Syntactic doubling and the structure of WH-chains[1]

SJEF BARBIERS*[+], OLAF KOENEMAN[#] & MARIKA LEKAKOU*

**Meertens Institute, [+]University of Utrecht, [#]University of Amsterdam*

(Received 19 March 2008; revised 19 December 2008)

ABSTRACT

This paper discusses cases of syntactic doubling, where more than one member of the same chain is spelled out. The focus will be on the more interesting case of non-identical doubling, where the elements spelled out have different forms. We demonstrate that the order of elements in a chain is fixed: the first (or syntactically higher) one is less specific that the second one. We argue that this generalization follows from partial copying, a process that copies a proper subconstituent and remerges it higher in the structure. This naturally excludes the ungrammatical orders, as those would involve full copying plus the addition of features, in violation of the inclusiveness condition. The proposal requires pronouns to be spell-outs of phrases, and it is in combination with this hypothesis that the full set of data is accounted for in a uniform way. Advantages over alternative accounts of syntactic doubling are discussed.

1. INTRODUCTION

In a recent survey of 267 dialects of Dutch (SAND; Barbiers et al. 2005) six cases of pronominal doubling are attested. (1) and (2) instantiate what we may call 'identical doubling'. (1) illustrates doubling of a WH-pronoun, and (2) doubling of a (strong) subject pronoun.

(1) **Wie** denk je **wie** ik gezien heb? *Drenthe*
who think you who I seen have
'Who do you think I have seen?'

(2) **Zij** heeft **zij** daar niets mee te maken. *Flemish Brabant*
she has she there nothing with to do
'She has got nothing to do with it.'

In addition to such cases of identical doubling, the Dutch dialects reveal the existence of non-identical doubling, namely the dual occurrence of a WH-pronoun whose phonological shape however differs in the two instances. In (3) the highest copy is a neuter WH-pronoun, whereas the lower one is non-neuter. In (4) the highest copy is the non-neuter WH-pronoun, whereas the lower one is a non-neuter relative pronoun. Finally, (5) involves the non-neuter relative pronoun in the embedded CP and the neuter WH-pronoun in the matrix CP.

(3) **Wat** denk je **wie** ik gezien heb? *Overijssel*
what think you who I seen have

(4) **Wie** denk je **die** ik gezien heb? *North-Holland*
who think you REL.PRON I seen have

(5) **Wat** denk je **die** ik gezien heb? *Overijssel*
what think you REL.PRON I seen have

Non-identical doubling is also possible with subject pronoun doubling, as is illustrated by (6), which features a weak subject pronoun and a strong subject pronoun (an option available in e.g. Flemish).

(6) **Ze** heeft **zij** daar niks mee te maken.
she.weak has she.strong there nothing with to do
'She's got nothing to do with it.'

In this paper we will restrict our attention to doubling of WH-pronouns. For subject pronoun doubling see the work of Haegeman (2005), van Craenenbroeck & van Koppen (2002, 2008), De Vogelaer & Devos (2008) and references therein.[2]

What is interesting in the cases of doubling above is that the order in which the two elements appear is rigid: the reverse order of elements is ungrammatical. Compare (3)-(6) to (7)-(10):

(7) ***Wie** denk je **wat** ik gezien heb?
who think you what I seen have

(8) ***Die** denk je **wie** ik gezien heb?
REL.PRON think you who I seen have

(9) ***Die** denk je **wat** ik gezien heb?
REL.PRON think you what I seen have

(10) ***Zij** heeft **ze** daar niks mee te maken.
she.strong has she.weak there nothing with to do

One could object that (8) and (9) are ungrammatical because they do not qualify as questions, because the matrix CP is not headed by a WH-pronoun but by a relative pronoun. However, the same (un)grammaticality pattern is observed in relative clauses, where reversing the order is equally impossible:

(11) (a) Dit is de man **wie** ik denk **die** Jan gezien heeft. *Drenthe*
this is the man who I think REL.PRON Jan seen have
'This is the man Jan thinks I have seen.'

(b) *Dit is de man **die** ik denk **wie** Jan gezien heeft.
this is the man REL.PRON I think who Jan seen has

The main purpose of our paper is to account for this ordering restriction.

Although examples like (1) and (2) are often treated as multiple spell-out of chain links, there is an ongoing debate about examples like (3), namely non-identical WH-doubling (also known as the WH-scope marking construction). The question this

debate revolves around is whether (3) involves chain formation or not. There have been two major views on the matter, one which postulates a direct dependency between the two WH-elements, and one which contends that the dependency is only indirect. On the direct dependency account of scope marking (van Riemsdijk 1982, McDaniel 1989, Beck & Berman 2000 *i.a.*), the highest WH-element is a base-generated expletive marking the scope of the lower WH-phrase. At LF expletive replacement places the contentful WH-phrase in the highest SpecCP. On the indirect dependency account (Dayal 1994, 2000, Felser 2001, *i.a.*) there is no direct syntactic dependency between the two WH-elements. The highest one is the object of the matrix verb, and semantically an operator over propositions whose restriction is provided by the entire embedded clause. The highest WH-element is thus co-indexed with the entire embedded clause, and not with the WH-element in its Spec.

Both approaches share the property that they cannot provide a uniform account for the data in (1)-(10). On the direct dependency approach, the difference between (1) and (3) is in terms of overt vs. covert movement. On the indirect dependency account (1) and (3) differ in whether the WH-elements are part of the same syntactic chain. In this paper, we will pursue the default hypothesis for the Dutch data, namely that there *is* a uniform analysis for the data in (1)-(10): they all involve chains created in overt syntax. Under this hypothesis, we arrive at the following descriptive generalization (Barbiers 2006):

(12) In a syntactic movement chain, a higher chain link is not more specified than a lower chain link.

To illustrate with subject pronoun doubling as in (6), *zij* is more specified that *ze*: since the former but not the latter can attract stress, it seems reasonable to assume that *zij* is endowed with some additional feature/structure—let's call it [+focus] for expository purposes—which *ze* lacks (see van Craenenbroeck & van Koppen 2008 for a worked out account that shows non-trivial similarities with our approach). So the feature matrix of the strong pronoun includes the specification [+focus, +phi], whereas that of the weak pronoun involves [+phi]. Hence, (12) correctly states that *ze* will always be higher in the structure than *zij* and will therefore always precede it.

The next step is then to explain why (12) would hold. We propose that (12) follows from the copy theory of movement (Chomsky 1995). This theory allows the syntax to copy a constituent α and remerge α higher in the structure. This will give standard movement. What syntax should also be allowed to do is to partially copy α. This is what happens with subextraction: trivially, an object must be able to move out of the VP, stranding the rest of the VP. Suppose that PF can spell out one or more than one chain link. Then (13) exhausts the options of a grammar:

(13)

Syntax:	*Phonology:*
(a) Full copying	(a) Spell out one chain link
(b) Partial copying	(b) Spell out more than one chain link

Given (13), we expect four possibilities:

(i) Full copying and both chain members are spelled out: identical doubling.

(ii) Full copying, but (for some reason) only the higher chain member is spelled out: non-doubling.

(iii) Partial copying and both chain members are spelled out: non-identical doubling.

(iv) Partial copying but (for some reason) only the higher chain member is spelled out.

Of these four options, (iv) does not occur for an independent reason: if after partial copying only the higher chain link is spelled out, this inevitably creates a recoverability problem. Hence, partial copying entails doubling.[3]

What is now naturally excluded is a case in which the more specified element precedes the less specified one. In order to generate such a construction, one would have to make a full copy of a constituent and subsequently add features and/or structure to it. This addition of features does not follow from the copy theory. It in fact violates the inclusiveness condition (Chomsky 1995), which states that the output of a syntactic operation cannot contain anything beyond its input.

In what follows we will apply this reasoning to the issue at hand, and assume that copying of a pronoun can also be either full or partial (cf. Hiemstra 1986, Cheng 2000, Sabel 2000, and the next section). In particular, we will be concerned with partial copying—thus option (iii)—as it manifests itself in the realm of WH-pronoun doubling (the scope marking construction, or partial copy construction).[4] In the following section we argue in favour of a phrasal analysis of (WH-) pronouns, and offer a concrete proposal along such lines for the syntactic structure of these elements. Section 3 provides a demonstration of how the proposal accounts for the empirical pattern. It also contains an extension to examples that less transparently involve partial copying, including measure phrases and the phenomenon of *wat...voor*-split. Section 4 shows the advantages over other recent accounts of syntactic doubling. Section 5 takes into

account data from Dutch child language and offers some speculations on the nature of intermediate movement steps of WH-pronouns.

2. PARTIAL COPYING AND THE PHRASAL ANALYSIS OF PRONOUNS

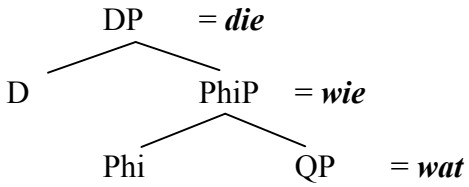
Our proposal can be summed up in the following statements:

(14) (a) Syntactic copying can be optionally partial (cf. Cheng 2000, Sabel 2000).

(b) PF spell-out is all or nothing, i.e. there is no partial spell-out at PF.

This raises an immediate question: what does it mean to partially copy a pronoun like *wie*? What it cannot mean is that *wie* is a head, the terminal string in a syntactic representation, and that partial copying targets a subset of its features. This would essentially entail that a syntactic operation, partial copying, is allowed to apply to elements at the sub-word level, violating lexical integrity (Lapointe 1980). However, this is not the only way of viewing pronouns. In the spirit of Cardinaletti & Starke (1999), Déchaine & Wiltschko (2002), van Koppen (2005), among others, we assume that pronouns are phrasal. More in particular, we assume that pronouns are not spell-outs of terminals but spell-outs of phrases (cf. Weerman & Evers-Vermeul 2002; Neeleman & Szendröi 2007). Adopting this view, we will argue that *di*e, *wie* and *wat* spell out different layers of the nominal projection, as indicated in (15):[5]

(15)



Given this structure, partial copying can now target the PhiP- or QP-node and the result will be non-identical doubling. We first motivate these nominal layers (sections 2.1-2.3), and then provide the derivations of doubling constructions (section 3).

2.1 The analysis of wat

Wat can be many things in Dutch, which suggests that it is not much in itself. It can be an indefinite (16a), a nominal modifier (16b), a relative pronoun (16c), a WH-pronoun (16d) or an exclamative marker (16e).

(16) (a) Jan heeft wat gegeten.
Jan has WAT eaten
'Jan has eaten something.'

(b) Jan heeft wat boterhammen gegeten.
Jan has WAT sandwiches eaten
'Jan has eaten some sandwiches.'

(c) Alles wat ik ooit dacht te weten.
everything WAT I ever thought to know
'Everything I thought I knew'

(d) Wat zal ik vanavond eten?
WAT shall I tonight eat
'What shall I eat tonight?'

(e) Wat een ellende is dit!
WAT a disaster is this
'What a disaster this is!'

Instead of listing *wat* in the lexicon five times, we follow Postma (1994) in assuming that there is only one *wat*, whose interpretation is determined by the syntactic context in which it appears (cf. Cheng 1991 for a similar claim for Chinese indefinites). This is illustrated in (17): in its base position, *wat* cannot be interpreted as a WH-pronoun and is instead an indefinite pronoun. (We ignore echo questions, and cases of multiple WH-questions, where *wat* can be licensed in situ by a moved WH-operator.) In clause-initial position, by contrast, the indefinite interpretation is not available, and *wat* is obligatorily construed as a WH-pronoun.[6]

(17) (a) Jan heeft wat gegeten.
Jan has WAT eaten
'Jan has eaten something.'
NOT: 'What has Jan eaten? '

(b) Wat heeft Jan gegeten?
WAT has Jan eaten
'What has Jan eaten?'
NOT: 'Jan has eaten something.'

For *wat* to appear in such a variety of contexts, it must be rather unspecified. This indeed seems to be the case. *Wat* can modify neuter and non-neuter mass nouns (18), suggesting it is unspecified for gender. It can also modify a plural noun (19), suggesting it is not specified for number. In addition, *wat* can appear in an expletive construction,

which in Dutch triggers a strong definiteness effect. Hence, the grammaticality of (20) suggests that *wat* is not specified for definiteness either:

(18) (a) het brood / wat brood
the$_{neuter}$ bread WAT bread
(b) de kaas / wat kaas
the$_{non\text{-}neuter}$ cheese WAT cheese

(19) wat boek-en
WAT book.PLUR

(20) Er is wat gekomen.
there is WAT come
'Something arrived‘

So, what features does *wat* express? We assume a privative system with the features [plural], [non-neuter] and [definite]. For an item to bear no specification for these features means that this item is not endowed with the relevant features. This explains the flexible combinatorial possibilities of *wat*, i.e. the fact that it can combine with a plural or singular noun. If *wat* is not combined with anything and appears on its own, it is interpreted by default rules: singular in the absence of [plural], neuter in the absence of [non-neuter], and indefinite in the absence of [definite].

As regards its categorial status, we think of *wat* as the spell-out of a QP, cf. (15). In short, *wat* is an indefinite numeral, in close kinship with Dutch *veel* ‘many’ and

weinig ‘little’. *Veel* and *weinig* have been analyzed as Q-elements in the literature (cf. Corver 1997). Informally, the denotations we assign to them are the ones in (21):

(21) *veel* ‘much’, ‘many’ = high quantity
weinig ‘few’, ‘little’ = low quantity
wat ‘something’ = quantity

There are three arguments in favour of the suggested parallel. First, all three elements can be modified by adverbs like *heel* 'very' and *nogal/best* 'quite':

(22) { heel / nogal / best } veel / weinig / wat boeken

Secondly, they appear in complementary distribution with elements such as determiners and numerals.

(23) *twee veel/weinig/wat boeken
two many/few/ some books

Thirdly, in noun ellipsis contexts, they obligatorily occur with quantitative *er* when modifying a count noun (a characteristic property of numerals), but they occur without quantitative *er* when modifying a mass noun:

(24) (a) (Over boeken): Ik heb *(er) veel / weinig / wat gelezen.
about books I have there many / few / some read
‘(As for books) I read many/few/some.’

(b) (Over kaas): Er ligt (*er) veel / weinig / wat in de koelkast.
about cheese there is there much / little / some in the fridge
‘(As for cheese) there is much/little/some in the fridge.’

Interestingly, *wat* is not always in complementary distribution with *veel* and *weinig*, as is evident on the basis of (25a). In such cases it has the same position as the phrasal *een beetje* ‘a bit’ (cf. (25b)):

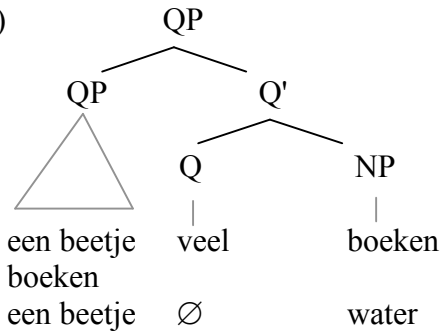
(25) (a) Ik heb wat veel/ weinig boeken gelezen.
I have WAT many/little books read
'I read quite a bit / a bit too little books.’

(b) Ik heb een beetje veel/weinig boeken gelezen.
I have a bit many/little books read
‘I have read a little too many books.’

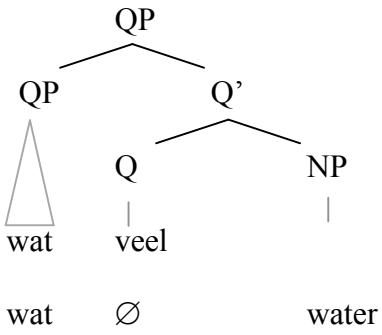
This means that, if *veel* and *weinig* are heads of QP (as argued for in for instance Corver 1997), *wat* cannot be. But this is exactly what we expect if *wat* is the spell-out of a phrase rather than a head (we will see that the same can be argued for *die* and *wie*). If so, *wat* can appear in a specifier position. Hence, such examples in (25) are represented as in (26), where QP-*wat* occupies the specifier position of another QP that dominates

NP. The head of this projection can be spelled out, e.g. by *veel* or *weinig* in (25), or remain empty, as in (19). These possibilities are represented in (26).

(26) (a)

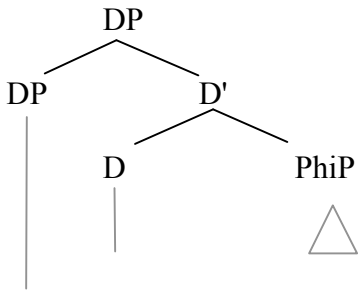


(b)

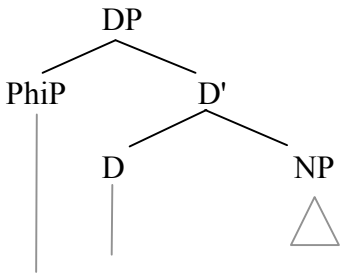


Since we claim that *die* and *wie* also spell out phrases, we also expect these pronouns to be able to occur as specifiers. This seems correct. Possesor WH-phrases in Dutch of the type given in (27b) provide ancillary support for the idea that WH-pronouns reside in the Spec of a DP, and there are even languages (like Greek) which fully lexicalize the structure.

(27) (a)



(b)

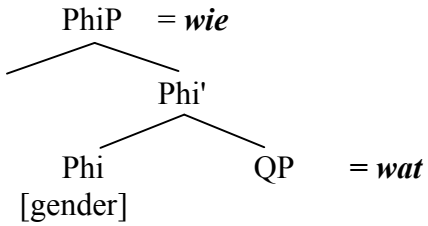


Dutch	die	∅	vrouw	wie	zijn	vrouw
				who	his	wife
English	that		woman			
Greek	ekini	i	jineka			
	that	the	woman			
	‘that woman’			‘whose wife’		

2.2 The analysis of wie

Following Déchaine & Wiltschko (2002), we assume that DPs have a PhiP-layer, where among other things gender is expressed. It is this layer that can be spelled out by *wie*:

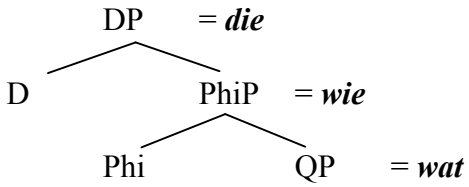
(28)



2.3 The analysis of die

PhiPs can be embedded under a DP-layer. This is what *die* spells out.

(29)



The contribution of this layer is definiteness (cf. Bennis 2001), as schematically indicated in (30):

(30) (a) *Dat* = *wat* + definiteness

(b) *Die* = *wie* + definiteness

Recall that *wat* cannot appear in a topic position without triggering a question interpretation (cf. 31a). This is in contrast to *dat* (cf. (31b)), which suggests that the latter is definite.

(31) (a) Hans heeft wat gelezen. ⇒ Wat heeft Hans gelezen?
Hans has something read something has Hans read
'Hans has read something.' *'Something, Hans has read.'

(b) Hans heeft dat gelezen. ⇒ Dat heeft Hans gelezen.
Hans has that read that has Hans read
'Hans has read that.' 'That, Hans has read.'

As we would expect on the basis of their ability to function as topics, *dat* and *die* can be topic-dropped. This is illustrated in (32). Given the non-topicalizability of *wat* and *wie*, this is impossible in their case.

(32) (a) Wie het weet, (die) mag het zeggen.
who it knows D-PRON. may it say-INF
'Whoever knows it may say it.'

(b) Wat je weet, (dat) mag je zeggen.
what you know D-PRON. may you say
'Whatever you know you can tell.'

An apparent problem is the following. If *wie* is a subconstituent of *die*, *wie* cannot have more features. However, *die* is a pronoun that refers to non-neuter antecedents, whereas *wie* is one that refers to non-neuter, human entities. It is reasonable, therefore, to ask why *die* does not strictly pick out human referents. Our response is that the situation is essentially due to an accidental gap. Both *wie* and *die* have [non-neuter] as a specification for gender. It so happens that the Dutch lexicon has no PhiP that expresses only [non-neuter]. What is available is a PhiP, spelled out as *wie*, which is also endowed with specification for [human].[7]

To summarize, *die*, *wie* and *wat* are spell-outs of phrases corresponding to different layers of a nominal structure, namely DP, PhiP and QP, respectively. With this in place, we can now go through the derivations of doubling constructions, which is the topic of the next section.

3. THE ANALYSIS OF PARTIAL COPYING

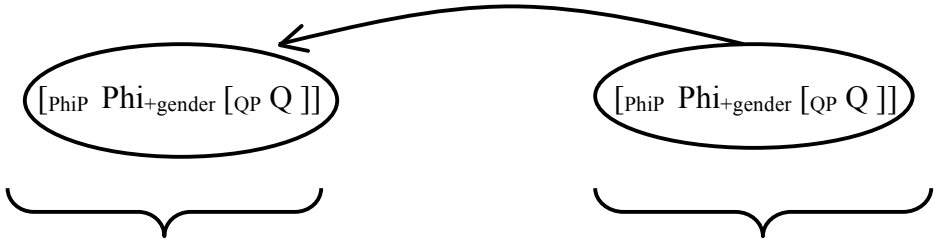
The examples of doubling provided in section 1 can now all be derived by ensuring that minimally the QP is copied. In section 3.1, we will present the derivation of copying constructions involving only WH-pronouns. In section 3.2, we will look at more complicated cases of partial copying construction in which the lower copy is a WH-phrase. We will end up with an analysis that makes partial copying constructions, involving either WH-phrases or WH-pronouns, look similar to the phenomenon of *wat…voor*-split. Section 3.3 subsequently exploits this parallel, showing that partial copying and *wat…voor*-split indeed behave similarly.

3.1 Partial copying with WH-pronouns

The different patterns arise because of (i) the optionality of generating either a DP or PhiP in the base position and (ii) the optionality of pied-piping DP and PhiP. In this section we will go over all the cases of non-identical doubling and give an account of the ungrammatical ones, i.e. the ones that violate the generalization in (12).

The most straightforward case is that of full copying. This is unsurprisingly derived by (i) copying of a PhiP, (ii) remerging it higher in the structure and (iii) spelling out two chain links: [8]

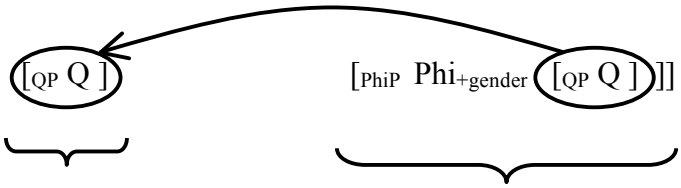
(33)



cf. (1)	**Wie**	denk je	**wie** ik gezien heb?
	who	think you	who I seen have

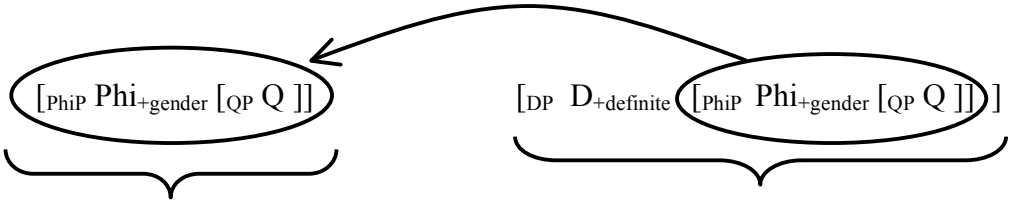
Turning now to partial copying, (34)-(36) schematize the grammatical patterns attested in Dutch dialects. In (34) we copy only the QP from within the PhiP. In (35) partial copying applies to PhiP within a DP, and in (36) partial copying targets the QP inside a DP.

(34)



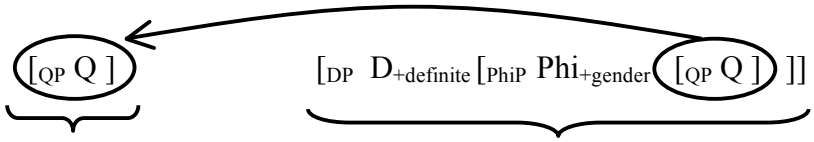
cf. (3)	**Wat**	denk je	**wie** ik	gezien	heb?
	what	think you	who I	seen	have

(35)



cf. (4)	**Wie**	denk je	**die**	ik gezien heb?
	who	think you	REL.PRON	I seen have

(36)



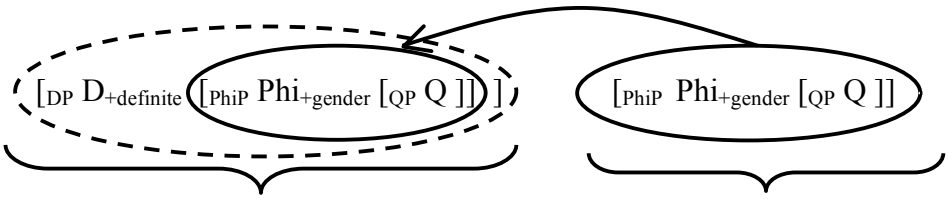
cf. (5)	**Wat**	denk je	**die**	ik gezien heb?
	what	think you	REL.PRON	I seen have

Examples (37)-(39) illustrate what goes wrong in the ungrammatical doubling cases. To derive an example in which the first element is more specified than the second, in violation of our generalization in (12), full copying has to be followed by something that the copy procedure does not itself provide, namely the addition of features and/or structure. We indicate this illegitimate addition by use of a dotted line.

(37)

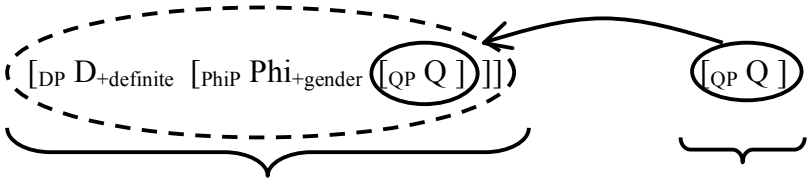
cf. (7)	***Wie**	denk je	**wat**	ik gezien heb?
	who	think you	what I	seen have

(38)



cf. (8)	***die**	denk je	**wie**	ik gezien heb?
	REL.PRON	think you	who	I seen have

(39)



cf. (9)	***die**	denk je	**wat**	ik gezien heb?
	REL.PRON	think you	what	I seen have

To conclude, by invoking the mechanism of partial copying we can derive the attested examples of non-identical doubling in a straightforward way. The inclusiveness condition suffices to rule out the unattested examples.[9]

The analysis proposed here builds on earlier proposals according to which doubling is derived by splitting a big DP, moving up one part and stranding the other. An early example of this is Uriagereka (1995), where clitic doubling in Western Romance is derived from a structure [DP (double) [D clitic [NP pro]]]. The clitic undergoes head movement out of this DP to a clause initial F position, stranding the double. Another prominent example is Kayne (2002), who extends Uriagereka's analysis to account for condition C effects. See also Cecchetto (2000), Belletti (2005) and Poletto & Pollock (2004) for implementations of the big XP approach. One important difference with such analyses is the spell out mechanism that we assume (i.e. a pronoun is the spell-out of the highest functional projection, QP, PhiP or DP), which ensures that in the case of partial copying of WH-pronouns the original is not affected by the partial copying operation but spelled out as a whole. Another difference is that in our analysis all pronouns are phrasal, i.e. neither the doubler nor the doublee is a head, which is in contrast to the literature on Romance. For an analysis of subject doubling cases like (6) along the lines proposed here, see Van Craenenbroeck & Van Koppen (2008).

A question that this analysis does not address is why WH-pronouns are never spelled out in their thematic base position. This question also arises for constructions involving WH-movement but no doubling, but becomes even more prominent with doubling constructions, where we observe that intermediate copies *can* be spelled out. The most explicit theory dealing with this issue is Nunes (2004). He proposes that movement as copying in general gives rise to a problem at PF. Consider example (40):

(40) X_i …Y… X_i

Here, X has been copied and merged in a higher position. Under the assumption that the two copies are PF-identical, linearization rules, such as Kayne's LCA axiom, encounter an ordering conflict: X has to be ordered before and after Y at the same time. The general solution is to not spell out one of the copies (see also section 4.1). The copy chosen for deletion is usually the lower one.[10] To explain the fact that WH-pronouns can be spelled out in intermediate specCP positions, Nunes proposes that these pronouns adjoin to C rather than move to specCP. In this position the WH-pronoun undergoes morphological reanalysis with C, i.e. the two become one word for the purposes of morphology. The consequence of this operation is that the WH-pronoun becomes invisible for the LCA, as this linearization procedure cannot look into the structure of words. In short, some varieties allow movement of WH-pronouns to embedded C-positions and the consequence of this syntactic option is doubling. In varieties that move pronouns to embedded specCP positions, intermediate copies have to be deleted at PF.

Since in our analysis pronouns are spell-outs of categories that are nonminimal maximal (Muysken 1982, Nunes 1998), movement of the PhiP/DP to a position adjoined to C is not immediately expected. The way to uphold Nunes' insight is to assume morphological reanalysis affecting PhiP/DP in SpecCP and C. For this to be possible, one has to assume that under certain conditions non-terminal nodes can undergo morphological merger. This assumption can be independently motivated. Consider the case of auxiliary contraction, for which there is evidence that it is a morphological process, thus sensitive to syntax and not reducible to phonology (see Goodall 2006 for a recent overview). The contrast between (41a) and (41b) shows that contraction is sensitive to the syntactic configuration: the pronoun c-commands the

auxiliary in (41a) but not in (41b). Although one could assume that the relevant structural relation is between two terminals, namely D and I, (41c) shows that contraction between the pronoun and the auxiliary is possible even when the pronoun is modified. The terminal D in (41c) does not c-command the auxiliary, suggesting that it is a projection of D that satisfies the c-command requirement on contraction.

(41) (a) You've got a lot of nerve.

(b) *John and you've got a lot in common. (Radford 1997: 331)

(c) Not even you've solved this problem.

Since nothing now excludes reanalysis of PhiP/DP with C, the difference between doubling and non-doubling can be characterized in terms of this operation, as in Nunes' proposal.[11]

3.2 Extensions

In previous sections we argued that *wat* is a subconstituent of *wie*, and *wie* a subconstituent of *die*, and we have motivated these claims in terms of features. But now consider the examples in (42):[12]

(42) (a) Wat denk je hoeveel mensen er op deze afdeling werken?
what think you how.many people there in this department work
'How many people do you think work in this department?'

(b) Wat denk je hoe dat kindje zich dan moet voelen?
what think you how that child REFL then must feel
'How do you think this child must feel?'

(c) Wat denk je welke impact het zou hebben?
what think you which impact it would have
'Which impact do you think it would have?'

Can these constructions be analyzed as involving partial copying? It is not completely straightforward that *wat* is a partial copy of *hoe* or *hoeveel*: in what way can *hoe* be decomposed into *wat* plus something in addition, like we did for *wie* and *die*? Moreover, under the standard assumption that *welke* 'which' in (42c) is a determiner head (cf. Longobardi 1994, Corver 1997), *wat* would have to be a partial copy of a head, thereby violating lexical integrity.

Despite initial appearances, we would like to explore the possibility that the examples in (42) involve copying of a subconstituent of the lower constituent. It proves insightful here to take into consideration degree questions in Scandinavian languages. Besides degree questions in which the whole adverb phrase is fronted (cf. 43a), Icelandic can split the phrase and leave the adjective in situ (cf. Svenonius & Kennedy 2006). The fronted question word is spelled out as *hvað* 'what' (cf. 43b).

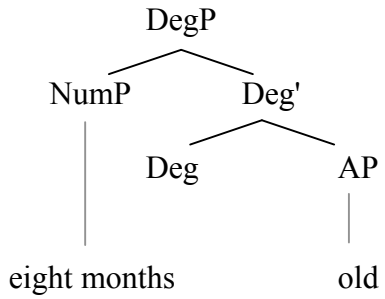
(43) (a) Hversu gammall ertu? *Icelandic*
how.much old are.you
'How old are you?'
(b) Hvað ertu gammall?
what are.you old
'How old are you?'

Standard Norwegian has the question word *kor* 'where' in constructions parallel to (43a), as given in (44a). Northern Norwegian dialects also have the 'in situ' construction but there is no overt clause-initial question word in that case. Example (44b) is distinguished from a yes/no-question through intonation.

(44) (a) Kor gammel er du? *Standard Norwegian*
where old are you
'How old are you?'
(b) Er du gammel? *Northern Norwegian*
are you old
'How old are you?'

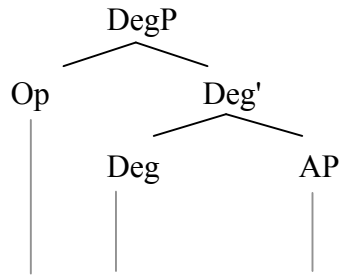
In order to account for the correct semantic interpretation of measurement, Svenonius & Kennedy argue that the syntactic representation involves a functional head, degree or measure, which selects a phrase headed by a gradable adjective. This degree head is interpreted as a variable which is bound by the measure phrase in its specifier:

(45)



Given this analysis, the variation in degree questions boils down to variation in the spell out rules.[13] In Standard English, the degree head is spelled out as *how* and is syntactically bound by an operator, a measure phrase in its specifier which presumably remains empty as a result of a doubly-filled COMP effect (cf. (46a)). Icelandic and Norwegian also have this option (cf. (46b) and (46c)). In addition to fronting the entire DegP to first position, however, Icelandic can also move just the operator, which will then be spelled out as *hvað* (cf. (46d)). In Northern Norwegian, this operator remains empty (cf. (46e)).

(46)



(a)		$Ø_{Op}$	how	old	*Standard English*
(b)		$Ø_{Op}$	kor	gammel	*Standard Norwegian*
(c)		$Ø_{Op}$	hversu	gammall	*Icelandic 1*
(d)	$hvad_{Op}$ ⟵	$hvað_{Op}$		eldre	*Icelandic 2*
(e)	$Ø_{Op}$ ⟵	$Ø_{Op}$		gammall	*Northern Norwegian*

Hence, the variation shown in Scandinavian degree questions motivates the presence of an empty question operator which only becomes PF-visible when it is subextracted. In Icelandic, PF spells out the operator and in Northern Norwegian PF signals its presence through intonation.

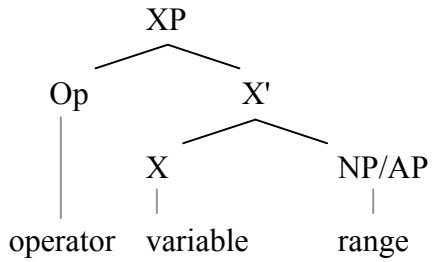
A similar structure can now be adopted for the Dutch data in (42). The degree phrase occupies an intermediate specCP position. From there, the operator is subextracted and moved to sentence-initial position, where PF spells it out as *wat*. The particular spell out that PF chooses, in Icelandic and Dutch dialects, should not come as a surprise. We argued earlier that *wat* is a QP denoting unspecified quantity. Hence, it can very well function as an unspecified measure phrase binding the degree variable *hoe*. For (42b), we assume that the degree head selects an empty adjective phrase. The structures are given in (47):

(47) (a) [[$_{QP}$ Wat] denk je [[$_{DegP}$ ~~QP~~ hoe [$_{AP}$ veel mensen]] er op die afdeling werken?]]

(b) [[$_{QP}$ Wat] denk je [[$_{DegP}$ ~~QP~~ hoe [$_{AP}$ Ø]] dat kindje zich dan moet voelen?]]

We would like to suggest that the structure in (46) provides the blueprint for partial copying constructions involving WH-phrases in general. They contain three components: (i) a variable, introduced by a determiner such as 'how' or 'which' (ii) a range for the variable, introduced by an (empty) NP or AP and (iii) an operator binding the variable (cf. also Wiltschko 1998, Rett 2006[14]).

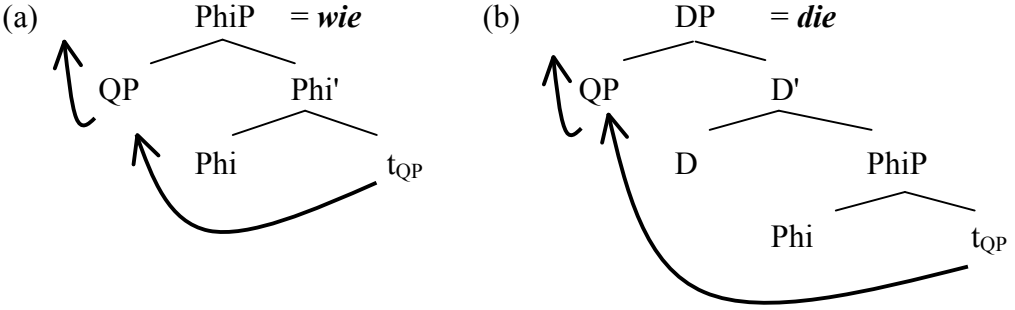
(48)



Hence, the hypothesis that WH-constituents contain an operator and a variable in general gives us a source for the category that after subextraction gets spelled out as 'what'. In other words, the internal syntax of WH-constituents accounts for the syntax external to it, namely the partial copying construction.[15]

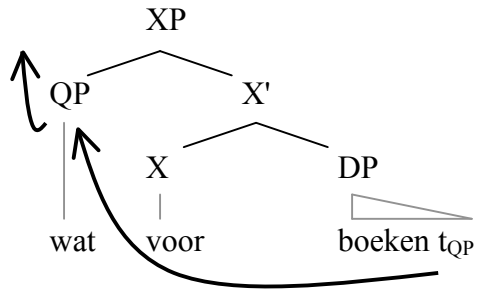
If the structure of WH-constituents contain both an operator and a variable, it must not only be the case for WH-phrases but also for WH-pronouns. Indeed, we will assume that PhiP- and DP-internally, the QP moves to the highest specifier position, as indicated for PhiP in (49a) and for DP in (49b).[16]

(49)



This move changes the representations of the derivations in section 3.1 slightly. The advantage is that it allows us to draw an interesting parallel with *wat...voor*-split, a construction that overtly shows the presence of *wat* in the highest specifier:

(50)



In the following section, we discuss parallels between partial copying and *wat...voor*-split, suggesting they are basically the same phenomenon.

3.3 The parallel with the wat ... voor-split

A crucial ingredient in the analysis is that partial copying should be allowed to target a specifier which is part of a constituent in a derived position. Although this may not seem the most straightforward position from which to allow extraction (but see Torrego 1985, Chomsky 1986: 25ff.), this is exactly what seems to happen in the *wat...voor*-split construction:

(51)

Wat denk je dat hij **voor boeken** niet gelezen heeft?
what think you that he for books not read has
'What kind of book do you think he did not read?'

Also, some speakers allow stranding in the matrix VP (Barbiers 2001), as in (52). This cannot be accounted for unless we allow *wat* to sub-extract from a derived position:

(52) [$_{CP}$ **Wat** had jij dan ~~**wat**~~ **voor boeken** gedacht [$_{CP}$ dat Jan zou lezen?]]
what had you then what for books thought that John would read
'What kind of books would you have thought that John would read?'

There are in fact four additional similarities between partial WH-copying and *wat...voor*-split, which we will briefly review presently. First, the higher copy cannot be more specified than the lower one, in line with what we have seen to be the case for WH-copying constructions and in accordance to our generalization in (12).

(53) (a) ***Wie** denk je **wat** ik gezien heb?
who think you what I seen have
(b) ***Wat voor boeken** denk je **wat** Jan gelezen heeft?
what for books think you what Jan read has

Secondly, in both WH-copying constructions and *wat...voor*-split PF apparently cannot spell out WH-copies in their base position:

(54) (a) *Ik vraag me af [$_{CP}$ **wat$_i$** Jan **wie$_i$** gezien heeft].
I ask me PRT what Jan who seen has
'I wonder who Jan has seen.'
(b) *Ik vraag me af [$_{CP}$ **wat** Jan **wat voor boeken** gelezen heeft].
I ask me PRT what Jan what for books read has
'I wonder what kind of books Jan has read.'

Note that not spelling out the lower *wat* in (54b) gives a grammatical result (cf. 55b). The strategy of not spelling out the lower copy cannot apply to (54a) on the intended reading, as this would lead to deletion of unrecoverable Phi-features. (In other words, even though (55a) is grammatical, it does not get a 'who'-reading, but a 'what'-reading.)

(55) (a) Ik vraag me af [$_{CP}$ **wat$_i$** Jan ~~**wie**~~ gezien heeft].
I wonder me PRT what John who seen has
'I wonder what/*who Jan has seen.'

(b) Ik vraag me af [$_{CP}$ **wat** Jan ~~**wat**~~ **voor boeken** gelezen heeft].
I ask me PRT what Jan for books read has
'I wonder what kind of books Jan has read.'

Thirdly, in both constructions any WH-element occuring in SpecCP of an embedded clause must be spelled out:

(56) (a) **Wat** denk je *(**wie**) Jan gezien heeft?
what think you who John seen has
'Who do you think Jan saw?'

(b) **Wat** denk je ***(wat) voor boeken** Jan gelezen heeft?
what think you what for books Jan read has
'What kind of books do you think that Jan has read?'

Finally, both partial WH-copying and *wat ... voor*-split are blocked by intervening negation (cf. Felser 2004 and references cited therein).

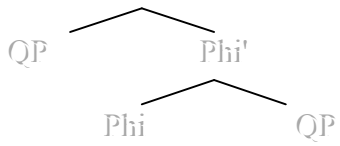
(57) (a) ***Wat** denk je **niet wie** Jan ontmoet heeft?
what think you not who John met has

(b) ***Wat** denk je **niet** dat Jan **voor mensen** ontmoet heeft?
what think you not that John for people met has

These similarities strengthen the idea that partial WH-doubling and *wat...voor*-split are derived by the same process which only partially copies a constituent.

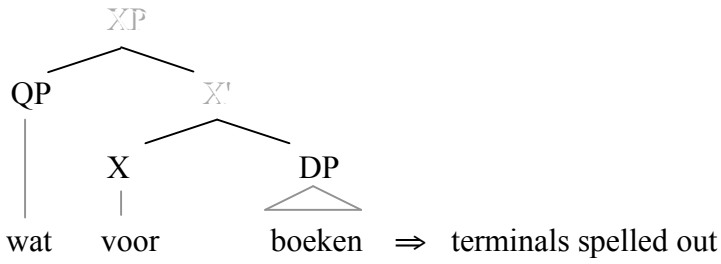
There is, however, one major difference. In *wat...voor*-constructions *wat* is always visible. In WH-doubling constructions, on the other hand, *wat* shows up in a subset of cases, namely whenever partial copying takes place. When full copying applies, or no copying at all (i.e. there is no movement), *wat* is not spelled out. This is what we expect, since spell out of *wie* subsumes spell out of *wat*.

(58) PhiP ⇒ spelled out as *wie*



In *wat...voor*-constructions, *voor* as well as the noun are spell-outs of terminal nodes, neither of which dominates *wat*. Hence, *wat* can and will always be spelled out, and we therefore expect that *wat voor boeken* can occur as a constituent, depending on the position it is in.

(59)



4. ALTERNATIVE ACCOUNTS

Let us now compare our approach to existing accounts of syntactic doubling. We start by considering an analysis discussed in Nunes (2004), namely scattered deletion at PF, to deal with cases of non-identical doubling. Then we consider the proposal by Poletto & Pollock (2004), in which doubler and doublee initially form one big XP (an approach we refer to as the 'big XP' analysis). We point out why we think that the data under discussion are better handled in our own approach. In section 4.2 we embed our analysis in the larger discussion on the nature of the dependency (direct vs indirect) between the elements partaking in doubling constructions.

4.1 Scattered deletion at PF and the 'big XP' approach

Nunes argues that spelling out more than one chain member is in general illicit, because it violates Kayne's LCA: if syntactic structure is linearized on the basis of c-command relations, movement of α across β leads to the situation in which β both c-commands and is c-commanded by α. Hence, α and β cannot be linearized, as PF is provided with conflicting linearization instructions. One strategy to make lineralization possible is to delete all but one copy. Another strategy is to delete complementary material in two copies. As an illustration of this mechanism, consider the following Croatian example from Nunes (2004: 29), taken from Cavar & Fanselow (1997). Strikethough notates

deletion at PF. (60b) indicates the syntactic structure that feeds PF, (60c) the results of scattered deletion at PF.

(60) (a) Na kakav je Ivan krov bacio loptu? *Croatian*
on what.kind.of be Ivan roof throw ball
'On what kind of roof did Ivan throw the ball?'

(b) [[$_{PP}$ na [kakav krov]]^{i} je Ivan [[$_{PP}$ na [kakav krov]]^{i} bacio loptu [[$_{PP}$ na [kakav krov]]^{i}]

(c) [[$_{PP}$ na [kakav ~~krov~~]]^{i} je Ivan [[$_{PP}$ ~~na [kakav~~ krov]]^{i} bacio loptu ~~[[$_{PP}$ na [kakav krov]]^{i}]~~]

Note that, under this approach, there is no partial copying: in the syntax, the whole WH-constituent is copied and PF subsequently decides where to delete what, thereby deriving what looks like subextraction. Assume that we would apply Nunes' notion of scattered deletion to the cases of non-identical doubling in the Dutch dialects. First we apply full copying of a WH-pronoun. Subsequently, only part of the higher copy is spelled out, namely as *wat*, and only part of the lower copy, namely as *wie*. Although we thus obtain the correct result, scattered deletion is not precise enough as it stands. Nothing yet blocks spelling out the higher copy as *wie* and the lower one as *wat*, so that we incorrectly predict partial underspecification of a lower copy to be possible. In other words, additional stipulations are needed to derive the generalization in (12).

Let us now turn to the so-called 'big-XP' analysis of pronominal doubling (see Cecchetto 2000, Kayne 2002, Belletti 2005 and Poletto & Pollock 2004 in particular for WH-doubling in Romance varieties). In their analysis of WH-clitic doubling in French

and Northern Italian dialects, Poletto & Pollock argue that the doubler and doublee are initially contained in one and the same nominal XP. During the derivation, doubler and doublee move to different syntactic positions, creating a doubling effect. Applying the gist of this analysis to the data at hand yields the XPs given in (61), in which *wie* is (contained in) the sister of *wat* or vice versa. (62) provides the structures assigned by our own analysis. The structures are different in that in (61) both WH-pronouns are dominated by the same category, XP, whereas in (62) one WH-pronoun dominates the other. More precisely, *wie* is the spell out of a category that dominates the category that is spelled out as *wat*.

(61) (a) [$_{XP}$ *wat wie*] or [$_{XP}$ *wie wat*]

(b) [$_{XP}$ *wie die*] or [$_{XP}$ *die wie*]

(c) [$_{XP}$ *wat die*] or [$_{XP}$ *die wat*]

(62) (a) [$_{wie}$ *wat*]

(b) [$_{die}$ *wie*]

(c) [$_{die}$ [$_{wie}$ *wat*]]

There are two ways in which *wie wat* can be derived, and these have to be ruled out. We will show that the first derivation does not decide between the two approaches, whereas the second one provides an argument for our approach.

The first way in which *wie…wat* could be derived involves moving *wat* to the embedded SpecCP, and subsequent movement of *wie* into matrix CP. (63) illustrates how this structure would be derived in each approach.

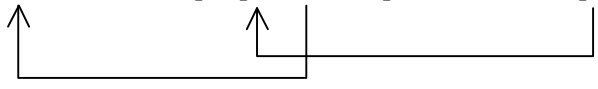
(63) (a)

(b)

These derivations can be straightforwardly ruled out. In long extraction, the reason why the WH-pronoun lands in an intermediate specCP is locality-related: it does not move there for feature checking reasons (cf. Boškovi 2007 and section 5.2 for discussion). Therefore, there is no reason for *wat* to end up in the embedded SpecCP position and this movement is blocked.[17] Moreover, subsequent movement of *wie* would be then non-local, violating locality (unless one assumes that *wat* can move to C, à la Nunes (2004), and *wie* through the embedded SpecCP). Since both approaches can resort to this reasoning in order to rule out ungrammatical *wie...wat*, (63) does not favour either.

There is, however, another way of deriving *wie...wat* which the big XP approach makes in principle available, and one needs extra assumptions to rule it out. Suppose that we move XP to the embedded SpecCP and then subextract *wie* and move it to the matrix SpecCP. The result is given in (64):

(64) [CP *wie* … [CP [XP *wie wat*] … ~~[XP *wie wat*]~~]]



Note now that it is impossible to do a similar derivation in our approach. Since spelling out PhiP subsumes spelling out QP (i.e. PhiP dominates QP), the only way for *wat* to surface is if it is subextracted from PhiP. Movement of PhiP never strands QP. Hence, moving PhiP can at most lead to identical doubling (*wie…wie*) but never to non-identical doubling (*wie…wat*). To conclude, our approach rules out the ungrammatical example without further ado.

Whereas the 'scattered deletion' and the 'big XP' approach require additional machinery to capture the generalization, the present analysis does not necessitate such measures.

4.2 The direct-indirect dependency controversy

According to the account proposed here, both identical (i.e. full) and non-identical (i.e. partial) doubling involve WH-elements belonging to a single chain that is established in overt syntax. In this respect, our proposal can be thought of as belonging to the family of direct dependency approaches to partial copying (van Riemsdijk 1982, Hiemstra 1986, McDaniel 1989, Beck & Berman 2000, Brandner 2000, Cheng 2000, von Stechow 2000, and others). A crucial point of departure concerns the status of the 'scope marker' 'what'. Contrary to most direct dependency accounts, we assume that the creation of a dependency relation between the scope marker and the real WH-element does not rely on a covert movement operation (namely one that replaces the scope marker with the contentful WH-element at LF) but is already established in overt syntax.

In this section, we will compare our direct dependency approach (which takes *wat* to be a partial copy of *wie* or *die*) to the indirect dependency approach and show the

advantages of the first approach. Our conclusion will be that our version of the direct approach fares better in accounting for the Dutch data than the most prominent indirect approaches. We do not wish to claim that the direct approach is superior in general. Arguments go both ways and the type of analysis one wants to assume may differ from language to language, suggesting the existence of a spectrum that ranges from indirect to direct dependencies (cf. Fanselow 2006 and also Dayal 2000, Horvath 2000). Nevertheless we permit ourselves a few remarks about the basic tenets of the indirect approaches, so as to bring out the differences (and, as we will see, similarities) with our own approach.

The indirect dependency approach holds that there is no direct syntactic relation between the higher WH-element and the lower one. Matrix *wat* is co-indexed with the entire embedded clause and the latter functions as the restriction of this operator. This semantic analysis leaves underdetermined what the syntactic function is of the CP-clause, and thereby what its relationship is to the WH-operator. We will discuss two main proposals: on one proposal, the WH-pronoun in the matrix clause (e.g. *wat* in Dutch, *was* in German) is the syntactic object of the matrix verb (Dayal 1994, 1996; Felser 2001), whereas on the second proposal the WH-pronoun is an expletive, generated in the functional domain related to the matrix object (cf. Fanselow & Mahajan 2000; Horvath 2000). Let us look at each in turn.

According to Dayal, the embedded clause is adjoined to CP or IP. This, however, has been shown to be problematic for German. See Beck & Berman (2000), Horvath (2000), Felser (2001), Fanselow (2006) for arguments suggesting that the CP-clause occupies a low, VP-internal position. But if *was* realizes the argument of the matrix verb, what is the syntactic status of the CP-clause? Felser (2004) proposes that it

is a secondary predicate, predicating of *was*. This analysis is problematic, however. If both *was* and the CP-clause are base-generated VP-internally, as an object and secondary predicate respectively, we expect them to be able to show up in their base-generated positions. As pointed out by Bayer (1996), multiple WH-questions are a good testing ground: if another WH-constituent occupies the sentence-initial position, *was* should be able to appear in object position (cf. (65a)). This prediction is not borne out (cf. (65b)):

(65) (a) Wer hat was gedacht?
who has what thought
'Who thought what?'

(b) *Wer hat was gedacht wen wir anrufen sollten?
who has what thought whom we call.up should
Intended: For which person x and for which person y, x thought that we should call up y?

Felser deals with this problem as follows. She points out that whenever *was* is modified it gets the indefinite interpretation, unless it moves to the left periphery. This is shown in (66):

(66) (a) Er hat mir was Schönes gesagt.
he has me something nice said
'He said something nice to me.'

(b) Was hat er dir denn Schönes gesagt?
what has he you PRT nice said
'Which nice things did he say to you?'

(c) Wer hat dir denn was Schönes gesagt?
who has you PRT something nice said
'Who said something nice to you?'
*'Who said which nice things to you?'

In (65b) *was* has not been fronted, and is predicated of by the CP-clause. This results in a conflict: *was* has to be interpreted as [-WH] since it is in situ and modified, but its predicate is [+WH]. This explanation seems flawed to us. If one takes into consideration prototypical secondary predicates, then *was* in situ need not be interpreted as an indefinite but can also be a WH-element:

(67) Wer hat was roh gegessen?
who has what raw eaten
'Who ate something raw?'
'Who ate what raw?'

Hence, under the assumption that the CP-clause *is* a secondary predicate, there is no explanation for the ungrammaticality of (65b). Since this example crucially shows that *was* cannot overtly occur in the position in which it is supposedly inserted, this key feature of the indirect dependency approach is challenged.

In short, the indirect dependency approach offers a plausible semantics for the scope marking construction, but has a harder time providing a syntactic function for the dependent CP-clause. What is more, some constructions from the Dutch dialects make it even harder to apply the indirect dependency approach to Dutch WH-doubling. Consider the sentences (4) and (5) repeated below:

(68) **Wie** denk je **die** ik gezien heb? *North-Holland*
who think you REL.PRON I seen have

(69) **Wat** denk je **die** ik gezien heb? *Overijssel*
what think you REL.PRON I seen have

While our approach derives (68) and (69) in a uniform way, by relying on partial copying, this is not the case for the indirect dependency analysis. Note first that this approach has nothing to say about examples such as (68), which features 'who' in the matrix C, a WH-element that does not qualify as a propositional variable. As for (69), the indirect dependency approach is forced to assume that the dependent CP-clause (the clause introduced by *die*) is a question, functioning as the restriction on the quantifier *wat*, which realizes the object of the matrix verb. We therefore expect examples like (70) and (71) to be grammatical, contrary to fact.[18]

(70) *Die denk je die ik gezien heb?
REL.PRON think you REL.PRON I seen have

(71) *Die heb ik gezien?
REL.PRON have I seen

If the embedded clause is not a question, as (70) and (71) strongly suggest, then it cannot be taken to provide the restriction to the quantifier 'what'. This poses a problem for the semantics proposed for the scope marking construction by the indirect dependency approach. Moreover, it bears on what the syntactic status of the dependent CP is: if the CP-clause were indeed a question, it would be impossible to treat it as the syntactic object of the matrix verb, since *denken* does not select a question. If the embedded clause is not a question, however, then nothing stands in the way of it being the object of *denken*. This is the syntactic analysis we assume for all dependent CP-clauses in these doubling constructions.[19] The consequence of this is that dependent CP-clauses introduced by a WH-element instead of *die* are not questions either, which suggests that the WH-element is not interpreted in that position.[20]

The second type of indirect dependency approach circumvents some of the key problems with the first approach. It assumes that *was* in German is not the argument of the verb but an expletive generated in some functional position, e.g. in specAgrOP (cf. Fanselow & Mahajan 2000). This approach allows for an analysis in which the CP-clause functions as the object of the verb, thereby resolving the issue of its syntactic status. Such an indirect dependency approach is in fact close to a direct dependency proposal along the lines of van Riemsdijk. The major syntactic difference is the insertion site of *was,* specAgrOP versus specCP.[21] The two approaches also differ in what moves in covert syntax, this now being the basic difference between the direct and the indirect dependency approach. What moves covertly in the former is the "real" WH-

constituent, and in the latter the CP-clause. Note, however, that what moves in covert syntax is not fully determined by the analysis of the overt syntactic structure. Whereas one could imagine that an expletive in specAgrOP triggers movement of the entire CP, such a covert movement is not blocked by the assumption that 'what' is generated in the highest specCP. Hence, under this second type of indirect dependency approach, the distinction with direct dependency approaches becomes harder to see and is at least no longer reliant on a different syntactic function of the CP-clause.[22]

Arguments in favour of the indirect dependency approach have been provided by differences between the scope-marking construction and long WH-movement. Since in our approach both constructions involve syntactic chains created in overt syntax, any difference between these two constructions is potentially problematic for us. For instance, it has been observed that negation in the matrix clause only creates a problem for the scope-marking construction, and not for long extraction (cf. among others Dayal 1994, 2000, Herburger 1994, Beck & Berman 2000, Felser 2001). This has been used as an argument in favour of analyzing the two constructions differently (though see Beck & Berman 2000 and von Stechow 2000). (72) illustrates the pattern in German:

(72) (a) Wen glaubst du nicht dass sie liebt?
who think you not that she loves
'Who don't you think that she loves?'

(b) *Was glaubst du nicht wen sie liebt?
what think you not who she loves

However, it has sometimes been overlooked that full copying across negation is also impossible (cf. Rett 2006):

(73) *Wen glaubst du nicht wen sie liebt?
who think you not who she loves

Full copying has generally been treated as a variant of long WH-movement involving multiple spellout (see among others Fanselow & Mahajan 2000, Felser 2004, Rett 2006), the indirect dependency approach being inapplicable to this construction. Hence, an explanation for the ungrammaticality of (72b) that hinges on a particular aspect of the indirect dependency approach cannot be used to account for the ungrammaticality of (73), because that would rule out (72a) too. Therefore, such an explanation does not count as an argument in favour of the indirect dependency approach. It is unclear to us which factor causes ungrammaticality here, but that factor has to distinguish both copying constructions from long extraction. As we show in the appendix, no existing theory of the intervention effect in (72b) and (73) is fully satisfactory in the light of data pertaining to intervention effects involving operators other than negation.

The same reasoning applies to the 'anti-locality' property of WH-scope marking (also brought up by Felser (2001) as an argument against the direct dependency), illustrated in (74b). Since this property is common to full copying as well (cf. 74c), it cannot be taken to argue in favour of the indirect dependency approach.

(74) (a) Wen hat Maria getroffen?
who has Maria met
'Who did Maria meet?

(b) *Was hat Maria wen getroffen?
what has Maria who met

(c) *Wen hat Maria wen getroffen?
who has Maria who met

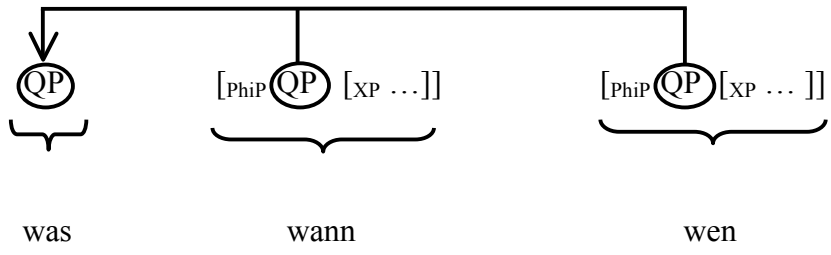
Since in our analysis long extraction, full copying and partial copying (i.e. the scope-marking construction) all involve syntactic chains created in overt syntax, any differences between the latter two are also potentially problematic. Here again, differences have been observed and used to motivate a different syntactic treatment. At least one set of data, however, in fact seems to lend support to our analysis. Consider the following examples:

(75) Es ist egal, was er meint [wann sie kommt] und [wen sie mitbringt].
It is equal what he thinks when she comes and who she with.brings
'It doesn't matter what he thinks as to when she willl come and who she will bring along.'

(76) *Es ist egal, wann/wen er meint [wann sie kommt] und [wen sie mitbringt].
It is equal when/who he thinks when she comes and who she with.brings

Although Felser (2001, 2004) uses this contrast as an argument against analyzing full copying on a par with partial copying (and thereby also as an argument against the direct dependency approach), it in fact only argues against an approach in which the 'contentful' WH-element replaces the scope marker *was* at LF. On such an approach, (76) would involve both *wann* and *wen* replacing *was* at LF, which would predict (75) to be as bad as (76). In our account, the contrast follows straightforwardly. Assuming, as does Felser, that across the board extraction targets identical material is enough to rule out (76): either *wen* or *wann* moves, but neither one is shared in both conjuncts. In (75), on the other hand, across-the-board movement targets the QP inside each of the two WH-phrases, as schematized in (77).

(77)



Felser further points out for German that there exists a contrast between full and partial copying concerning island sensitivity. Her observation is that partial copying is impossible with matrix verbs that can no longer select a DP object, whereas full copying is better.

(78) (a) *Was hat Peter das Gefühl, wen man fragen könnte?
What has Peter the feeling who one ask could

(b) ?Wen hat Peter das Gefühl, wen man fragen könnte?

(79) (a) *Was scheint es, wen Hans geschlagen hat?
What seems it who Hans hit has

(b) ?Wen scheint es, wen Hans geschlagen hat?
who seems it who Hans hit has

This follows if *was* 'what' is an argument of the matrix predicate: it competes for an argument slot with *das Gefühl* in (78) and with the embedded CP in (79). Full copying constructions fare better because *wen* is not an object of the matrix clause but part of a syntactic chain originating in the embedded clause. However, the contrast does not seem to exist in Dutch.[23] Consider the data in (80) and (81):

(80) (a) ***Wat** hoorde je het nieuws **wie** hij had ontmoet?
what heard you the news who he had met

(b) ***Wie** hoorde je het nieuws **wie** hij had ontmoet?
who heard you the news who he had met

(c) ***Wie** hoorde je het nieuws dat hij had ontmoet?
who heard you the news that he had met

(81) (a) ***Wat** schijnt het **wie** Hans geslagen heeft?
what seems it who Hans hit has

(b) ***Wie** schijnt het **wie** Hans geslagen heeft?
who seems it who Hans hit has

(c) %**Wie** schijnt het dat Hans geslagen heeft?
who seems it that Hans hit has

In (80), full and partial copying are equally bad. Note that long extraction also gives a bad result (cf. (80c)). The explanation of this is most likely that *wie* has been extracted out of a complex NP. In our account, this explanation carries over to (80a) and (80b). In (81), long extraction is much better but, crucially, there does not seem to be a contrast between full and partial copying. Whatever the explanation for the ungrammaticality, the Dutch data do not warrant a syntactic differentiation between full and partial copying.

5. FURTHER ISSUES

In this section, we take up two remaining issues. First, we discuss an example that seems to run counter to the generalization in (12) in that it contains two WH-constituents of which the first one is more specified than the second. We will argue in section 5.1 that these cases, attested in child speech, are only apparent counterexamples. Section 5.2 devotes some attention to intermediate movement steps.

5.1 Wh-doubling in child language

In this section, we will discuss a construction that seems to run counter to the generalization we have claimed to hold of syntactic chains, namely that a higher chain link is not more specified than a lower chain link. Apart from being a feature of Dutch dialects, doubling constructions also occur prominently in child language. According to van Kampen (1997, 2008), children have WH-doubling constructions before they can do

long WH-extraction. See also McDaniel et al. (1995) and Jakubowicz & Strik (to appear) for the pervasive nature of WH-doubling in child language. In addition to full and partial WH-copying constructions, constructions are attested in which a full WH-phrase precedes a WH-pronoun (cf. van Kampen 1997):

(82) Welke jongen denk je wie daar loopt?
which boy think you who there walks
'Which boy do you think walks there?'

Van Kampen (2008) argues that the full set of data from child language strongly suggests that children make use of the paradigm of relative pronouns when constructing the WH-constructions below.[24] The corresponding antecedent-relative pronoun pairs are given in (84):

(83) (a) In welk huis denk je waar jij woont? (child grammar)
in which house think you where you live
'In which house do you think you live?'

(b) Op welke jongen denk je op wie ik verliefd ben?
On which boy think you on who I in.love am
'Which boy do you think I am in love with?'

(c) Welk huis / welk meisje denk je wat ik leuk vind?
Which house/which girl think you what I nice find
'Which house/girl do you think I like?'

(84) (a) het huis waar jij woont (adult grammar)
the house where you live

(b) de jongen op wie ik verliefd ben
the boy on who I in.love am
'the boy that I am in love with'

(c) het meisje wat ik leuk vind
the girl what I nice find
'the girl that I like'

An argument in favour of such an analysis, according to her, is that examples in which the WH-phrase and the pronoun do not form a legitimate antecedent-relative pronoun pair in Standard Dutch are unattested in the child data:

(85) (a) *In welk huis denk je daar ik woon?
in which house think you there I live

(b) *Welke boeken denk je wat ik heb gelezen?
which books think you what I have read

(c) *Welke villa denk je wat ik ga kopen?
which villa think you what I go buy

(86) (a) *het huis daar ik woon
the house there I live

(b) *de boeken wat ik heb gelezen
the books what I have read

(c) *de villa wat ik ga kopen
the villa what I go buy

Van Kampen argues that children insert these relative pronouns in the C-head of the embedded complement clause, the choice of pronoun being determined by the features of the WH-phrase that has moved through the embedded specCP. In other words, the examples in (83) are analyzed as a form of agreement between C and a copy of the WH-phrase (cf. Thornton & Crain 1995). The analysis in addition captures the fact that doubling of WH-phrases is not attested: a phrase cannot function as a filler of C.

(87) *Welke jongen denk je welke jongen daar loopt?
which boy think you which boy there walks
'Which boy do you think is walking there?'

Two questions are raised: (i) do the child data pose a threat to our generalization and (ii) can van Kampen's proposal be applied to the dialect data we discuss in this paper, obviating the need for partial copying? We think that the answer to both questions is negative.

Let us start with the latter question. Treating lower copies as fillers of C is not a viable analysis for the basic data that we set out to explain. The reason is the existence of WH-doubling dialects in which the embedded C-head is already filled by a complementizer. See Felser (2004, citing Bayer 1996) for a similar argument on the

basis of comparable German data. Consider the southern Dutch data below (see also the examples in (90)):

(88) (a) Wie peis-de-gij wie da ‘k in ‘t stad gezien en. *Koewacht*
who think-you-you who that I in the city seen have
‘Who do you think I have seen in the city?’

(b) Wie peis-de-gij nu wie a ‘k in ‘t stad gezien heb.
St Gillis bij Dendermonde
who think-you-you now who that I in the city seen have

If in (88a, b) *da* and *a* fill the embedded C-position, the WH-pronoun cannot be an agreeing complementizer.

This brings us to the first question. If the lower WH-pronoun is in a specifier position, it could in principle form a syntactic chain with the sentence-initial WH-phrase. To uphold our generalization, we have to assume that *welke jongen* is base-generated upstairs and related to a sentence-internal operator, realized as *wie* (cf. Chomsky 1977, McCloskey 1979, 1990, van Craenenbroeck 2004). This pronominal operator is the element undergoing sentence-internal movement and is related to the base-generated phrase through semantic construal (or R-binding, cf. Safir 1984). In this respect, the construction in (82) shows a similarity with Germanic Contrastive Left Dislocation (CLD) constructions for which a similar analysis has been proposed (Koster 1978, Weerman 1989).[25] Van Craenenbroeck (2004) explicitly proposes this analysis for WH-constructions in Dutch dialects and we refer to this work for several arguments pointing towards the base-generated nature of the WH-phrase.[26]

In the base-generation analysis, it is not unexpected that the data in (83) show feature agreement between the base-generated phrase and the WH-pronoun.[27] Such agreement is typically also found in CLD-constructions, as the data below illustrate:

(89) (a) Deze jongen, die/ *dat ken ik.
this boy that$_{non\text{-}neuter}$/ that$_{neuter}$ know I
'This boy, I know.'

(b) In Groningen, daar/ *dat kun je lekker eten.
in Groningen, there$_{PP}$/that$_{DP}$ can you nice eat
'In Groningen you can eat well.'

In addition, the analysis provides a straightforward answer to the fact that doubling of WH-phrases is ungrammatical. If WH-phrases never undergo movement, they never occupy an intermediate specCP position. This is required for (87) to surface.[28]

To conclude, if WH-phrases do not move but are base-generated in the position we see them in, they do not form a syntactic chain with a clause- or sentence-internal WH-pronoun. Hence, examples in which a WH-phrase and WH-pronoun referring to the same syntactic entity co-occur in a sentence, with the WH-phrase preceding the WH-pronoun, do not fall under our generalization and form no problem.[29]

5.2 On the properties of intermediate movement steps

Given our analysis of (full and partial) WH-doubling, and especially the discussion in section 4.2 of the syntactic and semantic status of the dependent clause in these constructions, the C-head of the dependent clause cannot contain a [+Q] feature. This

raises the following two questions. First, what triggers the intermediate movement step? In (90), a WH-pronoun occurs in intermediate position, although the matrix verb *denk* 'think' does not select a [+Q] complement. Secondly, what licenses the appearance of [+Q] complementizers like *of* 'whether' in these cases?

(90) (a) Wel denkie wel of ik in de stad tegen kommen ben? *Drenthe*
who think.you who if I in the city against come am
'Who do you think I met in town?'

(b) Wie denk je wie of dat ik in de stad tegenkomme ben?
Noord–Holland
who think you who if that I in the city against.come am
'Who do you think I met in the city?'

As regards the first question, we follow Boškovi (2007) in assuming that WH-movement to intermediate positions is not triggered by the presence of a [+Q] feature on the intermediate C^0, but takes place for reasons of locality (cf. Boškovi (2007) for details).[30]

As regards the second question, a crucial observation is that complementizer *of* cannot occur if the lower copy of the WH-chain is not spelled out (i.e. in a non-doubling construction):

(91) *Wie denk je of ik gezien heb?
who think you if I seen have

What we suggest is the following. We assumed throughout that WH-pronouns lack a [+Q] feature. The pronoun is interpreted as a question word in the relevant syntactic context, i.e. in SpecCP of the matrix clause. At that point the entire WH-chain is marked for the property [+Q]. The contrast between (90) and (91) suggests that the embedded C obtains the [+Q] feature not as a consequence of syntactic agreement but through phonological agreement: spell-out of the lower link in the WH-chain feeds spell-out of *of*. If this agreement is post-syntactic, the consequence is that the [+Q] feature will not be visible on the category selected by the matrix verb *denken* 'think', namely the projection of the embedded C. This CP is therefore not a question. Hence, there is no clash with the selectional properties of the matrix verb.

This analysis makes a prediction. If spell-out of *of* is parasitic on an adjacent terminal hosting a [+Q]-feature (i.e. if (91) is ungrammatical), we expect that *of* cannot appear with lexical WH-phrases, as the noun will intervene between *welke* 'which' and the complementizer.

(92) *Wat denk je welke jongen of (dat) Hans gezien heeft?
what think you which boy if (that) Hans seen has

Although Google provides plenty of cases involving co-occurrence of WH-pronouns and *of*, it does not provide examples involving co-occurrence of WH-phrases and *of*. This is of course only indicative and further research is required to verify the prediction.[31]

6. Conclusion

In this paper, we argued that wh-doubling in Dutch dialects obeys a descriptive generalization stating that the higher copy is not more specified than a lower copy. We have argued that this follows from copy theory, ruling out the unattested cases by referring to the inclusiveness condition. Adopting the idea that pronouns are spell-outs of phrases, we have claimed that non-identical doubling involves partial copying. We have rejected the scattered deletion approach as well as the big XP approach because they are not entirely suited for the data at hand. Moreover, we have pointed out the advantages of our approach to both the direct and indirect dependency approaches to non-identical doubling currently on offer.

APPENDIX: WH-DOUBLING, NEGATION, AND QUANTIFIERS

As mentioned in section 4.2, long extraction across negation is grammatical but partial and full copying across negation is ungrammatical.

(A1) (a) Wie denk je niet dat zij uitgenodigd heeft?
who think you not that she invited has
'Who don't you think she has invited?'

(b) *Wat denk je niet wie zij uitgenodigd heeft?
what think you not who she invited has

(c) *Wie denk je niet wie zij uitgenodigd heeft?
who think you not who she invited has

Our account has not much to say about these data, but we believe that at present no account of the contrast between long extraction and partial copying with respect to negation is adequate when faced with the full set of facts. This appendix explains why we think so.

Dayal (1994) (whom Felser (2001) follows) proposes an account in terms of D-linking, but Beck & Berman (2000) present empirical and theoretical arguments against it. Beck & Berman (2000) rely on the idea that only a trace created by LF movement is sensitive to certain interveners. This is coherent only within an approach to partial copying that involves expletive replacement at LF; crucially this explanation does not carry over to full copying, so no explanation is offered for the ungrammaticality of (A1c).

A third alternative is to rely on Pesetsky's (2000) intervention effect, stated in (A2). This is what Felser (2004) assumes for full copying.

(A2) *Intervention effect* (Pesetsky 2000):

A semantic restriction on a quantifier (including WH) may not be separated from that quantifier by a scope-bearing element.

If we assume that in full and partial doubling constructions the higher copy is interpreted as the operator and the lower copy as the restriction, then the negation facts can be made to follow. Negation does not create a problem in long extraction, because by assumption it does not involve 'scattered interpretation': both the operator and the restriction are interpreted high.

However, such an approach cannot capture the data that involve, instead of negation, an intervening universal quantifier, i.e. the doubling counterparts to (A3a).

(A3) (a) Wie denkt iedereen dat een goede president is geweest?
who thinks everyone that a good president is been
'Who does everyone think was a good president?'

(b) Wie denkt iedereen wie een goede president is geweest?
who thinks everyone who a good president is been

(c) Wat denkt iedereen wie een goede president is geweest?
what thinks everyone who a good president is been

If we consider the doubling counterparts of WH-movement across a universal quantifier, we can observe one important similarity: all constructions are grammatical and we do not find a dichotomy between the doubling and non-doubling constructions, like we do in the negation examples. Given (A2), it is unclear how to account for the discrepancy between the behaviour of negation and universal quantifiers: if negation cannot intervene between an operator and its restrictor, why can a universal quantifier do so? Put differently, an explanation for the negation facts using (A2) does not carry over to the universal quantifier facts.

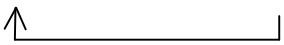
A solution to this problem is to replace Pesetsky's (A2) by de Swart's (1992) Scope Hypothesis (see also Honcoop 1999), stated in (A4).

(A4) *Scope Hypothesis* (de Swart 1992, as cited in Honcoop 1999):

An Operator O_1 can only separate another operator O_2 from is restrictive clause if O_1 takes wide scope over O_2.

Under the assumption that a universal quantifier can undergo raising at LF and negation cannot, LF-raising obviates the intervention effect (cf. A5a), whereas an intervening negation is immobile and causes ungrammaticality (cf. A5b).

(A5) (a) everyone what $t_{everyone}$ who



(b) * what negation who

This, however, raises another question. According to the existing literature, there is an

important difference between long extraction and the copying constructions. Long WH-movement allows both a pair-list (∀∃) and an individual reading (∃∀). In the first case, the possible answer is 'Sjef thinks Nixon, Marika thinks Kennedy, Olaf thinks Clinton'. In the second case, a possible answer is 'Nixon'. For German, it has been claimed that partial copying only allows the wide scope universal reading (∀∃), whereas full copying patterns with long extraction in allowing both (cf. Rett 2006, Pafel 2000, von Stechow 2000, contra Felser 2004). The availability of two readings for the full copying construction is problematic for (A4). If the universal quantifier undergoes QR in order to satisfy (A4), the prediction is that it will always do so. Hence it will always outscope the existential quantifier. The sentence is thus predicted to only have one reading (∀∃), contrary to fact.[32]

To sum up, it is at present unclear (i) how to account for the difference between the negation data and the universal quantifier data and (ii) how to simultaneously account for the readings for the universal quantifier data reported in the literature.

We conclude this appendix by providing some evidence that all the constructions under consideration are ambiguous in Dutch. More specifically, there is reason to believe that the reading that is allegedly unavailable for the scope marking (partial copying) construction is available, at least in Dutch. Note first of all that the claim about the missing ∃∀-reading of scope-marking constructions in itself merits some discussion. The reason is that the ∃∀ scoping is just a special case of the opposite scopal relation ∀∃: one of the situations that verify the wide scope universal reading ("for everybody there is one president that she considers good") is the one in which the wide scope existential ("there is a single president that everyone finds good") is true. In other words, ∃∀ entails ∀∃.[33] To side-step this complication, we used sentences with a

non-monotone quantifier, such as 'everyone but John', where no entailment relation exists between the two scopal orders.[34] In fact, at least in Dutch (and several other languages), 'everyone but John' cannot get wide scope over the existential, suggesting it cannot undergo QR. Thus, a sentence like (A6b) can only get the ∃∀-reading (i.e. it only allows an individual answer). The narrow scope existential reading is unavailable.

(A6) (a) Wie kent iedereen t_i ? (∀∃ & ∃∀)
Who knows everyone
'Who does everyone know?'

(b) Wie_i kent iedereen behalve Jan t_i ? (∃∀)
who knows everyone but John
'Who does everyone but John know?'

Now, if 'everyone but John' bleeds the narrow scope existential reading and the wide scope existential reading is, as has been claimed, unavailable in the scope marking construction, we expect partial copying across 'everyone but John' (i.e. example (A7)) to lead to ungrammaticality.

(A7) Wat denkt iedereen behalve Jan waar de beste wijn vandaan komt?
what thinks everyone but Jan where the best wine from comes
'Where does everyone but Jan think that the best wine comes from?'

This prediction turns out to be false. According to our informants, (A7) patterns with long extraction and full copying in being grammatical (and only allowing an individual

answer).[35] In fact, the five German speakers we consulted also judged the German counterpart to (A7) to be grammatical and had in common that they interpret it similarly to long extraction (i.e. they assigned a ∃∀-reading). This means that we now have a contradiction for German: if the German counterpart to (A7) is grammatical on the ∃∀-reading, then the German counterpart to (A3c) should be ambiguous. These new data highlight the fact that, in addition to an explanatory theory of the intervention effects induced by different operators, we also need more empirical research to fully understand the issues at hand.

REFERENCES

Abels, Klaus. 2003. *Successive cyclicity, anti-locality, and adposition stranding*. Ph.D. dissertation, University of Connecticut.

Barbiers, Sjef. 2001. Remnant stranding and the theory of movement. In Artemis Alexiadou, Elena Anagnostopoulou, Sjef Barbiers & Hans-Martin Gärtner (eds.), *Dimensions of movement*, 47—68. Amsterdam/Philadelphia: John Benjamins.

Barbiers, Sjef. 2005. Variation in the morphosyntax of ONE. *Journal of Comparative Germanic Linguistics* 8, 159—183.

Barbiers, Sjef. 2006. *Er zijn grenzen aan wat je kunt zeggen*. Inaugural lecture, University of Utrecht.

Barbiers, Sjef, Hans Bennis, Gunther De Vogelaer, Magda Devos & Margreet van der Ham. 2005. *Syntactic atlas of the Dutch dialects*, Volume 1. Amsterdam: Amsterdam University Press.

Barbiers Sjef, Olaf Koeneman, Marika Lekakou & Margreet van der Ham (eds.), *Microvariation in syntactic doubling*. Syntax and Semantics 36. Bingley: Emerald.

Bayer, Josef. 1996. *Directionality and logical form: on the scope of focusing particles and wh-in situ*. Dordrecht: Kluwer.

Beck, Sigrid & Steven Berman. 2000. *WH-scope marking: direct vs. indirect dependency*. In Lutz, Müller & von Stechow (eds), 17—44.

Belletti, Adriana. 2005. Extended doubling and the VP periphery. *Probus* 17: 1—36.

Bennis, Hans. 2001. Alweer wat voor (een). In B. Dongelmans, J. Lalleman & O. Praamstra (eds.), *Kerven in een rots*, 29—37. Leiden: SNL.

Boeckx, Cedric. 2003. *Islands and chains*. Amsterdam/Boston: John Benjamins.

Boškovic, Zeljko. 2007. On the locality and motivation of Move and Agree: an even more minimal theory. *Linguistic Inquiry* 38: 589—644.

Brandner, Ellen. 2000. Scope marking and clausal typing. In Lutz, Müller & von Stechow (eds.), 45—75.

Caha, Pavel. 2009. Nanosyntax of case. Ms., Tromsø University.

Cardinaletti, Anna. 1990. *Impersonal constructions and sentential arguments in German*. Padova: Unipress.

Cardinaletti, Anna & Michal Starke. 1999. The typology of structural deficiency: A case study of the three classes of pronouns. In Henk van Riemsdijk (ed.), *Clitics in the Languages of Europe*, 145—233. Berlin: Mouton de Gruyter.

Cavar, Damir & Gisbert Fanselow. 1997. Split consituents in Germanic and Slavic. Paper presented at International Conference on Pied-Piping, Friedrich-Schiller University, Jena.

Cecchetto, Carlo. 2000. Doubling structures and reconstruction. *Probus* 12: 1—34.

Cheng, Lisa. 1991. *On the typology of WH-questions*. Ph.D. dissertation, MIT.

Cheng, Lisa. 2000. Moving just the feature". In Lutz, Müller & von Stechow (eds), 77—99 .

Chomsky, Noam. 1977. On WH-movement. In Peter Culicover, Tom Wasow & A?? Akmajian (eds.), *Formal syntax*, 71—132. New York: Academic Press.

Chomsky, Noam. 1986. *Barriers.* Cambridge: MIT Press.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge: MIT Press.

Corver, Norbert. 1997. *Much*-support as a last resort. Linguistic Inquiry 28: 119—164.

Craenenbroeck, Jeroen van. 2004. *Ellipsis in Dutch dialects*. Ph.D. dissertation, Leiden University.

Craenenbroeck, Jeroen van & Marjo van Koppen. 2002. Pronominal doubling and the structure of the left periphery in southern Dutch. In Sjef Barbiers, Leonie Cornips & Suzanne van der Kleij (eds.), *Syntactic microvariation*. Xxpp. http://www.meertens.knaw.nl/boeks/synmic.

Craenenbroeck, Jeroen van & Marjo van Koppen. 2008. Pronominal doubling in Dutch dialects: big DPs and coordinations. In Barbiers et al (eds.), 207—239.

Dayal, Veneeta. 1994. Scope marking as indirect WH dependency. *Natural Language Semantics* 2, 137—170.

Dayal, Veneeta. 2000. Scope marking: cross-linguistic variation in indirect dependency. In Lutz et al. (eds), 157—193.

Déchaine, Rose-Marie. & Martina Wiltschko. 2002. Decomposing pronouns. *Linguistic Inquiry* 33, 409—442.

De Vogelaer, Gunther & Magda Devos. 2008. On geographical adequacy, or: how many types of subject doubling in Dutch. In Barbiers et al. (eds.), 251—276.

Engdahl, Elisabet. 1985. Parasitic gaps, resumptive pronouns and subject extractions. *Linguistics* 23, 3—44.

Everaert, Martin & Henk van Riemsdijk (eds.) 2006. *The Blackwell companion to syntax*. Oxford: Blackwell.

Fanselow, Gisbert. 2006. Partial WH-movement. In Everaert & van Riemsdijk (eds.), Volume 3, 437—492.

Fanselow, Gisbert & Anoop Mahajan. 2000. Towards a minimalist theory of WH-expletives, WH-copying, and successive cyclicity. In Lutz et al. (eds.), 195—230.

Fanselow, Gisbert & Damir Cavar. 2001. Remarks on economy of pronunciation. In

Gereon Müller & Wolfgang Sternefeld (eds.), *Competition in syntax*, 107—150. Berlin: Mouton de Gruyter.

Felser, Claudia. 2001. WH-expletives and secondary predication: German partial WH-movement reconsidered. *Journal of Germanic Linguistics* 13, 5—38.

Felser, Claudia. 2004. WH-copying, phases, and successive cyclicity. *Lingua* 114, 543—574.

Grohmann, Kleanthes. 2003. *Prolific domains. On the anti-locality of movement dependencies*. Amsterdam: John Benjamins.

Haegeman, Liliane. 2005. Verdubbeling van subjectpronomina in de Zuid-Nederlandse dialecten: een reactie uit Lapscheure. *Taal & Tongval* 56, 119—159.

Herburger, Elena. 1994. A semantic difference between full and partial WH-movement in German. Paper presented at the Annual Meeting of the Linguistic Society of America, Boston.

Hiemstra, I. 1986. Some aspects of WH-questions in Frisian. *Nowele* 8, 97—110.

Hoekstra, Eric & Jan-Wouter Zwart. (1997). Weer functionele projecties. *Nederlandse Taalkunde* 2, 121—132.

Honcoop, Martin. 1999. Dynamic quantification at a distance. In S. Bird, A. Carnie, J. Haugen & P. Norquest (eds.), *Proceedings of WCCFL 18*. Cascadilla Press.

Horvath, Julia. 2000. On the syntax of "WH-scope marker" constructions: some comparative evidence. In Lutz et al. (eds), 271—316.

Jakubowicz, Celia & Nelleke. 2008. Scope-marking strategies in the acquisition of long distance WH-questions in French and Dutch. *Language and Speech* 51, 101-132.

Kampen van, Jacqueline. 1997. *First steps in* WH-*movement*. Delft: Eburon.

Kampen van, Jacqueline. 2008. The acquisition of A-bar chains. To appear in Martin

Everaert, Tom Lentz, Øystein Nilsen & Arjen Zondervan (eds.), *Theoretical validity and psychological reality*. Amsterdam/Philadelphia: John Benjamins.

Kayne, Rirchard. 2002. Pronouns and their antecedents. In Samuel Epstein & David Seely (eds.), *Derivation and explanation in the minimalist program*, 136—166. Oxford: Blackwell.

Kayne, Richard. 2005. *Movement and silence*. Oxford Studies in Comparative Syntax. New York: Oxford University Press.

Koopman, Hilda. 1984. *The syntax of verbs: from verb movement in the Kru languages to Universal Grammar*. Dordrecth: Kluwer.

Koppen van, Marjo. 2005. *One probe-two goals: aspects of agreement in Dutch dialects*. Ph.D. dissertation, Leiden University.

Koster, Jan. 1978. Why subject sentences don't exist. In Samuel J. Keyser (ed.), *Recent transformational studies in European languages*. Pages. Cambridge, MA: MIT Press.

Lapointe, Stephen. 1980. *A theory of grammatical agreement*. New York: Garland. Outstanding Dissertations in Linguistics.

Longobardi, Giuseppe. 1994. Reference and proper names: A theory of N-movement in syntax and logical form. *Linguistic Inquiry* 25, 609—665.

McCloskey, James. 1979. *Transformational syntax and model theoretic semantics: a case study in Modern Irish*. Dordrecht/Boston: D. Reidel.

McCloskey, James. 1990. Resumptive pronouns, A-bar binding and levels of representation in Irish. In R. Hendrick (ed.), *The syntax of the Modern Celtic languages: Syntax and Semantics* 23, New York: Academic Press.

McCloskey, James. (2006). Resumption. In Everaert & van Riemsdijk (eds.), 94—117.

Volume 4.

McDaniel, Dana. 1989. Partial and multiple WH-Movement. *Natural Language and Linguistic Theory* 7, 565—604.

McDaniel, Dana, B. Chiu & T.L. Maxfield. 1995. Parameters for WH-movement types: evidence from child English. *Natural Language and Linguistic Theory* 13, 709—753.

Neeleman, Ad & Kriszta Szendröi. 2007. Radical pro-drop and the morphology of pronouns. *Linguistic Inquiry* 38, 671—714.

Nunes, Jairo. 2004. *Linearization of chains and sideward movement*. Cambridge, MA: MIT Press.

Pafel, Jurgen. 2000. Absolute and relative: on scope in German WH-sentences, w-... w-constructions included. In Lutz et al. (eds), 333—358.

Pesetsky, David. 2000. *Phrasal movement and its kin*. Cambridge, MA: MIT Press.

Pankau, Andreas. 2008. WH-copying in German. Ms., University of Utrecht.

Poletto, Cecilia & Jean-Yves Pollock. 2004. On WH-clitics and WH-doubling in French and some North Eastern Italian dialects. *Probus* 16, 241—272.

Postma, Gertjan. 1994. The indefinite reading of WH. In R Bok-Bennema & Crit Cremers (eds.), *Linguistics in the Netherlands 1994*, 187—198. Amsterdam: John Benjamins.

Reinhart, Tanya. 2006. *Interface strategies*. Cambridge, MA: MIT Press.

Rett, Jessica. 2006. Pronominal vs. determiner WH-words: evidence from the copy construction. In O. Bonami & Patricia Cabredo-Hofherr (eds.), *Empirical issues in syntax and semantics 6*, 355—374. Publisher, address.

Riemsdijk van, Henk. (1982). Correspondence effects and the Empty Category

Principle. *Tilburg Papers in Language and Literature* 12. University of Tilburg.

Rizzi, Luigi. 2004. TITLE In Adriana Bellettii (ed.)*, Structures and beyond. The cartography of syntactic structures*. Volume 3, 223—251. Oxford: Oxford University Press.

Sabel, Joachim. 2000. Expletives as Features. In R. Billerey et al. (eds.), *Proceedings of WCCFL 19*, 411—424. Somerville, MA: Cascadilla Press.

Safir, Ken. 1984. Multiple variable binding. *Linguistic Inquiry* 15, 603–638.

Shlonsky, Ur. 1992. Resumptive pronouns as a last resort. *Linguistic Inquiry* 23, 443—468.

Stechow von, Arnim. 2000. Partial WH-movement, scope marking and transparent logical form. In Lutz et al. (eds), 447—478.

Svenonius, Peter & Chris Kennedy. 2006. Northern Norwegian degree questions and the syntax of measurement. In Mara Frascarelli (ed.), *Phases of interpretation*, PAGES. Berlin: Mouton de Gruyter.

Swart, Henriette de. 1992. Intervention Effects, Monotonicity and Scope. *Proceedings of SALT II*, 387-406.

Thornton, Rosalind & Stephen Crain. 1995. Successful cyclic movement. In Teun Hoekstra & Bonnie Schwartz (eds.), *Language acquisition studies in generative grammar*, 215—252. Amsterdam/Philadelphia: John Benjamins.

Torrego, Esther. 1985. On empty categories in nominals. Ms., University of Massachusetts, Boston.

Uriagereka, Juan. 1995. Some sspects of the syntax of clitic placement in Western Romance. *Linguistic Inquiry 26*, 79—123.

Weerman, Fred. 1989. *The V2 conspiracy; a synchronic and a diachronic analysis*. Ph.D. dissertation, University of Utrecht. (Commercial edition published by Foris, Dordrecht, 2nd edition published by Mouton de Gruyter, Berlin).

Weerman, Fred & J. Evers-Vermeul. 2002. Pronouns and Case. *Lingua* X, 301—338.

Wiltschko, Martina. 1998. On the internal and external syntax and semantics of (relative) pronouns. *Journal of Comparative Germanic Linguistics* 2, 143—181.

Author's address: Sjef Barbiers, Meertens Institute, Amsterdam & University of Utrecht, Joan Muyskenweg 25, Amsterdam 1090 GG, The Netherlands.

Sjef.Barbiers@meertens.knaw.nl

Olaf Koeneman, Deparment of Dutch, University of Amsterdam, Spuistraat 13, 1012 VB Amsterdam, The Netherlands

Marika Lekakou, Meertens Institute, Amsterdam, Joan Muyskenweg 25, 1090 GG Amsterdam, The Netherlands.

Marika.Lekakou@meertens.knaw.nl

FOOTNOTES

[1] Earlier versions of this paper were presented at the 30th GLOW conference (Tromsø, 2007), WCCFL 26 (Berkeley, 2007), the 22nd Comparative Germanic Syntax Workshop (Stuttgart, 2007), the EGG school (Brno, 2007) and at a workshop on WH-pronouns (Konstanz, 2007). We would like to thank the audiences present at those occasions for their feedback. We also wish to express our gratitude to the following people for discussions on various aspects of this work: Ellen Brandner, Jeroen van Craenenbroeck, Jacqueline van Kampen, Marjo van Koppen, Øystein Nilsen, Andreas Pankau, Arnim von Stechow and Nelleke Strik. Finally, we thank two anonymous reviewers for valuable comments. The usual disclaimers apply.

[2] There is a rich literature on pronominal doubling in Romance, part of which proposes a 'big-XP' analysis (Uriagereka 1995, Cecchetto 2000, Kayne 2002, Boeckx 2003, Belletti 2005 among others). See sections 3.1 and 4.1 for similarities and differences between that approach and ours.

[3] Nothing excludes partial copying and spelling out of the lowest copy. Whether or not this option can be used depends on the parameter setting regulating whether or not a language has obligatory "overt" WH-movement. Since in all varieties of Dutch PF normally spells out the highest WH-copy in a movement chain (i.e. all varieties have "overt" wh-movement), we do not expect this option to occur in these varieties.

[4] A note on terminology. In the literature on the scope-marking construction one often finds the term 'partial movement' (used by proponents of the direct dependency), which does not convey exactly the same notion as our 'partial copying'. In particular, in previous studies of the construction it was stated (at the level of description of the data) that the lower wh-phrase had only partially moved, since it appeared in an embedded Spec and did not reach the matrix Spec (where long wh-movement would have otherwise placed it). When we use partial copying, we rather take the viewpoint of the higher copy, which we regard as a partial copy of the pronoun in the embedded domain (the 'contentful' wh-phrase, in direct dependency terms).

[5] The idea of partial copying shows resemblances with Michal Starke's idea of peeling. See Caha (2009) for an application of peeling to case realization in Czech.

[6] We leave unspecified how these interpretations come about exactly, as our analysis does not hinge on this. Let us assume that in the matrix SpecCP *wat* is interpreted as a WH-pronoun because of the presence of a [+Q]- feature on C.

[7] As in the case of *wat*, we assume that *wie* has no WH-feature, as that would imply *die* has one too. The lack of a WH-feature is suggested by the fact that both *wie* and *die* can function outside the context of WH-questions, namely as relative operators. What they have in common and what causes movement to clause-initial position must be related to the fact that both contain an operator. See the discussion in section 3.2. For ease of

exposition, however, we will continue to use 'WH-pronoun' and 'relative pronoun' as descriptive labels.

[8] One could hypothesize that full copying also involves partial copying, so that all the attested doubling effects can be related to the presence of stranded material. The higher *wie* is then a subconstituent of the lower *wie*, but there is simply no vocabulary item available that would reveal the distinction (Øystein Nilsen suggested this possibility to us.). A problem for such an approach is that every further embedding starting with *wie* requires one to postulate an additional functional layer to the syntax of the WH-pronoun, such that an additional subextraction becomes possible.

[9] It is fairly easy to imagine operations that would mask the effect of the inclusiveness condition and produce the undesired structures. It is for instance possible to assume that the higher copy enters a Spec-Head agreement relation, and that this process has to be interpreted as copying of the feature from the head to the specifier, making the higher copy more specified than the lower one. Apart from the fact that it is not obvious that Spec-Head agreement should involve feature copying, it does not immediately derive **wie* … *wat*: *wie* would occupy the matrix SpecCP, which is an unexpected location for copying of those features that differentiate it from *wat* (i.e. the phi-features). Alternatively, an anonymous reviewer suggests that an impoverishment rule could target a lower copy (for instance impoverishing the phi-features), thus producing what looks like a chain whose higher chain link is more specified than lower ones. For this to happen, however, one has to assume that such a rule can be specific enough to only

target the phi-features of a WH-pronoun in an embedded C position if this pronoun is an intermediate chain link, and not the head of a chain. Since these mechanisms raise undesirable questions for how to derive the unattested cases, we do not at the moment consider them to be serious threats to the relevance of the Inclusiveness Condition.

[10] The reason for this choice is that higher copies have checked their uninterpretable formal features against functional heads, whereas the copy in the lexical domain still carries them. Spelling out the lower copy therefore necessitates an additional operation ('FF-elimination') that deletes those formal features, whereas FF-elimination is not necessary if the highest copy is spelled out. Not spelling out the lower copy is therefore more economical, hence preferred. This is the reason why *wh*-pronouns are usually not spelled out in their base position.

[11] One may want to exclude morphological merger applying to C and a complex wh-phrase in its specifier, in order to rule out doubling of wh-phrases. This is the route Nunes (2004: 39ff.) takes. In section 5.1 we exclude such cases in a different way. Hence we can for the moment remain agnostic with regard to this issue.

[12] These examples were obtained by googling for "wat denk je hoe/hoeveel/welke" ('What do you think how/how many/which'), giving 8770, 1920 and 658 hits, respectively (June 2008). The search results also give examples consisting of two main clauses (i.e. 'Wat denk je? Hoeveel...' ('What do you think? How many...')) but filtering these out still gives a high number of relevant examples. In contrast, the search for "wie denk je hoeveel" ('Who do you think how many') and "wie denk je welke" ('Who do you

think which') gives no and one hit respectively, so for the time being we take their status to be unclear and set them aside.

[13] Cf. also the proposal in Kayne (2005, section 12.3.7), according to which French has an abstract counterpart of English *how* as a silent head.

[14] These authors differ from us, however, with respect to which syntactic nodes are taken to contribute the relevant ingredients at LF. Wiltschko argues that a variable cannot contain a range, as is the case in (48). Therefore, XP moves and leaves a trace. The trace is interpreted as a variable. Since the range is interpreted upstairs, it binds (and is not contained in) the variable. One obvious problem for the assumption that a trace cannot contain its range are reconstruction effects (cf. i):

(i) [Which picture of herself]$_i$ did Anne show to her father t_i ?

For the anaphor to be bound, it has to be interpreted in its base position, either by a reconstruction rule or by interpreting part of the copy. Hence, there is a tension between the requirement on the range to be interpreted high and the requirement on the restriction to be interpreted low.

[15] We have explicated our assumptions about the internal components of wh-constituents from a predominantly syntactic point of view, setting a full-fledged semantic analysis aside.

[16] The movement in (49a) is too local according to some theories. Abels (2003) argues that complement to specifier movement is banned if the head of the projection in which the movement takes place is a phase head. For this reason, English allows VP-movement to specCP but not movement of IP. It is unclear whether this ban on too local movement holds cross-categorically and cross-linguistically. For a potential counter-example see Barbiers (2005). Also, what counts as a phase head is parametrized across languages, so local movements are not banned across the board. Hence, it could be that Phi is not a phase head in Dutch. We will remain agnostic about this issue and continue to assume that the movement in (49a) is legitimate, as it does not affect the heart of our analysis.

[17] Neither (63a) nor (63b) is ruled out if movement to the lower position is triggered and the movement to the higher position can still be local. This is the type of analysis proposed for Romance CLLD constructions (cf. Cecchetto 2000, Kayne 2002, Belletti 2005). Note that the result is a clause in which the leftmost nominal constituent (the lexical DP) is more specified than the clitic. This is not incompatible with our generalization in (12), however, as the DP and the clitic are not part of the same chain.

[18] On our account, *die* could in principle be licit in questions, in virtue of its [operator] feature, also shared by *wie* and *wat*, were it not for its [definite] feature (which *wie* and *wat* lack): there seems to be a universal ban on definites functioning as question words. Presumably this is ultimately a semantic restriction.

---

[19] Example (65b) is then ungrammatical because there is no trigger for moving the 'scope-marker' to a VP-internal position; the dependent CP-clause already occupies the relevant thematic position.

[20] There is alternative way of looking at (68) that does not use partial copying. In that analysis, *die* is a complementizer agreeing with the wh-pronoun that has moved through its specifier: *wie* + *dat* becomes *die* (cf. Thornton & Crain 1995, Ankelien Schipper p.c.). The example in (69) constitutes a counterexample for this approach, as it is unclear how *die* could be the result of *dat* agreeing with *wat*. See section 5.1 for a similar approach to child language.

[21] Note, by the way, that van Riemsdijk expects (65b) to be ungrammatical, whereas (65b) could in principle surface if *was* is inserted in specAgrOP. Like Felser, Fanselow & Mahajan (2000: 207) also appeal to the paradigm in (66) for an explanation, which we have shown to be problematic.

[22] If the key difference between the direct and the indirect approach is characterized as a difference in what moves covertly, a comparison of the two approaches must focus on this distinction. This is not entirely straightforward. As pointed out by Dayal (2000: 165), moving the entire CP-clause will require LF-reconstruction, so that the end result mimics movement of the "real" WH-constituent only. This makes it hard to semantically

distinguish the two approaches. To syntactically distinguish the two approaches, one would like the relevant data to be clearer.

[23] Given the relative paucity of (dialectal) data at this stage, a more systematic investigation of island constraints in Standard and dialectal Dutch as well as their allevation strategies is needed in order to shed light on the data discussed here.

[24] Although we have no way of knowing how widespread this construction is in the Dutch dialects (the construction was not part of the SAND questionnaires), the fact that (82) is attested in child language suggests that the grammar is in principle able to generate it. Moreover, the construction has been claimed to exist in some German dialects (Fanselow & Cavar 2001), be it restrictedly.

[25] For contrastive left-dislocation CLD constructions, it has been suggested that the topic and pronoun do constitute a movement chain. Grohmann (2003), for instance, argues that PF spells out the lower copy as a resumptive pronoun, as a consequence of the movement being too local. As key evidence for chain formation, he notes that possessive pronouns in the contrastive topic can receive a bound variable interpretation (cf. ia), thereby contrasting with hanging topic left-dislocation (HTLD) constructions (cf. ib).

(i) (a) Seinen Rasen$_i$, den mäht jeder Herforder Bürger$_i$ Samstags. (CLD)

his.ACC lawn D-pron.ACC mows every Herfordian citizen Saturdays

(b) *Sein$_i$ Rasen, jeder Herforder Bürger$_i$ mäht ihn Samstags. (HTLD)
'His lawn, every Herfordian citizen mows it on Saturdays.'

This follows if in (ia) the topic is part of a syntactic chain that contains one chain link below the quantifier *jeder*, whereas in (ib) the topic is base-generated. We do not think this argument is conclusive. First of all, it is unclear if bound variable interpretations are due to reconstruction proper. Example (ii), from Hoekstra & Zwart (1997), contains a syntactic gap in the complement position of the preposition *naar*. This gap is a silent copy of a moved nominal constituent, which can be identified as *daar* but not as the PP *naar zijn promotie*. Although the PP cannot be reconstructed back into the gap, the bound variable reading of *zijn* is nevertheless available.

(ii) Naar zijn promotie, daar$_i$ kijkt iedere taalkundige naar t_i uit.
to his promotion, there looks every linguist to PRT
'His promotion, every linguist is looking forward to.'

Second, note that (ia) and (ib) do not form a minimal pair. There is a case clash between the topic and pronoun in (ib) but not in (ia), which could discourage speakers to have them co-referring. To facilitate a bound reading, we have constructed an HTLD-example which (a) does not display the case clash, (b) uses the predicate *gefallen* 'to please', which straightforwardly allows a nominative to occur under a dative quantifier and (c) contains a reflexive pronoun that must be bound clause-internally:

(iii) Der Eindruck von sich selbst, ich glaube dass jedem zumindest

---

the.NOM impression of REFL. SELF I believe that everyone.DAT at.least

(d)er ein Leben lang gefällt.

(d-)pron.NOM a life long likes

Four out of nine German speakers we consulted judged (iii) as fully grammatical. If pronouns in base-generated hanging topics allow for bound variable readings under some conditions, it becomes less obvious that such a reading in (ia) is due to the CLD topic being part of the same syntactic chain as *den*. More empirical research is required to reveal the factors responsible for bound variable readings in topic constructions.

[26] If wh-phrases are base-generated and the real operator is realized as a WH-pronoun, we need two CP projections in a clause, the highest hosting the WH-phrase and the lowest the WH-pronoun. Strong evidence for the existence of these two positions comes from dialects in which WH-phrases seem to occupy a higher specifier position than WH-pronouns. In the dialect of Strijen, for instance, WH-pronouns can precede or follow complementizers, whereas WH-phrases have to precede them.

(i) (a) Ik weet niet <of> met wie <of> Jan oan het proate was

Strijen

I know not if with whom if Jan on the talk was

'I don't know who Jan was talking with'

(b) Ik vroag me af <*of> welke jongen <of> die maisjes gezien hebben

I ask me PRT if which boy if those girls seen has

'I wonder which boy these girls have seen'

[27] This entails that the child only has to learn that the operator pronoun remains unpronounced in Standard Dutch. In van Kampen's analysis, children erroneously use relative pronouns as fillers of the C-position in complement clauses, which constitutes a significant deviation from the adult grammar that they will eventually have to unlearn.

[28] One reviewer wonders how one can rule out base-generating the WH-phrase twice, once in the embedded domain and once in the matrix domain. Two base-generated WH-phrases would lead to a Condition C violation on a par with **John*$_i$ *thinks that John*$_i$ *is clever*.

[29] A well-attested pattern cross-linguistically is one in which WH-constituents, including WH-pronouns and empty operators, are resumed by a clause- or sentence-internal personal pronoun. There are two cases to distinguish (cf. McCloskey 2006). In some languages, the resumptive pronoun acts like a base-generated element (cf. McCloskey (1990) for Irish and Shlonsky (1992) for Hebrew) and no syntactic chain formation is involved, making the examples irrelevant for our purposes. In other cases, such as Swedish (cf. Engdahl 1985) and the Kru languages (cf. Koopman 1984), the resumptive

personal pronoun acts like a trace. It typically shows up in subject position, licenses parasitic gaps and gives rise to weak cross-over effects. Here, the hypothesis of the resumptive forming a syntactic chain with a fronted WH-pronoun is more justified. We tentatively suggest that the personal pronoun in these examples functions as an intrusive pronoun that rescues an otherwise illegitimate movement operation (here, having to do with subject positions). This is a rather uncontroversial analysis for movement out of islands—cf. *He's the kind of guy that you never know what he is thinking*—(see McCloskey 2006 for an overview), and has been proposed by van Craenenbroeck & van Koppen (2008) for first conjunct agreement data from West-Flemish, in which movement of the first conjunct, in violation of the coordinate structure constraint, is rescued by spelling out the trace position of the moved conjunct.

[30] Therefore, doubling and non-doubling varieties have the same syntax, the difference between them being located post-syntactically. Pankau (2008) suggests an analysis of long wh-movement as involving movement in one fell swoop. On such an analysis, the syntactic difference between doubling and non-doubling varieties would be that the former employ successive-cyclic movement, whereas the latter do not. We will not pursue this alternative here.

[31] Irish has also been claimed to have complementizers sensitive to [+Q]-marked constituents in their specifier (cf. the contast in (i), from McCloskey 2000). Spell-out of a [+Q]-complementizers, however, does not depend on the spell-out of the adjacent specifier, suggesting that the agreement is not phonological but syntactic.

(i) (a) Creidim gu-r inis sé bréag.
I-believe ***go***-PAST tell he lie
'I believe that he told a lie.'

(b) an t-ainm a hinnseadh dúinn a bhí ar an áit
the name ***aL*** was.told to.us ***aL*** was on the place
'the name that we were told was on the place'

This makes it harder to exclude the visibility of this feature on the embedded CP. It is unclear to us, however, if agreement is really with a [+Q]-marked constituent, as the relevant complementizer also shows up in relative clauses (cf. ib), which are not questions. This suggests that the appearance of *aL* is triggered by an operator feature instead. The visibility of this feature on the top node is presumably harmless for the subcategorization frame of the matrix verb.

[32] As pointed out by an anonymous reviewer, an alternative is to treat the contrast between negation and universal quantifiers as a relativized minimality effect (cf. Rizzi 2004). Although Rizzi does not explicitly address the behavior of universal quantifiers, one could imagine that the universal quantifier lacks the relevant feature that gives rise to a blocking effect. Such a theory would then have to be complemented by a theory that derives the correct readings for the universal quantifier paradigm. It therefore does not yet improve over the literature described in the main text.

[33] This is a well-known property of the interaction between universal and existential quantifiers, and one which makes it hard to decide whether ambiguity or vagueness is at stake. See chapter 2 of Reinhart 2006 for a recent overview.

[34] We thank Øystein Nilsen for suggesting this test to us.

[35] To obtain the data we used a written questionnaire asking for relative acceptability judgments from five doubling speakers; we did not check for all 267 measuring points that were used in the SAND project. We would like to thank the following people for giving us their judgments: Ger de Haan, Eric Hoekstra, Bart Hollebrandse, Helen de Hoop and Marjo van Koppen.