

Complex *wh*-phrases don't move

On the interaction between the split CP-hypothesis and the syntax of *wh*-movement

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This paper starts out from a set of well-known syntactic differences and similarities between simple *wh*-phrases such as *who* or *what* and complex ones such as *which boy*. It translates these observations into a cartographic account of the left periphery and then proceeds to show how this new proposal is able to account for a wide range of at first sight disparate data from English, German, Frisian and (dialectal) Dutch. The final part of the paper briefly discusses the implications of the proposal for the theory of reconstruction.

Keywords: simple and complex *wh*-phrases, *wh*-movement, split CP-hypothesis, operators, clause typing

1. Introduction *

Much of the literature since the early 90's that deals with the left periphery of the clause has been devoted to arguing that what was once considered to be a single, unified projection (CP) is actually a conglomerate of more than one functional projection. In particular in the cartographic tradition of the last few years (cf. Cinque 2002; Rizzi 2004; Belletti 2004), a large number of projections has been proposed to host a wide variety of syntactico-semantic categories. This paper wants to make a contribution to that growing body of literature. The starting point of the discussion will be a set of well-known differences and similarities between simple *wh*-phrases such as *who* or *what* and complex ones such as *which boy*. These facts will form the basis for a new analysis of the interaction between the split CP-domain on the one hand and the syntax of *wh*-movement on the other. The main empirical advantage of this analysis is that it can account in a unified way for a wide range of seemingly disparate phenomena involving *wh*-phrases. Its main theoretical consequence is that it might constitute a new argument for a semantic (rather than a syntactic) theory of reconstruction.

The paper is organized as follows. In the next section I briefly discuss a set of well-known differences and similarities between simple and complex *wh*-phrases. These data serve as the basis for the analysis that is outlined in section three. There, I combine a particular incarnation of the split CP-hypothesis with an explicit account of the syntax of *wh*-movement. Section four introduces seven additional empirical differences between simple and complex *wh*-phrases—some known from the literature and some new—and shows how they follow straightforwardly from the theory outlined in section three. In section five I briefly discuss the consequences of the proposed analysis for the theory of reconstruction. Section six sums up and concludes.

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2. The basic data: simple and complex *wh*-phrases

2.1 Introduction

The data presented in this section are all well-known and in some cases even almost trivial. The point of this data presentation, then, is not to engage in an in-depth discussion or analysis of these facts. Rather, they will serve as catalyst for the cartographic account outlined in the next section. The main empirical contribution of this paper is situated in section four.

In what follows I first discuss several syntactic differences between the two types of *wh*-phrases, drawing heavily on a number of early, unpublished papers by Tanya Reinhart. The conclusion I draw from these data is that the distinction between simple and complex *wh*-phrases is that between operators and non-operators. Moreover, I present some new evidence from Dutch supporting that conclusion. Subsection 2.3 focuses on a number of similarities between simple and complex *wh*-phrases, while subsection 2.4 sets the agenda for the analysis to be developed in the next section.

2.2 Differences

In a number of unpublished papers from the late 80s, Tanya Reinhart focused extensively on syntactic differences between simple and complex *wh*-phrases (Reinhart 1986, 1987, 1990, but see also Hornstein & Weinberg 1981; Guéron & May 1984, Aoun e.a. 1987; Aoun & Li 2003 for highly compatible discussion). The most well-known set of data concerns the one exemplified in (1).

- (1) a. * What did who buy?
b. What did which boy buy?

Whereas *wh*-moving an object across a simple subject *wh*-phrase leads to a Superiority violation (cf. (1)a), the judgment improves dramatically if the subject is replaced by a complex *wh*-phrase, as in (1)b. Essentially following Pesetsky (1987:108), I claim this difference is due to the fact that while *who* is a syntactic operator, *which boy* is not.¹ There are various ways of cashing this out, but for concreteness' sake, I will adopt an Attract Closest-approach to Superiority (cf. Chomsky 1995:296). Under such an account, the example in (1)a is ill-formed because the operator feature of C° has failed to attract the closest bearer of a matching feature, i.e. *who*, thus violating Attract Closest. In (1)b, however, *which boy* is not a syntactic operator and hence not a possible Goal. As a result, C° is free to attract the object.

A second set of data pointing towards the same conclusion concerns the behavior of in situ *wh*-adjuncts. Consider the contrast in (2) (Reinhart 1990:4-5).

- (2) a. * Who fainted when you behaved how?
b. Who fainted when you behaved which way?

Simple *wh*-adjuncts cannot be left in situ inside a *wh*-island, but complex ones can. Reinhart attributes this to a difference in LF-movement. While *how* obligatorily raises at

¹ My account differs from Pesetsky's, though, in that I assume the relevant distinction between *who* and *which boy* to be structural, not discourse-related (but see Rizzi (2000) for a possible way of reconciling the two approaches). On the operator/non-operator distinction between simple and complex *wh*-phrases, see also Dobrovie-Sorin (1990), and cf. Cinque (1986) for a comparable distinction between bare and modified quantifiers in Italian CLLD.

LF and as a result will leave an ungoverned trace inside the island in (2)a, *which way* can remain in situ throughout the derivation and no ungrammaticality ensues. Translated into the line of reasoning developed above, these data can be seen as an extra indication that while simple *wh*-phrases are syntactic operators (that have to move to their scope-taking position), complex ones are not.

The third and final data contrast of Reinhart's I want to introduce here is illustrated in (3) (Reinhart 1986:1).

- (3) a. * Which grade did his_i teacher give who_i?
 b. ? Which grade did his_i teacher give which student_i?

These multiple *wh*-questions are set up such that (LF-)movement of the lower *wh*-phrase will lead to a WCO-violation (given that the subject such a movement operation would cross contains a coreferential pronoun). As the judgments indicate, however, only simple *wh*-phrases show the expected deviancy. This suggests that the complex *wh*-phrase *which student* does not (need to) move at LF, which further confirms its status as a non-operator.²

Summing up, in this subsection I have discussed three well-known differences between simple and complex *wh*-phrases.³ In the spirit of Pesetsky (1987), Dobrovie-Sorin (1990) and Cinque (1986), I have argued that all three data contrasts follow from the fact that while simple *wh*-phrases are syntactic operators (that have to move to their scope-taking position, either overtly or covertly), complex ones are not. Before considering some similarities between simple and complex *wh*-phrases in the next subsection, I first want to introduce a new piece of data from Dutch that supports the conclusion of this subsection. Consider the contrast in (4).

- (4) a. Die jongens_i, die_i ken ik niet t_{die}.
 those boys DEM know I not
 'Those boys, I don't know.'
 b. * Iedereen_i, die_i ken ik niet t_{die}.
 everybody DEM know I not
 'Everybody, I don't know.' (Dutch)

These sentences exemplify the construction known as contrastive left dislocation (CLD for short, cf. Grohmann 2003 for background and references). What the contrast between the a- and the b-example shows is that syntactic operators (in this case the quantifier *iedereen* 'everyone') cannot be CLDed. Now consider the following contrast:

- (5) a. ?? Welke jongen_i, die_i heb je t_{die} gezien?
 which boy DEM have you seen
 b. * Wie_i, die_i heb je t_{die} gezien?
 who DEM have you seen (Dutch)

While simple *wh*-phrases are categorically excluded from the left-peripheral CLD-position, complex ones are marginally possible. In light of the contrast in (4), this supports the hypothesis that simple *wh*-phrases are syntactic operators, but complex ones

² I leave open the question of how the pronoun *his* comes to be bound in (3)b, as well as the – possibly related – issue of why this example is slightly marked. See also Barker (2008) for relevant discussion of (configurations allowing) bound variable readings.

³ One difference between simple and complex *wh*-phrases this paper has nothing new to say about – and hence will not address – is the fact that the latter are more readily extractable from islands. See Rizzi (2000), though, for an account of these facts that is – technical details aside – fully compatible with the analysis developed in this paper.

are not.⁴ The data in (5) thus further corroborates the conclusion reached above on independent grounds.

2.3 Similarities

In this subsection I very briefly point out two similarities between simple and complex *wh*-phrases. While some of the observations made here might seem obvious or trivial at first sight, it is important to introduce them nonetheless, as they will play a central role in the analysis developed in the next section.

A first thing to note is that both simple and complex *wh*-phrases are able to type a clause as a *wh*-question (in the sense of Cheng 1991). For example, the selectional restrictions of a verb like *wonder* can be satisfied both by (a clause containing) a simple *wh*-phrase and by (a clause containing) a complex one:

- (6) a. I wonder who John saw.
b. I wonder which student John saw.

The second similarity is noteworthy in light of the conclusion reached in the previous subsection. Recall that I argued there that simple *wh*-phrases are syntactic operators, but complex ones are not. In spite of this contrast, however, all *wh*-questions—regardless of whether they contain a simple or a complex *wh*-phrase—display the typical characteristics of operator-variable dependencies. This is illustrated in (7) and (8).

- (7) a. * Who_i does his_i mother like t_i?
b. * Which boy_i does his_i mother like t_i?
(8) a. What_i did you file t_i without reading e_i?
b. Which book_i did you file t_i without reading e_i?

The data in (7) show that both simple and complex *wh*-phrases are sensitive to WCO, while the sentences in (8) illustrate that both of them can license a parasitic gap. Given that these are generally taken to be typical characteristics of operator-variable dependencies, such a dependency must be present in both types of *wh*-questions.

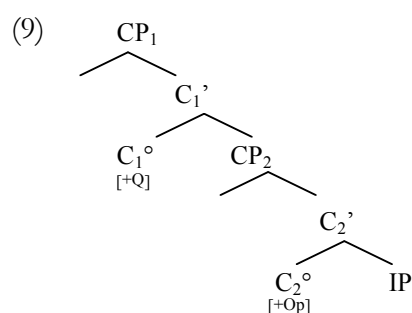
2.4 Conclusion

In this section I have introduced and discussed some well-known facts about simple and complex *wh*-phrases, thus setting the scene for what will follow. In particular, there are three basic generalizations an account of *wh*-movement should be able to capture. First, simple *wh*-phrases behave as syntactic operators, but complex ones do not. Second, both types of *wh*-phrases can type a clause as a *wh*-question. Third, all *wh*-questions involve an operator-variable dependency, regardless of whether they contain a simple or a complex *wh*-phrase. In the next section I show how the cartographic approach to the left periphery offers a natural way of accounting for these generalizations.

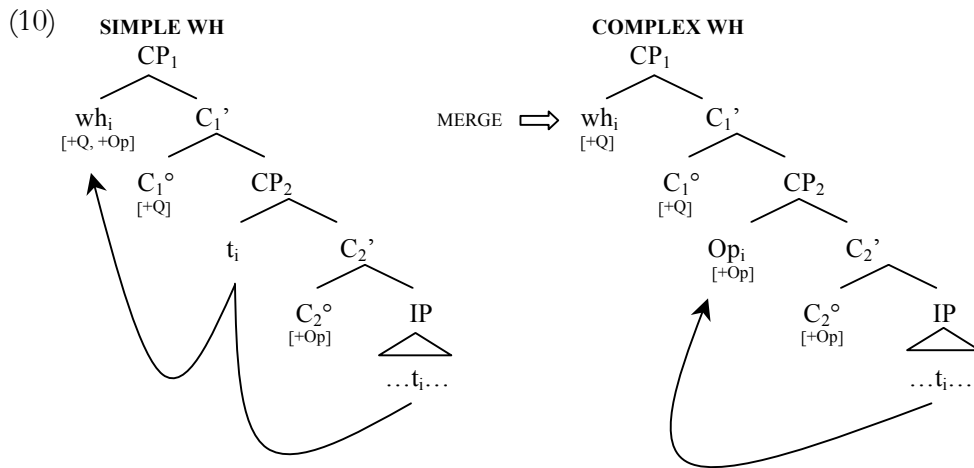
⁴ That the example in (5)a is itself not fully grammatical follows from the fact that left dislocates have to be fully referential XPs, which *welke jongen* ‘which boy’ clearly is not.

3. The proposal: multiple CPs and the syntax of *wh*-movement

Central to the cartographic enterprise is the idea that sentence structure can be represented as a template of fixed positions, each of which can be filled by a limited set of syntactico-semantic elements. This template is taken to be a universal, ordered series of functional projections, the specifiers of which serve as merger sites or as landing sites for XP-movement. Language variation—both within and across languages—is then due to the absence or presence of such Merge and Move operations. In order to account for the data discussed in the previous section, two left-peripheral functional projections will become relevant: one related to clause typing and one that hosts operators. Note that they are not an innovation of my analysis. The idea that there are designated left-peripheral positions (i.e. functional projections) for clause typing and for creating operator-variable dependencies is not only part and parcel of the most influential version of the split CP-hypothesis (cf. Rizzi's (1997) ForceP and FocP), it has also been proposed and argued for—albeit in various forms—by Reinhart (1981), Cheng (1991), Bhatt & Yoon (1991), and Bennis (1997, 2000). In order not to add to the already existing terminological proliferation, I will neutrally refer to the two projections I will make use of as CP₁ (clause typing) and CP₂ (operator-variable dependencies), with the former dominating the latter. Moreover, I will make the analysis technically explicit by assuming that in *wh*-questions the head of the CP₁ has a [+Q(uestion)]-feature that needs to be checked, while the head of CP₂ has a [+Op(erator)]-feature. This yields the abstract structure in (9).



Now let us see how this structure interacts with *wh*-movement. Simple *wh*-phrases behave exactly as expected. They are merged inside the IP and move via specCP₂ (where they check an operator feature) to specCP₁ (in order to check the clause typing feature). Complex *wh*-phrases on the other hand are not syntactic operators. This means they are not endowed with an operator feature and as a result, they cannot check the operator feature of C₂. Instead, they are base-generated in specCP₁ (where they check the clause typing feature) and involve empty operator movement from the IP-internal base position to specCP₂. The tree structures in (10) further illustrate this proposal.



Before examining to what extent this analysis can provide a unified account for the behavior of simple and complex *wh*-phrases in a number of Germanic languages, let us first see how it fares with respect to the conclusions reached in the previous section. Recall that the data presented there could be captured by the following three generalizations:

- (11)
- a. Simple *wh*-phrases are syntactic operators, but complex ones are not.
 - b. Both simple and complex *wh*-phrases can type a clause as a *wh*-question.
 - c. All *wh*-questions involve an operator-variable dependency.

The observations in (11)b and (11)c follow straightforwardly from the structures in (10). First of all, both simple and complex *wh*-phrases check the clause typing feature of C_1 and hence, can be taken to type the clause. On the other hand, both trees in (10) contain an operator-variable dependency. In the left-hand tree it is created by moving the simple *wh*-phrase, in the right-hand one by moving the empty operator. The generalization in (11)a is encoded in the feature matrix of the two types of *wh*-phrases: simple *wh*-phrases have a [+Op]-feature, but complex ones do not. Note that this suffices to capture the contrasts discussed in section 2.2. In particular, while the complex *wh*-phrase is merged in specCP₁ in the right-hand structure in (10), in a multiple *wh*-question (where it is not required to type the clause) it can just as easily be merged in an argument position. In such a case, though, the lack of a [+Op]-feature implies that the *wh*-phrase remains in that position throughout the derivation. This accounts for the well-formedness of the examples in (12) (all taken from section 2.2).⁵

- (12)
- a. What did which boy buy?
 - b. Who fainted when you behaved which way?
 - c. ? Which grade did his_i teacher give which student_i?

With the core proposal now firmly in place, I turn to additional data involving simple and complex *wh*-phrases in the next section.

4. Expanding the data set

⁵ An OUP-reviewer wonders what would rule out merging a complex object *wh*-phrase in specCP₁, an empty operator in the IP-internal object position, and a simple *wh*-phrase in the subject position. After *wh*-movement—whereby C_2° would attract the subject *wh*-phrase as the closest operator—this constellation would yield (illicit) configurations such as **I wonder which book who read*. I suggest this scenario is ruled out on the assumption that empty operators cannot remain in situ. This seems reasonable as their whole *raison d'être* is to create a syntactic operator/variable-dependency, and this is something they are unable to do if they remain in an argument position.

4.1 Introduction

In the following subsections I discuss seven additional empirical differences between simple and complex *wh*-phrases. Some of them are known from the literature, others are new. In each case I show that the theory outlined in the previous section can offer a straightforward account for the observed differences.

4.2 Doubly filled COMP phenomena in Frisian

In his discussion of the split CP-system in Frisian, Hoekstra (1993:3) notes that simple and complex *wh*-phrases pattern differently in doubly filled COMP contexts. Frisian is an obligatorily doubly filled COMP filter violating language. In other words, embedded *wh*-phrases are always followed by an overt complementizer. Complex *wh*-phrases are distinguished from simple ones in that they can only be followed by *of* 'if that'. Simple *wh*-phrases on the other hand are followed either by *t* 'that' or by *of t* 'if that'. The relevant contrast is given in (13).

- (13) a. Hy frege, wa (of) 't jûn kaam.
he asked who if that_{C°} tonight came
'He asked who came tonight.'
- b. Ik frege, hokker stik *(of) 't se lêzen hie.
I asked which article if that_{C°} she read had
'I asked which article she had read.' (Frisian, Hoekstra 1993:3)

I follow Hoekstra (1993), Hoekstra & Zwart (1994, 1997) and Bennis (1997, 2000) in assuming that while *of* 'if' occupies the higher C°-head (C₁° in my account), *t* 'that' occupies the lower one (C₂°) (see the papers mentioned for extensive argumentation). With this much as background, the facts in (13) now receive the following account in the theory proposed in this paper. As pointed out above, Frisian is a language that obligatorily violates the doubly filled COMP filter (cf. Haegeman (1992:51) and Poletto (2000) for similar claims about Lapscheure Dutch and northern Italian dialects respectively). In other words, whenever a specCP is filled in a *wh*-question, the head of that projection has to be spelled out as a complementizer. Assume now that in Frisian simple *wh*-phrases have the option of moving only to specCP₂, and can check their clause typing feature from there (*in situ* as it were).⁶ This would yield exactly the pattern attested in (13). Specifically, for complex *wh*-phrases there is no choice. They never move through specCP₂, which implies that they can also never stay there. Instead, they are merged in specCP₁ and involve operator movement to specCP₂. In the resulting configuration both specCPs are always filled, which means that both complementizers are spelled out (cf. (13)b). Simple *wh*-phrases on the other hand, do have an option. They either move via specCP₂ all the way to specCP₁, causing both C°-heads to be spelled out (both of their specifiers being filled in the course of the derivation). Alternatively, however, if they stay in specCP₂, the higher specifier remains empty, and only the lower complementizer (i.e. *t* 'that') is spelled out. As such, the proposal in (10) allows us to make sense of the data pattern exemplified in (13). One might object, though, that it only does so at the cost of introducing an additional, unmotivated assumption, i.e. the idea that simple *wh*-phrases can optionally stay in specCP₂. As will become clear in the next subsection, precisely this

⁶ I will not pursue a technical implementation of that idea here, but it seems tempting to link this phenomenon to the debate surrounding the Vacuous Movement Hypothesis (cf. e.g. Agbayani 2000).

assumption receives strong support from doubly filled COMP facts in certain Dutch dialects.

4.3 Doubly filled COMP phenomena in dialectal Dutch

Consider the examples in (14) and (15).

- (14) Ik weet nie <of> met wie <of> Jan oan et proate was.
 I know not if with who if John on it talk_{INF} was
 ‘I don’t know who John was talking to.’ (Strijen Dutch)

- (15) Ik weet nie of met wie dat Jan oan et proate was.
 I know not if with who that John on it talk_{INF} was
 ‘I don’t know who John was talking to.’ (Strijen Dutch)

What these data show is that in a certain (limited) set of Dutch dialects, simple *wh*-phrases can occur both to the left and to the right of the complementizer *of* ‘if’ (cf. (14)), and even in between the complementizers *of* ‘if’ and *dat* ‘that’ (cf. (15)). Neither of these options is open to complex *wh*-phrases. They can only occur to the left of *of* ‘if’. This is shown in (16) and (17).

- (16) Ik vroag me af <*of> welke jonge <of> die maisjes gistere
 I ask me PRT if which boy if the girls yesterday
 gezien hebbe.
 seen have
 ‘I wonder which boy the girls saw yesterday.’ (Strijen Dutch)

- (17) *Ik vroag me af of welke jonge dat die maisjes gistere
 I ask me PRT if which boy that the girls yesterday
 gezien hebbe.
 seen have
 INTENDED: ‘I wonder which boy the girls saw yesterday.’ (Strijen Dutch)

The explanation for these data is virtually identical to the account given for Frisian in the previous subsection. The only difference between the two languages is that Strijen Dutch allows C_1° to be spelled out even in the absence of an element in its specifier. This yields two options for simple *wh*-phrases. Either they move all the way up to specCP₁, in which case they precede *of* ‘if’, or they remain in specCP₂, in which case they follow *of* ‘if’ and can even occur in between *of* ‘if’ and *dat* ‘that’. Note that the combination of the examples in (14) and (15) provide strong and very direct evidence in favor of the hypothesis that *wh*-questions with simple *wh*-phrases have two possible derivations. Complex *wh*-phrases on the other hand, never occupy specCP₂ and as a result can never be preceded by *of* ‘if’ or occur in between the two complementizers.⁷

4.4 Swiping in English

⁷ An OUP-reviewer correctly points out that the present account predicts that both simple and complex *wh*-phrases should be able to precede an *of dat*-sequence. Unfortunately, I do not have the relevant data from Strijen Dutch to test this prediction, but it should be noted that the sequence *wh*-phrase-*of dat* is very common in varieties of Dutch spoken in the Netherlands, both with simple and with complex *wh*-phrases (see Hoekstra & Zwart (1994, 1997) and Bennis (1997, 2000) for data and discussion).

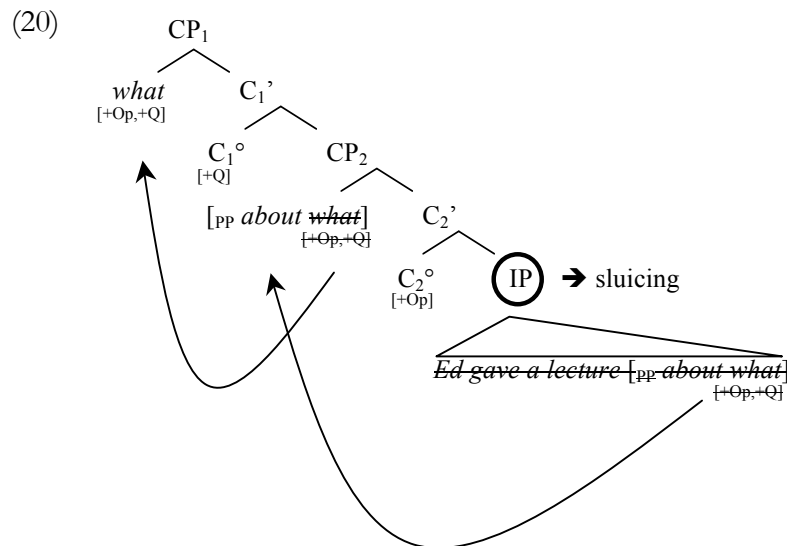
As is well known, sluiced *wh*-words can strand their preposition in certain contexts in English. This construction has been dubbed ‘swiping’ (an acronym for **S**luiced **W**h-word **I**nversion with **P**repositions **I**n **N**orthern **G**ermanic) by Merchant (2002), and an example is given in (18).

(18) Ed gave a lecture, but I don’t know what about.

As Merchant points out, swiping is restricted to simple *wh*-phrases. That is, a complex *wh*-phrase such as *which book* cannot strand its preposition under sluicing. This is illustrated in (19).

(19) *Ed gave a lecture, but I don’t know which topic about.

Just like the doubly filled COMP data discussed in the previous subsections, this contrast follows from the fact that simple *wh*-phrases occupy more CP-domain internal positions in the course of the derivation than complex ones do. In particular, in the example in (18) the PP *about what* first moves to specCP₂ to check an operator feature. Subsequently, the *wh*-phrase *what* strands this preposition on its way to specCP₁ (where it checks a clause typing feature), thus creating the word order *what about*. The structure in (20) illustrates this derivation.⁸



This scenario is not an option for complex *wh*-phrases because they never move through specCP₂. As a result, they can never strand a preposition there. They can only be merged together with their preposition in specCP₁, yielding the non-inverted word order. Note that the empty operator moving from the IP-internal base position to specCP₂ cannot pied-pipe the preposition either. As is well-known (and illustrated in (21) below), empty operators cannot pied pipe overt material.

(21) a. the man *Op_i* I was talking [to *t_i*]

⁸ At first glance the derivation in (20) violates Postal’s (1972) ban on intermediate P-stranding. What I want to argue, however, is that ellipsis (i.e. sluicing) rescues the otherwise illicit configuration here. In particular, I follow Craenenbroeck (2004:73-75, to appear) who argues that ellipsis is needed here for reasons of Chain Uniformity at PF. Assume that PF requires a chain to be uniform with respect to the categorial type of its chain links. In case of intermediate P-stranding this principle is violated, as the lower chain links are of the PP-type, while the higher ones are DP-copies. By (PF-)deleting all copies prior to P-stranding, however, a (PF-)uniform chain containing only DP-links emerges. An OUP-reviewer notes that (20) also violates the so-called Freezing Principle (Wexler & Culicover 1980), which prohibits subextraction out of moved phrases. However, given that this principle is not without exceptions (see Abels 2008), the strength of this objection is not clear and I leave it undiscussed in what follows.

- b. * the man [to *Op*]_k I was talking t_k

Summing up, the same aspect of the analysis that accounted for the doubly filled COMP phenomena in Frisian and Strijen Dutch (i.e. the fact that complex *wh*-phrases never occupy specCP₂) now also accounts for the English swiping data, thus unifying these at first sight unrelated phenomena.

4.5 *Wh*-copying in German

The fourth set of data concerns the construction known as *wh*-copying (cf. Nunes 2004:1-63 and references mentioned there). An example is given in (22).

- (22) Wen glaubt Hans wen Jakob gesehen hat?
 who_{ACC} thinks Hans who_{ACC} Jakob seen has
 ‘Who does Hans think that Jakob saw?’
 (German, McDaniel 1986, as cited in Nunes 2004:38)

This sentence contains two instances of the question word *wen* ‘who’, in spite of the fact that it is a simple *wh*-question, i.e. that only one of the two *wens* (the higher one) is interpreted. What is relevant from the present perspective, is that *wh*-copying is excluded with complex *wh*-phrases. This is illustrated in (23).

- (23) *Wessen Buch glaubst du wessen Buch Hans liest?
 whose book think you whose book Hans reads
 INTENDED: ‘Which book do you think Hans reads?’
 (German, McDaniel 1986, as cited in Nunes 2004:39)

Nunes (2004:1-63) suggests—following a long tradition—that the two question words in (22) are copies of one another, i.e. they are part of the same movement chain. Normally, only one such copy—typically the highest one—is spelled out, but in this exceptional case, two links in the same chain are phonetically realized. Nunes argues that the lower of the two copies in (22) has undergone morphological fusion with the embedded C°-position. As a result, it has become invisible to the LCA and can be spelled out independently of the highest copy. In this analysis, the ill-formedness of (23) is due to the fact that an entire phrase such as *wessen Buch* ‘which book’ cannot undergo morphological fusion with a C°-head.

From the present perspective, however, a much simpler option presents itself. Recall that complex *wh*-phrases are base-generated in the highest specCP and do not undergo movement at all throughout the derivation. If they do not move, they cannot leave any intermediate copies, which immediately explains why they cannot partake in *wh*-copying. Note that this account is not only simpler than that of Nunes (it need not appeal to an unusual type of morphological fusion), it also links *wh*-copying to the swiping and doubly filled COMP data discussed earlier. Moreover, it makes the correct prediction for examples such as (24).

- (24) Mit wem glaubst du mit wem Hans spricht?
 with who think you with who Hans spricht
 ‘Who do you think Hans is speaking with?’
 (German, McDaniel 1986, as cited in Nunes 2004:42n35)

In this example the PP *mit wem* ‘with who’ is spelled out twice. From Nunes’s point of view this is unexpected, as *mit wem* ‘with who’ is clearly phrasal, and phrases cannot undergo the required type of morphological fusion. Nunes is forced to conclude, then, that there is variation in “the degree of permissiveness of a given dialect or idiolect with respect to morphological reanalysis” (Nunes 2004:43). In the analysis developed here, however, the relevant distinction is not between heads and phrases, but depends solely on the type of *wh*-phrase. From this perspective, *mit wem* ‘with whom’ patterns with *wen* ‘who’, precisely as the data in (22)-(24) suggest.

4.6 Preposition stranding in Dutch

As was pointed out by Van Riemsdijk (1978), Dutch is what one could call a partial preposition stranding language. In particular, the only elements that can strand a preposition in this language are R-pronouns and empty operators. Two representative examples are given in (25).

- (25) a. Waar heb je die kist mee opengemaakt?
 where have you that crate with open.made
 ‘What did you open that crate with?’
- b. Die sleutel is te klein [*Op* om het slot mee open te doen.]
 that key is too small for the lock with open to do
 ‘That key is too small to open the lock with.’ (Dutch)

In (25)a the R-pronoun *waar* ‘where’ has stranded the preposition *mee* ‘with’, while in (25)b the empty operator in the infinitival purpose clause has done so. As such, these examples illustrate Van Riemsdijk’s generalization. However, these data do not exhaust the preposition stranding paradigm in Dutch. Consider in this respect the contrast in (26).

- (26) a. *Wie wil je niet mee samenwerken?
 who want you not with cooperate
 INTENDED: ‘Who don’t you want to cooperate with?’
- b. ? Welke jongen wil je niet mee samenwerken?
 which boy want you not with cooperate
 ‘Which boy don’t you want to cooperate with?’ (Dutch)

While preposition stranding with simple *wh*-phrases is categorically excluded, the judgments improve dramatically—often up to full acceptability—when complex *wh*-phrases are used. The contrast in (26) seems to complicate Van Riemsdijk’s generalization considerably. In particular, the group of elements allowing P-stranding in Dutch now includes R-pronouns, empty operators and complex *wh*-phrases, as opposed to simple non-R-*wh*-phrases, which do not. Under the present account, however, the generalization can be retained as is. The reason why (26)b is well-formed is because the preposition is stranded not by the complex *wh*-phrase (which is base-generated in the CP-domain), but by the empty operator moving from the IP-internal base position to specCP₂. The contrast in (26) is thus exactly what one would expect under the present account.

4.7 Free relatives in Dutch

Groos & Van Riemsdijk (1981) point out that free relatives in Dutch and German can only be introduced by a simple *wh*-phrase (cf. also Meinunger (1998) for a similar observation about English free relatives and Grosu (1994) for more general discussion of these ‘anti-pied-piping effects’).⁹ This is illustrated in (27).

- (27) a. Wat op tafel ligt is voor jou.
 what on table lies is for you
 ‘What lies on the table is for you.’
 b. *Welk boek op tafel ligt is voor jou.
 which book on table lies is for you

Suppose that in definite free relatives we are dealing with a truncated CP-domain, in which CP₂ is present, but CP₁ is not. The present theory then predicts the data pattern in (27). Given that complex *wh*-phrases are base-generated in the topmost specCP and at no point in the derivation occupy a position in CP₂, they simply cannot occur in the left periphery when CP₁ is absent. Simple *wh*-phrases on the other hand, do occupy specCP₂ at one point in the derivation (and in certain cases they can remain there, cf. supra). As a result, they are able to occur when CP₁ is absent. Moreover, the present paper makes an additional prediction. If in this construction CP₁ is absent, then the head of that projection should be absent as well. Recall that I follow Hoekstra (1993), Hoekstra & Zwart (1994, 1997) and Bennis (1997, 2000) in assuming that *of* ‘if’ is the spell-out of C₁^o and *dat* ‘that’ the spell-out of C₂^o. That means that while *dat* ‘that’ should be able to occur in definite free relatives, *of* ‘if’ should not. The data in (28) show that this prediction is borne out.¹⁰

- (28) a. Wat dat op tafel ligt is voor jou.
 what that on table lies is for you
 ‘What lies on the table is for you.’
 b. *Wat of op tafel ligt is voor jou.
 what if on table lies is for you

Summing up, the theory pursued in this paper is able to account for the absence of complex *wh*-phrases in definite free relatives.

4.8 Spading in dialectal Dutch

The final set of facts once again comes from dialectal Dutch. As pointed out by Van Craenenbroeck (2004, to appear a), many dialects of Dutch allow a sluiced *wh*-phrase to be followed by the distal demonstrative pronoun *da* ‘that’.¹¹ This construction is dubbed ‘spading’ (short for **S**luicing **P**lus **A** **D**emonstrative **I**n **N**on-insular **G**ermanic). An example is given in (29).

⁹ An important caveat is in order. I am only focusing on what Grosu & Landman (1998) – following a long tradition – call the definite usage of free relatives, i.e. those free relatives that can be paraphrased by means of a definite expression. In their universal reading, free relatives are compatible with complex *wh*-phrases. This is shown in (i).

(i) a. I’ll read whichever book you want me to read.
 b. Ik lees welk boek je ook maar wil.
 I read which book you PRT PRT want
 ‘I’ll read whichever book you want.’ (Dutch)

¹⁰ Note that the complementizer *of* ‘if’ is not independently incompatible with relative clauses: it occurs in headed relatives in some varieties of Dutch. See Zwart (2000) for discussion.

¹¹ The word *da* ‘that’ is – just like its English counterpart – homophonous between the declarative complementizer and the distal demonstrative. As discussed in detail by Van Craenenbroeck (2004:14-16, to appear a), however, in an example like (29) we are unambiguously dealing with the latter.

- (29) Jef eid iemand gezien, mo ik weet nie wou da.
 Jeff has someone seen but I know not who that_{DEM}
 ‘Jeff saw someone, but I don’t know who.’ (Wambeek Dutch)

Just like the phenomena discussed in the previous subsections, spading makes a distinction between simple and complex *wh*-phrases. In particular, while the former can partake in spading (cf. (29)), the latter cannot. This is shown in (30).

- (30) *Jef ei ne student gezien, mo ik weet nie welke student da.
 Jeff has a student seen but I know not which student that_{DEM}
 INTENDED: ‘Jeff saw a student, but I don’t know which student.’
 (Wambeek Dutch)

The reasoning developed below is more intricate than that of the previous subsections, as it involves giving an analysis of spading. Due to space considerations, I will only sketch the main lines of the account here, referring the reader to Van Craenenbroeck (2004, to appear a) for more details.

The first point to make about spading concerns its underlying structure. In particular, Van Craenenbroeck (2004:19-25, to appear a) argues that a spading example like B’s reply in (31)a is not derived from the ‘regular’ *wh*-question in (31)b, but rather from the cleft in (31)c.

- (31) a. A: Ik em iemand gezien. B: Wou da?
 I have someone seen who that_{DEM}
 ‘A: I saw someone. B: Who?’
 b. Wou ejje gezien?
 who have.you seen
 ‘Who did you see?’
 c. Wou is da da ge gezien etj?
 who is that_{DEM} that_{C°} you seen have
 ‘Who is it that you saw?’ (Wambeek Dutch)

There are various arguments in support of this claim. Given that they all have the same logical structure, I will only work out one of them in detail here, and simply mention the others. All the arguments can be found in Van Craenenbroeck (2004:19-25, to appear a). The general form of the argument is this: in contexts where regular *wh*-questions and clefts with a *wh*-phrase as pivot pattern differently, spading sides with the cleft rather than with the regular *wh*-question, thus supporting the hypothesis that this construction is derived from a cleft.

One such context concerns case. As the example in (32) shows, certain dialects of Dutch show morphological Case distinctions on their *wh*-pronouns.

- (32) { * Wea / Wem } has-te gezieë?
 who_{NOM} / who_{ACC} have.you seen
 ‘Who did you see?’ (Waubach Dutch)

Given that in this example the *wh*-phrase is the direct object of the verb *to see*, it has to occur in the accusative form.¹² Pivots of clefts on the other hand, always occur in the

¹² As pointed out in Van Craenenbroeck (2009) the case facts are more subtle than is suggested here. However, as this refinement does not affect the main point made here, I leave it undiscussed.

nominative, regardless of whether they correspond to the subject or the object of the embedded clause. This is shown in (33).

- (33) { Wea / * Wem } is dat dea-s-te gezieë has?
 who_{NOM} / who_{ACC} is that_{DEM} REL-AGR-you seen have
 ‘Who is it that you saw?’ (Waubach Dutch)

The data in (32) and (33) thus provide a testing ground for determining the underlying structure of a spading example. If spading derives from a regular *wh*-question, an object *wh*-phrase should occur in the accusative. If it derives from a cleft, an object *wh*-phrase should bear nominative case. As the example in (34) illustrates, it is the second prediction that is borne out.

- (34) A: Ich han inne gezieë.
 I have someone seen
 B: { Wea / * Wem } dat?
 who_{NOM} / who_{ACC} that_{DEM}
 ‘A: I saw someone. B: Who?’ (Waubach Dutch)

As a control example, it is informative to look at how sluicing behaves in this respect. Merchant (2001) argues at length that sluiced sentences derive from regular *wh*-questions. In the present discussion, that means that sluiced object *wh*-phrases should bear accusative case in the dialect of Waubach. The example in (35) shows that this is indeed the case.

- (35) A: Ich han inne gezieë. B: { * Wea / Wem }?
 I have someone seen who_{NOM} / who_{ACC}
 ‘A: I saw someone. B: Who?’ (Waubach Dutch)

Summing up, the morphological case of object *wh*-phrases in spading constitutes a strong argument in favor of the hypothesis that spading derives from clefts with a *wh*-pivot, rather than from regular *wh*-questions. Moreover, as table 1 shows, this is not the only such argument.

	REGULAR WH-QUESTION/SLUICING	SPADING	CLEFTS
case of <i>wh</i> _{object}	acc	nom	nom
modification by NEG and AFF	✓	*	*
multiple <i>wh</i>	✓	*	*
non-overt antecedent	✓	*	*
modification by <i>nog</i> ‘else’	✓	*	*
necessarily exhaustive reading	no	yes	yes

Table 1: comparison of regular *wh*-questions/sluicing, spading and clefts with a *wh*-pivot

This table shows that regular *wh*-questions—as well as sluices derived from them—allow their *wh*-phrases to be modified by polarity markers and by *nog* ‘else’, that they allow for multiple *wh*, that the ellipsis found in sluicing can have a non-overt antecedent, and that they do not necessarily have an exhaustive reading. For clefts with a *wh*-phrase as pivot, the picture is the reverse: their *wh*-phrase cannot be modified, there cannot be more than one, these clefts cannot be uttered without linguistic antecedent, and they necessarily

induce an exhaustive reading. The fact that spading patterns exactly like clefts and unlike regular *wh*-questions provides strong support for the hypothesis introduced above.

The next issue concerns the type of ellipsis process that is at work in spading. As is already suggested by the ‘s’ in the acronym, I assume that it is sluicing that is responsible, i.e. the deletion of the IP-complement of a C°-head whose specifier hosts a *wh*-phrase (cf. Merchant 2001). That being the case, however, a basic spading example like the one in (31)a poses a new problem. Consider the schematic representation in (36).

- (36) Wou ~~is~~ da ~~da~~ ~~ge~~ ~~gezien~~ etj?
 who is that_{DEM} that_{C°} you seen have
 ‘Who is it that you saw?’ (Wambeek Dutch)

In order to transform the cleft in (31)c into the sequence *wh*-phrase+demonstrative attested in (31)a, it looks like non-constituent deletion is necessary, something sluicing is normally not able to do. As a way out of this conundrum, I suggest that the demonstrative pronoun *da* ‘that’ in a spading example undergoes focus movement to specCP₂. There are two pieces of data in support of this claim. First of all, a spaded demonstrative bears stress. This is shown in (37) (where the use of capitals indicates stress).

- (37) Z’eid iemand gezien,
 she.has someone seen
 mo kweet nie {wou DA / *WOU da}.
 but I.know not who that_{DEM} / who that_{DEM}
 ‘She saw someone, but I don’t know who.’ (Wambeek Dutch)

This is surprising since in a sluicing context it is normally the *wh*-phrase that bears stress:

- (38) Z’eid iemand gezien, mo kweet nie {WOU / *wou}.
 she.has someone seen but I.know not who / who
 ‘She saw someone, but I don’t know who.’

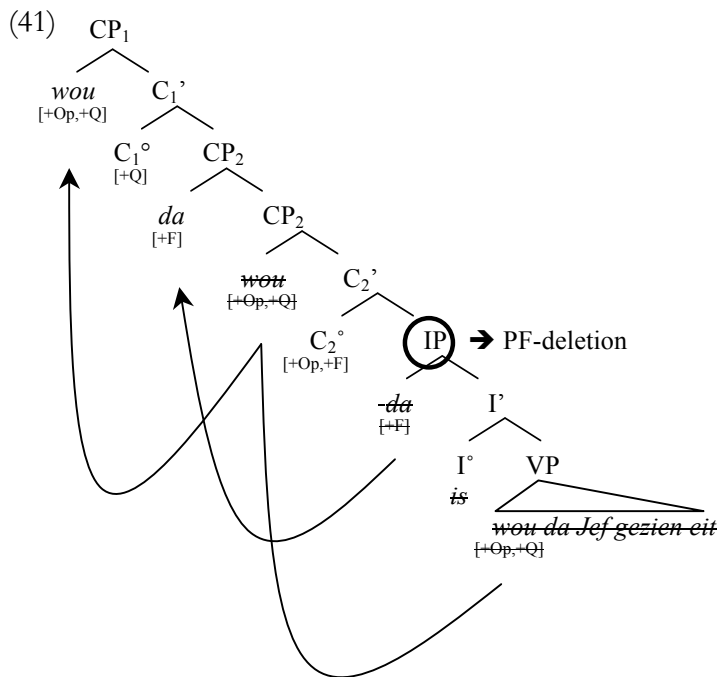
These facts follow, however, if one assumes that the demonstrative has undergone focus movement in (37) and that as a result, it bears stress.

The second argument in favor of the assumption that the demonstrative pronoun has moved into the left periphery, concerns the interaction between spading and swiping. In particular, in Frisian these two constructions can co-occur. Recall from subsection 4.4 that swiping involves P-stranding in specCP₂, with the (simple) *wh*-phrase moving on to specCP₁. If the demonstrative pronoun has also moved into the left periphery, it should be able to occur in between a sluiced *wh*-phrase and its swiped preposition. As the Frisian example in (39) illustrates, this prediction is borne out.

- (39) A: Jan hat juster in praatsje holden.
 John has yesterday a talk held
 B: Wêr dat oer?
 where that_{DEM} about
 ‘A: John gave a talk yesterday. B: What about?’ (Frisian)

With this much as background, I now turn to the analysis of a well-formed spading example. In particular, the interrogative subclause in (40) is derived as in in (41).

- (40) Jef eid iemand gezien, mo ik weet nie wou da.
 Jeff has someone seen but I know not who that_{DEM}
 'Jeff saw someone, but I don't know who.'



As pointed out above, the IP underlying this spading example has the form of a cleft. In particular, the subject position is occupied by the demonstrative pronoun *da* ‘that’, I° by the copula *is* ‘is’, and the VP contains both the pivot (here the *wh*-phrase *wou* ‘who’) and the embedded clause.¹³ After C₂[°] is merged, the demonstrative focus-moves to specCP₂. Subsequently, the *wh*-phrase moves to specCP₂ (to check its operator feature), tucking in beneath the demonstrative (Richards 2001:Ch1). When C₁[°] is merged, the *wh*-phrase moves on to specCP₁ to check the clause typing feature on C₁[°]. Finally, at PF the IP is deleted (sluiced), as is the copy of *wou* ‘who’ in specCP₂. All that remains is the *wh*-phrase (in specCP₁) followed by the demonstrative (in specCP₂). In other words, the derivation has converged and it has yielded a well-formed instance of spading.

The central question for this analysis in light of the present paper is why complex *wh*-phrases are excluded from spading (cf. (30)). In order to account for this, I make use of Merchant’s (2001:55-61) observation that sluicing always deletes the complement of the C°-head the specifier of which hosts the fronted *wh*-phrase. In a theory that starts out from a single, unsplit CP, the consequences of this claim are straightforward: sluicing is IP-deletion. Under the split CP-approach adopted here, however, matters are more complicated. Recall that in the present theory complex *wh*-phrases only occupy specCP₁—being as they are base-generated there. Combined with Merchant’s observation, this leads to the conclusion that sluicing with complex *wh*-phrases always deletes CP₂, rather than IP. If that is the case, however, the absence of complex *wh*-phrases in spading follows naturally. Given that the fronted demonstrative occupies

¹³ The precise internal structure of the cleft is orthogonal to my concerns, as the cleft is elided in spading anyway. As far as I can see, the account presented here is compatible with all existing syntactic accounts of clefts.

specCP₂ and given that CP₂ is contained in the ellipsis site, there is simply no way for the demonstrative to show up to the right of the sluiced *wh*-phrase.¹⁴

Summing up, even though the spading case turned out to be considerably more complicated than the data discussed in the previous subsections, the basic empirical difference between simple and complex *wh*-phrases could once again be made to follow from the proposal outlined in section three.

4.9 Summary

The data discussed in the preceding seven subsections can be summed up as in table 2.

	SIMPLE <i>WH</i> -PHRASES	COMPLEX <i>WH</i> -PHRASES
can be followed by ‘ <i>t</i> ’ in Frisian	✓	*
can be preceded by <i>of</i> ‘ <i>if</i> ’ in Strijen Dutch	✓	*
can partake in swiping	✓	*
can partake in <i>wh</i> -copying	✓	*
can strand a preposition in Dutch	*	?
can occur in definite free relatives	✓	*
can partake in spading	✓	*

Table 2: empirical differences between simple and complex *wh*-phrases

The facts summarized in this table are quite disparate at first sight. Not surprisingly, they have thus far not yet been subject to a unified account. One of the main strengths of the analysis defended in this paper is that it provides just such an account. The specific interaction between the split CP-domain and the syntax of *wh*-movement outlined in section three yields a way of combining all these data into one analysis.

5. A problem for the theory: reconstruction

A severe problem is posed for the analysis developed in this paper by instances of reconstruction with complex *wh*-phrases. Consider the example in (42).

(42) [Which friend of her_i’s] did [every student]_i invite?

In this example the pronoun *her* is interpreted as a variable bound by the QP *every student* even though the latter does not c-command the pronoun at Spell-Out. The by now standard account for these data starts out from the copy theory of movement and assumes that at LF it is the lower copy of *her*—the one that *is* c-commanded by *every student*—that is bound by the quantifier. In other words, the example in (42) is well-formed in the reading indicated because it has the LF-representation in (43) (cf. Sauerland 1998).

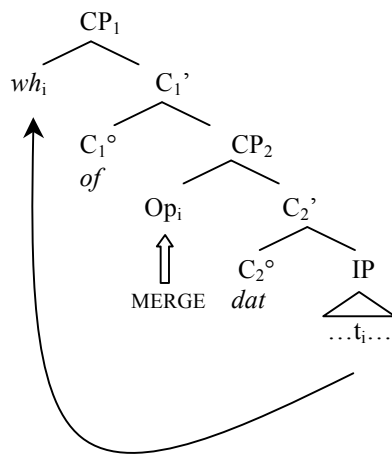
(43) LF: <which friend of her_i’s> did [every student]_i invite <which friend of her_i’s>

¹⁴ Note that the reasoning outlined here seems to allow sluicing to delete either IP or CP₂ in a structure like (41) (given that there is a copy of the *wh*-phrase both in specCP₂ and in specCP₁). Although this would not affect the account presented here – one of the two derivations yields the desired result – I assume that sluicing with simple *wh*-phrases always deletes IP. See Van Craenenbroeck (2004:60-64, to appear a) for a detailed technical account of how to derive this conclusion.

It should be clear that this explanation is not available under the present analysis. I have argued that complex *wh*-phrases are base-generated in the left periphery and do not undergo movement at all. As a result, there is no lower copy of that *wh*-phrase that can be activated in examples like (42). In this final section of the paper I explore this problem somewhat further by looking at two possible solutions and discussing their pros and cons.

As the traditional account of reconstruction is logically incompatible with the theory of *wh*-movement outlined in section three, one of them has to be on the wrong track. Suppose the former is correct in assuming that reconstruction effects are due to LF-activation of a lower copy. One possible way of modifying the theory presented in this paper would be as in (44) (cf. also Van Craenenbroeck to appear b).

(44) **complex *wh***



This structure is similar to the proposal put forward in section three in that complex *wh*-phrases at no point in the derivation occupy specCP₂, the operator feature of C₂[°] being checked by an empty operator instead. The tree in (44) differs from the present theory, though, in that complex *wh*-phrases do undergo movement. In particular, they move from the IP-internal base position in one fell swoop to specCP₁. It is the empty operator that is base-generated in the left periphery in this analysis.

Let us examine the consequences of adopting this theory. The data pertaining to doubly filled COMP (both in Frisian and in dialect Dutch), swiping, free relatives and spading all still follow under this new account. The explanation for these phenomena crucially hinged on complex *wh*-phrases never occupying specCP₂, and as that is an aspect that is retained in the new analysis, no problems arise there. Moreover, the structure in (44) allows us to maintain the standard theory of reconstruction. Given that there is a copy of the *wh*-phrase in the IP-internal base position, it can be activated to account for connectivity effects.¹⁵ On the downside, however, with the structure in (44) it is no longer clear why complex *wh*-phrases cannot partake in *wh*-copying. Given that they undergo movement and as a result leave intermediate copies, it is unclear why those copies cannot be spelled out parallel to those of simple *wh*-phrases.¹⁶ Secondly, the contrast between simple and complex *wh*-phrases in Dutch preposition stranding is no longer in accordance with Van Riemsdijk's generalization: given that in (44) it is the

¹⁵ Another such effect is the morphological case of a fronted complex *wh*-phrase. In the analysis outlined in section three, morphological case marking on complex *wh*-phrases has to be the result of the indexing relation with the empty operator in specCP₂, a non-trivial assumption.

¹⁶ As an OUP-reviewer points out, this problem could be amended by assuming that only copies in specCP₂ can be spelled out in *wh*-copying. I hope to explore this possibility further in future research.

complex *wh*-phrase itself that undergoes movement, it is also the complex *wh*-phrase that strands the preposition. To sum up, although the modified structure in (44) brings the proposal in line with the standard theory of reconstruction, it is no longer able to account for some of the data presented in section four.

Now consider the other option. Assume that the theory outlined in section three is essentially correct. That implies that a new account is needed for the bound variable reading in (42) and similar reconstruction phenomena. This in itself would not be a great innovation. The literature abounds with non-syntactic analyses of reconstruction phenomena (see for example Sharvit 1999, Sharvit & Guerzoni 1999, Jacobson 1994 and references mentioned there). At present, though, it is still unclear to what extent such semantic theories can account for the full range of reconstruction phenomena. In particular, while they do not have any problems with scope reconstruction, facts involving binding do not seem to be fully accounted for yet.¹⁷ As long as this issue is not settled, it remains unclear how serious a threat examples like (42) pose for the theory outlined in this paper.

Summing up, in this section I have examined the interaction between my account of *wh*-movement and the standard theory of reconstruction. Although the two are logically incompatible, a slight modification of either of them can yield a unified theory. As a detailed discussion of these issues would take me far beyond the scope of this paper, however, I have limited myself to pointing out a few general routes, leaving the rest as a topic for further research.

6. Summary and conclusion

In this paper I have combined a particular incarnation of the split CP-hypothesis with the syntax of *wh*-movement. Based on a set of well-known differences and similarities between simple and complex *wh*-phrases, I have argued that the projection responsible for clause typing and the one where operator/variable-dependencies are created should be kept separate. Complex *wh*-phrases such as *which boy* do not undergo syntactic movement, but instead are base-generated in the left periphery. This proposal led to a unified account of seven sets of at first sight unrelated data: doubly filled COMP phenomena in Frisian and dialect Dutch, swiping in English, *wh*-copying in German, free relatives in Dutch, preposition stranding in Dutch and spading in dialect Dutch. In the final section I have examined the interaction between the theory proposed here and the standard account of reconstruction.

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¹⁷ Thanks to an anonymous reviewer for pointing this out to me, and to Yael Shart (p.c) for discussing semantic reconstruction with me.

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