

Grammaticalisation in the Syntax of Flemish Preposition Doubling

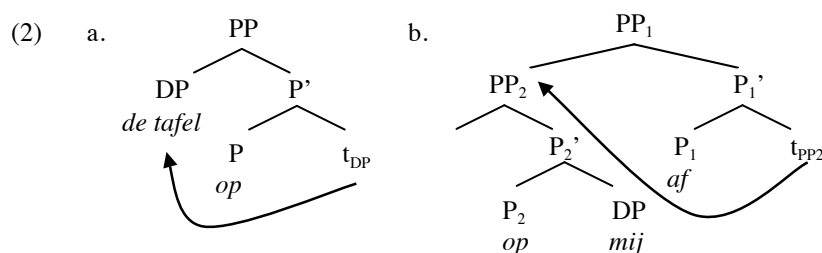
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1. Introduction

Standard Dutch exhibits three kinds of adpositions: prepositions, postpositions and circumpositions. An example of each is given 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.’

Postpositions are standardly taken 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 2010). Likewise, circumpositions are derived through movement of the lower PP, i.e. PP₂ in (2)b.



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In Standard Dutch, the two P elements in circumpositions are not identical. It turns out, however, that certain Belgian Dutch dialects, more specifically the dialects from and around Flemish Brabant, display circumpositions with identical prepositions and postpositions, as in (3). The interpretation of such 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 P-doubling phenomenon given in (3) is the topic of this paper.¹ We begin by presenting the main properties of these doubling PPs. Then we provide some important background information on the internal structure of Dutch PPs in general, with the aid of which we can tackle the analysis of doubling PPs. The last section will be taken up by a discussion of the distribution of P-doubling across the Dutch-speaking world.

1. 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 elements are necessarily identical. This will be explained by the analysis.

2. Properties of Doubling PPs

The present section presents the main properties of doubling PPs. First we deal with their distribution, then their behaviour with respect to movement is discussed, and lastly we discuss R-pronouns.

2.1. *The distribution of doubling PPs*

We begin by laying out the distribution of doubling PPs across the range of PP types found in natural language. A first major cut is made between *spatial* PPs and *selected* PP (Helmantel 2002). A preposition selected by a verb does not retain its core lexical meaning: It is a fixed P forming an interpretational unit in combination with the selecting verb, cf. (5)b. Doubling PPs are only allowed with spatial PPs, not selected PPs, cf. (6).

- | | | | |
|-----|----|---|------------|
| (5) | a. | De boeken zitten in de kast. | [spatial] |
| | | <i>the books sit in the cupboard</i> | |
| | | ‘The books are in the cupboard.’ | |
| | b. | Hij gelooft nog in sprookjes. | [selected] |
| | | <i>he believes still in fairytales</i> | |
| | | ‘He still believes in fairytales.’ | |
| (6) | a. | Lili is op de kast op gekropen. | [spatial] |
| | | <i>Lili is on the cupboard on crawled</i> | |
| | | ‘Lili crawled onto the cupboard.’ | |
| | b. | Hij had op Lili (* op) gerekend. | [selected] |
| | | <i>he had on Lili on counted</i> | |
| | | ‘He had counted on Lili.’ | |

Within the realm of spatial PPs, we need to make a further distinction between *locative* and *directional* ones (cf. Koopman 2000, 2010; Den Dikken 2010). Postpositions are always directional, whereas prepositions are usually locative, but can be get a directional interpretation as well when they occur with a verb of motion (Koopman 2000, cf. (8)).

- | | | | |
|-----|----|--|---------------|
| (7) | a. | Lola zit op de stoel . | [locative] |
| | | <i>Lola sits on the chair</i> | |
| | | ‘Lola is sitting on the chair.’ | |
| | b. | De kat springt de kast op . | [directional] |
| | | <i>the cat jumps the cupboard on</i> | |
| | | ‘The cat jumps onto the cupboard.’ | |

- (8) Lola springt in het water.
Lola jumps in the water
locative: Lola is in the water, jumping up and down.
directional: Lola jumps into the water.

As (9) shows, for contexts in which a spatial PP is in principle interpretable either locatively or directionally, P-doubling is a disambiguator, allowing only for a directional reading. This is further confirmed by the fact that in constructions featuring a manner of motion verb, the use of a doubling PP forces the selection of the auxiliary *zijn* 'be' rather than *hebben* 'have' (see (10)), as is typical of directional resultatives in general.

- (9) 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]
- (10) a. Lili is **op** de kast **op** gesprongen.
Lili is on the cupboard op jumped
 'Lili has jumped onto the cupboard.'
 b. Lili heeft **op** de kast (***op**) gesprongen.
Lili has on the cupboard on jumped
 'Lili has jumped (up and down) on the cupboard.'

2.2. Doubling PPs and movement

A second salient property of doubling PPs is their behaviour with respect to movement. 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 (11) for topicalisation, *wh* movement and scrambling across negation.

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

The doubling PP as a whole – including the postposition – cannot move: the sentences in (12), parallel to the ones in (11), are all judged ungrammatical.

- (12) 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 (13) illustrates. Such incorporation is typical of postpositions, not prepositions, in Standard Dutch.

- (13) 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.’

2.3. Doubling PPs and R-pronouns

A third striking property of doubling PPs is the fact that they place severe restrictions on the use of so-called 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 see this in (14): *iets* raises to the left of P and morphs into *ergens* and *het* (*dat*) changes places with P and comes out as *er* (*daar*).

- (14) a. Ze heeft het boek {**ergens op** /***op iets**} gelegd.
 she has the book somewhere on on something laid
 ‘She put the book on that.’
 b. Hij is {**eropaf** /***op hetaf**} gelopen.
 he is there.on.from on it from walked
 ‘He walked towards it.’

Ever since Van Riemsdijk’s (1978) dissertation, ‘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 so-called R-movement later. First we want to draw attention to the remarkable fact that in P-doubling constructions, R-movement of the indefinite neuter pronoun *iets* is actually forbidden: (15)b is ungrammatical with P-doubling.

- (15) a. Lili is **op iets** **op** geklommen. [Asse Dutch]
Lili is on something on climbed
 ‘Lili climbed up on something.’
 b. Lili is **ergens** **op** (***op**) geklommen.
Lili is somewhere on on climbed

But it is not the case that R-words are categorically forbidden in doubling PPs: the *wh*-pronoun *wat* ‘what’ can stay *in situ* but may also surface as the R-word *waar*, as (16) shows; 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 long as the second instance of *op* is incorporated into the verbal cluster, cf. (17).

- (16) 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?’
 (17) a. { **Daarop**/* **op dat** } is Lili <**op**> geklommen.
thereon on that is Lili on climbed
 b. **dat** Lili { **daarop**/* **op dat** } <***op**> is <[?]**op**> geklommen.
that Lili thereon on that on is on climbed
 ‘that Lili climbed onto that.’

Summing up, doubling PPs are restricted to directional (spatial) 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-formation, but *wh*-pronouns and definite pronouns can (in the latter case obligatorily). In sections 4 and 5 we present an analysis which captures these properties, but first, we provide some necessary background regarding the internal structure of Dutch PPs.

3. The Internal Structure of Dutch PPs

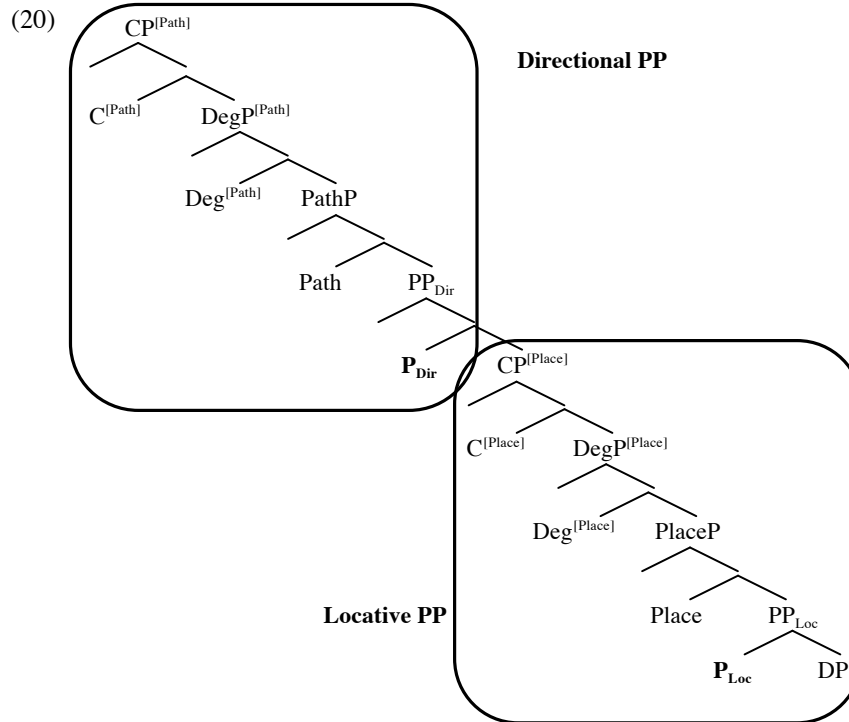
Following Van Riemsdijk’s (1978, 1990) lead, Koopman (2000, 2010) argues that, parallel to the verbal and nominal domains, the adpositional domain contains functional structure, as shown in (18) and (19). The lexical PP is the complement of a functional head Place; the extended P projection also contains 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 — in line with Chomsky's (2001) proposal that only phases are eligible for movement. For Koopman, directional PPs differ from locative PPs structurally in that they have a functional PathP on top of the locative extended P projection.

$$(18) \quad [_{C(Place)P} C^{[Place]} [_{Deg(Place)P} Deg^{[Place]} [_{PlaceP} Place [_{PP} P]]]]$$

$$(19) \quad [_{PathP} Path [_{C(Place)P} C^{[Place]} [_{Deg(Place)P} Deg^{[Place]} [_{PlaceP} Place [_{PP} P]]]]$$

In Den Dikken's (2010) work on PPs, he builds on Koopman's analysis, but argues for a separate lexical P_{Dir} for directional PPs. This P_{Dir} has its own extended projection, just like P_{Loc} in locative PPs. This yields (20) as the maximal structure for directional PPs.²



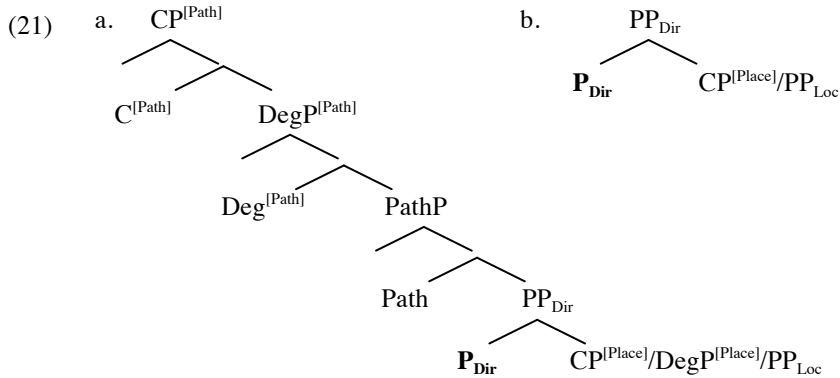
2. Den Dikken (2010) relabels the functional heads to bring the adpositional domain more in line with the clausal and nominal domain. We use Koopman's (2000) labels to keep the structures transparent.

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 argues that there are six possible extended PPs, depending on whether or not the lexical Ps project functional structure (see Den Dikken 2010 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. Analysis, Part I: A Reduced Higher P layer

4.1. The P_{Dir} layer

In the first part of the analysis we would like to capitalise on this latter point: variation in the size of the extended projection of P_{Dir} . In Den Dikken's work on directional PPs, he has argued that there are two options for P_{Dir} : it either has a full functional structure on top of its lexical PP, as in (21)a, or it has none at all, as in (21)b.



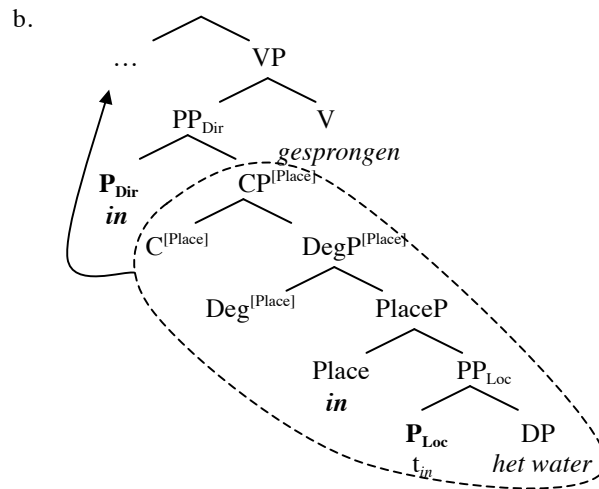
In (21)a, P_{Dir} can move to the Path-head but no higher. In particular, it cannot incorporate into the verb: incorporation into a lexical head never involves any functional heads. Since P_{Dir} has a full functional array erected over it in (21)a, the entire extended projection of P_{Dir} can undergo 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 in (21)a because $CP^{[Path]}$ is a closer goal for any probe higher up the tree (an A-over-A effect).

In (21)b, by contrast, incorporation of P_{Dir} into the verb that governs the directional PP is obligatory: since there is no functional shell around PP, incorporation is the only way to license P_{Dir} here. And because P_{Dir} does not have an extended projection, $CP^{[Place]}$ is the only target for an outside probe seeking to attract a PP-structure. So we expect (21)b to give rise to movement of the complement of P_{Dir} , not of PP_{Dir} as a whole.

4.2. Doubling PPs

These conclusions help us sort out the properties of doubling PPs in Flemish, for which we propose that they always have a reduced higher layer: P_{Dir} does not project any functional extension in doubling PPs. The details are given in (22)b for the example in (22)a.

- (22) a. Lili is in het water in gesprongen.
Lili is in the water in jumped
 ‘Lili has jumped into the water.’



The tree structure shows that the preposition is base-generated in P_{Loc} , and the postposition is sitting under P_{Dir} . With P_{Dir} obligatorily incorporating into the verb, its placement inside the verbal cluster is accounted for. As a result of incorporation of P_{Dir} , $CP^{[Place]}$ becomes the derived object of the verb, and precedes the postposition.

This immediately accounts for the first two properties listed in section 2. The fact that the structure of doubling PPs contains both a P_{Loc} and a P_{Dir} entails that doubling PPs are obligatorily interpreted directionally; and the fact that only the prepositional subpart of doubling PPs can be moved, and that the postposition must be incorporated into the verb, follows from the fact that P_{Dir} forgoes an extended projection of its own.

The next section focuses on the lower P layer, capturing the third property, and addresses the identity requirement on doubling PPs.

5. Analysis, Part II: A Defective Lower P layer

Besides the lack of functional structure outside P_{Dir} , we argue that a key property distinguishing doubling PPs from run-of-the-mill circumpositions is that the $C^{[Place]}$ of doubling PPs is defective (annotated as C^*). The defectivity of $C^{[Place]}$ has a variety of important consequences — so this defectivity is the great unifier in our analysis. We begin by mobilising the defectivity of $C^{[Place]}$ in our account of the R-pronoun facts.

5.1. Two positions for R-movement

Recall that in P-doubling the indefinite neuter pronoun cannot undergo R-movement: (23)a, with *iets in situ*, is grammatical, but the R-word formation in (23)b is impossible, regardless of where the second *op* is placed.

- (23) a. dat Lili **op iets** <**op**> is <**op**> geklommen.
 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 categorically forbidden in doubling PPs: (24) shows that both *daar* and *waar* are grammatical.

- (24) a. dat Lili **daar** **op** <***op**> is <?**op**> geklommen.
 that Lili there on on is on climbed
 ‘that Lili climbed onto that.’
 b. Ik vraag me af **waarop** Lili <?**op**> is <**op**> geklommen.
 I ask me off whereon Lili on is on climbed
 c. Ik vraag me af **waar** Lili **op** <***op**> is <**op**> geklommen.
 I ask me off where Lili on on is on climbed
 ‘I wonder what Lili climbed up on.’

As a starting point for our analysis of these R-placement facts, 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 said, 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 liken SpecPlaceP in the extended projection of P to SpecvP in the extended projection of V, and take SpecPlaceP to be a *scrambling* position — 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.

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 (25). The occupant of SpecCP necessarily precedes such modifiers, while the occupant of SpecPlaceP must follow them.

- (25) [CP ___ [C^[Place] [DegP *vlak* Deg^[Place] [PlaceP ___ [Place [PP **P_{Loc}** DP]]]]]]

Our expectation is that *definite* R-words should in principle be able to appear on either side of such modifiers (because they can surface either in SpecPlaceP or in SpecCP), but *indefinite* R-words should show a more restricted behaviour. The facts in (26) go along well with this prediction:

- (26) 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 (26)a, with the distal R-word *daar*, is perfect with *daar* on either side of *vlak*, the degree modifier; but out of context, (26)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 (26)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.

5.2. A defective lower layer

Let us now return to the fact that *ergens op op* is ungrammatical out of context, cf. (23)b. The problem with this kind of example must be that there is no suitable position for the indefinite R-word to surface in. We have already pointed out that movement of *ergens* to SpecPlaceP is not legitimate. The only position for *ergens* would then be SpecCP^[Place]. This position is in principle available for non-specific *ergens*: in (26)b,c, that is precisely where it is placed. Furthermore, there is evidence to suggest that the complement of P_{Dir} in P-doubling can be a full CP^[Place]. But the ungrammaticality of R-word *ergens* indicates that SpecCP^[Place] is apparently unavailable as a landing-site for the indefinite R-word in P-doubling. Why?

Our answer is that the C-head of the CP^[Place] in the complement of P_{Dir} in P-doubling is *defective*. One salient consequence of the defectivity of this C*-head is that it cannot be specified for the EPP property. EPP is the trigger for terminal movement. So the fact that C* cannot be EPP-specified entails that it is impossible for something to move into the SpecCP^[Place] in the complement of P_{Dir} in P-doubling constructions and for the derivation to end there. What *ergens* in (23)b has attempted to do is precisely this: terminal movement into SpecC*P^[Place]. This is impossible: there is no trigger for such movement, and untriggered movement is illegitimate. Out of context, therefore, a bare indefinite pronoun has no choice but to stay *in situ* in doubling-PPs, as in *op iets op* (cf. (23)a).

We made a point of saying that it is impossible to *terminally* raise an indefinite R-word into the specifier of C*. All movement that *terminates* in the specifier of a functional head α must be triggered by EPP on α . But there is no reason to expect *non-terminal* movement to the specifier position of α to be subject to the same requirement. What matters is that all movement has a trigger — which, in current terms, translates into the requirement that the EPP be satisfied in the final landing-site of movement. Movement, however, is standardly taken to proceed via a succession of intermediate steps — successive-cyclic movement. For those intermediate steps, we do not expect they should be feature-driven (cf. Bošković 2007).

With this in mind, let us turn to the fact that the [+wh] R-word *waar* can be used in P-doubling, as shown in (27).

- (27) a. **Waarop** is Lili **op** geklommen?
whereon is Lili on climbed
 ‘What did Lili climbed up on?’
 b. Ik vraag me af **waarop** Lili <[?]**op**> is <**op**> geklommen.
I ask me off whereon Lili on is on climbed
 c. Ik vraag me af **waar** Lili **op** <^{*}**op**> is <**op**> geklommen.
I ask me off where Lili on on is on climbed
 ‘I wonder what Lili climbed up on.’

The essential difference between *ergens* and *waar* is that movement of *ergens* to SpecCP *terminates* the derivation whereas in the case of movement of [+wh] *waar* to SpecCP, onward movement must always ensue — either onward movement of *waar* by itself or onward pied-piping movement. Movement of *waar* into SpecC*P in doubling PPs is thus not the terminal link in the movement dependency that *waar* is involved in: it is an intermediate step, necessarily followed by movement into the matrix SpecCP. The fact that movement of *waar* into SpecC*P is always followed by onward movement, and is therefore never a case of *terminal* movement, allows us to explain its legitimate status despite the fact that C* is not equipped with an EPP property: *intermediate* movement steps are not necessarily EPP-driven; they can involve specifier positions of heads that cannot be EPP-specified, such as our C* in doubling PPs.

Our point here has been to bring home the fact that movement to SpecC*P^[Place] in doubling PPs cannot be *terminal* movement because C*, being defective, cannot have an EPP property; but movement to SpecC*P^[Place] as an *intermediate* step in a long-distance *wh*-movement derivation is legitimate nonetheless, with an eye towards convergence of the *wh*-movement derivation overall. Finally, definite pronouns, which are [+specific] and hence must scramble, obligatorily move to Spec,PlaceP (and optionally on to Spec,C*P and further). This explains the grammaticality of *daarop...op* and the ungrammaticality of **op dat (...) op* in (17).

5.3. On the defectivity of C*^[Place]

C*'s defectivity entails not just that it cannot be equipped with an EPP property. It also requires C* to be *licensed*. The way to get C* licensed is to have it *amalgamate* with a lexical host which is *featurally compatible* with it. That lexical host is P_{Dir}, the head of the lexical category that immediately

dominates $C^*P^{[Place]}$. C^* is itself a member of P_{Loc} 's extended projection and is specified for P_{Loc} 's features. In order to amalgamate with C^* , P_{Dir} must be featurally compatible with it. For licensing to take full effect in the PF component, it must be the case that the C^* in the extended projection of P_{Loc} shares with P_{Dir} even the most microscopic lexical properties.³ This requirement can only be met if P_{Dir} spells out *identically* to P_{Loc} . A defective C^* thus demands identical Ps. This is what leads to doubling: although the two P-elements are merged independently as spell-outs of separate P-heads, they must be identical in order for the defective C^* in the extended projection of the lower P to be licensed.

The defectivity of the head of the $CP^{[Place]}$ in the complement of P_{Dir} is thus directly responsible for the fact that the two P-elements spell out identically. Without the postulation of the defective C^* in the complement of P_{Dir} , we would not have been able to derive this. It is impossible to derive the identity of the two P-elements as a result of the spell-out of more than one link in a movement chain (cf. Nunes 2004; Barbiers *et al.* 2009). The major obstacle to such an approach to P-doubling is that the chain-formation operation on which it would be contingent 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 P-doubling can happen even when there must be a $CP^{[Place]}$ in the complement of P_{Dir} . And we know entirely independently that head movement cannot proceed through C-heads: CPs always break head-movement chains. So this precludes an analysis of P-doubling in terms of the spell-out of multiple members of a head-movement chain.

This said, we learn something important about the nature of the licensing relationship between P_{Dir} and C^* as well. In light of the fact that Cs do not incorporate into lexical heads, it is clear that this licensing cannot involve incorporation. We take it instead to be a relationship of feature sharing under sisterhood: C^* must share its features with its sister P_{Dir} .

3. We take the identity requirement to be a PF requirement. Note, moreover, that we conceive of the locative/directional opposition as a privative one, with [dir] as the marked feature. A P_{Dir} *op* is hence specified for all of P_{Loc} *op*'s features: there is no feature conflict between [loc] and [dir]; P_{Dir} is more richly specified than P_{Loc} and C^* , but shares all of P_{Loc} 's and C^* 's features, and can license C^* .

Note that the fact that P_{Dir} is a featural superset of C^* makes our notion of defectivity compatible with Roberts' (2010) notion of 'defective goal', according to which in a probe-goal relationship in which the probe is a proper featural superset of the goal, the goal is defective. Of course the parallel between Roberts's proposal and ours ends there: P_{Dir} is not a probe for C^* ; C^* is not a goal. But the notion of 'defectivity' appealed to in both accounts is essentially the same.

So far we have derived both the very quintessence of P-doubling, viz. the identity of the two P-elements, and the ban on terminal R-movement in these constructions from the hypothesised defectivity of the C-head in the complement of P_{Dir} . In the remainder of this section, we will present a third consequence of the defective $C^{[Place]}$ in doubling PPs, namely the fact that P_{Dir} cannot have an extended projection. Recall that movement of the locative prepositional PP stranding the postposition is grammatical, but movement of the entire doubling PP is not. We had blamed 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 had not yet provided a rationale for this. It turns out that C^* 's defectivity in P-doubling constructions can once again be held responsible for this.

Extended projections are well-formed provided that they contain *at most one* instance of any functional category that can share features with the lexical category at the foot of the extended projection. When we inspect the extended projection of P_{Loc} in a P-doubling construction with this in mind, we see that not only do P_{Loc} , Place, and $C^{[Place]}$ all share features, but these features are also shared, as a result of obligatory amalgamation of C^* and P_{Dir} , by the P_{Dir} that selects $CP^{[Place]}$. This is what makes P-doubling constructions into what they are: cases of doubling. But it also prevents P_{Dir} from building its own $CP^{[Path]}$ in these constructions. P_{Dir} is an active party in the feature-sharing relationship that extends all the way from P_{Loc} ; $C^{[Place]}$ is in this relationship as well; but every extended projection can contain *at most one* instance of any functional category. Consequently, since amalgamation of P_{Dir} and $C^{[Place]}$ effectively renders 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. Therefore, P_{Dir} must either refrain from amalgamating with C^* or forgo the projection of a C-head in its own extended projection. Since the former option would have dire consequences for the survival of the defective C-head, the latter is forced upon P_{Dir} . So as a result of its helping C^* out, P_{Dir} must keep its own projection very small, which precludes movement of the doubling PP as a unit.

6. On the distribution of P-doubling

Not only do extended projections usually contain just one instance of each *functional* 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 amalgamation of C^* and P_{Dir} would at first blush seem

flout this. But as we will show, this actually leads to an outlook that is very useful in explaining the distribution of P-doubling constructions in the Dutch-speaking world.

6.1. *Directional prepositions to introduce infinitival clauses in Flemish*

P-doubling is restricted to certain areas of Flanders — more specifically it occurs only in Flemish Brabant and the areas bordering it. Why is it that the distribution of the defective C* across the Dutch-speaking world is restricted in this way, and what might this restricted distribution be correlated with? Our answer to these questions 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. In particular, we find that two prepositions that have clearly *directional* construals can be so used.

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):

- (28) 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.’

In Flemish varieties, two Ps that have clear *directional* uses can serve this purpose as well: *van* ‘of/from’ and *voor* ‘for/in front of’. In (29) we see them as directional Ps, which is possible in all varieties of Dutch. In (30) they are used as clause-introducers, which only occurs in Flemish varieties.

- (29) 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.’
 (30) 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.’

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 different properties of van as a clause introducer*

Van Craenenbroeck (2000) observes that there are two categories of speakers who use *van* as an introducer of infinitival clauses. The first category includes speakers from the non-central language area. For such speakers, *van* is the counterpart to Standard Dutch *om*: an infinitival complementiser. As a result, *van* cannot be used, for these speakers, in the complement of raising verbs, where *om* is impossible in Standard Dutch as well, as shown in (31).

- (31) Hij lijkt/ schijnt $\{(*om/^{\circ}van)\}$ de beste kandidaat te zijn
 he seems/appears COMP the best candidate to be
 ‘He seems/appears to be the best candidate.’

But there are also speakers of Flemish for whom the use of *van* in the complement of raising verbs *is* acceptable. For these speakers, who can be found in and around Flemish Brabant (possibly extending all the way to Antwerp), *van* makes a semantic contribution that is not found when *van* is absent. With epistemic verbs, this reading is characterised by Van Craenenbroeck as ‘restrictive’ (see (32)a), and in the complement of raising verbs, *van* delivers an evidential reading, as seen in (32)b: the speaker signals with the use of *van* only to have *indirect* evidence for the event or state of affairs expressed by the complement clause, and as a result, cannot vouch for its veracity.

- (32) 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. This semantic effect is arguably a consequence of *van* actually *not* being used as C-head in these varieties of Flemish: rather, *van* here is a P that occupies a position immediately *outside* the infinitival clause, from where it projects a lexical 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 form an *amalgam* with the null C-head of the clause in its complement, turning the P+C system into a featural unit, and thereby rendering the clause transparent to NP-raising: amalgamation of *van* and C makes the SpecCP position an L-related position, facilitating successive-cyclic movement to SpecTP.

The use of *van* in constructions with NP-raising, which is impossible in the *van*-as-C dialects, is thus 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 the *directional* P *van* to form a featural amalgam with the C-head of its complement is, in turn, directly linked to the availability of P-doubling in directional constructions in these varieties: P-doubling involves selection by a directional P of a CP-complement with an empty head, and the formation of a featural amalgam made up of the defective C-head and P_{Dir}.

6.3. The grammaticalisation of P_{Dir}

In dialects in which *van* has grammaticalised as a complementiser, there is no connection between the distribution of *van* and P-doubling. This is because in P-doubling, P_{Dir} clearly has not grammaticalised into a lexicalisation of the C*(Place)-head. Such wholesale grammaticalisation would result in a syntactic structure in which what follows the initial P of P-doubling is not a movable constituent: the only CP in the structure is CP(Place). With P_{Dir} reanalysed as C(Place) hence occupying this slot, we would expect that movement of this CP would result in displacement of the entire string, and that the [P_i DP] portion should not be manipulable as a constituent. This is contrary to fact. Moreover, a reanalysis of P_{Dir} as C* would leave the pre-PP portion of the doubling construction to the right of the occupant of C(Place), yielding the wrong word order: P P DP.

So it is clear that the P-elements used in P-doubling have not yet taken the step towards wholesale grammaticalisation as C-fillers. Because they have not, the grammaticalisation of *van* as an infinitival complementiser cannot directly influence the emergence of P-doubling.

But the use of *van* as a preposition selecting an infinitival CP with a null head *does* have the eminent ability to affect the rise of P-doubling

directly. In *van*+infinitives with NP-raising, *van* must form a featural amalgam with the C-head of the infinitival CP. This amalgamation is precisely what we have found at work in the syntax of P-doubling as well: it is thanks to the amalgamation of P_{Dir} and C(Place) that the defectivity of the latter is licensed. P-doubling constructions can arise only in a grammar in which a defective C*-head can get licensed; and since such licensing is contingent on amalgamation of C* with an outside P-head, it is only in a grammar in which P-C amalgamation is possible that P-doubling of this sort can materialise. P-C amalgamation is a precondition for P-doubling. The fact that (33b) and P-doubling occur in the same geographical area is thus precisely what we are led to expect.

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. The properties of doubling PPs are the following: they only occur with spatial directional PPs; the entire [P DP P] 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 (33).

$$(33) \quad [_{PP} \mathbf{P}_{Dir} [_{CP(Place)} C^{*[Place]} [_{DegP} Deg^{[Place]} [_{PlaceP} Place [_{PP} \mathbf{P}_{Loc} DP]]]]]$$

This structure contains both a locative and a directional P, which explains the directional interpretation of P-doubling constructions. P_{Dir} does not project any functional structure, which captures the fact that its projection cannot be moved. P_{Loc} selects a defective C*P without EPP, which forces indefinite neuter pronouns to stay *in situ* and not form R-words. Definite pronouns move to Spec,PlaceP, and *wh*-pronouns can access Spec,C*P as an intermediate, non-EPP-driven, step in their *wh*-movement chain.

The defectivity of C* in the complement of P_{Dir} derives doubling: P_{Dir} amalgamates with C* to license it, which causes P_{Dir} to spell out identically to P_{Loc} . P-C amalgamation is a precondition for P-doubling. Moreover, it causes the lack of functional structure in the extended projection of P_{Dir} .

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