Prepositions, Postpositions, Circumpositions and Particles:

The Structure of Dutch PPs
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0.1 Introduction

The substantial broadening of the empirical basis of syntactic theory in the eighties has resulted in a better understanding of the general architecture of syntactic structures and syntactic theory.[*] Syntactic structures are large structures, assembled out of small simple building blocks with a unique structure design. With large structures and simple design, the hypothesis that structural variation between languages is minimal or non-existent can be reasonably entertained. Linguistic variation can be seen as the result of different movement options being exercised (which constituents move, how "big" are these constituents. Kayne 1995, Koopman 1994, Koopman 1996, Sportiche 1995, Chomsky, 1995) operating on fixed and crosslinguistically invariant structural skeletons (Sportiche 1995, Koopman 1996, Cinque 1997). Seriously testing this hypothesis, however, presupposes a good understanding of the invariant skeletal structure, which all to is lacking.

In this paper, I explore the architecture of PPs, a quite modest syntactic category, with as ultimate goal a better understanding of the structure of Ps universally. I will do so not by analyzing patterns of crosslinguistic variation and drawing conclusions based on these patterns, but rather by attempting to provide a uniform analysis of the syntax of Ps in Dutch. As is well-known from the extensive literature on this subject, starting with the seminal work of Van Riemsdijk (1978), the syntax of Ps in Dutch is extremely rich. It thus lends itself well to this enterprise. There are many different types of Ps (prepositions, postpositions, particles and circumpositions (complex Ps). The distribution of modifiers and pronouns within the PP is intricate, providing a good starting point for determining the internal structure of PPs. Different overt movement processes apply to Ps and PPs: movement out of PPs resulting in P-stranding, head movement of Ps (incorporation), pied-piping of PPs, scrambling of PPs, and PP over V. Taken together these should allow to form a solid picture of the structure of PPs, and how everything hangs together. The development of a unified analysis for Dutch Ps should further our understanding of the necessary properties of the underlying invariant structure, which by hypothesis, underlies the syntax of all human languages.

0.2 Expectations and theoretical assumptions

The structure of PPs will be established by using as analytical tools those aspects of the theory that are relatively well understood, in particular the basic form of syntactic structures and movement theory. I depart from much current syntactic practice, which imposes additional methodological restrictions on possible analyses. In accordance with my recent research, (Koopman 1996, Koopman and Szabolci 1998), I avoid explanations using Economy, and rely on purely mechanical solutions instead.

Since syntactic structures are binary branching (Kayne 1984), Ps minimally project a PP projection, with a possible Spec and a complement position. Usually PP is taken to be the maximal projection of P as well for the purpose of external syntax. However, just as work on

the internal structure of clauses[1] and DPs[2] has established that the lexical projections of V and N, VP and NP, are dominated by a number of functional categories, PPs might be expected to be dominated by functional categories as well. This is directly confirmed by existence of inflected Ps[3] in many languages, showing that the extended projection of PP can contain at least an Agr projection.

Different word orders are derived by movement of different constituents from a common skeleton. Given the essential role of movement, it is important to spell out the theory of movement adopted in this paper. This paper assumes strict locality of movement and domain extension:

(1)   a.   XP movement proceeds through the local Spec[4]

        b.   Head movement is strictly local[5]

        c.   Head movement extends the domain of movement turning the Spec position of the landing site into a locally accessible Spec[6]

Head movement makes direct movement to some higher Spec position possible

1. Dutch PPs

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[1]Pollock 1989, Chomsky 1991, Sportiche 1995, Cinque 1997 and many others.

[2]Abney 1987, Carstens 1991, Longobardi 1994, Ritter 1991, Szabolcsi 1987, 1994, Valois 1991, among others.

[3]Interestingly, though, there always appear to be two classes of Ps: inflected Ps and uninflected Ps.

[4]See in particular, Sportiche, 1990, 1995, 1998.

[5]In particular, I adopt the theory of Head movement outlined in Koopman 1994, 1995).

[6]See Chomsky, 1995. Precursors to domain extension are the Head Constraint of Van Riemsdijk (1978), and the Government Transparency Corollary of Baker (1988).

1.1 The problem.

Dutch superficially has prepositions, postpositions, circumpositions (which are made up of a preposition and a postposition or a postpositional element), and particles:

(2)　　　a.　　*op* de tafel　　　　　　　*Preposition*

　　　　　　　on the table

　　　　b.　　de berg　　*op*　　　　　　*Postposition*

　　　　　　　the mountain on

　　　　　　　'onto/up the mountain'

　　　　c.　　*op* iemand *af* komen　　　*Preposition and Postposition*

　　　　　　　on someone from come

　　　　　　　'come towards someone'

　　　　d.　　Ik heb jou *op*gebeld　　　　　*Particle*

　　　　　　　I have you upcalled

　　　　　　　'I called you up.'

Since these all look alike, the null hypothesis is that prepositions, postpositions and particles belong to one and the same syntactic category P (Jackendoff 1973, Van Riemsdijk 1978, and Emonds 1976, 1985). All Ps, including semantically empty Ps[7], therefore minimally project PP. This is what all Ps have in common. However, each of the PP projections in (2) behaves differently with respect to the internal syntax, i.e. the distribution of PP internal material, and the external syntax, i.e. with respect to *pied-piping*, i.e. movement of a PP containing a wh-phrase,

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[7]Semantically empty Ps are basically used to create X-bar structure (or shell structures), in the same way as semantically empty Vs can be used to create subordinated structures (cf. the cases of indirect complementation discussed in Koopman 1984, and Koopman and Sportiche 1989.

PP-over-V,[8] i.e. the possibility for a PP to occur to the right of the verbal complex, *P-stranding* and *P-incorporation.*

The following table summarizes the complex distribution in anticipation of the sections below. As this table shows, it is necessary to distinguish between non-directional and directional PPs.

Table 1.

	-Directional	+Directional			+/- directional
	PrepPP	PrepPP	PostPP	CircumP	PartP
Pied-piping	✓	✓	*	*	*
PP over V	✓	*	*	*	*

P stranding

by R-pronoun	✓	✓	✓	✓	*
by DP	*	*	✓	*	✓
by PP	*	*	NA	✓	NA

P incorporation

P-incorporation	*	*	✓	✓	✓

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[8] This paper presupposes a head initial VP for Dutch (following Zwart 1993, Koster 1993, and many others. PP-over-V therefore cannot be a rightward movement rule. I continue to use the term PP over V as a descriptive term to talk about PPs that can occur to the right of the verbal complex. For an interesting account of restrictions on PP over V, see Barbiers 1995. His proposal is incompatible with the proposal in this paper.

Pied piping under wh-movement, or scrambling, is possible for (non-idiomatic) prepositional phrases, but basically excluded for postpositional and particle phrases. Pied-pipable PrepPs can in principle also occur in the PP over V position, except for directional (prepositional) PPs. P stranding reveals asymmetries: Dutch Preps can be stranded in the right structural configuration, but only a class of morphologically distinguished elements, the so called [+R]-pronouns, may escape from the projection of a preposition. DPs and PPs can escape the projection of postpositions and particles in the right configuration. P incorporation to V reveals an asymmetry as well. Given the right structural environment, Dutch postpositions and particles can incorporate to V but prepositions cannot.

The analytical problems that arise are complex, as the table above shows. How should one account for the head initial or head final character of the respective projections (i.e. this is a problem of the internal structure), how should one account for the distributional properties of the different parts of the PP (the complement of P, the P head etc), and for their external syntactic distribution (as being able to undergo syntactic movement or not)? I will develop a unified account for the different types of Ps, which will all be argued to project head initial structures, in accordance with Kayne 1994. In other words, the orientation of the basic building block is fixed. I will establish that Prepositional PPs contain a functional category *Place* as well as two other functional projections. Postpositional phrases combine a functional projection *Path* with some projection of *Place*. This structure, motivated on purely syntactic grounds, mirrors Jackendoff's (1990) conceptual argument structures for PPs quite closely. Different word orders fall out from independently motivated movements operating within the extended projection of P. The external syntactic distribution follows from the amount of functional structure present within the PP. PPs differ in the same way as sentential complements do, resulting in CP, IP or VP complements. Prepositional PPs will be shown to be parallel to full CPs, directional Ps to IPs and PartPs to bare VPs.

2. Non-directional Prepositional Phrases.

The analysis starts with non-directional prepositional phrases: of all PP projections, their properties are probably best understood.[9] The internal structure of prepositional phrases is established in the sections below, based on locative Ps. Each structural level is motivated, and the entire structure is summarized in (45) (section 2.4). 3.1.3.1 discusses how this structure accounts for the external distribution of prepositional PPs.

2.1 R-pronouns

While DP objects follow prepositions, inanimate pronominal objects precede. Inanimate pronouns belong to a particular morphological paradigm, which earned them the name *r-pronouns*.[10] The general locative pronouns also belong to this paradigm.

(3)   a.   **op de tafel**   op *het..   op *er

              on the table   on   it   on there

     b.   *de tafel op   *het op   **er op**

              the table on   it   on   there on

     c.   **op Jan**   **op hem**   *Jan op   *hem op

              on John   on him   *John up   *him up

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[9]The analysis of Dutch PrepPs presented below updates Van Riemsdijk's 1978 analysis and insights to a large extent.

[10]Besides the general locative pronoun *er*, this paradigm contains the demonstrative (*daar op* 'thereon'), [+wh] (*waar op* "whereon"); negative (*nergens op* "nowhere on"); and the universal quantifier (*overal op* "everywhere on") (Van Riemsdijk 1978).

d.   hij heeft **er** gewoond   (*locative pronoun*)

he has there lived

'He has lived there.'

The following analytical questions arise

(4)   a.   where is *er*

          b.   why is this position restricted to r-pronouns, and

          c.   what explains the homophony of the inanimate and locative pronoun.

2.1.1 R-pronouns are in Spec

R-pronouns show the typical behavior of elements occupying some Spec position. They are to the left of P (5), yet still within the PP, as pied-piping of PP in (6) shows.

(5)   Ik heb dat boek *daarop* gelegd

          I have that book there op put

          'I have put that book on there.'

(6)   de tafel, *waarop*   ik het boek heb gelegd, ...

          the table, whereon I the book have put

          'the table, on which I put the book'

They can undergo further movement, either to the position where other clitics occur (7a) or to Spec, CP (7b), stranding P:

(7)   a.   Ik heb *er* dat boek *op* gelegd

                I have there that book on put

                'I have put that book on it.'

        b.   *Waar* heb jij dat boek *op* gelegd

                Where have you that book on put

                'What did you put that book on?'

R-pronouns should thus be analyzed as occurring in some Spec position, as argued in Van Riemsdijk 1978, from where they may further escape. This Spec position is restricted to R-pronouns, and unable to host non-R DPs, as shown in (8) .

(8)   *deze tafel op   (versus: **daarop**)

                this table on

The ability to escape from PP correlates with the ability to reach a designated Spec position. Non-R DPs cannot strand P, in contrast to r-pronouns:

(9)   **Welke tafel* heb je dat boekje *op* gelegd

                Which table have you that book on put

                'Which table did you put the book on?'

Van Riemsdijk 1978 explains this as a locality effect. A lexical DP cannot strand P, because it cannot reach the escape hatch of the PP. This situation is comparable to the distribution of English main verb: main Vs may not invert (e.g. occur in C), because of an an intermediate landing site which is "hostile" to main Vs. We return to this issue 2.3.3 below where we propose a different account.

        So far, the data are compatible with a dual analysis of r-pronouns, either as occupying a Spec position, or, as the spelling suggests, as being incorporated to some head. However, give

the necessity of the Spec analysis, and in the absence of arguments for incorporation other than the spelling, I assume that the incorporation analysis is simply unavailable to the native speaker.

2.1.2 Which projection hosts r-pronouns?

There are three potential hosts for r-pronouns. First, they could be in the Spec of the projection containing the P. I will reject this option, since it can be shown that r-pronouns occur higher than this. Secondly, they could be in Spec, AgrP, i.e. the Case position where lexical DPs within the PP are licensed. This option will be rejected, because this position must be reserved for regular pronouns(cf 2.1.2.2) . This leaves a third option: r-pronouns move to Spec of a designated projection, which will be labeled Place.

2.1.2.1 R-pronouns are higher than Spec, PP

There is empirical evidence that r-pronouns occupy a position higher than Spec, PP. The location of the P can be further specified (van Riemsdijk 1978):

(10)   omdat ik ze *boven* in de la gelegd heb

               because I them up   in the drawer put have

               'because I have put them up in the drawer'

In this configuration the r-pronoun must precede the place specification (*boven*) (van Riemsdijk 1978):

(11)   omdat ik ze   *er*   *boven* (*er*) *in* heb gelegd

               because I them there up   in   have put

               'because I have put them up in there'

Since the r-pronoun cannot follow *boven*, it cannot be in the projection containing the P *in*. If R
-pronouns are attracted to some higher Spec position, this distribution would fall out from the

geometry of the tree. I take this as an argument for locating *er* in a projection on top of the projection containing the lexical P[11].

2.1.2.2 R pronouns are not in Spec, AgrP.

R-pronouns correspond to DP objects of P, and Spec, AgrP is thus a reasonable candidate, pointing to a hierarchical structure AgrP>P. There is evidence based on Q float within PPs that (non R) pronominal pronouns occupy this position (Koopman, 1993). Non r- pronouns follow the P, (P> Agr), but r-pronouns precede (r-pronoun>P>Agr) and are therefore not in Spec, AgrP.

I summarize the argument for Dutch. At issue is the question whether r-pronouns are in Spec, Agr or in some other Spec position, to be labeled Place below.

Floated quantifiers provide important clues of the internal organization of phrases, as the influential work of Sportiche 1988 established. A floated Q can be associated with the object of a P (it is important to read all examples below without stress on the pronoun and stress on the Q *allemaal;* lexical DPs can also strand Q, but are left out of consideration because of very interesting but ill-understood behavior):

(12)   a.   Hij heeft met jullie állemaal gepraat
              he has with   you   all   talked

        b.   Hij heeft tegen hun állemaal gestemd
              He has   against them all voted

The floated Q is within the PP, as the entire string may appear in the first position of a root clause, traditionally taken as tolerating only a single constituent:

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[11]I assume that (11) is impossible because *boven* takes a "small clause" PP, i.e. a projection of P that is smaller than the projection where r-pronouns are licensed.

(13) a. met jullie állemaal heeft hij gepraat

          with you all   has he talked

      b. tegen hun állemaal heb ik gestemd

          against them all   have I voted

There are several possibilities as to the internal constituent structure of the PP constituent *P pron Q*. The pronoun could be in Spec, QP/DP (14a), it could form a constituent with the P (14b), or it could be outside of the QP, but lower than P (14c):

(14) a. [..P [$_{QP/DP}$pron$_i$ [Q [e]$_i$..]

      b. [..[P pron] ..[Q ..]

      c. [$_{PP}$..[P [$_{XP}$ pron X [$_{QP/DP}$.. Q ..]]]..]

I will not consider (14b) seriously[12], but concentrate on (14a) versus (14c). (14a) predicts that the string *pron +accented Q* has the same distribution as the QP. This prediction is not borne

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[12]I thank an anonymous reviewer for the important observation that the Q can also be floated outside of the PP.

(i)   ik heb *met deze mensen* gisteren *allemaal* gesproken

      I have with these people yesterday all   spoken

This might support the constituent structure in (14b) if the source of the floated Q can only be within the DP. These facts remain unaccounted for in this paper, and merit further study. The text only considers floated Qs that are clearly PP internally..
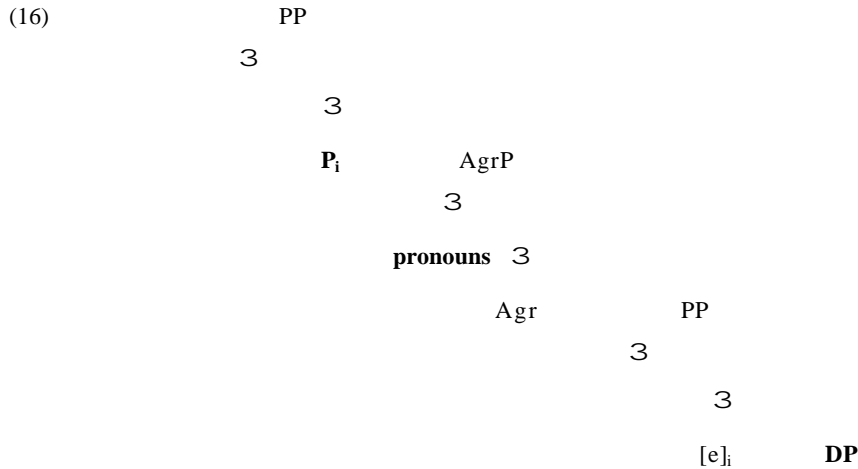
out as one can conclude from root clauses. Root clauses tolerate a single constituent before the finite verb, and allow a QP, but not a *pronoun(+accented)* Q[13]:

(15)   a.   * zij állebei/zij állemaal *zijn* gekomen

                    they both/they all   are come

       c.   * ons állebei/ons allemaal belt zij iedere dag op

                    us both   us all   calls she everyday up

The ungrammaticality of (15b) shows that the pronoun is *not* in Spec, QP, but rather outside the QP. If pronouns must obligatorily raise to Agr, as argued in Koopman 1993, the stars in (15) follow from the fact that there is no Agr position available in root initial position. In other words, whenever a weak pronoun precedes a stressed floated Q, the pronoun is in Spec Agr outside of the QP. Yet, a preposition precedes this sequence. This illiminates the structure in (14a), and fits (14c), with XP=AgrP. Since pronouns follow the lexical P, Agr must be lower than the projection where P surfaces. I will assume P has raised to some head position higher than AgrP (which I will simply call PP for convenience) , hence the structure in (16) (positions containing overt lexical items are boldfaced. I leave lexical DPs out of consideration: they could be in Spec, Agr or lower. Nothing hinges on this decision).

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[13] These examples are acceptable with focal stress on the pronoun, and no stress on the Q. I leave these cases out of consideration. There is a slight contrasts between subject and non-subjects. A remnant VP preposing analysis might be available for non-subjects (with the preposed VP containing only the object and the floated Q) rendering the judgment less clear in the latter case.

(16)
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                              PP
                            3
                               3
                          P_i        AgrP
                                   3
                            pronouns  3
                                  Agr        PP
                                           3
                                              3
                                         [e]_i        DP
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Given this structure, then, r-pronouns are not in Spec, Agr, because they *precede* the overt P.

2.1.2.3 R-pronouns and PlaceP

I have shown that r-pronouns are higher than the projection containing the lexical P, and eliminated PP and Agr as potential landing sites. I will assume that r-pronouns agree with a locative head, call it *Place*, following Jackendoff. R-pronouns are morphologically distinct and can be assumed to have a strong Place feature (a r-feature) which forces overt movement to Spec, Place[14]:

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[14]It is well-known that not all Ps allow for r-pronouns. Van Riemsdijk 1978 argued that Ps select for the features of their Specs. In my terms, Ps that disallow +R lack a lexical feature +Place and therefore fail to license the PlaceP. The distribution of the +Place feature is interesting. Ps that express notions not transparently related to location in time or space, and allow for +R, can also all be used as locative prepositionsl.

(17)

PlaceP
   3
er $_i$ 3
   Place   PP
          3
            3
        P$_k$ AgrP
               3
         [$_{DP}$e]$_i$ PP
                   3
                     3
                 [e]$_k$ [$_{DP}$e]
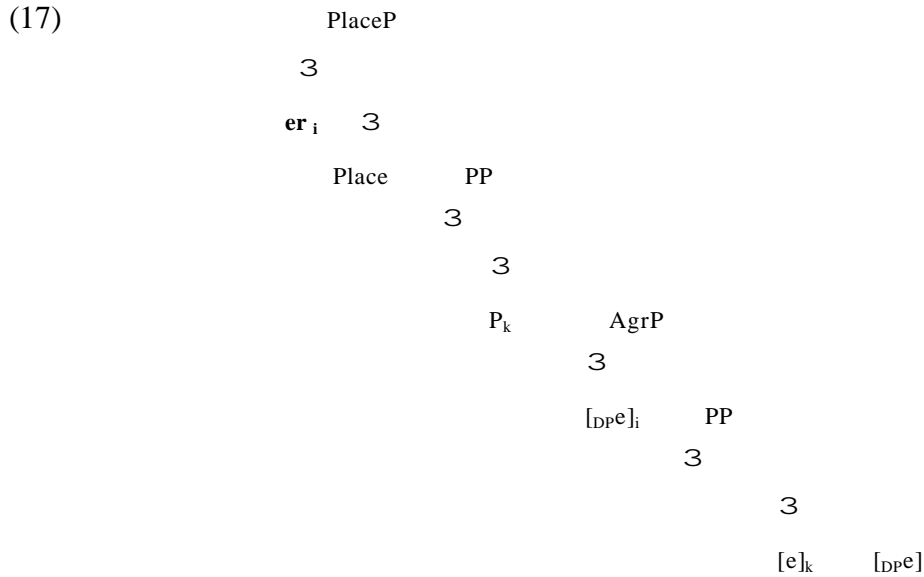
Non-R DPs do not encode Place morphologically, and this surely plays a role in why they may not move to Spec, Place. The motivation for movement depends on a property of the item that moves: r-pronouns have a feature that satisfies the Place head, DPs do not. We might therefore conclude, as I did in earlier versions of this paper, that DPs may procrastinate, but r-pronouns may not. It is unclear however, how this is consistent with Chomky's (1995) (highly desirable) proposal that movement is only driven by properties of functional heads: given overt movement to Place, Place must have a strong r-feature.

(18)   Place has a strong feature

Hence Place must attract some lexical material. But what happens then when there is a DP complement? A proposals that would make strenght of Place dependent on the moved element (Place has a strong feature when there is a r-pronoun, and a weak feature elsewhere) should of course be rejected. We can simply assume that the feature is checked by pied-piping the entire

PP to Spec, Place[15]. Since the Place head itself is silent, the effect of this movement does not yield a different word order. This yields the following configurations for the Place head:

(19a)   r-pronoun to Spec, Place

PlaceP

er $_i$

Place   PP

P$_k$ AgrP

op

[$_{DP}$e]$_i$

(19b) PP --> Spec, Place

PlaceP

PP   Place

P$_k$ AgrP

op

DP

de tafel

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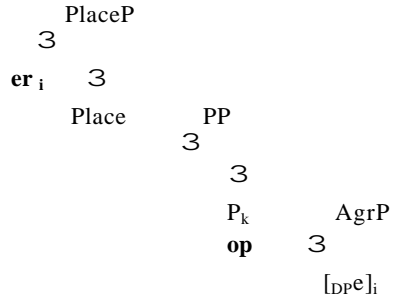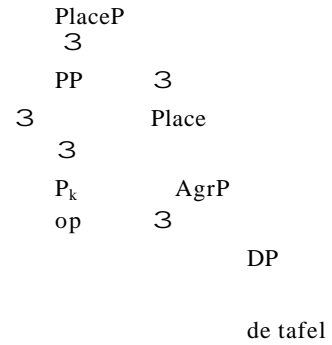
[15]For similar proposals, see Koopman (1996).

In other words, either the PP or the r-pronoun may satisfy the Place head. PP must move when it contains a regular DP, because the regular DP does not have what it takes to satisfy the Place head.[16]

The differences in derived constituent structure between (19a) and (19b) are important, because they give insight into what causes a basic P-stranding asymmetry in Dutch. P-stranding is possible with r-pronouns, but not with lexical DPs. In (19a) the r-pronoun and the P are "split" in the sense that they occur in two different projections, Place and PP. The r-pronoun is in Spec, PlaceP, a canonical extraction configuration, and can indeed extract further, yielding P-stranding. In (19b), P and DP are not split, but are contained together in Spec, Place. Extraction of PP (i.e. the string dominating P and DP) might be allowed, but extraction of DP out of Spec, PlaceP can be straightforwardly excluded as a left branch violation.

(20)

PlaceP
PP
Place
P_k
op
DP
welke tafel

DP cannnot extract: it is on a left branch (Spec, PlaceP)
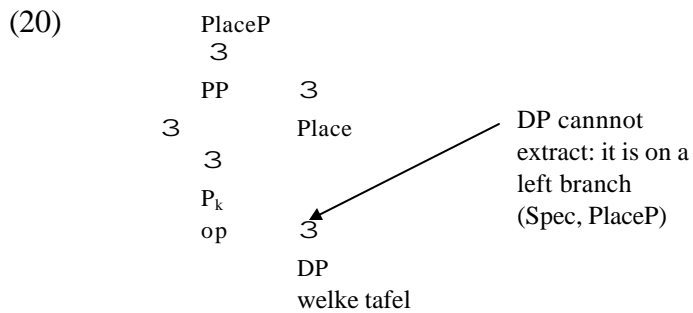
Thus, regular DPs may not strand P because the necessary separation from P cannot be created before the DP gets carried along and frozen on a left branch[17]. Pied-piping is forced.

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[16]What remains to be explained is why an r-pronoun *must* move if it is contained within a PP, i.e. what explains the illformedness of * *op er*. My inclination is to not follow the Economy line of explanation, but to pursue an account by which the r-pronoun "robs" the P of the structural property that satisfies Place

[17]What is therefore crucial for P-stranding is the separation of DP and P at an early point in the derivation. For English, this can be achieved in the way the paper describes it for r-pronouns: in English DP extracts to Spec, Agr, and the remnant PP goes to Spec, Place. DP, now separated from PP, can extract further.

Finally, this representation provides room to express the surely non accidental homophony of r-pronouns and locative pronouns. R-pronouns are in Spec, Place, where they are licensed. With P overt, prepositional *er* arises; with P covert, the locative pronoun:[18][19]

(21)

$$
\begin{array}{c}
\text{PlaceP} \\
\diagup\diagdown \\
er_i \qquad\qquad \text{Place} \\
\qquad\quad \diagup\diagdown \\
\qquad [e]_j \qquad\qquad \text{PP} \\
\qquad\qquad \diagup\diagdown \\
\qquad\qquad [e]_i \qquad\qquad \diagup\diagdown \\
\qquad\qquad\qquad\qquad \text{P} \qquad \text{DP} \\
\qquad\qquad\qquad\qquad [e]_j \quad [e]_i \\
\qquad\qquad\qquad\qquad [in]
\end{array}
$$
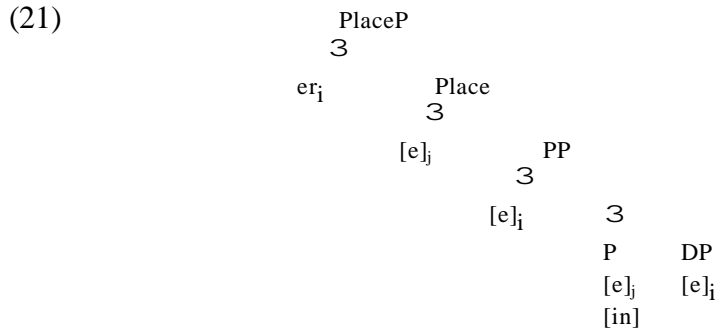
In sum, then:

(22) a.   R-pronouns are morphologically specified for Place.

b.   DPs do not encode a morphological Place feature.

b.   Place is strong.

c.   R-pronouns are attracted to Spec, PlaceP.

d.   PP is attracted to Spec, Place.

e.   Locative pronouns and r-pronouns are homophonous because they occur in the same structural configuration.

2.2 Deg(place) and C(Place)

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[18]I assume that silent P is licensed in Place, yielding the following structure of the locative:

[er [$_P$ e]$_i$ [$_{PP}$ [e]]$_i$

That the overt P is in PP, not in Place, is shown by PP to Place movement dicussed above.

[19]It follows that there must be a Place projection licensing the existential pronoun in existential sentences.

Apart from PlaceP, the extended projection of a PP can contain at least one, and probably two additional levels of projection dominating PlaceP. This can be established on the basis of the distribution of r-pronouns and certain bare adverbial modifiers of (locative or temporal) P (*pal* 'right', *vlak* 'just'). R-pronouns either precede or follow such bare adverbs modifiers (Van Riemsdijk 1978), with no meaning difference:

(23)   a.   vlak bij   het huis   b.   (*er*) vlak (*er*) bij
                  close near the house   there close there near

(24)   a.   pal   achter het huis   b.   (*er*)   pal (*er*)   achter
                  right behind the house   there right there behind

If modifiers always occupy the same structural position, there must be two Spec positions within the PP capable of hosting *er*: one preceding and one following *er* (as Van Riemsdijk, 1978 concludes). Since the modifier can precede *er,* it is higher than PlaceP. *Er* can also precede the modifier, hence there must be an additional Spec preceding the modifier. Dominique Sportiche (personal communication) suggests that the bare overt modifier actually is in a head position, heading a projection comparable to Degree phrase, specifying the "degree" of the Place specification[20]. A zero modifier gives rise to an arbitrary PRO interpretation (*behind the house* (somewhere behind the house) and *vlak achter het huis* would mean that 'the degree' or 'the distance' to '(the points) behind the house' is 'very small'. Den Dikken (1992 p. 106) also suggests that the bare adverb is in a higher head position, and presents strong empirical support for the treatment of these bare adverbs as heads: bare modifiers block P-incorporation (the examples in(25) are adapted from Den Dikken 1992, p. 106)[21]

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[20]This recalls Corver's 1990 proposals for a DegP in APs.

[21]Den Dikken attributes the examples in (25) to Bennis (1991). The judgments reported in Bennis differ though, as he judges the b examples as grammatical. My judgments presented here in (25) coincide with Den Dikken's

(25)   a.   dat Jan de bal *pal/vlak over* heeft geschoten (*no P-incorporation*)

          that Jan the ball right/right over has shot

          'that Jan shot the ball right over'

      b.   dat Jan de bal (*?*pal/*vlak*) heeft **over** geschoten (P-incorporation)

          that Jan the ball right/right has over shot

          'that Jan shot the ball right over'

Bare adverb modifiers can occur with an intransitive P (25a), but block P-incorporation, as (25b) shows. (25b) follows if the bare modifier occupies a head position dominating Place, call it *Deg(place)*: P-incorporation is blocked because the P is too low within the PP and V is not the closest c-commanding head. These data thus argue in favor of treating bare adverbs as heads (Deg(place)).

  Is *er* preceding Deg(place) in Spec, Deg(place), or in yet a higher Spec position? The distribution of *er* with XP modifiers, which I take as occurring in Spec, Deg(place) reveals the presence of yet another projection dominating the modifier. Instead of a bare adverb, as in (25), an XP modifier can modify Place:

(26)   dat Jan de bal *twee meter* over het hek heeft geschoten

        that Jan the ball two meter over the fence has shot

        'that Jan shot the ball two meters over the fence'

Head movement is not blocked in this case, as expected:

(27)   dat Jan de bal *twee meter* heeft *over* geschoten (Den Dikken (1992))

        that Jan the ball two meters has over shot

        'that Jan shot the ball two meters over'

If both the XP modifier and the r-pronoun occupy Spec, Deg(place), measure phrases and r-pronouns should not be able to cooccccur, contrary to fact:

(28)   [*daar twee mete*r achter] begint het niemandsland (Van Riemsdijk, 1978)

            there two meters behind starts the no-mans land

            'Two meters behind it, no-man's land starts.'

(28) therefore reveals the presence of an additional projection dominating Deg(place). I will call the head of this projection C(place), to express the parallelism with CPs and DPs, and refer to its maximal projection as CP(place). I assume that the CP(place) level turns a PP into an "independently" licensed constituent, which enables it to undergo PP over V, scrambling or pied-piping under wh-movement (see 2.3.2).

A final question concerns the position that P occupies in the overt syntax. Since P always follows *er* and the modifiers, and precedes pronouns, P can at most be as high as Place or Spec, Place if PP contains a regular DP. A full blown structure for Prepositional Phrases is presented in 2.4.

2.3 External syntax of P and PrepPs.

Different aspects of the external syntactic distribution of Ps and their constituents, are discussed in sections 2.3.1 (P-incorporation), 2.3.2 (P-stranding) and 2.3.3 (Pied-Piping) respectively.

2.3.1   P-incorporation

As is well known, Dutch has overt P incorporation: the position occupied by P within the verbal complex is restricted to bare heads only (P, N and A). When P is within the verbal complex following the finite verb, P incorporation has taken place (the incorporated P is boldfaced) [22]:

(29)   dat ik Jan   Marie (*op*) *heb willen laten* (**op**) *bellen*
         that I John Mary up have want let call
         'that I wanted to let Mary call up John '

---

[22]Traditional descriptions recognize two positions for incorporated heads which are underlined in (i) :

(i)   ...(*op*) heb   (**op**) willen (***op***) laten (**op**)bellen
           (up) have (up) want   (up) let   (up) call
          'have wanted to let call up'

As traditional analyses acknowledge, there is dialectal variation not covered by the schema above. Bennis (1991) assumes that P can be anywhere in the verbal complex, as long as it is preverbal. In my dialect, there are three positions for incorporable elements: pre-finite verb, immediately following the finite (auxiliary) V, and preceding the verb it is theta-dependent on, but not in the starred-position below((i) represents the verbal complex of (29).

(ii)   dat Marie Jan het huis   (**schoon**) heeft (**schoon**) willen (***schoon***) laten (**schoon**) maken
          that Mary John the house clean has want let make
          that Mary wanted to let John clean the house'

The difference between my dialect and the one described in traditional terms can be reduced to the distribution of the finite auxiliary. My dialect seems to allow the auxiliary to optionally raise to a higher head position than the traditional dialect described in (i):

(iii)   a. F X^o aux V V.

          b. aux X^o [e] V V

For more discussion on this issue , see Koopman 1995a.

When P incorporates, the incorporator, say V, "governs" the position from which P incorporates, i.e. V must be the closest c-commanding head of the position containing P. P may not incorporate if the structural conditions for incorporation are not met. This can come about if there simply is no c-command between V and PP, or, more interestingly, if V c-commands the PP, but P is too low within the projection, i.e. V is not the closest c-commanding head of the position containing the overt P. This situation can arise if there is additional structure between V and the position where P is spelled out, i.e. if the structure of PP is more complex[23]. The structure motivated so far immediately explains why lexical prepositions fail to incorporate, even when V c-commands the extended projection of the PP and P stranding is possible:

(30)   a.   dat zij *er* vroeger vaak *mee* heeft (***mee**) gespeeld
                 that she has there earlier often (with) has (with) played
                 'that she often played with it a long time ago'

         b.   dat zij *er* dit vaasje *op* heeft willen (***op**) zetten
                 that she there this vase up has want   upput
                 'that she wanted to put this vase up there'

The head P is lower than Deg(place), and not in C(place) or in Deg(place). V is not the closest c-commanding head of P, and intervening projections are unable to host P. P therefore cannot incorporate. In other words, P incorporation can only occur if the following structural configuration holds:

---

[23]Incorporation asymmetries can be derived in this purely structural way. I do not follow Baker and Hale's 1990 proposal for parametrization of functional and lexical heads with respect to relativized minimality , nor do I assume that there are two different types of incorporation as argued in Uriagereka (1988).

(31)   (i) P raises to C(place)

              (ii) CP(place), DegP(place), or PlaceP are absent[24]

Since P does not raise higher than Place in Dutch, (31i) is never available in Dutch. Asymmetries with respect to P-incorporation must therefore fall out from the PP internal structure (31ii).

2.3.2 Pied-piping

Prepositional phrases can undergo pied-piping under wh-movement, scrambling, and appear to the right of the verbal complex (PP-over V):

(32)   a. *Met welke ouders* heb jij gesproken   (*Wh movement*)

                  with which parents have you spoken

                  'Which parents did you talk to?'

              b. Zij heeft *met Jan* maar heel eventjes gesproken (*Scrambling*)

                  she has   with John just a short while spoken

                  'She spoke only for a short while with John.'

              c. omdat ik gesproken heb *met Jan*   (*PP-over-V*)

                   because I spoken have with John

                   'because I spoke with John'

Syntactic mobility has traditionally been taken as evidence for the constituency of a moved string. Failure to undergo wh-movement or pied piping does not show that a projection is *not* a

---

[24]Or alternatively, the smallest projection containing the lexical P pied-pipes to a Spec position where it is locally c-commanded by the incorporator.

syntactic constituent, however. The extended projection of a PP consists of several syntactic constituents, which are all maximal projections (XPs). Yet, none of the projections smaller than CP(place), like PlaceP or PP, can undergo any of the processes illustrated above. This is shown in the following examples (since C(PP) is empty, it cannot be tested if DegP(place) can be extracted):

(33)   a.   het niemandsland begint   *twee meters daar achter*

            the noonesland   start   two meters   there behind

            'No man's land starts two meters behind it.'

    b.   *CP(place) topicalization*

            twee meters daar achter begint het niemandsland

            two meters there behind   starts the noonesland

            'No man's land starts two meters behind it'

    c.   *PlaceP preposing*

            * daar achter* begint het niemandsland *twee meters*

             there behind starts the noonesland two meters

    d.   CP(place) preposing

            boven in welke la   heb jij de sokken gelegd

            up   in which drawer have you the socks put

            'Up into which drawer did you put the socks'

    e.   *PP preposing*

    *   *in welke la*   heb   jij de sokken *boven* gelegd

            in which drawer have you the socks up put

In sum, a constituent may very well be a maximal projection, but fail to undergo external syntactic movement (i.e. topicalization, wh-movement, or scrambling). This raises the question what property enables a projection to be able to "count" as wh-phrase, focus or topic. In DP and APs, these properties are located at the left edge, in the C/D domain, suggesting that this is where these properties are represented. Thus, the property enabling a constituent to undergo movement to the wh-landing site, or to FP, or TopP, is located at the CP (type) level. CP itself is a more articulated structure (Rizzi, 1996). However, for the purposes of this paper (34) is sufficient:

(34)   The property of being a wh-phrase, a topic, or a focus is represented at the C
        level of a particular phrase

Thus, if a PP has undergone wh-movement, scrambling, it must have the appropriate C level. Projections without the appropriate CP levels fail to undergo these external movements. This immediately accounts for the well known restriction that idiomatic PPs can neither be wh-moved, scrambled or topicalized. Idiomatic PPs simply don't have what it takes, i.e. they are not "full" PPs , and lack the C level.

        Idiomatic PPs may not occur in the PP over V position either. This suggests that the PP over V position is a position that can only host CP(place), i.e. PPs with a CP level. This will become relevant in the discussion of directional PPs below.

        Given (34), external syntactic movement is a diagnostic criterion for the presence of CP(place):

(35)   PP has CP(place) level if it can move to Spec, CP, scramble, or
             occur in the PP-over-V position.

In other words, the internal structure of PPs is comparable to that of clauses and DPs.
Differences between types of PPs in mobility will follow from the amount of internal structure
that is present.

2.3.3 P-stranding

R-pronouns can strand P, because they are separated from the projection that contains the
lexical P. DPs cannot strand P, because they are contained within the PP in Spec, Place They
have pied-piped before they could get a chance to separate from P (20). Thus, the asymmetry
with respect to what elements can strand P falls out from the internal structure of P.

        It is of course well-known that the constraint on internal structure is not a sufficient
condition. The extended projection of the PP (CP(place) must be transparent, i.e. to use
Barriers terminology, it must be "L-marked", as well.

        In the remainder of this section I summarize the paradigm of P-stranding in Dutch, i.e.
which configurations allow for P-stranding, and lay out how transparency could be achieved in
terms of head movement .

        Stranded Ps must precede the verbal complex, but do not need to be adjacent to the
verbal complex:

(36)   Hij is er   toen (*mee*) naar de dokor (*mee*) gegaan.
             he   is there then (with) to   the doctor (with) gone
             'He then went to the doctor with it'.

Stranded Ps thus cannot be in the PP over V position:

(37)　　　a.　　　Zij heeft vroeger vaak gespeeld *met legos*　　　(PP over V)

　　　　　　　　　she has earlier often played with legos

　　　　　　　　　'Earlier she often played with legos.'

　　　　　　b.　　　*Zij heeft *er*　 vroeger vaak gespeeld *mee*

　　　　　　　　　 she has there earlier often played with

Stranded Ps cannot be "too high" in the clausal skeleton, where "too high" refers to any position higher than NegP or focus particles like *maar*.

(38)　a.　　　Hij is er (**mee*) niet (*mee*) naar de doktor (*mee*) gegaan.

　　　　　　　he is there (with) not (with) to   the doctor (with) gone

　　　　　　　'He didn't go to the doctor with it.'

　　　b.　　　Waar ben jij (**mee*)　　maar　　　(*mee*) naar de doktor (*mee*) gegaan

　　　　　　　Where are you (*with) but (foc prt) with to the doktor with gone

　　　　　　　'What did you go to the doctor with'

PPs that count as too high in this sense includes adjunct Ps (temporal, cause, and reason Ps)[25], scrambled PPs (as in (42a)) as well as any other PP that has undergone A' movement.

---

[25]Marcel den Dikken informs me that this generalization might be too strong since he accepts examples like the following:

　　　(i)　　　de film waar ik onder ben weggegaan

　　　　　　　the movie where I onder   am   away gone

I do not accept such examples, andI do not know how much variability on the judgments there is either.

(39)   a.   Ik zal hoogstwaarschijnlijk   *daarna*   weggaan

I will probably   thereafter away go

'I will probably leave after that.'

            b.   *Ik zal *daar* hoogstwaarschijnlijk *na* weggaan

I will there probably   after away go

(40)   a.   de reden *waarom* hij vertrokken is, ...

de reason wherefore he left   is

'the reason for which he left,...

            b.   *de reden   *waar* hij *om* vertrokken is

the reason where he for left   is

(41)   a.   de manier *waarop* hij vertrokken is

the manner whereop he left is

'the manner in which he left,...'

            b.   * de manier *waar* hij *op* vertrokken is, ...

the manner where he up left   is

(42)   a.   Zij heeft vroeger (*met legos*) vaak   (*met legos*) gespeeld

she has earlier (with legos) often (with legos) played (with legos)

'She once played with legos often.'

            b.   Zij heeft *er* vroeger (**mee*) vaak *mee* gespeeld

she has there   earlier often   with   played

'She once played often with it.'

29

In sum, stranded Ps must end up between NegP and the verbal complex.

What allows P-stranding, i.e. extraction of an r-pronoun out of PP(CP)? There are basically two types of proposals in the literature. Head movement of the lexical P voids the barrierhood of PPs (see Zwart 1993 for a recent proposal); or PPs are transparent for extraction when they are "L-marked" (van Riemsdijk, 1978, Sportiche, 1988). L-marking itself has been related to incorporation by several linguists (Uriegereka 1988, Koopman 1994). Head movement thus seems to be somehow involved in P-stranding. It can easily been shown that incorporation of the *lexical* P is not involved in P-stranding: stranded and incorporated Ps have different distributions. Stranded Ps cannot occur in the verbal complex (incorporated Ps can), but precede the entire verbal complex:

(43)   de man waar Jan Piet gisteren *tegen* heeft (***tegen***) zien (***tegen***) *praten*
            the man where John Piet yesterday against has seen talk
            'the man who John saw Peter talk with yesterday'

In addition, the stranded P may be preceded by DegP:

(44)   omdat   ik het *er* zojuist *vlak boven op* heb gelegd
            because I   it there just right high up have put
            'because I just put it right on top of it'

As established in section 2.2, P is no higher than Place within the extended projection, and therefore cannot have incorporated.[26]

Since the structure of PPs themselves is more articulated however, we can still maintain head movement's involvement in P-stranding. PPs are topped off by a non-lexical C level: incorporation of C would allow escape of the r-pronoun from the PP projection. In fact, it

---

[26]The alternative analysis of treating the degree and Place modifier as a complex P undergoing incorporation should be rejected, since complex Ps, or complex heads, fail to incorporate.

would not only allow it, but it would also force it if incorporation of the C level "deactivates" the level that makes pied-piping of PP impossible. We leave deriving the condition that head movement of the C node must meet the structural condition of being lower than Neg/AgrO, but higher than the verbal complex for future research.

2.4 Summary

2.1 and 2.2 motivated the following structure for locative PPs. Positions that may contain overt lexical material are boldfaced.   PP shells or AgrP will play no role in the remainder of this article. This structure is taken to hold for all prepositional PPs that are not directional, and that allow for r-pronouns:

(45)   CP(place)

    C(place)

        (er)

            DegP(place)

                (2 meters)

                    Deg(place)   Place

                        (er)

                            Place   PP

                                P   AgrP

                                    pronouns

                                        Agr   PP

                                            P   **DP**
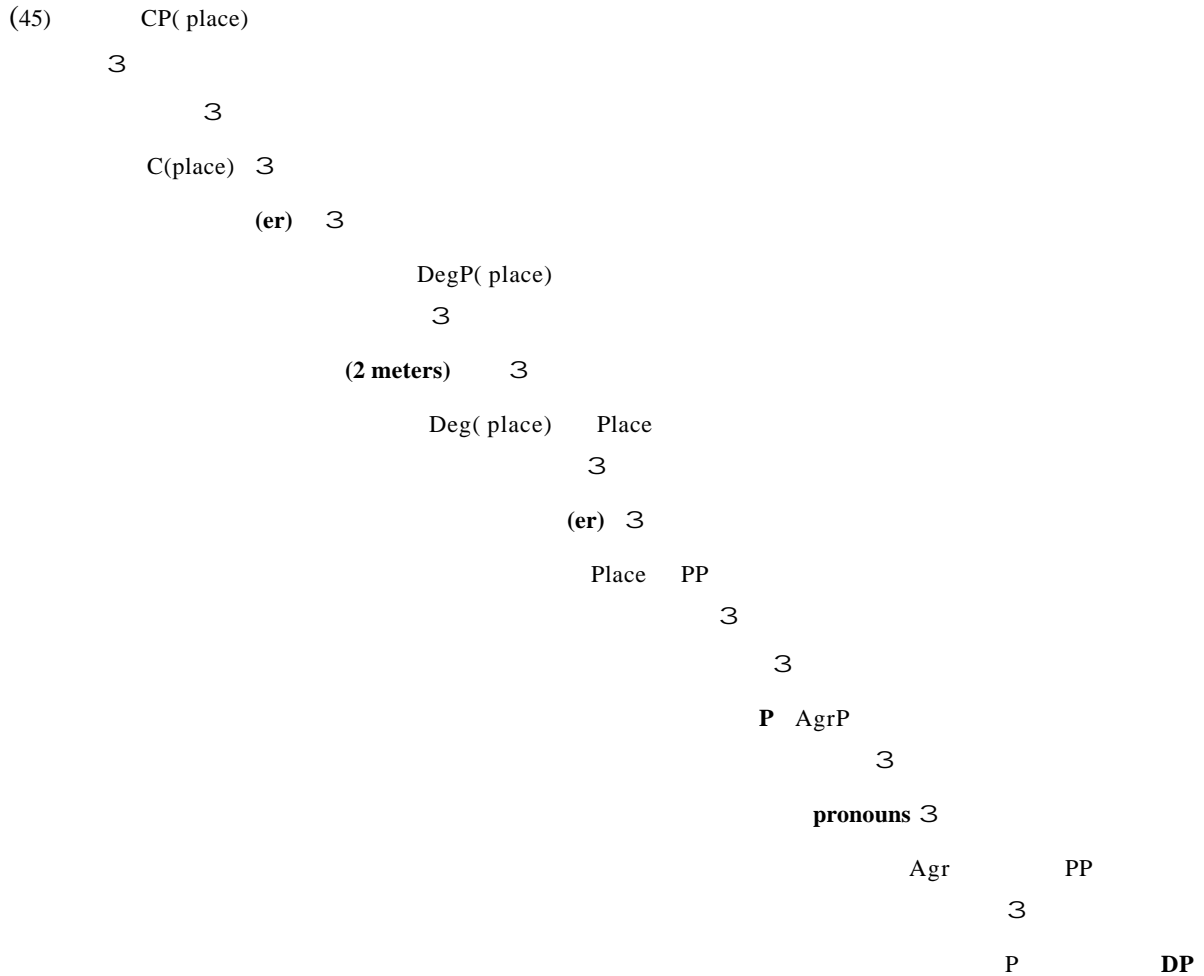
How this structure accounts for the properties of non directional prepositional phrases,

presented in Table 1. is indicated below:

Pied-piping	✓	OK but needs CP(place) level
PP over V	✓	OK but needs CP(place) level

P stranding (OK If C(place) level can be incorporated)

by R-pronoun	✓	Only r-pronouns can occur high enough in the internal structure
by DP	*	DPs are stuck on a left branch in Spec, PlaceP: PP must pied-pipe

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		to PlaceP to check the Place feature.
by PP	*	27
P incorporation		
P-incorporation	*	P is too low in the structure

3. Directional PPs

The syntax of directional PPs is quite complex and poorly understood, with many facts unexplained[28]. Dutch has prepositional directional PPs and postpositional directional PPs. The latter consists of both circumpositional PPs, and simple postpositional PPs.   Postpositional

---

[27]We do not discuss properties of P taking PP complements, as in (i).

(i)   deze koekjes zijn [voor [bij de koffie]]

          these cookies are for with the coffee

These Ps introduce a temporal or locative argument which behaves as an adjunct with respect to islandhood (r-pronouns cannot escape). PP complements are contained within this argument, and cannot escape either.

[28]The basic behavior of postpositions with respect to incorporation, extraction, etc., is discussed in Van Riemsdijk 1978. Koster (1987) contrasts extraction possibilities from postpositional PPs and prepositional PPs. The external syntactic properties of directional phrases in relation to *have/be* selection are discussed in Hoekstra (1984) and Hoekstra and Mulder (1990). Van Riemsdijk (1991) was the first to propose that postpositional order derived from (rightward) moving the preposition to some (functional) P projection. My analysis maintains the idea that prepositional PPs and postpositional PPs are related through movement, (leftward though), and quite generally strives to present a uniform structural account of the whole class of directional PPs.

PPs must receive a directional interpretation, while prepositional PPs can receive a directional interpretation:[29]

(46)   a.   Zij is meteen *in het water* gesprongen(*unambiguously directional*)

                        she is immediately in the water jumped

                        'She jumped into the water immediately.'

        b.   Zij is   meteen   *het water in* gesprongen (*unambiguously directional*)

                        she is   immediately the water in jumped

                        'She jumped into the water immediately.'

The alternation between prepositional and postpositional PPs is not free, but restricted to specific syntactic environments. Prepositional and postpositional directionals only alternate when they occur as complement of a (motion) verb and the selected auxiliary is *be*[30]. In other contexts, prepositional PPs are unambiguously locative. This is illustrated within DPs in (47):

---

[29]The meaning difference between the prepositional and postpositional PPs in (46a) and (46b) is not clear. According to my intuition the object of a postposition receives a literal interpretation obligatorily (and the object of a preposition optionally). This accounts for the following contrast:

(i)   a.   ga uit de kamer   b. ga de kamer uit

                 go out the room   go the room out

                 'go out of the room!'

(ii)   a.   ga uit mijn ogen   b. * ga mijn ogen uit

                 go out of my eyes   go my eyes out

                 'Go out of my eyes!'

In (ia) the path described by the motion V involves *the room.* In (iib) the path cannot involve *my eyes (*you were never literally in my eyes*),* and the sentence is therefore illformed .

[30]This is generally taken to show that any V which combines with a directional is unaccusative (Hoekstra 1984, Hoekstra and Mulder 1990).

(47)   a.   de weg *in het bos*   (locative only)

                   the road in the forest

                   'the road in the forest'

           b.   the weg *het bos in*   (directional only)

                   the road the forest in

                   'the road into the forest'

When the auxiliary *have* is selected, the PP can only be interpreted as locative and, concomitantly, a postpositional phrase is disallowed:

(48)   a. Zij heeft *in het water* (op en neer) gesprongen   (locative reading only)

                   she has in the water   up and down jumped

                   'She jumped up and down in the water.'

           b. *Zij heeft *het water in* gesprongen

                   she has the water in jumped

                   'She jumped in the water.'

This suggests the following generalization:

(49)   Prepositional directional PPs are only allowed when selected by motion

        verbs.

Since postpositional phrases are one particular type of directional PP, their syntax can only be understood against a general understanding of the distribution and properties of directional PPs as a whole. The sections below determine the properties of each type of directional PP, using as analytical tools the distribution of the DPs, r-pronouns, modifiers, the incorporability of P, and

35

the mobility under wh-movement. Prepositional directional phrases are examined in 3.1.1., circumpositional PPs in 3.1.2., and postpositional PPs in 3.1.3.

3.1 The structure of directional PPs

Directional PPs are often complex (*into*, *onto, towards*, ...), pointing to a complex underlying syntactic structure. Jackendoff (1991, p 45) suggests the following conceptual structure for a sentence like *John ran into the room*:

(50) $[_{Event}GO\ [_{Thing}\ JOHN],\ [_{Path}\ TO([_{Place}\ IN\ ([[_{Thing}\ ROOM])])])])$

As argued in 2.1.2.3, Place is syntactically represented as a functional head. Suppose that Jackendoff's Path is represented in a similar way, with Path selecting some PlaceP complement. This hypothesis is attractive because it entails that syntactic structure closely mirrors the conceptual structure. If Path is head initial and selects some projection of Place, (either CP(place) or some smaller complement, say PlaceP, or PP) we are lead to expect the syntactic structures in (51), (for convenience only head positions are indicated)
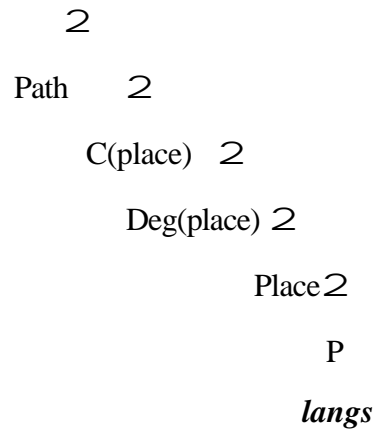
(51) a.

      2

    Path   2

      C(PP) 2

        Deg(place) 2

          Place 2

            P

    b.

      2

    Path 2

      Place 2

        P

    c.

      2

    Path   2

      P

As I will show, the basic properties of directional PPs can be derived from these three structures, in a quite simple fashion. (51a) underlies prepositional directional phrases and circumpositional PPs (section 3.1.1 and 3.1.1), (51b) simplex postpositional phrases (section 3.1.3) and (51c) directional particles (section 4.2).

3.1.1 Prepositional directional PPs

The structure in (51a) is a good candidate for directional prepositional phrases, with P remaining in Place within the CP(place).

(52)

```
            2
      Path      2
          C(place)   2
              Deg(place)  2
                  Place  2
                       P
                      langs
```

If P is not higher than Place, lexical items in higher head or Spec positions should cooccur with, and precede P. This is correct:

(53)　　　　a.　　Ben jij *er* langs gelopen?

　　　　　　　　are you there along walked

　　　　　　　　'Did you walk along it?'

　　　　　b.　　jij bent *vlak* langs de afgrond gelopen

　　　　　　　　you are right along the precipice walked

　　　　　　　　'You walked right along the precipice'

The projection dominating P therefore contains at least a PlaceP (*er* occupies Spec, PlaceP) and a Deg(place), where bare adverbial modifiers like *vlak* occur.

　　　　The presence of a CP(place) level can be determined on the basis of the external syntax: CP(place) projections can be scrambled or wh-moved (2.3.2). Some CP level must be present, because the preposition and its complement can undergo wh-movement:

(54)   *Langs welke afgrond* ben jij gelopen?

             along which precipice are you walked

             'Along which precipice did you walk?'

There are two potential candidates for CP levels in (52): either Path is dominated by some C

like projection and the entire PathP has moved, or CP(place) has extracted out of the PathP.

The former option can be ruled out: other PathPs selected by verbs of motion may never be

wh-moved (3.1.3.1). This follows if PathP selected by motion verbs lack the CP(Path) level

necessary for mobility.

        If PathP cannot have moved in (54), it must be CP(place) that escaped from PathP.

Movement out of the PathP is allowed because of the accessible Spec, Path position, which is a

licensing position for CP(place), as discussed below (3.1.2.2). Prepositional directionals

therefore contain a CP(place) projection:

(55)   [[$_{path}$ e] [$_{CP(place)..}$ ..P]

(55) contains a silent Path head, with a CP(place) complement.

        This raises two further questions: what is the distribution of the silent Path head and is

there any need to determine its location with respect to CP(place) in the overt syntax i.e. is the

path head postpositional, or prepositional?

3.1.1.1   The distribution of the silent Path head

        Directional prepositional phrases only cooccur with motion verbs (49). This suggests

that the Path node is in a chain relation with the motion verb. Following Koopman 1994, and

Sportiche 1993, we interpret this as evidence that silent Path is licensed through overt

incorporation into a motion verb.

(56)   silent Path is a trace whose antecedent is incorporated in a verb of motion

(57)

                         3

                   1   **3**

          $[_{Path}e]_i$ V   **3**

                         $[_{Path}e]_i$ CP(place)

Let us consider how (56) excludes directional prepositional phrases from DPs. Consider the representation in (58):

(58)   *..   [N $[_{PathP}$ $[_{Path}$ e] $[_{CP(place)}$]

This violates (56) since Path is not a trace whose antecedent is incorporated into a verb of motion. Thus, silent Path in (58) cannot head a chain. It cannot count as a trace of a Path that has incorporated into N either, as below, because this requires N to be an appropriate host (*licensing head* in the terminology of Koopman 1994) :

(59)   * $[[[_{Path}$ e]$_i$ N] $[_{PathP}$ [e]$_i$ $[_{CP(place)}$]

N, in contrast to V, is quite generally not a licensing head , as argued in Koopman, 1994. If N cannot license the Path feature, there is simply no way to satisfy (56).

       Postpositional directional phrases are possible in complement position of N (cf (47b)). This means that the Path node escapes (56), and must be independently licensed in this environment. The way it escapes (56) is by being overtly, not silent. As shown in 3.1.3, P raises via Place to Path in this configuration (in addition, the complement moves to the left of Path):

(60)   [$[_{PathP}[_{Path}$ P]$_i$ $[_{PP}$ $[_P$ e]$_i$]

Thus, either P raises to Path, or else silent Path raises to V. This could suggest that the Path head must be attached to an appropriate lexical host, where P and V are appropriate hosts, but N and A are not[31]. In other words, Path would act like a "bound" morpheme which attaches to either V or P, i.e. which selects for a [-N] category:

(61)   Path is a bound morpheme selecting for a [-N] category

(61), however, is to be rejected as an explanation for the following reason. It predicts that P either incorporates to Path, or that Path incorporates to V, and that they cannot cooccur. However, incorporation of Path into the motion V is still possible even if Path is lexical, i.e. if (61) is satisfied. P to Path is therefore independent of the relation between Path and a selecting verb.

      We conclude:

(62)   Silent Path cannot be licensed within the projection of the PathP

Path containing lexical P escape the effects of (62).

3.1.1.2   The order of Path and CP(place)

      Since Path is silent, the relative ordering of CP(Place) and Path cannot be determined on the basis of these directional PPs alone. However, all other cases of directional phrases involve movement of a phrasal projection to Spec, Path (3.1.2 and 3.1.3) which result in Path

---

[31]There do not seem to be underived adjectives in Dutch that take directional PrepPs. There are deverbal adjectives in Dutch that can take directional PrepPs (cf. Broekhuis, 1998) . Interestingly, these PPs are only prepositional, and cannot be circumpositional nor postpositional. This suggests that the Path feature is obligatorily incorporated into the verbal part of the adjective.

being in *final* position. This suggests that Spec, Path always contains overt material, and that prepositional directionals are in fact hidden postpositional structures, with CP(Place) in Spec, Path:

(63) $[_{PathP}CP(^{place})_i [_{path} e] [_{CP(Place)} e_i]]$

3.1.2 Circumpositional PPs.

Circumpositional PPs fit into the proposed structure for prepositional directionals, but contain more lexical items, hence slightly more structure. Some circumpositional PPs involve a postposition which is homophonous with a preposition. These therefore contain an additional PP where the P originates. Others contain a specific lexical postpositional element which I will assume is a direct lexicalization of the Path node[32]. All have a regular preposition at the left edge:

---

[32]Some contain an optional postpositional element (*toe, heen, vandaan*).

      (i)   Hij loopt *naar* Nijmegen (*toe)*

                he walks towards Nijmegen

      (ii)   de weg naar Nijmegen (toe)

                the road (leading) to Nijmegen

Optionality holds for clausal and DP contexts alike, showing Path is licensed Path internally. This suggests that the absence of the postposition is due to a PF deletion process. As Joost Zwart (1995) discusses, the postpositional element becomes obligatory when r-pronouns are extracted:

(iii)   Hij loopt er   naar *(toe)

        He walks there towards

(iv)   de weg er naar *(toe)

        the road there towards

If the absence of the postpositional element is handled at PF, then, blocking deletion should be handled at PF as well. I believe that deletion in (iv) is blocked for prosodic reasons. The preposition in circumpositional structures is always followed by a stress-bearing element (*naar*

42

(64)   a. *'door, op, aan '*   *onder* de brug   ***door***   *tegen*   het huis ***op***

                             under the bridge through   against the house up

         b. *'heen, vandaan,..'*   *over* de stoel ***heen***   *(van)* onder het bed ***vandaan***

                           over the chair *heen*   *from under the bed from*

The postposition associated with the Path reading or Path element acts as head of the entire projection. It can be incorporated into the verbal complex (cf. 3.1.2.1 for examples and discussion) . Path thus combines with a PlaceP complement that precedes it. The PlaceP complement contains at least a DegP(place) complement, as shown by the possible presence of a degree modifier:

(65)   Het vliegtuig is *vlak* onder de   brug door gevlogen

        The airplane   is right under the bridge through flown

        'the airplane flew right under the bridge'

This is consistent with a full CP(place) in a Spec position to the left of Path, say Spec, Path (or alternatively in any other projection higher than Path)[33]:

(66) $[[_{\text{CP(placeP)/DegP(place)}} \ [_{\text{Path}} \ \mathbf{P}_i \ [\ _{\text{PP}} \ [_P e]_i \ [_{\text{CP(place)}} ..]$

            onder de brug   door

Thus emerges a second property of the Path projection: Spec, Path attracts lexical material. Spec, Path is not insensitive to the category that ends up there: it must be some projection of Place. This can be demonstrated by the following ungrammatical string:

(67)   * [door [CP(place) onder de brug] [Pathe] [PP]

Underlying this string is a derivation in which , *door*, instead of moving to Path, has pied-piped to Spec, Path in an effort to making Spec, Path content. The empty Path is licensed by incorporating into V. Nothing so far excludes this derivation. The movement of the PP containing *door* is strictly local, and empty Path can be licensed by incorporating into V. What seems wrong here, intuitively, is that the moved constituent is of the Path category, and not of the Place category. Although Path contains the Place projection, this projection is too far embedded in the pied-piped constituent. In all good cases, Spec, Path contains a projection of the PlaceP, we therefore conclude:

(68)   Spec of Path attracts a projection of Place.

This is the basic price to pay for a head initial Path.

3.1.2.1 Path contains P.

The postposition in circumpositional PP is in Path, as shown by its incorporability into V.[34]

---

[34]The acceptability of P incorporation in this context seems to vary somewhat across speakers and within speakers judgments may vary depending on individual lexical items. All native speakers that I have consulted, accept at least several, if not all, cases of P incorporation. There is an extremely sharp contrast, however, between incorporation of the postposition and incorporation of the preposition in this structure. Any attempt at incorporating the latter yields total unintelligibility. Relative ease of incorporation therefore shows for all speakers that the postpositional element is the head.

(69)   a.   dat zij gisteren *onder* de brug is ***door*** gelopen

that she yesterday under the bridge is through walked

'that she walked under the bridge'

b.   dat   zij snel *achter* het konijn zijn ***aan*** gelopen

that they quickly behind the rabbit   be   at walk

'that they chased the rabbit'

c.   dat de plant   *tegen*   het huis is **op** gegroeid

that the plant against the house is up grown

'that the plant grew up the side of the house'

d.   dat zij de fiets weer *tegen* de muur heeft **aan** gezet

that she the bike again against the wall has at put

'that she put the bike against the wall again'

e.   dat de kinderen stilletjes onder het balkon zijn   **langs** gelopen

that the children quietly   under the balcony are along walked

'that the children quietly walked along under the balcony'

(70)   a.   dat zij de jas *over* de stoel hebben **heen** gelegd

that they the coat over the chair   prt have put

'that they laid the coat over the chair'

b.   dat dit book (*van*) *onder* het bed is (?***vandaan***) gekomen[35]

that this book   from under the bed   is from come.

'that this book came from under the bed'

The postposition is therefore in the head position of this constituent, and that there are no intervening projections between Path and V. These examples also show that the incorporability of Path into V is independent of the needs of the Path node. Path can be incorporated into V, even if Path is independently licensed by the postposition, as shown by its ability to occur in DPs:

(71)   a.   dat fietspad onder de brug door

that bikepath under the bridge through

that bikepath under the bridge

b.   de reis door Europa heen

the trip through Europe prt

3.1.2.2 The complement of Path is CP(place) or DegP(place)

Path takes a PlaceP complement, which can be at least as big as DegP(place) in the case of circumpositional PPs:

---

[35]The compound postposition *vandaan* does not incorporate, a property that holds for compounds in many languages. I take the failure of incorporation of *vandaan* to show that it is not really a single complex head, but rather a sequence of two heads in different head positions (i.e. it has more syntactic structure) structure, with *van* being in the syntactically higher position.

(72)   Het vliegtuig is *vlak* onder de   brug door gevlogen

          the airplane   is right under the bridge through flown

          'The airplane flew right under the bridge.'

The moved constituent could be either Deg(place) or CP(place). The external syntax can differentiates between these two options. If it is a CP(place), further movement should be possible, if not, further movement should be blocked. The following examples show wh-movement is possible for me and many other Dutch speakers:

(73)   a.   *Onder welke brug* is het vliegtuig *door* gevlogen?

                  Under which bridge is the airplaine through flown

                  'Under which bridge did the airplane fly'

          b.   *Achter welk konijn* zijn zij snel   *aan* gerend

                  Behind which rabbit are they quickly on run

                  'After which rabbit did they quickly run?'

          c.   *Tegen welke muur* heb jij je fiets *aan* gezet

                  Against which wall have you your bike on put

                  'Which wall did you put your bike against?'

          d.   *Over welke stoel* heb   je   je   jas   *heen* gelegd?

                  Over which chair have you your coat *heen* put

                  'Over which chair did you put your coat?'

For these speakers, it must be CP(place) that moves to Spec, PathP. Not all speakers accept such sentences however. Similar examples are given as ungrammatical in Koster (1987, p. 177). This suggests that these speakers analyze the constituent in Spec, Path as smaller than

CP(place), i.e. as Deg(placeP). This is not at all implausible, since there are other cases of Path selecting a complement smaller than CP(place) in the language as well as we will see in (3.1.3).

In sum, the overt syntax is of directional PPs is driven by properties of the Path projection. Path attracts a projection of Place to its Spec; a silent Path head must attach to a [-N] category, causing it to either incorporate to V, or to attract P to it. This forces either P movement to Path, or Path incorporation to V.

3.1.2.3 External syntax of circumpositional PPs.

Pied-piping of the entire directional PP under wh-movement[36] is impossible, indicating that CP(Path) is absent:

(74)   a.   *_Onder welke brug door_ is het vliegtuig gevlogen?
         Under which bridge through is the airplaine flown
         'Under which bridge did the airplane fly'

---

[36]The first position in non-interrogative root clauses can contain non-interrogative circumpositional PPs, but not interrogative circumpositional PPs:

(i)   _tegen_ het dorp _aan_ worden nieuwe huizen gebouwd
         against the village to are   new houses   built

(ii)   *tegen welk dorpen aan worden nieuwe huizen gebouwd
         against which villages to are new houses built

This contrast might be explained if (i) is embedded in a different constituent, say VP, out of which the participle has been extracted, i.e. it would be a case of remnant movement (see also footnote 43.)

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b.　　*_Achter welk konijn aan_ zijn zij snel gerend

　　　　　　　　Behind which rabbit to are they quickly on run

　　　　　　　　'After which rabbit did they quickly run?'

　　　　c.　　*_Tegen welke muur aan_ heb jij je fiets gezet

　　　　　　　　Against which wall to have you your bike on put

　　　　　　　　'Which wall did you put your bike against?'

　　　　d.　　*_Over welke stoel heen_ heb   je   je   jas gelegd?

　　　　　　　　Over which chair heen have you your coat put

　　　　　　　　'Over which chair did you put your coat?'

This goes well together with the fact that the head of the circumpositional PP can be incorporated, showing that it is in Path, and that no other head positions intervene between it and the V. Thus, PathPs lack the C level which would enable them to undergo pied-piping (cf. 3.1.3.1).

　　　　Scrambling of the entire PathP is impossible as well, pointing to the same conclusion:

(75)　　a.　　*Ik heb　　toen _tegen de muur aan_ maar mijn fiets [e] gezet

　　　　　　　　I have　　then against the wall to   FocP your bike put

　　　　b.　　*Ik heb toen mijn fiets _tegen de muur aan_ maar [e] gezet

　　　　　　　　I have then my bike   against the wall to   FocP   put

In sum, circumpositional PPs lack a CP(Path) level.

3.1.3 Simple postpositional phrases.

The structures so far determine the possible analyses for simple postpositional phrases to a large extent.

Postpositions can optionally incorporate:

(76)　　a.　　　omdat　zij　de boom is **in** geklommen

　　　　　　　　　because she the tree　is　in climbed

　　　　　　　　　'because she climbed into the tree'

　　　　　b.　　　omdat zij het bos (*door*) is (**door**) gelopen

　　　　　　　　　because she the forest through is walked

　　　　　　　　　'because she walked through the forest'

　　　　　c.　　　omdat jij de kamer (*uit*) bent (**uit**) gelopen

　　　　　　　　　because you the room out are walked

　　　　　　　　　'because you walked out of the room'

If the place P occurs in Path in (76), the projection of PlaceP must have allowed P to escape. We know from prepositional phrases that P can move no higher than Place within CP(place). It follows that the complement of Path can be no bigger than PlaceP, respecting locality of head movement (77a), and cannot containing any of the higher projections (77b):

(77)   a.

         [Path P]

             [Place e]

                 [P e]

    a.

        Path

           C(PP)

              Deg(place)

                 Place

All dotted
head
movements are
excluded

                          P
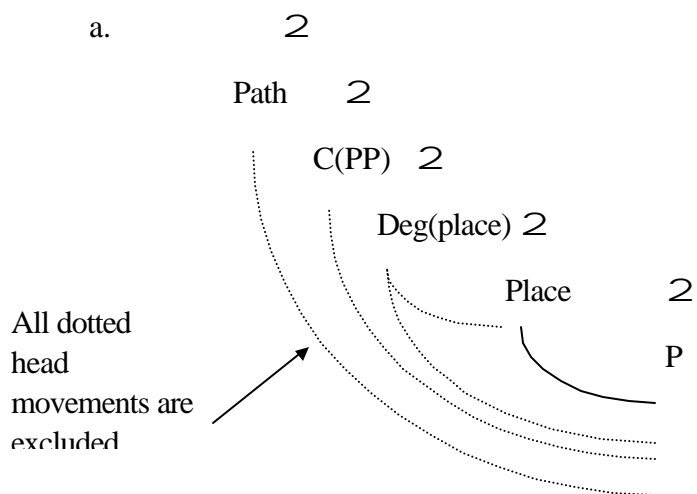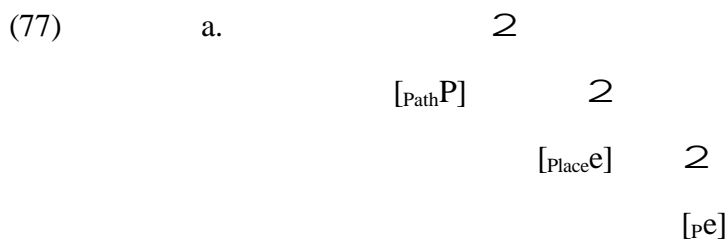
The structure in (77a) finds additional empirical support.

      R-pronouns can be licensed (78b) revealing the presence of PlaceP.

(78)   a.   omdat   zij   de boom *in* is geklommen

                because she the tree   in is climbed

                'because she climbed into the tree'

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b.　　　　omdat　zij *er*　　(in) is (in) geklommen[37][38]

　　　　　　　　　because she there in is climbed

　　　　　　　　　'because she climbed into it'

Postpositional phrases cannot contain overt realizations of Deg(place)[39]. This follows simply from the locality of head movement, which forces projections higher than Place to be absent:

---

[37]Particularly interesting is the fact that in acceptable sentences like (i), P incorporation is blocked:

　　　　(i) omdat zij *er boven in* is geklommen

　　　　　　because she there up in is climbed

　　　　(ii) *omdat zij we er boven is in geklommen

　　　　　　because she there up is in climbed

These facts follow. Since P is preceded by *boven*, P cannot have raised to Path. P must therefore be within the PlaceP: thus, CP(Place) is in Spec, PathP in these examples, and incorporation is simply impossible because of locality.

[38]The existence of two derivations for directional PPs renders the analysis of the examples in (78) tricky. If the place P is within the CP(Place), the structure represents a prepositional directional, and would reveal nothing about the postpositional structure. This derivation can be ruled out because P can be incorporated (cf. the boldfaced P in (78 b)). This is a diagnostic for P to Path movement yielding postpositional structures.

[39]As a reviewer points out, phrasal degree modifiers can precede the postpositional object:

　　　　(i)　　　　dat Jan drie meter de boom in is geklommen

　　　　　　　　that John three meters the tree in is climbed

If the phrasal modifier in (i) modifies Path, not Place, this would be entirely unproblematic.

(79)   a.   *overt Place can precede a directional prepositional phrase*

                    omdat zij   *boven* in de boom is geklommen

                    because she up   in the tree   is climbed

                    'because she climbed up into the tree'

         b.   *Postpositional phrases cannot contain overt Place*

                    omdat zij (**boven*) de boom (**boven*) in is geklommen

                    because she up   the tree   up   in is climbed

                    'because she climbed into the tree'

(80)   a.   *overt Deg (place) can precede a directional prepositional phrase*

                    omdat zij *(vlak)* langs de afgrond is gelopen

                    because she right along the precipice is walked

                    'because she walked right along the precipice'

         b.   *Postpositional phrases cannot contain overt Place*

                    omdat zij de afgrond (**?vlak*) langs is gelopen

                    'because she the precipice right along is walked'

         c.   omdat zij (**vlak*) de afgrond langs is gelopen

                    because she right the precipice along is walked

Phrasal degree modifiers however can precede the postpositional object, and the P can incorporate:

(81)   dat Jan drie meter   de boom (in) is (in) geklommen

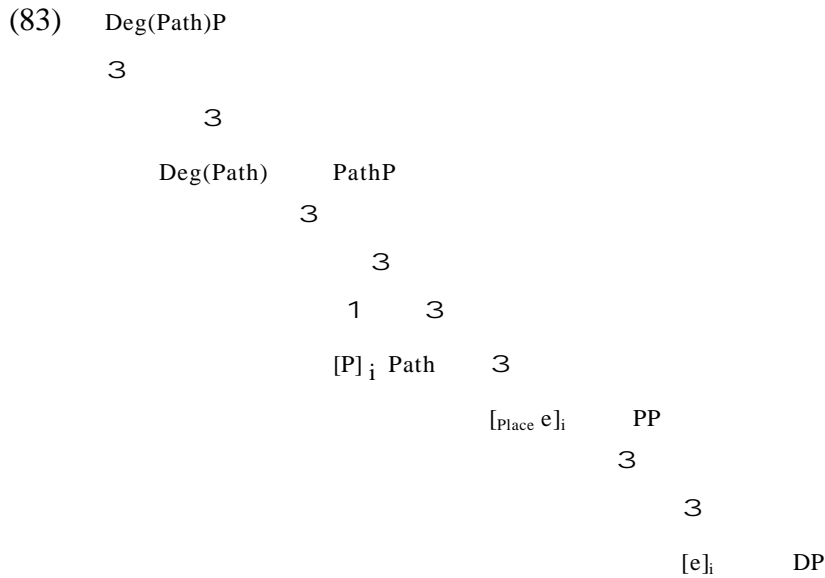   that John three meters the tree in is climbed

However, the phrasal modifier modifies Path, not Place, i.e. it is in Spec, Deg(Path) which is higher than Path. Since it is phrasal, it does not block further head movement of the P that has reached Path.

Postpositional directionals can appear within DPs, showing again that the Path node is licensed within the PathP:

(82)   de weg [het bos in]
        the road the forest in
        'the road into the forest'

P must have raised to Path to provide a lexical host for Path. This is of course consistent with the fact that simple postpositions can incorporate.

Postpositional phrases thus represent the skeleton below:

(83)   Deg(Path)P
        Deg(Path)   PathP
                     [P]$_i$ Path
                              [Place e]$_i$ PP
                                               [e]$_i$ DP

We next consider Spec, Path, which so far was argued to attract a PlaceP constituent (67). Postpositional order arises when some phrasal constituent containing the DP shows up in Spec,

PathP. The category in Spec, PathP could in principle be a DP (84a) , a structure close to the traditional postpositional phrase, or a "remnant" PlaceP, or PP (84b):

(84)   a.   ⋺
             DP$_i$ ⋺
             het bos   ⋺
                        [$_{path}$P] $_i$ ⋺
                                [$_{Place}$e]$_i$
                                            ⋺
                                                ....[$_{DP}$e]$_i$ ...

        b.   ⋺
           PlaceP   ⋺
        ⋺   [$_{path}$P] $_i$ ⋺
     [e]   PP   in   ⋺
            ⋺   [$_{Place}$e]$_i$
        [$_P$e]   ⋺   ⋺
             DP   ....[$_{DP}$e]$_i$ ...
             de boom
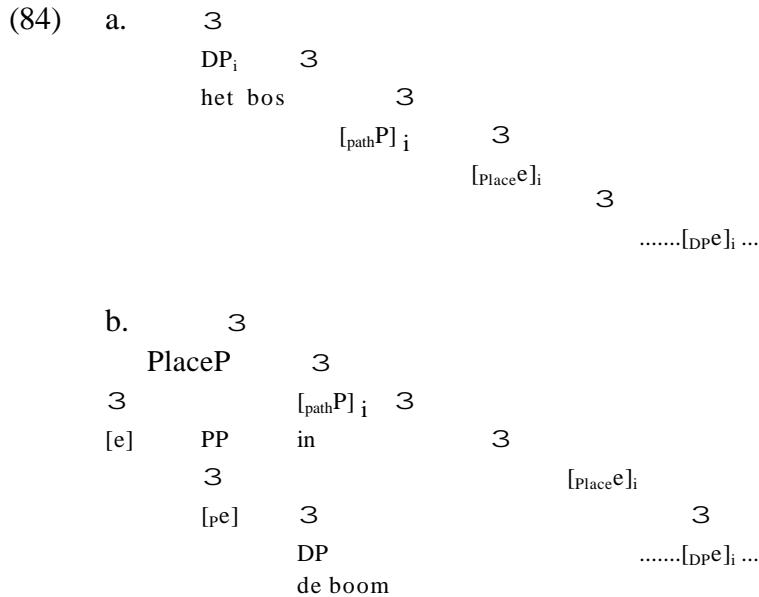
It turns out to be quite difficult to determine which structure is correct.

In Koopman 1993, I argued in favour of (84a), mainly on theoretical grounds. In particular, I argued that (84b), with remnant PlaceP or PP in Spec, Path , was excluded by the ECP which subsumes the Proper Binding Condition. Since these projections contained a head trace, the ECP kept them in the c-command domain of Path in the overt syntax. This conclusion, however, seems no longer tenable. There are good cases of head movement with exactly this configuration. Nkemnji (1996), for example, presents excellent evidence that such configurations are fine[40].

How then can we distinguish between these two possibilities?

(84b) is attractive since it allows maintaining in its most general and simple form that Spec, Path demands a PlaceP constituent. This would make the structure in (84a) simply unavailable. Moreover, given that remnant movement is allowed, it would simply be difficult to block (84b).

---

[40]See also Mueller (1997) for extensive discussion

What would we need to say if (84a) were correct? First, it would require a complication of the statement of what can satisfy Spec, Path. Not only PlaceP, but a DP "contained" in PlaceP would do as well. Furthermore, (84a) requires a way to block the derivation in (84b). On general grounds, then, (84b) seems the simplest and hence preferred analysis.

One might explore blocking (84b) and forcing (84a) by finding a reason that (84b), though the simpler analysis, would not lead to convergence. This could be tied to the licensing of DP in (84b). If DP fails to satisfy the Case filter in this configuration, perhaps (84a) could be forced. Thus, the DP in (84a) would satisfy the Case filter in PathP, not in PlaceP, and Case is unavailable within the PlaceP in (84b). This is a-priori an attractive move, given the existence of languages in which directional Ps license their own Case. In German, for example, directional Ps license accusative Case. This cooccurrence restriction should be structurally captured by moving the DP to a Case position in the PathP. We look at this property below.

The analysis just outlined predicts that Case is satisfied external to the PlaceP but internal to the PathP. There is evidence that suggests that this is incorrect for Dutch. Case in PathPs is (almost) always determined within the PlaceP. If it is not, it is determined outside PathP.

Pronominal DPs within postpositional phrases can show up either as r-pronouns or, in restricted cases, as accusative pronouns. The distribution is difficult to establish:

> "there are unfortunately, many stylistic, dialectal, and other factors that influence the judgemens on the choice of r-pronouns or non-r-pronouns in such examples. For some reaon, relative clauses show the ambivalent behavior most clearly". (Van Riemsdijk (1978, p. 98-99))

It seems clear however that r-pronouns have the widest distribution, and that accusative pronouns are quite restricted. R-pronouns are licensed PlaceP internally, which we take as evidence that case is assigned PlaceP internally, accusative pronouns PlaceP extrenally.

Given this background, consider the fact that accusative pronouns are possible in clauses, but excluded from paralel DPs:

(85)   a.   hij is de boom/hem/er in geklommen

                            he is the tree/him/there inclimbed

        b.   de klim de boom in

                            the climb the tree in

                            'the climb into the tree'

        c.   *de klim hem in

                            the climb him into

        d.   (?)de klim er in

                            the climb therein

(85c) shows quite straightforwardly that accusative case does not depend on properties of the Path projection, but on properties outside the PathP. If this is correct, the DP (the tree) in (85b) should not get its Case within PathP either. Rather its Case should be determined within PlaceP, as the occurrence of r-pronoun (85d) shows[41]:

(86)   a. Accusative case is not assigned within PathP

         b. Case on DPs is determined within

Case does not provide any support for (84a). We will therefore assume (84b) must be available as an analysis for postpositional phrases.

---

[41]I have no account for the fact that (85d) is slightly akwards, though infinitely better than (85c) .

There are of course further important questions relating to accusative Case. What is clear, minimally, is that there must be a way in which DPs can escape from the PathP so that they can have (Path external) accusative in particular circumstances in clauses. We leave the problem of how these derivations proceed open, but would like to suggest that there is a stage in the derivation where Spec, PathP contains a remnant PP. Directly related to the previous point is the fact that further DP movement is possible in postpositional structures is possible, resulting in P-stranding. (As (87b) shows, DP extraction is independent of P incorporation):

(87)   a.   *welk bos* is   hij *in*gelopen?

               which forest is he into walked

               'Into which forest did he walk?'

         b.   omdat hij *zo'n donker bos*   niet (*in*) durft (**in**) te lopen

               because he such a dark forest not in dares in to walk

               'because he doesn't dare walk into such a dark forest'

We leave the problem of how exactly the DP is able to escape from the postpositional PP and separate from P unsolved: we do assume that it involves the step in (84b).

3.1.3.1   External syntax of postpositional PPs.

PathPs could be further dominated by a CP(Path) level, or not, i.e. they could parallel fully articulated clauses, or reduced clauses. Postpositional PPs with a CP(Path) level should show the diagnostic properties associated with this level, i.e. they should be able to scramble or pied-pipe under wh-movement, or occur in the PP over V position. Postpositional PPs selected by verbs fail to pied-pipe under wh-movement, scramble or undergo PP over V, and thus behave as lacking a CP(Path) level (just like circumpositional PPs).:

(88) a. *Welk bos in ben jij gelopen   (pied-piping under wh-movement)

Which forest in are you walked

'Into which forest did you walk?'

   b. *Ik ben de kamer uit niet gelopen   (scrambling)

I am   the room out not walked

'I did not walk out of the room'

   c. *Zij zijn gelopen het bos door   (PP over V)

they are walked the forest through

'They walked through the forest.'

Is this property restricted to PathPs selected by verbs, or does it hold for PathPs in general? Postpositional PPs can occur independent of motion verbs (Van Riemsdijk, 1978, 1990). Yet, they cannot be wh-moved when this can be tested:

(89) de kamer uit met jou

the room out with you

'Out of the room with you!'

(90) de weg de stad in

the road the city into

'the road into the city'

(91) a. omdat hij meegereden is, de berg op

because he withdriven is, the mountain up

'because he drove with us, up the mountain'

   b. *welke berg op is hij meegereden

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which mountain on is hij with rode

'Onto which mountain did he ride with you?'

(92)   a.   zij waren *de hele dag door* hier boven aan het timmeren

                        they were the whole day through here upstairs at the hammering

                        'They hammered upstairs the whole day long.'

        b.   **welke hele dag door* waren ze hier boven aan het timmeren?

                        which whole day through were they here upstairs at the hammering

I conclude that postpositional PPs always lack a C level, and that this is a general property of PathPs. (cf. 3.1.2.2) [42] In this respect, the Path projection resembles verbal projections, like say VP, which cannot be wh-moved or scrambled either. I return to further similarities between Path and V in section 5.3.1..

3.2   Summary: directional PPs

The properties of directional PPs of Table 1 have now been discussed. The account can be summarized in the following table:

---

[42]Directional PPs thus are some kind of "small clause". This conclusion is similar to that of Hoekstra 1984, and Mulder and Hoekstra 1990, who argue on the basis of auxiliary selection that verbs taking directional PPs are unaccusative and that directional PPs are small clauses with the subject of the main V originating within it. My analysis is neutral with respect to their particular proposals.

+Directional		
PrepPP	simple PostPP	CircumP
All the * under pied-piping are explained in the same way: no PathP can undergo pied-piping. PathPs is never dominated by a C type category, which is a prerequisite for wh-movement, scrambling, or PP over V		

	PrepPP	simple PostPP	CircumP
Pied-piping	* Was wrongly assigned ✓ in Table 1. Examination shows that ✓ is due to movement of CP(place) stranding silent Path.	*	*
PP over V	*	*	*
P stranding: possible between NegP..verbal complex; C level is incorporated or absent			
by R-pronoun	✓	✓	✓
by DP	* DP too low within the PlaceP projection	✓ DP escapes from remnant PlaceP	DP is too low within the PlaceP projection
by PP	CP(place) moves to Spec, Path. It is dominated by the right type of C node, and can therefore move further.	*	✓ CP(place) moves to Spec, Path and on
P incorporation: local c-command between V and P necessary			
P-incorporation	* P is within CP(place): it is too low in the structure	✓ (P is in Path, and therefore close enough to V (V is closest c-commander))	✓ P is in Path, and therefore close enough to V (V is closest c-commander)

4. Particles

Particles homophonous with prepositions have a variety of uses: idiomatic, directional and aspectual. This section shows how idiomatic and directional particles fit into the structures established so far, but won't go into any of the other issues particles raise.

In the literature, verb particle constructions are either base generated as part of a complex V (and therefore do not project a P-type syntactic projection (Koster, 1975, Johnson, 1991, among others), or they project some syntactic projection. The projection containing the particle is argued to either be the projection of an intransitive P (a P with no complement, as in Emonds, 1976, 1985), or starting with Kayne (1985), of some type of small clause in which the argument

of the verb particle combination originates, either in subject position of the particle (Kayne, 1985), or in the complement position of the particle (Taraldsen (1983), Guéron (1986), Den Dikken (1992) and Koopman (1991), among others). For the purposes of this paper, any small clause structure will do the job: what matters is the categorial nature of the particle (P), and the fact that the complement originates within the PP. The question I would like to address is how the PP projection of the particle relates to the general structure of PPs established in this paper.

4.1 Idiomatic particles

Idiomatic particles form a thematic complex with V, and lack autonomous theta-properties (see also Kayne, 1985). Particles are like unaccusative verbs, and do not assign accusative Case. Given the absence of independent lexical properties, a reasonable hypothesis is that idiomatic particles project a PP without any functional layers:

(93)   *Verb particle constructions: V takes a bare PP complement*

```
           3
   V           PP
           3
               3
           P       XP
```
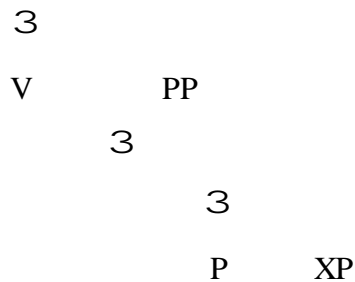
This structure accounts for the syntactic distribution of particles. Particles can incorporate into V, because V is the closest c-commanding head of V :

(94)   omdat ik Jan   niet heb *op*gebeld
               because I John not have upphoned
               'because I have not called John up'

The complement of P can escape the PP via Spec, PP as usual. When the complement is a DP, as in (94), DP movement is obligatory: the unaccusativity of the particle (cf. Koopman, 1991)

implies lack of case properties. Thus, there is no AgrP within the PP itself. Depending on which Case is available externally, the DP will move in search of an accessible Case licensing position.

(93) does not contain a PlaceP level. This is supported by failure of PlaceP material to surface in verb particle constructions:

(95)   omdat ik het/*er heb opgezocht

             because I it/*there have uplooked

             'because I looked it up'

Particles cannot be accompanied by bare modifiers, establishing the absence of Deg(place):

(96)   omdat ik het (*vlak) op heb gezocht

             because I it   right up have looked

             'because I looked it right up'

Idiomatic particle verbs therefore consist of a V selecting a bare PP complement.

Since the CP(place) level is absent, the PP cannot be preposed[43], scrambled, or occur in the PP-over-V position.

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[43]The PartP can be contrastively focused, and occur in first position in root sentences, showing phrasal behavior. I have nothing to say about such cases: this is consistent with a bare PP analysis, or a remnant movement analysis: the preposed constituent is a VP contains an incorporated P, and a trace of V. The latter analysis again raises question about the condition on proper binding (i.e. how is the verbal trace in the preposed constituent licensed).

(i)   op gaat de zon in het oosten; onder in de westen

             up goes the sun in the east;   under in the west

             'The sun goes up in the east, down the west'

(97)   a.   *op heb ik het niet gezocht

                              up have I it not looked

        b.   *omdat ik het op niet heb gezocht

                 because I it up not have looked

        c.   *omdat hij het heeft gezocht op

                 because he it has   looked up

4.2 Directional particles

Directional particles express Path, and therefore contain a projection of Path. Thus far, Path
was shown to take a CP(place) complement, or a PlaceP complement. Directional particles fill
the gap in the paradigm, with Path taking a PP complement:

(98)

         DP

                 Path   PP
                 P

                        P   DP
                        [e]   [e]
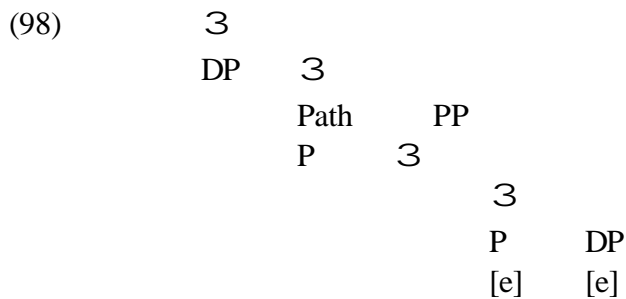
P raises to Path in directional PPs. From there, it can further incorporate into V. DP moves to
Spec PathP and continues on its journey in search of an appropriate licenser. Since the
complement of Path is a bare PP, r-pronouns cannot be licensed:

(99)   Ik heb niets/*nergens *op*gepakt

            I have nothing/nothing+er up picked

            'I picked up nothing.'

Since the particle cannot be modified by a Deg(place), Deg(place) must be absent:

(100)   Hij heeft het (*vlak/*pal) op gepakt

            He has   it   right   up picked

            'He picked it right up.'

CP(place) must be absent, and directionals always lack a CP(Path) node: directional particle PPs can basically not be preposed, scrambled or occur in the PP-over-V position.

Directional particles resemble idiomatic particle constructions except that they are embedded under Path. The projection of directional particles differs from other directional PPs in that the complement of Path is a bare PP, not a PlaceP nor a CP(place).
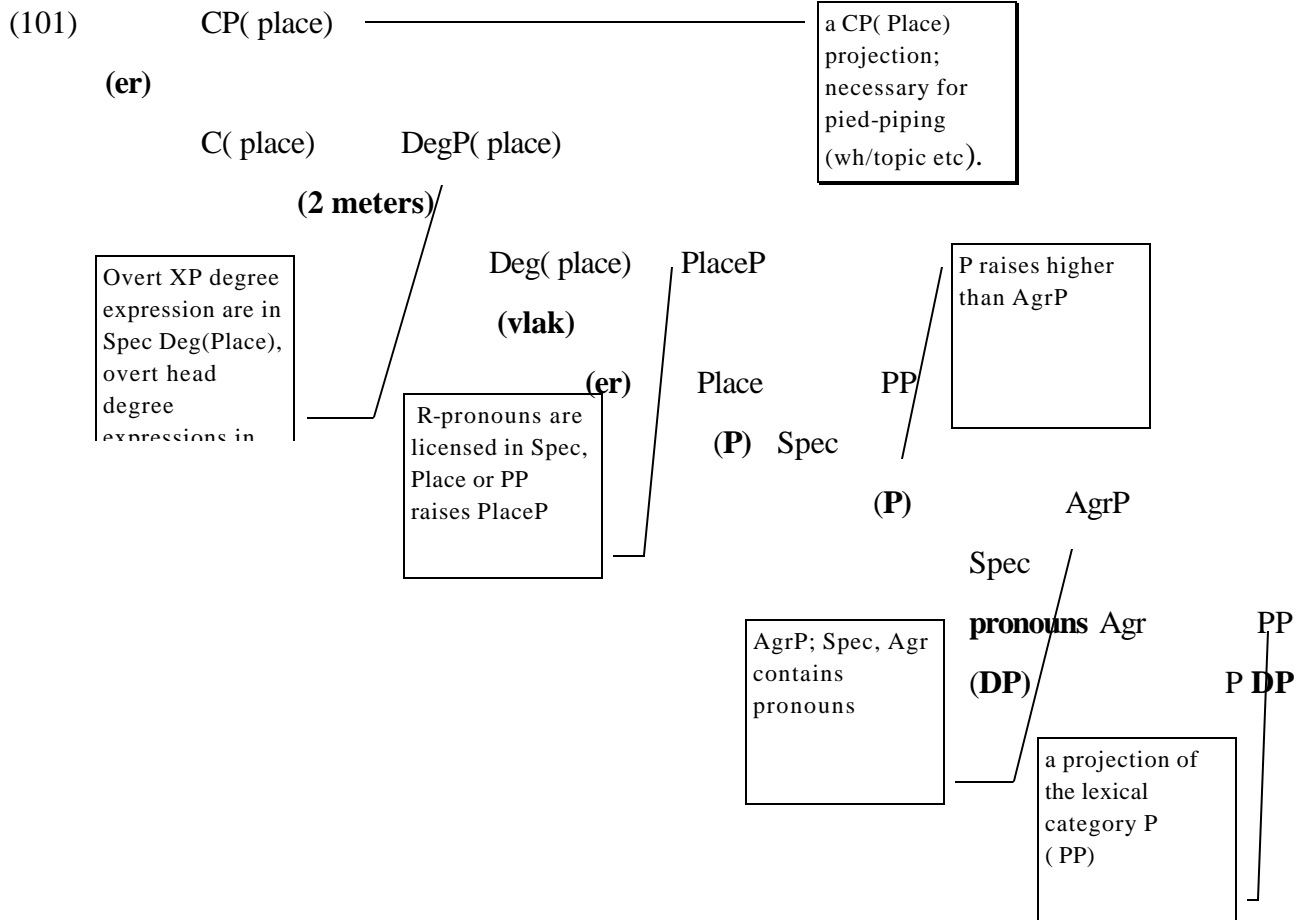

5. General issues

This paper focused on the architecture of PPs in Dutch, the development of a unified account for the different types of surface PPs, and the distribution of their constituent parts. What looks like a relatively simple syntactic category turns out to be quite complex, as usual. In this section, I briefly summarize the major results, and address some general issues.

5.1 Structures

As was shown, functional categories are not only expected within the extended projection of a P: their existence can in fact be quite firmly established on the basis of the overt syntax. Two basic semantic types of PPs must be distinguished: directional PPs and non-directional PPs. To these semantic categories correspond functional categories, for which

Jackendoff's (1990) labels Place and Path seem entirely appropriate. The syntactic structure, motivated by distributional evidence, closely mirrors the conceptual argument structure Jackendoff (1990). This strongly supports the idea that the syntax builds the structure necessary for the semantic interpretation. Other functional categories involve Agr, degree modification, and C like categories.The following structures were motivated:

5.2 PlacePs

(101) CP(place)

(er)

C(place)   DegP(place)

(2 meters)

| a CP(Place) projection; necessary for pied-piping (wh/topic etc). |

Deg(place)   PlaceP

(vlak)

(er)   Place   PP

| P raises higher than AgrP |

| Overt XP degree expression are in Spec Deg(Place), overt head degree expressions in |

(P)   Spec

(P)   AgrP

| R-pronouns are licensed in Spec, Place or PP raises PlaceP |

Spec

pronouns Agr   PP

(DP)   P **DP**

| AgrP; Spec, Agr contains pronouns |

| a projection of the lexical category P (PP) |

Within this structure, the preposition is never spelled out any higher than Place. From this, it follows that Ps can never incorporate: P is simply not high enough within its extended projection

to enter into the necessary structural relation to V (or whatever PP external category it would incorporate to).

5.2.1 Semantically empty Ps

The discussion focused on locative PPs, and never addressed the problem how semantically empty Ps fit into the picture. Empty Ps function in a variety of ways roles: as case markers and as Cs. In general, they have no particular semantic relation with the complement they license. Are these Ps Cs, as Kayne (1994) proposes, or Ps, as Emonds (1985) argues. What precisely is at stake here? Whether something is a C or a P depends on the functional structure associated with the categories dominating the head, not necessarily on the complement structure, since both C and P can take surface clausal complements. For concreteness consider a grammatical P comparable to *of*, i.e. Dutch *van*. *Van* looks like a P, and shares with P the property that it projects at least a PlaceP projection, in which r-pronouns can be licensed:

(102)   de verwoesting *van* de stad   de verwoesting *ervan*

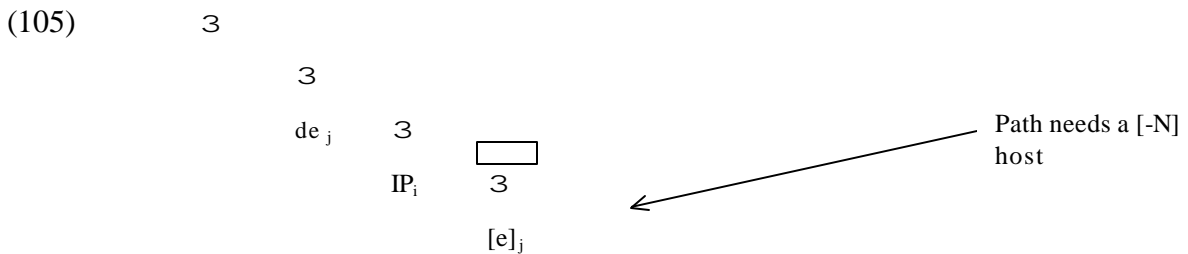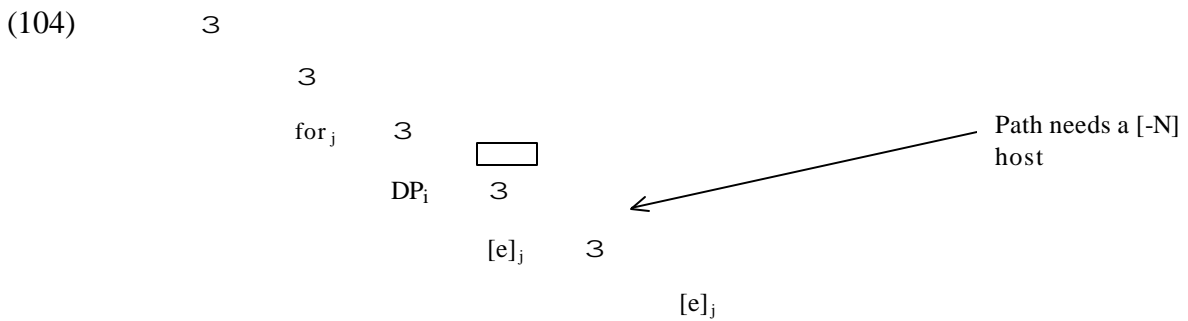   the destruction of the city   the destruction of it

Van is also dominated by a CP(place) since it can be wh-moved, scrambled or occur in the PP over V position. This shows unambiguously that *van* has properties in common with P. Although this might appear incompatible with Kayne's (1994) proposal that Ps like *of* or *van* are Cs, it is in fact it is not. Kayne proposes that elements like **van** are Cs in that they select for a clausal complement: the following DP is not a direct complement of *van*, but occurs in some Spec position in the clausal complement. Nothing prevents analyzing *van* as a P (hence showing external syntax of CP(place)) which somehopw combines with an IP, out of which a DP has raised (i.e. there is no direct complement relation between *van* and the DP)[44]. English C *for* can be treated in much the same way as Dutch *van*. Since it licenses accusative Case, there must be at least a P shell and an Agr shell present:

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[44]Strong empirical support for a Kaynian analysis is presented in Hoekstra 1995.

(103)   [[$_{PP}$**for** [**DP**   [[$_{Agr}$e] [[$_P$e] [$_{IP}$ [e]$_i$ to]
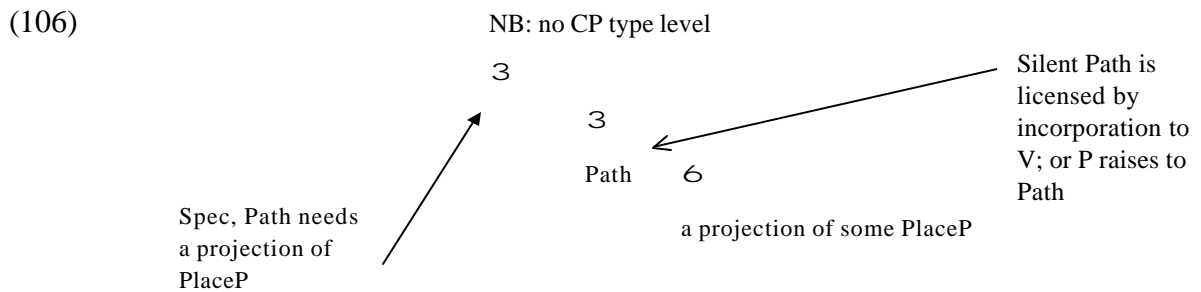
Prepositional complementizers raise the problem of exceptional Case marking. English *for*

licenses Case on the subject of an infinitival, but Romance *de* or Dutch *om* do not. This could

be taken as evidence that they do not provide any structural position for Case i.e. these Ps

would not project an AgrP projection. This proposal is unattractive since it still raises another

question: how does a language learner determine that P projects AgrP or not. Alternatively,

these prepositional Cs project the same structure as *for*, including AgrP. The reason why

Romance languages and Dutch do not allow for overt subjects in these infinitivals is not due to a

structural difference, but follows from the different status of infinitivals in the languages in

question. Infinitivals in Dutch and Romance have nominal morphology, but not in English. As a

consequence, the entire infinitival complement is forced to raise to Spec, AgrP in Dutch and

Romance, whereas DPs raise in English:

(104)

for $_j$

DP$_i$

[e]$_j$

[e]$_j$

Path needs a [-N]
host

(105)

de $_j$

IP$_i$

[e]$_j$

Path needs a [-N]
host

: a DP in English, yielding exceptional Case marking, and a clausal complement in French/Dutch, yielding absence of exceptional Case marking by prepositional Cs. This in turn seems directly realted to the fact that Raomnce infinitives are nominal, but English infinitives are not. The latter proposal is of course preferable, because it reduces parametric variation (the structures are identical) and shifts the parametric variation to the size of the consituent that moves.
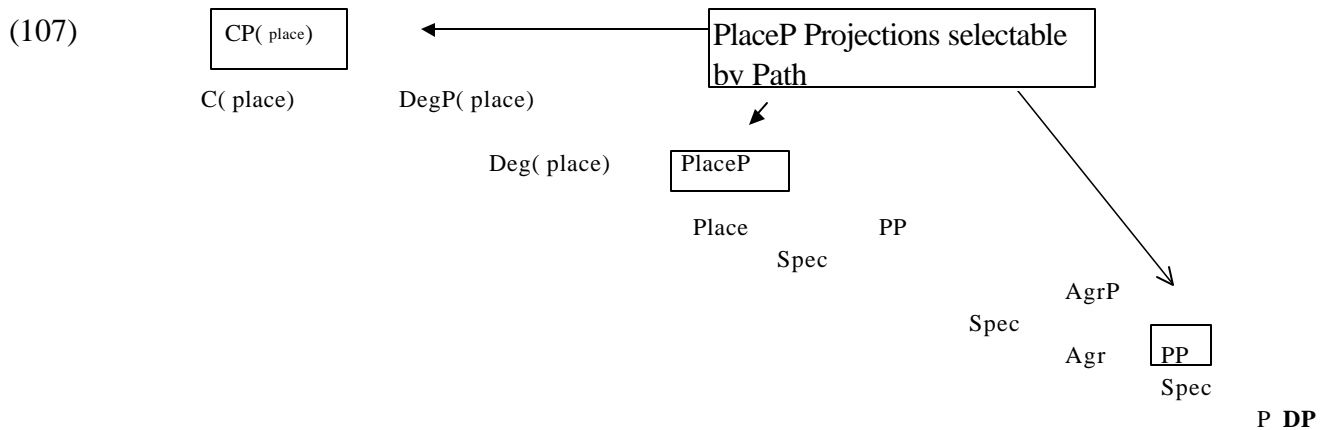
5.3 PathPs

Directional PPs have the skeletal structure in (106), with Path combining with some projection of the PlaceP:

(106)

NB: no CP type level

Silent Path is licensed by incorporation to V; or P raises to Path

Path

Spec, Path needs a projection of PlaceP

a projection of some PlaceP

PathP is never dominated by a CP type level, at least not by a CP level that makes wh-movement or scrambling possible. This hypothesis is useful in that it accounts for why PathPs never undergo pied-piping under wh-movement nor scrambling.

The different constituents of the PlaceP that can be selected by Path are illustrated in (107):

(107)

CP(place)

C(place)   DegP(place)

Deg(place)   PlaceP

Place   PP

Spec

AgrP

Spec

Agr   PP

Spec

P **DP**

PlaceP Projections selectable by Path

(107) raises two questions: why exactly these categories and what determines selection. The latter involves general issues about complementation, and this paper presents no new insights into these. The former question should be answerable, however. Spec, PathP must contain a PlaceP projection. A projection which does not carry this property recognizable on its sleeve, will simply not be selectable, because it will have nothing to offer to Spec, Path. Thus, AgrP is not selectable because PP is embedded under it. The lexical PP is, by virtue of its lexical place properties and PlaceP: it contains either the lexical P or the PP. It is less clear how CP(place) satisfies it, since in the derivations it is not structurally close to either PlaceP or PP[45].

5.3.1 Path: P and V

Although Path looks like a P, and not like a V, it has both P-like behavior and V-like behavior.

Dutch has verb particle constructions, with P optionally incorporating to V. The overt P in PathP can optionally incorporate into V as well.[46]This suggests that the Path head is part of a

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[45]Following Koopman (1996), empty projections must be licensed at a point in the derivation. This implies some category containing overt lexical material is sitting in Spec, CP(place). Pied-piping PlaceP to Spec, CP(place) will make CP be recognizable as PlaceP, in the same way as having a wh-phrase in Spec, DP allows the DP to count as wh-phrase.

[46]Precisely this fact motivated van Riemsdijk's rule of P-shift (1978), which turns a postposition into a particle.

verb particle construction. If this is corect, PathPs are never dominated by a (wh-type of) CP projection because these projections are excluded with particles as well.

V-like behavior includes the fact that non-CP complements of V precede V, and so does the complement of Path.

Path and V do not have paralel Case properties: Path in Dutch is never responsible for accusative Case (cf 3.1.3.)

Taken together, these observations might suggest that Path projections may involve both a verbal projection and a particle construction. In other words, the Path projection would be a verbal small clause headed by a light verb taking a particle.

(108)

         V   PathP

                [$_P$Path] Place
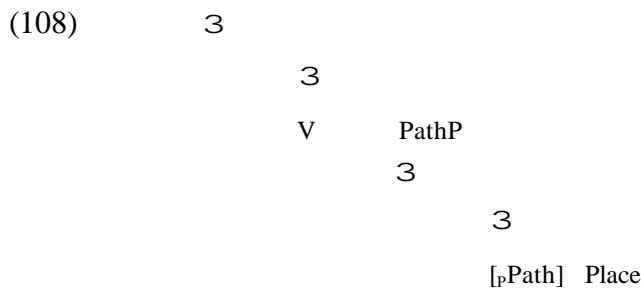
This structure allows us to sharpen the issues. Which properties are due to which projections. Are the verbal characteristics due to the presence of the light verb? The P characeristics due to the projection of the particle?

Consider the V projection. VP small clauses are generally excluded from DPs, yet PathPs are fine within DPs '*de weg de stad in* 'the road into the city') . This indicates the absence of the VP small clause projection, leaving a "bare" PathP is present. DPs then become a good test case to tease properties apart, as I have in fact been doing all along. Properties of the V projection should disappear within DPs, properties of the Path projection should be present.

PathPs within DPs are always pospositional. The leftward movement of PlaceP to Spec, Path is therefore not a property of V, but, as assumed all along, a property of Path. The shared property with V is accidental.

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Pronominal DPs within postpositional phrases can show up either as r-pronouns or, in restricted cases, as accusative pronouns.. When accusative pronouns are possible in clauses, they are excluded from paralel DPs:

(109)   a.   hij is de boom/hem/er in geklommen

                 he is the tree/him/there inclimbed

          b.   de klim de boom in   / de klim er in /*de klim hem in

                 the climb into the tree / the climb therein/ the climb him into

This shows that accusative case does not depend on properties of the Path projection, but on properties of the light verb (or other characteristics of the clause). Since this projection is missing within DPs, accusative Case is simply unavailable.

The similarity with verb particle constructions, which yields optional incorporation of Particles and PathPs, could in fact be due to the presence of the light V in verbal Path constructions. The presence of the light V would of course also be extremely important in light of the fact that languages with serial verbs typically use lexical verbs in directional constructions: if a structure like (106) underlies clausal directionals universally, questions about the overt forms of directionals crosslinguistically become discussable and answerable in precise ways.

5.3.2 Further questions

In this paper, I set out to explore the syntax of Ps, with the ultimate goal of getting a better understanding of the architecture of Ps universally. I did not do so by hopping around from one language to another, but tried instead to provide a uniform analysis of the syntax of Ps in Dutch. I arrived at a reasonable coherent picture of the properties of the different types of PPs in Dutch, accounting for a large amount of data in a unified fashion. Although progress has been made, the last word has not been said about many of the issues raised here. In

particular, it seems that we are at the beginning of understanding the extremely interesting issues surrounding the syntax of Path .

Some problems that remain in this paper are in fact general old theoretical problems, not problems related to my analysis in particular: the theory of complementation, what accounts for the optionality of incorporation into the verbal complex etc. My analysis does not yield any new insight either into the well-known problem that DPs can c-command out of their PPs (see among others, Pesetsky 1995).

Arguments for the architecture of PPs should not only come from careful language internal analyses, but also from success or ease in handling crosslinguistic variation. Indeed, if structural variation between languages is minimal or non-existent, the structures motivated for Dutch should extent directly to PPs in other languages. Unfortunately, serious investigation of this issue goes beyond the scope of the present paper.

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