To appear in: H. Newell, M. Noonan, G. Piggott and L. Travis (eds.), *The Structure of Words at the Interfaces*. Oxford University Press.

Dutch and German R-pronouns and P-stranding:

R you sure it's P-stranding?*

Máire B. Noonan, McGill University

1 Introduction

1.1 Syntax all the way up and down

This chapter provides a fine-tuned investigation of the structure of locative pronouns and, more broadly, of spatial adpositions. I will make two basic arguments. The first is in favour of radical syntactic decomposition of small function words (similar in spirit to Leu 2008a, 2015, this volume), and thus an argument against Morphology as a separate system. I argue that comparative data from two closely related Germanic languages provides evidence that locative pronouns should be analysed as decomposed into parts that are not traditionally recognised as morphemes. In particular, a comparison of the morphosyntactic distribution of "r" in German and Dutch so-called R-pronouns, counterparts of the English locative pronouns such as *there*/*where,* suggests that *r-* in Dutch *daar* 'there', as well as *d-* and *aa-* constitute morphemes and spell out functional heads situated in the extended projections of locational adpositions.[1] The second argument concerns certain seemingly monomorphemic words, e.g. the preposition *in,* whose pronounced parts are not decomposable, but which are associated with, or "spell out", rather large abstract (unpronounced) structures. In other words, there are rather more silent categories than we might suspect. The data involve complex spatial adpositional structures in Colloquial German (CG). The conclusion of these investigations support the hypothesis that an extended clausal structure needs to be generalised to all lexical categories, including adpositions.[2] In essence, I will show that the same articulated clausal architecture underlies the structure of R-pronouns and that of spatial adpositional constructions, but are distinguished from each other by the particular heads that are pronounced in each case.

1.2 The data: R-pronouns and P-stranding

The term R-pronoun was introduced by Van Riemsdijk in 1978 and is famous for identifying a morphosyntactic class of nominal constituents that can strand prepositions in Dutch. As the contrast in (1) and (2) illustrates, preposition stranding is disallowed with normal prepositional objects (1), but possible with R-pronouns (2b-f): (examples adapted from Koopman 2010:30)

* Earlier versions of this paper have been presented at the *Georgetown University Round Table on Languages and Linguistics* (*GURT*) 'Little Words', at the *Workshop on Theoretical Morphology 3*, University Leipzig, and at the workshop *Exploring the Interfaces (ETI1)* at McGill University. Many thanks to the respective audiences for their helpful questions and comments. Special thanks to my co-editors for help with the exposition of this chapter, as well as Tom Leu for extensive discussion and helpful comments. Thanks to Liz Smeets for help with the Dutch data. All errors, of course, remain mine. This research was supported by FQRSC 2012-SE-144646, for which I am grateful.

[1] The line of inquiry pursued elaborates Postal's (1966) traditional analysis that pronouns are not nouns but determiners involving a silent noun, and extends this approach to the domain of PPs.

[2] See among others Koopman 1997, Leu 2008a/2012 and much work in the cartographic tradition, e.g. Cinque and Rizzi 2008 and contributions to Cinque and Rizzi 2010.

(1) a. Ik heb dat boek **op deze tafel** gelegd.
I have the book on this table put
'I put the book on this table.'

b. *Ik heb dat boek **deze tafel op** gelegd.
I have the book this table on put

c. ***Welke tafel** heb je dat boek **op** gelegd.
which table have you that book on put
'Which table did you put that book on?'

(2) a. Ik heb dat boek **erop/daarop** gelegd.[3] (*op er/ *op daar)
I have that book there /on put
'I have put that book on it.'

b. Ik heb **daar** dat boek **op** gelegd (movement to middlefield)

c. **Daar** heb ik dat boek **op** gelegd. (movement to Spec,CP)

d. **Waar** heb jij dat boek **op** gelegd
where have you that book on put
'What did you put that book on?'

e. Ik heb dat boek **nergens op** gelegd. (*op nergens)
I have that book nowhere on put

f. **Nergens** heb je dat boek **op** gelegd. (movement of *nergens* to Spec,CP)

As the examples in (2a) and (2e) illustrate, this syntactic property appears to correlate with a more general fact of word order: it is precisely the types of pronominal complements that precede the adposition that can also strand it. While Dutch usually displays prepositional order (see (1a-b)), the order is reversed with R-pronouns. The order P > pronoun is restricted to [+human] pronouns (3a). There are thus two descriptive statements: (i) [-human] DPs must be pronominalised by an R-pronoun, and (ii) R-pronouns induce postpositional order; (see (3b)).

(3) a. op hem/haar/wie 'on him/her/whom' [+Human]

b. erop/daarop/ waarop 'thereon/whereon' [-Human]

[3] Dutch, in contrast to German and English, has a non-d R-pronoun, *er*, 'there'. *Er* differs from *daar* in that it cannot be stressed. Consequently, it is also barred from occurring in pre-V2 position (i.e. Spec,CP).

Van Riemsdijk's (op. cit.) account and Koopman's subsequent (1997) recasting of it exploit this word order fact by proposing, omitting technical details, that R-pronouns move to a specifier position (R-movement in terms of Van Riemsdijk), and this fact also permits them to escape PPs. Non-R-pronouns cannot move to this specifier, and therefore are unable to escape PPs.[4]

The pronouns that can escape PPs were termed R-pronouns by van Riemdijk because of a morphophonological property that they either end in an 'r' or have an 'r' in them: e**r** 'there', daa**r** 'there', waa**r** 'where', hie**r** 'here', ne**r**-gens 'nowhere', ove**r**-all 'everywhere'. The question, of course, arises as to what this morphophonological presence of 'r' corresponds to morphosyntactically.

Before addressing this crucial question, let us first turn to the facts in German. Here, we observe very similar word order effects: [-human] pronominal objects precede the preposition, and in combination with an adposition, German looks just like Dutch (see (4)). However, what is striking is that the German counterpart pronouns of *there* and *where*, respectively, *da* 'there' and *wo* 'where', do not end in an 'r'! As shown in (5), while in Dutch and in English 'r' appears to belong to the pronoun, in German 'r' does not appear to belong to either the pronoun (*da*, *wo*) nor the adposition (*auf*) (4a), but only occurs when the two come together (4b).

(4)	a.	auf ihm/ihr/wem	'on him/her/whom'	[+Human] [5]
	b.	darauf/worauf	'thereon/whereon'	[-Human]

(5)	a.	*da*	*wo*	German
	b.	*daar*	*waar*	Dutch
	c.	*there*	*where*	English

These pronouns are also the only elements that can strand the preposition through WH-movement or scrambling (including movement to pre-V2 position). What we observe here is that when the German counterparts of Dutch R-pronouns strand the adposition, the 'r' remains with the adposition. Put differently, the German 'r' appears to be part of the adpositional word, but *only* in cases where the counterpart of a Dutch "R-pronoun" is present (either left-adjacent to it, or moved leftward).[6] The examples (6-7) illustrate how the properties of P-stranding resemble

[4] See Koopman (1997) and Van Riemsdijk(1978) for details of their respective analyses.

[5] Non-R-pronouns in PPs must be [+human]. Tom Leu points out, (pers.com.) that this is true of normal pronouns. However, demonstrative d-pronouns (i.e., pronouns pronounced with an initial d-]) can have non-human reference. (For (i) to be well-formed, the D-pronoun must be stressed.)

(i) Karl hat auf *dem* gesessen. (pointing at chair)
Karl has on that-SG.DAT.MASC sat
'Karl sat on that one.

I will not address this issue here, as it would lead us too far afield. It touches on the question of the structure and interpretation of different types of pronouns. See Wiltschko (1998) and Dechaine & Wiltschko (2002) for relevant discussion.

[6] In the split cases, this is actually the state of affairs in directional PPs. Non-directional, i.e. static PPs are more complicated, as we will see presently.

those of Dutch, with the only apparent difference being that the stranded adposition must be "prefixed" with 'r'.[7]

(6) a. Sie hat das Buch auf den Tisch gelegt.
she has the book on the$_{ACC}$ table put
'She put the book on the table.'

b. * Sie hat das Buch den Tisch auf gelegt. (*DP>P)
she has the book the$_{ACC}$ table on put

c. *Welchen Tisch hat sie das Buch auf gelegt?
which table has she the book put
'Which table did she put the book on?'

(7) a. Ich habe das Buch da**r**auf gelegt. (*auf da)
I have that book there /on put
'I have put the book on it.'

b. Ich hab **da** das Buch **rauf/*auf** gelegt. (movement to middlefield)
I have there the book R-on put

c. **Da** hab ich das Buch **rauf/*auf** gelegt. (movement to Spec,CP)

d. W**o** hat er das Buch **rauf/*auf** gelegt?
where has he the book R-on put
'What did he put the book on?'

e. Nirgends/überall ist der Kater **rauf/*auf** gesprungen.
nowhere/everywhere aux the cat R-on jumped
'The cat jumped on nothing/everything.'

Given the fact that an *r-* is pronounced in identical syntactic contexts in both Dutch and German in examples (3b) and (4b), respectively, and that in the other examples the *r-* is present only in the those contexts in which we find the Dutch counter parts of R-pronouns, it would be highly implausible to assume that the *r-* we find in Dutch and English locative pronouns and the *r-* we find in German stranded adpositions is not the same element, in Leu's terms, a Meta-Morpheme (Leu, this volume).[8] I will therefore take this conjecture to be correct in what follows and

[7] Note that in German *r-* is restricted to vowel initial adpositions: da…(*r)-hinter 'behind', da…(*r)-zwischen 'between', da…(*r)-durch 'through', da-(*r)-neben 'beside'. Speakers vary as to whether they permit stranding in these. For me stranding is good in all of them except *neben* 'beside', where it is marginal (and impossible for other speakers). Tom Leu (p.c.) informs me that in Swiss German *r-* can also appear with consonant initial adpositions. E.g. *drnäbä* 'beside it', *drgägä* 'against it'.

[8] Note that Leu's (this volume) HomoMorphemicity Thesis (HMT) essentially forces us to make this assumption.

propose that the *r-* we observe in stranded adpositions in German and in Dutch R-pronouns *er*/*daar*/*waar* realises one and the same syntactic head.[9] The ensuing question based on this assumption then concerns the nature of the attested difference between Dutch and German. I will pursue this question in terms of a parametric difference between the two languages with respect to the derivation of P-stranding constructions: *r-* remains as part of the pronoun in Dutch and as part of the adposition in German as a consequence of different pied-piping options in the two languages.

1.3 The data: Place adpositions

Contrary to locative pronouns, simple place or path adpositions such as *in* 'in', *auf* 'on', *um* 'around' do not appear to be morphologically complex, in the sense that there is no pronounced part which can be segmented and recognized across the class. However, based on data from CG, we can glean a complex syntactic structure that is associated with them.

(8) a. Mein Kater sitzt in der Kiste d-r-in.
my tomcat sits in_{DAT} the box D-R-in
'My cat is sitting in the box.'

b. Mein Kater sitzt auf dem Schrank d-r-auf.
my tomcat sits on_{DAT} the wardrobe D-R-on
'My cat is sitting on the wardrobe.'

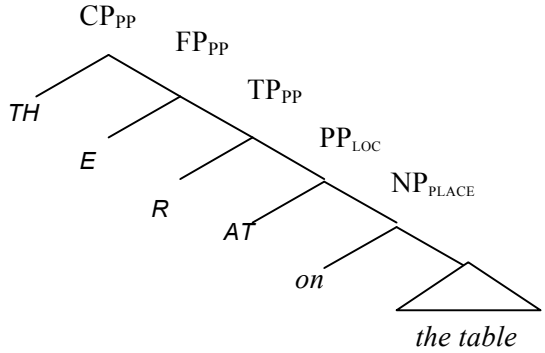
In previous work I have referred to the construction above as the 'shadow construction'; of interest is the postpositional double of the preposition, which is preceded by the elements *d-* and *r-* . I will argue that *r-* in these examples corresponds to the same head that occur in the Dutch R-pronoun *daar*, and to the *r-* in the German pronominalised forms in (4b). Furthermore, place and path adpositions are hypothesized to contain a nominal category as a lexical core, a functional place noun, as well as a semi-functional predicative had, a locational P, in addition to the above-mentioned functional heads (Noonan 2005a/b, 2010; Terzi 2010, and others). The *d-* of the *dr-* form will be shown to be related to that nominal category. An instantiation of a structure where a maximal number of the proposed heads are pronounced is given in the circumpositional construction (10), where the path preposition *um* 'around' is doubled twice, with the first post-positional double prefixed with *d-* and *r-*, and the second one with *r-*.

[9] I will not, here, address the more complex R-pronouns, such as *nergens/nirgens* 'nowhere', *oveR-all/übeR-all* 'everywhere' (lit. 'over all'). Note that these pronominal forms are more complex than *daar/da* etc., indicated by the dash, and probably occupy a specifier position (see Leu (2015a) on related cases, e.g German *je-der* 'everyone'). Another 'R-pronoun' is German *hier* 'here', which appears to pose a counterexample to the structures I will propose for *da* and *wo* below, as *r-* does appear to form part of the pronoun. Note that the facts in stranding cases are similar to *da* and *wo*, that is, *r-* is, in fact must be, also on the adposition, so there appears to be two instances of pronounced *r-*. I will leave these issues aside for now. This latter observation also holds for German *nirgens, überall*.

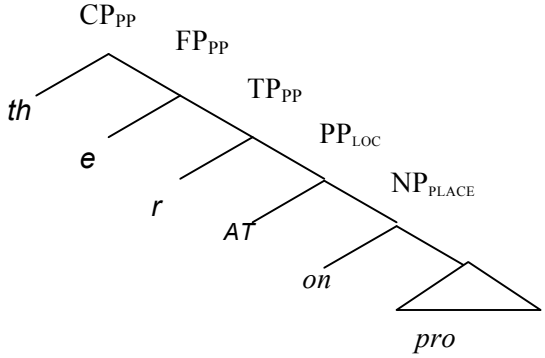
(9) Die Kinder sind **um** den Tisch **d-r-um** **r-um** gerannt.
the children AUX around the table D-R-around R-around run
'The children ran around the table.'

The nominal part of the structure is at times overtly evident in English complex place adpositions e.g. *inside*, but I assume it to be present also in seemingly simple adpositions such as *in*, *on*, or *under*.[10] The discovery that simple small words such as *in* "spell out" larger structures than meets the eye tells us that there is a rather large disconnect between morphemes and terminal nodes, in that the latter outnumber the former. As such, the approach assumed here can be filed under the what has come to be known as the cartographic enterprise in syntax.[11] Within cartographic work, the hierarchy of functional heads surrounding the various lexical categories is often portrayed as parallel to that of those in the extended domain of verbs, in other words, clauses (e.g. Koopman (1997) and various papers in Cinque & Rizzi (2010) for adpositions, Svenonius (2004) for nouns). Adopting this, I term the functional heads that are lexicalised, that is pronounced, by *th-*, *e-*, and *r-*, respectively CP_{PP}, FP_{PP}, and TP_{PP}. The reason why *r-* is labelled TP_{PP} is because its function is spatial and directional deictic, parallel to the function of Tense as deictic anchoring in the verbal extended domain.[12] *Th-* (and Dutch and German *d-*, respectively) is labelled as a C in the spirit of Leu (2015a/b), who identifies the *d-* of determiners with that of complementizers. To anticipate the types of structure my forthcoming discussion will lead to, see structure (10a) for the extended projections surrounding an expression such as *on the table*, [13] and (10b) for a locative pronoun such as English *thereon* (archaic in English but productive in Dutch and German). Capital letters throughout the paper indicate non-pronunciation of terminal nodes.

(10) a. Structure underlying *on the table*



b. Structure underlying *thereon*



[10] The analysis is an elaboration of previous work on the articulate structure of spatial adpositions; see Noonan 2005a/b, 2010.

[11] As has been argued elsewhere (e.g. Cinque and Rizzi 2008), the cartographic approach to syntactic structures is not incompatible with the basic assumptions of minimalism, although much work within the more narrowly minimalist approach tends to be rather more parsimonious with abstract silent categories. There is also a large affinity between cartographic approaches and nanosyntax (e.g. Caha 2009; Starke 2009), in that nanosyntax postulates a highly articulate functional architecture. However, the approach adopted here departs from nanosyntax in that it does not assume that morphemes such as *in* span several heads, but that they pronounce a head that is licensed by (or licenses) a number of silent heads which may (or may not) in other circumstances receive a pronunciation. It is thus more akin to the gist of e.g. Leu (2014) and much recent work by Richard Kayne.

[12] See den Dikken (2010) for similar ideas along this line.

[13] Note that the tree structure here only indicates the main functional structure. It does not necessarily reflect all the categories assumed, nor does it reflect the syntactic derivation (various displacements) within this syntactic domain. I return to a more detailed description of the respective derivations in later sections.

Directional PPs (*he jumped on(to) the table* or *She ran around the table*) are assumed to contain a higher lexico-functional domain in which structure (10a) is embedded (see section X.5).

2 *r*- in Dutch versus *r*- in German

Recall that the curious difference between Dutch and German concerns the morphosyntactic distribution of *r*-: in Dutch it is part of the R-pronoun, while in German it remains as a prefix on the adposition when the pronoun and the adposition are separated by movement. The syntactic minimal pair below sums up this difference:

(11) a. **Da** hab ich das Buch **rauf** gelegt.

b. **Daar** heb ik dat boek **op** gelegd.

There have I the book on put

'I put the book on that.'

I will begin by sketching out a scenario that might derive the contrast between the two languages in a simple way. Let us assume that *r*- corresponds to a syntactic head, a morpheme, which has the adposition and its internal argument in its domain. We could now assume that a [-human] pronominal DP, an '*R*-pronoun', moves to the specifier of what (for now) I shall label RP. The difference between German and Dutch might then be characterised in the following way: in German R is pronounced iff there is a right- adjacent vowel-initial complement (in other words, R is right-leaning), while in Dutch R is pronounced iff the specifier is pronounced (R is left leaning). (Non-pronunciation indicated by capital letters.)

(12) Preliminary Hypothesis

to be revised

i. 'R' = realizes a syntactic head, R.

ii. German: R is pronounced (/r/) in the context of a right adjacent vowel initial adposition. (right-leaning)

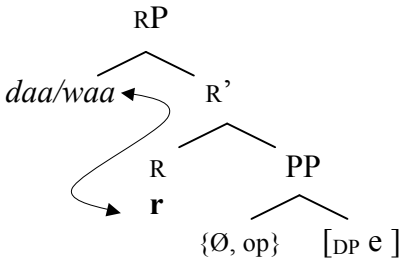
iii. Dutch: R pronounced iff Spec,RP is pronounced[14]

[14] As expected for Dutch, whether or not the adposition is vowel initial does not appear to have any effect, as the following examples show.

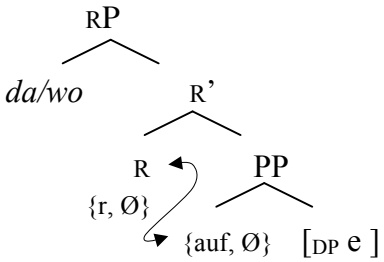
(i) Ik heb ervoor /daarvoor gestaan. vs. German (ii) Ich stehe davor (*darvor).
I have there-in front stood I stand there-in front
'I stood in front of it/that.' 'I'm standing in front of it/that.'

(13) Dutch

to be revised

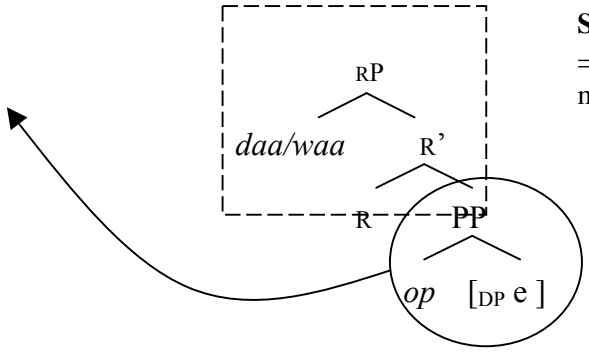


German



One immediate problem with this structure concerns P-stranding. For German there is theoretically no problem, – the pronoun, having moved to Spec of 'RP' can simply use this specifier as an "escape hatch" and move on, stranding 'RP', in a way familiar to Van Riemsdijk's and Koopman's proposals (which, as we will presently see, is in fact problematic for German when taking more data into account). For Dutch, however, the situation is now less straightforward: the pronoun and 'r' do not form a constituent and are therefore not expected to be able to move as a constituent. If our conclusion concerning R representing a syntactic head in the extended projection of P is on the right track, we now must understand P-stranding in Dutch to involve movement of the PP rather than of the pronoun, thereby leaving a remnant constituent that contains the *r*-headed projection as well as the pronoun in its specifier (or a higher specifier).

(14)



Step 2 (square): *daar/waar* = remnant RP, can move to middlefield or Spec,CP

Step 1 (circle): PP moves (see footnote 8)

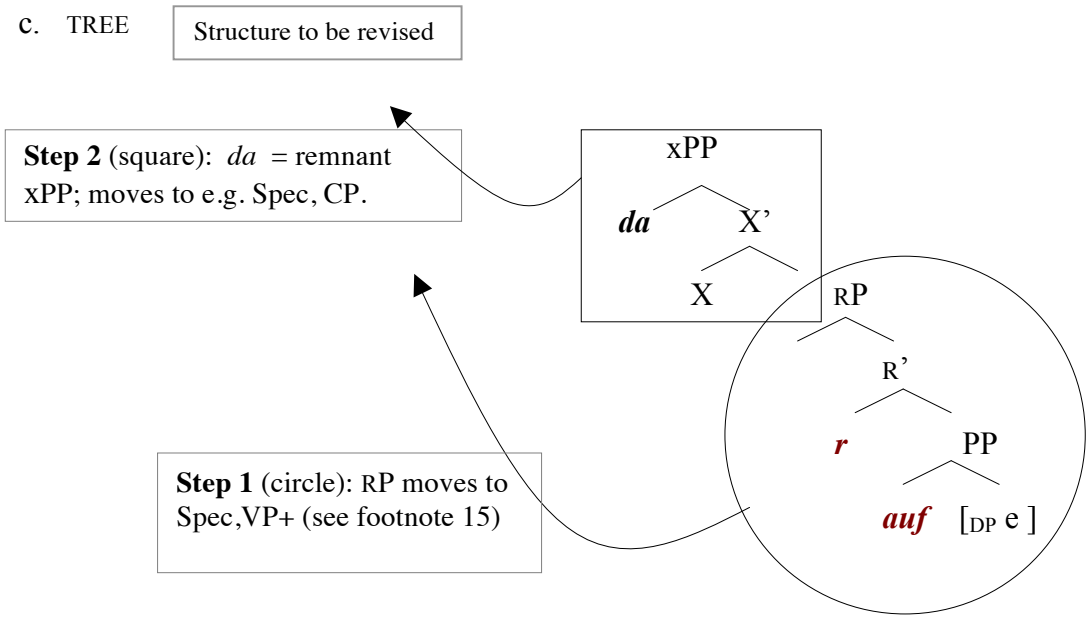
This approach to P-stranding in Dutch in turn suggests that the analysis of P-stranding in terms of the pronoun escaping through a specifier is presumably not what happens in German either, as we would not expect the processes in the two languages to be so radically different in nature. Let me propose that the approach to Dutch is on the right track, and that also in German an extended projection of P moves, leaving a remnant constituent, xPP (for now) containing the pronoun. However, in German a bigger extended projection of P moves, one that minimally includes RP (but see below). The remnant projection containing the pronominal part is thus without *r*-.[15]

[15] When wishing to be neutral about specific labels, I will use the term xXP (for extended XP), adopting terminology originally introduced by Matushansky (2006).

(15) a. EXAMPLE Da ist er **r**auf gesprungen.
there is he R-on jumped
'He jumped on that.'

b. DERIVATION i) VERB [$_{xPP}$ da [$_{RP}$ r [$_{PP}$ auf]]] move RP[16] →
ii) [$_{RP}$ r [$_{PP}$ auf]] VERB [$_{xPP}$ da ~~[$_{RP}$ r [$_{PP}$ auf]]~~] move xPP to Spec,CP →
iii) [$_{xPP}$ da ~~[$_{RP}$ r [$_{PP}$ auf]]~~] AUX SUBJ [$_{RP}$ r [$_{PP}$ auf]] VERB t_{xPP}

c. TREE



In other words, what is traditionally viewed as P-stranding in Dutch and German is in fact the stranding of an R-pronoun by a constituent that contains the P. Although the general mechanism of the apparent P-stranding introduced above will be argued to be on the right track, there are additional facts that make the situation more interesting. As the following examples show, in Colloquial German (CG) example (15a) has the following variant (16), suggesting an additional *d*-head in the structure.

(16) Da ist er **d-r-**auf gesprungen.
there is he D-R-on jumped
'He jumped on that.'

[16] The moved RP (and PP in Dutch, respectively) essentially behaves like a verbal particle, and it shares its syntactic distribution. In this paper I will not address the external distribution of such verbal particles in detail. (See section 4.5 for some brief remarks, and Koopman & Szabolcsi (2000), who postulate a specifier of a proxy VP+ to which particles move.)

Remaining with CG, however, we note that while the *d–* appears optionally in (16), it is obligatorily present when a non-directional, locational P is stranded, as in example (17):

(17) a. Da steht er **d-r-**auf /*rauf.
there stands he D-R-on
'He standing on that.'

b. Da sind die Bücher **d-r-**in /*rin.
there are the books D-R-in
'The books are in that.'

The *dr-* form is not restricted to constructions that involve stranding, (18a), nor to pronominal contexts (i.e. in combination with a pronominal *da* etc.). It also occurs in combination with a spatial PP of which the object is not pronominalized, (18b), revealing the complex nature of PPs in an interesting way. The *dr*-form in (18b) contains a double of the preposition.

(18) a. Es liegt da-d-r-auf. (Formal German: *darauf*)
it lies there D-R-on
'It is lying on that.'

b. Es liegt auf dem Schrank d-r-auf.
it lies on the$_{DAT}$ cupboard D-R-on
'It is lying on (top of) the cupboard.'

I will set aside the analysis of the pronominal cases for a moment in order to address the construction in (18b) in some detail. The reason for this diversion is that an investigation into the circumpositional shadow-construction from CG (Noonan 2005, 2010) is what initially gave rise to the proposal that spatial PPs contain an articulated left periphery.

3 The shadow-construction – first pass

The shadow construction involves a postpositional particle that is always a copy of the preposition. In previous work (Noonan 2005, 2010) I have analysed these copies as deriving from an undeleted copy of the preposition that is moved, along with its object, to the specifier above the functional heads pronounced as *d-* and *r-*, respectively. Hence the term "shadow-Ps".[17] The construction is exemplified with a broader range of spatial adpositions in (19).

[17] The term shadow construction was inspired by Perlmutter's (1972) term shadow pronouns for resumptive pronouns, left by syntactic movement.

(19) a. Mein Kater sitzt [**in** der Kiste d-r-**in**].
my cat sits in the$_{DAT}$ box D-R-in
'My cat is sitting in the box.'

b. Die Emma steht **auf** dem Tisch d-r-**auf**.
Emma stands on the$_{DAT}$ table D-R-on
'Emma is standing on the table.'

c. Das Kaugummi klebt **an** der Wand d-r-**an**.
the chewing gum sticks on the$_{DAT}$ wall D-R-on
'The chewing gum is sticking to the wall.'

d. Die Spinne hängt **unter** dem Tisch d-r-**unter**.
the spider hangs under the$_{DAT}$ table D-R-under
'The spider is hanging under/underneath the table.'

Noonan (2005/2010) argues that the shadow-postpositional element is in fact an audible realisation of the hidden clausal structure that underlies spatial PPs. Specifically, it reveals the clausal extended structure of a nominal core, a place noun, in intricate ways to be detailed presently. Note that a nominal part in complex prepositions is well known, as it is at times pronounced, as e.g. in the transparently complex English preposition *inside/outside*.[18] What I suggest is that the noun is present as an unpronounced variant even in the seemingly more simple *in*. It is well-known that in languages that lack place adpositions (e.g. Turkish, Korean, Japanese, Javanese), the spatial concept of *in, on, under*, etc. is often just expressed by a default locative element, P_{LOC} (surfacing as an adposition or a suffix), roughly corresponding to English *at*, while the particular place interpretation is established pragmatically.[19] If a more specific place interpretation is emphasized, we find the locative in combination with a functional place noun and a fully nominal structure. What is expressed as the object of the preposition in a language like English is realised as the inalienable possessor of the place noun, as exemplified in the Turkish sentence in (20).

(20) Kitab - ı masa-nın üst - ün - de koy-ar.
book-ACC table-GEN top–POSS-LOC put-TNS-∅(3s)
'S/he puts the book on the table.' (lit. at the table's top)

[18] Others include *be**side***, *in **front** of, on **top** of*, etc. This fact has given rise to a number of similar proposals for English according to which PPs contain a sometimes overt, sometimes silent nominal head. E.g. Svenonius (2008, 2010), who introduces a novel category, Ax(ial)part, to label this head. Under his analysis, *in* in *inside* pronounces the locative head. In my approach (adapting Terzi (2006), (2010)), *in* is always a modifier of a place noun, both in e.g. *in the box*, as well as in *inside the box*, with PLACE being abstract in the former, and pronounced as 'side' in the latter case. Further similar approaches include Aboh (2010), den Dikken (2010), and Koopman (1997/2010). In Noonan (2005) I propose to relate the abstract noun PLACE to Wunderlich's (1991) semantic category "region".
[19] See Terzi (2006/2010) for more detailed discussion of this particular facet of the analysis.

Returning to languages such as English and German, here the nominal projection PlaceP is transparent in the sense that its possessor argument is Case licensed in the extended domain of P_{LOC} that selects the modified nominal place projection. I propose to account for this in terms of a restructuring predicate in the sense that the P_{LOC} head selects a smaller constituent (Wurmbrand 2001). Rather than genitive case as in Turkish (and related languages), the argument of the Place noun thus appears in dative in German, and in objective case in English.[20]

The tree structures in (21) below sketch out the respective structures in a language like Turkish as compared to languages like English or German that have place adpositions, and in particular CG, which reveals rich functional structure. In the Turkish structure (21a), the ground argument (*masanın* 'table') is licensed with genitive case inside the DP surrounding the lexical nominal category (*üst* 'top'). This latter moves to the left of the POSS head *ün-*, and then incorporates into the P_{LOC} *-de*.[21] The genitive DP *masanın* 'table' (i.e. the possessor of the place noun) then moves to the left of P_{LOC}.[22] The crucial difference in a language with place adpositions is that P_{LOC} selects not a DP as its complement, but a bare NP. I follow the analysis provided in Noonan (2010) (adopting a proposal by Terzi (2006), (2010)), which takes the pronounced place adpositions in such languages to be a modifier of a place noun that remains unpronounced. In other words, there is in fact no lexical category P (see Baker 2003). There is only a functional, or semi-lexical category P_{LOC}, which can combine with place nouns in various ways. The structure is illustrated in the tree on the right-hand side. Here, the possessor of the place noun is Case licensed externally by P_{LOC}, and therefore not marked genitive, but with objective case (in German dative). A language such as English or (Formal) German would leave the heads that are lexicalised as *d-* and *r-* in CG as unpronounced. The fact that the PP *auf dem Tisch* precedes the shadow-P *drauf* tells us that $ModP_{PLACE}$ moves to the left of the head *d-* and *r-*. The reason for the non-deletion of Mod_{PLACE} *auf* is a version of the stray affix filter: the elements *d-/r-*, as bound morphemes, need support and prevent the original copy of the adposition from being deleted at PF. As the structure under (21b) shows, the final position of the particle *drauf* of [*auf dem Tisch drauf*], is the result of moving the projection $ModP_{PLACE}$ [auf dem Tisch] to a higher specifier and thus deriving the order PP > *d-r-*P. I return to more precise details of the derivation of the shadow-construction in §4.6 after presenting the proposal for German and Dutch R-pronouns.

[20] Depending on how much extended nominal structure is projected, the object of the preposition is case licensed inside the nominal domain (genitive case, realised as 'of' in English and 'de' in French). In English, some prepositions appear to vary in the structure they are embedded in: cf. *inside the box* vs. *inside of the box* (Compare to *beside* (**of*) *the box* vs. *in front* *(*of*) *the box*.

[21] I have indicated the movements in Turkish as head movement, mainly for expository reasons. However, under the approach taken here, they are more appropriately thought of as remnant phrasal movement. I will not go into this, as the paper is mainly concerned with German and Dutch. Note that I do not postulate head movement to derive the CG form *drin*, as right-adjunction is incompatible with Kayne's (1994) theory of antisymmetry.

[22] Either to Spec, P_{LOC}, or, if this is not possible due to a doubly-filled-Head-Spec Filter to a higher specifier.

(21) a) Turkish locational PP

masa-n-ın üst - ün – de

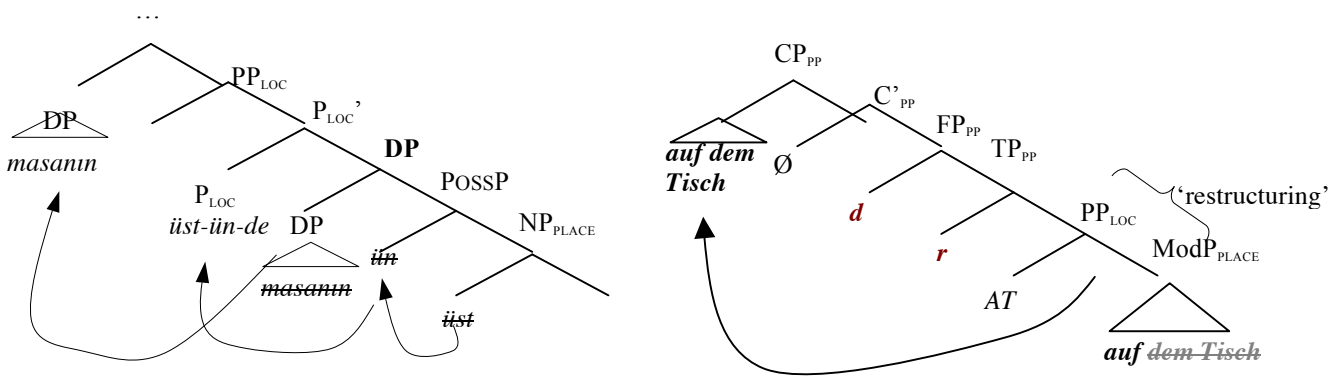
table-GEN top–POSS-LOC

(LIT. at the table's top)

b) CG locational PP

auf dem Tisch d-r-auf

on the$_{DAT}$ table D-R-on



4 Deconstructing R-pronouns and shadow-Ps

This section develops the analysis of R-pronouns and locational PPs. As already stated above, I take the *r*- we observe in Dutch R-pronouns to be the equivalent head to the one encountered in German PPs involving a locative pronoun, that is, a deictic head in the extended projection of the locational P, T$_{PP}$. As for the *d*-, in the gist of Leu (2015b), I view this head as a *d*-complementizer in the extended projection of P$_{LOC}$. If both *d*-,[23] as well as *–r* are morphemic, we are equally led to ascribe morphemic status to the vowel in e.g. Dutch *daar* and *waar*, or German *da* and *wo*, 'there' and 'where' respectively . This suggests that the left-periphery of xPP, parallel to that of clausal domains, is articulated. Generalising Rizzi's (1997, 2004) articulated left periphery of the clause to xPPs (ignoring FocP and TopP for now), we are led to postulate an articulated left periphery correlating to ForceP and FinP. We thus arrive at the following parallel left-peripheral structures for the extended projections of verbal and adpositional domains:

[23] As expected, *d*- alternates with *w*- for interrogative pronouns.

(i) German *d*-: der, die, das, dieser, **da**, …. *w*-: wer, was, **wo**, wann, …

(ii) English *th*-: the, this, that, **there** -- *wh*-: who, what, **where**, when ….

d- also alternates with *h*- for the proximal locative *hier* 'here'. Interestingly, in some dialects *h*- can occur directly before an adposition. Consider the following examples from Alemanic, cited in Brandner (2008). The *h*-prefixed form is proximal and the *d*-form is distal with respect to where the speaker is situated.

(i) a. h-usse vs. d-usse outside

b. h-unne vs. d-unne below

c. h-obe vs. d-obe above

I will leave the proximal form *hier 'here'*, along with the nature of the head *h*- aside for further research.

(22) a. Architecture of a clause b. Architecture of a PP

C_{PP} selects Fin_{PP}, headed by a vowel.[24] Thus, instead of *da/wo* being a constituent in a specifier, as indicated in the initial structures in (13-15), *d-* and *w-*, respectively, and *–a* and *–o*, respectively, are in fact heads. As they occur in pronominal constructions, we assume that they are associated with a silent nominal (*pro*), essentially assimilating Postal's (1966) original proposal that pronouns are pronounced Ds with an unpronounced noun.[25] (I will return to the position of *pro* in these structures.) Fin_{PLACE} in turn selects the projection headed *r-*, namely T_{PP}.[26]

The structure needs, however, to be more articulated yet. Going back to the CG example in (18a (repeated below) , however, we encounter more than one *d-*.

(18) a. Es liegt da-d-r-auf. (Formal German: *darauf*)
it lies there D-R-on
'It is lying on that.'

As stated already, the *d*-head in German and Dutch *daar/da* 'there', respectively, *d-* complementizer head in the extended projection of P_{LOC}. What about the lower *d-* head in *da-**d**-r-auf*? I propose that this head is a definiteness head related to the Place noun. In other words,

---

[24] This vowel, in German varies as follows: it is pronounced *a* in the context of *d-*, *o* in the context of *w-*, and *i* in the context of *h-* (cf. Kayne (2005), who, for English, proposes that the vowel is the head of a locative). Kayne suggests that /i/ in the English proximate 'here' (which we can extend to German 'hier') might be related to first person, as we find a similar /i/ in the Italian and Spanish possessive pronouns, where first person is the "odd man out" in terms of vowel. In my structure the vowel heads a projection on the left periphery. If the vowel is indeed related to person deixis, then it is not unreasonable to take it as a lexicalisation of a head that is in the discourse-interfacing left-periphery. (See Roberts (2005) and others, for analyses that take PERSON to be a head in the clausal spine.)

[25] See also Dechaine & Wiltschko 2002.

[26] In Noonan (2007) I argue that the same approach can be adopted to account for French adpositional constructions involving pronominalisation of [-human] objects, such as (ib):

(i) a. *(de)dans la boîte* 'in(side) the box' b. *là-dedans* 'there-in' (lit. 'there-in').

In view of the French genitive *de* occurring before the adposition, Tom Leu (p.c.) suggests to relate *r-* to the feminine oblique *r-* that he discusses in recent work (see Leu 2011; 2015a):

(i) in der_{DAT} Tasche d-r-in
in the_{DAT} bag D- r_{DAT}-in

The intuition is that this dative *r-* would be a reflex of the oblique (dative) case that a non-directional P assigns to its object, where the object is the silent Place noun. The proposal raises the question of why we would find the feminine, rather than the masculine case form that occurs here. Perhaps one could link it to the feminine noun *(die) Region* (cf. Wunderlich 1991), to which I have likened the abstract PLACE noun in Noonan 2005). I leave this fascinating avenue of investigation open for now.

while the initial *d-* is the highest C-type head in the extended projection of PP (xPP), the lower *d-* is the highest *d-* head associated with the extended projection of the Place noun. However, in the spirit of work by Sportiche (2005),[27] it is not merged as a constituent with Place. Sportiche proposes that determiner heads are not merged directly with the nominal constituent and are thus not part of the selection of the verb, but that they are merged high in the clausal architecture. [28] Generalising this idea to the clausal architecture of PPs, I suggest that the bolded *d-* in *da-**d**-r-auf* is equally a *d-* head merged higher than r-, that is, higher than T_{PP}. The following CG examples illustrate the existence of the d- head in combination with the d- locative pronoun *da*, interrogative *wo*, as well as proximate *hier*. Crucially, *d-* appears even in non-stranding cases:

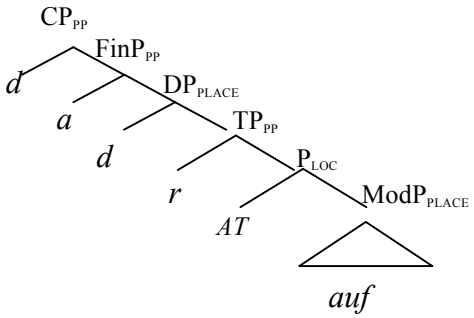
(23) a. Er sitzt **d**a-**d-**r-auf.
He sits there-D-R-on
'He is sitting on it/on that.'

b. Er sitzt **h**ier-**d-**r-auf.
He sits here-D-R-on
'He is sitting on this.'

c. **W**o**d**rauf sitzt er? / **W**o sitzt er **d**rauf?
where-D-R-on sits he / where sits he D-R-on
'On what is he is sitting? / What is he is sitting on?'

Both of these observations tell us that analysis that reduces the *d-* of ***d**rauf* to the *d-* in *darauf* and takes *drauf* to be a contracted form of *darauf* is too simplistic. The fact that they occur in non-stranding cases, as well as in the shadow-construction (examples (19)) also argues against the *dr-* form being some kind of resumptive element. I will thus label this lower *d-* head D_{PLACE}, and suggest that is pronounced in CG, but not in Formal German, nor in Dutch (and English). We thus arrive at the following structure, revised from (22b).

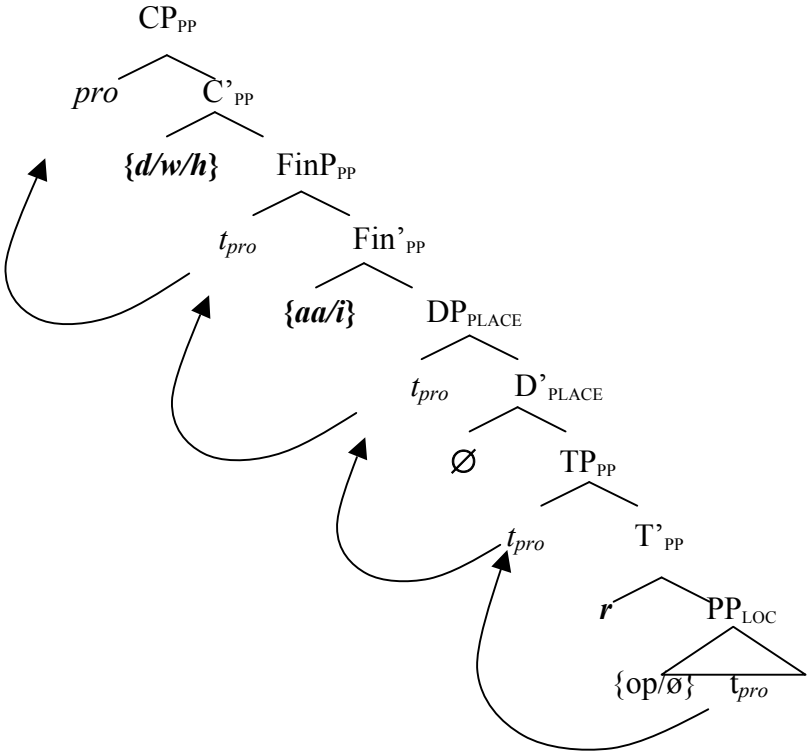
(24)



[27] See also Kayne 1999, 2004a.
[28] This has consequences for reconstruction. In fact much of Sportiche's conclusions were arrived at through a careful investigation of reconstruction and lack thereof in A-movement contexts. The placement of argumental clitics in e.g. French, in fact, indicates the place of merger for these *d-* heads that have nominal (and oblique) arguments as associates.

As is becoming increasingly clear, the analysis sketched out so far implies that small words such as German *da*, Dutch *daar* (as well as English *there*) spell out a rather large complex phrasal structure.[29] The full-fledged structures corresponding to the locative pronouns (R-pronouns) are given below for Dutch and German, respectively. I use '{..}' for context-sensitive allomorphy. I tentatively take the silent NP in these pronominal cases (indicated as *pro*) to move to the highest specifier, Spec,CP_{PP}, but see below for the stranding cases, where I qualify this somewhat.

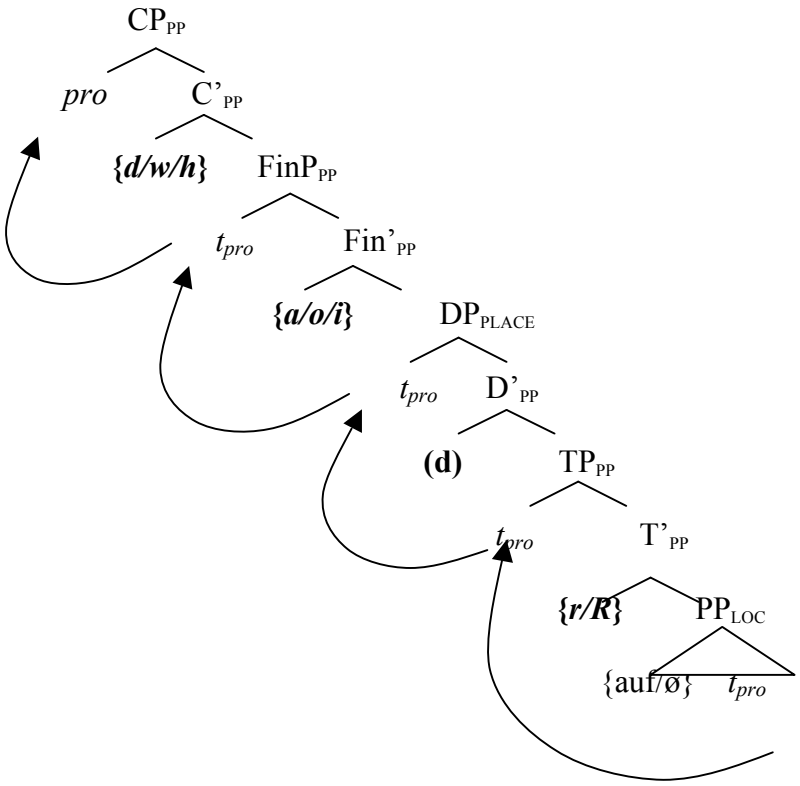
(25) a. Dutch *daar-/waar-/hier-/er-op* and *daar/waar/hier/er* (with Place modifier silent)



[29] See Koopman & Szabolcsi (2000), Leu (2008; 2015a), and much of Kayne's recent work (e.g. Kayne 2007) for similar conclusions regarding apparently "small" functional elements.

b. Formal German *da/wo/hierauf* and *da/wo/hier*

Colloquial German *dadrauf/wodrauf/hierdauf* and *da/wo/hier*

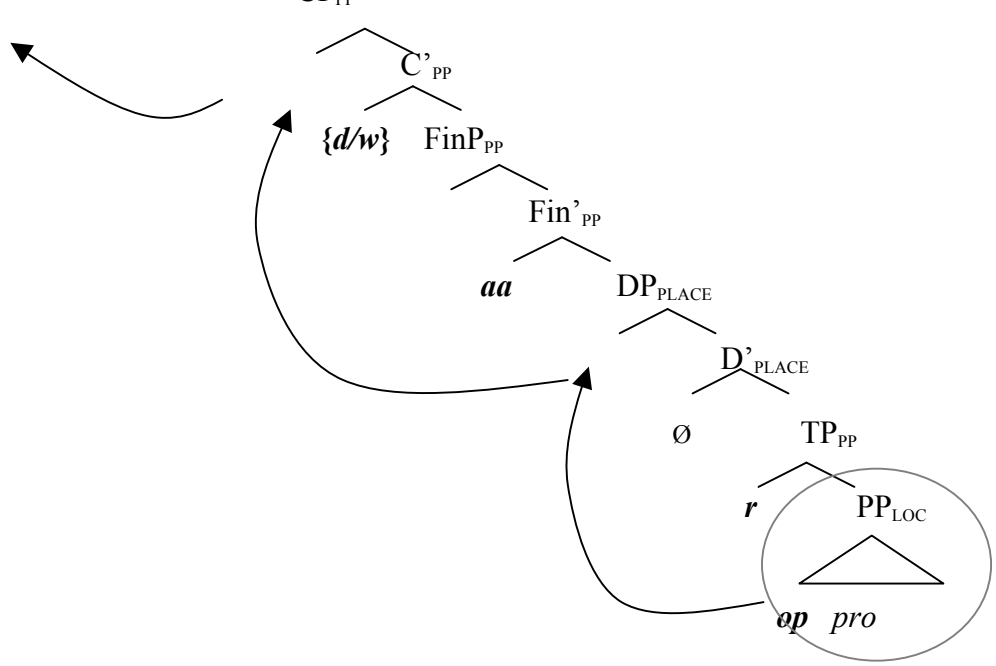


4.1 R-pronoun stranding in Dutch and CG PPs

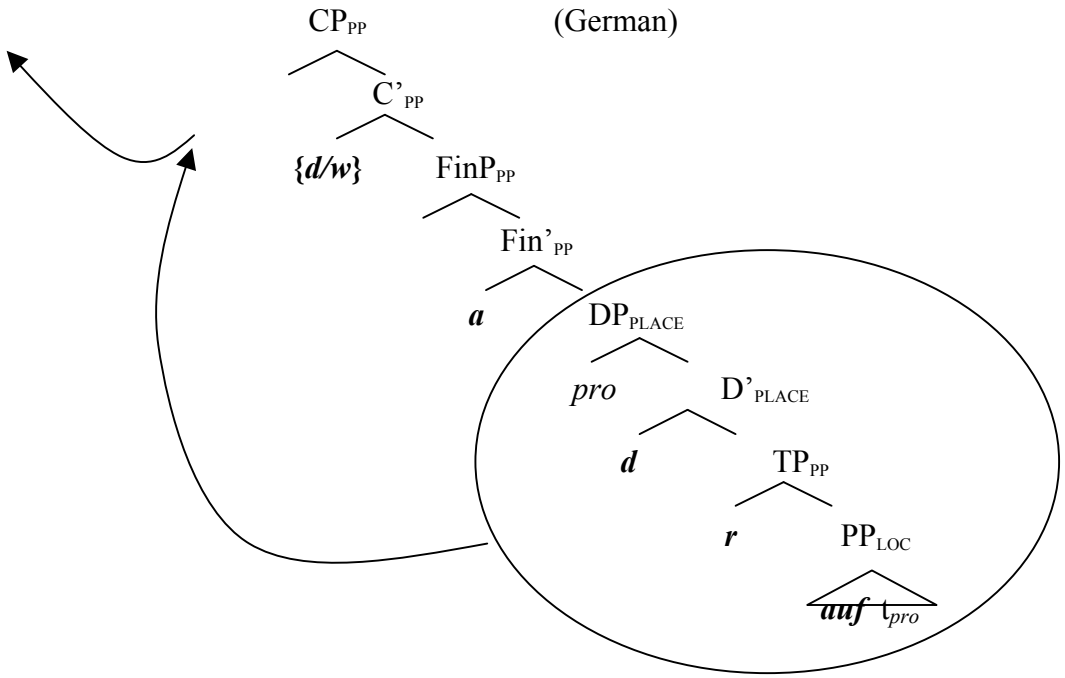
Returning now to stranding in locational PPs, recall that the approach I am pursuing takes apparent P-stranding to be in fact "pronoun-stranding" (with subsequent movement of the remnant phrase that contains the "pronoun" to a higher specifier, e.g. Spec,CP). As before, we assume that in Dutch PP moves, i.e. PP_{LOC}, containing the modified nominal NP_{PLACE}. The remnant CP_{PP} then topicalizes to a specifier in the middlefield or to Spec,CP of the clause.

I will not address in detail where PP_{LOC} moves to after evacuating CP_{PP}, except to state that it appears to have the typical distribution of verbal particles (see Van Riemsdijk (1978); Stowell (1982); Koopman & Szabolcsi (2000) for proposals, and see section 4.5). In contrast to Dutch, in German the phrase that escapes CP_{PP} is a larger chunk, namely DP_{PLACE}. The difference between Dutch and German regarding the realisation of 'r' in stranding contexts is thus reduced to a difference in the size of what is pied-piped, a familiar parametric distinction. The Dutch and CG options are illustrated in (26).

(26) a. Dutch: [$_{CP}$ [$_{CPPP}$ **<u>Daar</u>** t_{PPLOC}] heb ik dat boek [$_{PPLOC}$ **<u>op</u>**] gelegd t_{CPPP}]



b. CG: [$_{CP}$ [$_{CPPP}$ **<u>Da</u>** $t_{DPPLACE}$] hab ich das Buch [$_{DPPLACE}$ **<u>drauf</u>**] gelegt t_{CPPP}]



As the derivations in (26) indicate, I assume that PP_{LOC} and DP_{PLACE}, respectively, move via the edge of CP_{PP}. I propose to view this evacuation movement as an instance of pied-piping: the pronominal (*pro*), in moving to its licensing position in Spec,CP_{PP} pied-pipes a bigger phrase (PP_{LOC} or DP_{PLACE}, respectively). Arguably, as indicated in (26a), PP_{LOC} in Dutch moves via Spec,

DP_{PLACE}.[30] One final observation about this movement is that Spec,CP_{PP} can only be used as an escape hatch for movement of PP_{LOC} or DP_{PLACE}, respectively. These latter phrases cannot remain in Spec,CP_{PP}:

(27) a. *Er steht d-r-auf-da.
he stands D-R-on-there
b. *D-r-auf-da steht er.
D-R-on-there stands he

A plausible way to exclude (27) is by invoking the doubly-filled-Comp filter: since C_{PP} is pronounced as *d-*, its specifier cannot contain phonetically overt material.

4.2 Formal German locational PPs

Recall from §X.2 example (17), repeated below, that in CG "P-stranding" in locational PPs requires pronunciation of the D_{PLACE} head.

(17) a. Da steht er **d-r-**auf /*rauf.
there stands he D-R-on
'He standing on that.'
b. Da sind die Bücher **d-r-**in /*rin.
there are the books D-R-in
'The books are in that.'

Now turning to Formal German (FG), recall that the head of D_{PLACE} here is never pronounced.

(28) a. CG: Er steht da–**d**–r–auf.
he stands there-D-R-on
b. FG: Er steht da–r–auf.
he stands there-R-on
'He stands on it/that.'

[30] As CG has a *d-* pronounced head of D_{PLACE}, it may also licence a *pro* in this specifier, in which case *d-a* does not have to be pronounced: (i) Er sitzt drauf.
'He is sitting on it.'
This might be thought of as the CG counterpart to Dutch *er* pronouns: that is, involving D_{PLACE}, and T_{PP} but lacking a *d-* in C_{PP}.

What we observe now is that unlike Dutch and CG, FG disallows stranding in locational PPs altogether.

(29) *Da sitzt der Kater r–auf.
there sits the cat R-on
'That, the cat is sitting on.'

As we now analyse P-stranding in terms of splitting of PP_{LOC} (Dutch) or DP_{PLACE} , this suggests that FG disallows both PP_{LOC} as well as DP_{PLACE} movement, deriving the following respective structures:[31]

(30) a. *[$_{CP}$ [$_{CPPP}$ **Da-r** t_{PPLOC}] sitzt der Kater [$_{PPLOC}$ **auf**] t_{CPPP}]
b. *[$_{CP}$ [$_{CPPP}$ **Da** $t_{DPPLACE}$] sitzt der Kater [$_{DPPLACE}$ Ø-**r-auf**] t_{CPPP}]

Why does FG, as opposed to CG, not permit DP_{PLACE} movement splitting of these structures. I propose to relate the impossibility of DP_{PLACE} movement to the fact that D_{PLACE} is not pronounced. This reduces the impossibility of moving DP_{PLACE} in Formal German to e.g. the impossibility of moving a CP without a pronounced complementizer (or specifier).[32]

(31) A CP can move only if either its head or its specifier is pronounced.[33]

I will return to stranding in directional PPs in both CG and FG below in §X.5.

4.3 "P-stranding" analysed as R-pronoun stranding

The general approach in this paper to P-stranding constructions is that they in fact derive from the stranding of an R- pronoun by a phrase that contains the adposition. This latter phrase has been identified as DP_{PLACE} for CG and as PP_{LOC} for Dutch. I have so far not addressed the external distribution of these phrases, that is, I have not given any precise indications of where (or why) these phrases move. I follow Koopman & Szabolcsi's (2000) approach to the syntactic placement of various kinds of particles and modifiers by taking DP_{PLACE} (and Dutch PP_{LOC}, respectively) to move to the specifier of a "proxy VP", labelled VP+ by them. Descriptively, we can observe that DP_{PLACE} must occur very close, if not immediately adjacent, to the verb. The following data

[31] And of course, given that (29) is ungrammatical, FG also disallows TP_{PP} movement. Note that this should come as no surprise, as TPs in the verbal domain typically cannot move out of CP in general (see e.g. Abels 2003).
(i) * [$_{CP}$ [$_{CPPP}$ **da** t_{TPPP}] hab ich das Buch [$_{TPPP}$ **r-auf**] gelegt t_{CPPP}]

[32] This might be generalised to phase heads, assuming that C (and the equivalent in nominal domains, D) is a phase head.

[33] This kind of statement arguably poses a difficulty in a framework of late insertion. I leave it open here how this is to be resolved.

illustrate this. The *dr*-forms are restricted to the verb-adjacent position (32c, d) (indicated as underscores). This position in turn disfavours full-fledged xPPs (32a, b).[34]

(32) a. Ich frage mich ob er __schon oft __ hat (??)__sitzen wollen. '__' = auf diesem Tisch
I ask myself if he already often has sit want on this table
'I wonder if he wanted to sit on that table already often.'

b. Ich frage mich ob er ___ schon oft ___ hat (??) ___ sitzen wollen. ' __' = darauf
I ask myself if he already often has sit want thereon
'I wonder if he wanted to sit on it already often.'

c. Ich frage mich ob er **da** schon oft *___ hat ___ sitzen wollen. ' __' = drauf
I ask myself if he **there** already often has sit want DR-on
'I wonder if he wanted to sit on it already often.'

d. Ich ask myself **wo** er *___ schon oft *___ hat ___ sitzen wollen. ' __' = drauf
I wonder **where** he already often has sit want DR-on
'I wonder where he has already often wanted to sit.'

These facts thus indirectly support the analysis of DP_{PLACE} movement in German to a position from which larger, full-fledged xPPs (i.e. CP_{PP}) are barred (at least in neutral clauses). In conclusion, P-stranding does not in fact, exist in Dutch or in German, not even with R-pronouns. There is only the illusion of it.

4.4 Further properties of the shadow-construction in Colloquial German

In this section I return to the shadow construction, and compare its derivation to the constructions involving pronominal objects. Well-known syntactic constituency tests tell us that the PP forms a constituent with the shadow-P, as they can occur in Pre-V2 position (see (33)). But we also observe that, just as when occurring in combination with R-pronouns, the *dr*-forms (i.e. DP_{PLACE}) can split out of CP_{PP} (see (34)).

(33) [In dieser Kiste drin] hat er sich immer versteckt.
in this box D-R-in has he REFL always hidden
'He always hid in this box.'

[34] Pronouncing [*auf diesem Tisch*] and [*darauf*], respectively, in the position intervening between the auxiliary and the verb appears to me to be possible only with a marked intonation and focus interpretation.

(34) a. … weil er [$_{CPPP}$ in dieser Kiste] hat [$_{DPPLACE}$ d-r-in] sitzen wollen.
… because he in this box has D-R-in sit wanted
'… because he wanted to sit in the box.'

b. [$_{CPPP}$ In dieser Kiste] hat er immer [$_{DPPLACE}$ d-r-in] gesessen.
in this box has he always D-R-in sit
'He always sat in this box.'

With the functional architecture of spatial PPs dissected as explicated in the preceding sections, we can now detail the full-fledged syntactic derivation of the shadow construction. The main points of the derivation are listed below.

(35) Anatomy of the shadow-construction (illustrated in tree structure (36))

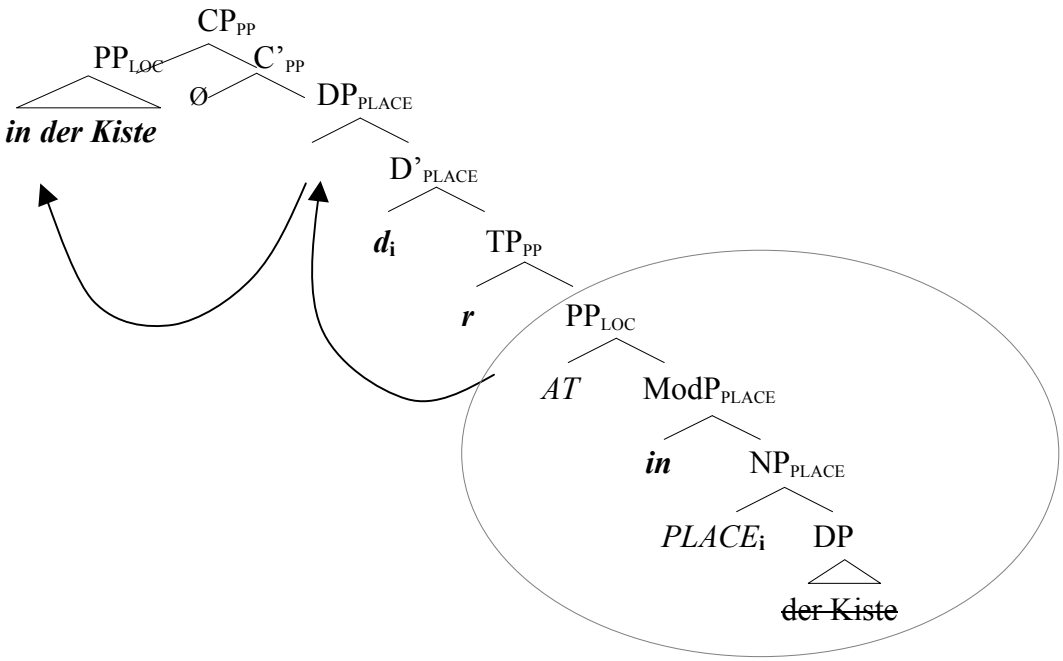
i. In the absence of a pronominal *pro* ground argument (possessor of Place), the highest *d*-head (i.e. C_{PP}) and Fin_{PP} are not silent.

ii. In this situation, PP_{LOC} obligatorily moves to Spec,CP_{PP}, via Spec,DP_{PLACE}, deriving the surface order PP > shadow-P: [$_{CPPP}$ [$_{PPLOC}$ *in der Kiste*] [$_{DPPLACE}$ *d-r-in* …]]

iii. The original copy of the modifier of N_{PLACE} does not get deleted, due to the affixal nature of d-r-; witness the double pronunciation of *in* : [***in*** …] dr-***in***

iv. DP_{PLACE} (*drin* in example (34)), just as in the pronominal cases, can move out of CP_{PP}, leaving, in this situation, a remnant CP_{PP} containing PP_{LOC} [in der Kiste]

(36) in der kiste d-r-in
in the$_{dat}$ box D-R-in



A second observation to note is that the occurrence of a shadow-P (i.e. a *dr*-P particle) is restricted to spatial PPs. This can be illustrated with the following example. While (37a) is ambiguous between an idiomatic and a compositional construction, (37b), with a shadow-P, must be interpreted as Karl literally hanging off the table.

(37) a. Karl hängt an dem Tisch.
Karl hangs on the$_{DAT}$ table
i. **idiomatic**: Karl is very attached to the table.
ii. **spatial**: Karl is hanging on/off the table.

b. Karl hängt an dem Tisch dran. → Reading (ii) only!
Karl hangs on the$_{DAT}$ table D-R-on

Even in PPs that contain a spatially interpreted P, the surfacing of a shadow-P is not well-formed when the place adposition has a somewhat default locative interpretation and lacks a precise place specification, as occurs for example when the preposition *in* is used with place names (38a), or in other cases where its object (the possessor) does not conform to a container-like space (38b/c).

(38) a. Ich bin in Montreal (*d-r-in).
I am in Montreal (*D-R-drin)

b. Das Gift ist in der Luft (*d-r-in).
the toxin is in the$_{DAT}$ air (*D-R-in)

c. Der See ist im Wald (*d-r-in).
the lake is in.the$_{DAT}$ forest (*D-R-in)

This point can be further illustrated in (39), where the interpretation of *auf* 'on' is taken as Karl perching on the highest part of the couch (say, its back, rather than the more normal position of sitting on a couch, which would be the seat cushion). Interestingly, the interpretation we derive from (39b) is similar to the one we derive in English when instead of 'on' the more complex, nominal 'on top of' is used.[35] (See Noonan (2005) and (2010) for a detailed discussions of this effect in German and English.)

[35] A similar effect can be derived in French in cases where the preposition is 'prefixed' with genitive marker 'de', (Noonan 2009).
(i) Mila se cache dedans la boîte.
Mila is hiding DE-in the box
(ii) Mila est (*de)dans une bonne humeur.
Mila is in a good mood

(39) a. Karl sitzt auf dem Sofa
'Karl is sitting on the couch.'
b. Karl sitzt auf dem Sofa drauf.
'Karl is sitting on top of the couch.'

Note that the effect disappears in pronominal cases. Both the spatial as well as the idiomatic interpretations are available in (40).

(40) Karl hängt da - d-r-an. / Da hängt Karl d-r-an
Karl hangs there D-R-D-on there hangs Karl D-R-D-on
i. **idiomatic**: Karl is very attached to it.
ii. **spatial**: Karl is hanging on/off it.

I propose to derive the interpretive effect of the shadow-P described above as follows. In case of a non-pronominal shadow-construction (e.g. (37b), D_{PLACE} takes the (modified) NP_{PLACE} as an associate (i.e. it licenses $ModP_{PLACE}$). In this case, if D_{PLACE} is pronounced (*d*-), its features impose a specific spatial interpretation on $ModP_{PLACE}$. Observe in the derivation above that PP_{LOC} moves through $Spec,DP_{PLACE}$. In the spirit of Cinque (2005), we can assume that what is moving is NP_{PLACE} (or $ModP_{PLACE}$), pied-piping PP_{LOC} to and beyond $Spec,DP_{PLACE}$ (ending up in $Spec,CP_{PP}$). The situation in a construction with a pronominal argument is quite different. Here, *pro*, essentially the pronominal possessor of NP_{PLACE}, moves to $Spec,DP_{PLACE}$. From there it either moves on to $Spec,CP_{PP}$, or, in those instances where it evacuates $Spec,CP_{PP}$ (the apparent stranding cases), it pied pipes DP_{PLACE}. (See the trees in (25b) and (26b), respectively, which illustrate the two options.) Thus, when it is the specific pronominal ground argument that is in a Spec-head dependency with D_{PLACE} (example (40)), D_{PLACE} does not affect the interpretation of NP_{PLACE}. In the shadow-construction, however, it is $Mod\text{-}NP_{PLACE}$ (pied-piping PP_{LOC}) that moves through $Spec,DP_{PLACE}$ and thus enters into a Spec-head dependency with D_{PLACE}. In this latter case it is therefore the modified NP_{PLACE} whose interpretation is affected by an overt D_{PLACE}, leading to the curious effect of enforcing a literal spatial interpretation of NP_{PLACE}. Informally, we can think of this contrast in terms of the associate of the D_{PLACE} head: NP_{PLACE} in the one case (shadow-construction), and the pronominal (*pro*) possessor in the other (pronoun cases such as (40)).

To summarize the discussion on locational PPs so far: it has been established that spatial adpositions are in fact the pronounced modifier of a place noun (NP_{PLACE}). This nominal phrase is embedded in a projection headed by an unpronounced locative, P_{LOC}. P_{LOC} is associated with a number of 'clausal' projections. Depending on the dialect (FG or CG) and on other factors (pronominal constructions versus 'shadow'-construction), differing parts of this articulated structure are pronounced. In the next section we turn our attention to directional PPs, and see how the parts of an articulated clausal structure and "P-stranding" manifest themselves there.

5 Directional PPs in FG and CG

We now turn to directional (or dynamic) PPs. As we saw in section X.2, we also find the *r*- in CG directional PPs. The important difference here was that the *d*- was optional, and we found adpositions that were prefixed by *r*- only.

(41) Da ist er **r-**auf gesprungen. (cf. *Da sitzt er r-auf)
there is he R-on jumped there sits he R-on
'He jump on that.' 'He is sitting on that.'

Recall also example (9) involving the path adposition *um* 'around', repeated below, which exhibited two shadow-Ps, *d-r-um* and *r-um*.

(9) Die Kinder sind **um** den Tisch **d-r-um** **r-um** gerannt.
the children AUX around the table D-R-around R-around run
'The children ran around the table.'

This suggests that directional PPs contain more structure, and in particular, that they contain two *r*-heads. This is precisely what I will lay out in what follows, building on the analysis I presented in Noonan (2010). Specifically, in dynamic PPs, the structure of a locational PP as developed so far is embedded under another clause, one headed by a path adposition, in other words, a modified NP_{PATH}.[36] I will first introduce FG directional PPs (§X.5.1), and then show how stranding works in this language (§X.5.2). Then I will address CG directional PPs (§X.5.3).

5.1 Formal German directional PPs

While locational PPs in FG do not occur with shadow-Ps, in directional PPs we do observe circumpositional constructions that resemble the CG shadow construction in that they appear to involve a doubling of the preposition. This post-positional double is prefixed by a particle *her* or *hin*. *Her* and *hin* are distinguished in their interpretation in the orientation of the speaker or focal reference point: *her* indicates a movement toward the speaker, *hin* a movement away.

(42) a. Sie sprang **auf** den Tisch hin**auf**.
she jumped on the$_{ACC}$ table HIN-up
'She jumped up onto the table.'

[36] This converges with much recent research on spatial PPs, which analyses directional PPs as possessing an additional layer of structure above (i.e., embedding) the extended projections of locational PPs (Koopman 1997; Huybregts & Van Riemsdijk 2001; den Dikken 2003; Aboh 2010, Noonan 2010; Svenonius 2010, among others).

b. Schieb es (hier) **an** die Wand her**an**.
push it (here) on the wall HER-on
'Push it here against the wall.'

The doubling however is only apparent, since we find many cases where the post-positional element differs from the preposition.[37]

(43) a. Sie lief **in** das Haus hin**ein**.
she ran in the$_{ACC}$ house HIN-in
'She ran into the house.'
b. Sie klettert **auf** den Baum hin**unter**.
she climbs on the tree HIN-down
'She is climbing down onto the tree.'

Furthermore, (44) shows that these *her/hin* prefixed adpostions elements also occur in purely postpositional constructions without a preposition.[38]

(44) Sie kommt die Treppe her**auf**.
she comes the stairs HER-up
'She is coming up the stairs.'

Adapting the analysis in Noonan (2010), I assume that directional PPs contain a modified Path noun (NP_{PATH}), and a number of parallel clausal nodes in its extended domain. Specifically I propose that *r-* here is also a deictic head, "T_{PATH}". The counterpart to D_{PLACE} in locational xPPs is, however, not a *d-* head. For the present purpose, I will simply label it XP_{PATH}. The modified NP_{PATH} (Mod_{PATH}) surfaces in final position due to movement of $CP_{PP(LOC)}$ to Spec,CP_{PATH}. This differs from from locational xPPs, where PP_{LOC} moves to Spec,$CP_{PP(LOC)}$. Here, PP_{DIR} does not move,[39] but $CP_{PP(LOC)}$ moves to Spec,$CP_{PP(DIR)}$. The derivation is illustrated in the following tree structure.[40]

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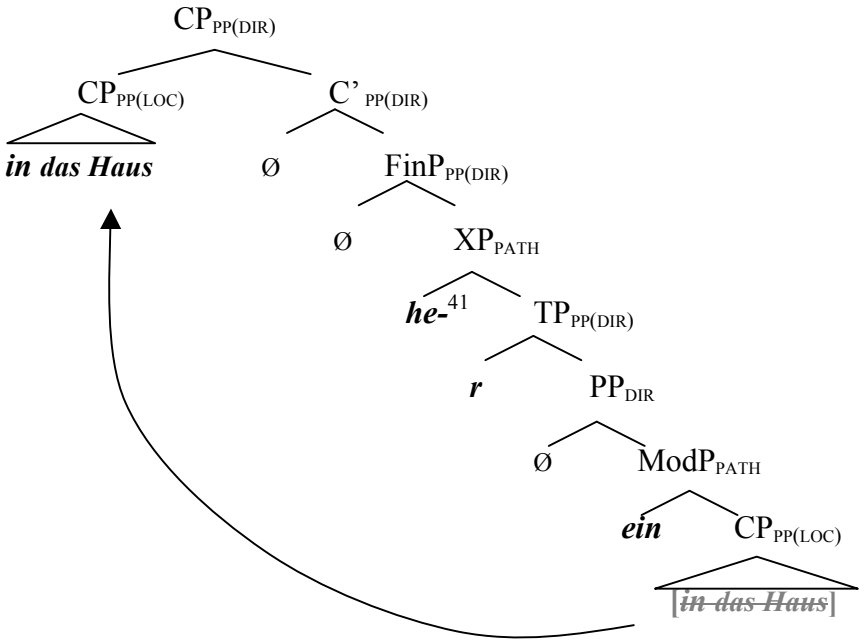
[37] See Huybregts & Van Riemsdijk (2001) for seminal work on these constructions. Noonan (2010) provides a very detailed discussion of these particular circumpositional constructions, and sets them in comparison to other languages (in particular English and French).

[38] *Hin* and *her* can also occur as free forms: (i) Komm her. come HER 'Come.' (ii) Geh hin. go HIN 'Go.'

[39] Except in cases such as (44). These constructions and their interpretive properties are discussed in greater detail in Noonan (2010), and I will leave then aside here.

[40] Instead of PP_{LOC} we here have PP_{DIR}. Briefly, the two types of P license different cases: PP_{LOC} licenses dative case on the prepositional object, while PP_{DIR} licenses accusative. In Noonan (2010) I propose that the directional head is

(45)



5.2 "P-stranding" in FG directional PPs

As (46) shows, FG permits P-stranding in directional PPs.

(46) a. **Wo** sprang er her**auf**?
where jumped he HER-on
'What did he jump on?'

b. **Da** lief sie hin**ein**.
there ran she HIN-in
'That/there she ran in.'

Similar to the case of locational Ps, I analyse these cases as stranding of the pronominal form by a the complex adposition, rather than stranding of the adposition. Stated differently, they do not actually involve P-stranding at all; they are derivd by XP_{PATH} stranding $CP_{PP(DIR)}$, where $CP_{PP(DIR)}$ is a remnant constituent that contains the pronominal elements in its specifier. It is the remannt $CP_{PP(DIR)}$ that moves to Spec,CP. We can account for the fact that FG permits stranding only in directional PPs, but not in locational PPs through the fact that XP_{PATH} has a pronounced head, while DP_{PLACE} does not. This makes movement of XP_{PATH} from $CP_{PP(DIR)}$ possible without violating (31), repeated below. [42]

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in fact verbal, thus accounting for the accusative case. The details of the derivation and its relation to the well-known Case difference are laid out in Noonan (2010). I will not revisit these issues here.

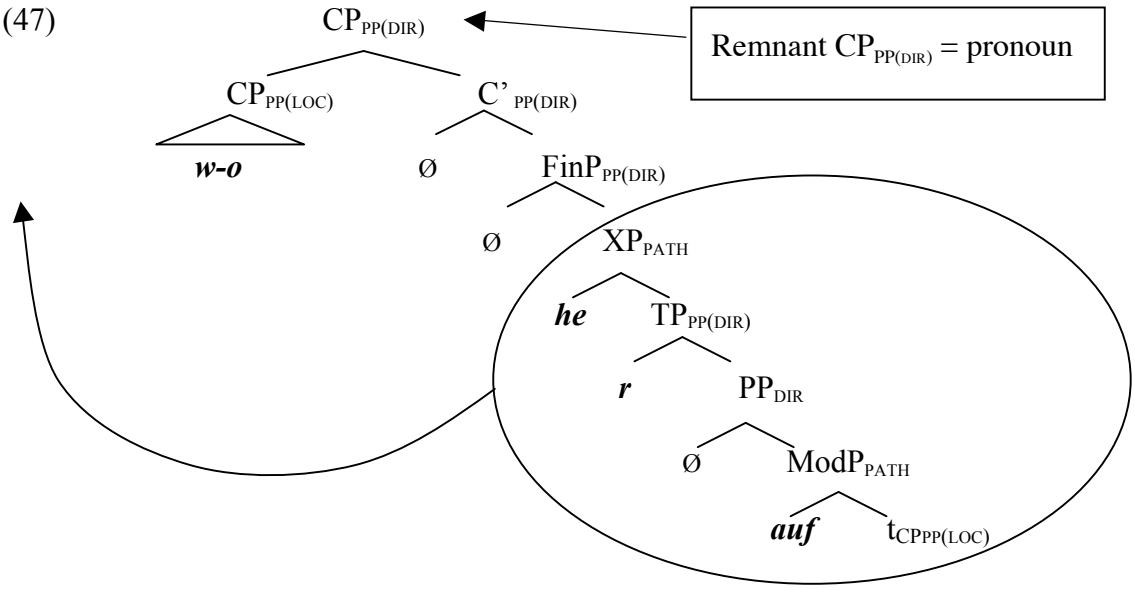
[41] When the particle is *hin*, I assume that $T_{PP(DIR)}$ is *-n* (not *-r*), and X_{PATH} *hi-*, rather than *he-*.

[42] This implies viewing X_{PATH} as parallel to D_{PATH}, as the highest licencing head associated with NP_{PATH}.

(31) A CP can move only if either its head or its specifier is pronounced.

The structure in (47) illustrates the derivation of stranding of (46a).

(47)



5.3 Colloquial German directional PPs

In CG the particles *her* and *hin* are replaced by *–r*_P, a form that does not encode the deictic distinction of *hin* versus *her* observed in FG.[43] For CG, X_{PATH} is therefore unpronounced.

(48) a. Albert sprang auf den Tisch r-auf.
Albert jumped on the$_{ACC.MASC}$ table R-on

b. Emma kam in den Laden r-ein.
Emma came in the$_{ACC.MASC}$ shop R-in

c. Albert sprang über das Sofa r- über.
Albert jumped over the$_{ACC.NEUT}$ sofa R-over

Recall from §X.2 that CG, in addition to (48) also permits the *dr*-form in directional PPs:

[43] See McIntyre (2001) for a discussion of the interpretive effects of the *hin-/her-* prefixed particles, and Noonan (2005), (2010) for such an effect of *r-* on particles.

(49) a. Albert ist auf den Tisch d-r-auf-gesprungen.
Albert is on the$_{ACC}$ table D-R-on-jumped
'Albert jumped onto the table.'

b. Albert ist über das Sofa d-r- über gesprungen.
Albert is over the$_{ACC.NEUT}$ sofa D-R-over jumped
'Albert jumped over the sofa.'

In Noonan (2010) I argue that this form results from the fact that in directional PPs DP_{PLACE} moves to the specifier of its equivalent head in the extended domain of directional Ps, that is $Spec,XP_{PATH}$.[44] This movement can be overtly seen in the case of *um* 'around', since this adposition permits two co-existing particles. The (b) and (c) examples below show that the *dr*-P and *r*-P form a particle complex that can split from the prepositional phrase or pronoun, respectively.

(50) a. Albert ist [**um** den Tisch **d-r-um r-um**] gelaufen? Note the order: *rum drum
Albert is around the table D-R-around R-around run
'Albert ran around the table.'

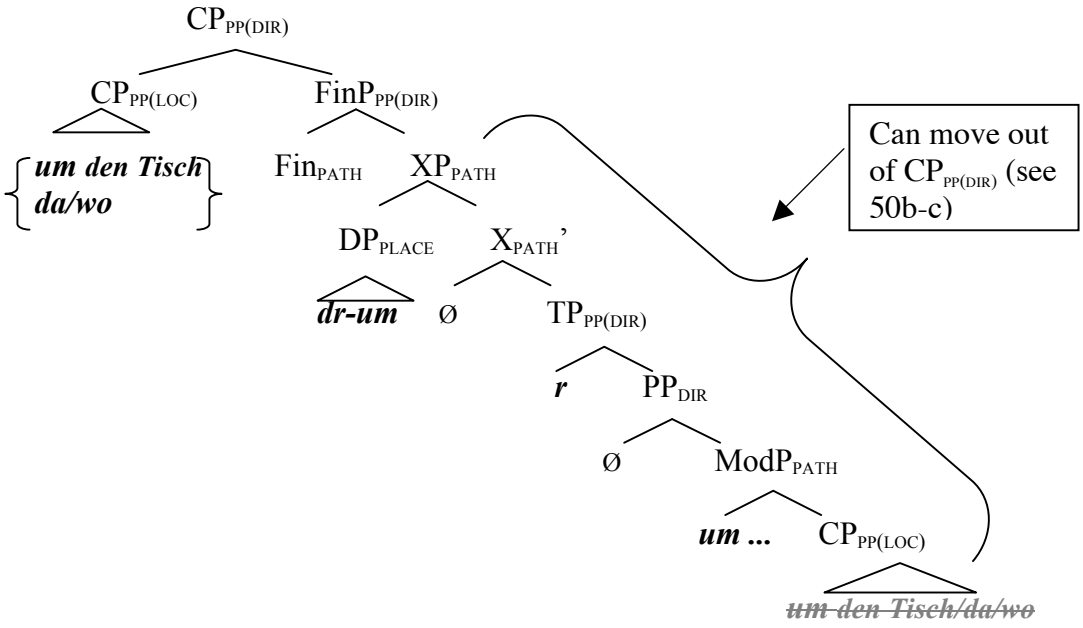
b. [**Um** den Tisch] ist Albert **d-r-um r-um** gelaufen. /*rum drum
around the table is Albert D-R-around R-around run
'Around the table, Albert ran.'

c. **Da** ist Albert **d-r-um r-um** gelaufen. /*rum drum
there is Albert D-R-around R-around run
'What did Albert run around?'

The tree in (51) illustrates the derivation of (50a-c) in Colloquial German.

[44] In Noonan (2010) the relevant projections are labelled $R_{PLACE}P$ and $R_{PATH}P$, respectively.

(51)



(52) and (53) involve the same derivation as (50), except that in (52) $T_{PP(DIR)}$ and Mod_{PATH} are unpronounced, while in (53) D_{PLACE}, $T_{PP(LOC)}$ and Mod_{PLACE} are unpronounced (no *drauf/drüber* form, respectively, is present).

(52) a. Da ist Albert d-r-auf-gesprungen.
there is Albert D-R-on-jumped
'Albert jumped onto that.'

b. Wo ist Albert d-r- über gesprungen?
What is Albert D-R-over jumped
'What did Albert jump over ?'

(53) a. Da ist Albert r-auf-gesprungen.
there is Albert R-on-jumped
'Albert jumped onto that.'

b. Wo ist Albert r-über gesprungen?
where is Albert R-over jumped
'What did Albert jump ?'

To summarize this section, I have shown that directional PPs has an extra layer of clausal structure, embedding the locational $CP_{PP(LOC)}$. The well-known directional circumpositional constructions n German (and Dutch) derive from the fact that the lower clause moves to the

specifier of the higher (directional) clause (Spec, $CP_{PP(DIR)}$). FG and CG differ in how the particular functional heads are pronounced (or unpronounced).

6 Conclusion

This chapter offered a comparison between Dutch and German R-pronouns in P-stranding constructions. Paying attention to the distinct surfacing of *r-* in German made it clear that we needed to take a decompositional approach to Dutch R-pronouns, in that the *r-* in them is not actually part of the pronoun, but rather is a head in the extended projections of the preposition that they appear to be an object of. This essentially means that (i) R-pronouns are complex (non-monomorphemic), and (ii) that they must be constructed in the syntactic component. In other words, Dutch pronouns such as *er/daar* and *waar* (and by analogy English counterparts *there* and *where*) are formed in the syntax. We thus encounter a strong argument in favour of deriving words in the syntax and against postulating a separate morphological module. The paper also developed a rich functional clausal architecture around spatial (locational and directional) PPs. This clausal structure was correlated to functional heads in clausal domains. This line of inquiry is thus situated within similar endeavours within other lexical domain (e.g. Svenonious 2004; Leu 2008a, 2015). The present work converges with previous findings concerning spatial PP in other work (see references cited throughout the text, in particular in footnote 18). It represents a continuation of the fine tuning of the structure of spatial PPs.

Finally, the analysis presented in this chapter makes clear that words can be made up of rather large phrasal constituents. The approach is thus aligned with frameworks that do not subscribe to the more traditional view that words are formed through head movement (or Lowering and Local Dislocation), i.e. words are not necessarily simple or complex heads. This view is shared by a number of other works, such as Leu (this volume), Mathieu et al. (this volume), Myler (this volume), as well as Koopman (2005), Julien (2002), and Cinque (2013), among others. It contrasts with e.g. Piggott and Travis (this volume), according to whom the morphosyntactic construction that feeds into word formation in the post-syntax is restricted to X^0s. If, as I assume, word formation is not determined by mapping X^0-structures formed in the syntactic component onto the prosodic category of a word, then other processes must be responsible for determining wordhood post-syntactically. Processes such as "squishing" and "glomming", terms invented during the *Exploring the Interfaces* 1 workshop at McGill University in 2012, can provide such mechanisms, although there is no as to yet well-understood definition of such processes (see the introduction to this volume, and Myler (this volume), for definitions and discussion). The process of *glomming*, for example, is highly sensitive to prosodic properties. It is also possible that wordhood is sensitive to frequency effects (Julien 2002). See Myler (this volume) for an excellent discussion of the issues involved.

References

Abels, Klaus (2003). *Successive Cyclicity, Anti-locality and Adposition Stranding*. Ph.D. diss. University of Connecticut

Baker, Mark. C. (2003). *Lexical Categories: Verbs, Nouns and Adjectives*. CUP.

Brandner, Ellen (2008). Patterns of Doubling in Alemanic. Ms. Universität Konstanz.

Caha, Pavel (2009). *The nanosyntax of case*. PhD dissertation, University of Tromsø, Tromsø.

Cinque, Guglielmo (2005). 'Deriving Greenberg's Universal 20 and its exceptions', *Linguistic*

Inquiry 36:315-332.
Cinque, Guglielmo (2013). 'Again on Tense, Aspect, Mood Morpheme Order and the Mirror Principle', In G. Cinque (ed) *Typological Studies. Word Order and Relative Clauses*. New York: Routledge, 68-85.
Cinque, Guglielmo and Luigi Rizzi (2008). 'The Cartography of Syntactic Structures', STiL – Studies in Linguistics Vol. 2, CISCL Working Papers.
Cinque, Guglielmo and Luigi Rizzi. (2010). *Mapping Spatial PPs. The Cartography of Syntactic Structures*, Volume 6. OUP.
Dechaine, Rose-Marie and Martina Wiltschko (2002). 'Decomposing Pronouns', *Linguistic Inquiry* 33:409-442.
Embick, David (2007). Linearization and Local Dislocation: Derivational mechanics and interactions. *Linguistic Analysis* 33: 303-336.
den Dikken, Marcel (2010). 'On the functional structure of locative and directional PPs', In G. Cinque & L. Rizzi (eds), *Mapping Spatial PPs. The Cartography of Syntactic Structures*, Volume 6. OUP, 74-126.
Grohmann, Kleanthes (2003). *Prolific Domains: On the Anti-Locality of Movement Dependencies* (Linguistik Aktuell 66). Amsterdam: John Benjamins Publishing Company.
Hujbregts, Riny and Henk C. van Riemsdijk (2001). 'Location and Locality', in Mark van Oostendorp and Elena Anagnostopoulou (eds), *Progress in Grammar*. Amsterdam:Meertens/KNAW, 1-23.
Julien, Marit (2002). *Syntactic heads and word formation*. New York and Oxford: Oxford University Press.
Kayne, Richard S. (1999). 'Prepositional complementizers as attractors', *Probus* 11:39–73.
Kayne, Richard S. (2004a). 'Prepositions as probes', In A. Belletti (ed.), *Structures and beyond: The cartography of syntactic structures, volume 3*. New York/ Oxford: OUP. 192–212. Reprinted in Kayne, R. S. (2005). *Movement and Silence*. OUP.
Kayne, Richard S. (2004b). 'Here and There', In C. Leclère, E. Laporte, M. Piot, & M. Silberztein (eds), *Syntax, Lexis and Lexicon-Grammar: Papers in Honour of Maurice Gross*, John Benjamins, Amsterdam: 253–273 (reprinted in Kayne (2005)).
Kayne, Richard S. (2005a). *Movement and Silence*. OUP, New York.
Kayne, Richard S. (2006). 'On Parameters and on Principles of Pronunciation', In H. Broekhuis, N. Corver, R. Huybregts, U. Kleinhenz, & J. Koster (eds), *Organizing Grammar. Linguistic Studies in Honor of Henk van Riemsdijk*. Berlin: Mouton de Gruyter, 289–299.
Kayne, Richard S. (2007). 'A Short Note on where vs. Place', In R. Maschi, N. Penello and P. Rizzolatti (eds.), *Miscellanea di Studi Linguistici offerti a Laura Vanelli da amici e allievi padovani*, Forum, Udine, 245-257.
Koopman, Hilda (1997). The structure of Dutch PPs. Ms. UCLA.
Koopman, Hilda (2005). 'Korean (and Japanese) Morphology from a Syntactic Perspective'. *Linguistic Inquiry* 38.4: 601-633.
Koopman, Hilda (2010). 'Prepositions, Postpositions, Circumpositions, and Particles', In G. Cinque & L. Rizzi (eds.), *Mapping Spatial PPs. The Cartography of Syntactic Structures*, Volume 6. OUP; 26-73.
Koopman, Hilda and Anna Szabolcsi (2000). *Verbal Complexes*. Cambridge, Mass: MIT Press.
Leu, Thomas (2008a). *The internal syntax of determiners*. Ph.D. dissertation NYU.
Leu, Thomas (2009). 'The internal syntax of jeder 'every'', *Linguistic Variation Yearbook* 9.

Leu, Thomas (2011). 'Feminine bleeds dative: the syntax of a syncretism pattern', Ms. Université du Québec à Montréal.
Leu, Thomas (2015a). *The Architecture of Determiners.* Oxford and New York: Oxford University Press.
Leu, Thomas (2015b). 'Generalized x-to-C in Germanic', *Studia Linguistica* 69.3 : 272-303.
Leu, Thomas (This volume). '*Ein* is *ein* and *that* is *that*: A note on anti-homophony and meta-morphology', In H. Newell, M. Noonan, G. Piggott and L. Travis (eds.), *The Structure of Words at the Interfaces*. Oxford University Press.
Mathieu, Eric, Brandon J. Fry, and Michael Barrie (This volume). 'Adjunction of complex heads inside words: A reply to Piggott and Travis (2013)', In H. Newell, M. Noonan, G. Piggott and L. Travis (eds.), *The Structure of Words at the Interfaces*. Oxford University Press.
Matushansky, Ora (2006). 'Head Movement in Linguistic Theory', *Linguistic Inquiry* 37: 69-109.
McIntyre, Andrew (2001). *German Double Particles As Preverbs*. Tübingen: Stauffenburg.
Myler, Neil (This volume). 'Exceptions to the Mirror Principle and Morphophonological "Action at a distance": The role of "word"-internal Phrasal Movement and Spell Out', In H. Newell, M. Noonan, G. Piggott and L. Travis (eds.), *The Structure of Words at the Interfaces*. Oxford University Press.
Newell, Heather, and Glyne Piggott (2014). 'Interactions at the syntax-phonology interface: Evidence from Ojibwe', *Lingua* 150:332–362.
Noonan, Máire B. (2005a). 'Spotlight on spatial PPs: evidence from German shadows', Unpublished Ms. McGill University.
Noonan, Máire B. (2005b). 'R-particles', Paper presented at *GLOW*, Geneva. Abstract in GLOW Newsletter 54.
Noonan, Máire B. (2007). 'Little big 'da'', Paper presented at *Georgetown University Round Table on Languages and Linguistics* (*GURT*) 'Little Words'.
Noonan, Máire B. (2010). '*À To Zu*', In G. Cinque & L. Rizzi (eds.), *Mapping Spatial PPs. The Cartography of Syntactic Structures*, Volume 6. OUP, 161-195.
Noonan, Máire B. (2009). 'A 'clitic' position inside PPs; revenons *là-dessus*', paper presented at the *39th Linguistic Symposium on Romance Languages*. University of Arizona, Tucson Arizona.
Perlmutter, David M. (1972). 'Evidence for shadow pronouns in French', in Paul M. Peranteau, Judith N. Levi, and Gloria C. Phares (eds), *Chicago which hunt*. Chicago Linguistic Society, 73-105.
Piggott, Glyne and Lisa deMena Travis. (This volume). 'Wordhood and word internal domains', In H. Newell, M. Noonan, G. Piggott and L. Travis (eds.) *The Structure of Words at the Interfaces*. Oxford University Press.
Postal, Paul M. (1966). 'On So-Called 'Pronouns' in English', in F.P. Dineen (ed.), *Report of the 17th Annual Roundtable Meeeting on Linguistics and Language Studies*, GUP, Washington, D.C.
Riemsdijk, Henk C. van (1978). *A Case study in Syntactic Markedness: the Binding Nature of Prepositional Phrases.* Foris Publications, Dordrecht.
Riemsdijk, Henk C. van (1990). 'Funtional Prepositions'. In H. Pinkster & I. Genee (eds.), *Unity in Diversity. Papers presented to Simon C. Dik on his 50th birthday*. Foris Publications, Dordrecht.
Rizzi, Luigi (1997). 'The Fine Structure of the Left Periphery', In L. Haegeman (ed.), *Elements*

of Grammar. Kluwer, Dordrecht, 281-337.
Rizzi, Luigi. (2004). On the Cartography of Syntactic Structures', In L. Rizzi (ed.), *The Structure of CP and IP – The Cartography of Syntactic Structures*, vol.2, New York: OUP:3-15.
Roberts, Ian (2005). *Principles and Parameters in a VSO Language: a Case Study in Welsh*. Oxford, New York: Oxford University Press.

Sportiche, Dominique (2005). 'Division of Labor between Merge and Move: Strict Locality of Selection and Apparent Reconstruction Paradoxes', In *Proceedings of the Workshop Divisions of Linguistic Labor*, The *La Bretesche* Workshop.

Starke, Michal (2009). 'Nanosyntax: A short primer to a new approach to language', Nordlyd, 36: 2-6.
Stowell, Tim (1982). 'Conditions on reanalysis', In Alec Marantz and Tim Stowell (eds.), *Papers in syntax: MIT Working Papers in Linguistics 4*. Cambridge, Massachusetts: MIT Working Papers in Linguistics, 245-269.
Svenonius, Peter (2004). 'On the Edge', in David Adger, Cécile de Cat, and George Tsoulas (eds). *Peripheries: Syntactic Edges and their Effects*. Dordrecht: Kluwer, 261-287.
Svenonius, Peter (2010). 'Spatial P in English', In G. Cinque & L. Rizzi (eds.), *Mapping Spatial PPs. The Cartography of Syntactic Structures*, Volume 6. OUP, 127-160.
Terzi, Arhonto (2006). 'Locative Prepositions and *Place*', Ms. Technological Educational Institute of Patras
Terzi, Arhonto (2010). 'Locative Prepositions and *Place*', In G. Cinque & L. Rizzi (eds.), *Mapping Spatial PPs. The Cartography of Syntactic Structures*, Volume 6. OUP, 196-224.
Wiltschko, Martina (1998). 'On the Syntax and Semantics of (Relative) Pronouns and Determiners', *Journal of Comparative Germanic Linguistics* 2: 143–181.
Wunderlich, Dieter (1991). 'How do prepositional phrases fit into compositional syntax and semantics?', *Linguistics* 29: 591-621.
Wurmbrand, Susi (2001). *Infinitives: Restructuring and Clause Structure*. Mouton de Gruyter, Berlin.
Zwarts, Jost (1997). 'Complex prepositions and P-Stranding in Dutch', *Linguistics* 35: 1091-1112.