



Royal Netherlands Academy of Arts and Sciences (KNAW) KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN

Doubling in Dutch restrictive relative clauses: rethinking the Head External Analysis

Boef, E.

published in

Proceedings of ConSole
2012

document version

Publisher's PDF, also known as Version of record

[Link to publication in KNAW Research Portal](#)

citation for published version (APA)

Boef, E. (2012). Doubling in Dutch restrictive relative clauses: rethinking the Head External Analysis. *Proceedings of ConSole, XIX*, 125-149.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the KNAW public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the KNAW public portal.

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

pure@knaw.nl

Doubling in Dutch restrictive relative clauses: rethinking the Head External Analysis

Eefje Boef

In colloquial Dutch the higher and the lower clause of long-distance relative clauses (RCs) can both be introduced by a relative pronoun. I argue that these doubling data are most easily compatible with a (specific implementation of the) head *external* analysis (HEA) of RCs. I show that although head *internal* analyses (HIAs) of RCs have gained a lot of ground in recent years, they face a variety of problems that are not encountered by a HEA. I furthermore show that the most prominent argument in favor of HIAs – namely the presence of *reconstruction effects* – is not very well founded, as reconstruction without movement or copies seems to be needed anyway. This strongly suggests that reconstruction is not a full proof diagnostic for movement, and that the presence or absence of reconstruction effects in RCs thus provides inconclusive evidence to support any analysis of RCs.

1. Introduction

Restrictive relative clauses (henceforth RCs) have been analyzed in roughly three different ways. The traditional approach, the *head external analysis* (HEA; cf. Quine 1960; Chomsky 1977; Smits 1988; Borsley 1997 a.o.) assumes that RCs are CPs adjoined to the RC head.¹ Inside the RC a coindexed empty operator or relative pronoun moves to the left periphery where it is linked to the external head by means of predication – indicated through coindexing in (1).

(1) ... the picture_{*i*} [_{CP} [which_{*i*}/Op_{*i*}]₁ he likes t₁] *Head External Analysis*

¹Not every version of the HEA assumes an adjunction structure. Besides the traditional adjunction hypothesis, the base-generated head hypothesis has also been combined with the hypothesis that the RC is a complement of N (cf. Fabb 1990; Platzack 2000), with the hypothesis that the RC is a complement of D (*D*-complement hypothesis; cf. Schmitt 2000; Aoun & Li 2003), or with the hypothesis that the RC (predicate) combines with the RC head (subject) in a small clause structure (Den Dikken 2006).

Alternatively, *head internal analyses* (HIAs) assume that the RC head originates in a position within the RC. Such analyses come in two flavors. The *head raising analysis* (HRA; cf. Schachter 1973; Vergnaud 1974; Kayne 1994; Zwart 2000; Bianchi 1999, 2000; De Vries 2002; Bhatt 2002 a.o.) assumes that the head noun is base-generated inside the RC and raises towards the matrix clause to become the RC head, as illustrated in (2). The *matching analysis* (MA; cf. Lees 1960, 1961; Chomsky 1965; Munn 1994; Citko 2001; Sauerland 1998, 2003; Salzmann 2006 a.o.) combines insights from both the HEA and the HRA: in addition to a RC internal head (as in a HRA), there is another representation of the RC head in a CP external position (as in a HEA). The RC internal head moves from the RC internal position to SpecCP, and under identity with the external head, PF-deletion of the RC head in SpecCP is triggered. This is illustrated in (3).

(2) ... the [_{CP} [picture₂ which/Op t₂]₁ he likes t₁] *Head Raising Analysis*

(3) ... the picture [_{CP} [which/Op picture]₁ he likes t₁] *Matching Analysis*

This paper examines some new facts that bear on the choice between the HEA and HIAs, namely doubling of the relative pronoun in colloquial Dutch long-distance RCs. It will be shown that these data challenge HIAs of RCs – currently the default or most prominent analyses of RCs within generative linguistics – and force a reevaluation of the HEA of RCs. In the final part of this paper, I will focus on the most prominent argument against the HEA – namely, *connectivity* or *reconstruction* effects² in RCs – and try to make plausible the claim that reconstruction without movement is needed anyway.

2. Doubling in Dutch long-distance restrictive relative clauses

In Standard Dutch long-distance restrictive RCs the RC itself is introduced by a relative pronoun (RP) and the embedded finite declarative clause is introduced by the declarative complementizer *dat* ‘that’. This is illustrated in (4) and (5), which show subject and object relativization with a common gender antecedent (*man* ‘man’) that requires the relative pronoun *die* in Standard Dutch (as opposed to neuter singular antecedents that require *dat* ‘that’, which is identical in form to the Dutch finite declarative complementizer).

(4) Dat is de man **die** ik denk **dat** het verhaal verteld heeft.
 that is the man RP I think that the story told has
 ‘That is the man who I think told the story.’ [subject RC, Standard Dutch]

(5) Dat is de man **die** ik denk **dat** ze geroepen hebben.
 that is the man RP I think that they called have
 ‘That is the man who I think they have called.’ [object RC, Standard Dutch]

²Strictly speaking, reconstruction effects are connectivity effects (cases in which a phrase is interpreted in a position different from its surface position) that are found in *movement* configurations only – *reconstruction* (originally proposed by Chomsky 1977) being an operation that places (parts of) moved material back into its position prior to movement. However, in the remainder of this paper I will follow common practice and use the term *reconstruction effects* for all connectivity effects.

In colloquial Dutch both the RC itself as well as the lower clause can be introduced by the relative pronoun *die* (or *wie* ‘who’, cf. SAND data: Barbiers et al. 2005, and results from a large scale online questionnaire study carried out in November/December 2010 – henceforth Meertens Panel Questionnaire (MPQ) data), giving rise to *identical* doubling as illustrated in (6) and (7).^{3,4}

- (6) Dat is de man **die** ik denk **die** het verhaal verteld heeft.
 that is the man RP I think RP the story told has
 ‘That is the man who I think told the story.’ [subject RC, colloquial Dutch]
- (7) Dat is de man **die** ik denk **die** ze geroepen hebben.
 that is the man RP I think RP they called have
 ‘That is the man who I think they have called.’ [object RC, colloquial Dutch]

I assume that the relative pronoun or relative DP successive-cyclically moves through the embedded SpecCP to the highest SpecCP,⁵ and that doubling is the spell out of multiple copies in a movement chain à la Nunes (2004) (cf. Bošković & Nunes 2007; Barbiers, Koenen & Lekakou 2009).⁶ Given these assumptions, a HIA of RCs together with the Copy Theory of Movement (Chomsky 1995) predicts that the RC head that is contained

³Only with object relatives can we be sure that the lower instance of *die* is a relative pronoun (true doubling) and not an agreeing variant of the complementizer (cf. Boef 2008b, 2012), i.e. *die* in the lower clause of long-distance RCs can be an agreeing complementizer only in case of subject extraction. Therefore, in the remainder of this paper I will only use long-distance *object* relatives to illustrate doubling.

⁴Besides *identical* doubling of the pronoun (e.g. patterns *die-die* and *wie-wie*), there are varieties of Dutch in which the RC itself as well as the lower clause can be introduced by *non-identical* pronouns (cf. SAND data, MPQ data), giving rise to *non-identical* doubling as in (i).

- (i) Dat is de man [**wie** ik denk [**die** ze geroepen hebben]].
 that is the man who I think RP they called have
 ‘That is the man who I think they have called.’

It is certainly beyond the scope of this paper to discuss in depth the intrinsic patterns of non-identical doubling in Dutch long-distance RCs, but see Boef (forthcoming) for a detailed overview and analysis.

⁵See Koopman & Sportiche (2008) for an alternative to the successive cyclic *wh*-movement analysis of long-distance RCs (but see Boef 2008a, 2012 for why this analysis cannot straightforwardly be extended to Dutch), and see Den Dikken (2009a,b) for arguments in favor of a general ban on successive cyclic *wh*-movement via SpecCP. Notice that the claim that movement to SpecCP is terminal (in RCs) is hard to reconcile with a HIA of RCs: the RC head in long-distance doubling constructions is unable to ‘escape’ from the lowest CP.

⁶Nunes (2004) assumes that every chain link is computed for linearization in accordance with Kayne’s (1994) *Linear Correspondence Axiom* (LCA). Taking two copies in a movement chain to count as *identical*, the LCA requires that only one copy be spelled out for linearization purposes, as an element cannot simultaneously *precede* and *follow* itself. Nunes furthermore assumes that – under specific circumstances – heads can undergo *morphological reanalysis*, which takes two terminal nodes and fuses them together into a single terminal node. Taking the LCA to not apply word internally (Chomsky 1995:337) and assuming that successive cyclic *wh*-movement (in languages that allow spell out of lower copies) proceeds by *adjunction* to an intermediate C⁰, the well-formedness of doubling structures is easily accounted for: the copy of the pronoun in the lower CP domain – being head-adjoined to C⁰ – undergoes morphological reanalysis with this C⁰. The two heads now become a single morpheme, as a result of which the copy of the pronoun becomes invisible for the LCA and may thus be spelled out. A great advantage of Nunes’

in the copy of the relative DP in the embedded SpecCP is overtly realized in doubling contexts, *quod non* (cf. Schippers 2006). This is illustrated in (8) for a HRA of RCs as in De Vries (2002) – the same prediction holds for a *matching* analysis.⁷ Put differently, whereas the relative pronoun may surface in more than one copy, the RC head in Dutch cannot surface in any but the highest copy.

(8) * ... de [_{CP} [**man die**]₁ ik denk [_{CP} [**man die**]₁ ze [~~man die~~]₁ geroepen hebben]]

The doubling data are especially problematic for the HRA of RCs, but they can in principle be accommodated by the MA of RCs when *PF-deletion under identity* not only has something to say about the copy that is adjacent to the external head, but affects all lower copies of the RC head, as abstractly illustrated in (9).

(9) D° **RC head** [_{CP} [**RP RC head**]₁ .. [_{CP} [**RP RC head**]₁ .. [~~RP RC head~~]_T ..
adjusted matching analysis

Even so, I will not attempt to make the MA of RCs compatible with the doubling data for three reasons. First, the MA faces more problems than accounting in a straightforward way for the doubling data, cf. section 4. Second, the *PF deletion under identity* operation is a bit suspicious in itself, as the precise properties and workings of this deletion operation (by which the RC internal representation of the RC head gets deleted) remain unclear. Bhatt (2002:77-79) for example notes that under a MA it is unclear why the external head is pronounced and why the internal head is *obligatorily* deleted – in contrast to the *optional* nature of other kinds of ellipsis.⁸ Furthermore, in other kinds of ellipsis constructions one phrase is pronounced, whereas both phrases are interpreted. The same does not hold for RCs: in some cases the RC head seems to be interpreted only RC internally, e.g. in case of reconstruction for idiom interpretation (*The headway [_{RC} that John made t] was impressive.*). Third, the doubling data follow from a head *external* analysis of RCs without

theory is that it immediately accounts for the ban on doubling with complex *wh*-phrases and for the observation that *wh*-pronouns are practically never spelled out in their thematic base position.

⁷Several solutions to this problem present themselves. First, one could assume an alternative to the standard Copy Theory of Movement, according to which lower copies in a movement chain are not full copies of the moved element but are reduced and lack internal structure (in the spirit of e.g. Van Koppen 2007 or Neeleman & van de Koot 2007). Interestingly, although such a solution straightforwardly accounts for the fact that the RC head never surfaces in a lower copy (as it only occurs in the highest chain link), it requires a new take on reconstruction: interpretation of a lower copy to account for reconstruction effects (*syntactic* reconstruction, see *infra*) is not possible. Under this view of copies, a HIA thus looks very similar to a HEA (w.r.t. reconstruction).

Alternatively, one could assume that the two elements in a doubling chain both originate within a single XP (cf. ‘big DP analysis’, e.g. Uriagereka 1995; Poletto & Pollock 2004; Belletti 2005 a.o.), and one of them (or both) move(s) out. However, such an analysis encounters two problems. First, the putative big XP never overtly occurs as one constituent, and second, the analysis encounters an overgeneralization problem when faced with non-identical doubling (cf. Barbiers et al. 2009; Boef forthcoming).

⁸Unless, as noted by Bhatt (2002:77-78), this type of deletion/ellipsis is thought of as being on a par with the type of ellipsis found in the domain of *comparative deletion*, as in (i)-(ii), cf. Kennedy (2000).

- (i) The galaxy contains more stars than the eye can see.
- (ii) The galaxy contains more **stars** than [_{CP} [~~DP stars~~]_T the eye can see [~~DP stars~~]_T].

any additional stipulations. More specifically, the problem of the impossibility of spelling out the RC head in the lower CP domain is non-existent if a HEA of RCs is assumed, as there is no copy of the RC head inside the RC in the first place. This is illustrated in (10b). Notice that in Standard Dutch (10a) the complementizer in the lower clause is spelled out because of the independent requirement that in all varieties of Dutch there needs to be at least one overt element in the CP-domain of embedded clauses (also, zero-relativization is unattested in Dutch (Dekkers 1999; Barbiers et al. 2005)).

- (10) a. ... de man [_{CP} **die**₁ ik denk [_{CP} ~~die~~₁ **dat** ze ~~die~~₁ geroepen hebben]]
 [Standard Dutch]
 b. ... de man [_{CP} **die**₁ ik denk [_{CP} **die**₁ ze ~~die~~₁ geroepen hebben]]
 [doubling, colloquial Dutch]

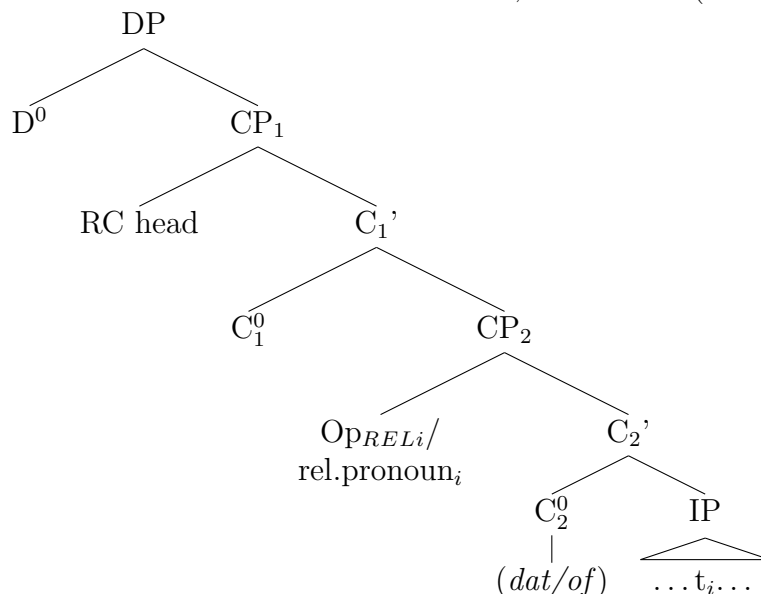
Having shown that pronominal doubling in Dutch long-distance RCs is most easily compatible with a head *external* analysis of RCs, the next section outlines the specific implementation of the HEA that I assume for Dutch RCs. I will show that this structure is compatible with the doubling data as well as with the full range of dialectal variation in the left periphery of RCs, most prominently doubly filled COMP data.

3. The syntax of Dutch relative clauses

As the HEA straightforwardly can account for the doubling data, whereas HIAs need additional assumptions to accommodate these data, I propose an analysis of RCs in Dutch that assumes that the RC head is base-generated ‘outside’ the RC (as in a HEA). Instead of assuming an adjunction structure as in the traditional HEA (cf. (1)), I will follow common practice and assume that the relative clause CP is the complement of the external determiner (*D-complement hypothesis*, cf. Smith 1964; Kayne 1994; Bianchi 1999, 2000; Schmitt 2000; Zwart 2000; De Vries 2002; Aoun & Li 2003 a.o.). I will furthermore assume with Aoun & Li (2003) amongst others that the RC head is base-generated in a higher SpecCP, whereas a coindexed empty operator or relative pronoun moves to a lower SpecCP (notice that a split CP structure is forced by the D-complement hypothesis together with a HEA of RCs in order to provide enough space for both the RC head and the relative pronoun or operator).

Movement of the relative pronoun or operator to SpecCP₂ turns the proposition into a predicate (*lambda/predicate abstraction*). The RC is related to the RC head by means of *Predicate Modification* (Heim & Kratzer 1998:95), which semantically amounts to *set intersection*. More precisely, the RC denotes a set which needs to be intersected with the set denoted by the RC head to get the right interpretation. Given that the prerequisite for the application of set intersection/predicate modification is that the RC and the RC head be two independent constituents, set intersection can successfully apply in the structure in (11), cf. Zwart (2000:378).

(11) structure of restrictive RCs in Dutch, cf. Schmitt (2000), Aoun & Li (2003)⁹



The higher CP_1 in (11) (or ForceP, as in Aoun & Li 2003, cf. Rizzi 1997) is related to *clause typing*: only elements that are specific for RCs (or RELATORS in the sense of Den Dikken 2006, cf. footnote 9) are allowed to occur there. The lower CP_2 is the layer in which *operator-variable dependencies* are created and *subordination* is expressed. Besides accounting for the doubling data, the structure in (11) accounts for the whole range of dialectal variation that is found in (the left periphery of) Dutch RCs (Boef to appear).

First, as there is no designated element (C_{REL}) in Dutch that is responsible for clause typing in RCs (cf. Wiltschko 1998), C_1^0 is always empty in Dutch.¹⁰ That is to say, the rel-

⁹A specific variant of this analysis has been proposed by Den Dikken (2006:chapter 5). According to his analysis of restrictive RCs (in Mandarin Chinese) D° takes a small clause complement of which the RC head is the subject and the RC itself is the predicate. This is illustrated in (i). The functional head of the small clause (the RELATOR in Den Dikken's terminology) may be realized in languages like Mandarin Chinese, as illustrated in (ii). Notice that the observation that there are languages in which the RC head and the RC itself may be separated by intervening material (the functional element *de* in the case of Mandarin Chinese) is highly problematic for the *raising* analysis of RCs à la Kayne (1994) or De Vries (2004). The structure I propose in (11) is also capable of accommodating data like (ii): the DE element may target the C_1^0 position in between the RC head and the RC itself.

(i) D° [_{SC} [RC head] [RELATOR [_{CP} RC]]] [adapted from Den Dikken 2006:244]

(ii) wo mai de shu
I buy DE book
'the book that I bought' [Mandarin Chinese; Den Dikken 2006:240]

¹⁰The claim that C_1^0 is targeted by elements that are specific to RCs receives some additional support from the observation that there are languages that make use of relative complementizers (C_{REL}). There is evidence that C_{REL} in such languages does in fact target the higher CP layer: C_{REL} can optionally be followed by the declarative complementizer – which I claim targets the lower C_2^0 . This is illustrated (i) and (ii) for Slovene and Icelandic respectively. These examples thus seem to indicate that the relative

ative pronoun or complementizer (zero-relativization is not allowed in Dutch, cf. Dekkers 1999; Barbiers et al. 2005) always directly follows the RC head in Dutch – the only dialect of Dutch that does not adhere to this generalization is Amsterdam Dutch, cf. *infra*.

Second, in colloquial Dutch embedded *wh*-questions the *wh*-phrase can be accompanied by two complementizers, giving rise to the string *wh of dat* ‘WH whether that’, as illustrated in (12) – I assume here that embedded *wh*-questions also have two CP layers (cf. Van Craenenbroeck 2004, 2010, and see *infra*). However, the structure in (11) predicts that the string *wh*-pronoun *of dat* should not be attested in RCs, as there is simply not enough space below SpecCP₂ (which is targeted by the relative pronoun) to fit both complementizers. This prediction is borne out: *wh of dat* is not or only very marginally attested in RCs in the Dutch speaking language area (cf. Boef to appear), as illustrated in (13). A *wh*-pronoun in a RC can thus be accompanied by only one complementizer (*of* or *dat* in C₂⁰).

- (12) Ze vroeg [_{CP1} **wie of** [_{CP2} **dat** het verhaal heeft verteld]].
 she asked who whether that the story has told
 ‘She asked who told the story.’ [colloquial Dutch]

- (13) a. Dat is de [_{CP1} man [_{CP2} **wie** het verhaal verteld heeft]].
 that is the man who the story told has
 ‘That is the man who told the story.’
 b. Dat is de [_{CP1} man [_{CP2} **wie of** het verhaal verteld heeft]].
 that is the man who whether the story told has
 c. Dat is de [_{CP1} man [_{CP2} **wie dat** het verhaal verteld heeft]].
 that is the man who that the story told has.
 d. ?*Dat is de [_{CP1} man [_{CP2} **wie of dat** het verhaal verteld heeft]].
 that is the man who whether that the story told has

The patterns that the structure in (11) predicts to exist are given in table 1. Most predictions in this table are borne out, but some predicted patterns are unattested. I claim that these patterns are unattested on independent grounds (cf. Boef to appear). First, [Op_{REL}] in table 1 is unattested because in all varieties of Dutch there needs to be at least one overt element in the COMP-domain of restrictive RCs (cf. *supra*). Second, the patterns [Op_{REL} *of*] and [*die of*] in table 1 are unattested, because *of* is only licensed by

complementizer targets a position in the left periphery that is higher than the position targeted by the declarative complementizer, in line with the proposal in (11).

- (i) človek, [_{CP1} **ki** [_{CP2} (**da**) pride]]
 the.man C_{REL} that is.coming
 ‘the man that is coming’ [Slovene, Hladnik 2010:14]
- (ii) manninn [_{CP1} **sem** [_{CP2} (**að**) kom hingað]]
 the.man C_{REL} that came here
 ‘the man that came here’ [Icelandic, Boef & Franco 2010]

an (overt) *wh*-element in its specifier (an overt *wh*-phrase or an empty yes/no operator), cf. Zwart (2000); Boef (to appear).

SpecCP ₁	C ₁ ⁰	SpecCP ₂	C ₂ ⁰	occurrence
RC head		<i>d_{REL}</i>		Standard Dutch
RC head		<i>d_{REL}</i>	<i>dat</i>	Waasland Dutch (SAND data)
RC head		<i>d_{REL}</i>	<i>of</i>	<i>unattested</i>
RC head		<i>wh_{REL}</i>		colloquial Dutch (MPQ data)
RC head		<i>wh_{REL}</i>	<i>dat</i>	southern Dutch (SAND data)
RC head		<i>wh_{REL}</i>	<i>of</i>	colloquial Dutch (Hoekstra 1993b:197)
RC head		<i>Op_{REL}</i>		<i>unattested</i>
RC head		<i>Op_{REL}</i>	<i>dat</i>	Vlaams-Brabant (SAND data)
RC head		<i>Op_{REL}</i>	<i>of</i>	<i>unattested</i>

Table 1: Predictions of relative clause structure (11), cf. Boef (to appear)

As reported by Hoekstra (1994), Amsterdam Dutch allows a *wh*- or *d*-pronoun to be preceded by complementizer *of*, as illustrated in (14).

- (14) a. de auto **of** **waar** ik in reed
the car whether where I in drove
- b. de vrouw **of** **die** ik gezien heb
the woman whether RP I seen have

[Amsterdam Dutch, Hoekstra 1994:316]

The Amsterdam Dutch data can be accommodated by the structure in (11) by arguing that the element *of* in (14) is not an interrogative complementizer but rather a relative complementizer (in C₁⁰). That this analysis of *of* in Amsterdam Dutch might be on the right track is provided by the observation that it does not adhere to the generalization that interrogative *of* in Dutch can only be licensed by an (overt) *wh*-element in its specifier (cf. *supra*) – suggesting that *of* in (14) is in fact not an interrogative complementizer. Whatever the exact nature of the element *of* in (14), the Amsterdam Dutch data seem to provide evidence for a head position (C₁⁰) between the RC head and the RC itself.¹¹

¹¹A proviso is in order here. The status of the data in (14) is a bit unclear. These data have been tested in the MPQ and were found to occur very marginally. To the extent that they exist at all, only test sentences with the *wh*-pronoun *wat* ‘what’ – and *waar* ‘where’ in locative RCs – are attested (these sentences are illustrated in (i)-(ii)), and the geographic distribution of this phenomenon is not restricted to (the area of) Amsterdam.

- (i) Het boek **of** **wat** ik gelezen heb is mooi geschreven.
the book whether wat I read have is beautifully written
‘The book that I read is beautifully written.’
- (ii) Het huis **of** **waar** ik gewoond heb is verkocht.
the house whether where I lived have is sold
‘The house where I lived is sold.’

Finally, it is worth noting that on independent grounds, a similar structure of the left periphery as in (11) has been proposed for embedded questions in Dutch by Van Craenenbroeck (2004, 2010) (cf. Reinhart 1981; Hoekstra 1993a,b; Hoekstra & Zwart 1994; Zwart & Hoekstra 1997; Bennis 1997, 2000 a.o.). Van Craenenbroeck argues for a split CP domain in which the higher layer CP₁ is related to clause typing (and optionally headed by *of*), and the lower layer CP₂ is related to the creation of operator variable dependencies (and optionally headed by *dat*). Van Craenenbroeck furthermore argues that complex *wh*-phrases introduced by *welke* ‘which’ are not operators – as opposed to *wh*-pronouns or PPs containing them – and are therefore merged in SpecCP₁, whereas a coindexed empty operator moves from an IP-internal position to the lower SpecCP₂ (to create an operator-variable dependency). This analysis of questions with a complex *wh*-phrase is strikingly similar to the proposed analysis of RCs. If we take the parallel between RCs and *wh*-questions further, we predict that complex *wh*-phrases introduced by *welke* do not occur in RCs because the designated position for such phrases – SpecCP₁ – is already occupied by the RC head. This prediction is in fact borne out: complex *wh*-phrases introduced by *welke* are not allowed in restrictive RCs (De Vries 2004).

- (15) a. *Ze zag een man *welke stakkerd* zijn been had gebroken.
 she saw a man which wretch his leg had broken
 ‘She saw a man which wretch had broken his leg.’
- b. *Ze las een boek *welke roman* door Reve was geschreven.
 she read a book which novel by Reve was written
 ‘She read a book which novel was written by Reve.’ [De Vries 2004:200]

The proposed structure for restrictive RCs in (11) and the parallel with embedded *wh*-questions furthermore predicts that in RCs that do not have a RC head, the higher SpecCP position should be available for complex *wh*-elements introduced by *welke*, and DFC with *of dat* should be possible. This is exactly the pattern that we find in Dutch free relative clauses, as illustrated in (16).

- (16) a. *Welke onverlaat* zoiets doet krijgt straf.
 which miscreant such a thing does gets punishment
 ‘Whoever miscreant does such a thing will be punished’
 [De Vries 2004:193]
- b. *Wie of dat* het weet mag het zeggen.
 who whether that it knows may it say
 ‘Whoever knows it may say it.’ [MPQ data]

4. Rethinking the Head External Analysis

In this section I will argue in more detail in favor of a HEA of RCs, i.e. I will make a case for the HEA and argue against HIAs (*raising* or *matching*) of RCs. I will show that although HIAs have featured most prominently in syntactic theorizing in recent years, (my

implementation of) the HEA fares better in many respects: case mismatches, selection, and locality violations.¹² A detailed evaluation of the most prominent argument in favor of HIAs, namely reconstruction effects, has to await the next section.

4.1. Case mismatches

Because both the *raising* analysis and the *matching* analysis of RCs take the RC head to be merged with the relative pronoun inside the RC, the case of the RC head is predicted to be compatible with its grammatical function inside the RC, and with the case of the relative pronoun. However, in languages with overt case morphology, case mismatches between the relative pronoun and the RC head are attested, as exemplified for Polish in (17) and for German in (18).¹³

- (17) Widziałem tego pana, [który zbił ci szybę].
 saw.1SG the.ACC man.ACC who.NOM broke your.SG glass.ACC
 ‘I saw the man who broke your glass.’ [Polish, Borsley 1997:638]
- (18) Wir brauchen den Politiker, der unsere Interessen vertritt.
 we need the.ACC politician who.NOM our interests represents
 ‘We need the politician who represents our interests.’
 [German, Schmitt 2000:332]

Although several solutions to the case mismatch problem have been proposed for the HRA (cf. Kayne 1994; Bianchi 2000; De Vries 2002), they are all (to a greater or lesser extent) stipulative and ‘not particularly explanatory’ (Salzmann 2006:17). For the MA of RCs, the case mismatch data are less problematic because the external head is not in a chain relation with the internal head, so they can receive case separately as long as total identity of features is not required for *deletion under identity* (cf. Citko 2001). Only from a (traditional) HEA of RCs do case mismatches like (17) and (18) follow straightforwardly. Notice that for the proposed implementation of the HEA of RCs in (11), the external D⁰

¹²Internally headed RCs (or RCs that contain multiple overt heads, cf. Cinque 2010 for Italian and Latin), as illustrated in (i), have always been taken as strong evidence in favor of HRAs of RCs: they seem to display the structure before *raising*. My aim is not to argue against HIAs of RCs altogether as it might very well be the case that it is necessary to distinguish between different types of RCs, both within and across languages. Rather, my more modest aim is to make a case for the (particular implementation of the) HEA of RCs (as outlined in (11)). Accordingly, I will not be concerned with internally headed RCs in this paper.

(i) [nuna bestya-ta ranti-shqa-n] alli bestya-m ka-rqo-n
 man horse-ACC buy-PERF-3 good horse-EVID be-PAST-3
 ‘The horse that the man bought was a good horse.’ [Ancash Quechua, Cole 1987:277]

¹³I am abstracting away from so-called *Case Attraction* phenomena – situations in which the RC head bears the same case as the relative pronoun – as case attraction only seems to be at play in free relatives and correlatives (Bhatt 2005), i.e. case attraction does not seem to occur in externally headed *restrictive* RCs – the type of RC I am concerned with.

needs to be able to interact with the specifier of its complement. Put differently, a head should be able to see the specifier of its complement. According to current minimalist assumptions this is no problem as the edge of a phase (specifier) can be reached from outside that phase (*Phase Theory* and *Phase Impenetrability (PIC)*, Chomsky 2000 *et passim*). Assuming that CP is a phase, and the RC head is on the edge of that phase (SpecCP₁), the RC head is thus available for further computation after the CP is built.

A related problem for the *raising* analysis, comes from *adjectival inflection*, as pointed out by Salzmann (2006:123-124) among others. The form of adjectives in attributive position of neuter nouns (e.g. *huis* ‘house’) in Dutch depends on the form of the determiner. When the definite determiner *het* ‘the’ is used, the default *-e* appears, and when the indefinite determiner *een* ‘a(n)’ is used, the adjective appears without an (overt) agreement affix.

- (19) a. het mooi-e huis
 the beautiful house
 b. een mooi huis
 a beautiful house

As can be seen in (20), in RCs in Dutch, the form of the adjective depends on the external D, not on RC internal material. This follows from a HEA of RCs. A *raising* analysis on the other hand, incorrectly predicts that the adjective always has the default *-e* ending because the neuter RC head *huis* ‘house’ combines with the definite demonstrative relative pronoun *dat* ‘that’ inside the RC: *dat mooi-e huis* ‘that beautiful house’.

- (20) a. het mooi-e/*mooi huis dat zij gekocht hebben
 the beautiful house that they bought have
 b. een mooi/*mooi-e huis dat zij gekocht hebben
 a beautiful house that they bought have

4.2. Selection

In contrast to what we predict on the basis of an analysis that takes relative pronouns to be determiners that take the RC head as their complement – as in a HIA of RCs – relative pronouns do not have the same selectional properties as their determiner or interrogative counterparts. This is exemplified in (21) for Dutch *die* ‘that’, and in (22) for English *who*.

- (21) a. dat/*die meisje heb ik gezien
 that.N/that.C girl.N have I seen
 b. het meisje dat/?die ik gezien heb
 the girl.N that.N/that.C I seen have
- (22) a. the man [who I have seen]
 b. *I have seen [who man]
 c. *[who man] have you seen?

Obviously, this problem of selection is not unsurmountable as one can always assume that the relative pronoun simply is a different lexical item than its interrogative or determiner counterpart, i.e. there are (at least) two lexical entries for Dutch *die* and English *who*. However, such a conclusion is theoretically unattractive because it would result in the postulation of several construction-specific lexical entries (cf. Wiltschko 1998). Moreover, it cannot account for the fact that the meaning and the categorial status of a pronoun is (partially) determined by the syntactic configuration it occurs in (cf. Postma 1994; Cardinaletti & Starke 1999; Koopman 1999 amongst others).¹⁴

Another problem for HIAs of RCs that is related to *selection* are adverbial relatives like (23). These would have to base-generate [waarom reden] ('[why reason]', or [how manner] in case of manner RCs), which seems implausible (cf. Aoun & Li 2003:121; Salzmann 2006:14,79-80).

- (23) de reden waarom hij niet kwam
the reason why he not came
'the reason why he didn't come'

4.3. Violation of locality constraints

HIAs of RCs, and most prominently HRAs of RCs, violate several well-established (locality) constraints on movement. All versions of a HRA, in one way or another violate the Constraint on Extraction Domains (CED, Huang 1982), which states that a moved phrase is an island for extraction. Seeing that in a HRA of RCs the RC head is base-generated as the complement of the relative D^0 (relative pronoun or empty operator – see section 4.2), movement needs to take place in order to get the RC head in a position linearly preceding the relative D^0 . One way of doing this is by moving the RC head out of the relative DP to (an extended projection of) CP (e.g. Kayne 1994, Zwart 2000, and Bianchi 1999, 2000 for *wh*-relatives) or to a position outside CP (e.g. Vergnaud 1974). Moving the RC head out of the DP_{REL} – after DP_{REL} has moved to the left periphery, as illustrated in (24) – violates the CED.¹⁵

- (24) the man₂ [DP_{REL} who t₂]₁ they have called t₁

¹⁴Under a HEA of RCs, the pattern in (21) is in line with the universal pattern of agreement captured by the *Agreement Hierarchy* proposed by Corbett (1979, 1991, 2006). According to this hierarchy, as given in (i), depending on the syntactic distance between the pronoun and the agreement controller, a pronoun is more likely to agree syntactically or semantically. Given that the syntactic distance between determiner *die/dat* and the noun *meisje* is smaller than the syntactic distance between relative pronoun *die/dat* and the noun *meisje*, the first is predicted to agree syntactically, whereas the latter can also agree semantically. This is exactly what we find.

(i) attributive	>	predicate	>	relative pronoun	>	personal pronoun
<i>syntactic agreement</i>				<i>semantic agreement</i>		

¹⁵Similarly, a *raising analysis* of RCs violates the Subject Condition (in case of subject relativization), the ban on extraction out of adjunct PPs (in case of PP relatives in German, cf. Webelhuth 2011), and the ban on extraction of material from a possessive specifier (in case of possessive RCs).

De Vries (2002) proposes to overcome this CED violation by assuming that the RC head moves from the complement position to the specifier position of DP_{REL} (before the DP_{REL} itself moves up to the left periphery, to avoid *countercyclicity*). According to some theories, this movement is too local (*Anti-Locality*, e.g. Grohmann 2003, Abels 2003), but what is more, De Vries (2002) still needs to assume that the formal features of the RC head move out of DP_{REL} to the external determiner (to check case). This movement operation (albeit formal feature movement), as illustrated in (25), violates the CED (cf. Salzmann 2006). Notice that CED violations are non-existent given a HEA or MA of RCs, as there is no extraction of the RC head (out of DP_{REL}) at any point in the derivation.

(25) the+FF₂ [DP_{REL} man₂ who t₂]₁ they have called t₁

An argument against both *raising* and *matching* comes from the syntax of adpositions in German (Webelhuth 2011:26-27). “Adpositions of the *mit*-class are obligatorily prepositional if they combine with an inanimate phrasal complement and obligatorily postpositional if they combine with an inanimate pronominal complement”, as illustrated in (26).

- (26) a. Wir hatten [PP <mit> dem Anruf <*mit>] gerechnet.
 we have with the call with expected
 ‘We had expected the phone call.’
- b. Wit hatten [PP <*mit> da <mit>] gerechnet.
 we have with it with expected
 ‘We had expected it.’ [Webelhuth 2011:26]

Whereas interrogative clauses respect this generalization, as illustrated in (27), under a head *internal* analysis of RCs, RCs violate this generalization, as can be seen in (28): before movement, the adposition combines with an inanimate phrasal complement so we expect it to be prepositional (analogous to (26a)), but instead it is postpositional. If we were to assume a HIA of RCs (*raising* or *matching*), we would thus have to assume that a well-established constraint does not hold for RCs.

- (27) [PP <*mit> wo <mit>] hattet ihr nicht gerechnet?
 with what with had you not expected
 ‘What did you not expect?’ [Webelhuth 2011:26]
- (28) Etwas Schreckliches₁, [PP <*mit> [wo t₁] <mit>] wir nicht gerechnet
 something terrible with what with we not expected
 hatten
 has
 ‘something terrible that we had not expected to happen’ [Webelhuth 2011:27]

4.4. Interim summary and outlook

Taking reconstruction to be the interpretation of a lower copy at LF (*syntactic reconstruction*, cf. Chomsky 1993, Fox 1999b a.o.) – and thus a diagnostic for movement –

reconstruction effects (of the RC head) in RCs have been taken to be the most important argument in favor of analyses that assume there is a representation of the external head inside the RC, i.e. head *internal* analyses of RCs. Given that the doubling constructions show reconstruction effects, we are faced with the following paradox: doubling data, case mismatches, and problems from selection and locality favor a HEA of RCs, whereas reconstruction effects challenge such an analysis. Interestingly, however, as we will see in the remainder of this paper, reconstruction without copies/movement seems to be independently needed anyway. So, reconstruction in RCs cannot be used as a proper diagnostic for movement of the head noun, and therefore, reconstruction should not be used as (the only) diagnostic for distinguishing the HEA and HIAs of RCs.

5. Reconstruction

5.1. Reconstruction in Dutch (long-distance) relative clauses

Dutch restrictive RCs show reconstruction for idiom interpretation, Principle A, variable binding, scope interpretation, and for the interpretation of adjectival modifiers, as illustrated in (29)-(33).¹⁶ If possible, the reconstruction effects are illustrated in both short and long RCs, and in long relatives for both the Standard Dutch variant (*die-dat*) as well as for the doubling variant (*die-die*) – there does not seem to be any difference in reconstruction effects between these two variants.¹⁷

(29) reconstruction for idiom interpretation

- a. De [**streek**] die hij me **t leverde**, riep om wraak.
 the nasty joke RP he me delivered cried for revenge
[De Vries 2002:78]
- b. De [**streek**] die ik denk dat/die hij me **t leverde**, riep om wraak.
 the nasty joke RP I think that/RP he me delivered cried for revenge

(30) reconstruction for Principle A

- a. de [verhalen over **zichzelf_i**] die **Paul_i t** hoorde
 the stories about SE-SELF RP Paul heard
 ‘the stories about himself that Paul heard’ [De Vries 2002:80]
- b. de [verhalen over **zichzelf_i**] die jij dacht dat/die **Paul_i t** hoorde
 the stories about SE-SELF RP you thought that/RP Paul heard

(31) reconstruction for variable binding

- a. de [ouders van **zijn_i** geliefde] die **iedere man_i** graag **t** wil ontmoeten
 the parents of his beloved RP every man gladly wants to.meet

¹⁶In all reconstruction examples I indicate the trace position inside the RC, but I leave undetermined what moved from that position: only the relative pronoun/operator (as in a HEA) or the RC head *plus* the relative pronoun/operator (as in a HIA).

¹⁷Many thanks to Hilda Koopman for providing me with the relevant doubling data.

- b. de [ouders van **zijn**_{*i*} geliefde] die ik denk dat/die **iedere man**_{*i*} graag **t**
 the parents of his beloved RP I think that/RP every man gladly
 wil ontmoeten
 wants to.meet

(32) *reconstruction for scope interpretation*

de [**band**] die **iedere student t** het beste vindt
 the band RP every student the best finds

‘the band that every student likes best’ [$\exists > \forall$; $\forall > \exists$, cf. Salzmann 2006:95 for German]

(33) *reconstruction for the low reading of adjectival modifiers*

de *eerste* roman die je *zei* dat/die Tolstoj *geschreven* heeft
 the first novel RP you said that/RP Tolstoy written has

‘the first novel that you said Tolstoy has written’ [cf. Bhatt 2002:57 for English]

- a. high reading: the first novel about which you *said* that Tolstoy had written it
 b. low reading: you said that the first novel that Tolstoy had *written* is *x*

The RC head cannot always reconstruct but sometimes must be interpreted in the matrix clause. Examples of this are given in (34)-(36), which show obligatory non-reconstruction of the external head for idiom interpretation, obligatory non-reconstruction for anaphor binding and obligatory non-reconstruction of the internal head for Principle C respectively. The latter anti-reconstruction effect is better known as the ‘lack of Principle C effect’ (see Salzmann 2006 for a detailed overview of the patterns of (the lack of) Principle C effects).¹⁸

(34) *obligatory non-reconstruction for idiom interpretation*

- a. Hij **leverde** een [**streek**] die **t** om wraak riep.
 he delivered a nasty joke RP for revenge cried
 b. Hij **leverde** een [**streek**] die jij vindt dat/die **t** om wraak riep.
 he delivered a nasty joke REL.PR you find that/REL.PR for revenge cried

(35) *obligatory non-reconstruction for Principle A*

- a. **Paul**_{*i*} haat die [rare verhalen over **zichzelf**_{*i*}] die Marie **t** vertelt.
 Paul hates those weird stories about SE-SELF RP Marie tells
 b. **Paul**_{*i*} haat die [rare verhalen over **zichzelf**_{*i*}] die ik geloof dat/die Marie
 Paul hates those weird stories about SE-SELF RP I believe that/RP Marie
t vertelt.
 tells

¹⁸I abstract away from (obligatory non-) reconstruction for NPI licensing (but see Citko 2001). It has been argued in the literature that NPIs are generally licensed at *surface structure* (see e.g. Sternefeld 2001). If true, the attested reconstruction behavior of NPIs (in RCs) cannot be accounted for by means of (the absence or presence of) *syntactic reconstruction*.

(36) *obligatory non-reconstruction for Principle C*

- a. de [vriend van **Jan_i**] die **hij_i** **t** zo aardig vindt
 the friend of Jan RP he so nice finds
- b. de [vriend van **Jan_i**] die je denkt dat/die **hij_i** **t** zo aardig vindt
 the friend of Jan RP you think that/RP he so nice finds

Under the assumption that reconstruction signals movement (but see *infra*), the non-reconstruction cases in (34)-(36) suggest a HEA of RCs, whereas the reconstruction cases in (29)-(33) suggest the opposite.¹⁹ The aim of the following sections is not to give a full-fledged analysis of the attested reconstruction effects, but rather to show that the presence of reconstruction effects does not necessarily signal movement.

5.2. *Reconstruction for idiom interpretation*

The fact that (some) idioms can be relativized has always been taken as a strong argument in favor of HIAs of RCs, because in order to get the idiomatic interpretation, the RC head needs to reconstruct to its base position at LF due to the *adjacency requirement* on idiom interpretation. However, Lasnik & Fiengo (1974:451) observe that, in contrast to the famous and often used VP idiom *making headway* in (37), some object NPs of VP idioms can in fact not relativize, as illustrated in (38). Under a HEA the impossibility of an idiomatic interpretation under relativization follows, but under a HIA these examples are more problematic, i.e. a HIA incorrectly predicts the sentences in (38) to be grammatical.²⁰

¹⁹The anti-reconstruction effects in (34)-(36) are especially problematic for a *raising* analysis of RCs because under such an analysis the lowest copy will be interpreted by default, predicting reconstruction effects to arise across the board (but see Safir 1999 for an attempt to reconcile the HRA with the lack of Principle C effects by means of *Vehicle Change* (Fiengo & May 1994)). The anti-reconstruction effects are less problematic for a *matching* analysis, because within a MA there is always the option of interpreting the RC external head instead of a copy of the RC internal head (i.e. the lower copy can exceptionally delete at LF when its content is *recoverable* from the external head, cf. Munn 1994; Citko 2001).

More generally, the lack of reconstruction data might not be really problematic for HIAs as they can potentially be accounted for by assuming that in RCs (in contrast to questions) reconstruction is *not* the default (Marcel den Dikken p.c.), i.e. there is only reconstruction when it is forced for some reason (e.g. for idiom interpretation (29) or variable binding (31)). That this line of reasoning is on the right track is evidenced by (i)-(ii) which show that Principle C effects re-emerge when reconstruction of the RC head is forced for some other reason: for the interpretation of an idiom in (i) and for variable binding in (ii), cf. Munn (1994); Sauerland (1998); Citko (2001).

(i) *The [*headway on Mary_i's project*] **she_i** had *made t* pleased the boss.

(ii) *The [letters by **John_i** to *her_j*] that **he_i** told *every girl_j* to burn **t** were published.

[Sauerland 1998:71]

²⁰De Vries (2002) distinguishes between ‘real’ idioms, which are established holistically and of which the meaning cannot be determined by the literal meaning of the component parts (*semantic idioms*), and *collocations*, most of which involve a semantically bleached/light verb, like *take a dive/swim/shower, make progress/headway*. Only the latter, but not the former type of collocation can *in principle* be split across a relative construction. According to De Vries (2002:79) this is obvious “since it is not possible to relate two meanings at once to the head noun: an idiomatic one in the relative and a literal (or ‘decomposed’) one in

- (37) The headway that we made was sufficient.
 (38) a. *The heed that we paid to that warning was slight.
 b. *The attention that we paid to the lecture was careful.

When we now consider the grammaticality of the examples in (39) in which the idiom has been *passivized*, the ungrammaticality of the sentences in (38) becomes even more puzzling: a HIA predicts the same outcome in both types of sentences as both sentence types are derived by movement of the object NP. A HEA on the other hand actually predicts this pattern: only in the case of passivization have the RC head and the verb originated as one constituent and can they get the idiomatic interpretation. In RCs, however, the RC head and the verb have never been a constituent and the idiomatic interpretation under relativization is correctly predicted to be out.

- (39) a. Heed was paid to our warning.
 b. Attention was paid to our problems.

5.3. Reconstruction for scope interpretation

A good alternative to *syntactic* reconstruction to account for scope interpretation is *semantic* reconstruction, i.e. the interpretation of scope inversion by means of semantic methods, cf. Cresti (1995); Rullmann (1995); Sternefeld (2001) amongst others. An often mentioned argument in favor of *syntactic* reconstruction and against *semantic* approaches to reconstruction is the unification of Binding Reconstruction and Scope Reconstruction (e.g. Romero 1997; Fox 1999a), as illustrated in (40). These examples show that whenever there is reconstruction for binding (40a), there is reconstruction for scope (the existential can get narrow scope), but when there is no reconstruction for binding (40b), the narrow scope interpretation of the existential is not available.

- (40) a. [A student of **his_i**] seems to **David_i** **t** to be at the party. [*seem*>∃; ∃>*seem*]
 b. [A student of **David_i**'s] seems to **him_i** **t** to be at the party.
 [**seem*>∃; ∃>*seem*]

Cecchetto (2001) shows that Italian *Clitic Left Dislocation* (CLLD) with a dislocated PP provides evidence against the unification of Binding Reconstruction and Scope Reconstruction. (41) shows that there is Binding Reconstruction of the dislocated PP (i.e. *pro* cannot refer to *Gianni* due to a Principle C violation) but that same PP cannot reconstruct for Scope (i.e. there is no corresponding narrow scope reading of the existential). Thus, Fox (1999a)'s argument in favor of *syntactic* and against *semantic* approaches to reconstruction does not stand. Consequently, scope reconstruction cannot provide a case for either *syntactic* or *semantic* reconstruction.

the matrix." It is important to note that we are not dealing with real semantic idioms in the case of (38), and that strings like *pay slight heed to* and *pay careful attention* are perfectly fine (with the idiomatic interpretation). The sentences in (38) thus cannot be ruled out on other grounds than relativization of the idiom (see main text).

- (41) In una casa di Gianni_i pro_j ci ha ospitato ogni ragazzo.
 in a house of Gianni (he) there has hosted every boy
 ‘In a house of Gianni every boy was hosted.’ [$\exists > \forall$; $*\forall > \exists$, Cecchetto 2001:2]

5.4. Reconstruction for the low reading of adjectival modifiers

Bhatt (2002) argues that *syntactic* reconstruction of the RC head and its modifiers accounts for the possible *low* reading of the adjectival modifier. However, Heycock (2005) shows that this account of the low reading of the adjectival modifier “overgenerates massively”. Not all adjectival modifiers allow for a low reading, and more importantly, the low readings of adjectival modifiers are not always generated by virtue of reconstruction, i.e. similar readings may arise in the absence of a RC, as is illustrated for an evaluative adjective in (42).²¹ More specifically, the judgment in (42a) that the books are *prachtig* ‘wonderful’ can be ascribed to the speaker or to Jan (*low* reading), but for the apparent low reading no RC is required, as illustrated in (42b).

- (42) a. de *prachtige* boeken die Jan zei dat Piet heeft geschreven
 the wonderful books RP Jan said that Piet has written
 ‘the wonderful books that Jan said that Piet has written’
 b. Jan gaf altijd op over de boeken die Piet heeft geschreven. Maar ik heb
 Jan gave always on about the books RP Piet has written but I have
 die *prachtige* boeken gelezen en ze zijn compleet waardeloos.
 those wonderful books read and they are completely worthless
 ‘Jan was always going on about the books that Piet has written. But I’ve read
 those wonderful books and they’re completely worthless.’
 [translated from English examples (6) and (7) in Heycock 2005:362]

The low reading of (some) adjectival modifiers thus provides inconclusive evidence to support any analysis of RCs.

5.5. Reconstruction for Principle A

Constructions in which an anaphor contained in the RC head is bound by an antecedent inside the RC have been taken as robust evidence for *syntactic* reconstruction of the RC head and thus for HIAs of RCs. However, in RCs there can also be binding for Principle A without a copy being present in the c-command domain of the antecedent, as illustrated in (43).

- (43) ?de [mislukking van **zichzelf**_i] die **t hem**_i beroemd heeft gemaakt.
 the failure of SE-SELF RP him famous had made

²¹It is furthermore unclear if the adjective originates within the RC in the first place (cf. section 4.1).

More generally, binding for Principle A without *syntactic* reconstruction is attested in other constructions as well, as illustrated for left dislocation in (44) and for topicalization in (45)²². Both sets of examples show that *syntactic* reconstruction of the fronted constituent would lead to selectional problems, thus suggesting that this constituent is base-generated in the left periphery instead of being moved there.

- (44) a. [**Elkaar**_i helpen] dat doen **ze**_i hier niet **t**.
 each other help TOPIC PR. do they here not
 ‘Help each other, they don’t do that here.’
 b. ***Ze**_i doen hier niet [**elkaar**_i helpen].
 they do here not each other help
 ‘They don’t help each other here.’ [Hoekstra 1999:65]
- (45) a. [**Elkaar**_i kussen] hebben **zij**_i nooit geprobeerd.
 each other kiss have they never tried
 b. ***Zij**_i hebben nooit [**elkaar**_i kussen] geprobeerd.
 they have never each other kiss tried
 c. **Zij**_i hebben nooit geprobeerd [**elkaar**_i te kussen].
 they have never tried each other to kiss
 d. ?* [**Elkaar**_i te kussen] hebben **zij**_i nooit geprobeerd.
 each other to kiss have they never tried

5.6. Reconstruction for variable binding

The example in (46), as reported by Sharvit (1999), shows that in RCs there can be variable binding in the absence of c-command. That is to say, in order for the quantifier *every man* in (46) to c-command and bind the variable *him*, it would have to move out of the RC, thereby violating the local character of QR and the Complex NP Constraint (Ross 1967). It thus seems impossible that the binding relation in (46) is established by means of *syntactic* reconstruction.

- (46) The [woman] [_{RC} that **every man**_i invited **t**] thanked **him**_i.
 [Sharvit 1999, as cited in Salzmann 2006:55]

More generally, variable binding without *syntactic* reconstruction occurs in other constructions as well, e.g. in left dislocation structures (47)-(48), pseudoclefts (50), and *tough*-movement constructions (51).

On the basis of the Dutch left dislocation structure in (47), Van Craenenbroeck (2004) shows that we need reconstruction without movement. That is, in order for the pronoun *zijn* ‘his’ in the left dislocated constituent to be bound by the quantifier *iedere taalkundige* ‘every linguist’ it would need to reconstruct, but crucially it cannot reconstruct because the left dislocated element is a PP whereas the reconstruction position is not. Similarly,

²²Thanks to Marcel den Dikken p.c. for drawing my attention to examples like these.

Guilliot & Malkawi (2007) observe that – given the uncontroversial assumption that movement out of strong islands is blocked – the fact that we do find reconstruction effects in adjunct islands (with resumption), as illustrated for the French left dislocation structure in (48), shows that reconstruction cannot be a proper diagnostic for movement.

- (47) Naar **zijn**_i promotie, daar kijkt **iedere taalkundige**_i naar **t** uit.
 to his defense there looks every linguist to out
 ‘Every linguist looks forward to his defense.’ [Van Craenenbroeck 2004:48]
- (48) [La photo de **sa**_i classe]_j, tu es fâché [_{ADJUNCT} parce que **chaque prof**_i l_j’a déchiré].
 ‘The picture of his class, you’re furious because each teacher tore it.’
 [French, Guilliot & Malkawi 2007:118]

Other convincing examples of reconstruction effects without movement or c-command are illustrated by specificational pseudoclefts (cf. Sharvit 1999; Cecchetto 2001). These are sentences in which a *wh*-phrase is equated with a constituent that corresponds to the gap in the *wh*-phrase (Cecchetto 2001:3), as illustrated by the sentence in (49).

- (49) [Wat Jan kocht **t**] was een boek.
 what John bought was a book

Although it has been proposed in the literature that the pivot constituent – *een boek* ‘a book’ in (49) – and the gap in the *wh*-phrase are related by syntactic movement, Cecchetto (2001) convincingly argues that this is highly problematic. Movement of the pivot from a position in the *wh*-phrase to its surface position has several weird properties: it is a case of lowering movement, and it is movement from a *wh*-island. Assuming then that there is no movement relation between the pivot and the gap in the *wh*-phrase,²³ we see that – contrary to what we expect when reconstruction signals movement – specificational pseudoclefts do show reconstruction effects (50a), i.e. the pivot seems to be interpreted in the position of the gap in the *wh*-phrase. The bound variable reading in (50a) most likely does not result from LF scoping the quantifier to a position in which it c-commands the pronoun, as this movement would violate the local character of QR and it would move the quantifier out of a *wh*-island (cf. Cecchetto 2001:8). We thus seem to have another case of reconstruction without movement or c-command.

- (50) a. [Wat **elke generaal**_i verdedigde **t**] was **zijn**_i bataljon.
 what every general defended was his battalion
- b. **Elke generaal**_i verdedigde **zijn**_i bataljon.
 every general defended his battalion.
 [translated from example (29) in Cecchetto 2001]

²³See Den Dikken, Meinunger & Wilder (2000) for an analysis of specificational pseudoclefts (SPCs) that does not assume movement of the pivot constituent from a position inside the *wh*-phrase, yet does account for reconstruction effects by means of *syntactic* reconstruction (through *ellipsis*). As the authors note themselves, it remains to be seen whether or not such a *syntactic* reconstruction analysis can account for the attested reconstruction effects in *all* types of SPCs.

As pointed out to me by Marcel den Dikken, also *tough*-movement constructions seem to provide a case in point. Although we do find reconstruction effects in *tough*-movement constructions, as illustrated for variable binding in (51), there is arguably no *syntactic* reconstruction in *tough*-movement constructions as the surface subject is not subject to the restrictions of the lower predicate (52) (*to believe* does not select *for to* infinitives (Wilder 1991)).²⁴

(51) **His**_{*i*} car is tough for **every man**_{*i*} to have to part with.

- (52) a. [For him to be top of the class] is hard to believe.
 b. *It is hard to believe [for him to be top of the class].

5.7. Interim summary

In this section I tried to make plausible the claim that reconstruction without movement is needed anyway, i.e. not all reconstruction effects can get a strictly syntactic account: we need some sort of semantic reconstruction mechanism as well (cf. Cresti 1995; Rullmann 1995; Sternefeld 2001; Cecchetto 2005). At this point it is unclear whether semantic accounts of reconstruction can adequately account for the whole range of reconstruction effects in RCs (besides scope reconstruction and reconstruction for variable binding). Independently of whether or not the reconstruction effects in RCs can be accounted for by semantics, the facts above show that *syntactic* reconstruction cannot be the only way to account for reconstruction effects. Put differently, reconstruction is not a proper diagnostic for movement and it thus cannot be used for distinguishing HIAs from the HEA of RCs.

6. Summary and conclusion

Starting from the observation that doubling of the relative pronoun in colloquial Dutch long-distance RCs is most easily compatible with a head *external* analysis of RCs, the main goal of this paper was to make a case for the HEA of RCs. I tried to show that although head *internal* analyses have gained a lot of ground in recent years, choosing between a HEA and HIAs is certainly not a trivial matter. Besides doubling in RCs, there are other properties of RCs that seem to argue in favor of a HEA of RCs, namely case mismatches between the RC head and the relative pronoun, selectional differences between the relative pronoun and its determiner or interrogative counterpart, and locality constraint violations. *Reconstruction* effects in RCs, on the other hand, have always been taken to strongly argue *against* a HEA of RCs. That is, assuming reconstruction effects in RCs to be the result of the activation of a lower copy at LF (*syntactic* reconstruction), the presence of an (additional) RC head within the RC – as in a HIA – is needed to accommodate such reconstruction effects. I showed that it is well established that reconstruction without

²⁴But see Salzmann (2006:271ff.) for an account of *tough*-movement under a HIA of RCs.

movement is needed anyway, in RCs as well as in other configurations, e.g. left dislocation structures and pseudoclefts. This strongly suggests that reconstruction is not a full proof diagnostic for movement, and that it thus should not be used as (the only) diagnostic for distinguishing between the HEA and HIAs of RCs.

Acknowledgements

An earlier version of this paper was presented at the Syntax Circle in Utrecht. I would like to thank the audience there, as well as the audience of ConSOLE XIX in Groningen, for useful comments. Many thanks to Anke Assmann, Doreen Georgi and Philipp Weisser for their helpful review of an earlier draft of this paper.

Eefje Boef

Meertens Instituut

Eefje.Boef@meertens.knaw.nl

www.meertens.knaw.nl/cms/nl/medewerkers/142889-eejeb

References

- Abels, K. (2003). *Successive cyclicity, anti-locality and adposition stranding*. Ph.D. thesis, University of Connecticut.
- Aoun, J. & A. Li (2003). *Essays in the representational and derivational Nature of Grammar: the Diversity of wh-constructions*. Linguistic Inquiry Monographs 40, MIT Press, MIT.
- Barbiers, S., H. Bennis, G. de Vogelaer, M. Devos & M. van der Ham (2005). *Syntactic Atlas of the Dutch Dialects, Volume 1*. Amsterdam University Press, Amsterdam.
- Barbiers, S., O. Koeneman & M. Lekakou (2009). Syntactic doubling and the structure of wh-chains. *Journal of Linguistics* 45, pp. 1–46.
- Belletti, A. (2005). Extended doubling and the VP periphery. *Probus* 17, pp. 1–36.
- Bennis, H. (1997). Voegwoordvariëties. van Santen, A. & M. van der Wal (eds.), *Taal in tijd en ruimte*, SNL, pp. 353–364.
- Bennis, H. (2000). On the interpretation of functional categories. Bennis, H., M. Everaert & E. Reuland (eds.), *Interface Strategies*, KNAW, pp. 37–53.
- Bhatt, R. (2002). The Raising Analysis of Relative Clauses: Evidence from Adjectival Modification. *Natural Language Semantics* 10, pp. 43–90.
- Bhatt, R. (2005). In Search of Case Attraction. Handout of a LOT School summer course (Leiden), March 2005: *The Syntax and Semantics of Nominal Modification*.
- Bianchi, V. (1999). *Consequences of Antisymmetry*. Mouton de Gruyter, Berlin.
- Bianchi, V. (2000). The Raising Analysis of Relative Clauses: A Reply to Borsley. *Linguistic Inquiry* 31, pp. 123–140.
- Boef, E. (2008a). *Long-distance relativization in varieties of Dutch*. Master's thesis, Universiteit van Utrecht.
- Boef, E. (2008b). Variatie in Nederlandse lange-afstandsrelatieven. *Taal en Tongval* 60:2, pp. 90–120.
- Boef, E. (2012). Long-distance relativization in varieties of Dutch. Constantinescu, C., B. L. Bruyn & K. Linke (eds.), *Proceedings of ConSOLE XVII*.
- Boef, E. (forthcoming). *Doubling in relative clauses*. Ph.D. thesis, Meertens Instituut (KNAW), Amsterdam.

- Boef, E. (to appear). Doubly filled COMP: a view from East-Flanders ('Doubly-filled COMP' de la vue de la Flandre-Orientale'). *Proceedings of Morphologie, syntaxe et sémantique des subordonnants*, Cahiers du LRL (Laboratoire de Recherche sur le Langage), Maison des Sciences de l'Homme (MSH), Clermont-Ferrand.
- Boef, E. & I. Franco (2010). A comparative study of subordinate A'-dependencies. Paper presented at the 6th Grand Meeting for Scandinavian Dialect Syntax (ScanDiaSyn).
- Borsley, R. D. (1997). Relative Clauses and the Theory of Phrase Structure. *Linguistic Inquiry* 28, pp. 629–647.
- Bošković, Z. & J. Nunes (2007). The Copy Theory of Movement: A view from PF. Corver, N. & J. Nunes (eds.), *The Copy Theory of Movement*, John Benjamins, Amsterdam/Philadelphia, pp. 13–74.
- Cardinaletti, A. & M. Starke (1999). The typology of structural deficiency. A case study of the three classes of pronouns. van Riemsdijk, H. (ed.), *Clitics in the Languages of Europe*, Mouton de Gruyter, Berlin, pp. 145–233.
- Cecchetto, C. (2001). Syntactic or Semantic Reconstruction? Evidence from Pseudoclefts and Clitic Left Dislocation. Cecchetto, C. & M. T. Guasti (eds.), *Semantic Interfaces*, CSLI Publications, Stanford.
- Cecchetto, C. (2005). Reconstruction in relative clauses and the copy theory of movement. Pica, P., J. Rooryck & J. van Craenenbroeck (eds.), *Linguistic Variation Yearbook*, John Benjamins, Amsterdam, vol. 5, pp. 5–35.
- Chomsky, N. (1965). *Aspects of the theory of syntax*. MIT Press, Cambridge, Mass.
- Chomsky, N. (1977). On wh-movement. Culicover, P., T. Wasow & A. Akmajian (eds.), *Formal Syntax*, Academic Press, New York, pp. 71–132.
- Chomsky, N. (1993). A minimalist program for linguistic theory. Hale, K. & S. J. Keyser (eds.), *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, MIT Press, Cambridge, Mass., pp. 1–52.
- Chomsky, N. (1995). *The Minimalist Program*. MIT Press, Cambridge, Mass.
- Chomsky, N. (2000). Minimalist inquiries: the framework. Martin, R., D. Michaels & J. Uriagereka (eds.), *Step by step: Essays on minimalist syntax in honour of Howard Lasnik*, MIT Press, Cambridge, Mass.
- Cinque, G. (2010). Toward a unified theory of relative clauses. Handout of a talk presented at Mini-Workshop on Modifiers and Carthography. CASTL/University of Tromsø.
- Citko, B. (2001). Deletion Under Identity in Relative Clauses. *Proceedings of NELS 31*, pp. 131–145.
- Cole, P. (1987). The Structure of Internally Headed Relative Clauses. *Natural Language and Linguistic Theory* 5, pp. 277–302.
- Corbett, G. (1979). The agreement hierarchy. *Journal of Linguistics* 15, pp. 203–224.
- Corbett, G. (1991). *Gender*. Cambridge University Press, Cambridge.
- Corbett, G. (2006). *Agreement*. Cambridge University Press, Cambridge.
- van Craenenbroeck, J. (2004). *Ellipsis in Dutch Dialects*. Ph.D. thesis, Universiteit Leiden.
- van Craenenbroeck, J. (2010). Complex Wh-Phrases Don't Move: On the Interaction between the Split CP Hypothesis and the Syntax of Wh-movement. Panagiotidis, P. (ed.), *The Complementizer Phase: Subjects and Operators*, Oxford University Press, Oxford, pp. 236–260.
- Cresti, D. (1995). Extraction and Reconstruction. *Natural Language Semantics* 3, pp. 79–122.
- Dekkers, J. (1999). *Derivations & Evaluations. On the Syntax of Subjects and Complementizers*. Ph.D. thesis, Universiteit van Amsterdam, The Hague.
- den Dikken, M. (2006). *Relators and linkers: The syntax of predication, Predicate Inversion, and copulas*. MIT Press, Cambridge, MA.
- den Dikken, M. (2009a). Arguments for successive-cyclic movement through SpecCP: A critical review. *Linguistic Variation Yearbook* 9:1, pp. 89–126.
- den Dikken, M. (2009b). On the nature and distribution of successive cyclicity; adjunction, resumption, and scope marking as the roads to success in long-distance relation building. Manuscript CUNY Graduate Center.
- den Dikken, M., A. Meinunger & C. Wilder (2000). Pseudoclefts and Ellipsis. *Studia Linguistica* 54, pp. 41–89.
- Fabb, N. (1990). The Difference between English Restrictive and Nonrestrictive Relative Clauses. *Journal*

- of *Linguistics* 26, pp. 57–78.
- Fiengo, R. & R. May (1994). *Indices and Identity*. MIT Press, Cambridge, Mass.
- Fox, D. (1999a). *Economy and Semantic Interpretation*. MIT Press, Cambridge, Mass.
- Fox, D. (1999b). Reconstruction, variable binding and the interpretation of chains. *Linguistic Inquiry* 30, pp. 157–196.
- Grohmann, K. K. (2003). *Prolific Domains: On the Anti-Locality of Movement Dependencies*. *Linguistik Aktuell/Linguistics Today* 6, John Benjamins, Amsterdam.
- Guilliot, N. & N. Malkawi (2007). Reconstruction without movement. Eguren, L. & O. F. Soriano (eds.), *Coreference, Modality and Focus: Studies on the syntax-semantics interface*, John Benjamins, Amsterdam/Philadelphia, pp. 113–132.
- Heim, I. & A. Kratzer (1998). *Semantics in Generative Grammar*. Blackwell Textbooks in Linguistics, Blackwell, Oxford.
- Heycock, C. (2005). On the interaction of adjectival modifiers and relative clauses. *Natural Language Semantics* 13, pp. 359–382.
- Hladnik, M. (2010). *Restrictive relative clauses in Slovene and its spoken varieties*. Master's thesis, Universiteit Utrecht.
- Hoekstra, E. (1993a). Dialectal variation inside CP as parametric variation. Abraham, W. & J. Bayer (eds.), *Dialektsyntax*, Westdeutscher Verlag, pp. 161–179.
- Hoekstra, E. (1993b). On the Parametrisation of Functional Projections in CP. Schafer, A. (ed.), *NELS 23*, University of Massachusetts, Amherst.
- Hoekstra, E. (1994). Overtollige voegwoorden en de volgorde of + interrogativum/relativum. *De Nieuwe Taalgids* 87, pp. 314–321.
- Hoekstra, E. (1999). On D-pronouns and the movement of topic features. *Folia Linguistica* 33, pp. 59–74.
- Hoekstra, E. & J.-W. Zwart (1994). De Structuur van CP. Functionele Projecties voor Topics en Vraagwoorden in het Nederlands. *Spektator* 23, pp. 191–212.
- Huang, C. J. (1982). *Logical Relations in Chinese and the Theory of Grammar*. Ph.D. thesis, Massachusetts Institute of Technology. Distributed by MIT Working Papers in Linguistics, Cambridge, Mass.
- Kayne, R. (1994). *The Antisymmetry of Syntax*. MIT Press, Cambridge, Mass.
- Kennedy, C. (2000). Comparative (Sub)deletion and Ranked, Violable Constraints in Syntax. *Proceedings of NELS 30*, GLSA, University of Massachusetts at Amherst.
- Koopman, H. (1999). The internal and external distribution of pronominal DPs. Johnson, K. & I. Roberts (eds.), *Beyond Principles and Parameters: Essays in Memory of Osvaldo Jaeggli*, xx, pp. 91–132.
- Koopman, H. & D. Sportiche (2008). The que/qui Alternation: New Analytical Directions. (to appear, Oxford University Press).
- van Koppen, M. (2007). Agreement with (the internal structure of) copies of movement. Corver, N. & J. Nunes (eds.), *The Copy Theory of Movement*, John Benjamins, Amsterdam/Philadelphia, pp. 327–350.
- Lasnik, H. & R. Fiengo (1974). Complement Object Deletion. *Linguistic Inquiry* 5, pp. 535–572.
- Lees, R. B. (1960). *The Grammar of English Nominalizations*. Mouton, The Hague.
- Lees, R. B. (1961). The constituent structure of noun phrases. *American Speech* pp. 159–168.
- Munn, A. (1994). A minimalist account of reconstruction asymmetries. Gonzalez, M. (ed.), *Proceedings of the North East Linguistic Society 24*, Amherst, University of Massachusetts, pp. 397–410.
- Neeleman, A. & H. van de Koot (2007). A Local Encoding of Syntactic Dependencies and its Consequences for the Theory of Movement. Manuscript UCL.
- Nunes, J. (2004). *Linearization of Chains and Sideward Movement*. *Linguistic Inquiry Monographs* 43, MIT Press, Cambridge, Mass.
- Platzack, C. (2000). A Complement-of-N^o Account of Restrictive and Non-Restrictive Relatives: The Case of Swedish. Alexiadou, A., P. Law, A. Meinunger & C. Wilder (eds.), *The Syntax of Relative Clauses*, John Benjamins, Amsterdam, pp. 265–308.
- Poletto, C. & J.-Y. Pollock (2004). On WH-clitics and WH-doubling in French and some North Eastern Italian dialects. *Probus* 16, pp. 241–272.

- Postma, G. (1994). The indefinite reading of WH. Bok-Bennema, R. & C. Cremers (eds.), *Linguistics in the Netherlands 1994*, John Benjamins, Amsterdam/Philadelphia, pp. 187–198.
- Quine, W. V. O. (1960). *Word and Object*. MIT Press, Cambridge, Mass.
- Reinhart, T. (1981). A second Comp position. Belletti, A., L. Brandi & L. Rizzi (eds.), *Theory of markedness in generative grammar. Proceedings of the 1979 GLOW conference*, Scuola Normale Superiore, pp. 517–557.
- Rizzi, L. (1997). The fine structure of the left periphery. Haegeman, L. (ed.), *Elements of Grammar*, Kluwer Academic Publishers, Dordrecht, pp. 281–337.
- Romero, M. (1997). Problems for a Semantic Account of Scope Reconstruction. *Proceedings of the 1997 Tübingen Workshop on Reconstruction*, University of Tübingen.
- Ross, J. R. (1967). *Constraints on variables in syntax*. Ph.D. thesis, Massachusetts Institute of Technology.
- Rullmann, H. (1995). *Maximality in the semantics of wh-constructions*. Ph.D. thesis, Amherst, University of Massachusetts.
- Safir, K. (1999). Vehicle change and reconstruction in A-bar chains. *Linguistic Inquiry* 30, pp. 587–620.
- Salzmann, M. (2006). *Resumptive Prolepsis; A study in indirect A'-dependencies*. Ph.D. thesis, Universiteit Utrecht.
- Sauerland, U. (1998). *The Meaning of Chains*. Ph.D. thesis, Massachusetts Institute of Technology.
- Sauerland, U. (2003). Unpronounced Heads in Relative Clauses. Schwabe, K. & S. Winkler (eds.), *The Interfaces: deriving and interpreting omitted structures*, John Benjamins, Amsterdam/Philadelphia, pp. 205–226.
- Schachter, P. (1973). Focus and relativization. *Language* 49, pp. 19–46.
- Schippers, A. (2006). Variation in the CP-domain: Long-distance dependencies in the Dutch dialects. Manuscript Meertens Instituut and Rijksuniversiteit Groningen.
- Schmitt, C. (2000). Some Consequences of the Complement Analysis for Relative Clauses, Demonstratives and the Wrong Adjectives. Alexiadou, A., P. Law, A. Meinunger & C. Wilder (eds.), *The Syntax of Relative Clauses*, John Benjamins, Amsterdam, pp. 309–348.
- Sharvit, Y. (1999). Connectivity in specificational clauses. *Natural Language Semantics* 7, pp. 299–339.
- Smith, C. S. (1964). Determiners and Relative Clauses in a Generative Grammar of English. *Language* 40, pp. 37–52.
- Smits, R. (1988). *The Relative and Cleft Constructions of the Germanic and Romance Languages*. Ph.D. thesis, Katholieke Universiteit Brabant.
- Sternefeld, W. (2001). Semantic vs. syntactic reconstruction. Kamp, H., A. Rossdeutscher & C. Rhorer (eds.), *Linguistic Form and its computation*, CSLI Publications, Stanford, pp. 145–182.
- Uriagereka, J. (1995). Aspects of the syntax of clitic placement in western Romance. *Linguistic Inquiry* 26, pp. 79–123.
- Vergnaud, J.-R. (1974). *French Relative Clauses*. Ph.D. thesis, Massachusetts Institute of Technology.
- de Vries, M. (2002). *The Syntax of Relativization*. Ph.D. thesis, Universiteit van Amsterdam.
- de Vries, M. (2004). Head-Internal Relative Clauses in Dutch? Cornips, L. & J. Doetjes (eds.), *Linguistics in the Netherlands 2004*, John Benjamins, Amsterdam/Philadelphia, pp. 193–204.
- Webelhuth, G. (2011). Capturing Collocations and Idioms in Relative Clauses without Literal Reconstruction. Handout of a talk presented at the workshop on 'Reconstruction Effects in Relative Clauses', Zentrum für Allgemeine Sprachwissenschaft (ZAS), Berlin.
- Wilder, C. (1991). Tough-movement constructions. *Linguistische Berichte* 132, pp. 115–132.
- Wiltschko, M. (1998). On the internal and external syntax and semantics of (relative) pronouns. *Journal of Comparative Germanic Linguistics* 2, pp. 143–181.
- Zwart, J.-W. (2000). A Head Raising Analysis of Relative Clauses in Dutch. Alexiadou, A., P. Law, A. Meinunger & C. Wilder (eds.), *The Syntax of Relative Clauses*, John Benjamins, Amsterdam, pp. 349–386.
- Zwart, J.-W. & E. Hoekstra (1997). Weer functionele projecties. *Nederlandse Taalkunde* 2, pp. 121–132.