

Adpositions and adpositional phrases

A syntactic view from Dutch

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Abstract

This article examines the main syntactic features of Dutch adpositions, including their complementation and modification possibilities, and the main syntactic functions of adpositional phrases. It is also shown that adpositions can undergo different movement processes, and that they can sometimes be split by subextraction of their complement. The standard syntactic classification of adpositions is based on their placement relative to their complement (if any): preposition, postposition, circumposition, and particle (i.e. intransitive adposition). We will argue that this classification is epiphenomenal, in the sense that word order is not lexically but syntactically determined; at the same time, we will show that the internal structure of adpositional phrases is more complex than might appear at first glance.

Keywords:

Adpositions, projection, classification, movement, internal structure

1 Introduction

This chapter examines adpositions and adpositional phrases in Dutch. Section 2 begins with a syntactic classification based on the order of adpositions and their complements. This is followed by a discussion of the modification possibilities and syntactic uses of adpositional phrases in Sections 3 and 4. Section 5 discusses the movement possibilities of adpositional phrases as well as subextraction from them. Section 6 returns to the classification of adpositions in Section 2 and argues that it is epiphenomenal.

2 Adposition classes and complementation

Dutch adpositions are usually divided into the four basic types in (1), based on their position with respect to their complement (if there is one); cf. Beliën (2021). When discussing the various subclasses, we will use the abbreviations in (1) when relevant, while in other cases we will use the conventional abbreviation P, as well as for the class of adpositions as a whole.

- (1) a. Prepositions (preP): adpositions preceding their complement
- b. Postpositions (postP): adpositions following their complement
- c. Circumpositions (circumP): discontinuous adpositions enclosing their complement
- d. Intransitive adpositions (intrP) and verbal particles: adpositions without a complement

It is a remarkable fact that the (constituting parts of) the adposition types in (1b-d) are all smaller subsets of the set of prePs; cf. the lists in Broekhuis (2013: §1.2). This raises the question of whether the four basic types are listed as such in the lexicon, or whether the word order variation is a syntactic matter; we will argue in Section 6 that the latter is the case.

2.1 Prepositions

PrePs usually take noun phrases as complements; the prePs *in* ‘in’ and *naar* ‘to’ in (2) are combined with the DP *de garage* to form prePPs.

- (2) a. De auto staat [PP in [DP de garage]].
 the car stands in the garage
 b. Jan ging [PP naar [DP de garage]].
 Jan went to the garage

The **nominal complement** usually has an obligatory determiner (i.e. an article, possessor, or demonstrative pronoun); omitting the article *de* ‘the’ in the examples in (2) is impossible. However, there are contexts where the determiner need not or cannot be used; the prePs *in* and *naar* in (3) take a bare (i.e. determinerless) noun phrase.

- (3) a. Marie lag [PP in bed].
 Marie lay in bed
 b. Marie ging [PP naar school].
 Marie went to school
 c. Marie werkte vroeger [PP op kantoor].
 Marie worked formerly at office

The interpretation of the ‘P + bare noun phrase’ units in (3) is special in that it expresses that the subject is engaged in an activity or occupation that is somehow related to the noun; these units are conventional ways of saying that Marie was resting/sleeping, taking lessons, or working as an administrative worker. When an article is added to the noun, the noun phrase becomes referential and the intended “occupation” reading is suppressed by a compositional spatial reading. However, many nouns cannot occur as bare singular noun phrases, and in such cases the construction may be ambiguous: (4a) would normally express that the baby was in its cradle, but it can also express that it was sleeping; on the other hand, (4b) would normally express that Marie attended religious services every week (cf. English *Mary went to church every week*), but it can also express that she went to the church every week for some other reason. The ability to occur as a bare noun phrase to express an “occupational” reading thus seems to be an idiosyncratic (i.e. lexical) property of a limited number of nouns.

- (4) a. De baby lag [PP in *(zijn) wieg]. (cf. (3a))
 the baby lay in his cradle
 b. Marie ging elke week [PP naar *(de) kerk]. (cf. (3b))
 Marie went every week to the church

The verbs and PPs in (3) form more or less collocations with a fixed core meaning, but as one of the reviewers notes, there are other more or less fixed phrases that prefer a bare noun phrase like *op verzoek van* ‘at the request of’ and *na zorgvuldig onderzoek* ‘after careful examination’; for more examples, see Broekhuis (2013:169ff.).

Nominal complementation is the prototypical case, but not an exclusive option; there are also more exceptional cases in which prePs take a **prepositional** or **adjectival complement**. A clear example showing that PPs sometimes appear as complements of prePs is given in (5); cf. Van Riemsdijk (1978) and Hoekstra (1984a). The PP-complements refer to regularly recurring events, which may explain why they can be replaced by temporal adverbs like *later* ‘later’ and *morgen* ‘tomorrow’.

- (5) De koekjes zijn [PP voor [PP bij de koffie]].
 the cookies are for with the coffee
 ‘The cookies are intended for coffee.’

Cases that are more systematic include adpositions such as *van* ‘from’ and *tot* ‘to/until’; the former indicates the starting point of a spatial or temporal path, while the latter indicates a later point (not necessarily the end point). In (6) we first give some examples with nominal complements.

- (6) a. Jan reed [PP van Utrecht] [PP tot Groningen] met me mee.
 Jan drove from Utrecht to Groningen with me prt.
 ‘Jan traveled with me from Utrecht to Groningen.’
 b. Els is [PP van maandag] [tot vrijdag] afwezig.
 Els is from Monday until Friday absent
 ‘Els is absent from Monday to Friday.’

The examples in (7) show that such *van-* and *tot-*prePPs can also take a PP-complement. Note that the complements can contain the modifier *vlak/diep*, which intervenes between the two Ps; this shows that sequences like *van na* ‘from after’ in (7a) and *tot in* ‘to in’ in (7b) are not compounds. This is also supported by the fact that the complements of *van/tot* can be much more complex than in (7), as *tot (aan) het einde ((aan) toe)* ‘to/until the end’, where the (P-like) elements between brackets are optional; cf. Broekhuis & Den Dikken (2018).

- (7) a. Dit gebouw dateert [PP-PATH van [PP-LOC (vlak) na de oorlog]].
 this building dates from just after the war
 b. Deze weg loopt [PP-PATH tot [PP-LOC (diep) in het bos]].
 this road stretches to deep in the wood
 ‘This road runs deep into the forest.’

Note that while the prePPs as a whole refer to paths, the PP-complements must refer to locations. This may explain why the PPs can be replaced by locational and temporal pro-forms, as in *van hier tot daar* ‘from here to there’ and *van toen tot nu* ‘from then till now’. This suggests that the selection restrictions imposed on the complement of *van/tot* are not syntactic (i.e. categorial) but purely semantic. *Van-* and *tot-*prePPs are also special in that they allow adjectival complements, as in *Van vroeg tot laat was hij aanwezig* ‘he was present from dawn till dusk’ (lit. from early till late) and *Van jong tot oud was aanwezig* ‘Everyone (from young to old) was present’. These cases are idiomatic in that they express a universal meaning in a non-compositional way; cf. Postma (1995). Adjectival complements are otherwise very exceptional and usually temporal. Two cases (the first again with *tot*) are given in (8); the use of the degree modifier *heel* and the comparative affix *-er* show that we are dealing with true adjectives and not e.g. deadjectival nouns.

- (8) a. [PP Tot [PP voor [AP (heel) kort]]] woonde hij in Amsterdam.
 till for very short lived he in Amsterdam
 ‘Until (very) recently, he lived in Amsterdam.’
 b. Hij wil [DP geen contract [PP voor [AP langer dan één jaar]]].
 he wants no contract for longer than on year
 ‘He does not want a contract for more than one year.’

Another popular belief is that prePs do not take **clausal complements**, but the adverbial clauses in (9) can be taken as evidence for the existence of such cases; cf. Van Riemsdijk (1978: §3.5) and Hoekstra (1984b). The analysis of the PPs in (9) differs from that in traditional grammars, which take the sequence *nadat* to be a complex subordinating

conjunction; cf. Haeseryn et al. (1997: §10.3). However, the traditional analysis leaves unexplained the fact that the adverbial phrases introduced by *voordat/nadat* in (9) can be modified by the same modifiers as prePPs with a nominal complement; cf. *vlak voor zijn vertrek* ‘just before his departure’ and *vlak na zijn val* ‘right after his fall’. Note in passing that a puzzling property is that the complementizer-like element *dat* can be omitted after *voor* ‘before’, but not after *na* ‘after’.

- (9) a. Jan zwaaide [PP (vlak) voor [CP (dat) hij vertrok]].
 Jan waved right before that he left
 ‘Jan waved (just) before he left.’
 b. Jan huilde [PP (vlak) na [CP *(dat) hij gevallen was]].
 Jan cried right after that he fallen was
 ‘Jan cried (right) after he fell.’

An appeal to parallelism in behavior can also be found in the case of the prePs *van* ‘from’ and *tot* ‘to/until’, which can (exceptionally) take a PP-complement; cf. the examples in (7). If temporal clauses introduced by *voordat/nadat* have the adpositional structure in (9), one would expect them to accept these clauses as complements of *van/tot*; (10b) shows that this is indeed the case (see Bennis & Hoekstra 1984):

- (10) a. Dit model auto dateert nog [PP van [PP VOOR [DP mijn geboorte]]].
 this model car dates PRT from before my birth
 ‘This model car dates from before my birth.’
 b. Dit model auto dateert nog [PP van [PP VOOR [CP dat ik geboren werd]]].
 this model car dates PRT from before that I born was
 ‘This type of car dates from before I was born.’

Although we have seen that temporal clauses introduced by *voordat/nadat* are regular prePPs, we cannot yet conclude that the *dat*-clauses occur as complements of the preP *voor/na*, because we have ignored a possible analysis in which the *dat*-clause functions as a relative clause with a silent noun phrase as antecedent, as in [PP VOOR [DP ~~HET MOMENT~~ [relative clause *dat hij vertrok*]]]. Broekhuis (2013: 183) compares the two analyses, but does not find conclusive evidence to decide between them. Another potential problem is that, as one of the reviewers correctly points out, the proposed analyses of Dutch *voordat* and *nadat* cannot be applied to their German counterparts *bevor* and *nachdem*. We leave these issues for future research and turn now to the prePP-objects of verbs such as *rekenen (op)* ‘to count (on)’; the examples in (11a&b) show that the *op*-PrePP can take a nominal but not a clausal complement when it occurs in the regular object position immediately preceding the verbs in clause-final position. Note that the intended meaning in (11b) can be expressed by (11c), where the clause is introduced by an anticipatory PP *erop* ‘on it’; this is not relevant here, since the clause is clearly not part of the prePP, but in a right-dislocated position.

- (11) a. Jan had niet [PP op [DP die bonus]] gerekend.
 Jan had not on that bonus counted
 ‘Jan had not counted on that bonus.’
 b. *Jan had niet [PP op [CP dat hij die bonus zou krijgen]] gerekend.
 Jan had not on that he that bonus would get counted
 c. Jan had *er* niet *op* gerekend [CP dat hij die bonus zou krijgen].
 Jan had there not on counted that he that bonus would get
 ‘Jan hadn’t counted on getting that bonus.’

The unacceptability of (11b) has led to the claim that there is a ban on clausal complements in prePPs, but this cannot be sustained, since many speakers allow them when the PP is moved to a more leftward position, as in (12); cf. Haslinger (2007: ch.3). Note that (12a) requires a special intonation pattern associated with contrastive focus (with an intonation break before the PP and a focus accent indicated by small caps), and the percentage sign indicates that the acceptability judgments range from marked to fully acceptable. Haslinger (p.163) suggests that the complement clause of the extraposed PP in (12a) is preferably factive, but it may be that constructions with a preposed PP are rather sensitive to information-structural considerations; we leave this to further research.

- 12) a. %Jan had niet gerekend [_{PP} op [_{CP} dat hij die bonus zou krijgen]].
 b. %Jan had [_{PP} op [_{CP} dat hij die BONUS zou krijgen]] niet gerekend.
 c. % [_{PP} Op [_{CP} dat hij die bonus zou krijgen]] had Jan niet gerekend.

Furthermore, adpositions can also be combined with infinitival clauses with *te*, although not when the complementizer *om* is present, which can be found in infinitival object clauses in examples such as *Jan beloofde [_{CP} (om) PRO niet te snurken]* ‘Jan promised not to snore’. This is exemplified in (13) for the temporal adposition *na* ‘after’ and the non-temporal adposition *zonder* ‘without’.

- (13) a. Jan huilde [_{PP} na [_{CP} (*om) PRO te zijn gevallen]].
 Jan cried after COMP to be fallen
 ‘Jan cried after falling.’
 b. Jan sliep [_{PP} zonder [_{CP} (*om) PRO te snurken]].
 Jan slept without COMP to snore
 ‘Jan slept without snoring.’

A special kind of complementation is found in so-called absolute *met*-constructions; cf. Van Riemsdijk (1978) and Beukema & Hoekstra (1983/1984). The examples in (14) show that the preP *met* takes a complement consisting of a subject-like element (*Jan*) and a phrase predicated of this subject, which can be a PP (*in ons team*) or an AP (*helemaal dronken*). The constituency of the absolute *met*-construction can be seen from two standard constituency tests that are generally applicable to Dutch. First, as shown in (14a&b), the absolute *met*-constructions can be placed in sentence-initial position before the finite verb *zullen* in second position. Second, (14c) shows that absolute *met*-constructions can be conjuncts in a coordinate structure: cf. Ross (1967).

- (14) a. [_{PP} Met [Jan in ons team]] zullen we nooit verliezen.
 with Jan in our team will we never loose
 ‘We will never loose with Jan on our team.’
 b. [_{PP} Met [Jan helemaal dronken]] zullen we nooit winnen.
 with Jan entirely drunk will we never win
 ‘With Jan completely drunk, we will never win the game.’
 c. [_{PP} Met [[Jan in ons team] en [Piet op de bank]]] zullen we nooit verliezen.
 with Jan in our team and Piet on the bench will we never loose
 ‘We will never loose with Jan on our team and Piet as substitute player.’

We have seen that complements of prePs are prototypically noun phrases, but we have only illustrated this with full (i.e. non-pronominal) noun phrases. The use of pronominal complements is possible in general, although third-person **pronominal complements** exhibit somewhat special behavior. The latter can be seen in the examples in (15), corresponding to English “Els waited for him/her/it/them”.

- (15) a. Els heeft [_{PP} op hem/haar/*het] gewacht. (strong personal pronoun)
 Els has for him/her/it waited
 b. Els heeft [_{PP} op 'm/'r/*'t] gewacht. (weak personal pronoun)
 Els has for him/her/it waited
 c. Els heeft [_{PP} op hen/ze] gewacht. (strong/weak personal pronoun)
 Els has for them waited.'

Example (15a) shows that third-person singular pronominal complements of prePs are possible when they are non-neuter, but not when they are neuter. Since the neuter pronoun *het* is usually phonologically weak, one might think that the restriction is phonological; this is clearly wrong, since the weak pronouns in (15b) give the same results, and furthermore the third-person plural pronoun in (15c) can be either strong or weak. There are good reasons to think that the restriction is semantic. First, the pronouns in the acceptable examples in (15) can only refer to [+HUMAN] entities: for example, (15c) can be used to express that Els is waiting for some friends, but not to express that she is waiting for some parcels. Second, (16) shows that prePs can take [+HUMAN] interrogative and relative pronouns as their complements, but not their [-HUMAN] counterparts.

- (16) a. [_{PP} Op wie/*wat] heeft Els gewacht? (interrogative pronoun)
 for who/what has Els waited
 b. De man [_{PP} op wie] Els gewacht heeft. (relative pronoun)
 the man for who Els waited has
 b'. *Het pakje [_{PP} op wat] Els gewacht heeft.
 the parcel for which Els waited has

To refer to [-HUMAN] entities, Dutch uses the so-called R-pronouns, which typically precede the adposition; cf. Van Riemsdijk (1978). The name derives from the fact that these pronouns contain the sound /r/. In (17) some illustrations are given corresponding to the unacceptable cases in (15) and (16); the R-pronouns are italicized. We should note two things in passing. First, since the R-word is not marked for number, it can be interpreted as either singular or plural; this is only indicated in the translation of (17a). Second, the examples in (17c&d) show that the R-pronoun and the selecting prePs can be separated by leftward movement of the former; this will be one of the topics discussed in Section 5.2.

- (17) a. Els heeft [_{PP} *er* op] gewacht. (personal pronoun)
 Els has there for waited
 'Els waited for it/them.'
 b. Els heeft [_{PP} *daar* op] gewacht. (demonstrative pronoun)
 Els has there for waited
 c. *Waar*_i heeft Els [_{PP} *t*_i op] gewacht? (interrogative pronoun)
 where has Els for waited
 d. Het pakje [*waar*_i] Els [_{PP} *t*_i op] gewacht heeft] (relative pronoun)
 the parcel where Els for waited has

While third-person pronouns must refer to [+HUMAN] entities, R-pronouns typically refer to [-HUMAN] entities; the examples (17a-c) would be considered derogatory if used to refer to a person. However, there is no absolute prohibition against this use; in colloquial speech, *De man waar Els op gewacht heeft* 'The man for whom Els waited' may be even more common than the use of the demonstrative *wie* in *De man op wie Els gewacht heeft*. The prohibition of [-HUMAN] pronominal complements in prePPs is not absolute either, since quantificational pronouns can be either [+HUMAN] or [-HUMAN]; the R-pronominal counterparts, on the other hand, must be interpreted as [-HUMAN]. This is illustrated in (18) for existential pronouns.

- (18) a. Els heeft [_{PP} op iemand/^(?)iets] gewacht.
 Els has for someone/something waited
 ‘Jan has waited for someone/something.’
 b. Jan heeft [_{PP} ergens op] gewacht.
 Jan has somewhere for waited
 ‘Jan has waited for something.’

The phenomenon of R-pronominalization is widespread. It occurs not only with PP-complements of verbs (i.e. with “functional” prePs), as in (15)-(18), but also with prePPs with a predicative function, as in (19a). Furthermore, it occurs with several adverbial functions (i.e. with different semantic types of prePs), as in (19b-e), including spatial adpositions (b), temporal adpositions (c), causative/passive *door* ‘by’ (d), and instrumental *met* ‘with’ (e).

- (19) a. Jan zet de boeken [_{PP} in de kast/er in].
 Jan put the books in the bookcase/there in
 b. Jan werkt [_{PP} achter dat scherm/daar achter].
 Jan works behind that screen/there behind
 c. Jan gaat [_{PP} na het journaal/daar na] naar bed.
 Jan goes after the news/there after to bed
 d. De boom brak [_{PP} door de harde wind/er door].
 the tree broke by the strong wind/there by
 e. Jan schuurde de vloer [_{PP} met een machine/er mee].
 Jan sanded the floor with a machine/there with

However, not everything goes, because there are also prePs that resist R-pronominalization. Such prePs are morphologically complex (at least from a diachronic point of view). Some examples are given in (20), which can be compared with the examples in (19c-e).

- (20) a. Jan heeft [_{PP} tijdens het journaal/*er tijdens] geslapen.
 Jan has during the news/there during slept
 b. De boom bleef [_{PP} ondanks de harde wind/*er ondanks] onbeschadigd.
 the tree stayed despite the strong wind/there despite undamaged
 c. Jan schuurde de vloer [_{PP} zonder een machine/*er zonder].
 Jan sanded the floor without a machine/there without

2.2 Postpositions and circumpositions

This section will show that Dutch Ps can also be postpositional or circumpositional. We start with **postpositions** (postPs), which are homophonous with prePs in the sense that a subset of prePs can also occur after their complement. The two examples in (21) differ in that the prePP indicates a place, while the postPP indicates a direction (a distinction expressed in German by dative or accusative assignment to the complement of the preP, not by word order); the preP *op* in (21a) thus indicates that the cycling took place on the hill, while the postP *op* expresses that the cyclist followed a path up the mountain.

- (21) a. De fietser reed [_{PP} op de heuvel].
 the cyclist rode on the hill
 ‘The cyclist rode on the hill.’
 b. De fietser reed [_{PP} de heuvel op].
 the cyclist rode the hill onto
 ‘The cyclist rode onto the hill.’

The examples in (22) show that the two constructions in (21) differ in their choice of perfect auxiliary. This can be explained by the fact that the perfect construction with *hebben* ‘to have’ simply expresses that the cyclist has completed a cycling event, while the perfect construction with *zijn* ‘to be’ expresses that the eventuality has resulted in reaching a certain goal, i.e. the cyclist has completed the cycling event by reaching the endpoint of the implied path, the top of the hill. In Dutch, telic perfect constructions of the latter kind usually take *zijn* with intransitive (i.e. unaccusative) verbs.

- (22) a. De fietser heeft/??is [PP op de heuvel] gereden.
 the cyclist has/is on the hill ridden
 ‘The cyclist rode on the hill.’
 b. De fietser is/??heeft [PP de heuvel op] gereden.
 the cyclist is/has the hill onto ridden
 ‘The cyclist rode onto the hill.’

As the notion of path implies a change of location it is also correctly predicted that postPPs cannot be combined with verbs that are incompatible with such a change, such as the positional verb *zitten* ‘to sit’.

- (23) Jan zit [PP op de heuvel]/*[PP de heuvel op].
 Jan sits on the hill/the hill onto
 ‘Jan is sitting on/*onto the hill.’

Circumpositions (circumPs) consist of two adpositional parts around the complement, i.e. P₁-DP-P₂, as in *onder₁ de brug door₂* ‘under the bridge’ in (24a). In this case both P₁ and P₂ are taken from a subset of prePs, but there are at least two cases, such as *over₁ de heide heen₂* in (24b) and *van₁ de brug af₂* ‘from the bridge’, where P₂ has a form that is not commonly used as a preP. However, there is reason to think that they were originally prePs (cf. Phillipa 2018, lemma *af* and *heen*), and they are still used as postPs c.q. particles with a directional meaning.

- (24) a. Jan liep [PP onder de brug #(door)].
 Jan walked under the bridge through
 ‘Jan crossed the bridge below.’
 b. Jan liep [PP over de heide (heen)].
 Jan walked over the heathland HEEN
 ‘Jan walked across the heath.’

The circumPPs in (24) are directional. First, *onder de brug door* in (24a) describes a path that goes under the bridge and crosses it from a position on the left of the bridge to a position on the right, or vice versa. The number sign in (24a) indicates that it is possible to omit *door*, but that this results in a locational reading: it is no longer claimed that Jan will end up on the other side of the bridge. Second, *over de heide heen* in (24b) preferably refers to a path that begins at one end of the heathland and ends at the other; if we omit *heen*, this reading seems possible, but less compelling: Jan can also walk on the heath. However, this does not mean that circumPPs are always directional, as can be seen in (25), where the meaning is clearly locational; it seems that in such a case the second part of the circumP can be omitted without changing the core meaning of the sentence:

- (25) De haan stond [PP tussen de kippen (in)].
 the cock stood between the chickens in
 ‘The cock was standing in between the chickens.’

All the examples so far are cases with a nominal complement. This is not accidental, since it seems that postPs and circumPs differ from prePs in that they are incapable of selecting adjectival or clausal complements. Nevertheless, it is conceivable to analyze circumPPs as cases where a postP selects a prePP, resulting in the structure [postPP [prePP prep DP] postP]. This may seem far-fetched at first, but we will show that it is not. First, consider the examples in (26). The examples in (26a&b) show that the semantic difference between prePPs and postPPs established above also arises in attributive position; while (26b) implies that the hike followed a path up the mountain (not necessarily to the top), there is no implication about the path covered in (26a), apart from the fact that it is on the mountain. The interpretation of (26c) seems to show that R-pronominalization of postPPs is ruled out; it does not involve the notion of a path.

- (26) a. [DP De wandeling [PP op de berg]] duurde 10 uur.
 the hike on the mountain lasted 10 hour
 ‘The hike on the mountain lasted 10 hours.’
- b. [DP De wandeling [PP de berg op]] duurde 10 uur.
 the hike the mountain onto lasted 10 hour
 ‘The hike up the mountain lasted 10 hours.’
- c. [DP De wandeling [PP er op]] duurde 10 uur.
 the hike there on lasted 10 hour
 ‘The hike on/*up it lasted 10 hours’

If we tentatively conclude from this that R-pronominalization is only possible with prePs, we run into the problem that circumPPs also allow R-pronominalization. This problem can be solved by assuming that circumPs are actually postPs with a prePP-complement and that R-pronominalization only affects the latter, as in (27b).

- (27) a. [DP De tocht [postPP [prePP over de berg] heen]] duurde een week.
 the trek over the mountain HEEN lasted a week
 ‘The trek across the mountain lasted a week.’
- b. [DP De tocht [postPP [prePP er over] heen]] duurde een week.
 the trek there over HEEN lasted a week
 ‘The trek across it lasted a week.’

Of course, an alternative hypothesis would be that circumPPs simply exhibit the same behavior as prePPs with respect to pronominalization, but we will see in Section 6 that there is additional compelling evidence for the analysis in (27).

2.3 Intransitive adpositions and verbal particles

Intransitive adpositions differ from the other three types in that they have no (overtly realized) complement, although it is usually implied. IntPPs are typically spatial, as can be seen in the examples in (28). In (28a), the context determines the deictic center from which the intended location can be computed, with the default being the speaker’s location: in the default reading, *boven* in (28a) refers to a floor of the building higher than where the speaker is; *achter* in (28b) refers to the rear of the building. Examples such as (28c) are typically found in contexts related to dressing and personal hygiene; the implied complements can usually be made explicit. IntrPPs can also be used as postnominal modifiers; cf. *De kamer boven is groter dan de kamer beneden* ‘The room upstairs is bigger than the room downstairs’.

- (28) a. De douche bevindt zich [_{PP} boven].
 the shower is.located REFL above
 ‘The shower is upstairs (i.e. above this floor).’
- b. Mijn fiets staat [_{PP} achter].
 my bike stands behind
 ‘The bike was behind the house.’
- c. Marie deed een sjaal [_{PP} om (haar nek)].
 Marie did a shawl around her neck
 ‘Marie put a shawl around (her neck).’

There are also intransitive Ps that have lost their spatial meaning and form a collocation with a verb, which is why they are often called verbal particles. The meaning aspect added by the particle is often aspectual, as in *opeten* ‘to eat up’, where it adds a sense of completeness in that the referent of the direct object of *eten* ‘to eat’ must be completely consumed; the contrast between the two (a)-examples in (29) is thus due to the fact that only the definite object in (29a) refers to a bounded amount of food. Sometimes the particle adds more lexical meaning, as in *uitslapen* ‘to sleep out/late’ in (29b).

- (29) a. Jan heeft de spaghetti op gegeten.
 Jan has the spaghetti up eaten
 ‘Jan has eaten up the spaghetti.’
- a’. Jan heeft spaghetti (*op) gegeten.
 Jan has spaghetti prt eaten
 ‘Jan ate the spaghetti.’
- b. Jan slaapt graag (uit).
 Jan sleeps gladly out
 ‘Jan likes to sleep (late).’

Finally, we present two competing views of the status of verbal particles. One view, represented in Den Dikken (1995), is that they function as independent clausal constituents, as evidenced by the fact that particle verbs are split in verb-second contexts, as in (30b). Their syntactic function is assumed to be that of a predicative complement of the verb; like the AP predicate in (30a), the particle *uit* in (30b) semantically licenses a direct object to the otherwise intransitive verb *lachen* ‘to laugh’.

- (30) a. Els lacht haar tanden *(bloot).
 Els laughs her teeth bare
 ‘Els smiles and bares her teeth.’
- b. Els lacht Jan *(uit).
 Els laughs Jan out
 ‘Els is making fun of Jan.’

The second view is that particle verbs are compounds; this requires that we allow them to be separated by movement of the finite verb in examples such as (29b), which violates the common view that words are syntactic atoms that cannot be affected by syntactic rules. The main argument for this view is that the presumed complex stem of particle verbs can be input to various morphological rules, e.g. the particle verb *uitvoeren* ‘to export’ can be nominalized, as in *de uitvoer van goederen* ‘the export of goods’; cf. Neeleman (1994) for further examples.

3 Modification

The core of the spatial PPs functions in a three-dimensional Cartesian coordinate system by defining sets of vectors. For example, the PP *achter Els* ‘behind Els’ refers to a set of vectors that originate at the location of the so-called reference object (here: Els). Example (31a) shows that modifiers of spatial PPs typically specify the length and direction of these vectors, i.e. the distance and orientation between the reference object (i.e. Els) and the located object (i.e. the dog); cf. Zwarts (1997). Since temporal PPs are one-dimensional in the sense that they indicate positions on the time axis, it is not surprising that they can only be modified for the distance between the reference object (i.e. Els’ departure) and the located object (i.e. the event of Els becoming ill): cf. (31b).

- (31) a. [_{PP} *Vlak/Recht* [*achter Els*]] stond een grote hond.
 right/straight behind Els stood a big dog
 ‘There was a huge dog right/straight behind Els.’
 b. [_{PP} *Vlak/*Recht* [*na haar vertrek*]] werd Els ziek.
 right/straight after her departure became Els ill
 ‘Right after her departure, Els became ill.’

The bracketed structures in (31) indicate that it is a projection of the adposition rather than the adposition itself that is modified. Syntactic evidence for this is that the modifier and the adposition can be separated; the examples in (32) show that the R-pronominal counterparts of the DP-complements of the PrePPs in (31) can be placed between the modifier and the adpositional head (although we will see below that they can also be placed further to the left). The same can be seen in *Jan liep [_{PP} *recht/een kilometer* [*de berg op*]]* ‘Jan walked straight/one kilometer up the mountain’, where the nominal complement *de berg* of the directional postPP occurs between the adpositional head *op* and the modifier *recht/een kilometer*; see also the (a)-examples in (35).

- (32) a. [_{PP} *Vlak/Recht* [*er achter*]] stond een grote hond.
 right/straight there behind stood a big dog
 ‘There was a huge dog right/straight behind it.’
 b. [_{PP} *Vlak/*Recht* [*er na*]] werd Els ziek.
 right/straight there after became Els
 ‘Right after it, Els became ill.’

Modifiers of PPs can belong to different syntactic categories. First, there are adverb-like modifiers such as *vlak* ‘right’ in (31), which are typically bare forms that cannot be further modified by e.g. a degree modifier; cf. (**erg*) *vlak/pal achter Els* (lit. very right behind Els) and (**erg*) *vlak/net voor haar vertrek* (lit. very right before her departure). In this respect, adverbs differ from adjectival modifiers, which allow degree modifiers and can also occur in their comparative or superlative form: cf. (33a). Vector length (i.e. distance) is also typically modified by nominal measure phrases such as *twee meter/uur* ‘two meters/hours’ in the (b)-examples in (33).

- (33) a. [PP *Erg dicht/nog dicht* [achter Els]] stond een grote hond.
 very close/even closer behind Els stood a big dog
 ‘There was a huge dog very close/even closer behind Els.’
- a’. [PP *Erg kort* [na haar vertrek]] werd Els ziek.
 very short after her departure became Els ill
 ‘Very shortly after her departure, Els became ill.’
- b. [PP *Twee meter* [achter Els]] stond een grote hond.
 two meter behind Els stood a big dog
 ‘There was a huge dog two meters behind Els.’
- b’. [PP *Twee uur* [na haar vertrek]] werd Els ziek.
 two hour after her departure became Els ill
 ‘Two hours after her departure, Els became ill.’

Recall from Section 2.1 that there is reason to analyze clauses introduced by *voordat* ‘before’ and *nadat* ‘after’ as PPs because they exhibit parallel behavior to temporal PPs. The examples in (34) support this claim by showing that such strings can be modified in the same way as the temporal PPs in the primed examples in (33). Such modification seems to be less felicitous in the case of infinitival clauses, as shown by the unacceptability of **Kort/Twee uur na te zijn vertrokken werd Els ziek* (with the intended reading: ‘Two hours after leaving, Els became ill’). The reason for this is not clear, so we leave it for future research.

- (34) a. *Erg kort nadat zij vertrok* werd Els ziek.
 very short after.that she left became Els ill
 ‘Very shortly after she left, Els became ill.’
- b. *Twee uur nadat zij vertrok* werd Els ziek.
 two hour after.that she left became Els ill
 ‘Two hours after she left, Els became ill.’

The cases of modification given so far mainly concern prePPs, but they can also occur with the other types of adpositions. This is illustrated in the (a)-examples in (35) for postPPs with an adjectival and a nominal modifier of distance. Examples with circumPPs and intrPPs are given in (35b&c).

- (35) a. Marie klom [PostP *heel hoog* [de boom in]].
 Marie climbed very high the tree into
 ‘Marie climbed high up into the tree.’
- a’. Marie klom [PostP *10 meter* [de boom in]].
 Marie climbed 10 meter the tree into
 ‘Marie climbed 10 meters into the tree.’
- b. Els sprong [CircumP *hoog* [over het hek heen]].
 Els jumped high over the fence HEEN
 ‘Els jumped high over the fence.’
- c. Jan schoot de bal [IntrP *twee meter naast*].
 Jan shot the ball two meter next.to
 ‘Jan missed the goal by two meters.’

Modification seems to be restricted to spatial and temporal PPs. For example, PP-complements such as the *op*-PP selected by the verb *wachten* ‘to wait’ (cf. (17a)) or adverbial PPs indicating a cause (*door de storm* ‘by the storm’ in (19d)) or an instrument (*met een machine* ‘with a machine’ in (19e)) do not allow it.

We conclude the discussion of the modification of the PP with some remarks about the order of modifiers and R-pronouns. Section 2.1 has shown that R-pronouns typically

occur to the left of the adposition. The examples in (36) show that the order of the modifier and R-pronoun is not fixed. The context of the example is that the speaker is trying to specify the location of a person's house: he first selects a certain tree as the reference object (Do you see that tree?) and then specifies the location of the house. The angled brackets indicate the alternative placements of the R-pronoun. Since the finite verb must be in second position in Dutch main clauses, we must conclude that sequences within square brackets form a constituent.

- (36) Context: Do you see that tree over there?
 a. [PP <daar> vlak/links <daar> achter] staat zijn huis.
 there right/left behind stands his house
 ‘Right/To the left behind it is his house.’
 b. [PP <daar> 15 meter <daar> achter] staat zijn huis.
 there 15 meter behind stands his house
 ‘15 meters behind it is his house.’

The conclusion that R-pronouns can either precede or follow the modifiers can be a useful tool in examining the internal structure of PPs. Consider the examples in (37):

- (37) a. [PP Boven op de kast] stonden twee oude vazen.
 above on the cupboard stood two old vases
 ‘There were two old vases on top of the cupboard.’
 b. [PP Achter in de schuur] stonden twee oude fietsen.
 back in the barn stood two old bikes
 ‘Two old bikes were in the back of the barn.’

The internal structures of these examples are not immediately clear. At first glance, the adpositional elements *achter* and *boven* seem to function as modifiers of the sequences *in de schuur* and *op de kast*, respectively. However, this is contradicted by the placement of the R-pronouns in (38). The fact that the R-pronouns cannot follow *boven/achter* suggests that we are dealing with the compound forms *bovenop* and *achterin*, i.e. the PPs in (37) are simple (unmodified) PrePPs.

- (38) a. [PP <Daar> boven <*daar> op] stonden twee oude vazen.
 there above on stood two old vases
 ‘There were two old vases on top of it (e.g. the cupboard).’
 b. [PP <Daar> achter <*daar> in] stonden twee oude fietsen.
 there back in stood two old bikes
 ‘Two old bikes were in the back of it (e.g. the barn).’

4 Syntactic uses of adpositional phrases

PPs can have a number of syntactic uses in Dutch; they can be used as selected arguments, as predicates, as adverbials and as attributive modifiers. We will first illustrate their use as **arguments**. The prototypical cases are the PP-complements of verbs and adjectives in (39a&b). That we are dealing with selection is clear from the fact that the selecting head determines the adposition used: (39a&b) shows that *wachten* ‘to wait’ and *trots* ‘proud’ both select *op*, not *voor* or *van*. It will be clear that deverbal nouns can inherit the PP-complement of the input (cf. *het wachten op Marie* ‘the waiting for Marie’), and it has also been claimed that kinship terms such as *vader* select a *van*-PP, since it is impossible to determine the reference of the DP *de vader* ‘the father’ without some (explicit or implicit) related argument; the number sign in (39c) indicates that the *van*-PP can only be omitted if its

content is recoverable from the context; cf. Broekhuis & Keizer (2012: ch.2) for further discussion.

- (39) a. Jan wacht op/*voor Marie.
 Jan waits up/for Marie
 ‘Jan is waiting for Marie.’
 b. Jan is trots op/*van Els.
 Jan is proud on/of Els
 ‘Jan is proud of Els.’
 c. Jan is de vader #(van Els).
 Jan is the vader of Els

We should also mention here PPs that function as second (i.e. indirect) objects referring to a goal, beneficiary, or inalienable possessor; they alternate with a nominal object, as indicated in (40c) by angled brackets. Perhaps we should add the passive *door*-phrase, although there is reason to consider it a causative adverbial phrase of the type in (44d) below.

- (40) a. Els gaf <Jan> een boek <aan Jan>.
 Els gave Jan a book to Jan
 b. Jan schonk <Els> een borrel <voor Els> in.
 Jan poured Els a drink for Els prt.
 ‘Jan poured Els a drink/a drink for Els.’
 c. Jan zette <Peter> de baby <bij Peter> op schoot.
 Jan put Peter the baby with Peter on lap
 ‘Jan put the baby on Peter’s lap.’

The examples in (41a) show that PPs can be used as **predicates** in a copular construction, just like APs and DPs. It is sometimes claimed (without much evidence) that the PP is an adverbial phrase, but this does not account for the fact, illustrated in (41b), that it obligatorily occurs in the (predicative) position to the left of the clause-final verb(s), as place adverbials can be extraposed: cf. *dat Els <in de tuin> speelt <in de tuin>* ‘that Els plays in the garden’.

- (41) a. Onze nieuw auto is kapot/een flop/in de garage.
 our new car is broken/a failure/in the garage
 ‘Our new car is broken/a failure/in the garage.’
 b. dat onze nieuwe auto <in de garage> is <*in de garage>.
 that our new car in the garage is

Predicative PPs usually have a locational or directional interpretation and typically occur with locational and directional verbs: in (42a) the PP is a predicative complement of the stative verb *liggen* ‘to lie’ indicating the location of the book; in (42b) it combines with the dynamic verb *leggen* ‘to put’, resulting in the reading that the book is undergoing a change of location; finally, in (42c) we have a postPP with a directional meaning: Jan took a path that led him into Paris.

- (42) a. Het boek ligt [PP op de tafel].
 the book lies on the table
 b. Jan legde het boek [PP op de tafel].
 Jan put the book on the table
 c. Jan reed [PP Parijs in].
 Jan drove Paris into

Dutch also seems to allow non-spatial PP-predicates like those in (43). However, it is less clear whether we are dealing with true PPs: since *tot* and *voor* have lost their meaning, we may be dealing with specialized “relators” for expressing predicative relations, here between a nominal predicate *ridder/leugenaar* and the direct object *Els*, i.e. the king makes Els a knight by tapping her on the shoulder with a sword, and Jan rightly or wrongly attributes to Els the property of being a liar. See Den Dikken (2006) for relevant discussion.

- (43) a. De koning sloeg Els *tot ridder*.
 the king hit Els TO knight
 ‘The king knighted Jan.’
 b. Jan maakte Els *voor leugenaar* uit.
 Jan made Els VOOR liar prt.
 ‘Jan called Els a liar.’

PPs are also common as **adverbial phrases**. The prototypical cases are adverbial phrases with a spatial or temporal meaning, but they can also refer to participants in the event with a specific semantic role, like concomitant agent, instrument, and cause(r); cf. (44). Note that some adverbial PPs also take clausal complements, as shown in (44d’).

- (44) a. Jan wandelt *op de hei*. (locational)
 Jan walks on the heathland
 b. Jan vertrekt *na het eten*. (temporal)
 Jan leaves after the meal
 c. Jan wandelt *met Peter/een stok*. (co-agent/instrument)
 Jan walks with Peter/a stick
 d. Het raam brak *door de harde wind*. (cause)
 the window broke by the hard wind
 d’. Het raam brak *door [dat de wind hard waaide]*.
 the window broke by that the wind hard blew

In fact, there are many more relations that can be expressed by adverbial PPs with specialized prePs of the kind in (45a), which are diachronically often morphologically complex. We also find so-called phrasal prePs of the kind in (45b), which should also be regarded as historical relics, as they often show morphological case as in *ter/ten* ‘*te* + case marked determiner’. The forms in (45) are listed in the lexicon.

- (45) a. Morphologically complex prePs: *dankzij* ‘thanks to’, *ondanks* ‘despite’, *vanwege* ‘because of’, *volgens* ‘according to’, etc.
 b. Phrasal PPs: *met uitzondering van* ‘except’, *ter gelegenheid van* ‘on the occasion of’, *ten aanzien van* ‘e, etc.’

The PPs in (46) are used as **attributive modifiers**; they typically occur in postnominal position and can serve many semantic functions, only some of which are illustrated in (46).

- (46) a. het pad *in het bos/het bos in* (locational/directional)
 the path in the forest/the forest into
 b. het gekraai *in de ochtend* (temporal)
 the crowing in the morning
 c. de wandeling *van/met Peter* (agent/co-agent)
 the walk of/with Peter
 d. de schade *door de wind* (causer)
 the damage by the thunderstorm

5 PP-movement and extraction from PP

5.1 PP-movement

PPs are easily moved, in the sense that they can undergo most of the movement processes that operate in the clause: they can be moved to the left by *wh*-movement and focus/negation-movement, and to the right by extraposition (if it really is rightward movement, which is disputed). The examples in (47) show that PPs can undergo all three main types of ***wh*-movement**, i.e. movement into the clause-initial position; (i) movement of interrogative phrases in questions, (ii) topicalization, (iii) and movement of phrases with a relative pronoun in relative clauses. *Wh*-movement can be applied to all PPs functioning as clausal constituents, i.e. arguments, predicates and adverbial phrases, and is subject to the usual island constraints; this cannot be shown here for reasons of space.

- (47) a. *Op wie_i heeft Els t_i gewacht?*
 on whom has Els waited
 ‘Who did Els wait for?’
 b. *Op Jan_i wil Els niet t_i wachten.*
 on Jan want Els not wait
 ‘For Jan, Els does not want to wait.’
 c. *De man [op wie_i Els t_i heeft gewacht] kwam niet.*
 the man on who Els has waited came not
 ‘The man Els had been waiting for did not come.’

The examples in (48) show that *wh*-movement can also be applied to PP-complements of APs, as shown in (48a) for topicalization. This is not the case for PPs that are part of noun phrases, although this is somewhat controversial; cf. Broekhuis (2016) for a detailed discussion.

- (48) a. *Op Jan_i is Els [AP erg trots t_i].*
 on Jan is Els very proud
 ‘Of Jan Els is very proud.’
 b. **Op de hoek_i kocht Jan [DP het huis t_i].*
 on the corner bought Jan the house
 Intended reading: ‘Jan bought the house on the corner.’

Not all PPs can undergo **extraposition**. The examples in (49) show that this is possible with PP-complements and certain adverbial PPs; example (49a) is the “neutral” order, with the adverbial PP preceding the PP-complement, while the orders in (49b-d) are derived by extraposition. We can see in (49d) that extraposition of both PPs leads to an inversion of the neutral order, which has become known as the mirror effect; cf. Koster (1974).

- (49) a. *Els heeft in het park_{Adv} op Jan_{Compl} gewacht.*
 Els has in the park on Jan waited
 ‘Els has waited for Jan in the park.’
 b. *Els heeft in het park gewacht op Jan.*
 c. *Els heeft op Jan gewacht in het park.*
 d. *Els heeft gewacht op Jan in het park.*

Predicative PPs are special in that extraposition leads to poor results; this is illustrated by the embedded clauses in (50). Note that the degraded order in (50b) becomes fully acceptable if we replace the verb *leggen* with the particle verb *neerleggen* ‘to put down’: cf. *dat Jan het boek neer legt op de tafel*.

- (50) a. ... dat het boek <op de tafel> ligt <??op de tafel>.
 that the book on the table lies
 ‘... that the book lies on the table.’
 b. ... dat Jan het boek <op de tafel> legt <??op de tafel>
 that Jan the book on the table puts
 ‘... that Jan puts the book on the table.’

PPs can also undergo **focus/negation movement**. This is easiest to demonstrate with PP-complements of adjectives, as the movement targets designated positions in the middle field of the clause preceding the AP, so that the movement has to cross the adjective; cf. Haegeman (1995: 179) and Broekhuis & Corver (2016, §13.3). Example (51a) gives the neutral order; the leftward movement of the negative PP *op niemand* ‘with nobody’ in (51b) is obligatory, while that of the contrastively focused PP *op JAN* in (51c) is at least much preferred.

- (51) a. ... dat Els [AP erg boos op Jan] is.
 that Els very angry of Jan is
 ‘...that Jan is very angry with Jan.’
 b. ... dat Els op niemand_i [AP erg boos *t_i*] is.
 c. ... dat Els op JAN_i [AP erg boos *t_i*] is.

Finally, we will show that **A(argument)-scrambling** does not apply to PP-complements (contrary to Neeleman 1994). A-scrambling involves leftward movement of nominal arguments over a specific subset of clause adverbials, more specifically the clause-medial adverbs in the sense of Thráinsson (2007: 38), such as the modal *waarschijnlijk* ‘probably’. A-scrambling is only possible under certain conditions (cf. Broekhuis & Corver 2016, §13.2), but for our present purpose we need only appeal to the uncontroversial claim that A-scrambling of weak pronouns such as *’m* ‘him’ is obligatory, as shown in (52a). Example (52b) shows that a similar shift is excluded for PP-complements with a weak pronoun as complement; the result of the leftward shift is much better with a contrastively accented pronoun (i.e. *op HEM*) but then we are dealing with focus movement of the kind in (51c).

- (52) a. Els heeft <’m> waarschijnlijk <*’m> gezien.
 Els has him probably seen
 ‘Els has probably seen him’.
 b. Els heeft <*op ’m> waarschijnlijk <op ’m> gewacht.
 Els has for him probably waited
 ‘Els has probably waited for him.’

We conclude that PPs can be subject to all movement processes that operate in the clause for which we can expect them to be eligible: in current generative terms, it allows A'- but not A-movement.

5.2 Extraction from PP

The examples in (53) show that Dutch resists P-stranding in the sense that it is generally not possible to extract the nominal complement from a prePP by *wh*-movement; pied-piping of the preposition as in the primeless example is obligatory, while P-stranding as in the primed example is excluded. Note that the primed examples can be read as a construction with the particle verb *opwachten*, which has a different meaning (‘to lie in wait for someone with evil intent’) and requires sentence stress on the verbal particle *op*.

- (53) a. [PP Op Jan]_i heeft Els niet t_i gewacht.
 for Jan has Els not waited
 a'. *Jan_i heeft Els niet [PP op t_i] gewacht.
 b. [PP Op wie]_i heeft Els niet t_i gewacht.
 for who has Els not waited
 b'. *Wie_i heeft Jan niet [PP op t_i] gewacht.
 c. de man [[PP op wie]_i Els t_i heeft gewacht] kwam niet.
 the man for who Els has waited came not
 c'. *de man [die_i Els [PP op t_i] heeft gewacht] kwam niet.
 the man that Els for has waited came not

The cases in (53) differ sharply from cases in which the PP is pronominalized, i.e. takes an R-pronoun as complement. The primeless examples in (54) show that such cases allow both pied-piping and stranding of the adposition; the angled brackets indicate the alternative placements of the adposition. Recall that pronominal PPs usually refer to [-HUMAN] entities, with the exception of relative clauses such as (54c). Example (54a'), presumably derived by focus movement, is added to show that the two alternative placements are also available when the movement targets a clause-internal position.

- (54) a. Daar <op> heeft Els niet <op> gewacht.
 there on has Els not waited
 a'. Els heeft daar <op> niet <op> gewacht.
 Els has there on not waited.
 'El's did not wait for that.'
 b. Waar <op> heeft Els niet <op> gewacht?
 where on has Els not waited
 'What did Els not wait for?'
 c. de man [waar <op> Els <op> heeft gewacht] kwam niet.
 the man where on Els has waited came not
 'The man for whom Els was waiting did not come.'

The examples in (53) have shown that DP-complements cannot be extracted from prePPs. However, this does not mean that prePPs are inescapable islands for movement, since under certain conditions modifiers can be extracted from prePPs; cf. Zwarts (1978) and Corver (1990). First, consider (55a) with the predicative prePP *onder de zeespiegel* modified by the nominal measure phrase *twee meter*, which clearly form a constituent because they can be moved together into the sentence-initial position: cf. *Twee meter onder de zeespiegel ligt Amsterdam*. Crucially, the question in (55b) shows that the modifier can be extracted from the PP by *wh*-movement (although pied-piping of the rest of the PP is also possible, perhaps as a less preferred option; cf. *Hoeveel meter onder de zeespiegel ligt Amsterdam?*).

- (55) a. Amsterdam ligt [PP twee meter onder de zeespiegel].
 Amsterdam lies two meters below the sea.level
 'Amsterdam is two meters below sea level.'
 b. Hoeveel meter_i ligt Amsterdam [PP t_i onder de zeespiegel]?
 how.many meter lies Amsterdam below the sea.level
 'How many meters is Amsterdam below sea level?'

We conclude that prePPs are not absolute islands for movement, but allow extraction under certain conditions (e.g. from predicative but not adverbial PPs), which we cannot discuss here for reasons of space. This conclusion is supported by the examples in (56). First,

example (56a) shows again that the nominal complement of a prePP can be pronominalized with an R-pronoun; the angled brackets indicate the alternative realizations of the complement of the PP. The crucial point here is that the R-pronoun must precede the preP-head for some reason, and that this allows it to be extracted from the prePP, as shown in the two (b)-examples. Recall from the discussion of (36) that the derivation probably involves a second PP-internal movement of the R-pronoun across the adverbial modifier *pal*; we will ignore this here for the sake of simplicity.

- (56) a. Het café staat vaak [PP pal <daar> naast <de kerk>].
 the café stands often right there next.to the church
 ‘The café is often right next to the church/it.’
 b. Het café staat daar_i vaak [PP pal *t_i* naast].
 b’. Daar_i staat het café vaak [PP pal *t_i* naast].

The examples in (57b-c) show again that both complements and modifiers can be extracted from prePPs, provided that they can precede the adpositional head (i.e. the noun phrase *het gebouw* must remain in situ). Example (57d) shows that they can in fact be extracted simultaneously (which may be a problem for the still highly influential formal analysis of the phenomenon in the seminal study of Van Riemsdijk (1978), according to which PPs are just like clauses in that they allow extraction of at most one constituent).

- (57) a. De luchtballon hangt nu [PP hoog [boven het gebouw]].
 the balloon hangs now high above the building
 b. De luchtballon hangt er_i nu [PP hoog [*t_i* boven]].
 the balloon hangs there now high above
 c. Hoe hoog_j hangt de luchtballon nu [PP *t_j* [boven het gebouw]].
 how high hangs the balloon now above the building
 d. Hoe hoog_j hangt de luchtballon er_i nu [PP *t_j* [*t_i* boven]].
 how high hangs the balloon there now above

So far we have only discussed extraction from prePPs, but if we take seriously the condition that the extracted element must precede the adpositional head, we predict that predicative (directional) postPPs differ from predicative prePPs in that their complement can be extracted. The examples in (58b-c) show that this turns out to be correct, although there are certain complications with *wh*-questions that we cannot discuss here; cf. Broekhuis (2013: §5.2.2).

- (58) a. Marie gaat nooit alleen [PP het bos in].
 Marie goes never alone the woods into
 ‘Marie never goes into the woods alone.’
 b. Marie gaat het bos_i nooit alleen [PP *t_i* in].
 Marie goes the woods never alone into
 c. het bos_i [dat Marie nooit alleen [PP *t_i* in] gaat]
 the forest that Marie never alone into goes

The predictions for circumPPs are not clear *a priori*, since there are two adposition-like elements, one before and one after the complement of the PP. The examples in (59) with the circumP *van ... af* show that circumPPs behave like prePPs, not postPPs, because the complement can only be extracted from the PP if it is an R-pronoun.

- (59) a. Jan is gisteren [_{PP} *van het dak af*] gesprongen.
 Jan is yesterday from the roof AF jumped
 ‘Jan jumped from the roof yesterday.’
 b. Jan is daar_i/*het dak_i gisteren [_{PP} *van t_i af*] gesprongen.
 Jan is there/the roof yesterday from AF jumped
 c. Waar_i/*Welk_i dak is Jan [_{PP} *van t_i af*] gesprongen?
 where/which roof is Jan from AF jumped

We would expect that the movement of the *wh*-phrase *welk dak* pied-pipes the entire PP *van welk dak af*, but the examples in (60) show that this is not a preferred option, since it is usually only the first part of the circumP that is pied-piped; cf. Broekhuis (2013: §1.5.2) for further examples.

- (60) a. ??[_{PP} *Van welk dak af*] is Jan gesprongen?
 from which roof AF is Jan jumped
 b. *Van welk dak_i* is Jan [_{PP} *t_i af*] gesprongen?
 from which roof is Jan AF jumped

6 A note on the internal structure of PPs

The unexpected acceptability of (60b) raises the question whether the traditional view that circumPs are discontinuous words is correct. The answer is “no”, because of the well-established generalization that *wh*-movement can only affect whole phrases: we are therefore dealing with a PP *van welk dak*. If this is correct, it inevitably leads to the conclusion that so-called circumPs are not composite lexical items; recall that example (27) in Section 2.2 led to the same conclusion for independent reasons. This means that at most there are prePPs and postPPs, which can take a nominal or a prepositional complement, as in (61).

- (61) a. PrePP: [P DP/PP]
 b. PostPP: [DP/PP P]

This leads to the legitimate question whether the distinction between prePPs and postPPs is a lexical one, or whether we are dealing here with a syntactic surface phenomenon as well. For example, it might be the case that what we call postPPs and circumPPs are both derived from prePPs, e.g. by moving the complement DP/PP from its base position in (62a) to a position in some higher functional projection within the PP, as in (62b&c).

- (62) a. PrePP: [_{FP} F [P DP/PP]]
 b. PostP: [_{FP} DP_i F [P t_i]]
 c. CircumPP: [_{FP} PP_i F [P t_i]]

Such an approach might be supported by the pronominalization data we discussed earlier. To see this, it is important to realize that R-words like *daar*, despite the fact that they are used as pronouns in our examples so far, are actually locational proforms; they are prototypically used to replace spatial PPs, such as *in de tuin* in (63).

- (63) Jan zit in de tuin/daar.
 Jan sits in the garden/there
 ‘Jan is in the garden/there.’

The fact that R-pronouns must precede prePPs therefore seems to be consistent with the fact that prePPs with PP-complements are very exceptional: apparently, while DP-complements usually remain in their base position (unless the PP is directional), PP-complements and R-

pronouns must move in the way indicated in (62b&c), with only a few exceptions. If we idealize (62) by setting aside the more exceptional cases, we will get the result in (64).

- (64) a. PrePP (default): [_{FP} _ F [P DP]]
 b. PostPP (semantically conditioned): [_{FP} DP_i F [P t_i]]
 c. CircumPP (default): [_{FP} PP_i/R-pronoun_i F [P t_i]]

The hypothesis in (64) leads to an elegant syntactic analysis of the word orders found in adpositional phrases with very few (lexical) *ad hoc* constraints. It also implies that PPs are not just combinations of an adposition and a complement, but are internally structured. This conclusion is currently under intensive investigation; cf. Koopman (2000), Den Dikken (2010) and Broekhuis & Den Dikken (2018) for some studies on Dutch.

7 Conclusion.

This article discussed the Dutch PP from a syntactic point of view. Since space limitation did not allow us to go into much detail, we had to ignore many interesting issues. To help the reader to find a way through the vast formal syntactic literature on Dutch PPs, we list here a few key studies (most of which were already mentioned in the article) as a starting point: Van Riemsdijk (1978), Corver (1990), Helmantel (2002), and Zwarts (1997). Another starting point might be Broekhuis (2013), which covers the issues discussed in this article in more detail and aims to provide a representative overview of the results of formal syntactic research up to about the year 2005; an updated version will be published as Broekhuis & Corver (2026: vol. 7).

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