D-LINKING, SCRAMBLING AND SUPERIORITY IN GERMAN

Martina Wiltschko
University of Vienna/UBC

0. INTRODUCTION

It is a standard claim in the literature on German syntax that German does not show superiority effects (cf. Grewendorf 1988; Haider 1993, Lutz 1995, Grohmann 1997). This claim receives support by the following data:

(1) a. Wer   hat   was   behauptet?
       Who   has   what   claimed
    b. Who claimed what?
(2) a. Was   hat   wer   behauptet?   Grewendorf (1988)
       What   has   who   claimed?
    b. *What did who claim?

In German as opposed to English a multiple question with the object overtly moved to SpecCP and the subject left in situ is well-formed. Given the data in (1) and (2) two questions arise:
1. What is the cross-linguistic difference that accounts for the difference in judgements concerning multiple questions like (2)?
2. Why does German not show superiority effects?

On closer inspection, it turns out that a satisfying answer to each of these questions is not easily available. It turns out that all the principles that have been proposed in the literature to be responsible for superiority effects in English are active in German as well. The parametric difference between English and German is not immediately obvious. This means however that the standard claim that German lacks superiority effects faces a serious problem, which needs to be addressed. The main goal of this paper[1] is to show that the standard claim is in fact incorrect. In certain well-defined configurations, German shows superiority effects:

(3) a. Wer   hat   [denn   schon   oft   was   gesehen?
       Who   has   [prt   already   often   what   seen
    b. *?Was hat   [denn   schon   oft   wer   gesehen?
       What   has   [prt   already   often   who   seen

This means that the question in 2 is not appropriate. It has to be replaced by the following one:

3. When do superiority effects in German show up and when not?

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In this paper I will show that the answer to the question in 3 is quite straightforward:

(4) German shows superiority effects with non-D-linked wh-words.

The claim in (4) does not come as a surprise, given that cross-linguistically only non-D-linked wh-phrases induce superiority violations whereas D-linked ones do not (cf. Pesetsky 1987). This still leaves us with the question in 1. If only D-linked wh-words can escape superiority violations, then we have to conclude that the wh-words in (2) are D-linked in German but not in English. We therefore have to address the question concerning the possible trigger for D-linking. In English D-linking is mainly an inherent property of wh-words: for example *which N* is inherently D-linked. It is however not the case that simple wh-words as used in (2)a are inherently D-linked, given the contrast in (3). What I will show in this paper is that the D-linked reading of simple wh-words in German is more easily available due the fact that German has to possibility of overt scrambling. Thus, I will argue for the following claim, which provides an answer to the question in 1:

(5) Scrambling of wh-phrases triggers D-linking.

This amounts to saying that German has an additional trigger for D-linking, which English lacks, namely scrambling. This claim is not really surprising, given that overt scrambling in German has an interpretive effect on indefinites as well (cf. Diesing 1992). The two claims in (4) and (5) allow us to capture the German data as well as the cross-linguistic difference. On the one hand the multiple question in (2) is well-formed in German, because German allows for overt scrambling and therefore the wh-word can be interpreted as D-linked. English on the other hand does not allow for scrambling and therefore the wh-word is not interpreted as D-linked. It will also follow why superiority effects show up in sentences like (3). Here we find an adverb marking the VP-boundary. The wh-word in situ follows the adverb and thus it cannot be scrambled. In this case regular superiority effects show up. In the rest of this paper I will empirically and theoretically motivate these claims. Thus my main concern will be to show that German shows regular superiority effects. I will not attempt to provide a solution for superiority effects in general, nor will I address the question as to why D-linked wh-phrases escape superiority violations.

The paper is organized as follows. In section 1 I review the standard data leading to the claim that German lacks superiority effects. Here I will also show that this claim faces some severe problems that cannot easily be solved. In sections 2–7 I will show that German shows regular superiority effects with non-D-linked wh-phrases. Here empirical evidence for the claim that scrambling triggers D-linking will be presented. I will also briefly discuss the notion of D-linking. In section 8 I will address the intepretational effect of scrambling on weak quantifiers. We will see that there is a striking parallelism between D-linking and the interpretation of scrambled weak quantifiers, which constitutes theoretical support for the present analysis. Section 9 addresses the difference between two types of wh-phrases (*'welch- N'* and *'was für (ein) N'*). In section 10 I will present some additional data showing that not only scrambling but also a certain kind of intonation can force the D-linked or non-D-linked interpretation respectively. Section 11 addresses the question as to why superiority effects have been overlooked. Section 12 concludes.

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1. PROBLEMS WITH THE STANDARD CLAIM

In the literature on German syntax it is generally argued that German lacks superiority effects.(cf. Grewendorf 1988; Haider 1993, Lutz 1995, Grohmann 1997). In this section the evidence that has lead to this conclusion will be discussed in brief. I will also review several analyses of superiority effects. It will become evident that the standard claim faces severe problems: there is no obvious explanation for the cross-linguistic difference between German and English.

1.1. *Apparent Lack of Superiority Effects in German.*

Apparent evidence for the claim that German lacks superiority effects is easy to find. Consider again the examples in (1) and (2) repeated below for convenience:

(1) a. Wer   hat   was   behauptet?
        Who   has   what   claimed
    b. Who claimed what?
(2) a. Was   hat   wer   behauptet?   Grewendorf (1988)
        What has   who   claimed?
    b. *What did who claim?

In (1) the subject wh-word is overtly moved to SpecCP whereas the object wh-word stays in situ. The sentence is well-formed under the multiple questions interpretation, both in English and in German. In (2) the object wh-word is overtly moved to SpecCP whereas the subject wh-word stays in situ. This is a standard superiority configuration. The English example is ill-formed whereas the German example is well-formed. The conclusion that one can immediately draw on basis of these examples is of course that German lacks superiority effects. This is in fact the standard claim in the literature on German syntax. We will now see why this claim is inherently problematic.

1.2. *What is the reason for the cross-linguistic difference?*

The contrast in (2) and the standard conclusion drawn from it raises the question as to what accounts for the cross-linguistic difference between German and English. In other words, why should German not show superiority effects?

It is one of the major goals of syntactic theory to get rid of construction specific notions (like for example 'superiority') and to reduce individual phenomena to general principles and parameters. Accordingly, superiority violations are generally analysed as a violation of a more general constraint (see section 1.2.2.). We cannot simply state that German lacks superiority effects without providing a reason since this would be a construction-specific statement, merely paraphrasing the descriptive observation. It is crucial to provide a possible source for the cross-linguistic variation between German and English. I will address this question in turn. It will turn

out that there is no obvious answer and consequently the standard claim concerning superiority in German faces severe problems.

1.2.1. The configurationality parameter

In the early days of German syntax the answer to the above questions was the configurationality parameter: German (as opposed to English) was analysed as a non-configurational language (cf. Haider 1981, 1982). Consequently no subject-object asymmetries were expected and therefore also no superiority effects were expected. However, since then evidence for the configurationality of German has clearly been established (cf. for example Webelhuth 1985). Therefore subject-object asymmetries are expected in German and consequently superiority effects are as well.

The configurationality parameter is therefore not a possible answer to the question concerning the cross-linguistic difference between German and English. In the following section I will briefly review some standard analyses of superiority effects in English. This will reveal that the lack of superiority in German is a quite dubious property, which cannot be easily accounted for.

1.2.2. (Some) Analyses of Superiority effects

Superiority Condition. The first analysis of superiority violations in English is (almost) a "construction specific" condition, namely the Superiority Condition (Chomsky 1973). This condition essentially states that given two potential targets for a given rule (i.e. wh-movement), the higher one has to move.[2] With this analysis (which is proposed within a framework where construction-specific rules were possible) the difference between German and English is in fact easy to define: German can be argued to simply lack the Superiority Condition.

However, one of the major goals of the principles and parameters framework is to get rid of construction specific rules and conditions. Consequently, we find several attempts to reduce the Superiority Condition to a more fundamental principle, which not only accounts for superiority violations, but also for other phenomena of natural languages.

Empty Category Principle. One such candidate is the Empty Category Principle (ECP) which states that traces have to be properly governed. The ECP accounts for a variety of subject – object asymmetries concerning extraction. This principle was first made responsible for superiority violations in Aoun, Hornstein & Sportiche (1981) (and in following work by Huang 1982; Cheng & Demirdache 1990). The line of argumentation is roughly as follows. One crucial assumption is

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[2] The exact definition is given in i):

    i) Superiority Condition:

        No rule can involve X, Y in the structure

        ...X...$[_\alpha$ ...Z...WYV...]...

        where the rule applies ambiguously to Z and Y, and Z is superior to Y   Chomsky 1973: 101

The notion 'superior' is defined as in ii):

    ii)   The category A is taken to be superior to the category B if every major category dominating A dominates B as well but not conversely.

that the wh-phrase in situ has to move (covertly) at LF to its scope position. Object traces (which are lexically governed by the verb) are always properly governed whereas subject traces are not lexically governed. They have to be antecedent governed. Consequently, (covert) movement of the object wh-phrase is never a problem, whereas movement of the subject is more restricted. The crucial assumption then is that if the object moves first (overtly) then LF-movement of the subject wh-phrase results in a configuration where its trace is not antecedent governed (this can be implemented in different ways, which is however not crucial for the present purpose[3]).

Given that there is a more fundamental principle, which is argued to be responsible for superiority violations, the possible source for the parametric difference is not obvious anymore. We cannot simply say that German lacks the ECP because it has been shown that German shows ECP-effects in other domains (cf. Grewendorf 1988). Thus, the ECP-account for superiority violations does not provide us with a possible source of parametrization.

Nested Dependency Condition. In Pesetsky (1982, 1987) another way to deal with superiority effects is proposed. It is shown that there is a general restriction on dependencies: they have to be nested rather than crossing. Superiority effects are analysed as an instance of a violation of this constraint.

With this account for superiority effects we are however faced with the same problem as with the ECP account. We cannot simply say that German lacks the Nested Dependency Condition, since there are instances where German shows effects of this constraint. Consider for example the following subject-object asymmetry discussed in May (1985):

> (6) a. What did everyone buy for Max?
>   b. Who bought everything for Max?

Only in 0a can the quantifier have scope over the wh-word, whereas in 0b only the wh-word can have wide-scope. May (1985) reduces the lack of ambiguity in 0b to the Nested Dependency Condition. We find the same effect in German:

> (7) a. Was   haben alle für Max   gekauft?
>   *What   have   all for Max   bought*
>   b. Wer   hat alles für Max   gekauft?
>   *Who   has all   for Max   bought*

Again, only in 0a can the quantifier have scope over the wh-word but not in 0b. This means that the Nested Dependency Condition is active in German as well. Therefore this account for superiority effects does not provide us with a possible source of parametrization.

Weak Cross Over. A different account for superiority effects is proposed in Williams (1994) and Hornstein (1995). Both authors argue that superiority violations can be reduced to an instance of Weak Cross Over violations. Again, we cannot simply say that German lacks the principle that rules out WCO violations, since we find WCO violations in German (cf. Webelhuth 1985; Grewendorf 1988).

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[3] The ECP account for superiority cannot capture so called 'pure superiority violations' as discussed in Hendrick & Rochemont (1982).

Minimal Link Condition. In Kitahara (1997) superiority effects are reduced to the Minimal Link Condition (MLC). This condition is closely related to the original Superiority Condition: Informally, MLC states that the closest potential wh-feature must move to check off a strong feature in C (where closeness is defined in terms of c-command).

As opposed to the original Superiority Condition, the absence of superiority effects in German cannot simply be analysed as the lack of MLC because the MLC is a more fundamental principle, which not only accounts for superiority effects but also for other phenomena, for example Relativized Minimality effects. Since we find Relativized Minimality effects in German (for example wh-movement in German obeys wh-islands, cf. d'Avis 1995) we cannot simply state that MLC is not active in German. In addition, MLC is an instance of an economy condition, and economy does not seem to be a possible source of parametrization in the first place.

Given what we have seen so far, it is not obvious why German should not show superiority effects. The principles or conditions that are claimed to capture superiority effects in English are active in German in other empirical domains.

A difference in the interpretation of wh-words in situ? There is another potential possibility to account for the parametric difference between English and German that comes to mind. In all of the above analyses the wh-word in situ has to somehow be associated with its scope position (for example by means of LF-movement). We might ask whether there could be a cross-linguistic difference regarding the interpretation of the wh-phrase in situ. This amounts to saying that we are dealing with a parameter that is not overtly detectable. Under such an approach it is not clear how a child acquiring the language could discover this parameter. In other words, an 'LF-parameter' does not help to solve the problem.

Let me briefly summarize the main result of this section. We have looked at a variety of possible analyses of superiority effects in English. It is obvious that the lack of superiority effects in German is highly unexpected. We have to conclude that German should show regular superiority effects.

In the rest of this paper I will show that this is indeed the right conclusion. German shows regular superiority effects with non-D-linked wh-words. However, German also has an additional trigger for D-linking that English lacks. The cross-linguistic difference reduces to the availability of overt scrambling in German, which triggers D-linking.

2. TRIGGERS OF D-LINKING IN ENGLISH

In English, D-linking is (mainly) an inherent property of wh-words. For example *which N* is inherently D-linked. It forces a D-linked interpretation and therefore does not induce superiority effects as shown in the following example from Pesetsky:

(8) a. Mary asked which man read which book
    b. Mary asked which book which man read   Pesetsky 1987: 106 (29)

Simple wh-words like *who* and *what* are unspecified for D-linking. In English they are preferably interpreted as non-D-linked and therefore they generally induce superiority effects:

(9) a. Who saw what?

    b. *What did who see?

Besides inherently D-linked wh-words English has one other source for D-linking, namely intonation. In the right context and with a special kind of intonation (i.e. stress on the wh-word in situ and the verb) simple wh-words can be interpreted as D-linked.[4] In such cases they escape superiority violations as shown in the following example from Bolinger (1978):

(10)   I know that among all the disasters in that kitchen, Jane corched the beans and Lydia put salt in the ice tea; but whát did whó bréak? I know somebody broke something, so stop evading my question.   Bolinger 1978

It is also crucial for the present proposal that it is possible to force simple wh-words to be interpreted as non-D-linked by adding *the hell*. This is what Pesetsky calls "aggressively non-D-linked wh-words". In this case superiority effects are always induced:

(11)   *What the hell did who do?

Let me briefly summarize the results of this section. In English there are two potential triggers for D-linking: lexical specification (i.e. inherently D-linked wh-words like *which*) and intonation. I will now turn to the trigger of D-linking in German.

3. INHERENT D-LINKING IN GERMAN

Like English, German has inherently D-linked wh-phrases (*welch-* N) as well as wh-phrases that are preferably interpreted as non-D-linked (*was für (ein) N*). To have independent evidence for the D-linking status of the wh-word I will make use of two tests: Weak Cross Over (henceforth WCO) and exclamatives. It has been argued in Kraskow (1990) that D-linked wh-phrases escape WCO violations. Obenauer (1992) argues that if a language distinguishes a D-linked and a non-D-linked wh-phrase, then only the non-D-linked one can be used in exclamatives. We thus predict the following correlation: D-linked wh-phrases, which cannot be used in exclamatives, do not induce superiority effects nor WCO effects. Non-D-linked wh-phrases can be used in exclamatives and induce superiority and WCO violations. This is summarized in the following table:

(12)   D-linking in German

	WH-PHRASE	SUPERIORITY	WCO	EXCLAMATIVE
D-linked	*Welch-* ('*which N*')	OK	OK	*
Non-D-linked	*Was für N* ('*what N*')	*	*	OK

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[4] I will come back to intonation as a trigger for D-linking in section 10.

3.1. *welch- N*

welch- N is the equivalent of *which N* in English. This wh-phrase is inherently D-linked. Therefore we do not expect superiority effects just like in English. This is indeed the case as can be seen in the following examples:

(13) a. Welcher Lehrer$_i$ hat t$_i$ welches   Buch   empfohlen?
     Which   teacher$_i$ has t$_i$ which   book   recommended
     'Which teacher recommended which book?'

   b. Welches   Buch$_i$ hat   welcher   Lehrer   t$_i$ empfohlen?
     Which   book$_i$ has   which   teacher   t$_i$ recommended
     'Which book did which teacher recommend?'

Of course, it does not come as a surprise that *welch- N* does not induce superiority effects, given that we have not yet seen any superiority violations in German to begin with. What is however crucial for the present purpose is that *welch- N* does not induce WCO violations as well:

(14)   ?[Welchen Jungen]$_i$ wird   sein$_i$ Bruder   t$_i$ besuchen?
      [Which   boy]$_i$ will   his$_i$ brother   t$_i$ visit?
      'Which boy will his brother visit?'   D'Avis 1995

Also, *welch- N* cannot be used in exclamatives[5]:

(15)   *Welcher   Mann!
      which$_{masc.sg. nom}$ man
      '*Which man!'

We thus have independent evidence for the D-linked interpretation of *welch- N* in German.

3.2. '*was für (ein) N*'

German also has wh-phrases that are preferably interpreted as non-D-linked. This is the case for *was für (ein) N*, the equivalent of *what (kind of) N* in English. With these wh-phrases we can observe superiority violations in German. In (16) on the one hand the subject wh-phrase is moved to SpecCP. The sentences are well-formed under the multiple question interpretation:

(16) a. Was   für Raucher   bevorzugen   denn   was   für Zigaretten?
     What   for smokers   prefer   prt   what   for cigarettes?
     'What (kind of) smokers prefer what (kind of) cigarettes?'

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[5] In archaic speech *welch* is allowed in exclamatives '*Welch ein Mann!*' Notice however that here (as opposed to the example in (15) *welch* is not inflected and the phrase contains an indefinite determiner. The possibility to use *welch* in this archaic construction has historical reasons. According to de Boor & Wisniewski (1984) *welch* is derived from Old High German *hwalih*, which is best translated as '*What shape/gestalt/kind*'.

b. Was fur Gäste trinkenin diesemLokal was für ein Bier?
What for guests drink in this pub what for a beer
'What kind of guests drink what kind of beer in this pub?'

c.. Was für Menschen mögen denn was für Opern?
What for people like prt what for operas?
'What kind of people like what kind of operas?'

d. Was für Tiere fressen denn was für ein Futter?
What for animals eat prt what for a food?
'What kind of animals eat what kind of food?'

In (17) on the other hand we are dealing with multiple questions where the object wh-word is moved to SpecCP whereas the subject wh-phrase is in situ. Since these wh-phrases are preferably interpreted as non-D-linked we expect the output to be degraded, which in fact it is.

(17) a. *?Was für Zigaretten bevorzugen denn was für Raucher?
What for cigarettes prefer prt what for smokers

b. *?Was für ein Bier trinken in diesemLokal was für Gäste?
What for a beer drink in this pub what for guests

c. *?Was für Opern mögen denn was für Menschen?
What for operas like prt what for people

d. *?Was für ein Futter fressen denn was für Tiere?
What for a food eat prt what for animals?

Speakers of German prefer the questions in (16) over the ones in (17). This contrast is clearly based on superiority. We have a first piece of evidence that German shows superiority effects.[6]

That *was für (ein) N* is non-D-linked can be tested with WCO configurations. As expected these wh-phrases induce a WCO violation:

(18) *[Was für einen Jungen], wird sein, Bruder t, besuchen?
[What for a boy], will his, brother t, visit?
'*What (kind of) boy will his brother visit?'

Furthermore *was für* can be used in exclamatives:

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[6] It has to be noted that there is a dialectal (and possible idiolectal) variation involved Some speakers allow the D-linked (partitive) interpretation of *was für (ein) N* It is however easy to determine the dialect of a given speaker Speakers who allow for an overt partitive phrase following *was für (ein)* as in i-ii) can interpret these wh-phrases as D-linked

i) %/*?Was für einen dieser Filme hast du schon gesehen?
What for a these movies have you already seen
'Which of these movies have you seen already?'

ii) %/*Was für einen von diesen Filmen hast du schon gesehen?
What for a of these movies have you already seen
'Which of these moves have you seen already?'

The contrast in (16)-(18) crucially depends on the impossibility for *was für (ein) N* to be interpreted as D-linked, which correlates with judging the examples in i-ii) as degraded

(19)   Was   für ein Mann!
       what   for a   man
       'What a man!'

We have now (partly) solved the original problem: German shows regular superiority effects with non-D-linked wh-phrases. However, we are still faced with a problem. There seems to be a difference between English and German with respect to simple wh-words as indicated by the contrast in (2).

4. SIMPLE WH-WORDS: *WER ('WHO')* AND *WAS ('WHAT')*

Consider again the crucial examples repeated here for convenience.

(20)   a.   Was hat wer behauptet?
       b.   *?What did who claim?

We still have to address the question as to why (20) is well-formed in German but not in English? However, we know that only non-D-linked wh-phrases induce superiority effects. German (like English) shows regular superiority effects with non-D-linked wh-phrases. Given these two facts we can infer that the simple wh-words in (20) are D-linked in German but not in English. The question that we have to address now concerns the reason for this cross-linguistic difference.

There are two possible solutions that come to mind. The first hypothesis would be that simple wh-words in German are inherently D-linked. An alternative hypothesis would be that the D-linked reading of simple wh-words is more easily available.

4.1.   *Are simple wh-words in German inherently D-linked?*

How can we determine whether simple wh-words in German are inherently D-linked? It has been observed in Pesetsky (1987) that inherently D-linked wh-phrases cannot be aggressively non-D-linked:

(21)   a.   What the hell book did you read that in?
       b.   *Which the hell book did you read that in?   Pesetsky 1987: 111 (40)

In (21)a we find the non-D-linked wh-phrase *what book*. In this case (at least in colloquial speech) *the hell* can be added to force the aggressively non-D-linked interpretation. In (21)b, we are dealing with the inherently D-linked wh-phrase *which book*. This wh-phrase is incompatible with aggressive non-D-linking as can be observed by the ungrammaticality of *which the hell book*. The same phenomenon can be observed in German. The non-D-linked wh-phrase *was für (ein) N* can be aggressively non-D-linked whereas the inherently D-linked wh-phrase *welch- N* cannot:

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(22) a. Was   zum   Teufel für Bücher hast   du   gelesen?
          What   to-the devil for books   have   you   read
          'What the devil books did you read?'
      b. *Welche zum   Teufel Bücher hast   du   gelesen?
          Which   to-the devil books   have   you   read?
          'Which the devil books did you read?'

Since inherently D-linked wh-phrases cannot be aggressively non-D-linked, we have a convenient test for the present hypothesis. If simple wh-phrases were inherently D-linked, we would expect that they could not be aggressively non-D-linked. This is however not true: simple wh-words in German can be aggressively non-D-linked as shown below:

(23) a. Wer   zum   Teufel hat den Peter gesehen?
          Who   to-the devil has the Peter seen
          'Who the devil has seen Peter?'
      b. Was   zum   Teufel hast   du   getan?
          What   to-the devil have   you   done
          'What the devil did you do?'

Given that the non-D-linked interpretation of simple wh-words can be forced we know that simple wh-words cannot be inherently D-linked.

4.2. Superiority effects with aggressively non-D-linked wh-words

We now have a way to force the non-D-linked interpretation of simple wh-words. Given that non-D-linked wh-words induce superiority violations, we predict that we find superiority violations with aggressively non-D-linked wh-words. This prediction is borne out as shown by the contrast below:

(24) a. Wer   zum   Teufel hat   wen   gesehen?
          Who   to-the devil has   who   seen
          'Who the devil saw who?'
      b. ?*Wen   zum   Teufel hat   wer   gesehen?
          Who   to-the devil has   who   seen
          '*Who the devil did who see?'

The contrast in (24) raises an important question. The aggressively non-D-linked wh-word in (24)b is the one in SpecCP rather than the one in situ. Under Pesetsky's (1987) analysis however, the wh-word that crucially needs to be D-linked in order to circumvent a superiority violation is the one in situ[7]. Therefore, the relevant data should involve an aggressively non-D-linked wh-

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[7] The reason for this is essentially as follows. Pesetsky analyses superiority violations as a result of a violation of the Nested Dependency Condition (see section 1.2.2), which is a constraint on movement. He concludes that superiority violations are indicative of LF-movement of the wh-word in situ. Since D-linked wh-words do not induce superiority effects he infers that there is no LF-movement involved. Rather, D-linked wh-words are associated with their scope

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word in situ. Unfortunately, for some ill-understood reason wh-words in situ cannot be aggressively non-D-linked as Pesetsky (1987) observes:

(25) a. Who the hell caught what?
      b. *Who caught what the hell?   Pesetsky 1987: 124f. Fn.20

Given these facts we cannot test whether we find superiority effects in German with aggressively non-D-linked wh-words that appear in situ. The following examples are ungrammatical for independent reasons:

(26) a. *Wer₁ zum   Teufel hat   t₁ wen   zum   Teufel gesehen?
          Who, to-the devil has   t, who   to-the devil seen
          '*Who the devil has see who the devil?'
      b. *Wen₁ zum   Teufel hat   wer zum   Teufel t₁ gesehen?
          Who, to-the devil has   who to-the devil t, seen
          '*Who the devil has seen who the devil?'

Now the question remains, as to why the contrast in (24) shows up. According to Pesetsky (1987) the status of the wh-word in SpecCP should not have any effect.

It is argued in Comorovski (1996) that Pesetsky's (1987) claim is not quite accurate. Her own analysis relies on the assumption that at least one wh-word has to be D-linked. However, she also notices (without providing an explanation) that the best results are achieved if both wh-phrases are D-linked. This is supported by the following example.

(27) ?What did which student read?   Comorovski 1996: 96 (28)
(28) *?Who the hell read which book?

Under Pesetsky's (1987) analysis, the sentences above are predicted to be well-formed contrary to facts. In a multiple question violating superiority both wh-words have to be D-linked. This can be interpreted as to saying that in a multiple question the two wh-words have to match in their D-linking status. If this is indeed the case, then the contrast in (24) follows: the aggressively wh-word in SpecCP forces the wh-word in situ to be non-D-linked as well and therefore we get a superiority violation.

Notice finally, that we make another prediction. Aggressively non-D-linked wh-words should induce WCO violations. This prediction is borne out as can be seen by the following example:

(29) *Wen₁ zum   Teufel wird sein₁ Bruder   t₁   besuchen?
      Who, to-the devil will   his, brother   t,   visit
      '*Who the devil will his brother visit?'

In this section, we have seen that simple wh-words in German are not inherently D-linked. This means that we expect regular superiority effects with simple wh-words in German whenever the

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position by means of unselective binding by an abstract Q-morpheme in C (much in the spirit of Baker's 1970 analysis as well as Heim's 1982 analysis of indefinites) Given these assumptions it is clear that the wh-word that matters is the one in situ

D-linked interpretation is excluded. We have already seen one such environment, namely aggressively non-D-linked wh-phrases. Aggressively non-D-linked wh-words can only be used in a context where D-linking is excluded, i.e. the context must be such that there is no previously established set of discourse referents available that would serve as the range for the wh-word. However, since non-D-linking in this case is lexically marked (by adding phrases like *the hell*) we do not have to set up the right context in order to see superiority violations.

4.3. *D-linking is excluded*

Since we know that simple wh-words can be non-D-linked we make the following prediction. If we set up the context such that D-linking is excluded, then we should see superiority violations with simple wh-words in German. In the following example, I have set up such a context:

(30)   Peter is walking his stubborn dog on the leash. The dog is dragging really hard in the direction of his favourite tree.
    a. Wer   führt   denn   hier   wen   an der Leine?
        Who   leads   prt   here   who   on the leash?
        'Who is leading who on the leash here?'
    b. *Wen   führt   denn   hier   wer   an der Leine?
        Who   leads   prt   here   who   on the leash
        '*Who does who lead on the leash?'

In this context, the only possible question that can be asked is the one where the subject wh-phrase has been moved overtly. The question in (30)b where the object is overtly moved is ill-formed, providing another piece of evidence that German shows regular superiority effects.[8]

However, the example above raises an important question: What is the nature of D-linking? Although I do not have a full-fledged answer to this question, I would still like to briefly discuss the issue. We will see independent evidence for the claim that D-linking is excluded in (30).

4.4. *Some remarks on the notion of D-linking*

There are several definitions of D-linking found in the literature. Pesetsky's (1987) definition is as follows: *"When a speaker asks a question like 'Which book did you read?', the range of*

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[8] It is interesting to notice that these examples seem to induce the strongest violations both in English and in German. All my English and German consultants, including those who have a hard time with other superiority effects, find theses sentences severely ungrammatical. Other contrasts I am discussing in this paper are more controversial. This might partly be due to a dialectal difference between northern and southern dialects of German. Whereas all of my (approximately 30) Austrian informants (except for one) share the judgements as I am presenting them here (and which correspond to my own) not all of the speakers from Germany do. Kleanthes Grohmann (p.c.) reports the same effect. Though in Grohmann (1997) he also states that some speakers prefer the configuration that does not violate the superiority condition. Since there are speakers from Germany that agree on the judgments the potential dialectal difference is not immediately obvious. This diversity in judgement is interesting but I have to leave a definite answer for its source as a matter of future research. See however section 11, which deals with the problems of grammaticality judgments.

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felicitous answers is limited by a set of books both speaker and hearer have in mind." (Pesetsky 1987: 107f.).

Comorovski (1996) gives a different definition. She argues that D-linking is the possibility of identical partitioning for both the speaker and the hearer: *"The felicity condition on the use of 'which-NP' is that the participants in the conversation partition identically the set that 'which' takes as an argument."* (Comorovski 1996: 12).

It is obvious that the wh-words in (30) do not really fall under either of these definitions. In this example the range of felicitous answers is limited by a set of individuals both speaker and hearer have in mind (i.e. Peter and the dog). Thus, under Pesetsky's definition of D-linking the wh-words should be D-linked. The same is true for Comorovski's definition: In the example in (30) the participants in the conversation can equally partition the set that the wh-words have as their limiting range. The wh-words should be D-linked and so they should be able to escape superiority violations, contrary to facts. Two possible ways to deal with this problem come to mind. We could give up the assumption that the wh-words in (30) are non-D-linked. In this case we would have to find an explanation for the ill-formedness of (30)b. This line of reasoning would induce a major complication of the simple generalization that D-linked wh-words escape superiority violations. The other possibility is to take this simple generalization for granted. In this case we have to justify the claim that the wh-words in (30) are in fact non-D-linked, which would in fact cast some doubt on Pesetsky's and Comorovski's definition of D-linking.

Let us look more closely at the context in 0. The crucial factor seems to be that there are only two individuals involved, which determine the range for the wh-words. In (31) and (32) we find two similar examples. Again there are only two individuals involved and we get superiority effects:

(31)   I have heard that Peter and Mary had an affair. Can you tell me:
a. Wer   hat   wen   verführt?
   Who   has   who   seduced
   'Who seduced who?'
b. *Wen   hat   wer   verführt?
   Who   has   who   seduced
   '*Who did who seduce?'

(32)   I am sure that Peter and Mary must have talked to each other on the phone:
a. Weißt du   wer   wen   angerufen hat?
   Know you   who   whom   called   has
   'Do you know who called who?'
b. *Weißtdu   wen   wer   angerufen hat?
   Know you   whom   who   called   has
   '*Do you know who who called?'

As soon as there are three individuals involved, the superiority effect disappears:

(33)   I know that Peter, Paul and Mary have all talked to each other on the phone.
a. Weißt du,   wer   wen   angerufen hat?
   Know you,   who   whom   called   has
   'Do you know, who has called who?'

b. Weißt du, wen wer angerufen hat?
   Know you, whom who called has
   'Do you know, who has whó cálled?'

In (33) there are three individuals involved that the speaker and hearer have in mind. Thus the answer can consist of (at least) two pairs.[9] If the superiority effects in (30)b, (31)b, and (32)b are really due to the fact that the wh-words are non-D-linked then the proper definition of D-linking cannot just involve 'previous mentioning' (or equal partitioning). So we have to address two questions: 1) Is there independent evidence for the claim that the wh-words in (30)b, (31)b, and (32)b are non-D-linked? 2) What is it about having only two individuals involved in a multiple question that excludes the D-linked interpretation?

I will first show that there is indeed independent evidence for the non-D-linked interpretation of the wh-words under consideration. If D-linking is really excluded in these contexts, then we predict that inherently D-linked wh-phrases cannot be used. This prediction is indeed borne out:

(34) a. *Welcher zieht denn welchen?
        Which leads prt which
        '*Which one is leading which one?'
     b. *Welches Individuum hat denn welches Individuum verführt?
        Which individual has prt which individual seduced
        '*Which individual has seduced which individual?'
     c. *Welche Person hat denn welche Person angerufen?
        Which person has prt which person called
        '*Which person has called which person?'

The questions in (34) are all ill-formed in the respective contexts that we have set up in (30)-(32). In (34)a *welcher* is used without an overt noun which is generally possible in German:

(35) Welchen hast du gesehen?
     Which have you seen
     'Which one have you seen?'

In (34)b/c *welch-* takes a noun that denotes a range which is general enough to include the individuals mentioned in the previous context. We can conclude that the reason for the ill-formedness of the questions in (34) has to do with an infelicitous use of inherently D-linked wh-words. This supports the claim that the D-linked interpretation is excluded in these contexts.

There is yet another piece of evidence that supports this conclusion. If the respective context is such that D-linking is excluded we predict that aggressively non-D-linked wh-phrases can be used. This prediction is again borne out:

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[9] It is worthwhile mentioning that Comorovski (1996) claims that for a multiple question to be felicitous this condition always has to be met. According to her there must always be (at least) two pairs of answers for a multiple question to be well formed. However, given the well formedness of the questions in (30)a, (31)a, and (32)a this cannot be the case.

(36) Wer zum Teufel führt denn da wen an der Leine?
Who to-the devil leads prt there who on the leash
'Who the hell is leading who on the leash?'

If the wh-words in these examples were interpreted as D-linked, then aggressively non-D-linked wh-phrases should not be possible. However, as (36) shows, we can use aggressively non-D-linked wh-phrases.

We can therefore conclude that in a context where only two individuals are involved, D-linking is in fact excluded. This suggests that the definition of D-linking is more complex than the ones assumed by Pesetsky or Comorovski. The property of being 'previously introduced' seems to be a necessary but not a sufficient condition for the wh-phrase to be D-linked.

There is one alternative definition of D-linking available that provides the sufficient condition that we need. Some authors (e.g. Szabolcsi & Zwarts 1993; Dobrovie-Sorin 1994) have argued that D-linking can be equated with partitivity. Notice that the notion of 'partitivity' implies the notion of 'previous mentioning'. But it adds a further condition. For both wh-phrases to be partitive, i.e. to range over a set whose cardinality is greater than |1| there must be at least three individuals involved. Consider what happens if there are only two individuals involved as in the example in (30) repeated below for convenience:

(30) Peter is walking his stubborn dog on the leash. The dog is dragging really hard in the direction of his favourite tree.
Wer führt denn hier wen an der Leine?
Who leads prt here who on the leash?
'Who is leading who on the leash here?'

Only one wh-word in (30) ranges over a set whose cardinality is greater than |1|. It is enough to establish an answer to one wh-word in order to know the answer to the second one. This means that the range of one wh-word is of cardinality |1|, which is not compatible with a partitive (or D-linked) interpretation.

If this line of reasoning is on the right track we predict that overt partitive phrases are excluded in this context as well. This prediction is indeed borne out:

(37) Peter is walking his stubborn dog on the leash. The dog is dragging really hard in the direction of his favourite tree.
a. *Wer von ihnen führt wen von ihnen an der Leine?
Who of them leads who of them on the leash?
'*Which of them leads which of them on the leash?'
b. *Wer von den beiden führt wen von den beiden an der Leine?
Who of the both leads who of the both on the leash
'*Who of the two leads who of the two on the leash?'

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4.5. Conclusion

Let me briefly summarize the major result of this section. We have seen evidence that German wh-words are not inherently D-linked. They can be aggressively non-D-linked as shown in section 4.2. Furthermore, I have presented evidence that simple wh-words can be used in a context where D-linking is excluded (section 4.3). A closer look at these contexts in section 4.4 provided evidence that D-linking should be defined in terms of partitivity rather than simply in terms of 'previously established in the discourse'. The most important result is however that in all the environments where D-linking is excluded regular superiority effects were detected.

We can now return to our original problem concerning the cross-linguistic difference: Why do we get superiority effects with simple wh-words in English but not (as readily) in German.Given that we have clear evidence that simple wh-words in German are not inherently D-linked, we are now left with the alternative hypothesis mentioned above: the D-linked reading for simple wh-words is more easily available in German than it is in English. Why should this be so? I will present a solution to this problem in the next section.

5. SCRAMBLING AS A TRIGGER FOR D-LINKING

In this section, I will argue that the solution for the problem of cross-linguistic variation reduces to an independent difference between German and English. It is a well-known fact that German as opposed to English has the possibility of overt scrambling. In what follows, I will argue for the claim below:

(38)   Scrambling of wh-phrases triggers D-linking.

In order to justify this claim I will proceed as follows. First I will show how the claim in (38) accounts for the apparent lack of superiority effects in German. Then I will discuss in detail how the cross-linguistic difference is accounted for (section 6). Furthermore in section 7 I will present empirical motivation for the claim in (38) and finally in section 8 I will show that this claim is theoretically motivated, given what we know about the interpretive effect of scrambling in German.

In a nutshell the analysis is as follows. Since German has the possibility of overt scrambling, wh-words that are 'in situ' can be in scrambled position. Scrambling triggers D-linking and D-linked wh-phrases can escape superiority (and WCO) violations. This is summarized in the table below:

(39)   Scrambling triggers D-linking:

POSITION	INTERPRETATION	SUPERIORITY	WCO
+Scrambled	D-linked	OK	OK
- Scrambled	Non-D-linked	*	*

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5.1. Representational ambiguity

Given that German has the possibility of overt scrambling, there are two possible representations for superiority- and WCO configurations, i.e. we are dealing with representationally ambiguous sentences.

5.1.1. Superiority

Consider again a standard superiority configuration in German:

(40)　Was　hat wer　behauptet?
　　　What　has who　claimed

The sentence in (40) is ambiguous. It can be associated with two representations. (41) shows the well-formed representation:[10]

(41)　Was$_j$　hat wer$_i$　　[$_{VP}$ t$_i$　t$_j$　behauptet?

　　　Wh$_j$ .... wh$_i^{\text{d-linked}}$　[$_{VP}$ t$_i$　t$_j$

Here, the wh-word 'in situ' is not really in its 'base-position'. It has been scrambled. Scrambling triggers D-linking and D-linked wh-words do not induce superiority effects. Therefore, this representation is well-formed. The sentence is judged grammatical. Consider next the second possible representation of the sentence in (40) given in (42) below.

(42)　*Was$_j$　hat　[$_{VP}$wer　　t$_j$　behauptet?

　　　?* Wh$_j$ ....　　[$_{VP}$ wh$_i^{\text{non-d-linked}}$　t$_j$

Here the wh-word in situ is really in its base-position, i.e. it has not been scrambled. Therefore, it is interpreted as non-D-linked. Of course, this representation is ruled out as a superiority violation just like in English. However, since a sentence like (40) can easily be associated with a well-formed representation superiority violations have simply been overlooked.[11]

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[10] The representation I am using here is actually oversimplified. It is shown in Haiden (1995) that all arguments have to move out of the VP. He distinguishes between short and long scrambling, where only the latter triggers an interpretive effect. Thus, when I talk about a 'VP-internal position' I am oversimplifying in that this position really corresponds to the position targeted by short scrambling. For expository reasons I will however continue to talk VP-internal and VP-external positions.

[11] Werner Abraham (p.c.) informs me that the two representations can actually be distinguished by intonation. This is actually not unexpected given what we have seen for English: intonation can serve as a trigger for D-linking (cf. section 2)

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5.1.2. Weak Cross Over

We expect the same phenomenon for WCO configurations as well. The possibility for a representational ambiguity should also be found in a sentence like (43) below:

(43) Wen$_i$ mag seine$_i$ Mutter nicht?
      Who$_i$ likes his$_i$ mother not?
      'Who does his mother not like?'

Although in this configuration we do not find a wh-word 'in situ' we can still find a source of ambiguity. In this case, it has to do with the possibility to scramble the wh-word before it undergoes wh-movement. There are two possible representations. In (44) the well-formed representation is shown:

(44) Wen$_i$ mag t$_i$ seine$_i$ Mutter t$_i$ nicht?

      Wh$_i^{d\text{-linked}}$.. t$_i$ [[pron$_i$ N]   t$_i$

Here the wh-word has been scrambled before it is moved to SpecCP. Consequently, the wh-word is interpreted as D-linked and thus no WCO violation is induced.

However, the wh-word can also be moved directly from its base position to SpecCP (without previous scrambling). In this case we get the following ill-formed representation:

(45) *Wen$_i$ mag   seine$_i$ Mutter t$_i$ nicht?

      *Wh$_i^{non\text{-}d\text{-linked}}$.... [[pron$_i$ N]   t$_i$

Since the wh-word has not been scrambled it is not interpreted as D-linked and therefore we expect to find a WCO violation.

5.1.3. Diversity in Judgements.

This analysis of WCO in terms of a representational ambiguity is a nice result. It straightforwardly explains the diversity in judgements found in the literature on WCO with simple wh-words in German. On the one hand, d'Avis (1995) claims that German shows WCO effects (with simple wh-words). He gives the following example, judging it as ill-formed:

(46) *Wen$_i$ wird sein$_i$ Bruder   t$_i$ besuchen?
      Who$_i$ will   his$_i$ brother   t$_i$ visit
      'Who$_i$ will his$_i$ brother visit?'   D'Avis, 1995

On the other hand Grewendorf (1988) claims that German does not show WCO effects with simple wh-words. He gives the example in (47), judging it as well-formed:

(47) Wen₁ mag   seine₁ Mutter t₁ nicht
      Who₁ likes his₁   mother t₁ not?
      'Who₁ does his₁ mother not like?'   Grewendorf, 1988

Notice that the two examples in (46) and (47) do not differ in any significant way, which could explain this difference in grammaticality judgement. Moreover, consider Grewendorf's remark concerning WCO effects: *"I was told (Wolfgang Sternefeld, p.c.) that here we do indeed feel a weak cross over effect. What could be the reason that it is weaker than in case of quantifiers or focussed NPs?"* (Grewendorf 1988: 320; translation is my own MW).

Given the present analysis, we have an answer to Grewendorf's question. We know that D-linked (scrambled) wh-words do not induce WCO effects. This seems to correspond to Grewendorf's interpretation of sentences like (47). Non-D-linked (unscrambled) wh-words do induce WCO effects and this seems to correspond to Sternefeld's and D'Avis' interpretation.

6. THE DIFFERENCE BETWEEN GERMAN AND ENGLISH

We are finally in a position to answer our original question: What is the cross-linguistic difference that accounts for the difference in judgements concerning multiple questions like (2)?

The answer has to do with the fact that German allows for the possibility of overt scrambling whereas English does not. Scrambling triggers the D-linked interpretation of wh-words. D-linked wh-words can escape superiority and WCO violations. This result is summarized in the table below:

(48) German vs. English:

TRIGGER for D-LINKING	German	SUPERIORITY	WCO	English	SUPERIORITY	WCO
INHERENT	+	OK	OK	+	OK	OK
SCRAMBLING	+	OK	OK	-	*	*

This amounts to saying that there are two potential sources for the D-linked interpretation of wh-phrases.[12] First, they can be lexically specified for D-linking. This possibility is available both in English and in German. Inherently D-linked wh-words (*which* and *welch-*) escape superiority and WCO violations in both languages. A second trigger for the D-linked interpretation is by means of the phrase structure position in the clause: scrambling can trigger D-linking. The possibility for overt scrambling is only found in German but not in English. Thus, simple wh-words in English are preferably interpreted as non-D-linked, whereas in German (due to scrambling) the D-linked reading is more easily available.

It is important to notice here that we are making use of an overt factor to explain the cross-linguistic difference, namely overt scrambling. Thus, the present analysis is in fact a possible explanation for the cross-linguistic difference.

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[12] For the time being we can ignore intonation although we already know that it can also serve as a trigger for D-linking I will return to this issue in section 10

In the examples we have seen so far scrambling was not really overtly detectable. We have been dealing with representationally ambiguous sentences. Of course, the representations are justified, since German allows for overt scrambling. In order to empirically support the present analysis we still have to find unambiguous sentences. This is especially important given that it has been argued in the literature that wh-words cannot be scrambled (cf. Müller & Sternefeld 1993).

7. UNAMBIGUOUS SENTENCES

In this section I will show first that wh-words can be scrambled overtly (contra Müller & Sternefeld 1993). Second it will be shown that scrambled wh-words can escape superiority violations whereas wh-words that have not been scrambled induce superiority effects. In order to disambiguate the relevant sentences I will make use of two different strategies. The first set of data involves adverbs that mark the VP-boundary[13] and the second set of data involves floating quantifiers. Both sets of data allow us to unambiguously observe scrambling of wh-words.

7.1. *Adverbs marking the VP-boundary*

In the previous section I have claimed that wh-words can be scrambled. We therefore expect that wh-words that appear 'in situ'[14] can either follow or precede a VP-adverb as indicated in (49):

(49) a. Wh........ Wh   Adv
      b. Wh............   Adv   Wh

Furthermore, I have claimed that scrambling triggers D-linking. D-linked wh-phrases can escape superiority violations. We predict the following pattern:

(50) a. Wh_j....... $Wh^{D\text{-}linked}$ Adv t_i t_j

      b. *?Wh_j..........   Adv $Wh^{non\text{-}D\text{-}linked}$ t_j

If the wh-word precedes the adverb, we know it has been scrambled. In this case it is interpreted as D-linked and therefore we do not expect superiority violations. If however the wh-word follows the adverb we know it has not been scrambled. Consequently it is interpreted as non-D-linked and we expect superiority violations. This prediction is borne out as the following sentences exemplify.

In (51)-(53) the adverb particle combination *{ja/denn} schon oft* is used.[15] First consider the declaratives in (51). Here we can observe that both the subject and the object can occur in a position either following (a) or preceding (b) the particle adverb combination:

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[13] Again this is an oversimplification. As shown in Haiden the relevant adverbs are actually higher and consequently the 'unscrambled' wh-words are actually not VP-internal (cf Fn 10)

[14] From now on I will use the term 'in situ' to refer to wh-words that are not in SpecCP, no matter whether they have been scrambled or not

[15] In Diesing (1992) the particle 'ja' is argued to mark the VP-boundary. For independent reasons this particle cannot

(51) a. weil   ja schon   oft   ein Kletterer eine   Gams   gesehen   hat
          since prt already often a climber   a   chamois seen   has
          'sine a mountainclimber has often seen a chamois.'
      b. weil   ein Kletterer eine   Gams   ja schon   oft   gesehen   hat
          since a climber   a   chamois prt already often seen   has

The data, which are relevant for the present purpose are given in (52) and (53). In (52) the wh-word 'in situ' precedes the adverb. As expected no superiority violation is induced.

(52) a. Wer   hat   was   [denn schon   oft   gesehen?
          Who   has   what   [prt already   often   seen
          'Who has often seen what?'
      b. Was   hat wer   [denn schon   oft   gesehen?
          What has who   [prt already often seen?

In (53) however the wh-word follows the adverb, it has not been scrambled. Therefore it is interpreted as non-D-linked and we can observe the expected contrast. The examples in (b) are cases of standard superiority violations:

(53) a. Wer   hat   [denn schon   oft   was   gesehen?
          Who   has   [prt already   often   what   seen
      b. *?Was hat   [denn schon   oft   wer   gesehen?
          What has   [prt already often who   seen

The following data show the same phenomenon with a different adverb. Again the declaratives in (54) are given in order to show that both subjects and objects can precede or follow the adverb respectively.

(54) a. weil   [schon   einmal fast   ein Mechaniker mein   Auto   ruiniert hat
          since [already once   almost a   mechanic   my   car   ruined has
          'since once a mechanic almost ruined my car.'
      b. weil   ein Mechaniker mein   Auto   schon   einmal fast   ruiniert hat
          Since a   mechanic   my   car   already   once   almost ruined has

(55) I have almost ruined the TV-set today. And now I want to know from you guys:
      a. Wer   hat was   [schon   einmal fast   ruiniert
          Who   has what [already once   almost   ruined
          'Who has almost ruined what?'
      b. Was   hat wer   [schon   einmal fast   ruiniert?
          What has who [already once   almost   ruined

(56) a. Wer   hat [schon   einmal fast   was   ruiniert?
          Who   has already once   almost what   ruined?
      b. *?Was hat [schon   einmal fast   wer   ruiniert?
          What has already once   almost who   ruined?

be used in questions. Thus, in the respective questions I use the particle *denn*, which can only be used in questions but not in declaratives. The complementary distribution of *ja* and *denn* justifies this choice.

With this set of data, we have overt evidence that wh-words can be scrambled, and that only unscrambled wh-words induce superiority violations.

7.2. Floating quantifiers

There is another set of data, which empirically supports the present claim. In German a wh-phrase can contain a (universal) quantifier as shown in (57)a. As with other quantified phrases it is possible to move the wh-word alone stranding the quantifier in its base-position as shown in (57)b.

(57) a. **Wer aller** hat gestern ein Bier getrunken?
          Who all has yesterday a beer drunk
          'Who all has drunk a beer yesterday'
      b. **Wer** hat gestern **aller** ein Bier getrunken?
          Who has yesterday all a beer drunk

This phenomenon provides another configuration in order to test the present hypothesis. We predict that if the (subject) wh-word 'in situ' is separated from the quantifier by means of scrambling no superiority violation should be induced. The sentence below is predicted to be well-formed, which it is:

(58) Was hat **wer** gestern **aller** getrunken?
      What has who yesterday all drunk

If the wh-word and the quantifier are still adjacent to each other (in a position following an adverb), then we expect a superiority violation. Again, this prediction is borne out:

(59) *?Was hat gestern **wer** **aller** getrunken?
      What has yesterday who all drunk

Let me briefly summarize the most important results of this section. We have established that (unambiguously) overtly scrambled wh-words can escape superiority violations. This follows from the claim that scrambling of wh-words triggers D-linking. D-linked wh-phrases can escape superiority violations. If however the wh-word appears in unscrambled position, then we can observe superiority violations. Thus, we have fully solved the original problem: German shows superiority effects with non-D-linked wh-phrases. The D-linked reading of simple wh-words is more easily available given that German has the possibility of overt scrambling and scrambling triggers D-linking. In providing evidence for this main claim we have also seen evidence that wh-words can be scrambled contrary to Müller & Sternefeld (1993).[16]

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[16] Grohmann (1997) arrives at a similar conclusion. However, he claims that movement (of a wh-phrase) to SpecCP is always preceded by movement to SpecTopP, TopP being situated immediately below CP. With this assumption the standard claim that German does not show superiority effect would follow from MLC because a wh-word in SpecTopP is always the closest available attractee for feature checking in C.

8. THE INTERPRETIVE EFFECT OF SCRAMBLING

The purpose of this section is to further motivate the claim that scrambling in German triggers D-linking. I will briefly discuss scrambling of weak quantifiers in order to show that the interpretive effect on wh-words, which scrambling triggers, does not come as a surprise. In addition, I will show that the potential possibility of LF-scrambling in English (cf. Diesing 1992) cannot have the same effect as overt scrambling in German.

8.1. *Wh-words and Indefinites*

It is a well-known fact that scrambling of indefinites (and weak quantifiers in general) has an interpretive effect. An extensive discussion of this interpretive effect is found in Diesing (1992). Consider the following data from Diesing:

(60)   a.... weil [vpja doch zwei Cellisten in diesem Hotel abgestiegen sind
           since 'indeed' two cellists in this hotel have-taken-rooms

    b. ...weil zwei Cellisten [vpja doch in diesem Hotel abgestiegen sind
           since two cellists 'indeed' in this hotel have-taken-rooms

<div align="right">Diesing 1992</div>

The DP *zwei Cellisten* is interpreted in two different ways depending on its position in the clause. In (60)a it appears in a position following the (VP-marking) particle *ja doch*. Diesing refers to the resulting reading as the 'cardinal' or 'non-presuppositional' reading. In (60)b the same DP appears in a position preceding the particle. It has been scrambled. The resulting reading is a 'presuppositional' reading.[17] The effects of scrambling on wh-words and weak quantifiers are summarized in the table below:

(61)   The interpretive effects of scrambling:

	VP-EXTERNAL	VP-INTERNAL
Wh-word	D-linked	Non D-linked
Weak Quantifiers/Indefinites	+ Presuppositional	- Presuppositional

This pattern deserves special attention in the present context. Given that scrambling induces an interpretive effect on weak quantifiers, it does not really come as a surprise that such an effect is found with wh-phrases as well. The parallelism is even stronger than the table in (61) suggests. It is possible to capture the effect that scrambling triggers with a unified analysis for both wh-words and weak quantifiers i.e. the two effects can be reduced to two instances of the same phenomenon. In order to do this, we have to ask two questions:
1. Do wh-words have anything in common with weak quantifiers?
2. Does D-linking have anything in common with presuppositionality?

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[17] The two different readings roughly correspond to what has traditionally been labeled as the specific vs. non-specific interpretation. Diesing defines specificity in terms of presuppositionality.

A brief look at the literature reveals that the answer to both questions is positive. First of all, it is a well-known fact that wh-words in German can be used as indefinite pronouns as shown below:

(62) a. Ich weiß   was.
        I   know   what
        'I know something.'
     b. Ich habe   wen   gesehen
        I   have   who   seen
        'I have seen somebody.'

Indefinites are a subset of weak quantifiers, and thus we have some evidence that wh-words can be subsumed under the class of weak quantifiers as well. Furthermore, it is a long-standing claim in the literature on wh-words, that there is a striking parallelism between simple wh-words (like *who* and *what*) and indefinites (whereas *which N's* behave on par with definites). This observation goes at least back to Katz & Postal (1964). The data discussed in section 7 once more reveal this parallel behaviour. Both wh-words and indefinites are interpreted differently depending on their structural position within the clause: scrambling triggers an interpretive effect on wh-words and indefinites, supporting the claim that they can be subsumed under the same natural class. This result is especially interesting in the light of Pesetsky's analysis of wh-words, which is in fact inspired by Heim's (1982) treatment of indefinites:[18] *"I have argued that the scope of D-linked wh-phrases is assigned by unselective binding much as scope is assigned to indefinite NPs in Heim's system."* (Pesetsky 1987: 119).

Now consider the second question above. Is there anything that D-linking has in common with presuppositionality such that we can capture both phenomenon with a unified analysis? The answer to this question is positive, as a brief comparison of D-linking and presuppositionality reveals. First, remember the conclusion we have drawn in section 4.4. There it was shown that D-linking is most likely to be equated with partitivity. Secondly, Diesing's notion of 'presuppositionality' is intended to capture three different kinds of reading (depending on the elements involved). These readings have also been labelled as 'strong readings'(cf. de Hoop 1995; Anagnostopoulo 1995): the referential, the generic and the partitive reading. The partitive reading is simply a subset of 'presuppositional' readings, much as wh-words can be considered to be a subset of weak quantifiers. Diesing's description of the presuppositional reading induced by scrambling in examples like (60) further supports this conclusion: *"The sentence in [(60)a] asserts the existence of two cellists who have taken rooms in this hotel.(...) In [(60)b] the two cellists are two of some larger set of cellists.."* (Diesing 1992: 79; emphasis is my own) It is crucial for the present purpose that Diesing chooses the 'partitive' *two of some larger sets of cellists* to describe the presuppositional reading.

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[18] In Wiltschko (1997) it is argued that this parallel behavior of wh-words and indefinites together with Pestsky's (1987) analysis of wh-words might in fact shed some light on the proper analysis of indefinites. Pesetsky treats D-linked wh-words as non-quantificational and non-D-linked wh-phrases as quantificational (undergoing LF-movement). Indefinites receive various different analyses in the literature. If Pesetsky's analysis is on the right track we expect indefinites to behave alike: non-presuppositional indefinites should be treated as quantificational whereas presuppositional indefinites should be treated as non-quantificational. An analysis along these lines has in fact been proposed by a variety of authors (cf. Fodor & Sag 1982; and more recently in Beghelli 1995). Diesing's (1992) analysis is virtually the opposite: presuppositional DPs are treated as quantificational whereas non-presuppositional DPs are treated as non-quantificational.

To conclude, whatever the proper analysis of D-linking of wh-phrases and presuppositionality of weak quantifiers turns out to be, the present data strongly suggest that they are actually instances of the same kind of phenomenon.[19] Since it is not the main goal of the present paper to provide a proper analysis of D-linking (or presuppositionality) I will leave this matter here, simply noting that the parallel behaviour of scrambled weak quantifiers and wh-phrases is not surprising at all. On the one hand, simple wh-words are closely related to indefinites and on the other hand D-linking can be equated with partitivity, which is in turn one instance of the strong (presuppositional) reading.

8.2. Covert Scrambling (at LF) does not have the same effect.

At this point we have to address a potential problem for the present analysis. I have shown that scrambled wh-words do not induce superiority effects because they are interpreted as D-linked. I have argued that multiple questions like the one in (63)a can be associated with the well-formed (S-structure) representation given in (63)b in German:

(63) a. Was hat wer gesehen?
          what has who seen
          'What has who seen?'
      b. Was$_j$ hat wer$_i$ [$_{VP}$ t$_i$ t$_j$ gesehen?

The cross-linguistic difference between English and German reduces to the possibility of overt scrambling. English does not allow for overt scrambling, and therefore (63)b is not a possible S-structure representation. Furthermore, I have argued above that the presuppositional reading of indefinites and the D-linked reading of wh-words can receive a unified analysis. Especially this last step raises a potential problem for the analysis concerning the cross-linguistic difference.

Diesing's main claim is that there is a close connection between syntactic structure and semantic interpretation. It is argued that non-presuppositional DPs are mapped into the nuclear scope whereas presuppositional DPs are mapped into the restrictive clause (this analysis is known as Diesing's Mapping Hypothesis). Furthermore, she claims that the nuclear scope of a clause can be equated with the VP whereas the IP domain corresponds to the restrictive clause. In German, DPs occur in their respective position for interpretation already at S-structure.

Although English does not allow for overt scrambling, DPs can still be interpreted presuppositionally. In order to maintain the view that the interpretation of a given DP can be read off the syntactic representation, Diesing concludes that English allows for covert (LF) scrambling. In other words, it is argued that the presuppositional reading of weak quantifiers is achieved by means of LF scrambling. Since we have seen that the D-linked reading of wh-words can be viewed as an instance of the presuppositional reading of weak quantifiers, we are still faced with the following problem. We cannot exclude the possibility of LF-scrambling of wh-words in English. For all we have seen so far, we might expect LF-scrambling of wh-words to result in a D-linked interpretation as well, which should ultimately result in an (apparent) lack of superiority effects. It seems that the proposal that the cross-linguistic difference between German

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[19] This is in fact not a new claim It is (implicitly) assumed by a variety of authors For example Kiss (1993) refers to D-linked wh-phrases as 'specific' wh-phrases Whereas Beghelli (1995) refers to 'specific' NPs as D-linked NPs

and English reduces to the availability of scrambling does not do the job after all, at least if Diesing is on the right track. Since English shows regular superiority effects we have to address the following question: Why is the equivalent of (63) given in (64) not a possible LF-representation in English:

(64)   What$_j$ did [who$_i$ [$_{VP}$ t$_i$ t$_j$ claim?

There is a solution to this potential problem, which is based on the following independently motivated assumptions:

1. In multiple wh-questions the wh-words have to match in their D-linking status [20]
2. The D-linked interpretation of a (non-inherently D-linked) wh-word in SpecCP is a function of the position of its trace.[21]

The interaction of the assumptions in 1 and 2 has the result that only the possibility for overt scrambling has the effect of saving superiority violations whereas covert scrambling cannot. With this in mind consider the representation of English multiple questions in (64), which we want to exclude.

To circumvent a superiority violation the wh-word in situ must be D-linked (i.e. scrambled). The assumption in 1 requires that in a multiple question the two wh-words have to match in their D-linking status. Therefore the wh-word in SpecCP in (64) must be D-linked as well. According to the assumption in 2, this can only be achieved if the trace is in a position where D-linking is forced. Thus, before the wh-word undergoes movement to SpecCP it has to be scrambled. Consequently, the adequate S-structure representation in German must be (65) rather than (63):

(65)   Was$_j$ hat [wer$_i$ t$_j$ [$_{VP}$ t$_i$ t$_j$ behauptet?

This means that it is indeed the possibility for overt scrambling which is crucial to circumvent superiority violations. Since English simply lacks the possibility for overt scrambling, the wh-word in SpecCP cannot move through an intermediate (scrambled) position, where it could acquire the D-linked interpretation. Therefore superiority violations are always induced.

9. *WAS FÜR N, WELCH- N* AND DIESING'S MAPPING HYPOTHESIS

In section 3 we have seen that German has inherently D-linked wh-phrases (i.e. *welch- N*) and wh-phrases that are preferably interpreted as non-D-linked (i.e. *was für (ein) N*). In this section these wh-phrases will be discussed in more detail. Given that Diesing's Mapping Hypothesis is relevant for wh-words as well (cf. section 7 and 8), we expect a correlation between the position of wh-phrases and their respective interpretation. I will also show that the present analysis has an important consequence for *was für*-Split in German.

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[20] cf. Comorovski 1996 and the discussion in section 4.2 above

[21] Notice that this assumption is in the spirit of Pesetsky's (1987) analysis, even though it is stronger. A similar assumption is also made in Hornstein (1995). There it is argued that D-linked wh-phrases are interpreted in situ rather than in SpecCP. If this is the case for all wh-words, no matter where they appear at S-structure (i.e. in SpecCP or 'in situ'), then overtly moved wh-words could be assumed to be subject to reconstruction. Assuming reconstruction to be relevant for overtly moved wh-words is actually not much different from claiming that the interpretation of wh-words is a function of their trace.

Consider again Diesing's Mapping Hypothesis discussed in section 8. Her analysis predicts that all non-presuppositional DPs appear within VP whereas presuppositional DPs are (usually) scrambled in German. We have argued that both D-linking and presuppositionality are triggered by scrambling. With this in mind let us turn again to the two wh-phrases discussed in section 3: *welch- N* and *was für (ein) N.*

Given that *welch- N* is inherently D-linked we predict that it can appear in scrambled position.[22] This prediction is borne out as shown below:

(66)	a.	Wer	hat	[denn	schon	oft	welches	Buch	empfohlen?
		Who	*has*	*[prt*	*already*		*often which*	*book*	*recommended*
	b.	Wer	hat	welches	Buch	[denn	schon	oft	empfohlen?
		Who	*has*	*which*	*book*	*[prt*	*already*		*often recommended*

'Who has often recommended which book?'

In section 3 I have shown that *was für (ein) N* is preferably interpreted as non-D-linked. Given that they are not compatible with the D-linked interpretation we predict that these wh-phrases cannot undergo scrambling. Again, this prediction is borne out:

(67)	a.	Was	für Menschen	mögen [denn	meistens	was	für Opern?
		What	*for people*	*like [prt*	*mostly*	*what*	*for operas*

'What people like what operas mostly?'

(67)	b.	*?Was für	Menschen	mögen was	für Opern	[denn	meistens?
		What	*for people*	*like*	*what for operas*	*[prt*	*mostly*

(68)	a.	Wer	hat	immer	was	für Opern geschätzt
		Who	*has*	*always*	*what*	*for operas appreciated*

'Who has always appreciated what operas?'

(68)	b.	*?Wer hat	was	für Opern	immer	geschätzt.
		who	*has*	*was für Opern*	*always*	*appreciated*

(68)	b.	*?Wer hat	was	für Opern	immer	geschätzt.
		who	*has*	*what*	*for operas*	*always appreciated*

(69)	a.	Was	für	Raucher	rauchen	denn	meistens	was	für Zigaretten?
		What	*for*	*smokers*	*smoke*	*prt*	*mostly*	*what*	*for cigarettes*

'What smokers smoke what cigarettes mostly?'

(69)	b.	*?Was für	Raucher	rauchen	was	für Zigaretten denn	meistens?
		What	*for*	*smokers*	*smoke*	*what*	*for cigarettes prt*	*mostly*

The fact that *was für-* wh-phrases cannot be scrambled has an important consequence concerning the well-known phenomenon of *was für-split.*

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[22] According to Diesing's version of the Mapping Hypothesis presuppositional DPs (and therefore D-linked wh-words) should always appear VP-externally (i.e. in scrambled position). This claim turns out to be too strong as the following sentence shows:

i)	weil	der Peter	ja	doch	oft	die Maria	gesehen hat.
	since	*the Peter*	*prt*	*prt*	*often*	*the Mary*	*seen has*

'since Peter has often seen Mary'

In i) a proper name appears in the position following the adverb, indicating that it has not been scrambled.

9.2. Was für-Split

Based on an observation by den Besten (1985), Diesing argues that extraction out of *was für N* (i.e. *was für* -Split') is only possible out of wh-phrases that are not scrambled:

(70) a. ??daß Olga immer   Opern   von   Mozart schätzt
             that   *Olga*   *always*   *operas*   *of*   *Mozart appreciates*
             '...that Olga always appreciates operas by Mozart.'

      b. *?Was$_i$ hat Olga immer [$_{NP}$ t$_i$ für Opern] geschätzt
          What$_i$ *has Olga*   *always [$_{NP}$ t$_i$* *for operas appreciated*
          'What operas did Olga always appreciate?'

(71) a. daß   Olga Opern von   Mozart immer   schätzt
             that   *Olga* *operas of*   *Mozart always appreciates*

      b. *Was$_i$ hat Olga   [$_{NP}$ t$_i$ für Opern] immer geschätzt.
          what$_i$ *has Olga*   *t$_i$* *for operas always appreciated*   Diesing 1992

The contrast between (70)b and (71)b is intended to show that extraction out of DPs is only possible if the DP is not in scrambled position. What Diesing fails to show however, is that *was für N* can be scrambled in the first place. Multiple questions are the only environment where one can observe the possible position of *was für N* independent of *was für*-Split. The data in (67)-0 clearly indicate that *was für N* cannot be scrambled in the first place. Thus the ungrammaticality of (71)b is not a function of extraction. Since *was für (ein) N* cannot be scrambled, the remnant of *was-für*-Split cannot appear in scrambled position as well. This suggests that Diesing's data are not a legitimate test for extractability.

10. INTONATION AS A TRIGGER FOR D-LINKING: ADJUNCTS

There is one more issue to be addressed, namely multiple questions involving adjuncts, which we ignored so far. I have shown that German shows regular superiority effects based on subject object asymmetries provided we control for D-linking. This leads us to expect that German shows superiority effects in general including object-adjunct asymmetries.

In this context it is important to notice that it has been observed in the literature (Kiss 1993; Reinhart 1995) that different adjunct wh-phrases differ in their behaviour in superiority configurations. Just like arguments, adjuncts are sensitive to D-linking. For example Kiss (1993) shows that specific (i.e. D-linked) adjunct wh-phrases can escape superiority violations. We therefore expect that German shows superiority effects with non-D-linked adjunct wh-phrases as well. The crucial difference to argument wh-phrases is however that it is not the structural position within the clause (i.e. scrambling) that serves to disambiguate the wh-phrase. Rather, for adjuncts intonation turns out to be the crucial trigger for D-linking. This is not surprising, given that we have already seen that intonation has a crucial influence on the interpretation of wh-phrases (cf. section 2).

Pesetsky observes *"that it is cross-linguistically extremely difficult to D-link the word that means why"* (Pesetsky 1987; 127, Fn.31). Therefore we always find superiority effects in a multiple question where *why* is in situ:

(72)   *Who bought a book why?

There is however nothing special about reasons that would prohibit them to be interpreted as D-linked. This can be observed on basis of the following examples:

(73)   a. Aus   welchem   Grund würdest   du   kein   Bier   trinken?
            Out   which   reason would   you   no   beer   drink
            'Out of which reason would you drink no beer?'
        b. Aus   welchem   dieser Gründe   würdest   du kein   Bier   trinken?
            Out   which   these reasons   would   you no   beer   drink
            'Out of which of these reasons would you drink no beer?'

On basis of these examples we must conclude that (at least) paraphrases of the wh-word meaning *why* can be D-linked. In (73) we find the inherently D-linked wh-word *welch* and (73)b shows that we can even add a partitive phrase. As expected, D-linked adjunct wh-phrases do not induce superiority effects (cf. also Kiss 1993):

(74)   Who bought a book for which reason?

With this in mind, let us now look at the equivalent of *why* in German:

(75)   Wer   hat   das Buch   WArum   gelesen?
        Who   has   the book   why   read
        'Who has read the book why?'

The sentence in (75) is well-formed, apparently violating the superiority condition. This leads us to the conclusion that *warum* in (75) must be D-linked. What could be responsible for the D-linked interpretation of *warum* in (75)? One possibility that comes to mind is that *warum* is inherently D-linked in German. We can easily reject this hypothesis. As we have seen in section 4.1 inherently D-linked wh-words cannot be aggressively non-D-linked. However, *warum* can be aggressively non-D-linked:

(76)   Warum   zum   Teufel hat Peter   kein   Bier   getrunken.
        Why   to-the devil   has Peter   no   beer   drunk
        'Why the hell didn't Peter drink any beer?'

We can therefore conclude that *warum* is not inherently D-linked. In section 5 we have seen another trigger for the D-linked interpretation of wh-words, namely scrambling. In case of adjuncts, we cannot easily attribute the D-linked interpretation of the adjunct *warum* to the

possibility of scrambling in German.[23] However, in section 2 we have seen another trigger for D-linking, namely intonation. As we will see immediately, adjunct wh-phrases like *warum* can be forced to be D-linked or non-D-linked respectively by means of intonation. There are two possible stress patterns for the morphological complex wh-word *warum*. Either the first syllable (which is the wh-word) or the second syllable (i.e. the preposition) can bear stress.[24] The difference in stress has an interpretational impact as the example in (77) shows.

(77) There are only two possible reasons that I accept as an excuse for not drinking beer: being on a diet or having to get up early on the next day. I am asking you:
  a. WARum   würdest   DU   kein   Bier   trinken?
  b. #waRUM würdest   DU   kein   Bier   trinken?
    Why   would   you   no   beer   drink.
    'Why would you not drink a beer?'

The preceding context establishes a set of possible reasons. This makes it clear that *warum* in the question must be D-linked. Observe that only one stress pattern is well formed in this context: the wh-part has to be stressed in this context. If the preposition is stressed the question is infelicitous (77)b. We can therefore conclude that stress on the wh-part (*WARum*) induces the D-linked interpretation. Indeed, the question in (77)a is a paraphrase of the questions in (73) (involving inherently D-linked wh-phrases) whereas (77)b is not. If the preposition is stressed (*warUM*), the non-D-linked reading is forced.

It is important for the present purpose that we have established a way to force the non-D-linked interpretation, namely stress on the prepositional part of the wh-word. With this test, we can go back to superiority configurations. We predict that superiority effects are induced if the wh-word is forced to be non-D-linked by stressing the preposition. This prediction is borne out:

(78) a. WARum   hat Peter   was   getrunken?
     b. waRUM   hat Peter   was   getrunken?
       Why   has Peter   what   drunk
       'Why did Peter drink what?'
     c. Was   hat Peter   WARum   getrunken?
     d. ?*Was hat Peter   waRUM   getrunken?
       What   has Peter   why   drunk
       'What did Peter drink why?'

In (78)a and b *warum* occupies SpecCP. In this case, both intonational patterns are well formed as expected. However, if *warum* stays in situ, it has to be D-linked in order not to violate the superiority condition. Therefore in this configuration only the intonation which is associated with the D-linked interpretation (*WARum*) is well-formed (78)c, whereas the stress associated with the non-D-linked interpretation (*waRUM*) is ill-formed (78)d.

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[23] Although Diesing does not address the issue, it has to be noticed, that her Mapping Hypothesis could in principle be applied to adjuncts as well. And indeed, van Riemsdijk (1995) shows that adjuncts pattern much like arguments in this respect. Non-specific adjuncts (like *irgendwo* 'somewhere') occur lower in the clause than specific adjuncts like *dort* ('there').
[24] Stress is indicated by capital letters.

There are a number of morphologically complex adjunct wh-words in German, which all pattern alike. For example, in (79) we find *wohin* ('*whereto*'). Again, if this wh-word occupies SpecCP both possible stress patterns are allowed. If however, the wh-word stays in situ it has to be D-linked. This is only compatible with stress on the wh-part (rather than on the preposition):

(79) a. WOhin   hat die Regierung   wen   abgeschoben?
        b. woHIN   hat die Regierung   wen   abgeschoben?
            Where-to   has the government   who   deported
            'Where did the government deport who?'
        c. Wen hat die Regierung   WOhin   abgeschoben?
        d. ?*Wen hat die Regierung   woHIN   abgeschoben?
            Who   has the government   where-to   deported
            'Who did the government deport where?'

Finally, it is worth mentioning that not only adjunct wh-phrases allow for disambiguation by means of stress. The same is true for argument wh-phrases that question the cardinality.

10.2. *To question the cardinality*

In order to ask for the cardinality the complex wh-phrase *wieviele* ('*how many*') is used. We find a similar phenomenon as in the case of morphologically complex adjuncts. Stressing the wh-part of the complex phrase (*WIEviele*) results in the D-linked reading, whereas stressing the other part (*wieVIELE*) forces the non-D-linked interpretation. Again, these wh-phrases behave as expected in superiority configurations:

(80) a. WIEviele   UFOs haben wen   attackiert?
        b. WieVIELE   UFOs haben wen   attackiert?
            Howmany   UFOs have   who   attacked
            'How many UFOs attacked who?'
        c. Wen   haben WIEviele   UFOs attackiert?
        d. ?*Wen haben wieVIELE   UFOs attackiert?
            Who   have   HOWmany UFOs   attacked
            '*Who did how many UFOs attack?'

The only possible way to leave *wieviele* in situ is to stress the wh-part of the complex wh-phrase resulting in the D-linked interpretation.

To conclude this section, we have seen that besides scrambling and inherent D-linking there is another potential trigger for D-linking in German: a specific stress pattern can trigger D-linking of wh-words resulting in apparent superiority violations.

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11. Why have Superiority Effects in German been Overlooked?

In the last section, I would like to briefly address the question as to why superiority effects in German have been overlooked. I believe that the reason is a conspiracy of interacting factors.

First of all, German was analyzed as a non-configurational language. As a result superiority effects were not expected. Secondly, superiority violations are in general not severely ungrammatical. This is true for English as well. Here, superiority violations are not as strong as for example (other) ECP-violations. Likewise, in Dutch, a language where superiority effects have always been acknowledged, the contrast does not seem to be very sharp. This becomes evident from the following quote from Koster (1987), who comments on the example in (81), which is a potential superiority-violating configuration:

> (81) Wat   heeft   wie   gekocht?
>   *What   has   who   bought*
>   'What did who buy?'

"As for the Dutch equivalent [of superiority MW] I find it difficult to make up my mind."

Koster, 1987: 229

Above all, there is one more important factor, which intervenes in judging the data under consideration. Superiority effects only show up with non-D-linked wh-words. However, judgements concerning D-linking or specificity are in general very difficult.[25] This has to do with two factors.

On the one hand, intonation can intervene. With 'non-neutral intonation', sentences that are predicted to be ungrammatical (or infelicitous) are sometimes rendered well formed. It is worth mentioning that this is also true for the Diesing's (1992) data as is obvious from the following quote:

> *"Strictly speaking the particles [ja doch] act only as a partial diagnostic of the phrase structure position of the subject (....) A subject to the right of the particles may be VP-external owing to the possibility of their scrambling and adjoining to IP. <u>The interpretation that results in this case is rather marked, and requires a particular intonation contour. With neutral intonation, only the VP-internal interpretation of the indefinite is possible.</u>"*

Diesing, 1992: Fn. 30; (emphasis is my own)

This means, that we have to find a reliable way to control for 'neutral intonation'.[26]

A second factor which creates problems with grammaticality judgements has to do with the fact that contrasts that rely on possible contexts are often rather subtle. Given that discourse notions play an increasingly important role in syntactic description we have to find a way to

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[25] This might be responsible for the fact that sometimes judgements concerning superiority are not as crystal clear as we would like them to be (cf. Fn.8).

[26] Notice that the literature on the PF-syntax interface diverges as to whether there is such thing as 'neutral intonation'. For example Selkirk (1984) argues against this notion whereas Cinque (1993) assumes that it is possible to identify neutral (or unmarked) intonation.

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make judgements about a possible discourse/context more robust. This point is also made very clear in Reinhart (1995):

> *"What we are asked to check is our meta-theoretic intuitions regarding whether the sentence is undefined or false, in such a world, or even <u>less reliable intuitions about which contexts we could have uttered the sentence in</u>. (...) The method Diesing uses for showing the presupposition ambiguity is, essentially, declaring that it is there, and providing a textual analysis of imaginary contexts of utterance. Diesing's theory, thus, makes very fine semantic distinctions, regarding which structures are ambiguous and which are not. But <u>the problem is that there is no obvious way to check them</u>. "*

(Reinhart, 1995: 95f. emphasis is my own)

In this paper we have seen (following Pesetsky 1987) that the discourse related notion of D-linking can intervene with syntactic principles (like the Superiority Condition or whatever this condition is reduced to). Syntactic description cannot ignore this. This paper has shown that in order to see superiority violations in German we have to crucially control for D-linking, which is not always an easy task especially since the notion of D-linking is not so easy to define as some of the data discussed in this paper made clear.

12. CONCLUSION

In this paper I have shown that German shows regular superiority effects contrary to standard assumptions. As in English, superiority effects only show up with non-D-linked wh-phrases. I have also shown that D-linking can be triggered in (at least) three different ways:
1. Lexically: *which* and *welch* are inherently D-linked
2. By intonation: specific stress patterns force the D-linked interpretation
3. By the phrase structure position in the clause: overt scrambling triggers D-linking
In German all three possibilities are available, whereas in English the third possibility is not available: English does not allow for overt scrambling.

I have shown that the assumption that scrambling triggers D-linking is empirically well motivated. If we look at sentences where the wh-word appears unambiguously in unscrambled position, superiority effects are induced. Furthermore we have seen that it does not come as a surprise that scrambling triggers D-linking, given that scrambling in general has an interpretive effect.

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