion is blocked. Note that the sentence in (i) is blocked for the same reason as those in (5.11) are (Rochemont and Culicover 1990:156):

(i) *Will probably John leave?

In the next section, I will show that auxiliary inversion in the locative inversion construction is blocked for a different reason.

grammatical.⁶

- (5.12) a. *I expect on this wall to be hung a portrait of our founder.
b. On this wall is likely to be hung a portrait of our founder.
c. On this wall I expect to be hung a portrait of our founder.

The third set of facts against the subject status of the preposed locative PP is based on the lack of agreement with V. As (5.13) shows, it is the theme DP that agrees with the V, not with the preposed locative PP:

- (5.13) a. Down the hill rolls a baby carriage.
b. Down the hill roll two baby carriages.

Bresnan (1994) notes that the lack of subject-verb agreement in English locative inversion contrasts with its presence with the locative subject in Chicheŵa which

⁶ It has been observed that Norwegian displays the same contrast as English. Consider the following examples (den Dikken and Næss 1993:309):

- (i) a. *Jeg lot på denne veggen bli hengt opp et bilde av grunnleggeren vår.
I let on this wall be hung up a portrait of the-founder our
b. På denne veggen lot jeg bli hengt opp et bilde av grunnleggeren vår.
on this wall let/make I be hung up a portrait of the-founder our
c. ?Nedover denne bakken har jeg aldri sett komme trillende en barnevogn.
down this hill have I never seen come rolling a baby.carriage

With respect to the raising asymmetry observed in English, I will argue in the following section that it can be accounted for under a minimalist analysis.

In addition, English and Norwegian also exhibit parallel behavior with respect to the unavailability of PP occupying the object position (den Dikken and Næss 1993:309):

- (ii) a. *I have never seen down this hill rolling a baby carriage.
b. *Jeg har aldri sett nedover denne bakken komme trillende en barnevogn.
I have never seen down this hill come rolling a baby.carriage

exhibits subject properties (see Bresnan and Kanerva 1989 for the details of locative inversion in this language, and Ura 1996 for his minimalist analysis of the contrast between the preposed locative PP in English and in Chicheŵa).⁷

Having reviewed Bresnan’s empirical arguments concerning the properties of preposed locative PP, I will now turn to theory-internal considerations. I will show that the above facts against the subject status of the preposed PP do not necessarily constitute strong evidence against the view that the preposed locative PP is in the subject position.

5.1.3. Theory-internal considerations

In the standard transformational generative literature, the preposed PP has been argued to undergo movement to two different positions, i.e., the subject position and the topic position.

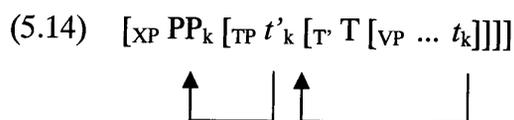
First, it has been proposed that the preposed PP is in a higher position than the sentence subject, e.g., in the topic position (Stowell 1981, Coopmans 1989, Rochemont and Culicover 1990, den Dikken and Næss 1993). One theory-internal motivation for such an analysis is Case-theoretic. To put it simply, the subject position is a Case

⁷ Bresnan and Kanerva (1989:9) observe that in the following examples, the locative phrase is the subject and it must agree with the V in person, number and gender (or noun class; there are eighteen classes altogether).

- (i) a. Pa-m-sik. -pa pá-bádw-a nkhonya.
 16-3-market-16 this 16 SB IM FUT-be-born-IND 10 fist
 ‘At this market a fight is going to break out.’
 b. M-nkhal. ngo mw-a-khal-á mí-kângo.
 18-9forest 18 SB-PERF-remain-IND 4-lion
 ‘In the forest have remained lions.’
 (SB: subject; IM FUT: immediate future; IND: indicative; PERF: present perfect)

(i) shows that the locative phrase is in subject position and induces agreement with the V. For example, (ia) shows that the noun class of the subject *market* is 16, which is indicated by the prefix *pa*, and that the same prefix appears on the V, indicating subject-verb agreement.

position. Stowell (1981), for example, proposes that under category-neutral phrase structure theory, the subject position can be filled by any category at D-structure. It is independent principles concerning Case and θ -role assignment that rule out PP occupying the subject position at S-structure. Therefore, PP must vacate the subject position at S-structure, where nominative Case is assigned, and move to the topic position. The movement proposed is illustrated in (5.14):



I will show in what follows that this Case-related problem evaporates under a minimalist analysis.⁸ I will review one minimalist analysis of locative inversion advocated by Collins (1997) to show how locative inversion is treated in the minimalist framework.

Under this approach, Collins (1997) proposes that PP can move to the subject position, i.e., [Spec, T] and can remain there thanks to feature-only movement in covert

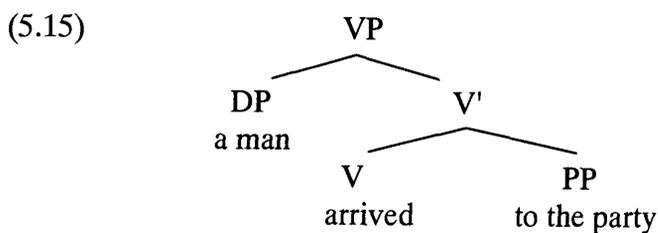
⁸ Note that even under GB theory, Hoekstra and Mulder (1990) argue that the preposed PP moves to the subject position. They argue that the theme DP and the PP form a small clause within VP. The PP is predicate and the theme DP, subject. Nominative Case is assigned to the PP in [Spec, T] and then is shared with the theme DP through the trace of the moved PP. They argue that the sharing of Case between the subject and the predicate has empirical support from Latin.

- (i) a. Puella bella est.
 daughter-NOM/FEM pretty-NOM/FEM is
 ‘(The) daughter is pretty.’
 b. Puellam bellam facio.
 daughter-ACC/FEM pretty-ACC/FEM make-I
 ‘I make (my) daughter pretty.’

(i) shows that in Latin, the subject and the predicate share Case and gender. Although Case-sharing is a plausible notion in the above constructions in Latin, it is not in locative inversion in English since PPs in English seem to bear neither Case nor gender (but see Jaworska 1986 for a view that PPs in English do bear Case).

syntax (Collins 1997). Following Chomsky (1995), he argues that Case can be dissociated from the EPP requirement of T in English, and that the matrix subject position must be filled by an overt syntactic category. Furthermore, there are two possibilities for deleting the EPP-feature of T, depending on whether the feature in question is category-neutral or category-specific. First, if the EPP-feature of T is category-neutral, it can be deleted by the category feature [P] of the preposed locative PP. Therefore, the locative PP is allowed to be preposed in English. The second possibility is that if the EPP-feature of T is category-specific, it is the categorial feature [D] of the DP complement of P that deletes the EPP-feature of T. In other words, the PP is pied-piped with the DP in much the same way as the PP is pied-piped with the WH-phrase that undergoes WH-movement (e.g., *Under which bed did Betty hide the candy?* (Collins 1997:28)).⁹ Leaving this matter open at this point, I will now review the derivational steps he proposes for locative inversion.

First, Collins (1997:16) proposes the following basic unaccusative structure (based on Hale and Keyser 1993):¹⁰



He proposes that the unaccusative construction involves a small verb Tr (equivalent to

⁹ Branigan (1998:102) argues that if the DP complement of T can delete the category-specific EPP-feature of T, the same head T can delete the other [-interpretable] features of the same DP, which results in an ungrammatical derivation due to, say, the wrong agreement effect.

¹⁰ Collins (1997) assumes the unaccusative analysis. I will provide a short note on this issue in the following section.

[-trans] ν proposed in Chapter 1), which neither assigns an external θ -role nor deletes accusative Case. In the transitive construction, Tr (i.e., [+trans] ν) assigns an external θ -role and deletes accusative Case.¹¹ As noted above, the EPP-feature of T can be satisfied by PP moving to [Spec, T] either by a category-specific or a category-neutral requirement of the EPP-feature of T. Moreover, in the unaccusative construction as shown in (5.15), Collins proposes that either the locative PP or the theme DP can be subject to movement induced by the EPP-feature of T. He argues that the optionality of moving either the locative PP or the theme DP follows from the definition of the minimal domain (Chomsky 1995, Ura 1996) and minimality. With regard to the notion of minimal domain, both the locative PP and the theme DP are in the same minimal domain of the V.¹²

As for minimality, Collins (1997:22) defines it as follows:

- (5.16) α can raise to a target K only if there is no operation (satisfying Last Resort)
Move β targeting K, where β is closer to K.

Since the DP and the PP in (5.15) are equidistant from the target T with the EPP-feature, either of them can undergo movement to [Spec, T].

¹¹ Collins (1997:16) presents the following sentence as evidence for the proposed Tr in the unaccusative construction:

- (i) There arrived a man to the party.

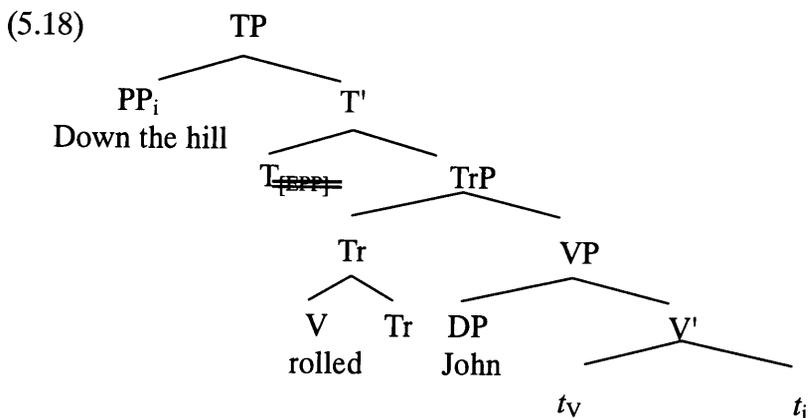
He claims that for *arrived* to precede *a man*, there needs to be a verbal head to which *arrived* must move to adjoin to, namely, Tr. He maintains that if *arrived* remains in the base position, the following ungrammatical derivation results:

- (ii) *There a man arrived to the party.

¹² See Chomsky (1995:178-179) for his definition of the minimal domain. To put it simply, the minimal domain includes categories locally related to the head X.

Collins (1997:29) thus proposes the following structure (5.18) for the sentence in (5.17):

(5.17) Down the hill rolled John.



In the case of locative inversion, it is the PP that raises to [Spec, T] to satisfy the EPP-feature of T, as illustrated in (5.18). With this instantiation of the operation Move, the [-interpretable] EPP-feature is deleted. Note that the V *rolled* moves to adjoin to Tr, deriving the word order PP-V-theme DP. As for the [-interpretable] features that are not deleted by this overt movement of the PP, he claims that they are deleted at LF. Such features include the Case-feature of T, the ϕ -features of the V and the ϕ -features of the DP.

Given the above minimalist analysis, it becomes obvious that one of the three objections against the preposed PP occupying the subject position evaporates, namely, lack of subject-verb agreement. That is to say, once agreement is captured in terms of [-interpretable] features, it can be satisfied independently of the EPP-feature of T, as in Collins' analysis.

In addition to the above, Hoekstra and Mulder (1990) argue that auxiliary inversion in the locative inversion construction is ruled out for an economy reason; there is no movement if there is no principle that requires movement (Chomsky 1988). Hoekstra and Mulder (1990:32) observe the same unavailability in the WH-question as in locative inversion. Consider (5.19) and (5.20):

- (5.19) a. Out of which barn ran a horse?
b. *Out of which barn did run a horse?
- (5.20) a. Which horse ran out of the barn?
b. *Which horse did run out of the barn?

Hoekstra and Mulder (1990:32) indicate that (5.19b) is out for the same economy reason that (5.20b) is out, i.e., no movement if there is no principle that requires movement.

Concerning the raising asymmetry, which has been considered to constitute evidence against the subjecthood of the preposed PP, I argue that under the feature-based minimalist analysis, the ungrammaticality of a sentence with PP occupying the Spec of TP of an embedded infinitival clause (or the object position of the matrix clause) is for Case reasons and/or the absence of the LF-raising of the ϕ -feature of the theme DP.

(5.21) illustrates the ways in which the [-interpretable] features are deleted in (5.12a):

(5.21) *I ν expect [_{PP} on this wall]_k to~~be~~ be hung [_{DP} a portrait of our founder] t_k
 [Case], [ϕ] [Case], [ϕ]

In (5.21), the locative PP undergoes raising, which results in an ungrammatical derivation. Note that the EPP-feature of the infinitival T is deleted by the raised PP, but the Case-feature and ϕ -features of ν associated with the verb *expect* cannot be deleted against those on the theme DP. One possible reason for this is that there is ν associated with the passive verb *hung* in the infinitival clause (cf. fn. 44 in Chapter 4), i.e., a Relativized Minimality effect (Rizzi 1990). This leads to two consequences.

First, the [-interpretable] Case-feature of the theme DP survive. Since this feature cannot enter into interpretation at the LF interface, the derivation results in ungrammaticality, as illustrated in (5.21).

The second consequence actually stems from the first. That is, the theme DP in the infinitival clause fails to be interpreted in the subject position of the infinitival clause (or the object position of the matrix V) due to the unsuccessful feature-deletion. I propose that the above interpretation of the theme DP is only possible when ν associated with *expect* has ϕ -features and/or a Case-feature that are deleted against those of the theme-DP either at LF (i.e., LF-raising of the theme DP in the sense of Collins (1997) and Chomsky (1995)) or in situ.¹³ As has been shown above, failure to do so leads to the LF uninterpretability of the theme DP.

In addition to the above, it must be noted that the ungrammaticality of (5.21) contrasts with the grammaticality of the copular construction as shown in (5.22).

¹³ In the following section, I will return to this issue regarding the control properties of the DP theme in locative inversion and the *there*-existential construction.

- (5.22) a. They considered after the holidays to be too late for a family gathering.

(Jaworska 1986:359)

- b. I wouldn't expect under the bed to be the best place to leave your toys.¹⁴

(Levine 1989:1037)

It has been argued by, for example, Bresnan (1991) that the grammaticality of (5.22) can be attributed to the subject status of the PP. Note that with the copular construction, PPs can be in the subject position as follows:¹⁵

- (5.23) Under the bed is a good place to hide.¹⁶

¹⁴ This sentence contrasts sharply with (i) which is taken from Levine (1989:1037):

(i) *I wouldn't expect behind the trees to (appear to) stand a large building of some kind.

¹⁵ Further, the copular construction allows auxiliary inversion as shown in (ia) and agreement between PP subject and V as in (ib) (Levine 1989:1015):

- (i) a. Is under the bed a good place to hide?
b. Under the bed and in the fireplace are not the best (combination of) places to leave your toys.

Bresnan (1991) argues that the grammaticality of the above sentences along with the sentence *Under the bed is a good place to hide* is rooted in the fact that the PPs are pragmatically interpreted as instances of ellipsis as follows:

- (ii) a. [_{NP} (a time) [_{PP} after the holidays]]
b. [_{NP} (a place) [_{PP} under the bed]]

Due to the somewhat obscure nature of the pragmatic interpretation provided in (ii), I do not accept Bresnan's analysis.

¹⁶ Moro (1991) proposes that in a copular construction such as (i), the underlying word order is represented by the (a) sentence.

- (i) a. A picture on the wall was the cause of the riot.
b. The cause of the riot was a picture on the wall.

Moro (1991:6) bases the above proposal on the contrast between (iia) and (iib):

- (ii) a. I consider [a picture of the wall (to be) the cause of the riot]
b. I consider [the cause of the riot *(to be) a picture of the wall]

He claims that if a landing site is not provided, the predicative linking within the small clause must display the basic direction. Applying this diagnostic, the copula sentence in question (i.e., *Under the*

Contra Bresnan, I suggest that the grammaticality of the two sentences in (5.22) stems either from the fact that the Case-feature of the predicate *a good place to hide* is deleted by the copula within the infinitival clause (as in the structural Case analysis in the copular construction (Lasnik 1992)) or from the idea that the predicate is simply Case-less (Authier 1991). Further, it is postulated that ν associated with the respective verbs in (5.22), namely, *considered* and *expect*, do not bear ϕ -features and a Case-feature. Since this issue is beyond the scope of the present chapter, I will leave the matter here. However, I have shown that the contrast between the locative PP in (5.12a) and the subject PPs in the copular construction in (5.22) is not rooted in the non-subject versus the subject status of the respective PPs.

In this section, I first reviewed Bresnan's empirical arguments concerning the properties of a preposed locative PP, which display the mixed status of the PP in question. I then turned to the theory-internal considerations on the preposed PP in locative inversion. I have supported Collins' (1997) minimalist analysis of locative inversion and have demonstrated that under this analysis, the evidence against the subject status of the preposed locative PP does not seem to hold. In the following section, I will propose my analysis of locative inversion in English, focusing on the contrast observed at the outset of this chapter, namely, that between (5.1) and (5.2).

5.2. Proposal: A category-specific EPP-feature of T and the categorial feature [N] of P

This section will present my analysis of locative inversion in English. I assume

bed is a good place to hide) shows that (iiia) is the basic order, while (iiib) is the inverse:

- (iii) a. I consider under the bed (to be) a nice place to hide.
- b. I consider a nice place to hide *(to be) under the bed.

Collins' line of analysis of the preposed PP moving from within VP and to the Spec of TP. However, Collins' analysis of locative inversion falls short of accounting for the contrast between (5.1) and (5.2):

- (5.1) a. Down the hill rolled the baby carriage.
b. Into this room ran a number of boys.
c. Out of the barn ran a horse.
d. Down the hill seemed to have rolled the baby carriage.
- (5.2) a. *To the room ran a number of boys.
b. ??From the barn ran a woman.
c. *To the house appears to have walked an alcoholic.

That is to say, if his analysis is on the right track (i.e., the EPP-feature of T can be satisfied by any PP, whether the nature of the feature is category-neutral or category-specific), there should not be any such contrast at all. Instead, I will propose

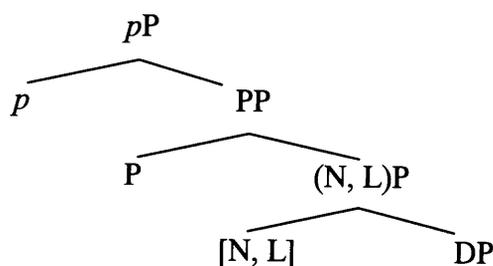
- (5.24) a. the EPP-feature of T is sensitive to the categorial feature of XP, namely, [N]/[D], in the sense of Chomsky (1995).
b. Locative inversion is only possible if P bears [N].

The first proposal in (5.24a) is in fact in line with the analysis offered in the previous chapter with regard to head-to-head movement; the [-interpretable] formal feature of Y^0 that attracts X^0 is sensitive to the categorial feature of X^0 .

The second proposal in (5.24b) needs further elaboration. First of all, recall

the full multi-layered PP structure proposed in Chapter 2, which contains three different heads with different feature specifications.

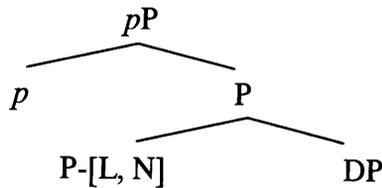
(5.25)



I have proposed in this thesis that there are two types of P in a PP projection: lexical P and functional *p*. I have also proposed that PP can contain a locative head, namely, [N, L], which has a categorial feature [N]. All of the three heads appear within a PP in the following examples taken from Gruber (1976:83):

- (5.26) a. The dog scooted [_{pP} from [_{PP} in [_{LP} front of the house]]].
 b. The horse galloped from in the tent [_{pP} to [_{PP} in [_{LP} front of the tree]]].

It is plausible that, depending on different internal structures of PP, PPs exhibit different syntactic behaviors. I propose that the contrast between (5.1) and (5.2) is rooted in the presence versus the absence of lexical P with the categorial feature [N]. More precisely, I propose that lexical P and locative N can be fused and that this fusion is lexical. This is illustrated in (5.27):

(5.27) Lexical fusion¹⁷

On the basis of the proposal that the deletion of an EPP-feature of T in English requires an overt syntactic category with [N]/[D] in its Spec position, the structure in (5.27) can account for the contrast between (5.1) and (5.2) as follows. As (5.28a) shows, the PPs in (5.1) bear the category feature [N] that can delete the EPP-feature of T, while (5.28b) shows that the PPs in (5.2) do not bear the same feature and, therefore, the EPP-feature of T cannot be deleted.¹⁸

¹⁷ This proposal contradicts Chomsky's (1970) feature specification for P, namely, [-N, -V]. I suggest that his specification holds for non-fused lexical Ps.

¹⁸ R. Borsley (personal communication) has pointed out to me that the grammaticality of the locative inversion sentences observed in (5.2a) and (5.2b) can improve by turning the respective indefinite theme DPs into definite:

- (i) a. ?To the room ran the boys.
b. ?From the barn ran the woman.

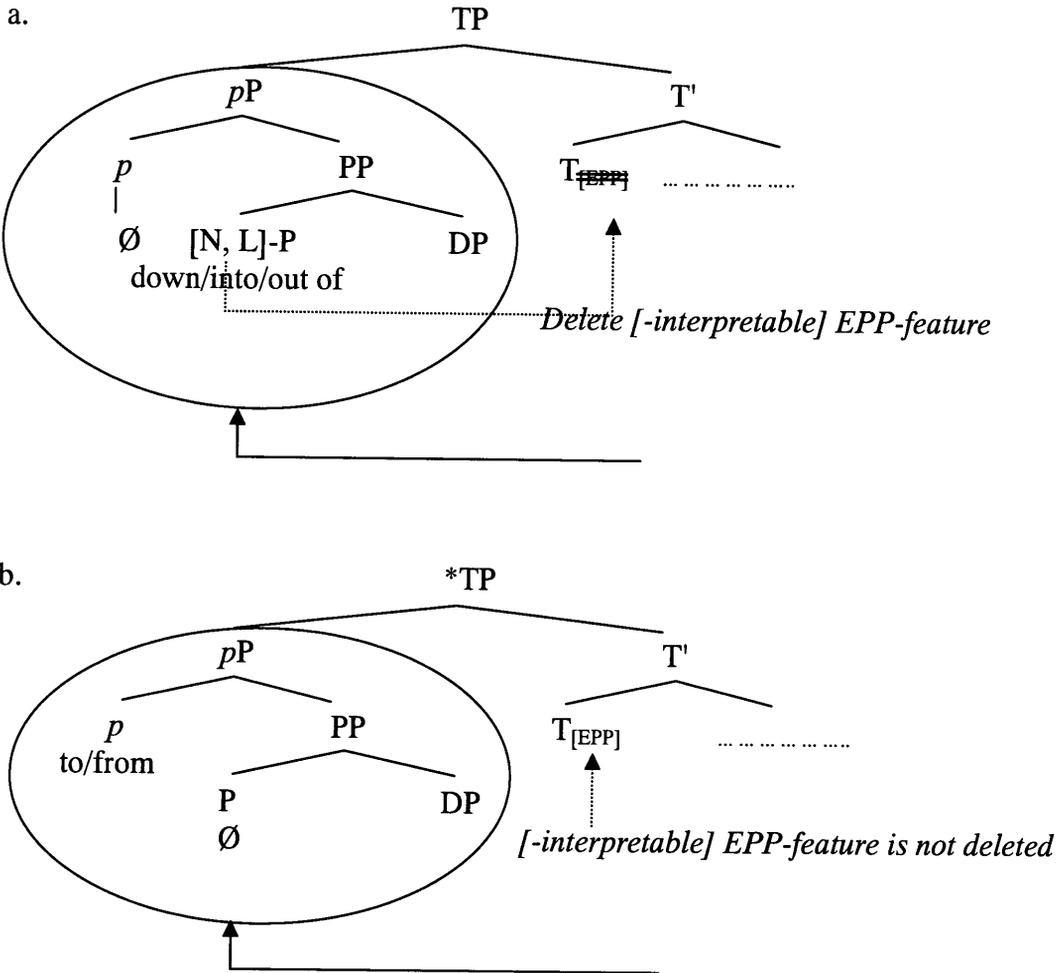
This effect is the opposite of the well-known definiteness restriction imposed on the *there*-existential sentence (Milsark 1974) as shown in (ii):

- (ii) a. *There are the three books on the shelf.
b. *There is the dog in the garden.

I speculate that the improved sentences in (i) involve different derivational steps from those in (5.2). With regard to (5.2a) and (5.2b), the preposed PPs have moved to [Spec, T] and this overt movement of the respective PPs fails to delete the [-interpretable] EPP-feature of T, as proposed here. Turning to (i), I suggest that the EPP-feature of T can be deleted by the theme DP that moves to [Spec, T], and that the VP containing the V and the locative PP has moved to some higher Spec position, say, by topicalization. This explains why manner adverbs can appear before the preposed locational PP (the facts in (iii) are taken from Rochement and Culicover 1990:80):

- (iii) a. ?Quickly into the room went Bill.
b. ?Gracefully down the staircase walked the Queen.

(5.28) Proposed analysis of the contrast between (5.1) and (5.2)



In the following section, I will provide empirical support for the above proposal.

5.3. Empirical support for my proposed analysis

In this section, I will show that my proposed analysis has empirical support. First, I will claim that the fused P analysis can be supported in terms of morphology and syntax. The second piece of empirical support for my analysis concerns inserting a fused P into a PP that cannot undergo inversion as observed in (5.2). The predicted outcome of such insertion is for the ungrammatical derivations in (5.2) to become more acceptable

or grammatical.

5.3.1. Evidence for fused P

The most transparent case of lexical fusion can be observed in Ps such as *inside* that consists of lexical P *in* and locative N *side*. There are two points to be noted about this P.¹⁹

First, *inside* displays properties of both N and P. Note that it can take an *of*-phrase:²⁰

- (5.29) a. Mary stepped inside of the building.
b. I was inside of the phone booth when I heard the explosion.

Recall that I have argued in Chapter 2 that *of* in PPs such as *in front of the house* and *on top of the roof* indicate that *front* and *top* bear the categorial feature [N]. Thus, I called lexical items such as *top* and *front* locative Ns. Such locative Ns need lexical P in order to appear within PP. As (5.30) illustrates *front* must co-occur with lexical P *in* and *top* with *on*.

¹⁹ *Inside* is also N. Consider (i)

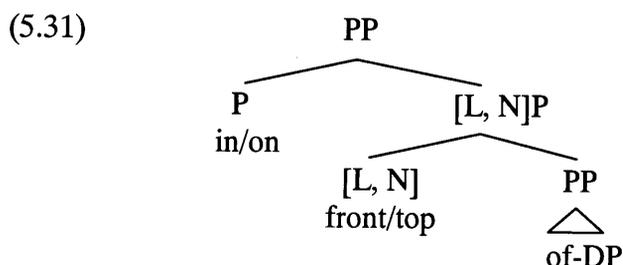
- (i) The inside of the box was lined with silk.

This is in accordance with the Righthand Head Rule (Williams 1981, Lieber 1983). *Inside* can be P in the case where *in* selects *side* and projects P, provided that such process of word formation takes place in parallel to that in syntax.

²⁰ M. Tallerman and R. Maylor have pointed out that with *of*, the examples are ungrammatical in British English. This seems to suggest that *inside* in British English has different feature-specifications from that in American English.

- (5.30) a. I bumped into Bonnie *(in) front of the department.
 b. Mary put her pen *(on) top of the desk.

With regard to the PPs in (5.30), there is no fusion and they simply have the multi-layered structure with *front/top* under locative N and *in/on* under lexical P as illustrated in (5.31):



Given the above analysis of *in front of* and *on top of*, it is plausible to assume that *inside* bears the categorial feature [N]. At the same time, *inside* displays a property of P. As shown in (5.32), the modifier *right* indicates that *inside* in the following example is P:²¹

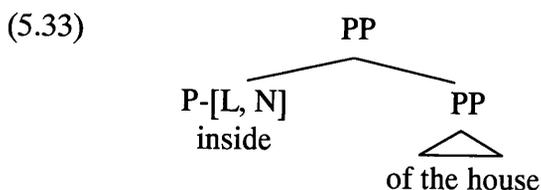
- (5.32) a. Mary stepped right inside of the building.
 b. I was right inside of the phone booth when I heard the explosion.

Therefore, the PP *inside of the house* I consider to have the following structure:

²¹ M. Whong-Barr (personal communication) has noted that with *right*, the (b) sentence is better without *of*. She has further pointed out that while (ia) is perfect with *of*, (ib) is out:

- (i) a. The detective sneaked inside of the suspect's room.
 b. The detective sneaked right inside (*of) the suspect's room.

The above contrast seems to suggest that *inside* falls somewhere between Ps that require *of* when taking its complement (e.g., *out*) and Ps that do not (e.g., *in* and *on*).



Second, the PP headed by *inside* can undergo movement to the subject position.

Consider (5.34) (Rochemont and Culicover 1990:181):

(5.34) Inside the hall marched the students.

(5.34) suggests that the PP *inside the hall* shares a property with the PPs in (5.1), i.e., the categorial feature [N], which enables it to undergo movement to the subject position.

Having examined the properties of *inside* and demonstrated that it has the ambivalent status of being both [N] and [P], I will now turn to the examples in (5.1) repeated below as (5.35):

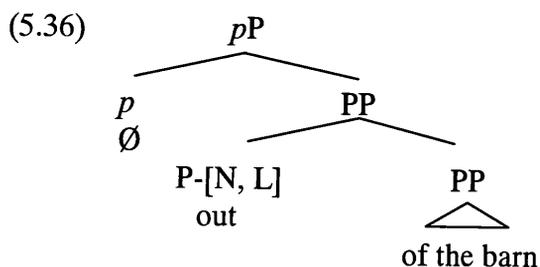
(5.35) a. Down the hill rolled the baby carriage.

b. Into this room ran a number of boys.

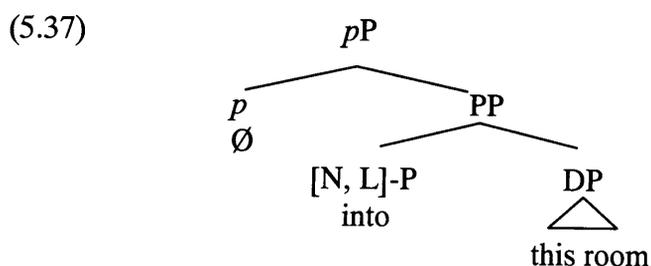
c. Out of the barn ran a horse.

Let me begin with (5.35c). Unlike *inside*, in which the locative N *side* is morphologically realized, *out* in (5.35c) is a P fused with a morphologically covert locative N. I argue that this proposal can be supported by the fact that it also takes an *of*-phrase as its complement. Thus, the structure of the PP *out of the barn* can be represented as in (5.36). Note that because the PP *out of the barn* is [+directional], it is

plausible to assume that the PP involves [+directional] *p*:



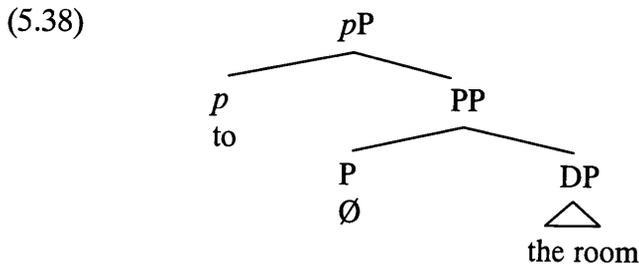
Regarding (5.35b), I propose that Ps such as *into* are also fused with locative N, although the locative N is not morphologically realized as in the case of *out*. With respect to the PP structure containing *into*, I argued in Chapter 2 that *into* is base-generated under P and does not undergo P-to-*p* movement; the morphologically covert [+directional] *p* is in the structure and it licenses the [directional] *to* in *into*. In terms of my analysis of *out*, *into* is fused not only with *to*, but also with a null locative N head. As a result of the above lexical process, the lexical P *into* bears the categorial feature [N]. The structure of a PP headed by *into* is illustrated in (5.37):



On the basis of the above analysis, I also assume that *down* is a P fused with a morphologically covert locative N.

This subsection has shown that lexical fusion proposed in (5.27) has empirical support from Ps such as *inside* and suggested that the analysis can be extended to Ps

such as *out*, *into*, and *down*. This leads me to assume that the PPs in (5.2) headed by *to/from*, which cannot undergo movement to [Spec, T], have the following structure:



The head of the PP in (5.38) is functional *p* par excellence. This analysis is in accordance with my proposal that [+directional] prepositions/postpositions are functional *p*. Further, the lexical P is neither morphologically realized nor fused with locative N. Thus, the unavailability of locative inversion for the PPs in (5.2) can be attributed to the lack of the categorial feature [N] in P.

5.3.2. Inserting morphologically overt P with the categorial feature [N]

In what follows, I will introduce facts that will provide further empirical support for my proposal that lexical P fused with the categorial feature [N] can delete the EPP-feature of T.

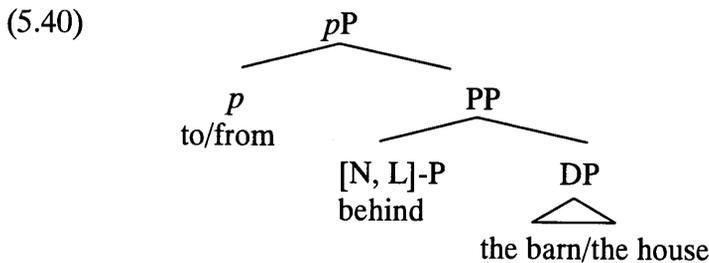
It can be predicted that, if we add a lexical P fused with locative N to the PPs in (5.2), locative inversion should be more acceptable. This prediction is borne out.

Consider (5.39):

- (5.39) a. ?To behind the barn ran a number of boys.
 b. From behind the barn ran a woman.

c. ?To behind the house appears to have walked an alcoholic.

It has already been established in Chapter 2 that (5.40) illustrates the structure of the PPs in (5.39), in which the lexical P *behind* takes the DP complement and projects, forming the lower PP, and the functional *p to/from* takes this PP and projects a *pP*:



Behind is a lexical P and projects its maximal projection. However, the question remains whether it is fused with locative N as in the case of *inside*.

Although it is not syntactic, there is evidence available from its etymology that *behind* is a fused P. According to the *OED*, *behind* is a compound word with the prepositional prefix *be-* ‘at/near/towards the front’ and the root *-hind* ‘back’.²² The *OED* further notes that the etymological form *-hind* is not attested and that this root form must have originated from the shortening of some form with a suffix, possibly, either an adverb or an adjective. In any case, this suggests that *-hind* carries with it the categorial feature [N].

Returning to the facts in (5.39), inserting *behind*, which bears the categorial feature [N], into the PPs in (5.2) results in improved judgments. Therefore, I claim

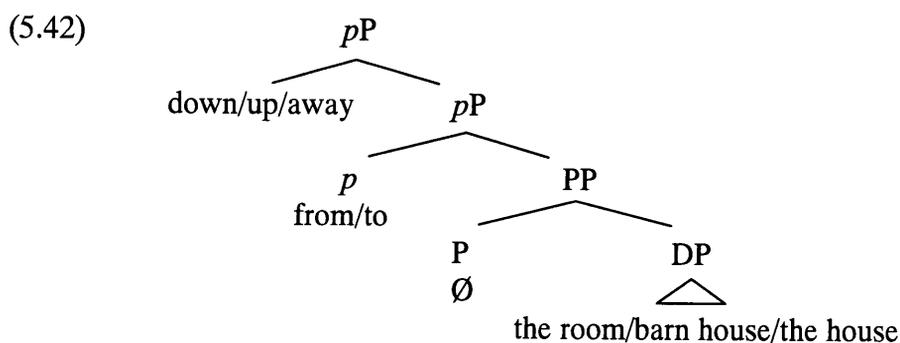
²² According to the *OED*, the Old English form is *bi-hind-an*. Note that Gothic *hind-ana* ‘from behind’ consists of the root *hind* and the adverbial suffix *-ana* ‘from’. As for the prefix *be-* (/bi/), after a vowel shift, the stressed form has become *by* in Modern English, and the unstressed form remains a prefix.

that this is because the EPP-feature of T can be deleted by the categorial feature [N].²³

Adding another type of lexical P, which is fused with morphologically covert locative N, also improves the unacceptable derivations in (5.2). First of all, consider (5.41), in which (5.2) improves with the insertion of lexical Ps such as *down*, *up* and *away*:

- (5.41) a. Up/down to the room ran a number of boys.
 b. Away from the barn ran a woman.
 c. Up/down to the house appears to have walked an alcoholic.

It follows from the above discussion of fused Ps and the facts observed so far that the inserted Ps in (5.41) bear the categorial feature [N]. However, (5.41) differs from (5.39) in that the inserted Ps *down*, *up* and *away* precede *from* and *to*. I have argued in Chapter 3 that these Ps are adjuncts. (5.42) illustrates the structure of the PPs in (5.41):



²³ A question naturally arises concerning the configuration for deleting the EPP-feature. There seem to be at least two options. First, the categorial feature [N] of *behind* can delete the EPP-feature of T by feature percolation. Second, *behind* incorporates into *p* in syntax, although *behind* and *to/from* do not form a single morphological unit. I leave this matter as an open question.

The grammaticality of the sentences in (5.41) with the insertion of lexical Ps in the adjoined position of *pP* can be accounted for as follows. As has been argued above, the [-interpretable] EPP-feature of T is sensitive to categorial specification of the overt syntactic object in order for it to be deleted. In (5.41), the lexical P with [N] in the adjoined position is visible to the EPP-feature of T, and the entire PP is subject to movement to [Spec, T], which successfully deletes the EPP-feature of T, hence the grammaticality of (5.41).²⁴

5.3.3. Concluding remarks on 5.3.

I have argued in this section that the contrast between (5.1) and (5.2) is rooted in the feature-specification of the locational P. I have shown (i) that lexical Ps are of two kinds in English: (a) those fused with locational N as in the case of (5.1) and (b) those without locative N as in (5.2), and (ii) that the EPP-feature of T is category-specific and can only be deleted by the categorial feature [D]/[N]. Questions remain as to how other [-interpretable] features are deleted in the course of deriving the locative inversion construction, to which I turn in the following section.

5.4. Remaining issues

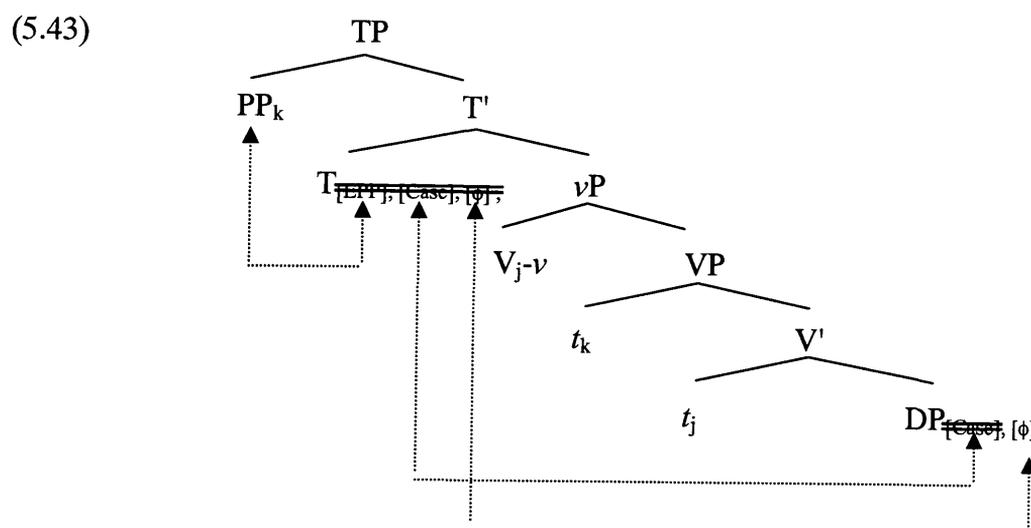
This section will discuss two remaining issues with regard to locative inversion in English. The first issue concerns how [-interpretable] features other than an EPP-feature of T are deleted in locative inversion in English. I will also provide an analysis of how this feature-deletion is related to control facts. Second, I will provide

²⁴ One possible way in which the categorial feature [N] of the adjunct P becomes visible to the EPP-feature of T is that the syntax does not distinguish between the adjunct position and the Spec position at least as far as feature-deletion is concerned (see Saito and Fukui 1999 for their argument that Spec and the adjunct (modifier) position are both adjoined positions).

a short note on the unaccusative analysis, which I have so far set aside in my discussion.

5.4.1. Deletion of other [-interpretable] features and control

I propose that the [-interpretable] features that remain to be deleted in locative inversion in English are deleted in syntax in situ. The deletion of the [-interpretable] features proceeds as follows. The [-interpretable] features of T are deleted against the features of the DP in situ. As has been already proposed above, the EPP-feature of T can only be deleted by the overt syntactic category with [D]/[N] occupying its Spec position.



Chomsky (1995), Collins (1997) and Ura (1996) argue that the [-interpretable] features of the theme DP, V and T are deleted at LF and that LF movement of the formal properties of the theme DP has effects on control. Consider the facts in (5.44):

- (5.44) a. A woman_k stood on the corner [without PRO_k being near another woman].
 b. *On the corner_k stood a woman [without PRO_k being another woman].
 c. On the corner stood a woman_k [without PRO_k being near another woman].

As illustrated in (5.44), it is the theme DP that has the ability to control even in the locative inversion sentence as in (5.44c). Note that this parallels the facts shown in (5.45) (the (a) sentence taken from Chomsky (1995:274)):

- (5.45) a. There arrived three men (last night) without PRO identifying themselves.
 b. Three men arrived (last night) without PRO identifying themselves.
 (cf. *I met three men (last night) without PRO identifying themselves.)

Chomsky (1995:272-276) argues that the theme DP displays the control properties in (5.45a) because its formal features move to the subject position, which enables the theme DP to assume the ability to control. Chomsky shows that this analysis has desirable consequences. He observes that in Italian, the morphologically covert expletive in the subject position shares the relevant properties of the expletive subject in English *there*. Thus, the theme DP in Italian displays the same control properties as those in English (Chomsky 1995:274):²⁵

- (5.46) sono entrati tre uomini senza identificarsi
 are entered three men without identifying:REFL
 ‘three men entered without identifying themselves’

²⁵ Chomsky (1995:274) claims that *tre uomini* ‘three men’ in this example occupies the object position since *ne*-extraction is possible as shown below:

- (i) ne sono entrati tre *t* senza dire una parola
 of.them are entered three without saying anything
 ‘of-them three entered without saying anything’

In contrast to English and Italian, French has the full NP expletive. It deletes all features of the matrix T and prevents the formal properties of the theme DP from raising to the subject position at LF. Therefore, the theme DP in the expletive construction does not assume the ability to control:

- (5.47) *il est entré trois hommes sans s'annoncer
there is entered three men without REFL-identifying
'three men entered without identifying themselves'

The LF raising analysis can be captured under my analysis such that the feature-deletion relation between the T and the theme DP, which is established in syntax, plays a role in enabling the theme DP to control.²⁶

As mentioned earlier in this chapter, Chicheŵa displays subject-verb agreement between the preposed locative phrase and the V (Bresnan and Kanerva 1989). Given the correlation between the feature-deletion relation and the ability to control, I argue that control facts in this language can be accounted for as follows.

Bresnan and Kanerva (1989) observe that in Chicheŵa, a DP/NP can be modified by an infinitival verb form much like the English participle. They note that in this attributive VP, every argument of the V may be expressed except for the subject and that the θ -role assigned to the missing subject is attributed to the controller, i.e., the modified DP/NP. Consider (5.48), in which the subjects of the respective examples are missing and the respective θ -roles assigned to the missing subjects are attributed to the

²⁶ See Watanabe (2000) for an analysis of binding as a result of feature-copying in syntax in place of an LF-raising analysis.

modified DPs/NPs (Bresnan and Kanerva 1989:13). Notice that the V and the modified DP/NP display agreement in gender class (i.e., 1 and 10, respectively).²⁷

- (5.48) a. m-sodzi [VP w-ó-ík-á nsómbá pa-m-pando]
 1-fisherman 1-ASC.INF-put-IND 10.fish 16-3-chair
 ‘a fisherman putting fish on a chair’
- b. nsómbá [VP z-ó-ík-ídw-á pá-m-pando]
 10.fish 10-ASC.INF-put-PASS-IND 16-3-chair
 ‘fish being put on a chair’

Bresnan and Kanerva (1989) further note that inverted Vs appear in the attributive VP construction. They observe that in (5.49), the locative phrase is missing from the attributive VP and that the locative θ -role can be attributed to the controller, with which the V exhibits agreement in gender class:²⁸

²⁷ The presence of agreement between the attributive VP and the modified DP/NP suggests that there may be a functional head that selects the VP in question and provides a domain of feature-deletion in the sense that subject-verb agreement is mediated by T.

²⁸ Contrast the facts in Chicheŵa with the following facts in English (Bresnan 1994:95):

- (i) a. On the corner stood a woman [\emptyset standing near another woman].
 (meaning: ‘on the corner stood a woman who was standing near another woman’)
 b. *She stood on the corner [\emptyset standing another woman].
 (meaning: ‘she stood on the corner on which was standing another woman’)

In (ia), the θ -role of the subject of the V is attributed to or predicated of the controller DP/NP. However, the equivalent to (5.49) is not available in English as illustrated in (ib).

(5.49) a. m-nkhalangó [VP m-ó-khál-á mi-kângo]



18-9.forest 18-ASC.INF-live-IND 4-lion

‘in the forest where there live lions’

b. ku-m-sáná kw-akó kw-á-kú-kúlu-ko [VP k-ó-tér-á njûchi]



17-3-back 17-your 17-ASC-17-big-17 there 17-ASC.INF-land-IND 10 bee

‘on that big back of yours where there land bees’

The control facts observed in (5.49) can be captured in terms of the feature-deletion relation. More specifically, the ϕ -features of the V and those of the locative phrases in (5.49) are deleted.²⁹ This establishes the feature-deletion relation between the V and the locative phrase, which results in the missing subject being attributed to the controller, i.e., the locational phrase.

Ura (1996:412), citing Polinsky (1993:346), notes that the theme DP in the locative inversion construction in Kinyarwanda loses its ability (i) to induce agreement and (ii) to control. In (5.50), the (a) sentence shows that the theme DP is in the subject position and induces agreement on the V and furthermore, it can control PRO in the infinitival clause, while the (b) sentence indicates that the theme DP is in the postverbal position, does not induce agreement on the V and loses the ability to control:

²⁹ More precisely, feature-deletion is mediated by some functional head.

- (5.50) a. **Aba-shiytsi_k** ba-ra-siinziir-a muri iyi inzu [PRO_k ku-guna mbere
 2-guest 2-PROG-sleep-IMPF in this house INF-rest before PRP
 y’umurimo]
 work
 ‘The guests_k are sleeping in this house [PRO_k to get some rest].’
- b. *Muri iyi inzu ha-ra-siinziir-a **aba-shiytsi_k** [PRO_k ku-guna].
 in this house 16-PROG-sleep-INPF 2-guest INF-rest
 ‘In this house are sleeping guests_k [PRO_k to get some rest].’

Following Polinsky (1993), Ura (1996:413) argues that the above facts show the loss of subjecthood of the theme DP in the (b) sentence. I maintain that they further indicate that the loss of the feature-deletion relation leads to the loss of the ability to control.

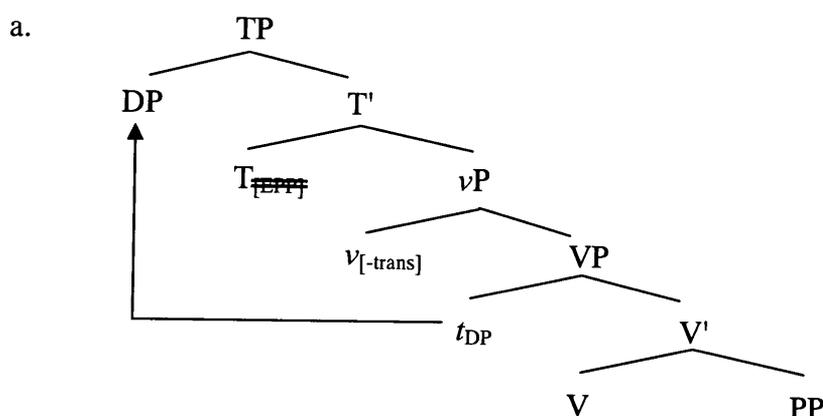
In this subsection, I have examined the ways in which [-interpretable] features are deleted in the locative inversion construction. Further, I have shown that there is a correlation between the kind of feature-deletion relation established in syntax and the ability to control. More specifically, I have provided a non-LF-raising account for the control properties of the theme DP observed in (5.44) and (5.45) in the locative inversion construction and the expletive construction, respectively, in that it is the feature-deletion relation established between T and the theme DP in syntax that enables the theme DP to control as in (5.44c) and (5.45a).

5.4.2. The unaccusative analysis

In concluding this section, it is necessary to provide a short note on the issue that I have simply assumed so far, namely, the unaccusative analysis. At the center of the

investigation of locative inversion is an issue as to what type(s) of verb allow(s) locative inversion. Collins (1997) assumes the unaccusative analysis, following Bresnan and Kanerva (1989), Coopmans (1989) and Hoekstra and Mulder (1990).³⁰ This analysis is crucial for his analysis, in that in the unaccusative verb construction, both the theme DP and the locative PP are in the same minimal domain of the verb (Ura 1996:416, Collins 1997:27): [_{νP} *v*_[-trans] [_{VP} DP [_{V'} V PP]]]. This means that the EPP-feature of T can be satisfied by either the DP or the PP moving to [Spec, T] as illustrated in (5.51a) and (5.51b), respectively:

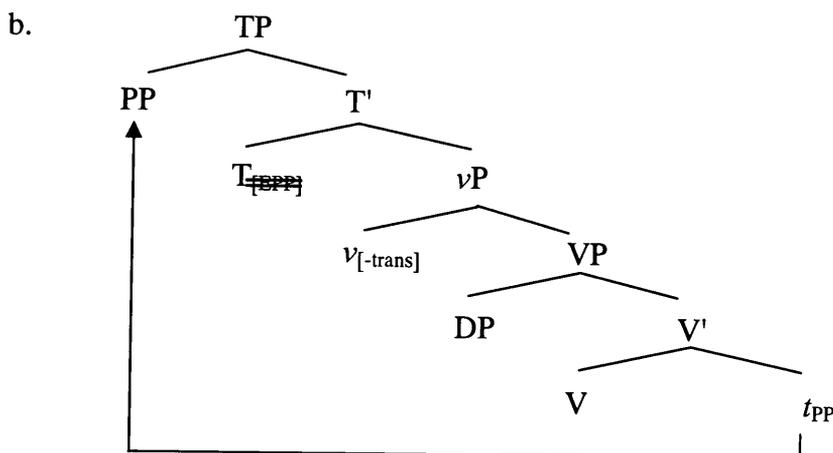
(5.51)



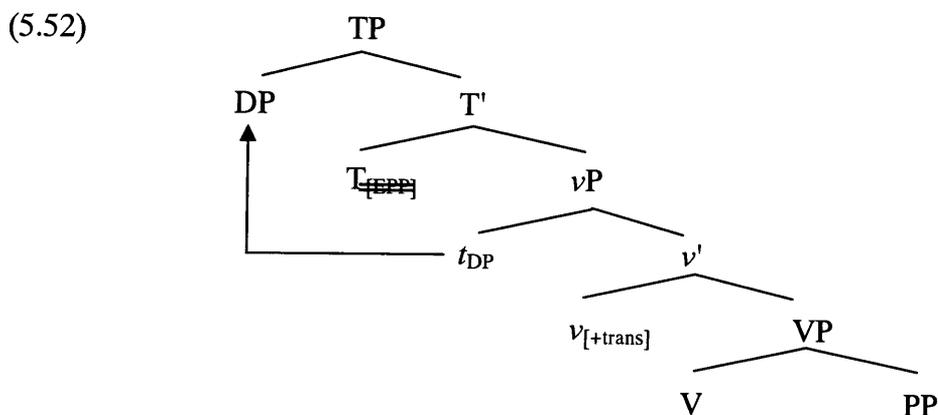
³⁰ In contrast to the unaccusative analysis, Levin and Rappaport and Hovav (1995) argue that the set of verbs that participate in the locative inversion construction in English extends beyond unaccusative verbs (Levin and Rappaport Hovav 1995:256-257):

- (i)
- a. Opposite the landing-place stood half-a-dozen donkeys with saddles on their backs and bunches of flowers in their bridles, and around them **chattered** and **sang** as many girls with the silver spadella stuck through their black tresses and a red handkerchief tied across their shoulders.
 - b. Inside **swam** fish from an iridescent spectrum of colors ...

Therefore, they claim that the construction does not serve as an unaccusative diagnostic. Instead, they propose a discourse-based treatment of the verbs that participate in locative inversion, namely, information lightness.



In contrast, the transitive verb construction precludes locative inversion, in that the subject is introduced in [Spec, v], while the PP is in VP, e.g., [_{vP} DP [_{v'} v[+trans] [_{VP} V PP]]. That is, since the subject is closer to T, it is only the subject that can move to [Spec, T] as illustrated in (5.52):



According to the above unaccusative analysis, the seemingly unergative Vs in (5.1) that allow locative inversion are in fact unaccusative Vs. For example, the V *ran* in (5.1a) and (5.1b) is not unergative, but unaccusative. This is in line with the earlier proposal about the V *rijden* ‘drive’ in Dutch, on which I will elaborate in what follows.

As in the case of Italian (Burzio 1986), the Dutch unergative V selects the

auxiliary V *hebben* ‘have’ and the unaccusative V the auxiliary V *zijn* ‘be’. (cf. Hoekstra 1984). Consider the following examples taken from Coopmans (1989:741):

(5.53) a. Jan heeft/*is getelefoneerd.

‘Jan has telephoned.’

b. Jan *heeft/is gearriveerd.

‘Jan has arrived.’

Coopmans (1989:741) observes that the Vs such as *lopen*, *wandelen* ‘walk’, *rennen* ‘run’ and *vliegen* ‘fly’ are unergative in that they take the auxiliary *hebben* ‘have’ as in the following examples:

(5.54) a. Jan heeft/*is gewandeld/gelopen.

‘Jan has walked.’

b. Jan heeft/*is gerend.

‘Jan has run.’

c. Jan heeft/*is gevlogen.

‘Jan has flown.’

Crucially, he also observes that the same verbs can take the auxiliary V *zijn* ‘be’ as well as *hebben* ‘have’ when they co-occur with directional PPs as follows:

(5.55) a. Jan heeft/is naar Engeland gewandeld/gelopen.

‘Jan has walked to England.’

b. Jan heeft/is naar Engeland gerend.

‘Jan has run to England.’

c. Jan heeft/is naar Engeland gevlogen.

‘Jan has flown to England.’

In addition to the fact observed in (5.55), Coopmans (1989:741) notes that there is a slight difference in meaning between the *hebben* sentences and the *zijn* sentences. That is, the *hebben* sentences denote an activity in which *Jan* is engaged, while the *zijn* sentences denote a change of position, to which *Jan* has moved. This contrast in meaning can be expressed as follows: the former are [+process] and [-change], which characterize transitive verbs (including unergative V_s in the sense of Chomsky (1995)), whereas the latter are [-process] and [+change], i.e., defining aspectual properties of unaccusative V_s (Vendler 1967, Dowty 1979, Verkuyl 1993).

The above facts suggest that it may be plausible to assume that unergative V_s in English such as *run* appearing in the locative inversion construction are unaccusative. There is one piece of evidence for this analysis. Coopmans (1989:744) notes that *run* and *walk* taking a directional PP can appear in the *there*-construction, in which only canonical unaccusative V_s are allowed. The following facts support the unaccusativity of those V_s:

(5.56) a. ??There walked a man into the room.

b. There ran down the street two joggers.

Note first that (5.56a) can improve when the word order of the postverbal

subject and the PP is reversed as in (5.56b) (Coopmans 1989:744). Second, (5.56a) with the above order is much better than other non-motional unergative Vs appearing in the same construction, which seems to support the unaccusative analysis of the verb *walk*.³¹

- (5.57) a. *There played a boy in the room.
 b. *There played in the room a boy.

In this short note on the unaccusative analysis, I have supported the view that only unaccusative verbs allow locative inversion.

5.5. Concluding remarks on Chapter 5

This chapter has shown that the internal structure of PP proposed in this thesis has effects on the external syntax of PP with respect to locative inversion. I have proposed

³¹ I do not discuss the ways in which the unergative-unaccusative shift takes place in the lexicon in this chapter. With regard to this topic, refer to Pustejovsky (1995) for his analysis of such shifts in a generative lexicon. On the basis of Pustejovsky's study, Nakajima (2001) proposes the 'state subevent condition', which defines the type of Vs that can occur in the locative inversion construction in English. The condition requires a given V to involve the final subevent structure designating a state. Nakajima argues that in the Japanese locative construction, the state subevent in the event structure is morphologically realized. He claims that (i) represents the locative construction in Japanese:

- (i) Komen-ni-wa abura-ga hirogat-te-iru. (Nakajima 2001:57)
 surface.of.the.lake-LOC-TOP oil-NOM spread-GER-be
 'Over the surface of the lake is spreading oil.'

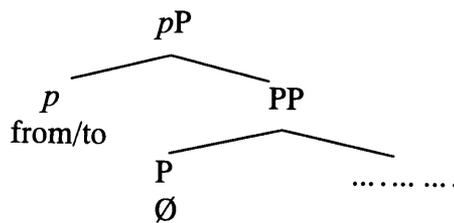
He maintains that the construction is most felicitous with unaccusative Vs. Furthermore, he argues that the verbal affix *iru* 'be' is an existential affix. He observes that with this affix, unergative Vs can participate in the locative construction. Consider (ii):

- (ii) Kouen-ni-wa takusan-no kodomotach-ga ason-de-iru. (Nakajima 2001:52)
 park-LOC-TOP many children-NOM play-GER-be
 'In the park are playing many children.'

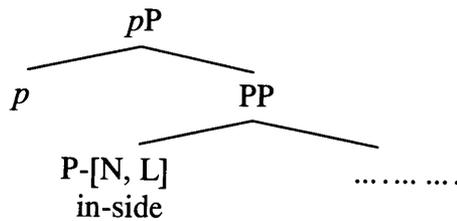
Nakajima also observes that the unergative V followed by the existential affix in (ii) mainly denotes existence, not progression.

that lexical Ps are of three kinds in English: (i) null P with no fused locative N as illustrated in (5.58); (ii) overt P with overt locative N as in (5.59); (iii) overt P with null locative N as in (5.60):

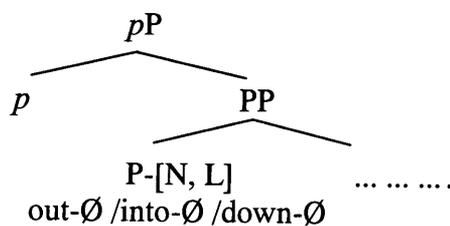
(5.58) null P + no fused locative N



(5.59) overt P + overt locative N



(5.60) overt P + null locative N



Obviously, there are gaps in the above paradigm. However, I will not pursue this issue

any further in this chapter.³²

I have also proposed that the EPP-feature of T is category sensitive.³³ I have shown that these two proposals can account for the contrast observed between (5.1) and (5.2). That is, the lexical Ps in (5.1) bear the categorial feature [N], which deletes the EPP-feature of T when moving to [Spec, T] in syntax. On the other hand, the morphologically covert lexical Ps in (5.2) are not fused with locative N, which fails to delete the EPP-feature of T.

³² R. Borsley (personal communication) has pointed out that in his dialect (5.2b) is not degraded. I simply assume that *from*-phrase in some dialects of English may have a different internal structure from that of my American informants, which represents one of the gaps in the paradigm of lexical P. That is to say, the *from*-phrase contains the morphologically covert lexical P fused with the locative N that is also morphologically covert. Or, *from* is a fused form of three different heads, namely, *p*, P and [N, L] as in the case of *into*.

³³ Note that I have argued against Collins' proposal of the two possibilities in which the EPP-feature of T in English can be deleted by the preposed PP in locative inversion, which I have introduced earlier. First, I have shown that the EPP-feature of T is category-specific, which is in accordance to his first possibility. However, my analysis departs from his in that it is not the categorial feature [D] of the DP complement of P that deletes the EPP-feature of T, as has been argued in this chapter. Second, it is simply not category-neutral as Collins has proposed as the second possibility. If it is so, then the contrast observed between (5.1) and (5.2) would need a new line of analysis.

CONCLUDING REMARKS

As I stated at the outset of Chapter 1, the purpose of this thesis has been to examine the properties of spatial Ps under a minimalist analysis. The focus has been placed on the properties and structures of Ps and their effects on the syntax of PP both internally and externally.

Chapter 1 provided a brief sketch of the theoretical issues relevant to the present thesis: (i) two syntactic operations Merge and Move, (ii) the ways in which they build up derivations (i.e., formation of a new category and a two-segment category) and (iii) a contrast between transitive and intransitive constructions.

In Chapter 2, I showed that three heads, i.e., functional *p*, lexical P and locative N, constitute a layered full structure of PP. I provided conceptual motivation and empirical support for functional *p* as a locus of agreement with its complement. Further, I maintained that bare N heads found in PP are indeed bare and participate in the layered structure as the lowest head.

Chapter 2 dealt with one of the two outcomes of Merge, i.e., forming a new category, whilst Chapter 3 concerns the other outcome of it, i.e., forming a two-segment category. I showed that there are three types of P-P-DP combination in English and that in one of the three types (e.g., *over near the couch*), the first preposition of the combination, which is an intransitive P, displays behaviors that indicate that it is an adjunct to PP. Further, the intransitive P that appears in this type of P-P-DP combination has a phrasal status. Given that such intransitive Ps are [+directional] and that PPs can have a layered internal structure, I suggested that they are selected by a

morphologically covert functional *p* that projects a *pP*. I argued that the proposed analysis has crosslinguistic support from Dutch intransitive Ps, which appear in one type of P-P-DP combination, and Hungarian non-inflecting postpositions. Crucially, both of them exhibit optionality and phrasal status just like intransitive Ps in English that adjoin to *pP/PP*.

In Chapters 4 and 5, I examined the interplay between the proposed PP internal structure and the external syntax of PP, focusing on P-to-V incorporation and locative inversion, respectively.

Chapter 4 provided a minimalist analysis of P-to-V incorporation. I argued that head-to-head movement can be motivated by [-interpretable] features under a feature-motivated movement analysis. I showed that the layered structure of PP can account for the P-to-V incorporation facts in Dutch. Further, I demonstrated that the P-to-V incorporation analysis can be extended to account for instances of P-to-V incorporation in Japanese. I proposed that there is a morphologically covert postposition in Japanese, which is affixal and undergoes P-to-V incorporation. I provided empirical evidence for three crucial aspects of my analysis: (i) transitivity of P-V complex; (ii) subcategorization; (iii) secondary predication. Finally, I argued that one of the two ways in which Ps can be stranded in English involves P-to-V incorporation. That is, the strict adjacency requirement for P-stranding derived by the pseudo passive indicates that P is actually incorporated into V. On the other hand, P-stranding derived by WH-movement is not subject to the same requirement. I argued on the basis of Van Riemsdijk's (1978) study of movement through the Spec of PP that WH-phrases in English can raise out of PP through the same position, and I showed that this is a case of "real" P-stranding.

Chapter 5 studied locative inversion in connection with the layered PP internal structure. I proposed (i) that T bears an [-interpretable] EPP-feature that is category-specific; the feature in question can only be deleted by overt movement of a category that has a categorial feature [N]/[D] and (ii) that PPs that can undergo locative inversion contain lexical P fused with locative N that can be either morphologically overt or covert, while PPs that cannot do not contain such a lexical P. The proposed analysis has empirical support: the insertion of a lexical P fused with locative N into the PP that cannot undergo P-to-V incorporation results in a grammatically improved judgment. I also dealt with control facts and the unaccusative analysis.

As I mentioned at the outset of this thesis, the principal goal was to investigate the structural properties of spatial Ps. I have analyzed the properties of Ps and the syntax of PP in only a handful of languages. It remains to be seen what crosslinguistic variation there is among other languages of the world. I will leave this matter to future research.

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