Preposition doubling in Flemish and its implications for the syntax of Dutch PPs

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This paper explores the previously undiscussed phenomenon of preposition doubling in Flemish Dutch dialects. It offers an account for the properties of this phenomenon adapting the basic internal structures for Dutch PPs proposed by Koopman (2010) and Den Dikken (2010a). They argue following Van Riemsdijk (1978, 1990) that PPs contain functional structure, parallel to the verbal and nominal domain: the lexical P is dominated by a PlaceP – parallel to vP – and also a DegP, hosting degree modifiers, and a CP[Place]. We argue that doubling PPs are the result of identical spell-out of a locative P-element (P_{Loc}) and a directional P-element (P_{Dir}), in a structure in which P_{Loc} has a full extended projection but P_{Dir} does not. The CP[Place] in the functional layer of P_{Loc} in doubling PPs is defective, which derives doubling as well as the distribution of R-words in these PPs. C[Place]'s defectivity also provides a window on the cross-dialectal distribution of P-doubling: the availability of P-doubling in certain dialects is correlated with the use of the directional preposition *van* 'of, from' as the introducer of infinitival clauses exhibiting NP-raising.

preposition doubling, circumpositions, R-pronouns, defective C, extended projection, EPP

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1.   Introduction

(Standard) Dutch displays three kinds of adpositions: prepositions, post-positions and circumpositions. We provide an example of each of these in (1).

(1)　a.　Het boek ligt **op** de tafel.　　　　　[preposition]
　　　　　the book lies on the table
　　　b.　De kat springt de tafel **op**.　　　　　[postposition]
　　　　　the cat jumps the table on
　　　　　'The cat jumps on(to) the table.'
　　　c.　Hij loopt **op** mij **af**.　　　　　　[circumposition]
　　　　　he walks on me from
　　　　　'He's walking towards me.'

Standardly, postpositions are roughly assumed to derive from prepositions by movement of the DP object across the P element (see (2)a; cf. Koopman 2000, 2010; Helmantel 2002; Den Dikken 2010a).[1] Circumpositions are taken to be derived through movement of the lower PP, i.e., PP_2, across the higher P, i.e., P_1, as in (2)b.

(2)　a.
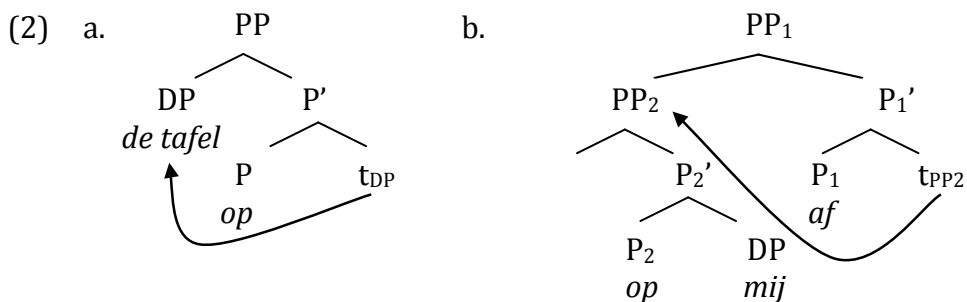
In Standard Dutch circumpositions, the two P-elements are not identical. However, certain Belgian Dutch dialects, and more specifically the dialects from and around Flemish Brabant, exhibit circumpositions with identical prepositions and postpositions, as in (3).[2] The interpretation of such

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doubling PPs is parallel to that of their Standard Dutch counterparts with either a directionally interpreted preposition or a postposition, as is illustrated in (4) for the example in (3)a.

(3) a. dat hij **op** dem berg **op** is geklommen.   [Asse Dutch]
        that he   on   the   hill   on   is climbed
        'that he has climbed up on the hill.'
     b. Hij komt **uit** zijn kamer niet **uit**.
        he   comes out   his   room   not   out
        'He never leaves his room.'
     c. Ik durfde **door** dat bos niet **door** te lopen.
        I   dared   through that wood not   through to walk
        'I didn't dare walk through that wood.'

(4) a. dat hij **op** de berg is geklommen.   [Standard Dutch]
        that he   on   the hill is climbed
     b. dat hij de berg **op** is geklommen.
        that he   the hill   up   is climbed
        'that he has climbed up on the hill.'

The previously unexplored P-doubling phenomenon illustrated in (3) is the topic of this paper.[3] In the next section we present the main properties of these doubling PPs. Section 3 provides important background information on

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speakers from Aalst Dutch (East-Flanders, bordering Flemish Brabant), Roosdaal and Ternat (both Pajottenland, Flemish Brabant) exhibit the same pattern with regard to the properties discussed in this article. Unless indicated otherwise, the examples are given in Asse Dutch, but the patterns hold for all speakers of P-doubling dialects.

[3]   Identical P-elements also occur in directional PPs in Swiss German, cf. (i).
(i)   ab dem   Berg   abe   (Van Riemsdijk 1990; Den Dikken 2003)
       off the.DAT   mountain   off
       'down from the mountain'

More recent work by Huijbregts & Van Riemsdijk (2007) on German adpositions shows that in German the postposition describes the orientation of the path: *auf das Dach hinauf* expresses an upward movement onto the roof, whereas *auf das Dach hinunter* expresses a downward movement onto the roof (see Huijbregts & Van Riemsdijk 2007: (6)). The analysis of such circumpositions is beyond the scope of this paper. What is important, however, is the observation that the Flemish doubling dialects do not exhibit this phenomenon: in the doubling cases the two P's are necessarily identical. This will be explained by the analysis.

An anonymous reviewer tells us that P-doubling can also be found in Slavic languages, such as Old Polish, Old Russian and Russian spoken dialects (see (ii)).
(ii)   Vošel   on v   dom   v   tot v   zakoldovannyj.
       entered   he into house into that into haunted
       'He entered that haunted house.'   (Coll. Russian; Yadroff & Franks 2001: their (17))
We immediately note that in Slavic the doubled prepositions can occur within (all subconstituents of) the nominal complement phrase. This is never found in Flemish P doubling. Rutkowski (2007) analyses Polish P-doubling as involving apposition, parallel to polydefinites in Greek. Whatever the details of the analysis, it will have to be different from the one we are presenting for Flemish.

English and Icelandic, too, display a kind of P-doubling – see Radford (2004), Radford & Felser (2011) and Jónsson (2008). Jónsson links the availability of P-doubling (or P-reduplication, as he calls it) to the availability of P-stranding (see also Bergh 1998; Bergh & Seppänen 2000). Although the link with the English and Icelandic data is closer than with the Slavic ones, Flemish P-doubling is still different. We come back to Jónsson's proposal and the difference with Flemish in fn. 13 in section 5.1.

the internal structure of Dutch PPs in general, following Van Riemsdijk (1990), Den Dikken (2010a) and Koopman (2010), who argue for several functional projections within the prepositional domain. Sections 4 and 5 tackle the analysis of doubling PPs themselves. The gist of our proposal is that doubling PPs have the structure in (5): the PP contains both a locative and a directional layer, and the locative layer is built all the way up to CP[Place], unlike the directional layer. A crucial feature of our analysis is that the C[Place] head is defective in doubling PPs, which we will show to have several important consequences.

(5)   ([PathP)[PP **P**_{Dir} [CP(Place) C[Place] [DegP Deg[Place] [PlaceP Place [PP **P**_{Loc} DP]]]]])

The sixth section is taken up by a discussion of the distribution of P-doubling across the Dutch-speaking world, which can again be linked to the defectivity of C[Place]. Section 7 presents our conclusions.

2. Properties of doubling PPs

The present section presents the main properties of doubling PPs. First we show that the postpositional element in doubling PPs is not a verbal particle. Then we survey the distribution of doubling PPs, and their behaviour with respect to movement. Lastly, we discuss the distribution of R-pronouns in doubling PPs.

2.1 The postpositional element is not a particle

An issue that is often raised in discussions of Dutch postpositions is whether these might be more profitably analysed as particles (such as English *up* in *he looked it up*). The dividing line between postpositions and particles is not always clear; but in the case of doubling PPs, there are several reasons why the second occurrence of P should not be treated as a particle.

First of all, the interpretation of the P is always the lexical spatial meaning, not (as is often the case in verb-particle constructions) some idiosyncratic meaning contributed jointly by the P-element and the verb. A telling example is (6). The particle verb *op geraken* always has an idiosyncratic interpretation ('to run out', as in *de suiker geraakt op* 'the sugar is running out'), but in (6) *op geraken* has a compositional semantics derived from the lexical meanings of *op* and *geraken* ('manage to get up something').

(6)   Hij is op dienen   berg niet op geraakt.
      he is on that.MASC hill not on reached
      'He didn't manage to get up on that hill.'

That the second P in doubling PPs is not a particle is confirmed by the fact that for many speakers P-doubling can occur in the complement of a noun, when there is no verb present at all, as in (7):

(7)   dat wegske   over de brug over
      that path.DIM over the bridge over
      'that little path over the bridge'

Note that Dutch simple particles cannot occur independently with nominals: (8)a, with a complex particle, is fine, but (8)b, with simple *uit* 'out', is ungrammatical (though it can be salvaged by placing the particle to the left of the noun, in a lexical Prt+N complex, as in (8)c. By contrast, a postpositional phrase headed by *uit*, as in (8)d, is perfectly fine in a nominal environment.

(8) a. de weg omhoog   b. * de weg uit
         the way up.high   *the way out*
         'the way up'
     c. de uitweg   d.   de weg de stad uit
         the out.way   *the way the city   out*
         'the way out'   'the way out of the city'

Perhaps the clearest indication that the second P-element in P-doubling constructions is not a particle is the fact that doubling PPs themselves co-occur with particles, as shown in (9); in doubling PPs with *naar* and *af*, this additional particle is in fact obligatorily present:

(9) a. ? De   zon   scheen door   de huizen door**heen**.[4]
            the sun   shone   through the houses   through.PRT
            'The sun was shining through the houses.'
     b.   Ge   moet naar diene grote rots naar*(**toe**)   springen.
            you   must to   that   big   rock to.PRT   jump
            'You have to jump towards that big rock.'
     c.   Of   wil   je   van   iets   van*(**af**)?
            or   want   you   of   something   of.PRT
            'Or do you want to get rid of something?'
     d.   Hij is op dat   meisje op *(**af**) gekomen.
            he   is on that   girl   on   off   come
            'He came towards that girl'/'He went for the girl.'

If, as is likely, the elements in boldface in the examples in (9) are particles, then the P-elements immediately to their left cannot also be analysed as particles: as a general rule, particles are strictly unique per verb. This is perhaps clearest from the fact that there are no combinations of free-standing particles and any of the prefixal particles of Dutch, *be-*, *ver-* and *ont-* (see Hoekstra, Lansu & Westerduin 1987): there is *afdekken* 'off-cover, i.e., cover up' and *bedekken* 'BE-cover' but not *afbedekken; and there is *invoeren* 'im-port' and *vervoeren* 'trans-port' but not *invervoeren; the pattern is systematic (on apparent exceptions, irrelevant for our purposes here, see Koopman 1995, Booij 2002, and esp. Den Dikken 2003: sect. 2). The co-occurrence of doubling PPs with particles thus precludes an analysis of the second P-token of P-doubling constructions as a verbal particle.

2.2   The distribution of doubling PPs

Doubling PPs are highly restricted in their distribution. A first major cut should be made between *spatial* PPs and *selected* PP (Helmantel 2002). The

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[4]   This example was taken from http://www.geocaching.com/seek/log.aspx?LUID=89a4 c2f5-d1a3-45db-b7baf27da41bff9d, and many more examples can be found on the internet.

sentences in (10) show that doubling PPs are only allowed with spatial PPs, not selected PPs.

(10)   a.   Lili is **op** de kast   **op** gekropen.   [spatial]
             Lili is on the cupboard on crawled
             'Lili crawled onto the cupboard.'
       b.   Hij had **op** Lili (***op**) gerekend.   [selected]
             he had on Lili   on counted
             'He had counted on Lili.'

       Within the realm of spatial PPs, a further distinction should be made between *locative* and *directional* PPs (cf. Koopman 2000, 2010; Den Dikken 2010a). Postpositions are always directional, whereas prepositions are usually locative, but can get a directional interpretation when they occur with certain verbs of motion, as (12) shows (cf. Koopman 2000; see also Gehrke 2007).

(11)   a.   Lola zit **op de stoel**.   [locative]
             Lola sits on the chair
             'Lola is sitting on the chair.'
       b.   De kat springt **de kast**   **op**.   [directional]
             the cat jumps   the cupboard on
             'The cat jumps onto the cupboard.'

(12)   Lola springt in het   water.
       Lola jumps   in the   water
       locative: Lola is in the water, jumping up and down.
       directional: Lola jumps in*to* the water.

As (13) illustrates, for cases in which a spatial PP is in principle interpretable either locatively or directionally, P-doubling is a disambiguator: it allows only for a directional reading.

(13)   Lili springt **in**   het   water **in**.
       Lili jumps   in   the   water in
       'Lili jumps into the water.'   [directional]
       # 'Lili jumps up and down in the water.'   [*locative]

This is further confirmed by the fact that the use of a doubling PP forces the selection of the auxiliary *zijn* 'be' rather than *hebben* 'have' (cf. (14)). This is typical of directional resultatives in general (Koopman 2000, Den Dikken 2010a): in (15), *hebben* delivers a locative reading and *zijn* a directional one.

(14)   a.   Lili <u>is</u> **op** de kast   **op** gesprongen.
             Lili is on the cupboard op jumped
             'Lili has jumped onto the cupboard.'
       b.   Lili <u>heeft</u> **op** de   kast   (***op**) gesprongen.
             Lili has   on the cupboard on   jumped
             'Lili has jumped (up and down) on the cupboard.'

(15) a.   Lola **heeft** in het water (*in) gesprongen. [loc/*dir]
          Lola has in the water in jumped
          'Lola has jumped (up and down) in the water.'
    b.   Lola **is** in het water (in) gesprongen. [*loc/dir]
          Lola is in the water in jumped
          'Lola has jumped into the water.'

2.3   Doubling PPs and extraction

A salient property of doubling PPs is their behaviour with respect to extraction. In doubling PPs, the preposition and the DP object can undergo movement as a unit, to the exclusion of the postposition. This is shown in (16) for topicalisation, *wh*-movement and scrambling across negation.

(16) a.   **Op dienen berg** is Lili *t* **op** geklommen.   [topicalisation]
          *on that.*MASC *hill is Lili on climbed*
          'That hill Lili has climbed up on.'
    b.   **Op welken berg** is Lili *t* **op** geklommen?   [+*wh* movement]
          *on which.*MASC *hill is Lili on climbed*
          'Which hill has Lili climbed up on?'
    c.   Lili is **op dienen berg** niet *t* **op** geklommen. [scrambling]
          *Lili is on that.*MASC *hill not on climbed*
          'Lili didn't climb up on that hill.'

The doubling PP as a whole – including the postposition – cannot move: the sentences in (17), parallel to the ones in (16), are all judged ungrammatical.

(17) a. * **Op dienen berg op** is Lili *t* geklommen.
          *on that.*MASC *hill on is Lili climbed*
    b. * **Op welken berg op** is Lili *t* geklommen?
          *on which.*MASC *hill on is Lili climbed*
    c. * Lili is **op dienen berg op** niet *t* geklommen.
          *Lili is on that.*MASC *hill on not climbed*

The postposition needs to be adjacent to the verbal cluster, and can be incorporated into it, as (18) illustrates. Such incorporation is typical of postpositions, not prepositions, in Standard Dutch.

(18) a.   Lili zal op dienen berg < **op**>moeten < **op**> klimmen.
          *Lili will on that.*MASC *hill on must on climb*
          'Lili will have to climb up on that hill.'
    b.   Lili zal < *niet*> op dienen berg < *niet*> **op** <* *niet*> kunnen
          *Lili will not on that.*MASC *hill not on not can*
          klimmen.
          climb

2.4   Doubling PPs and R-pronouns

Doubling PPs severely restrict the use of R-pronouns. In Standard Dutch, neuter pronouns in the complement of a preposition usually move to the left of P and surface as R-pronouns – so called because they typically have an /r/ in them in Dutch. We illustrate this in (19): *iets* 'something' raises to the left

of P and morphs into *ergens*, and *het/dat* 'it'/'that' changes places with P and comes out as *er/daar*.

(19) a. Ze heeft het boek {**ergens   op** /***op iets**}   gelegd.
         she has   the book somewhere on   on something laid
         'She put the book on something.'
     b. Hij is {**er   op af** /* **op het af**} gelopen.
         he is   there on off   on it   off walked
         'He walked towards it.'

Ever since Van Riemsdijk (1978), 'R-movement' has been considered a transformational process involving movement of the neuter pronoun to a specifier position in the extended projection of P. We will be more precise about the nature and landing site of R-movement later. First we want to draw attention to the remarkable fact that in doubling PPs, R-movement of the indefinite neuter pronoun *iets* is actually forbidden: (20)b is ungrammatical with P-doubling, no matter where the doubling P is placed.

(20) a. dat Lili **op iets**   <**op**> is <**op**> geklommen. [Asse Dutch]
         that Lili on something on   is   on   climbed
         'that Lili climbed up on something.'
     b. dat Lili **ergens   op** <* **op**> is <* **op**> geklommen.
         that Lili somewhere on   on   is   on   climbed

However, it is not the case that R-words are banned altogether in doubling PPs: the [+*wh*] pronoun *wat* 'what' can stay *in situ* but can also surface as the R-word *waar*, as (21) illustrates; and the definite demonstrative pronoun *dat* 'that' in fact undergoes R-word formation obligatorily: *in situ* placement of *dat* is ungrammatical, whereas R-word *daar* works, as shown in (22). [5]

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[5]   The grammaticality of *daarop op* and the ungrammaticality of *op dat op in (22) make it immediately clear that the problem with (20)b is plainly not the fact that there are two tokens of *op* occurring immediately adjacent to one another in the linear string: the sentences in (22) with *daarop* have the same *op op* sequences, yet are grammatical; and if haplology were behind (20), one would expect (22) to be perfect with *op dat*, but in fact it is worse than its 'stuttering' alternative. Moreover, if haplology were the problem in (20), one would have expected incorporation of the doubling P into the verbal cluster (as in *ergens op is op geklommen*) to make the problem disappear – but as (20)b shows, the status of P-doubling with indefinite *ergens* is insensitive to the placement of the doubling P. Jónsson (2008) suggests an explanation for why Icelandic does not allow P-doubling when the PP does not undergo movement, attributing this fact to a version of the Obligatory Contour Principle (i.e., a ban on adjacent identical features). Our data show that at least for Flemish P-doubling such an account is unsatisfactory.

For Dutch in general, it cannot be maintained that a haplology effect is at work in its PPs. Sometimes speakers of Dutch in fact seem to go out of their way to produce strings featuring two immediately adjacent identical P-elements in constructions in which a single such P-element would have sufficed. A striking case in point is (i), found in certain varieties of Dutch spoken in the Netherlands (not in Flanders, as far as we know; the exact geographical distribution of (i) is unclear to us at this time):

(i)   Hij heeft zijn t-shirt verkeerd **om**   (%**om**)   aan
       he has   his t-shirt wrong   around around on
       'He is wearing his t-shirt inside out.'

The Standard Dutch expression *verkeerd om* 'wrong around' means 'the wrong way around', and it standardly features just one token of the P-element *om*. But in some varieties of Dutch,

(21) a. **Op wat** is Lili **op** geklommen?   [Asse Dutch]
on what is Lili on climbed

b. **Waarop** is   Lili **op** geklommen?
whereon is   Lili on climbed
'What did Lili climbed up on?'

(22) a. { **Daarop/* op dat**} is Lili   **op**   geklommen.
thereon   on that is Lili   on   climbed
'That, Lili climbed up on.'

b. dat   Lili {**daar op/* op dat**} **op**   geklommen   is.
that Lili there on   on that on   climbed   is
'that Lili climbed onto that.'

2.5   Summary, and comparison with non-identical circumPPs

Now that we have inventoried the salient morphosyntactic properties of doubling PPs in Flemish, let us bring the results of our empirical investigation together in the form of a table:

Distribution	directional PPs	*selected PPs *locative PPs
Movement	[preP DP]$_i$ … t_i postP	*[preP DP postP]$_i$ … t_i
R-words	wh-pronoun (optionally) definite pronoun (obligatorily)	*indefinite pronoun

Table 1: Summary of the properties of doubling PPs

Distributionally, doubling PPs are restricted to directional PPs and cannot undergo movement as a whole, but the preposition and the object are allowed to move to the exclusion of the postposition. Moreover, the indefinite neuter pronoun cannot undergo R-word formation in doubling PPs, but [+*wh*] pronouns and definite pronouns do (in the latter case obligatorily).

In sections 4 and 5 of the paper, we will account for the properties of doubling PPs catalogued here. Before we turn there, however, let us briefly demonstrate, for the sake of full disclosure, the differences between doubling PPs and 'ordinary', non-identical circumPPs in Dutch. For it turns out that doubling PPs differ markedly from non-identical circumpositional phrases, both in their resistance to movement of the entire complex PP and in the restrictions they impose on R-word formation.[6] The example in (23)b shows

this *om* can be doubled, resulting in a string of two immediately adjacent tokens of *om* (sometimes spelled with hyphenation, as in *Ik heb het anders eens gepresteerd om mijn schoenen verkeerd-om-om aan te trekken* 'I once managed to put my shoes on the wrong way around'; petravz.blogspot.com/2005/12/handig.html). That the second *om* in (i) is a double of the first, and not an independent particle, is clear from the fact that there is already a particle present (*aan* 'on') in the sentence: recall from the discussion of (9), above, that particles are unique per verb. Examples of the type in (i) should be carefully kept distinct from cases like (ii), which are grammatical for all Northern Dutch speakers: here the second token of *om* is indeed independent of the first, serving as a particle in combination with *hebben* 'have' (*om+hebben* means 'to wear something around oneself').

(ii) Hij heeft zijn sjaal verkeerd **om**   **om**.
he   has   his scarf wrong   around around
'He is wearing his scarf the wrong way around.'

[6] For completeness, we should add that the judgements on movement possibilities of non-identical circumpositions suggest that there are at least two different variants of

that non-identical circumPPs allow R-word formation with indefinites, in contradistinction to doubling PPs (recall (20)b).

(23) a. Lola is **om   iets   heen**   gelopen.
         Lola is about something towards run
     b. Lola is **ergens   om   heen**   gelopen.
         Lola is somewhere about towards run
         'Lola ran around something.'

Moreover, with non-identical circumPPs, the availability of movement of the entire complex PP versus 'splitting' depends on the nature of the nominal complement: with [+wh,+R] *waar*, as in (24), splitting *waar+om* off from *heen* is impossible (in contrast to doubling PPs, where splitting with *waar* is fine: (21)b), whereas with [+wh,–R] *wat* full pied-piping is impossible (see (25)a; cf. (21)a), with the grammaticality of splitting being subject to speaker variation (as is generally the case for the prePP of Dutch non-identical circumpositional PPs; see Den Dikken 2010a, Koopman 2010).

(24) a. **Waar   om   heen**   is hij gelopen?
         where   about   towards   is he run
         'What did he run around?'
     b. * **Waar   om**   is hij **heen**   gelopen?
         where   about   is he   towards   run

(25) a. * **Om   wat heen**   is hij gelopen?
         about what towards is he   run
     b. % **Om   wat** is hij **heen**   gelopen?
         about what is he   towards run
         'What did he run around?'

    These comparative notes on doubling PPs versus non-identical circumPPs should bring home the fact that doubling PPs are not simply circumPPs that happen to have identical P elements on either side of the nominal constituent. Their syntactic properties need to be addressed in their own right. We will not be able to discuss the syntax of non-identical circumpositional phrases here; we refer the interested reader to Koopman (2000, 2010) and Den Dikken (2010a) and references cited there. But we will take the result of Den Dikken's exploration of Dutch spatial and directional PPs as our starting point in the development of an analysis of doubling PPs. The internal structure of Dutch PPs is recapitulated in section 3.

3.   The internal structure of Dutch PPs

Following Van Riemsdijk (1978, 1990), Koopman (2000, 2010) argues that, parallel to the verbal and nominal domains, the adpositional domain contains

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(Standard) Dutch with respect to this property. See Den Dikken (2010a) and Koopman (2010) for more details on this variation. It should be noted that this speaker variability was not attested with the examples with R-words, presented in (24), at least not for the speakers we consulted with our questionnaires.

functional structure, as shown in (26). The lexical PP is the complement of Place, a functional head, parallel to little *v* in the verbal domain (see Den Dikken 2010a for argumentation). The extended P projection also contains a DegP, which hosts degree modifiers, and is topped off by a CP, whose specifier position hosts R-pronouns. According to Koopman, the CP layer is the only layer that is able to undergo extraction.[7] For Koopman, directional PPs differ from locative PPs structurally in that they have a functional PathP on top of the locative extended P projection (cf. (27)).

(26) $[_{C(Place)P}\, C^{[Place]}\, [_{Deg(Place)P}\, Deg^{[Place]}\, [_{PlaceP}\, Place\, [_{PP}\, P]]]]$
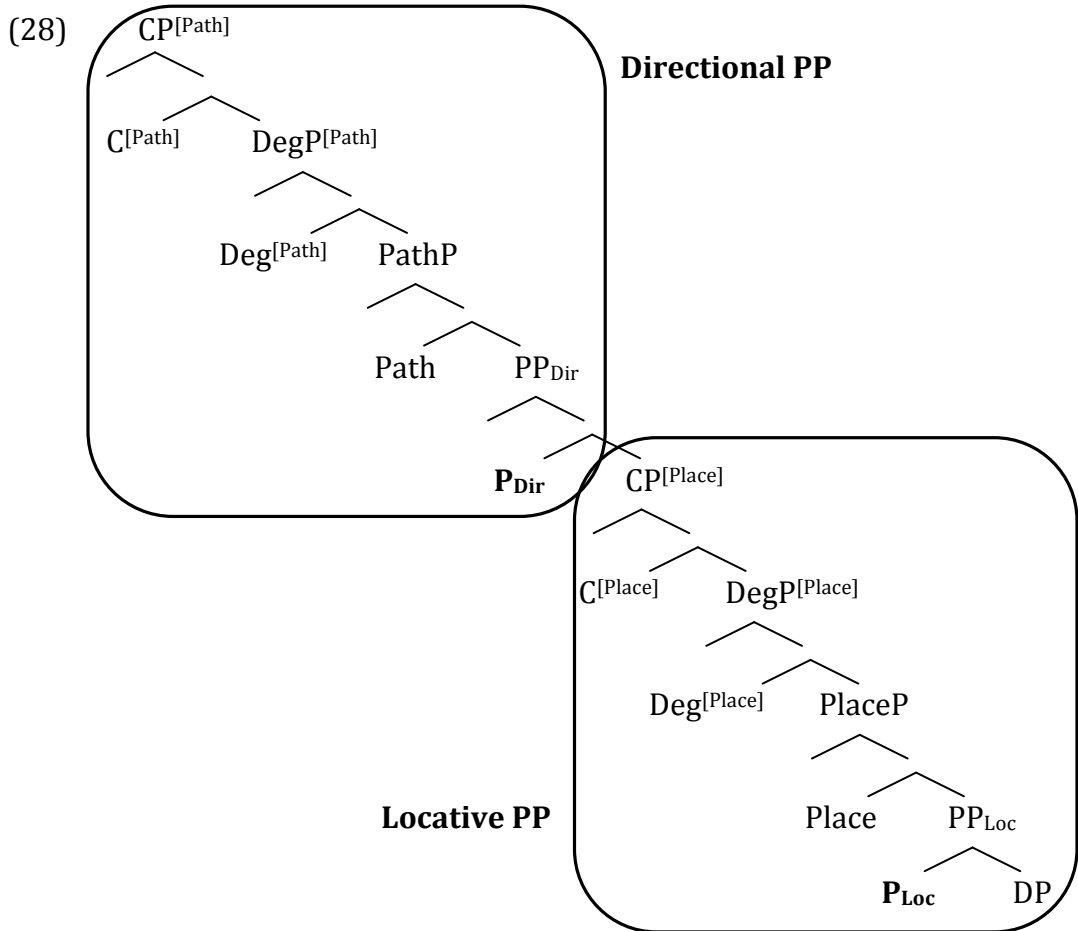
(27) $[_{PathP}\, Path\, [_{C(Place)P}\, C^{[Place]}\, [_{Deg(Place)P}\, Deg^{[Place]}\, [_{PlaceP}\, Place\, [_{PP}\, P]]]]]$

Den Dikken (2010a) builds on Koopman's analysis, but argues for a separate lexical P_{Dir} for directional PPs. This P_{Dir} has its own extended projection, parallel to P_{Loc} in locative PPs. This yields (28) as the maximal structure for directional PPs.[8]

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[7]   This is in line with current theoretical assumptions. Chomsky's (2001) statement that '[t]he inability of TP to be moved or to appear in isolation without C gives further reason to suspect that TP only has phase-like characteristics when selected by C, hence derivatively from C' links syntactic mobility to the possession of 'phase-like characteristics' in such a way that only phases are eligible for movement. (Roberts 2010 also assumes that only phases can be moved, and extends this to the realm of heads: heads can be 'minimal phases', and only heads that are phasal can move.) That moved phrases must be phases also follows if, as standardly assumed, non-head movement is always to a specifier or adjunct position, and if specifiers and adjuncts (which we will refer to collectively as 'satellites') must be phases in order for linearisation to proceed properly. This conclusion is perhaps worded particularly directly by Fowlie (2010): 'Satellites that are underlyingly part of the spine […] are claimed to be restricted to phases. Only phases can be remnant-moved. This allows the derived satellites to linearise with their sisters.' (Fowlie 2010: 12) Since phrases cannot *become* phases as a result of phrasal movement, not even in theories with a more dynamic view on phases (which allow phasehood to shift as a result of *head* movement), it follows that the moved phrasal constituents must have been a phase already before movement. So a constituent that can undergo phrasal movement has to be a phase. In the context of the present discussion, this implies that in prepositional phrases CP[Place] and CP[Path] (the two adpositional phases) can move, but DegP and PlaceP/PathP cannot.

[8]   Den Dikken (2010a) relabels the functional heads to bring the adpositional domain more in line with the clausal and nominal domain. We use Koopman's (2000) labels to keep the structures more transparent.
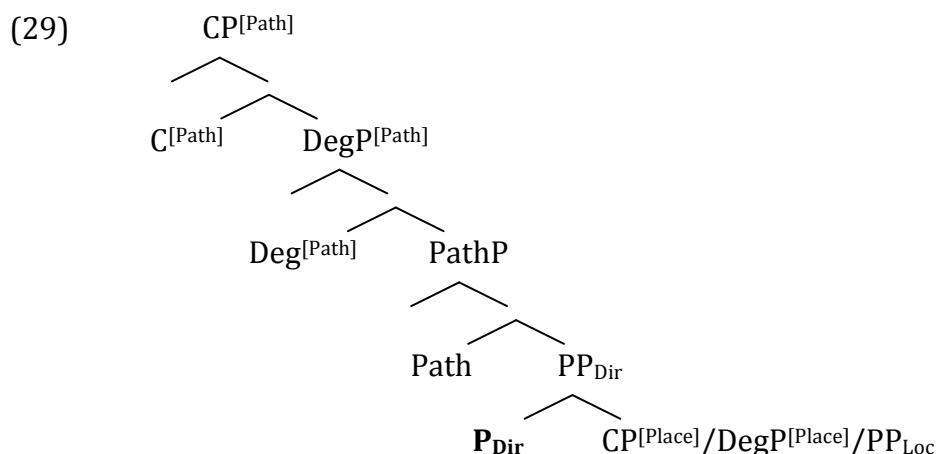
(28)

Directional PP

```
CP[Path]
├── C[Path]
└── DegP[Path]
        ├── Deg[Path]
        └── PathP
                ├── Path
                └── PP_Dir
                        ├── P_Dir
                        └── CP[Place]
```

Locative PP

```
CP[Place]
├── C[Place]
└── DegP[Place]
        ├── Deg[Place]
        └── PlaceP
                ├── Place
                └── PP_Loc
                        ├── P_Loc
                        └── DP
```

Not all directional PPs flesh out this maximal structure. There is variation with respect to the size of the complement of P_{Dir} as well as the size of P_{Dir}'s own extended projection. Den Dikken (2010a) argues that there are six possible extended PPs, depending on whether or not the lexical Ps project functional structure (see Den Dikken 2010a for a more detailed discussion). In the next section we apply this structure to doubling PPs and show how a reduced P_{Dir} layer can capture the first two properties discussed in section 2.

4.   The analysis, part I: A reduced higher layer

Doubling PPs are always interpreted directionally. In order to capture this property, we take doubling PPs to contain a P_{Dir} as well as a P_{Loc}. The latter surfaces as the preposition and the former as the postposition, as is the case with Dutch circumpositions. Moreover, we argue that the two P elements in a doubling PP are in fact two separate but identical instantiations of P_{Loc} and P_{Dir}. The fact that these P elements are identical and the reason why this is necessarily so will be dealt with in section 5.

Let us now turn to the second property of doubling PPs, namely their behaviour with regard to movement. Den Dikken (2010a) argues that when P_{Dir} has a full functional structure on top of its lexical PP, as in (29), the entire extended projection of P_{Dir} can undergo movement, but the locative subpart of the directional phrase cannot be subextracted from it: it is either too small (lacking the CP layer) or, if there is a full CP[Place] in the complement of P_{Dir},

this CP is prevented from extraction because $CP^{[Path]}$ is a closer goal for any probe higher up the tree (an A-over-A effect).

(29)

```
                CP[Path]
               /        \
        C[Path]          DegP[Path]
                        /          \
                 Deg[Path]          PathP
                                   /     \
                               Path       PP_Dir
                                         /      \
                                     P_Dir       CP[Place]/DegP[Place]/PP_Loc
```

This structure is clearly an option available for non-identical circumPPs, which allow full pied-piping (recall (24)). But for doubling PPs, it is blocked, see section 2.3. To capture this property we argue that doubling PPs always have a reduced higher layer: P_{Dir} does not project to $CP^{[Path]}$. The reduced functional structure of the directional PP in doubling PPs accounts for the fact that full pied-piping is never an option here: full pied-piping could only result from movement of $CP^{[Path]}$, but doubling PPs by hypothesis do not project a $CP^{[Path]}$. Conversely, subextraction of the prePP portion with stranding of the postposition is grammatical: with $CP^{[Path]}$ absent, $CP^{[Place]}$ is free to extract (leaving the postposition behind in P_{Dir}) because it is the closest adpositional CP (phase) to the higher probe.[9]

Moreover, we know that the postpositional part of doubling PPs can be incorporated into the verb. This suggests that doubling PPs have a much-reduced functional superstructure. Incorporation of C and Deg into a verb is impossible: there is no C-incorporation in syntax; and in Den Dikken (2010a) it is argued that Deg in the functional structure of the extended PP is the counterpart of T in the extended projection of V and the Person head in the extended projection of N. It is well-known that verbs bearing temporal inflection and nouns that are specified for person (i.e., pronouns; person is not specified for common nouns, which are 'third person' by default) cannot be incorporated into a higher verb. Hence, by the same logic Deg cannot be incorporated either. The Path head, according to Den Dikken (2010a), is the counterpart in the adpositional realm of Aspect in the verbal domain and Number in the structure of nominal phrases. Whether incorporation of any of these heads into a verb is possible is not crystal clear, but Booij (2008) argues that pseudo-incorporation of plurals is licit (in Dutch expressions such as *aardappels schillen* 'potatoes peel, i.e., be engaged in a potato-peeling activity', *brieven schrijven* 'letters write, i.e., be engaged in letter-writing'), and if he is right about this, Num does not radically resist incorporation into V. If Num and Path are each other's counterparts in their respective structural domains, this suggests that Path in principle allows incorporation

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[9]   This is reminiscent of Koopman's (2010) analysis for the variability with non-identical circumpositions in Standard Dutch, which according to her judgements display the same movement properties as what we have observed for doubling PPs.

as well. Assuming so, we come to the conclusion, based on the fact that the postpositional part of doubling PPs can be incorporated into the verb, that doubling PPs are either 'bare' PPs or no larger than PathP.

In the 'bare' PP structure, P_{Dir} *must* in fact be incorporated: in (30)b, the complete lack of functional structure outside PP_{Dir} makes it impossible for P_{Dir} to be licensed by a functional head in its extended projection. As a result of incorporation of P_{Dir}, CP[Place] becomes the derived object of the verb, preceding the postposition, and having the licence to scramble (as in (3)b,c, past *niet* 'not').

(30) a.　　Lili is in het water in gesprongen.
　　　　　　Lili is in the water in jumped
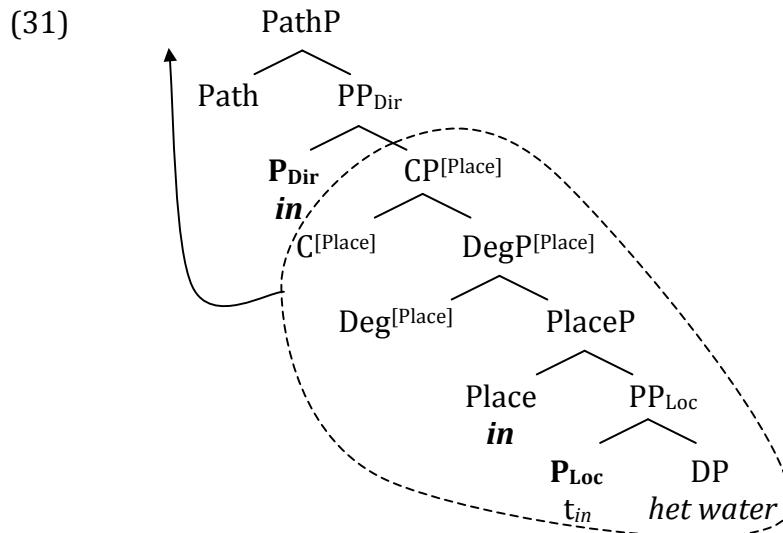　　　　　　'Lili has jumped into the water.'

　　　b.
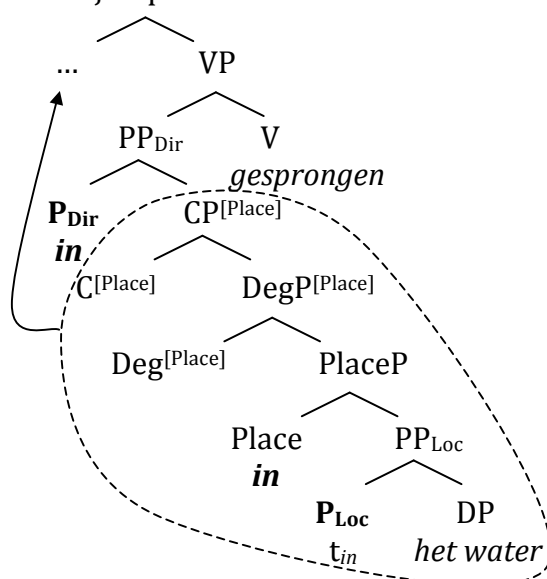
But the reader will recall that physical incorporation of the post-position into the verbal complex is merely a possibility, not a requirement, in doubling PPs: both versions of (18)a, repeated below, are grammatical.

(18) a.　　Lili　zal　op dienen berg < **op**>　moeten < **op**>　klimmen.
　　　　　　Lili　will on that.MASC hill　on　must　　on　climb
　　　　　　'Lili will have to climb up on that hill.'

Therefore, we also need there to be a way for P_{Dir} to be licensed within the maximal adpositional structure without being forced to incorporate, still *without* giving the doubling PP a licence to move as a unit. For this we need a structure in which a PathP is projected outside PP_{Dir}, as in (31), where Path can license P_{Dir} (but is itself probably entitled to incorporation into V; as pointed out above, the precise conditions on incorporation of Path, Asp or Num into V are not entirely clear at this time, but this need not concern us here). Since CP[Path] is still not projected, the doubling PP continues to be barred from movement as a unit, and subextraction of CP[Place] remains licit. (We talk about the surface position of the prepositional CP[Place] in section 5.3.4, below.) With Path being lexicalisable as a particle, the structure in (31) also accommodates the co-occurrence of P-doubling with particles, as shown previously in (9) (where the postP precedes the particle as a result of P_{Dir} raising to Path and left-adjoining to the material base-merged under Path).

(31)

PathP
Path   PP$_{Dir}$
P$_{Dir}$ CP[Place]
in   C[Place]   DegP[Place]
    Deg[Place]   PlaceP
        Place   PP$_{Loc}$
        in   **P$_{Loc}$**   DP
        t$_{in}$ *het water*

The structures of doubling PPs in (30)b and (31) contain both a P$_{Loc}$ and a P$_{Dir}$. P$_{Dir}$ does not project a CP[Path], whereas P$_{Loc}$ does come with its full extended projection. This captures the movement properties of doubling PPs. But we have not yet derived the ban on a full-fledged extended projection for P$_{Dir}$ in doubling PPs (i.e., the fact that CP[Path] must be absent), nor explained why the P elements spell out identically. And nothing we have said so far accounts for the R-movement properties of doubling PPs either. In the next section, we take up these tasks, with an appeal to one key postulate: the defectivity of C[Place] in the structure of doubling PPs. This single postulate will turn out to be the only property that is specific to doubling PPs, tying together their movement and R-word restrictions with an explanation for the formal identity of the two P-elements, and even providing a perspective on the cross-dialectal distribution of doubling PPs (as section 6 will show).

5.   The analysis, part II: A defective lower layer

The obligatory absence of CP[Path] will be shown in this section to follow from a key property distinguishing doubling PPs from run-of-the-mill circumpositions: the fact that the C[Place] of doubling PPs is *defective*. The defectivity of C[Place] also brings forth an account of the R-pronoun facts of doubling PPs. In section 6, we will present a third corollary of the defectivity of C[Place] in doubling PPs: its cross-dialectal distribution.

5.1   CP[Place] as a defective goal, and the emergence of P-doubling

Our central hypothesis about what makes doubling PPs different from ordinary circumpositional phrases is that the CP[Place] in the complement of P$_{Dir}$ in P-doubling constructions is *defective*. We understand defectivity here in the sense of Roberts (2010): the feature content of C[Place] in doubling PPs is a proper subset of the feature content of the Path–P$_{Dir}$ probe upstairs.[10] P$_{Dir}$

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[10]   We take Path–P$_{Dir}$ to be a complex probe on a par with C–T and *v*–V in the clause, in line with Chomsky's (2006) discussion of feature inheritance. Though we concentrate in the discussion to follow on structures in which PathP is projected outside CP[Place], we note that when Path is not projected (as in (30)b), P$_{Dir}$ obligatorily incorporates into the verbal cluster,

has a feature, call it [directional], that P_{Loc} does not have: directionality versus non-directionality is a *privative* opposition. This means that P_{Dir} is specified for the relevant feature while P_{Loc} and $C^{[Place]}$ are not. If P_{Loc} brings in no lexically idiosyncratic features that P_{Dir} lacks, P_{Dir} is thus a proper featural superset of its complement: it subsumes the features that its complement has, and only adds directionality to it. Defectivity explains all of the core properties of doubling PPs, including the emergence of doubling itself, which is the topic of the present subsection.

The hypothesis that $CP^{[Place]}$ in doubling PPs is a defective goal in the sense of Roberts (2010) not only predicts that its C head is necessarily silent,[11] but it can also be argued to explain the defining property of P-doubling constructions: the fact that there are two identical P-elements spelled out.

For Roberts, defective probe–goal relations result either in silence (see in particular Holmberg's 2010 application of the defective goal approach to pro-drop) or in displacement, which for Roberts involves the spell-out of the superset probe, with silence in the position of the subset goal. They do not result in doubling. Why does the defective probe–goal relation between Path–P_{Dir} and $C^{[Place]}$ deliver P-doubling, then? The answer is that P_{Loc} does not raise to $C^{[Place]}$, so P_{Loc} is spelled out independently. $C^{[Place]}$, *qua* head of the extended projection of P_{Loc}, does share with P_{Loc} all its lexical features, however – as an automatic consequence of extended projection in the sense of Grimshaw (1991/2005). When defective $CP^{[Place]}$ is subsequently probed by the upstairs Path–P_{Dir} probe, this causes $C^{[Place]}$'s features to be spelled out at P_{Dir}. This results in double spell-out of P_{Loc}'s lexical features: once in P_{Loc} (*in situ*) and once in P_{Dir}. As a result of $C^{[Place]}$'s defectivity, Path–P_{Dir} is the spell-out of all the features of $C^{[Place]}$ plus the additional feature [directional] brought in by Path–P_{Dir}, the superset probe.[12] This is illustrated in (32) for *in het water in* 'into the water'.

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becoming an integral part of the v–V probe. This complex v–V–P_{Dir} probe is again a proper featural superset of $CP^{[Place]}$, so in this scenario as well, $CP^{[Place]}$ is defective in doubling PPs.

[11]   Probably trivially so: there are, to our knowledge, no lexical spell-outs for C-heads in the extended projections of Ps in Germanic.

It may be good to emphasise here that we use the term 'defective' strictly in the sense of Roberts (2010): a 'defective goal' is a proper featural subset of a higher probe; and such defective goals are never spelled out *in situ* (if at all). This use of the term 'defective' is different from the myriad other ways in which this term is used (rather confusingly) in the literature. Thus, the literature has sometimes called the C-head of subjunctival clauses 'defective'; but this C-head is not a proper featural subset of the probe (v) in the matrix clause, so while a subjunctival CP may very well be 'defective' in not being a phase and lacking a specification for tense, it is not a 'defective goal' in Roberts' sense of the term. There is no expectation, therefore, that subjunctival Cs should remain silent or undergo movement.

[12]   When the complement of P_{Dir} is a defective goal for the Path-P_{Dir} probe, all of the features of P_{Loc} are spelled out at Path–P_{Dir}, along with the features that the superset probe Path–P_{Dir} brings in. In the absence of a particle, Path–P_{Dir} in Dutch has no phonological features different from those of its defective goal, so in a situation in which the (extended) projection of P_{Loc} is the defective goal of the probe Path–P_{Dir} and Path is not occupied by a particle, the only features that are spelled out upstairs are those of P_{Loc}. But when a particle is present, or when the (extended) projection of P_{Loc} is the defective goal of the probe v-V-P_{Dir} (i.e., when P_{Dir} lacks an extended projection of its own and is incorporated into the verbal cluster), the features of the defective goal (P_{Loc}) and the superset probe are clearly spelled out discretely, but crucially in the same position in the syntactic tree (i.e., as part of the complex Path- or v-head). This is entirely in line with Roberts' (2010) discussion of incorporation phenomena as involving defective probe-goal relations.

(32)
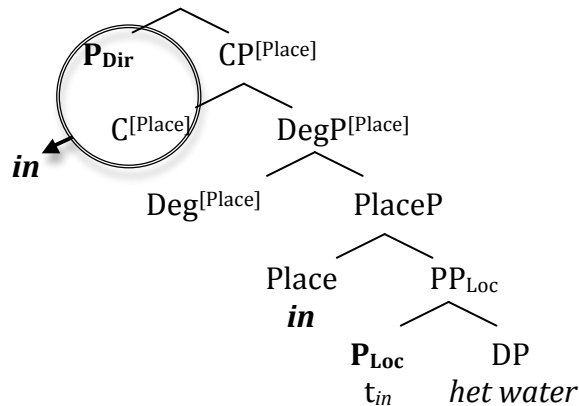
      In this approach to P-doubling, there is multiple spell-out of the same feature-set: the features of P_{Loc} are spelled out both in its base position and in P_{Dir}, in the latter case as a result of the probe–goal relation between Path–P_{Dir} and the defective $C^{[Place]}$. But it is not the case that multiple members of a single head-movement chain are spelled out: the chain-formation operation in question cannot be performed. There could only be a chain with members in the locative and directional P-heads if it were legitimate for P_{Loc} to move to P_{Dir} and be realised in both positions. But from the fact that the prepositional portion of a doubling PP can autonomously undergo movement in the syntax (recall the pattern repeated in (33)) we had concluded earlier in this paper that there is a need for a functional extended projection immediately outside PP_{Loc} in doubling PPs.

(33) **Op welken berg <*op>** is Lili **<op>** geklommen?
      on which hill on is Lili on climbed
      'Up on which hill has Lili climbed?'

In particular, we concluded (taking our lead from Koopman 2000) that the grammaticality of the subextraction of the prepositional part demonstrates that there must be a $CP^{[Place]}$ in the complement of P_{Dir} (as in the structure in (32)). We know that head movement cannot proceed through C heads: CPs always break head-movement chains; head movement via C into a higher lexical head is never legitimate (see Li 1990 for one possible perspective on why this might be the case). So the fact that (33) demonstrates that the complement of P_{Dir} is as large as $CP^{[Place]}$, in conjunction with the fact that head movement out of CP is impossible, precludes an analysis of P-doubling in terms of the spell-out of multiple members of a head-movement chain.[13]

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[13]   On doubling as a result of the spell-out of more than one link in a movement chain, see among others Bošković (2002), Nunes (2004), and Barbiers *et al.* (2009) for [+*wh*] doubling.

     Jónsson (2008) takes on a Nunes-inspired analysis for P-reduplication in Icelandic. He argues that in Icelandic, the P first undergoes movement to a functional head in the extended P-projection and gets reanalysed there. After the remnant PP has undergone movement, both the copy of P in the moved PP and the reanalysed P are pronounced. Such an approach does not carry over to Flemish P-doubling, however, for several reasons. As we point out in the main text, PP movement is only possible as movement of a CP layer, in this case $CP^{[Place]}$; the P-element cannot cross the C head on its way to a position higher than this $CP^{[Place]}$. Moreover, Jónsson's analysis predicts that P-reduplication in Scandinavian only occurs with speakers/ languages which display P-stranding, as these phenomena share

Not only do we have ample reason to believe that the complement of P_{Dir} is a full-fledged $CP^{[Place]}$ (which prevents head movement), but from the logic of Roberts' (2010) theory of defective goals it also follows that if Path–P_{Dir} established a probe–goal relation with defective P_{Loc}, the result would be a simple postposition, not a P-doubling construction: whenever P_{Loc} itself serves as the defective goal for the Path–P_{Dir} probe, the result is displacement (i.e., spell-out of P_{Loc}'s features at P_{Dir}). So in simple postpositional PPs (*de berg op* 'the hill on'), Path–P_{Dir} takes a smaller complement (just PP_{Loc}), and probes its head (P_{Loc}). This P_{Loc} is a defective goal for the probe, and must consequently remain silent, with the features of P being spelled out at P_{Dir}. This is illustrated in (34).[14]

(34)
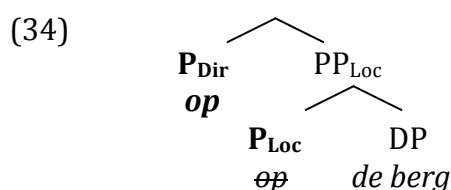
In 'ordinary', non-identical circumpositional PPs, by contrast, the $CP^{[Place]}$ in the complement of the Path–P_{Dir} probe is not defective: it is not a proper featural subset of the probe because the probe and the goal each have idiosyncratic lexical features that the other does not share. Since $CP^{[Place]}$ in non-identical circumPPs is not the extended projection of a proper subset of the P-features under P_{Dir}, we do not get doubling of P_{Loc} (as in doubling PPs) or silence under P_{Loc} (as in postpositional PPs). P-doubling results only in a situation in which P_{Dir} takes a CP complement that is a proper featural subset of the upstairs Path-P_{Dir} probe — in other words, when $CP^{[Place]}$ is defective.

5.2 Defectivity and the forced absence of $CP^{[Path]}$ in doubling PPs

A second consequence of the defective $C^{[Place]}$ in doubling PPs is the fact that P_{Dir} cannot have an extended projection including $CP^{[Path]}$. In (31) we showed that movement of the locative prepositional PP stranding the postposition is grammatical, but movement of the entire doubling PP is not. We have blamed

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crucial steps in their derivation. This link is not obvious with respect to the Flemish P-doubling under discussion here: there are speakers who speak a doubling dialect but do not accept P-stranding in (i)a: pied-piping of P is necessary, with repeating the P lower down marginally possible, as in (i)b.

(i)   a.   *   Da   scenario moette   nu   echt   nie   aan denken.   (Asse Dutch)
            that scenario must-you   now really   not   on   think
      b.   Aan da   scenario moette   nu   echt   nie   (??aan) denken.
            on   that   scenario must-you   now really   not   on   think
            'You really shouldn't think about that scenario now.'

Another important difference with P-stranding is that the P-doubling in Flemish we discuss in this paper is not allowed with selected PPs (see (10)b), whereas P-stranding is not so restricted for the Dutch speakers who accept it:

(ii)   Lili   kan   je   op   rekenen.
       Lili   can   you   on   count
       'Lili you can count on.'

[14]   In postpositional PPs, the complement of P_{Loc} raises to SpecPathP. The P-element is spelled out at Path-P_{Dir} owing to the fact that P_{Loc} is a defective goal for the Path-P_{Dir} probe. The result is postpositional order. See Den Dikken (2010a) for more details on the derivation of postpositional PPs in Dutch.

this ungrammaticality on the apparent fact that no $CP^{[Path]}$ can be built on top of the projection of P_{Dir} in P-doubling constructions. However, we have not yet provided a rationale for this. It turns out that $C^{[Place]}$'s defectivity in doubling PPs can once again be held responsible for this.

The defectivity of the $C^{[Place]}$ in the complement of P_{Dir} in doubling PPs rests on P_{Loc} being a proper featural subset of P_{Dir}, with the Path–P_{Dir} complex upstairs establishing a defective probe–goal relation with $CP^{[Place]}$. This proper subset relation effectively establishes a single extended projection running from P_{Loc} all the way up to the Path–P_{Dir} complex.[15] $C^{[Place]}$ is a member of this extended projection. And no single extended projection is ever allowed to contain multiple projections of C: there is no 'CP recursion' in the strict sense of the term;[16] there is a unique C for any extended projection. So since the proper subset relation between Path–P_{Dir} and the extended projection of P_{Loc} effectively renders Path–P_{Dir} a member of P_{Loc}'s extended projection, and since this extended projection already includes an instance of C, it will be impossible for P_{Dir} to be associated with another projection of C.[17]

Since inclusion of a $CP^{[Path]}$ in the extended projection of a P_{Dir} with a defective $CP^{[Place]}$ complement would deliver an anomalous extended projecttion with two Cs in it, P_{Dir} must either take a non-defective $CP^{[Place]}$ as its complement (as in 'ordinary' non-identical circumpositional phrases) or, if its $CP^{[Place]}$ complement *is* indeed defective, forgo the projection of a C head in

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[15]   A reviewer asks whether the fact that $CP^{[Place]}$ is a subpart of the extended projection of P_{Loc} in doubling PPs still entitles it to phasehood and movement. We would like to emphasise that phasehood is defined independently of extended projections: on standard assumptions, *v*P is phasal but not the maximal extended projection of V (which is CP); and those who follow Grimshaw in taking PP to be an extended projection of N (ourselves not included) are not thereby prevented from taking DP to be a phase. Since it is not the case that only the maximal extended projection of a lexical head is entitled to phasehood, our text claim that in doubling PPs $CP^{[Place]}$ is a subpart of P_{Loc}'s extended projection does not in any way rob it of its phasality and movement potential. CP's defective goal status does not affect its phasality either.

[16]   In the cartographic model, 'CP' stands for a multitude of functional categories in the left periphery, with the aid of which some facts that used to be dealt with under the rubric of 'CP recursion' (embedded Verb Second under bridge verbs, in particular) can be accounted for without having the C-projection itself be recursive. Some of the ingredients of the cartographic left periphery (such as TopP) are believed to be recursive, but the majority of the functional categories postulated in the left periphery are unique per functional sequence.

[17]   PathP and PlaceP are not in complementary distribution within an extended projection. These are identified as aspectual categories in Den Dikken (2010a), and single extended projections can in principle be specified multiple times for different aspectual features (thus, in *John knocked on the door for half an hour* the lexical aspect of the semelfactive VP *knock on the door* is telic but this does not preclude the presence of the time-frame adverbial *for half an hour*, which signals atelicity). It seems unlikely, however, that $Deg^{[Place]}$ and $Deg^{[Path]}$ should be able to co-occur within a single extended projection. Den Dikken (2010a) likens DegP in the extended projection of P to TP in the extended projection of V. It is impossible to include multiple TPs in a single clause; so it is presumably impossible to combine $Deg^{[Place]}$ and $Deg^{[Path]}$ in the extended projection of P_{Loc}. Testing this comes down to investigating the grammaticality of doubling PPs with two modifiers, one modifying the location and the other the path. In non-identical circumPPs, this is possible, as Den Dikken (2010a) demonstrates: *het vliegtuig vloog* _tien meter lang_ _tien meter hoog_ *boven het strand langs* 'the plane flew ten metre long ten metre high above the beach along, i.e., the plane flew above the beach along a ten-metre stretch at a height of ten metres'. For doubling PPs, such double modification is very difficult to construct. We have not been able to find grammatical examples of this type. Whether they are indeed systematically impossible (as our hypotheses lead us to expect) remains to be verified.

its own extended projection (as in doubling PPs). As a consequence of taking a defective CP[Place] complement, P$_{Dir}$ must forfeit the prospect of seeing its own projection undergo syntactic movement: PP$_{Dir}$ never reaches up to CP[Path], and must hence stay *in situ*.[18]

5.3 Defectivity and R-movement

In section 2 we pointed out that an indefinite neuter pronoun cannot undergo R-word formation in doubling PPs: (35)a, with *iets in situ*, is grammatical, but the R-movement in (35)b is impossible. The ungrammaticality of (35)b notwithstanding, however, R-words are not categorically forbidden in doubling PPs: (36) shows that both *daar* and *waar* are grammatical.

(35)   a.   dat   Lili   **op iets**   (**op**)   geklommen   is.
            that   Lili   on   something   on   climbed   is
            'that Lili climbed up on something.'
       b.   dat   Lili   **ergens**   **op**   (***op**)   geklommen is.
            that   Lili   somewhere   on   on   climbed   is

(36)   a.   dat   Lili   **daar op**   (**op**) geklommen   is.
            that   Lili   there   on   on   climbed   is
            'that Lili climbed onto that.'
       b.   Ik   vraag   me   af   **waarop**   Lili   (**op**)   geklommen is.
            I   ask   me   off   whereon   Lili   on   climbed   is
       c.   Ik   vraag   me   af   **waar**   Lili   **op**   (**op**)   geklommen is.
            I   ask   me   off   where   Lili   on   on   climbed   is
            'I wonder what Lili climbed up on.'

In this subsection, we provide an account for these R-movement data. The hypothesised defectivity of the CP[Place] of doubling PPs will once again play a central role.

5.3.1 Two positions for R-pronouns

As a starting point for our analysis of these R-word data, we adopt Koopman's (2010) proposal that there are, in principle, two positions that can accommodate R-words: SpecCP and SpecPlaceP. Going beyond what Koopman says, we argue that there is a difference between SpecPlaceP and SpecCP with respect to the kinds of R-pronouns they can house. More specifically, we draw a parallel between SpecPlaceP in the extended projection of P and the Object Shift or scrambling position in the extended projection of V, and concomitantly take SpecPlaceP to be a position with information-structural import. What is raised to SpecPlaceP gets a 'strong' interpretation. By contrast, movement to SpecCP does not have any intrinsic information-structural consequences.

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[18]   This conclusion has consequences for the way in which we account for the fact that PP$_{Dir}$ *precedes* the verbal cluster. These consequences could be radical, leading us to opt for a head-final underlying representation for VP, perhaps along the lines of Haider (2000) and Barbiers (2000); but it is conceivable that a less extreme position could be taken, for instance if the idea that only phases can undergo movement is confined in scope to A-bar operations and if the kinds of movement operations that are responsible for the derivation of head-final orders based on head-initial underliers are A-movements. More thought is needed here.

This said, it follows that *definite* R-pronouns are freely licensed in either SpecPlaceP or SpecCP, whereas *indefinite* R-pronouns are not licensed in SpecPlaceP unless they receive a 'strong', [+specific] interpretation. We can test this by investigating the relative placement of R-words *vis-à-vis* degree modifiers such as *vlak* 'right', which belong to the DegP that sits right in between C and PlaceP, as shown in (37).

(37)   [$_{C(Place)P}$ __ [C$^{[Place]}$ [$_{Deg(Place)P}$ *vlak* Deg$^{[Place]}$ [$_{PlaceP}$ __ [Place [$_{PP}$ **P$_{Loc}$** DP]]]]]]

The occupant of SpecCP necessarily precedes such modifiers, while the occupant of SpecPlaceP must follow them. So our expectation is that *definite* R-words should in principle be able to appear on either side of such modifiers (because they can surface in either SpecPlaceP or SpecCP), but *indefinite* R-words should show a more restricted behaviour. The facts in (38) illustrate that this prediction is borne out:

(38) a.   <daar> **vlak** < daar> onder/ boven/ naast/…
             there   right   there   under   above   next.to
          'right under/above/next to that'
     b.   <ergens>   **vlak**   <$^{??}$ ergens>   onder/ boven/ naast/…
             somewhere right   somewhere under   above   next.to
          'right next to/above/under something'
     c.   nooit <ook maar ergens> **vlak** <* ook maar ergens>
          never   also but   anywhere right   also but   anywhere
          onder/ boven/ naast
          under above   next.to
          'never right under/above/next to anything (at all)'

The example in (38)a, with the distal R-word *daar*, is perfect with *daar* on either side of *vlak*, the degree modifier; but out of context, (38)b strongly prefers the indefinite R-word *ergens* to be placed to the left of *vlak*. This preference for placement to the left of *vlak* is strengthened when the negative polarity marker *ook maar* is added to the R-word: *ook maar ergens* can only support a non-specific interpretation, so the fact that (38)c is sharply worse with *ook maar ergens* to the right of *vlak* supports our proposal that the two positions for R-words are different in terms of the interpretation they trigger on the R-words occupying them. SpecPlaceP is an information-structural position, forcing a [+specific] reading onto its occupant, unlike SpecCP.[19]

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[19]   We note in passing that there presumably is a landing-site for R-movement in SpecDegP as well. This is suggested by the following example from the *Gazet van Antwerpen*, a Flemish newspaper:
(i)   twee meter er   vlak boven, op de   eerste verdieping, lag een
      two   metre there right above on the first   floor   lay a
      vierjarig   jongetje te slapen.
      four.year.old   boy-DIM   to sleep
      'two metres right above it, on the first floor, a four-year-old boy lay sleeping'
      [http://www.gva.be/antwerpen/essen/auto-s-branden-op-twee-meter-van-slapende-kinderen.aspx]
With *twee meter*, a phrasal degree modifier, adjoined to DegP, and *vlak*, a head-level degree element, probably inserted directly under Deg^0, the word order in (i) falls out directly if *er* is in SpecDegP. This is not the only legitimate position for *er* in the string in (i): there are two alternatives, one with *er* to the left of *twee meter* (i.e., with *er* in SpecCP$^{[Place]}$) and the other

Before we move on, we would like to note briefly that the fact that indefinite R-pronouns are *higher* up the tree than their definite counterparts need to be does not contradict what we know about the placement of definites and indefinites in clauses (i.e., that indefinites in the clause are usually placed *lower* than definites). The contradiction is merely apparent. Whenever an indefinite is required to move to check some feature higher up the tree, such as a [+*wh*] feature, it is welcome to so do: its indefiniteness does not stand in the way of feature checking outside the nuclear scope, so long as reconstruction of the indefinite to a position inside the nuclear scope remains possible. The Dutch [+*wh*] word *wat* is an indefinite; and when it stays inside the nuclear scope, it is interpreted accordingly, as a weak indefinite. When it moves out to check a feature on C, nothing prevents it from still being interpreted as a non-specific indefinite, thanks to the fact that [+*wh*] movement allows for reconstruction. *Mutatis mutandis*, exactly the same is going on in the case of *iets* and *ergens*, two other bare indefinites, one a non-R-word and the latter its R-word counterpart: *iets* stays *in situ* inside PP; *ergens* is the incarnation of the bare indefinite pronoun raised up to SpecCP[Place], just like English *what* is the incarnation of the bare indefinite pronoun raised up to a [+*wh*] SpecCP. R-words are always in a derived position – but whenever the derived position they are in allows for reconstruction, they will still be interpreted as non-specific indefinites, as desired. By contrast, for *definite* R-pronouns serving as complements to prepositions movement to SpecPlaceP always takes place (in parallel to obligatory scrambling of definite objects in Dutch clauses), optionally followed by onward movement to SpecCP[Place] and beyond. Reconstruction from SpecPlaceP is impossible, hence R-words raised to SpecPlaceP are never interpreted within the nuclear scope, again as desired.

5.3.2 The ban on indefinite R-words in doubling PPs

Let us now return to the fact that *ergens op op, a doubling PP with an indefinite neuter R-word, is ungrammatical: recall (35)b above, repeated here as (39)b (and recall also note 5 on the irrelevance of haplology).

(39) a.   dat Lili **op iets**   (**op**) geklommen   is.
          that Lili on something on   climbed   is
          'that Lili climbed up on something.'
     b.   dat Lili **ergens**   **op** (*****op**) geklommen is.
          that Lili somewhere on   on   climbed   is

The problem with this kind of example must be that there is no suitable position for the indefinite R-word to surface in. But it is not immediately obvious why this should be the case. Though, for reasons we mentioned above, movement of *ergens* to SpecPlaceP is not legitimate, one might expect *ergens* to be able to move to SpecCP[Place]: after all, in (38)b,c, that was precisely where we placed *ergens*. We know that the complement of P$_{Dir}$ in P-doubling is a full CP[Place]. But the ungrammaticality of R-word *ergens*

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with *er* to the right of *vlak* (i.e., with *er* in SpecPlaceP). The latter is dispreferred: in general, *er* is slightly less good to the right of *vlak* than the distal R-word *daar* is. But this probably does not have anything to do with syntax.

indicates that SpecCP[Place] is apparently unavailable as a spell-out site for the indefinite R-word in doubling PPs. Why?

Our answer to this question once again rests upon our central hypothesis about what makes doubling PPs special: the fact that the CP[Place] in the complement of P_{Dir} in doubling PPs is defective. In section 5.2, we argued that the proper subset relation between the Path–P_{Dir} probe and CP[Place] in doubling PPs effectively establishes a single extended projection running from P_{Loc} all the way up to the Path–P_{Dir} complex. CP[Place] is a part of this extended projection, but while CPs are normally the highest nodes of any extended projection, in the particular situation in which CP is a defective goal, it is not. We link to this the fact that no R-word can be spelled out in the specifier position of CP[Place] in doubling PPs, on the hypothesis that, while movement of R-words to SpecCP[Place] is not restricted *in se*, this landing site is only a legitimate *spell-out position* at PF if it is the highest position in an extended projection. Movement of R-words to SpecCP is 'pure EPP'-driven movement. We hypothesise that movement driven by 'pure EPP' can have a PF effect only if the landing-site it targets is the highest specifier in an extended projection – more technically, if the landing-site c-commands all the heads that are members of an extended projection.[20] Movement of R-words to SpecPlaceP is not 'pure EPP' movement: it has interpretive effects; so the fact that SpecPlaceP is not the highest specifier in the extended projection of P does not prevent R-words from being spelled out there. But movement of an R-word to SpecCP[Place] is interpretively neutral, and can have an effect on PF output only if this specifier is the highest one in an extended projection – which it is not in doubling PPs. So out of context, a bare indefinite pronoun in a doubling PP cannot move to SpecPlaceP or be spelled out in SpecCP[Place]: it has no choice but to stay *in situ*, as in *op iets op* (cf. (35)/(39)a).

Interestingly, according to some speakers of the P-doubling variety of Flemish, the status of (39)b changes somewhat in a context in which a [+specific] reading for *ergens* is felicitous: if *ergens* refers to a specific, but unidentified object which Lili climbed up on, the sentence becomes a lot better. This mimics the pattern we find for the distal demonstrative R-pronoun *daar* in (36)a, repeated below as (40). This is as it should be: [+specific] indefinites behave very much like definites when it comes to their placement options in the West-Germanic OV languages. They can move to SpecPlaceP and stay there.

(40) dat Lili **daar op** (**op**) geklommen is.
      that Lili there on on climbed is
      'that Lili climbed onto that.'

Though the essence of the account of the ill-formedness of (39)b with P-doubling is now in place, the analysis is not quite complete yet. To finish it, we first need to investigate the contrast that was observed between [–*wh*]

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[20]   The rationale for this hypothesis is the following: 'EPP' is what Chomsky has called an 'edge feature'. So 'pure EPP'-driven movement is movement to the edge, for purely syntactic reasons (not ones having to do with the interpretive components). Our hypothesis reflects the idea that PF spell-out of pure 'edge-driven' movement phonologically marks the *highest* edge in the syntactic substructure at hand – the specifier position that c-commands all the heads that are part of a complete extended projection.

ergens and its [+*wh*] counterpart *waar*: as (36)b-c show, *waar* is grammatical in doubling PPs. The explanation we provide for this in the next subsection paves the way for a completion of the account of (39)b in section 5.3.4.

5.3.3 On intermediate and pied-piping wh-movement

Since the specifier of the defective CP[Place] of doubling PPs is not the highest specifier in the extended projection of P$_{Loc}$, it does not normally provide a landing site for terminal movement, where by 'terminal movement' we understand movement to a position in which the moved constituent is spelled out. But *non-terminal* movement to SpecCP[Place] *followed* by onward movement to a higher specifier which does license spell-out of the moved category should be perfectly legitimate: in the case of non-terminal movement, SpecCP[Place] does not serve as a spell-out point, so the fact that it is not the highest position in the extended projection of P$_{Loc}$ is entirely immaterial.

   This immediately accounts for the fact that, while the [–*wh*] R-word *ergens* is not welcome in doubling PPs, its [+*wh*] counterpart *waar* can be used in P-doubling constructions of the type in (41)a.

(41)   a.   Ik vraag me af **waar** Lili **op**   **op**   geklommen is.
            I   ask   me off where Lili on   on   climbed   is
            'I wonder what Lili climbed up on.'

The essential difference between *ergens* in (39)b and *waar* in (41)a is that movement of *ergens* to SpecCP *terminates* the derivation whereas in the case of [+*wh*] *waar*, movement to SpecCP[Place] is not the terminal link in the movement dependency that *waar* is involved in: it is an intermediate step, followed by movement into the matrix SpecCP. Since movement of *waar* into SpecCP[Place] is followed by onward movement, SpecCP[Place] in (41)a is not a spell-out site.

   But in the pied-piping cases in (41)b,c the R-word *is* spelled out in SpecCP[Place]: these are cases of movement of the entire prepositional CP[Place] (stranding the postpositional double) into the matrix SpecCP, with *waar* spelled out in the specifier position of the fronted CP[Place]. Don't these examples contravene our claim that terminal movement to SpecCP[Place] in doubling PPs is impossible?

(41)   b.   **Waarop**   is   Lili **op** geklommen?
            whereon   is   Lili on   climbed
            'What did Lili climbed up on?'
       c.   Ik vraag me af **waarop** Lili   **op**   geklommen is.
            I   ask   me off whereon Lili   on   climbed   is

   The pied-piping cases in (41)b,c should be placed in a broader perspective. We would like to draw a parallel between onward pied-piping movement of *waar*+P in the sentences above and similar cases of [+*wh*] pied-piping found with DPs in English and with clauses in Basque, Quechua and other languages, possibly including English. In English, [+*wh*] movement to SpecDP is generally impossible: there is no [+*wh*] movement in DP, and as a result expressions like *[DP *who pictures of t*] are ungrammatical. Yet, whenever a modifier of a noun is [+*wh*] specified, the [+*wh*] marked modifier

must raise to SpecDP, followed by raising of the entire DP into a [+*wh*] SpecCP position in the clause: (42)a is impossible, while (42)b is fine.[21]

(42) a. * [$_{DP}$ A how big problem] did you bump into?
     b.   [$_{DP}$ How big (of[22]) a problem] did you bump into?

Clausal pied-piping illustrates the same thing. Hermon (1984) presents Quechua examples of the type in (43), mimicked closely by Ortiz de Urbina's (1989, 1993) cases of clausal pied-piping in Basque, illustrated in (44), itself taken from Arregi (2003), the most recent in-depth account of the phenomenon.[23] Haddican, Tanaka & Tsoulas (2006) suggest that even English has something like this: they treat sentences such as (45) as involving a syntactic derivation parallel to that of (43) and (44).

(43) [$_{CP}$ *ima*-ta$_i$ wawa t_i miku-chun-ta]$_k$ Maria t_k muna-n?
        what-acc child-nom   eat-TNS-q   Maria-nom   want-TNS-3
     'What does Maria want that the child eat?'   (Quechua)

(44) [$_{CP}$ *se*$_i$ t_i idatzi   rabela Jonek]$_k$ pentzate su t_k?
        what   written has   Jon.erg think.IMP AUX.2SG.PR
     'What do you think Jon wrote?'   (Basque)

(45) [$_{CP}$ *How old*$_i$ is she t_i]$_k$ do you think t_k?

In these examples, movement to the SpecCP of the – clearly non-interrogative – embedded clause is obligatorily followed by movement of the entire subordinate CP into the [+*wh*] specifier of the matrix clause, which is interrogative.

In all these cases, the [+*wh*] element is spelled out at the left edge of the

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[21]   The fact that **How big did you bump into (of) a problem?*, with subextraction of *how big*, is ungrammatical is an independent matter: left-branch extraction from DP is generally impossible in (adult) English, for reasons that need not concern us here.

[22]   For our purposes, questions about the distribution of *of* here are immaterial; see Troseth 2004 and references there for details.

[23]   Simpson & Bhattacharya (1999) point out that Tamil works essentially like Basque and Quechua, requiring movement of the [+*wh*] constituent to the left edge of the pied-piped CP. But they also note that, although for Bangla and Marathi a clausal pied-piping analysis of examples like (i) and (ii) is arguably the right way to go, the [+*wh*] constituent that pied-pipes the entire subordinate clause in these languages is itself not in the embedded SpecCP.

(i)   Jon [$_{CP}$ meri   *kon   boi-Ta*   poRe-che]$_k$ bollo t_k?   (Bangla)
      John   Mary   which   book-clf   read-has.3   said
      'Which book did John say Mary read?'

(ii) Mini-la [$_{CP}$ Lili-ni   Ravi-la   *kay*   dila   asa]$_k$ vaTta?   (Marathi)
      Mini-acc   Lili-erg Ravi-acc what   gave   comp   believes
      'What does Mini believe Lili gave Ravi?'

So [+*wh*] pied-piping can be triggered, in these cases, by a [+*wh*] constituent that is itself in clause-internal position: intermediate movement to the edge of the pied-piped phrase is not a prerequisite for pied-piping. In doubling PPs as well, [+*wh*] pied-piping of the lower PP with stranding of the higher one is not contingent on R-movement of the [+*wh*] word into the specifier position of the defective CP: (iii)b is grammatical alongside (iii)a.

(iii) a.   [$_{CP(Place)}$ **Waar**$_i$ op t_i]$_k$ is hij t_k op   geklommen?
                   where   on   is he   on   climbed
      b.   [$_{CP(Place)}$ Op   **wat**]$_k$ is hij t_k op   geklommen?
                    on   what   is he   on   climbed
            both: 'What did he climb onto?'

phrase that it pied-pipes to SpecCP. Throughout, the spell-out position of the [+*wh*] element is the highest specifier in the structure. Even though in the particular case of (41)b,c the specifier position of the pied-piped CP[Place] is not the highest specifier position in the extended projection of P_Loc, the fact that CP[Place] is displaced to the highest specifier position in the containing clause makes SpecCP[Place] a legitimate spell-out position for the [+*wh*] element. This directly falls out from our earlier hypothesis regarding spell-out positions: movement driven by 'pure EPP' can have a PF effect only if the landing-site it targets c-commands all the heads that are members of an extended projection. In the pied-piping cases in (41)b,c the landing-site of the [+*wh*] R-word *waar* (i.e., the specifier position of the pied-piped CP[Place]) c-commands all the heads in the extended projection of the verb (see Kayne 1994 for discussion of c-command in specifier-of-specifier configurations), hence can be spelled out in SpecCP[Place]. In the P-doubling version of (37)b, by contrast, *ergens* in SpecCP[Place] does not c-command all the heads of any extended projection, hence cannot be spelled out there.

5.3.4 The ban on ergens in doubling PPs revisited: The finishing touches

The point of the discussion in the previous subsection was to bring home the fact that movement to SpecCP[Place] in doubling PPs can result in spell-out of an R-word in this position only if CP[Place] is pied-piped by the R-word into the highest specifier position of the clause. This leaves unaffected our earlier discussion of the ungrammaticality of (35)/(39)b. Even though CP[Place] undergoes movement here as well (after all, the prePP surfaces to the left of the postposition, which spells out P_Dir), the landing site of pied-piping movement of CP[Place] is not the edge of a maximal extended projection. As we pointed out in section 4, in the absence of functional structure outside PP_Dir the prepositional CP[Place] is moved to a position in the *Mittelfeld* of the clause (see (30)b) — a position in the extended projection of the verb but certainly not the *highest* specifier position in the verb's extended projection (i.e., SpecCP). So spelling out an R-word in the specifier position of the moved CP[Place] in a doubling PP remains impossible even after movement of CP[Place] in (30)b: neither is SpecCP[Place] the highest specifier in the extended projection of P_Loc nor does it end up being the highest specifier of the extended projection of the verb.

But recall from the discussion in section 4 that P_Dir in doubling PPs can have a PathP erected on top of its own lexical projection, as in (31). We needed this structure in particular to accommodate doubling PPs that feature a particle, spelling out the Path head (recall (9)). Now imagine that the argument of P_Loc in these examples is the indefinite R-word *ergens*, and that we move *ergens* to SpecCP[Place]. If the derivation could proceed from this point by moving CP[Place] to SpecPathP and leaving it there, we would expect it to be legitimate to spell out *ergens* in a doubling PP that includes a particle: SpecPathP is the highest specifier in the extended projection of P in the structure in (31), and with CP[Place] raised to SpecPathP the occupant of SpecCP[Place] would end up c-commanding all the heads in the extended projection of P. Concretely, then, if CP[Place] in (31) could be terminally moved to SpecPathP, the examples in (46), based on the ones in (9), should be grammatical. But they are not: native speakers detect no improvement of doubling PPs with *ergens* as an effect of the presence of a particle.

(46) a. * De zon scheen ergens door doorheen.
      the sun shone somewhere through through.PRT
      'The sun was shining through something.'
   b. * Ge moet ergens naar naartoe springen.
      you must somewhere to to.PRT jump
      'You have to jump towards something.'
   c. * Of wil je ergens van vanaf?
      or want you somewhere of of.PRT
      'Or do you want to get rid of something?'
   d. * Hij is ergens op op af gekomen.
      he is somewhere on on off come
      'He came towards something/went for something.'

The conclusion to draw from the ungrammaticality of (46) is that even in the presence of a particle spelling out Path, the prepositional CP[Place] of doubling PPs continues to raise into a *Mittelfeld* position in the extended projection of the verb, just as in the case of (30). SpecPathP is not a position to which CP[Place] can be moved. Koopman (2010:48) derives standard Dutch circumpositional phrases by movement of CP[Place] to 'a Spec position to the left of Path, say Spec,Path (or alternatively [to] any other projection higher than Path)'; she does not take a clear stand on where exactly CP[Place] is moving. Den Dikken (2010a) uses the SpecPathP position for movement of the *nominal* complement of P_{Loc} (in directional postPPs), and likens PathP to the aspectual projection in the verbal extended projection which Object Shift targets (see Shim 2012 and references there for detailed discussion of the fact that Object Shift targets SpecAspP). By this logic, SpecPathP cannot serve as a landing-site for CP[Place] in (31): CP[Place] is not nominal, hence not an Object Shifter.[24] Even in the presence of a particle lexicalising Path, therefore, the prePP of a doubling PP must be scrambled into the extended projection of the verb, just as in the derivation based on (30). This once again gives rise to a structure in which an R-pronoun in SpecCP[Place] c-commands some but not all the heads of any extended projection. So as before, *ergens* cannot be spelled out in SpecCP[Place].

The grammaticality of *waarop(...)op* in (41)b,c is not in any way inconsistent with the ungrammaticality of *ergens op op in (35)/(39)b and (46). The problem with the latter is that movement of the indefinite pronoun to SpecCP[Place] does not give *ergens* the licence to be spelled out: the landing-site of this instance of 'pure EPP'-driven movement does not c-command all the heads in the extended projection of P_{Loc} or V, hence by hypothesis does

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[24]   Den Dikken (2010a:109) says in passing that 'P_{Dir}'s prepositional complement [can] raise to SpecAsp[PATH]P', but this was in error: the prePP portion of a circumpositional phrase can raise to the specifier position of DegP (which Den Dikken rechristens DxP), analogously to locative inversion (which targets SpecTP), but it cannot raise to SpecPathP. In light of our findings in this paper, we should also revise another assumption made in Den Dikken (2010a): the hypothesis that PathP can never serve as the complement of V. The logic behind the reasoning that led Den Dikken (2010a) to the conclusion that V cannot take PathP (his Asp[PATH]P) as its complement is sound in general, but it should not be taken to lead to a blanket ban on PathP as a V-complement: in the particular case in which the verb selecting PathP as its complement is itself endowed with the aspectual feature [directional] (i.e., in the case of verbs of directed motion), the matching aspectual content of Path and V makes a [VP V [PathP Path ...]] structure grammatical.

not qualify as a spell-out site at PF. Successive-cyclic movement of [+*wh*] *waar* via SpecCP[Place] to the highest specifier position of the clause is unproblematic, leading to spell-out of *waar* in its final landing-site. And movement of [+*wh*] *waar* or [–*wh*] *ergens* to SpecCP[Place] followed by pied-piping movement of CP[Place] to the highest specifier of an extended projection (the SpecCP of the clause) allows the R-word to be spelled out in CP[Place] thanks to the fact that, in the resulting configuration, the R-word in SpecCP[Place] c-commands all the heads in the extended projection. Finally, definite pronouns, which are [+specific], obligatorily move to SpecPlaceP, also a position whose occupant is spelled out as an R-word. This explains the grammaticality of *daarop…op* and the ungrammaticality of **op dat (…) op* in (22). Movement SpecPlaceP is not 'pure EPP'-driven movement (it has an interpretive effect), hence is not subject to the condition on spell-out that we formulated for 'pure EPP' positions.[25]

5.4   Summary

In our account of the ungrammaticality of **ergens op op* in section 5.3.2, a central role is played by the hypothesis that the CP-complement of P_{Dir} in P-doubling constructions is a defective goal. In section 5.1, we had already demonstrated that this hypothesis also provides an account for the very fact that makes P-doubling special: the occurrence of two *identical* P elements in a single complex PP. And in section 5.2, we showed that CP's defectivity in doubling PPs has the further benefit of explaining the fact that no functional structure can be built on top of the projection of P_{Dir} in these PPs, something that is responsible for the fact that the entire doubling PP fails to undergo movement as a constituent. These things combined reveal the strength of the single hypothesis that underlies our analysis of P-doubling in Flemish. In the next section, we complete our case for defectivity by arguing that it also provides us with an interesting window on the distribution of doubling PPs in the Dutch-speaking world.

6.   On the distribution of doubling PPs in Dutch

In section 5.2, we explained the ban on inclusion of a CP[Path] in the extended projection of P_{Dir} in doubling PPs by capitalising on the fact that no single extended projection can contain more than one CP. However, not only do extended projections usually contain just one instance of each *functional*

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[25]   Susi Wurmbrand (p.c.) correctly points out that our hypothesis that 'pure EPP'-driven movement must involve spell-out in a position c-commanding all the heads in an extended projection entails that movement of the subject to SpecTP or movement of the object to Spec*v*P cannot be 'pure EPP'-driven movement. It would take us too far afield to address this issue in detail, but our general perspective on movement to SpecTP and on Object Shift is that this is movement that has an effect on interpretation (leading as a rule to a topic reading for the moved constituent; in the case of expletive movement to SpecTP, there is also an interpretive effect but it lies elsewhere: the associate of the expletive receives a focus reading), and that movements that have an effect on interpretation are not EPP-driven. Wurmbrand also notes that our analysis is compatible with pronunciation at PF of material in intermediate SpecCP positions in cases of successive-cyclic *wh*-movement, since each SpecCP along the movement path is the highest position of an extended projection. This is correct; but entirely independently of our hypothesis regarding spell-out of 'pure EPP'-driven movement, the second author of this paper has reason to believe that this would not be the right analysis of, for instance, cases of *wh*-doubling (see Den Dikken 2010b for discussion).

category, they normally also contain just one *lexical* category. The inclusion of a lexical P_{Dir} in the extended projection of P_{Loc} as a consequence of the defectivity of $C^{[Place]}$ (and P_{Loc}) would at first blush seem to flout this. But as we will show, this actually leads to an outlook that is very useful in explaining the distribution of doubling PPs in the Dutch-speaking world.

6.1   Directional Ps as introducers of infinitival clauses

As we have pointed out above, doubling PPs are restricted to certain areas of Flanders, and more specifically Flemish Brabant and the areas bordering it. Why is it that P-doubling is regionally confined to a portion of the Flemish-speaking territory? More specifically phrased, why is it that the distribution of the defective $C^{[Place]}$ across the Dutch-speaking world is restricted, and what might this restricted distribution be correlated with? Our answer to this question takes as its cue the fact that in the geographical area in which P-doubling is found, we also find a wider range of prepositions being used as introducers of infinitival clauses than in the standard variety, and, in particular, we find that two prepositions that have clearly directional construals can be so used.

We exploit the restrictions on extended projections to establish the explanatory link between the distribution of P-doubling and the use of directional Ps as clause introducers.[26] In particular, we argue that it is precisely the fact that Dutch speakers from Flemish Brabant have at their disposal direct evidence for the use of directional Ps as selectors of CPs with whose null heads they featurally amalgamate that allows them to build prepositional structures in which a P_{Dir} selects a defective $CP^{[Place]}$ in P-doubling constructions.

In Standard Dutch, the locative P *om* has clear complementiser functions, in control infinitives serving as arguments (where *om* is typically optional) or adjuncts (where *om* tends to be obligatory):

(47) a.   Ik zal proberen [$_{CP}$ (om) [$_{TP}$ de klus te klaren]].
          I   will try   COMP   the job   to accomplish
          'I will try to accomplish the job.'
     b.   Je   moet   meer   studeren [$_{CP}$ om [$_{TP}$ te slagen]].
          you must   more   study   COMP   to pass
          'You have to study more to pass.'

Om is the only P-element that has such a clause-introducing function in Standard Dutch. In Flemish varieties, however, two Ps that have clear *directional* uses can serve this purpose as well: *van* 'of/from' and *voor* 'for/in front of'. In (48) we see them as directional Ps, which is possible in all varieties of Dutch.[27] In (49) they are used as clause-introducers, which only occurs in Flemish varieties. In Standard Dutch, *om* would be used here.

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[26]   We will use the locution 'clause introducer' rather than 'complementiser' for reasons that will become clear in the course of the discussion to follow.
[27]   Speakers vary on individual examples, however. Thus, in southern varieties *Ik kom van Rotterdam* 'I come from Rotterdam' is accepted widely whereas in northern varieties *uit* 'out (of)' would be used in this context.

(48) a.   Ik kom   net   **van** m'n werk.
            I come just   from my   work
            'I just came from work.'
     b.   Ik rijd/ zet de auto wel even   **voor**   de deur.
            I drive/ put the car   DPRT quickly in.front.of the door
            'I will just quickly drive/put the car out in front of the door.'

(49) a.   Ik probeer altijd   **van** vroeg op te   staan.
            I try   always of   early up to   stand
            'I always try to get up early.'
     b.   We hebben niks   meer **voor** te   eten.
            we have   nothing more for   to   eat
            'We've got nothing left to eat.'

We argue that the use of *van* and *voor* as introducers of infinitival clauses in Flemish is particularly significant in connection with the distribution of P-doubling.

At first sight, the correlation between P-doubling and the clause-introducing use of the prepositions *van* and *voor* might not seem straightforward: the distribution of *van* and *voor* as clause introducers stretches all over Flanders. More specifically, it occurs in Brabant, East-Flanders, West-Flanders and to a certain extent also the Eastern part of (Flemish) Limburg. P-doubling on the other hand, is restricted to the more central regions of Flemish Brabant and areas of East-Flanders and Antwerp that are close to Brabant. This distributional difference might seem to weaken the link we are trying to establish between the two phenomena. However, this weakening is only apparent. It turns out that especially the use of *van* as an introducer of *raising* infinitives in a subpart of the Flemish-speaking region is a very good predictor for the use of P-doubling.

6.2   The properties of *van* as a clause introducer

Of particular significance to us is Van Craenenbroeck's (2000) observation that there are two categories of speakers who use *van* as an introducer of infinitival clauses. The first category includes speakers from a large swath of the Southern Dutch language area. For speakers belonging to this group, *van* seems to be clearly a filler of C. For them, the distribution of *van* as an introducer of infinitival clauses is by and large similar to the distribution of *om* in Northern Dutch — *van* is in effect the Flemish counterpart to Northern Dutch *om* for these speakers: an infinitival complementiser. As a result, *van* cannot be used, for these speakers, in the complement of raising verbs, where *om* is impossible in Northern Dutch as well, as shown in (50).[28]

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[28]   Van Craenenbroeck notes that for the speakers for whom *van* is an infinitival complementiser, it is also impossible in the complement of epistemic verbs like *menen* 'believe', again as in the standard language: cf. (i). The Flemish Brabant varieties that we will be most concerned with are different here as well.
(i)   Hij   meent {(* *om*/%*van*)}   de   beste kandidaat te zijn
       he   believes   COMP   the best   candidate to be
       'He believes to be the best candidate.'

(50) Hij lijkt/ schijnt {(*_om_/%_van_)} de beste kandidaat te zijn
      he seems/ appears   COMP   _the best   candidate to   be_
      'He seems/appears to be the best candidate.'

The ungrammaticality of _om_ in Standard Dutch is routinely attributed to the fact that _om_ lexicalises C and CP blocks NP-raising. For Flemish speakers for whom _van_ is impossible in (50), this suggests that they analyse _van_ as C.

But Van Craenenbroeck notes that there are also speakers of Flemish for whom the use of _van_ in the complement of raising and epistemic verbs _is_ acceptable. For those speakers, who can be found in and around Flemish Brabant (possibly extending all the way to Antwerp), _van_ qua introducer of infinitival clauses has a much less restricted distribution than that of _om_ in Northern Dutch and _van_ in the rest of Flanders. Moreover, the presence of _van_ for these speakers makes a semantic contribution that is not found when _van_ is absent. Van Craenenbroeck expresses the semantic contributions made by _van_ in the Flemish Brabant region as follows. In the complement of control and epistemic verbs, the use of _van_ signals what he calls a 'restrictive reading': the factivity of the infinitival clause is restricted by the meaning of the matrix verb. A sentence such as the one in (51)a expresses that the speaker will make an attempt to repair the dishwasher, but it also conveys that it is 'only' an attempt: with the presence of _van_ the speaker expresses doubt that (s)he will actually succeed in repairing the dishwasher. In the complement of raising verbs, on the other hand, _van_ delivers an evidential reading: the speaker signals with the use of _van_ that (s)he only has indirect evidence for the event or state of affairs expressed by the complement clause, and as a result, (s)he cannot vouch for the veracity of what is expressed by this clause.[29] In the case of (51)b, _van_ indicates that the speaker has only heard from someone, for instance, that the addressee loves Mary, and has not witnessed the addressee's loving attentions to the girl. Without _van_ the sentences are ambiguous between the two readings. Outside of Flemish Brabant (and surrounding areas) _van_ does not seem to contribute this semantic effect.

(51) a.   Ik zal proberen van de afwasmachine te repareren.
           I   will try   VAN the dishwasher   to repair
           'I will try to repair the dishwasher.'
           → 'restrictive reading': _only_ an attempt to repair it
     b.   Ge schijnt van Marie graag   te   zien.
           you seem   VAN Marie gladly   to   see
           'You seem to love/really like Marie.'
           → only _indirect_ evidence

It is specifically in the varieties that associate the use _van_ with a semantic effect that we find P-doubling. It would certainly help if we under-stood the semantic effect of _van_ in Flemish Brabant better. But it seems clear to us that whatever the precise details of the analysis of this semantic effect, it is highly plausible to suggest that it is a consequence of _van_ actually _not_ being used as a filler of the C head position in these varieties of Flemish:

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[29]   Van Craenenbroeck seeks to relate the two semantic observations to a syntactic claim about the nature of _van_'s complement in these varieties: _van_ selects _indefinite_ complements.

rather, *van* here is a P-element that occupies a position immediately *outside* the infinitival clause. In this position, it can project a syntactic category that can make an autonomous semantic contribution. And perched above the infinitival clause rather than in the C head position of that clause, it can engage in a close structural relationship with the null functional head of the clause in its complement. In particular, from its perch outside the infinitival clause, it can form an amalgam with the null C head of the clause. In so doing, it turns the P+C system into a featural unit, which helps render the clause transparent to NP-raising: amalgamation of *van* and C makes the SpecCP position (through which successive-cyclic movement proceeds) an L-related position, allowing onward movement of the occupant of SpecCP to an L-related position (*i.c.*, SpecTP) higher up the tree.[30]

Thus, the idea that *van* qua introducer of infinitival clauses in the Flemish Brabant area is not actually a C-filler but instead a P-element selecting an infinitival CP as its complement with whose null head it forms a featural amalgam allows us to account for the fact that in these varieties the presence of *van* is not incompatible with NP-raising; and because *van* in these varieties is still being treated as a lexical category, the analysis also lays a foundation for an explanation of the specific semantic contributions that *van* makes in Flemish Brabant.

But most importantly for our purposes here, the idea that *van* as an introducer of infinitival clauses in Flemish Brabant is a P-element selecting a CP with whose head it forms an amalgam is particularly helpful in establishing a structural connection between the use of *van* in raising constructions and the grammaticality of P-doubling. The use of *van* in constructions with NP-raising, which is impossible in the *van*-as-C dialects, is an indication to the language user that *van* is capable of selecting a CP with whose empty head it can amalgamate, turning SpecCP into an L-related position. And the possibility of *van*, an intrinsically *directional* preposition, to form a featural amalgam with the C head of its complement is, in turn, in concert with the availability of P-doubling in directional constructions in these varieties: after all, P-doubling, in our analysis, involves selection by P_{Dir} of a CP-complement with an empty head, and a kind of amalgamation of P_{Dir} and the head of its defective CP-complement, as a reflex of the featural subset relation between P_{Dir} and the defective CP.[31]

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[30] Amalgamation of P_{Dir}=*van* and C in NP-raising constructions is made possible thanks to the fact that the infinitival clause is itself headed by *te* 'to', a locative preposition. This amalgamation is not an instance of a defective probe–goal relation: in raising constructions, P_{Dir} does not probe its CP complement because there is no PathP projected above PP (and lexical categories by themselves cannot be probes). So no doubling is expected in these raising constructions, unlike in the doubling PPs that are the theme of this paper, where there is a defective probe–goal relation between Path–P_{Dir} and its CP[Place] complement.

[31] For most speakers, the postposition in P-doubling constructions is firmly holding on to its lexical feature [directional], and as a result, P-doubling is generally possible in directional constructions only. But erosion of the lexical feature [directional] results in a widening of the range of contexts in which the P-doubling can be used. This may eventually lead to grammaticalisation of P to C, with *non*-directional P inserted directly under C[Place].

Speakers for whom this grammaticalisation process is in a more advanced stage allow for P-doubling in purely locative contexts such as the one in (i) as well.

(i) % Hij wil **naast** dat meisje niet **naast** zitten.
        he wants next.to that girl   not   next.to sit
        'He does not want to sit next to that girl.'

It seems to us plausible that it is specifically the use of *van* in NP-raising clauses that provides the language user with a clear indication that *van* qua directional P can select a CP with whose head it forms a featural amalgam. The use of P-doubling (which is a reflex of CP selection and a proper featural subset relation between P_{Dir} and its defective CP-complement) emerges from this.

7.   Conclusion

Our central claim has been that doubling PPs in Flemish dialects are the result of identical spell-out of a P_{Loc} and a P_{Dir} that are independently base-generated in the structure. An alternative approach where doubling is achieved by multiple spell-out in a movement chain is not tenable here, precisely because movement of P_{Loc} up to P_{Dir} is structurally impossible.

The key properties of doubling PPs are the following: they only occur with spatial directional PPs; the entire [P_i DP P_i] string cannot undergo movement, but the prepositional part can subextract; and indefinite pronouns stay *in situ* and do not form R-words, whereas definite pronouns obligatorily form R-words and [+*wh*] pronouns do so optionally. To capture these properties we have argued for the structure in (52).

(52)   [$_{PP}$ **P_{Dir}** [$_{CP(Place)}$ $C^{[Place]}$ [$_{DegP}$ $Deg^{[Place]}$ [$_{PlaceP}$ Place [$_{PP}$ **P_{Loc}** DP]]]]]

This structure contains both a locative and a directional P, which explains the directional interpretation of P-doubling constructions. P_{Dir} does not project an extended projection reaching up to $CP^{[Path]}$, which explains the fact that its projection cannot be moved. P_{Dir} selects a defective $CP^{[Place]}$ that forms a subpart of the extended projection of P_{Loc} (which includes PP_{Dir}). This forces indefinite neuter pronouns to stay *in situ* and not form R-words. Definite pronouns move to SpecPlaceP; [+*wh*] pronouns can access SpecCP$^{[Place]}$ as an intermediate step in their [+*wh*] movement chain, and can be spelled out in this position if pied-piping movement of $CP^{[Place]}$ to the highest specifier of the clause takes place.

The defectivity of $C^{[Place]}$ in the complement of P_{Dir} derives doubling: $CP^{[Place]}$ is a defective goal for Path–P_{Dir}, ultimately causing P_{Dir} to spell out identically to P_{Loc}. The fact that $CP^{[Place]}$ is a proper featural subset of P_{Dir} and its superstructure also causes the absence of a $CP^{[Path]}$ in the extended

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Even for these speakers, however, grammaticalisation of P to C is not fully complete at the present time. For all speakers, sentences such as (ii)a only support a directional interpretation – in stark contrast with what we know is the case for the non-doubling counterpart in (ii)b, which is in principle ambiguous between a locative and a directional reading.

(ii)   a.   Will   zou   nooit   **in**   het water **in** springen.
             Will   would   never   in   the water in jump
             'Will would never jump into/*in the water.'
        b.   Will   zou   nooit   **in**   het water springen.
             Will   would   never   in   the water jump
             'Will would never jump in/into the water.'

For all speakers, P doubling with locative Ps is also restricted to those PPs that are used predicatively, not adverbially (see Helmantel 2002 for the distinction between these two uses). We defer a full account of this grammaticalisation process in the different varieties of Flemish to future research.

projection of P$_{Dir}$, causing the entire doubling PP to be immobile as a unit; only the CP[Place] portion of doubling PPs can undergo syntactic movement.

The defectivity of C[Place] in P-doubling also captures the empirical correlation between P-doubling and the use of directional *van* in raising infinitivals in certain Flemish dialects.

Acknowledgements

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