Dutch, PPs, R-pronouns

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1 Introduction

The term R-pronoun (van Riemsdijk, 1978) refers to a set of nominal elements that can strand prepositions in Dutch (and German). It is special because Dutch is a normally non-preposition stranding language. R-pronouns morphologically consist of a combination of a preposition and locative pronoun. In the example (1) *mee* 'with' is the preposition and *er* 'there' is the locative pronoun.

(1) Ik klim er-op.
I climb there-on
'I am climbing on it.'

This paper focuses on a single R-pronoun in a specific type of free relative construction. The R-pronoun I focus on is the relative pronoun *waarmee* 'with what', which is interesting for two reasons. First, just like for all R-pronouns, the wh-element is the locative, but there is no meaning component related to location in 'with what'. Second, the preposition *met* 'with' changes into *mee* 'with when it is combined with an R-pronoun.

The construction I focus on is a mismatching free relative. This is a free relative construction in which the two predicates (the one in the main clause and the one in the embedded clause) combine with two different cases (i.e. the case requirements do not match). I illustrate this in (2). The predicate in the embedded clause, *schildert* 'paint', combines with an instrumental PP. The predicate in the main clause clause, *gekocht* 'bought' combines with an accusative DP. The R-pronoun *waarmee* 'with what' is used here. [1]

(2) Ik heb gekocht waar jij mee schildert.
I have bought where you with paint

[1] In this example *mee* 'with' is stranded and *waar* 'where' is moved to the left edge of the embedded clause. It is also possible for *waar* 'where' to bring *mee* 'with' along, as in (i) but it is regarded as slightly less natural.

(i) Ik heb gekocht waar jij mee schildert.
I have bought where you with paint
'I bought what you are painting with.'

'I bought what you are painting with.'

If one were to switch around the predicates between the clauses, the R-pronoun does not appear anymore. In (3), *schilder* 'paint' combines with an instrumental PP in the main clause and *gekocht* 'bought' combines with an accusative DP in the embedded clause. The use of an R-pronoun is ungrammatical, as indicated by the ungrammaticality of (3a). Instead, a combination of the regular instrumental preposition *met* 'with' and the regular wh-pronoun *was* 'what' in used.

(3) a. *Ik schilder waarmee jij hebt gekocht.
I paint where with you have bought
'I paint with what you bought.'
b. Ik schilder met wat jij hebt gekocht.
I paint with what you have bought
'I paint with what you bought.'

The use of *met wat* 'with what' is ungrammatical in the context in which *waarmee* 'with what' appeared in (2). This is illustrated in (4).

(4) *Ik heb gekocht met wat jij schildert.
I have bought with what you paint
'I bought what you are painting with.'

In this paper I show that distribution of *waarmee* 'with what' and *met wat* 'with what' in these free relative constructions gives us a unique insight into the internal structure of R-pronouns. In what follows I show that R-pronouns and regular preposition compete to spell out the same syntactic features. If all features form a constituent, the R-pronoun surfaces. If the constituent is interrupted, the preposition-pronoun combination shows up. This straightforwardly follows in a system in which spellout targets phrasal constituents: Nanosyntax (Starke, 2009).

This paper is structured as follows. First, I show that it really is constituency. Then I decompose R-pronouns, prepositions and regular pronouns. Last, I show in derivations that constituency connects to the choice for R-pronoun or preposition and regular pronoun. Unmarked examples are constructed and have been verified by native speakers.

2 The distribution between *waarmee* and *met wat*

In the introduction I discussed the distribution between *waarmee* 'with what' and *met wat* 'with what' in free relatives with predicates that combine with different cases. Table 2 repeats the generalization. When the main clause predicate combines with an accusative and the embedded clause predicate with an instrumental, *waarmee* is grammatical and *met wat* is ungrammatical. When the main clause predicate combines with an instrumental and the embedded clause predicate with an accusative, *waarmee* is ungrammatical and *met wat* is used.

In this section I first show that R-pronouns are the default complement of a preposition. Next, I illustrate that a necessary requirement for an R-pronoun is that is forms

Table 1: Distribution between *waarmee* and *met wat*

	waarmee	*met wat*
m:ACC, e:INS	✓	*
m:INS, e:ACC	*	✓

a proper constituent.

2.1 R-pronouns as default

The goal of this section is to show that *waarmee* 'with what' is the default as instrumental relative pronoun. This generalization is not new, it has already been made van Riemsdijk (1978) and Koopman (2003). In order to show that *waarmee* 'with what' is the default, I discuss the distribution of R-pronouns and regular pronouns in more general. I start with the personal pronouns and then return to the wh-pronouns.

Dutch has the personal pronouns *haar* 'her', *hem* 'him' and *het* 'it' that can be used as animate and inanimate objects of verbs, as illustrated in (5).

(5) Objects of verbs
   a. Ik zie haar/hem.
      I see her/him
      'I see her/him.'
   b. Ik zie 't.
      I see it
      'I see it.'

The example in (6a) shows that for animate objects the same pronouns (*haar* 'her' and *hem* 'him') appear as objects of prepositions. However, the inanimate personal pronoun *het* 'it' cannot be used as an object of a preposition, shown in (6b). Instead, an R-pronoun appears. This is illustrated in (6c). (6d) shows that the R-pronoun obligatorily moves to the left of the pronoun.

(6) Objects of prepositions
   a. Ik schilder samen met haar/hem.
      I paint together with her/him
      'I am painting together with her/him.'
   b. *Ik schilder met 't.
      I paint with it
      'I am painting with it.'
   c. Ik schilder er-mee.
      I paint there-with
      'I am painting with it.'
   d. *Ik schilder mee er.
      I paint with-there
      'I am painting with it.'

Met is not the only preposition with which this happens. *Op* 'on' and *in* 'in' do not combine with the inanimate personal pronoun *'t*, but the R-pronoun is used obligatorily.

(7) a. Ik zit er-op.
I sit it-on
'I am sitting on it.
b. *Ik zit op 't.
I sit on it
'I am sitting on it.

(8) a. Hij zwemt er-in.
He swims it-in
'He is swimming in it.'
b. *Hij zwemt in 't.
He swims in it
'He is swimming in it.'

The situation of the inanimate wh-pronouns resembles the inanimate personal pronouns. *Wat* 'what' can function as an object of a verb (see (9a)), but not as an object of a preposition (9b). In that case, the R-pronoun *waarmee* 'with what' is appears, as shown in (9c). [2]

(9) a. Wat zie jij?
what see you
'What do you see?'
b. *Met wat schilder jij?
With what paint you
'What are you painting with?'
c. Waar schilder jij mee?
Where paint you with
'What are you painting with?'

Waarmee 'with what' and not *met wat* 'with what' does not only appear in wh-questions, but also in other contexts. (10) gives an example of a headed relative, and (11) shows a free relative in which both predicates combine with an instrumental PP. The use of *met wat* 'with what' is ungrammatical in both contexts, and *waarmee* 'with what' is used.

(10) a. Ik schilder met de kwast waar jij ook mee schildert.
I paint with the brush where you also with paint
'I am painting with the brush that you are painting with too.'
b. *Ik schilder met de kwast met wat jij ook schildert.
I paint with the brush with what you also paint
'I am painting with the brush that you are painting with too.'

[2] The sentence in (9b) is unacceptable with neutral intonation. It becomes is only acceptable if *wat* 'what' is stressed, for example in a context in which the speaker questions the choice for the object hearer is painting with.

(11) a. Ik schilder waar jij ook mee schildert.
I paint where you also with paint
'I am painting with what you are painting with too.'
b. *Ik schilder met wat jij ook schildert.
I paint with what you also paint
'I am painting with what you are painting with too.'

Table (11) summarizes the distribution of inanimates in Dutch. Inanimate (personal and wh-)pronouns in Dutch can function as objects verbs, but they are ungrammatical as objects of prepositions. In these contexts, R-pronouns appear.

Table 2: Inanimates in Dutch

	pers. pronouns	wh-pronouns
objects of verbs	ət	wat
objects of prepositions	er	waar

The next section discusses the role of constituency in R-pronouns.

2.2 *Waarmee* is a constituent, *met wat* is not

Let me now return to the mismatching free relatives. I repeat the relevant grammatical examples in (12).

(12) a. Ik heb gekocht waar jij mee schildert.
I have bought where you with paint
'I bought what you are painting with.'
b. Ik schilder met wat jij hebt gekocht.
I paint with what you have bought
'I paint with what you bought.'

In this section I showed that R-pronouns are expected in combinations with prepositions. This means that the use of *waarmee* 'with what' (12a) is not surprising. Something that is surprising is the use of *met wat* 'with what' in (12b), and this is the example something more needs to be said about. In the remainder of this section I argue that this 'something more' is that the instrumental PP in (12b) does not form a proper constituent, i.e. it is not a constituent to the exclusion of any other elements. The other side of the coin is that constructions with R-pronouns contain a PP that does form a proper constituent.

Below I repeat the examples with instrumental PPs I discuss so far in this paper.

(13) a. Ik schilder er-mee.
I paint there-with
'I am painting with it.'
b. Waar schilder jij mee?
Where paint you with
'What are you painting with?'

c. Ik schilder met de kwast [waar jij ook mee schildert].
I paint with the brush where you also with paint
'I am painting with the brush that you are painting with too.'
d. Ik schilder [waar jij ook mee schildert].
I paint where you also with paint
'I am painting with what you are painting with too.'

In each of these examples the instrumental PP forms a constituent at a certain point in the derivation. In (13a), the PP forms a proper constituent in the surface order, as shown in (14a). In (13b), the PP forms a proper constituent before wh- and V2-movement, shown in (14b). The structure in (14c) represents a stage in the derivation of the embedded clauses in (13c) and (13d). [3] Again, in the stage, which comes before relative movement of the pronoun to the left periphery of the relative clause, the PP forms a proper constituent.

(14) a. [[ik] [[schilder] [er-mee]]]
b. [[jij] [[schilder] [[waar] [mee]]]]
c. [[jij] [[ook] [[schilder] [[waar] [mee]]]]]

There is additional evidence for the fact that *waarmee* 'with what' forms a constituent in the constructions above. In the example in (13b)-(13d) only *waar* 'where' was fronted, but (15) shows that also the phrase containing *mee* 'with' can be moved. As wh-movement can only target constituents, it follows that *waar* 'where' and *mee* 'with' have to form a constituent.

(15) a. Waarmee schilder jij?
where with paint you
'What are you painting with?'
b. Ik schilder [waarmee jij ook schildert].
I paint where with you also paint
'I am painting with what you are painting with too.'
c. Ik schilder met de kwast [waarmee jij ook schildert].
I paint with the brush where with you also paint
'I am painting with the brush that you are painting with too.'

The mismatching free relative in (12b) is not the only construction in which the string *met wat* 'with what' appears. I give examples of two more occurrences in (16). In (16b), *wat* 'what' is the *wat* 'what' in the so-called *wat voor* 'what for'-construction (cf. Corver, 1991). In (16b), *wat* appears as a quantifier, and it means 'some'. In both construction *wat* 'what' takes a complement and *met wat* 'with what' do not form a proper constituent. The brackets within the examples indicate the constituency.

(16) a. [Met [wat [voor [potloden]]] teken jij?
with what for pencils draw you
'What kind of pencils do you with?'

[3] I assume that the antecedent in a free relative is a phonologically empty element, in line with cf. Bresnan and Grimshaw, 1978; Groos and van Riemsdijk, 1981; Himmelreich, 2017. Under that view, (13c) and (13d) are identical, except for that in (13d) modifies phonologically empty element.

b. Ik wil graag thee [met [wat [suiker]]].
I want please tea with some sugar
'I would like to have tea with some sugar.'

Let me now show how this applies to the examples with the mismatching free relatives. The two predicates I used in the free relatives are *kopen* 'to buy' and *schilderen* 'to paint'. *Kopen* 'to buy' takes an accusative DP as its object, illustrated in (17a). *Schilderen* 'to paint' can take an instrumental PP as its object., shown in (17b).[4]

(17) a. Ik koop het schilderij.
I buy the painting
'I am buying the painting.'
b. Ik schilder met een kwast.
I paint with a brush
'I am painting with a brush.'

I repeat the mismatching free relative in which *waarmee* 'met wat' appears in (18). The predicate *schildert* 'paints' combines in the embedded clause with the instrumental PP. The PP forms a proper constituent within the embedded clause, and the PP can be realized as the R-pronoun *waarmee* 'with what'.[5]

(18) Ik heb gekocht [waar jij mee schildert].
I have bought where you with paint
'I bought what you are painting with.'

Next, we arrive at the mismatching free relative in which *waarmee* 'with what' cannot be used, but *met wat* 'with what' appears. The embedded clause predicate *gekocht* 'bought' combines with an accusative DP. The accusative object of a verb is always *wat* 'what', as I showed in (9a). The instrumental PP only comes into the picture in the main clause, when *schilder* 'paint' combines with an instrumental PP. At no point in the derivation does the PP form a proper constituent, and *waarmee* 'with what' does not surface.

(19) Ik schilder met [wat jij hebt gekocht].
I paint with what you have bought
'I paint with what you bought.'

(20) summarizes what I showed in this section. *Met wat* 'with what' can never surface when *met* 'with' and *wat* 'what' form a proper constituent. It always becomes *waarmee* 'with what'. This is schematically shown in (20a). There are other contexts in which *met wat* 'with what' appears. This can be either when *wat* 'what' takes a complement, or when *wat* is part of the a clause that *met* 'with' is not a part of.This last option is schematically showed in (20c), and it represents the mismatching free relative in (19).

[4]Of course, *schilderen* also optionally takes an accusative DP, but I am focussing on the instrumental here.

[5]I assume that the embedded clause modifies a phonologically empty noun here which is the DP argument of *gekocht* 'bought'.

(20) a. *[[met] [wat]] ⟶ [waarmee]
b. [met [wat [X]]]
c. [met [[wat] [X]]]

This section showed that being a proper constituent is a necessary requirement for *waarmee* 'with what' to surface. The next section elaborates on how proper constituency and spellout relate to each other.

3 *Waarmee* as suppletion

Met 'with' is a preposition that combines with full DPs and animate pronouns. *Wat* 'what' is a wh-element that appears as subject or object. There is no principled reason why *met wat* 'with what' should be ruled out. Previous work on R-pronoun has not given many insights, other than van Riemsdijk (1978) postulating a filter that prohibits the existence of constituents consisting of prepositions and wh-elements or Koopman (2003) who makes reference to a different paradigm.

In this section I start with showing a similar instance in which proper constituency and spellout go hand in hand. Then I show how these facts can be straightforwardly follow from the spellout algorithm in Nanosyntax. The section ends with showing how this logic can be applied to *waarmee* 'with what' and *met wat* 'with what'.

In what follows I show another instance in which proper constituency influences spellout, suppletive negative forms in Korean as discussed in Chung (2007). The point is that suppletion only goes through when the relevant features form a proper constituent, and not when an additional feature intervenes.

Sentences in Korean can be negated by the two negative prefixes *ani* or *mos*, as shown in (21).

(21) a. ca -n -ta
sleep -PRES -DECL
'is sleeping'
b. mos/an(i) ca -n -ta
NEG sleep -PRES -DECL
'cannot sleep / is not sleeping' (Chung, 2007)

The verb *al-* 'know' does not combine with any of the negative markers, but it it uses the suppletive stem *molu.NEG*. This is illustrated in (22).

(22) a. al -n -ta
know -PRES -DECL
'know(s)'
b. *mos/*an(i) al -n -ta
NEG know -PRES -decl
c. molu -n -ta
NEG.know -PRES -DECL
'do(es) not / cannot know' (Chung, 2007)

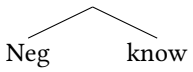
When *al-* 'know' is causativized before it is negated, the regular stem is used again, shown in (23b). (23c) illustrates that the suppletive stem *molu-* is no longer grammatical.

(23) a. al -li-
know -CAUS
'let know, inform'
b. ani/ mos al -li -ess -ta
NEG NEG know -CAUS -PAST -DECL
'did not /could not inform'
c. *molu -li -ess -ta
NEG.know -CAUS -PAST -DECL

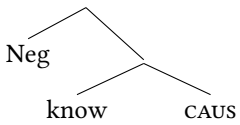
(Chung, 2007)

Chung (2007) points out that it cannot be phonological adjacency of the negation and *al-* 'know' that causes the suppletion in (22c). The reason for that is that in (23b) *al-* also follows the negation, but there is no suppletion. Chung (2007) suggests crucial difference has to do with in proper constituency. The structure of (22c) is given in (24a): Neg and *al-* 'know' form a proper constituent. (24b) represents the structure of (23b). Neg and *al-* 'know' no longer form a proper constituent, because CAUS is also part of the structure as the sister of *al-* 'know'.

(24) a.

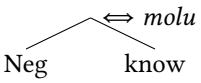


b.



Caha (2009) uses this pattern to argue in favor of a model with phrasal spellout rather than inserting phonology into terminal nodes, specifically Nanosyntax (Starke, 2009). The idea is that the lexicon contains syntactic structures that are linked to a particular piece of phonology. If Korean has a lexical entry as in (25), this can be inserted into the syntactic tree in (24a).

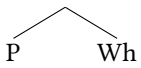
(25)



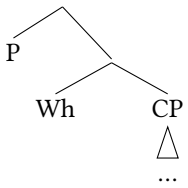
Spellout targets only constituent (Starke, 2009). This ensures (25) is not inserted into the structure in (24b), as CAUS is contained in the syntactic structure but not in the structure in the lexicon in (25).

The same logic can be applied to *waarmee* 'with what' and *met wat* 'with what'. The preposition and wh-element together form a proper constituent, as in (26a), or the embedded CP of the relative clause is a sister of the wh-element, as in (26b).

(26) a.

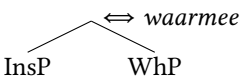


b.



Assume we have a lexical entry for *waarmee* 'met wat' that look as (27). This entry can only be inserted into (26a), because the lexical structure matches the syntactic structure. It cannot be into (26b), because the lexical structure does not contain the CP.

(27)



What I have shown in this section is how proper constituency relates to a change in phonology. However, this analysis missed numerous phonological properties of *waarmee* 'with what' and *met wat* 'with what', e.g. that they both contain the morpheme *wa*. Under the suppletion analysis above, one can the phonological form of *waarmee* could just as well be completely phonologically unrelated. The point of presenting the problem like this is to illustrate that the distribution between *waarmee* 'with what' and *met wat* 'with what' can be captured as a matter of spellout.

In the next section I decompose *waarmee* 'with what' and *met wat* 'with what'. I show that both spell out the same set of features, but the distribution is different.

4 A finer decomposition

In this section I investigate the internal structure of *waarmee* 'with what' and *met wat* 'with what' to capture the phonological similarities between the two forms. First, I identify *w-* and *-a-* as morphemes that appear in both expressions. Putting these two aside, I concentrate on *ermee* 'with it' and *met 't* 'with it'. I decompose these two expressions further, and end up arguing for a picture as shown in Table 4. The elements *w-* and *-a-* express the same syntactic structure in both expressions. The elements *met* and *'t* together also express the same features as *mee* and *er* together, but the distribution differs. *Met* expresses less structure than *mee* and *'t* expresses more structure than *er*. It becomes clear that the *er* in fact corresponds to the locative *r* in Dutch.

Finally, I put everything together and show how *waarmee* 'with what' is inserted if all features form a constituent, and *met wat* 'with what' if this is not the case.

Table 3: *met wat* and *waarmee*

w	*a*	*met*	*(ə)t*
w	*a*	*mee*	*(ə)r*

4.1 Taking everything apart

In this section I decompose *waarmee* 'with what' and *met wat* 'with what'. The idea is that both expessions realize the same features, and *waarmee* 'with what' takes precedence when all features form a constituent. The morphemes I distinguish in *waarmee* 'with what' are *w-*, *-aa-*, *-r* and *-mee*. Within *met wat* 'with what' I distinguish *met*, *w-*, *-a-* and *-t*. (28) shows this as well.

(28) a. w -aa -r -mee
b. met w -a -t

Let me start with the morphemes *w-* and *-a-* that appear in both expressions. Exactly because they appear in both expression, I do not pay much attention to them. For *w-* I follow Hachem (2015) in that *w-* realizes a WP.

(29) WP $\Longleftrightarrow$ *w*

W

The morpheme *-a-* expresses deixis. Dutch distinguishes between proximal by using *-ie-/-i-* and distal by using *-aa-/-a-*, illustrated in (30). I assume that lengthening or shortening of the vowel is a result of the final *r*.

(30) a. h-ie-r
here
b. d-aa-r
there
c. d-i-t
this
d. d-a-t
that

In combination with wh-elements, the distal marker *-a-* is used. For the purpose of this paper I simply let *-a-* correspond to DEIXP.

(31) deixP $\Longleftrightarrow$ *a*

deix

I put *w-* and *-a-* aside for now, assuming they spell out the same syntactic structure

in *waarmee* ‘with what’ and *met wat* ‘with what’. This leaves *er-mee* ‘with it’ and *met ’t* ‘with it’.[6]

(32) a. (e)r -mee
there with
b. met ’t
with it

I repeat the examples from Section 2.1 below that show that *ermee* ‘with it’ is used when it forms a proper constituent and *met ’t* ‘with it’ is ungrammatical.

(33) a. Ik schilder er-mee.
I paint there-with
‘I am painting with it.’
b. *Ik schilder met ’t.
I paint with it
‘I am painting with it.’

In other words, both expessions realize the same features, and *ermee* ‘with it’ takes precedence when all features form a constituent.

Let me continue with specifying the lexical entries for *met ’t* ‘with it’. *’t* ‘it’ can be used as subject, direct object and indirect object, as shown in (34).

(34) a. ’t Staat in de hal.
3SG.N.NOM stands in the hallway
‘It is standing in the hallway.’
b. Ik zie ’t.
I see 3SG.N.ACC
‘I see it.’
c. Ik heb ’t een klap gegeven.
I have 3SG.N.DAT a hit given
‘I hit it.’

Pronouns in other genders alternate between nominative (non-oblique) and accusative/dative (oblique) in these contexts, illustrated in (35).

(35) a. Hij staat in de hal.
3SG.M.NOM stands in the hallway
‘He is standing in the hallway.’

[6] *’rmee* ‘with it’ is often precdeded by an /ɛ/, which I assume to be for phonological reasons. The vowel can be dropped under the right phonological circumstances.

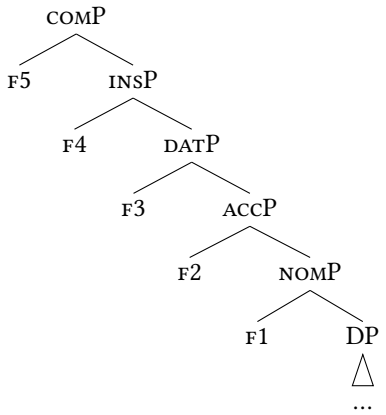
(i) Ik heb ’r niks mee te maken.
I have there nothing with to do
‘I have nothing to do with it.’

b. Ik zie hem.
I see 3SG.M.ACC
'I see it.'

c. Ik heb hem een klap gegeven.
I have 3SG.M.ACC a hit given
'I hit him.'

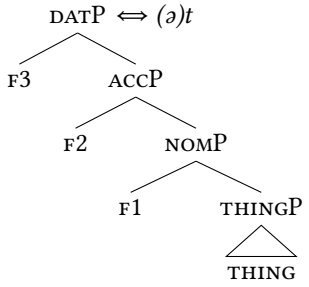
I assume that the inanimate personal pronoun minimally contains the ontological category THING (Kayne, 2005). I leave possible number and gender features out because they do not play a role in this paper. For case, I follow Caha (2009) that case features case features are organized the containment relation in (36). The higher, more complex cases contain the smaller, less complex cases.

(36)



The morpheme *'t* can act as nominative, accusative and dative, as I showed in (34). Taking this all together, *'t* should have the lexical entry given in (37).

(37)



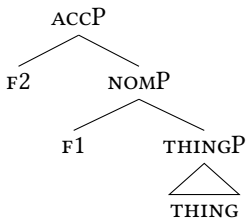
This lexical entry can lexicalize the DATP, but also the ACCP and NOMP. This is due to the Superset Princple.

(38) The Superset Principle Starke (2009):
A lexically stored tree matches a syntactic node iff the lexically stored tree contains the syntactic node.

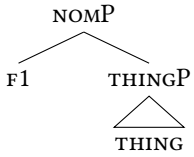
In other words, a lexically stored structure does not have to be identical to the syntac-

tic structure. It is enough if the syntactic structure is contained in the lexically stored tree. This has a as consequence that the lexical entry in (37) can also be inserted in (39a) and (39b).

(39) a.



b.

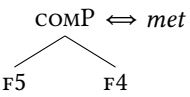


Continuing with *met* 'with', which I have shown in this paper can be used to express instrumental. It can also be used as comitative, as shown in (40).

(40) Ik dans met hem.
I dance with him
'I am dancing with him.'

Case features are in a containment relation and instrumental contains all case features down to F1. Some of these features are expressed by the preposition, and other by the DP they combine with. As pronouns in Dutch can realize up to F3, the preposition starts from F4.

(41)



In sum, the syntactic structure that *met wat* 'with what' realizes is the one in (41).

ex. [[[[THING] F1] F2] F3 F4]

Let us now turn to *ermee* 'with it', which lexicalizes the same structure as *met 't* 'with it', but with a different distribution.

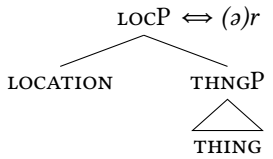
Er 'there' can be used as a locative.

(42) Ik ben er al geweest.
I am there already been
'I have already been there.'

I follow Baunaz et al., 2018 in assuming that the ontological category LOCATION contains THING.[7]

[7] Baunaz et al. (2018) place in addition PERSON between THING and LOCATION, which I left out here.

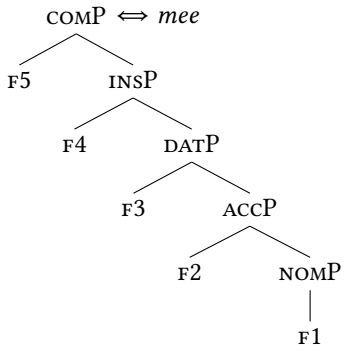
(43)



Via the superset principle, *er* can be used to realize the feature THING as well, as it is contained in LOCP.

So far, *er* 'there' only realizes the feature THING from the structure in (41). This leaves *f1* to F4 to be realized by *-mee*. I give the lexical tree in (44).

(44)



Note that there are two differences between the lexical entry in (41) and (44). First, the lexical entry for *mee* 'with' in (44), in addition to the one for *met* 'with' in (41), contains the features F1, F2 and F3. Second, the lexical entry in (41) has a binary bottom, and the lexical entry in (44) has a unary bottom. Nanosyntax distinguishes prefixes and suffixes by distinguishing these types of lexical entries. This is the crucial differences needed for the Dutch instrumental. *Met* 'with' is a prefix (preposition), so it has a binary bottom, and *-mee* 'with' is a suffix, so it needs a unary bottom. In the next section I show how this works in a derivation. [8] [9] [10]

[8]For completeness, *mee* 'with' has to be blocked from combining with full DPs and animate pronouns (reference). For now I assume that these pronouns spell out an additional feature σ that is not realized by *mee* 'with' but only by *met* 'with'. Full DPs combine in addition with a zero marker for dative case. This way *mee* 'with' does not compete with *met* 'anymore'. I left this features out in this paper, at is does not contribute to the main point.

[9]Giving *met* 'with' and *mee* 'with' two distinct lexical entries has as a consquence that the phonological overlap between them seems like a coincidence. I leave it for future research to capture this observation.

[10]I do not address the ordering difference of the wh-element and the adposition. A topic related to (but not relevant for) this paper is the different positioning of identical adpositions in Dutch. In (i), *in* changes meaning dependent on whether it procedes or follows the DP, it is respectively locational or directional.

(i) a. Ik klim in de boom.
I climb in the tree
'I am climbing in the tree.'
b. Ik klim de boom in.
I climb the tree in
'I am climbing into the tree.'

The different positioning of the adpositions in R-pronouns is driven by spellout and is, therefore, meaning-

Table (44) gives an overview of the distribution of the features in *met wat* 'with what' and *waarmee* 'with what'. In both cases, *w-* and *-a-* are the realization of the same morpheme. The difference between the two expressions lies in the distribution of the case features. *Mee* 'with' realizes all of them, and *met* 'with' only the top two. The residues are realized by respectively *er* 'there' and *'t* 'it'.

Table 4: *met wat* and *waarmee*

WH	DEIX	F4	F3	F2	F1	THING
w	*a*	*met*		*(ə)t*		
w	*a*		*mee*			*(ə)r*

In the next section I put all features back together in a derivation and I show how *waarmee* 'with what' surfaces when all features form a constituent. *Met wat* 'with what' appears when the functional sequence is disrubted.

4.2 Putting it back together

Before I show that *waarmee* 'with what' is used when all features form a proper constituent, I need to make some assumptions about the spellout process in Nanosyntax explicit.

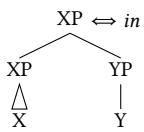
First of all, when two lexical entries are both candicates for spellout, the most specific is inserted, following the Elsewhere Condition:

(45) The Elsewhere Condition (Kiparsky 1973, formulated as in **caha2020**):
When two entries can spell out a given node, the more specific entry wins. Under the Superset Principle governed insertion, the more specific entry is the one which has fewer unused features

Second, spellout happens in a cyclic derivation, following a spellout algorithm (Starke, 2018). After each instance of merge, spellout takes place. If no spellout exist for the phrase created by the newly added feature, evacuations movements specified in the spellout algorithm take place. The algorithm is given in (46).

(46) Merge F and
a. Spell out FP

less. However, the topic might be related. In almost all cases the preposition does not change form when it combines with an R-pronoun, e.g. *in*. If this proposal is on the right track, such elements can be used as either a prefix and as a suffix. A lexical entry as in (ii) would be a candidate for such an element.

(ii)


I leave it to future research to determine whether this is a feasible solution.

b. If (a) fails, attempt movement of the spec of the complement of F, and retry (a)
c. If (b) fails, move the complement of F, and retry (a)

When a new match is found, it overrides previous spellouts.

(47) Cyclic Override (Starke, 2018):
Lexicalisation at a node XP overrides any previous match at a phrase contained in XP.

If the spellout procedure in (46) fails, backtracking takes place.

(48) Backtracking (Starke, 2018): When spellout fails, go back to the previous cycle, and try the next option for that cycle.

If backtracking also does not help, a specifier is constructed.

(49) Spec Formation (Starke, 2018):
If Merge F has failed to spell out (even after backtracking), try to spawn a new derivation providing the feature F and merge that with the current derivation, projecting the feature F at the top node.

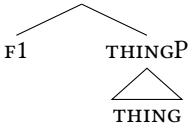
With this theoretical background in the back of our minds, we can turn to the derivation. I first show how *ermee* 'with it' is constructed. I leave out *w-* and *-a-*, because it unnessisarily complicates the story. [11]

We start with THING. The two candidates here are (37) and (43). Following the Elsewhere Condition, (43) wins the competition because it contains less unused material.

(50) THINGP ⟹ *(ə)r*

In the next step, F1 is merged. (43) is no longer a candidate because it does not contain F1. (37) still is a candidate, because it contains all features in (51). The spellout is overridden and the structure is realized as *'t*.

(51) NOMP ⟹ *(ə)t*

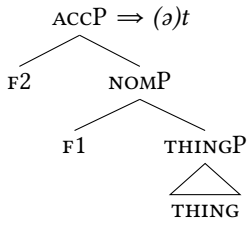


Then F2 is merged. This structure can still be realizd by *'t*.

[11] I assume the actual functional sequence to be (i).

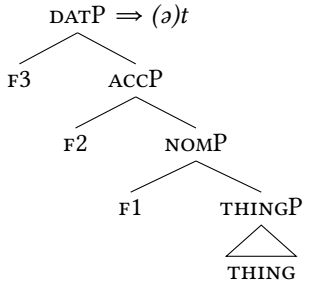
(i) [[[[[[THING] DEIX] W] F1] F2] F3 F4]

(52)



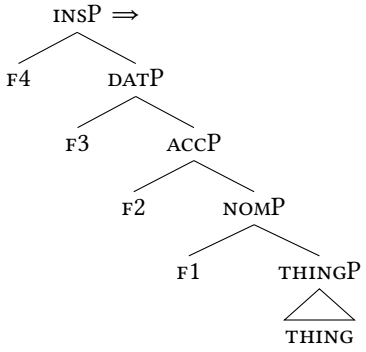
In the next step F3 is merged, the structure is still spelled out as *'t*.

(53)



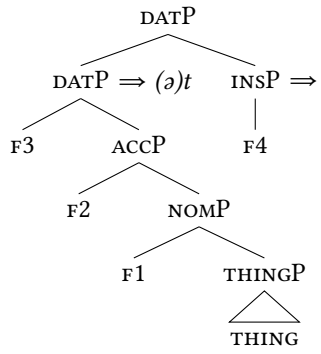
Then F4 is merged, as shown in (54a). (37) can no longer spell the structure out, because it does not contain F4. Moreover, there is no candidate to spell out the structure as it is, so evacuation movement takes place. According to the spellout algorithm, the first evacuation movement to be tried is spec-to-spec movement. However, there is no specfier in this structure, so this does not apply. The second movement option is complement movement. The complement of F4 moves to the specifier of INSP, resulting in the structure in (54b). The lexicon does not contain an entry with INSP which contains only F4.[12]

(54) a.

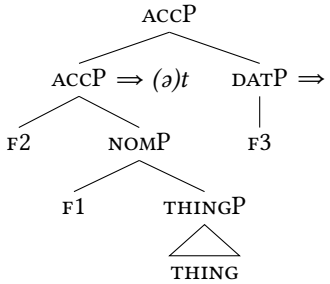


[12] *Met* 'with' is not a candidate, because the syntactic structure has a unary bottom and the lexical structure has a binary bottom.

b.



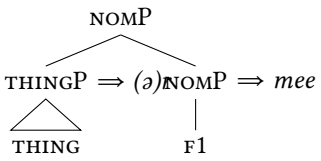
As no match can be found, backtracking is triggered. The derivation goes back to the previous cycle, and the next option for that cycle is tried. In this case, that is after the merge of F3. There is no specifier, so there is no spec-to-spec movement. Complement movement is tried, showed in (54). However, there is no match in the lexicon for an DATP that contains only F3.



Backtracking proceeds further, into the cycle in which F2 was merged. Again there is no specifier to be moved, and complement movement does not give any results.

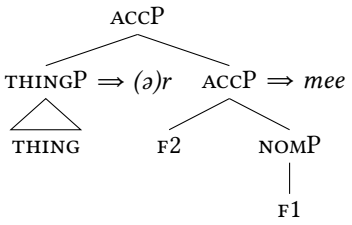
The derivation ends up backtracking into the cycle in which F1 was merged. At this stage, THING was realized as *'r*. Here there is again no specifier, but complement movement provides a structure that is fit for a lexical entry, namely: (44).

(55)



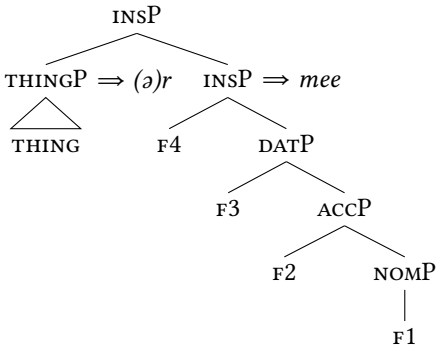
The feature F2 is merged again. The structure cannot be spelled out as a whole, so spec-to-spec movement is tried. In that configuation *f2* can be realized together with F1 as *mee*.

(56)



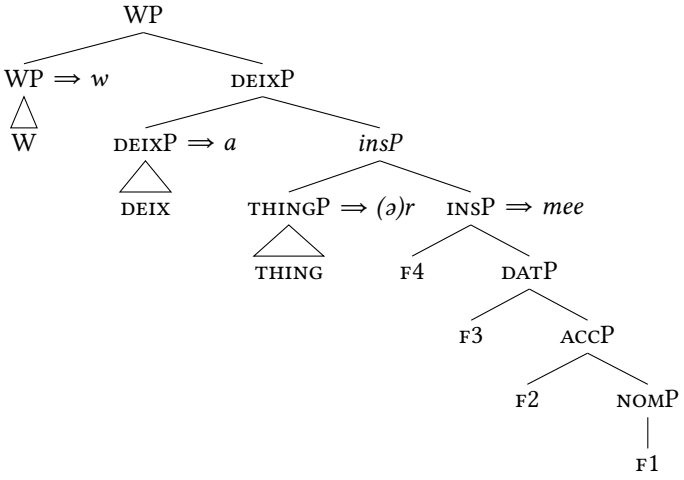
The same happens for F3 and F4, and the complete structure is realizes as shown in (57).

(57)



Skipping over the irrelevant details of how *w-* and *-a-* end up in their positions, the structure for *waarmee* 'with what' look as in (58). [13] [14]

(58)



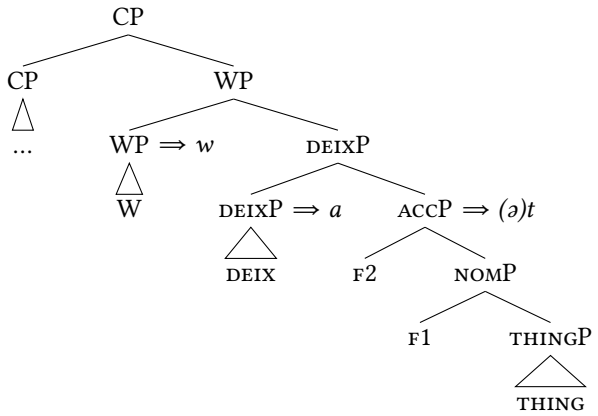
[13] I assume that WP and DEIXP are both complex specifiers that are created after THING is spelled out in (50). In after each merge after that, backtracking always takes place, the complex specifier is detached from the structure and the case features are spelled out together with or as a suffix on THING.

[14] A consequence of analyzing *mee* 'with' as a suffix is that *r* and *-mee* always form a constituent to the exclusion of *w-* and *-a-*. This is problematic because *waar* 'where' can move leaving *mee* 'with' behind. The only way to resolve the situation would be to assume that *mee* 'with' is evacuated and *waar* 'where' remnant moves after that.

So far I showed how *waarmee* 'with what' is derived if all syntactic features form a constituent. Next I address how this is blocked when the features do not form a proper constituent, and how the spellout is then *met wat* 'with what'.

I start in a situation in which *wat* 'what' is part of a syntactic structure with the rest of a relative clause as a sister.

(59)



If a dative feature is merged here, it will not be able to be spelled out. The only option to realize the features is to form to spawn a new derivation, to create a complex specifier. And that is exactly what forming the preposition *met* 'with' is.

5 Conclusion and discussion

In this paper, I discussed the distribution of *waarmee* 'met wat' and *met wat* 'with what' is mismatching free relatives. I showed that *waarmee* 'with what' appears when all features form a proper constituent, and *met wat* 'with what' if they do not.

The described pattern follows from a core assumptions in Nanosyntax: phrasal spellout spells out constituents. Looking more into detail, *waarmee* 'with what' takes precedence over *met wat* 'with what' because *mee* has the structure of a suffix. Following the spellout algorithm, *'t* 'it' is replaced by *er*, so that it can combine with *mee* 'with'. The preposition *met* 'with' is only used if there is no other option to spell out the features.

This proposal is in several aspects in accordance with earlier work. Just like van Riemsdijk (1978), I claim that R-pronouns originate as the complement of P. He argued that due to some kind of suppletion *'t* 'it' changes form to ER, which is coincidentally also the locative in Dutch. In my proposal, this suppletion follows naturally from the regular spellout algorithm. Also, it is not a coincidence that the locative appears, as it is an item with little features that spells out THING. The current proposal differs from van Riemsdijk (1978) in that it is not the whole complement of P is moved. Instead, only part of the complement of P is extracted, which is generally allowed, also in non-preposition stranding languages (Abels, 2003).

References

Abels, Klaus (2003). "Successive cyclicity, anti-locality, and adposition stranding". PhD thesis. University of Connecticut Storrs, CT.

Baunaz, Lena et al. (2018). "Ontological categories". In: *The unpublished manuscript: A collection of LingBuzz papers to celebrate Michal Starke's 50th birthday*.

Bresnan, Joan and Jane Grimshaw (1978). "The Syntax of Free Relatives in English". In: *Linguistic Inquiry* 9.2, pp. 331–391.

Caha, Pavel (2009). "The Nanosyntax of Case". PhD thesis. Tromsø: University of Tromsø.

Chung, Inkie (2007). "Suppletive Negation in Korean and Distributed Morphology". In: *Lingua* 117, pp. 95–148.

Corver, Norbert (1991). "The internal syntax and movement behavior of the Dutch 'wat voor'-construction". In: *Linguistische Berichte* 133.1991, pp. 190–228.

Groos, Anneke and Henk van Riemsdijk (1981). "Matching Effects in Free Relatives: A Parameter of Core Grammar". In: *Theory of Markedness in Generative Grammar*. Ed. by Luciana Brandi Adriana Belletti and Luigi Rizzi. Pisa: Scuola Normale Superiore.

Hachem, Mirjam (2015). "Multifunctionality. The Internal and External Syntax of d- and w-Items in German and Dutch". PhD thesis. Utrecht: Utrecht University.

Himmelreich, Anke (2017). "Case Matching Effects in Free Relatives and Parasitic Gaps: A Study on the Properties of Agree". PhD thesis. Leipzig: Universität Leipzig.

Kayne, Richard (2005). "A Note on the Syntax of Quantity in English". In: *Movement and Silence*. Ed. by Richard Kayne. New York: Oxford University Press, pp. 176–214.

Kiparsky, Paul (1973). ""Elsewhere" in Phonology". In: *A Festschrift for Morris Halle*. Ed. by Stephen Anderson and Paul Kiparsky. New York: Holt, Rinehart, & Winston, pp. 93–106.

Koopman, Hilda J (2003). "Prepositions, postpositions, circumpositions, and particles: The structure of Dutch PPs". In: *The syntax of specifiers and heads*. Routledge, pp. 212–268.

Starke, Michal (2009). "Nanosyntax: A Short Primer to a New Approach to Language". In: *Nordlyd* 36, pp. 1–6.

— (2018). "Complex Left Branches, Spellout, and Prefixes". In: *Exploring Nanosyntax*. Ed. by Lena Baunaz et al. Oxford: Oxford University Press, pp. 239–249. DOI: 10.1093/oso/9780190876746.003.0009.

van Riemsdijk, Henk (1978). *A Case Study in Syntactic Markedness*. Lisse: Peter de Ridder.