My Topic is D-Linked

Aspects of *Wh*-Determination

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1. Introduction to the Topic and Basic Assumptions

This work deals with aspects of so-called *wh*-determination, and the empirical focus will be mostly on Indo-European languages, but other languages will also be discussed. The central claim is that there are basically two types of *wh*-determination, whatever surface form the *wh*-item used as *wh*-determiner takes: Token-*wh*s and Kind-*wh*s. These two basic forms of *wh*-determination are argued to trigger different syntactic effects. The notion of D-linking (Discourse-linking) will figure prominently as it is used to uncover and explain properties of and differences between constructions involving *wh*-determiners. I will identify and discuss three structural triggers for the syntactic effects exhibited by D-linked *wh*-phrases, which I claim to be instances of Token-*wh*s because the triggers for the syntactic effects of D-linking are shown to be identical to the once for the token-reading of a *wh*-phrase. I achieve this goal by decomposing D-linking into four components. A main result will also be that the observable syntactic effects are all facilitated by the presence of two nominal constituents inside a *wh*-phrase. Reviving and systematizing classical observations and proposals, this thesis provides a fresh view on old problems.

1.1 Setting the Scene: *Wh*-Pronouns and *Wh*-Determiners

Wh-proforms like *who*, *wha*t, or *where* are part of the lexicon of most languages, yet most speakers would not regard them as more important than other features of language. In linguistics, the picture is a different one. In the last four decades, there appeared numerous articles, conference proceedings, monographs and special issues on the syntax, semantics, and morphology of *wh*-words. This interest was sparked by the fact that *wh*-proforms have multiple personalities. In what is often perceived as their canonical usage, they are linked to interrogative force, making *wh*-proforms relevant for the discussion on clause-typing (i.e. the association of illocutionary forces to their grammatical realizations like declarative, interrogative, or imperative). *Wh*-items can not only be used as interrogative pronouns, but also as indefinite pronouns, relative pronouns, and in exclamative pronouns in many languages.

Regardless of the different illocutionary functions, the 'range' of things a particular *wh*-phrase (no matter if single word or complex; see below) can ask for is restricted to certain conceptual domains, i.e. their denotation is limited to certain objects sharing some property. As Munaro & Obenauer (1999:182) put it: "wh-elements [are] characterized by a clearly recognizable semantic restriction whose function is to determine the domain of individuals that are potential values of the variable bound by the wh-quantifier". This is illustrated by the following examples from English which are just a sample of the *wh*-pronouns in this language (see chapter 4 on pronoun-paradigms):[1]

(1) a. *who* → ranges over PERSON
b. *when* → ranges over TIME
c. *how* → ranges over MANNER or DEGREE

The range of concepts which can be expressed by simple, one-word *wh*-proforms seems to be restricted to a universal pool of concepts which are also relevant in other parts of the lexicon, the so-called 'Basic Ontological Categories'/BOC (Jackendoff 1983:51).[2] Not every language distinguishes all possible 'Ranges' (i.e. encyclopedic/ontological concepts) lexically. It is common that a single proform is used to refer to a group of ontological categories which are expressed by different *wh*-words in other languages. An example is the English form *how*, which can be used to express both DEGREE and MANNER (cf. (1)).

Moreover, it is the case that irrespective of the range a *wh*-word denotes, and of the syntactic category it belongs to (pronoun or pro-adverb), every simple (i.e. one-word) *wh*-phrase can be replaced by a so-called '*Wh*-Determiner Phrase'.[3] Because of the restriction on one-word proforms to BOC, *wh*-determiner phrases are also employed to ask for concepts with no specialized exponent in the lexicon of the respective language:

[1] In this thesis, CAPITALS indicate either (i) Conceptual Meaning (e.g. AMOUNT; KIND; TIME), or (ii) Lexical Equivalents (e.g. WHICH; WHAT), or (iii) Functional Nouns (e.g. NUMBER; KIND).
[2] Equivalent terms are *epistemological category* (Durie 1985), and *knowledge category* (Mushin 1995).
[3] Haspelmath (1997:30) notes that "it is always possible to create more specific complex expressions […]. This is what languages do which have fewer than [the] seven most common categories [i.e. BOC]". According to Conrad (1978:92-95) every language has an "equivalent" to the *wh*-determiner WHICH.

(2) *which book*; *which car*; *what type*; etc…

In order to make explicit the relation of the range expressed by pronouns and the range expressed by the "head-noun" of a determiner phrase, I propose to subsume the elements which are the overt expression of the restrictions under the label of 'Range Restrictors' (RR).[4] To use the words of Munaro & Obenauer (1999:183) again "[s]uch a restriction can be expressed by the morphology alone or by means of a lexical noun (phrase), whence the (quasi) parallel series of bare and non-bare wh-quantifiers":

(3)	*qui*	*quell homme/humain*	→	HUMAN
	who	which/what man/human		
	quand	*à quell instant*	→	TIME
	when	at which/what time		
	où	*à quell endroit*	→	PLACE
	where	at which/what place		
	pourquoi	*pour quelle raison*	→	REASON
	why	for which/what reason		
	comment	*de quelle façon*	→	MANNER
	how	in which/what way		

To capture the differences between the categories expressed by bound morphemes in *wh*-pronouns, and the free head-noun in determiner constructions, I introduce the distinction between the 'Morphological Restrictor' (MR), which is part of pronominal morphology, and the 'Nominal Restrictor' (NR), which is the "head-noun" or "NP-complement" accompanying *wh*-determiners (see Polletto & Pollock 2002 and Garzonio & Poletto 2013:4 for related ideas):

(4) a. *who* → *wh* + MR_{PERSON}
b. *which person* → *wh* + NR_{PERSON}
c. *which* → *wh* + $MR_{???????}$

[4] See e.g. Enç (1991), von Fintel (1994), or López (2000:190) for the idea that quantifiers generally involve such a restriction on their domain. I will not have to say much about non-*wh* quantifiers in this thesis, but I expect that the results obtained in this thesis should be applicable to other domains of determination and quantification.

Complicating an answer to the question on how Morphological Restrictors and Nominal Restrictors interact is the fact that *wh*-determiners (often) incorporate a Morphological Restrictors themselves (cf. (4c)). Take for example the Germanic instances of WHICH: They all derive from *wh*-words involving the Proto-Germanic **lika*, meaning 'shape', 'body', or 'kind'. Such *wh*-determiners can combine with Nominal Restrictors, which could lead to a situation where there are two Range Restrictors being present in the complex *wh*-phrase (see chapter 4 for thorough discussion).[5]

The set of *wh*-item that can be used adnominally (i.e. as *wh*-determiners) varies from language to language, and which "type" of *wh*-items (i.e. overt form) is used as *wh*-determiners seems to be arbitrary at first sight. But upon closer inspection, we can detect systematic, recurring restrictions on the possible candidates for these adnominal *wh*-elements. This shows up most clearly in languages which permit more than one way to form *wh*-determiner phrases.[6] Here, the choice of *wh*-determiner depends on the intended reading/meaning of the phrase. One example for this is the fact that there are two possible English translations for the French *wh*-determiner *quell* in (3). The resulting *wh*-phrases can be sorted into a cross-linguistic valid semantic classification, and the three sets which concern us in this study are given in (5). I adopt the terminology used in Heim (1987:27-32) and Vangsnes (2001 et seq.), and call type (5a) 'Token-*wh*' and type (5b) 'Kind-*wh*':[7]

(5) *Three Types of Wh-Determiner-Phrases*

a.	Token-*wh*	→	*which* NP
b.	Kind-*wh*	→	*what (kind of)* NP
c.	Amount-*wh*	→	*how many/much* NP

Token-*wh*s are restricted to ask for specific, identifiable individuals with the properties described by the NP ('Identificational *Wh*'), while Kind-*wh*s operate on properties, such that a subset of the Ns described by the NP shares these properties ('Specificational

[5] A note on terminology: '*Wh*-item', '*wh*-word', '*wh*-element' refer to *wh*-proforms (i.e. one word *wh*-phrases. 'Complex *wh*-phrase' and '*wh*-determiner phrase' refer to *wh*-phrases which involve another elements besides the *wh*-item, Nominal Restrictors being the most important.

[6] According to Conrad (1978:92-95) every language has an "equivalent" to the *wh*-determiner WHICH.

[7] Heim (1987:27-32) arrives at the conclusion that " *what* ranges over KIND, *which* over individuals". The first group is represented in Germanic by *welch-* , *welk-*, or *h(v)ilken*, the second group by *was für ein*, or *wat voor een*. Gallmann (1997:17) notes for German: "flektiertes *welche* verlangt eine identifizierende Antwort, *was für (ein)* eine spezifizierende".

Wh'); cf. Conrad (1978) and Gallmann (1997), among others. In the first case, the *wh*-phrase is restricted to a set of individuals, and in the second case it is restricted to a set of properties with a non-empty intersection with the NP extension. Amount-*wh*s obviously asks for the amount or number of Ns such that they are a subset of the Ns described by NP.[8] One result reached in this thesis will be that Amount-*wh*s receive either an interpretation as Token-*wh*s or an interpretation as Kind-*wh*s and thus does not constitute a type of its own. This in part depends on whether the NR denotes a count- or a mass-noun. A difference reflected in English by the choice between *many* and *much*. In chapter 2, I will examine other overt forms of *wh*-determination and how these are related to the typology in (5). The outcome will be that in languages with more than one *wh*-determiner, every *wh*-determiner phrase can be analyzed as either being a Token-*wh* or a Kind-*wh*.

Independent of the distinction between Token- and Kind-*wh*s, *wh*-determiner cognate to English *which*-phrases have received a lot of attention under the label of 'D-linking'. These 'D-linked *wh*-phrases' (DWH) show a range of special syntactic properties which are similar to the effects observed with Token-*wh*s. The notion of D-linking will therefore figure prominently in this dissertation because I will use it as a tool to uncover the structural differences between the *wh*-determiner types in (5).[9]

1.2 The Notion of D-Linking and the Status of *Which*-Phrases

In his 1987 paper "Wh-in-situ: Movement and Unselective Binding", David Pesetsky introduced the term 'D(iscourse)-Linking' which is intended to capture the phenomena that the answers to questions with certain *wh*-phrases must be drawn from a set of possible answers pre-established in and restricted by discourse. Pesetsky (1987:108-109) argues that "[w]hen a speaker asks a question like *which book did you read?*, the range of felicitous answers is limited by a set of books both speaker and hearer have in

[8] I will abstract away from the fact that the English Amount-*wh* determiner consists of the *wh*-item *how* and the quantifier *many*. *Many* could be analyzed as an existential quantifier over individual variables, *how* as an existential quantifier over degree variables (cf. Romero 1998; Hackl 2000; Cresti 1995; Fox 1999; and Rett 2006). There are Amount-*wh* determiners which cannot be decomposed along the lines of their English cognate, but which nevertheless show the distribution of the English *how many*. An instance of such a monomorphemic *wh*-determiner is Romanian *citi*.

[9] Pace e.g. Vangsnes (2008b:134), I will not argue that the token-kind distinction corresponds to the D-linked non-D-linked distinction. Nevertheless, as we will see, there are interesting correlations between these notions.

mind. […] If a speaker asked *how many angels fit on the head of a pin?*, there is no presumption that either speaker or hearer has a particular set or quantity of angels in mind". The answer to a D-linked question is thus "supposed to be drawn from […] part of the 'common ground' established by speaker and hearer" (Pesetsky 2000:16):

(6) *Definition of D-Linking (Pesetsky 1987)*
With D-Linked *wh*-phrases the range of possible (felicitous) answers to the *wh*-item is limited to a set pre-established in discourse and/or known to the interlocutors.

In other words, certain *wh*-phrases bring with them a contextual antecedent that narrows down the range of possible answers to a question containing these D-Linked *wh*-phrases. I will refer to these *wh*-phrases as DWH ('Discourse-linked *Wh*-Phrases').[10]

The restriction on the possible referents of *which*-phrases to entities already introduced into the discourse explains why D-linked *wh*-phrases are not good in out-of-the-blue contexts. For example, the answer to questions containing *which*-phrases, for which the consensus among linguists is to analyse them as being "inherently D-linked", must be drawn from a pre-established set, otherwise their usage leads to infelicity (example modified from Boeckx & Grohmann 2004:4):[11]

(7) A: John bought something expensive yesterday.
B: What did he buy?
B': #Which car did he buy?
B'': #What car did he buy?

(7B'') shows that these restrictions does not only hold for *which*-phrases (as instances of Token-*wh*s) but also for (at least some) *wh*-determiner phrases headed by what I call Kind-*wh* determiners. Both types of *wh*-phrases thus show what I will call a 'D-linked interpretation' (but crucially not the same 'D-linked syntax'; see below).

[10] The term 'DWH' will be used to refer to the whole *wh*-phrase. For the most time, it will refer to *which*-phrases and their cognates in other languages, but will also be applied to *wh*-phrases which show properties similar to English *which*-phrases.
[11] Felix Schuhmann (p.c.) pointed out to me that (7) is not really an out-of-the-blue context and that the defiance of (7B'+B'') is due to a "presupposition-clash". I will discuss presuppositions in section 3.1.

That D-linking is a pragmatic (or semantic) phenomenon is the position defended in e.g. Pesetsky (1987), Kroch (1989), Comorovski (1996), or Wiltschko (1997a, b). While it is uncontroversial that interpretive factors play a crucial role in defining D-linked *wh*-phrases across languages, what makes DWH an interesting object of study are the systematic syntactic differences to other types of *wh*-phrases. Poletto & Pollock (2002:281) note the well-known fact that "D-linked wh-phrases are in general 'more liberal' than non-D-linked ones in allowing for a greater variety of interrogative constructions". This syntactic side of D-linking is illustrated by the following examples from English for superiority-effects and extraction out of weak islands (see section 2.1 for descriptions of and discussions on these empirical phenomena):

(8) *No Superiority Effects*[12]

a. ***What**$_i$ did who see t_i?

b. [**Which movie**]$_i$ did which boy see t_i?

(9) *Escape Weak Islands*

a. ??[**What**]$_i$ do you wonder [$_{ISLAND}$ whether Gromit read t_i]?

b. [**Which books**]$_i$ do you wonder [$_{ISLAND}$ whether Gromit read t_i]?

As the data show, regular *wh*-phrases cannot cross a hierarchically higher wh-phrase in many languages (cf. (8)) and cannot extract out of certain syntactic structures (cf. (9)), while DWH can do so. Another important property of DWH, namely the licensing of resumption, is illustrated by the following data from Romanian (Dobrovie-Sorin 1990). As was the case with the other two empirical phenomena, DWH have an option open to them which is not available for regular *wh*-phrases:

(10) a. ***Ce*** (***roman***) (**l*)-*ai citit*?
What (novel) it-have (you) seen
'What boy did you see?'

b. *Pe* ***care*** (***baiat***) *(*l*-)*ai vazut*?
PE which (boy) him-have you seen
'Which boy did you see?'

[12] Note that (9b) involves a *wh*-subject which itself is a *which*-phrase. How this choice influences the grammaticality of (9b) will be discussed in section 4.4.

Other examples for the special status of *which*-phrases abound in numerous other languages (see throughout this thesis). Strikingly, *which*-phrases in different languages pattern in similar ways and show several recurrent differences from other types of *wh*-words. I take this to be a clear indication for a universal property all D-linked *wh*-phrases share besides a similar interpretation or pragmatic conditions on their usage.

As we will see in the next section, Kind-*wh*s differ from *which*-phrases (i.e. Token-*wh*s) in a number of syntactic domains, and I want to argue that these differences cannot be reduced to some type of discourse-anaphoricity as formulated in (6) or (13). One important result of this study is that D-linking is not a unified phenomenon and that it is crucial to keep the following components of D-linking apart ((11c+d) are "triggers" for D-linking, while (11a+b)) are the "results" of D-linking):

(11) *The four components of 'D-linking'*

a. DL-Interpretation (DL-I)

b. DL-Syntax (DL-S)

c. Contextual DL (C-DL)

d. Morphosyntactic DL (M-DL)

DL-I refers to what is often just labeled 'D-linking' in the literature, and is therefore synonymous with the notion of 'disourse-anaphoricity' (cf. (7)). DL-S subsumes the effects D-linked *wh*-phrases can have on the grammaticality of the sentences they appear in as in (8) and (9) (the full range of so-called DL-S effects will be introduced in detail in chapter 2). C-DL describes the fact that certain contextual factors trigger a DL-I.[13] M-DL captures the role of e.g. a Nominal Restrictor as the trigger for DL-S.[14]

It is crucial for the analysis proposed in this thesis that C-DL does not suffice to trigger DL-S effects. Although, as we will see later, there are cases of *wh*-phrases which do not seem to involve a Nominal Restrictor, but show DL-S effects, I will argue that these cases are rare and thus not relevant (cf. Wiltschko 1997b, who identifies scrambling and lexical choice as triggers for D-linking, but does not differentiate among DL-I and DL-S). It could turn out that C-DL (and DL-I) are directly responsible for DL-S, but starting the enterprise with this assumption, there is the danger of missing some

[13] For example presuppositions or previous mentioning, to name two such triggers.

[14] Tsai (1997:38) stresses the fact that "the D-linking effect is essentially a RESULT rather than the cause of the asymmetry between WHICH-NPs and wh-pronominals"; see also Haider (2004) for a similar view.

important generalizations. I thus conclude that there are different triggers for DL-I and triggers for DL-S. While C-DL mainly seems to triggers DL-I, M-DL is the relevant trigger for DL-S. Given this conjecture, this thesis focusses on DL-S and the (structural) triggers for DL-S effects will occupy the most part of this thesis.

Abstracting away from apparent pragmatic and semantic factors governing the choice for certain *wh*-elements in a given environment, I want to emphasize that this thesis is based on the idea that "D-linking is a syntactic construct" (Hirose 2003:505; see also Vangsnes 2006a, 2008a, b), and I argue for the idea that the triggers for DL-S manifest in the phrase-structural make-up of the adnominal *wh*-items used. The main claim regarding the source for DL-S effects is given in (12):

(12) *DL-S effects have morphosyntactic triggers*
DL-S effects are triggered by structural properties of *wh*-phrases (i.e. M-DL).

The possible triggers for DL-S (and DL-I) proposed in the literature involve the notions presuppositionality, specificity, partitivity, topicality, and to a certain extend also cardinality. DWH are sometimes labelled "presuppositional" (Pesetsky 1987; Rullmann & Beck 1988; Comorovski 1996) or "specific" (Kiss 1993; Rizzi 1996) *wh*-phrases. Taking serious the distinction between the interpretative and the syntactic effects of D-linking, the outcome of this study is that not all presuppositional *wh*-phrases are D-linked and not all D-linked *wh*-phrases are specific. Nevertheless as a working-hypothesis, we could argue that a prototypical DWH is an instance of '*specific partitive wh-phrases which are syntactic topics*' (cf. Kiss 1993; Grohmann 1998; and Reglero 2003).[15]

Although the title of the thesis presumably leads to the opposite expectation, I take D-linking as understood in most work on the topic (i.e. DL-I) to be an epiphenomenon, and therefore one aim of this thesis is to dispense with the notion of D-linking as a grammatical primitive. I still want to keep D-linking as a descriptive term, but reject theories using D-linking as a feature (as in López 2000 or Rizzi 2005).

[15] Topicality has been claimed to be related to specific and presuppositionality independent of *wh*-questions (cf. Aboh 2007:6, 28, who claims that specificity is topicality at the nominal level).

1.3 The Relevance of DL-Syntax to the Study of *Wh*-Determination

In work which does not differentiate between the syntactic and the interpretative effects of D-linking (i.e. DL-S and DL-I), both Token-*wh*s and Kind-*wh*s are often analysed as DWH. Take for example the following two-fold definition of D-linking:

(13) *Comorovski's (1996) two Types of D-Linking*

a. All participants in a conversation build the same partition of [the set denoted by the restriction], namely the maximal one, i.e. the partition into singletons.

b. All participants in a conversation share some criterion of classification according to which they exhaustively partition the set that *which* takes as an argument.

Although Comorovski (1996:136) argues that Romanian *ce* 'what' in her examples is not D-linked (in her interpretation of the term), she admits that "it ranges over a set already introduced in the discourse", and thus under the view on D-linking developed in this thesis, she analyses both Token- and Kind-*wh*s as D-linked (despite her explicitly claiming that they differ in terms of presuppositions).[16]

When D-linking is defined as reference to an entity already introduced into discourse, it is natural to assume that the link to established discourse-entities necessary for DL-I is provided by the NR. And indeed, the contrast between *which*-phrases and regular *wh*-proforms is frequently attributed to the 'heaviness', 'relative weight' or 'phrase-structural complexity' of the respective phrase (Rizzi 1978; Engdahl 1980; Maling & Zaenen 1982; Rudin 1988; van Craenenbroeck 2008). Contrary to this view, I argue that it is not the complexity of a *wh*-phrase (the fact that it consist of a *wh*-determiner plus a NR) which triggers DL-S, but rather that the type of *wh*-determiner plays the key role in triggering DL-S effects, as is evident from the fact that other *wh*-determiner phrases do not show the same syntactic behaviour *which*-phrases show:

[16] According to Comorovski, a *wh*-phrase is D-linked if the discourse participants can exhaustively partition the set denoted by the *wh*-phrase in an identical way by a shared selection criterion. In the case of a singular *wh*-phrase, one member of the set denoted by the restriction is picked, and in the case of a plural *wh*-phrase, all members of the set have to be listed individually to which a certain (contextual) criterion applies.

(14) *Superiority with Kind*-whs[17]

a. *What book did what school order?

b. Which book did which school order?

(15) *Non-extractability of Amount*-whs *out of weak islands*

a. *[**How much**]$_i$ did Bill wonder whether the book cost t_i?

b. *[**How much**]$_i$ did Bill wonder whether to pay t_i for the book?

(16) *No resumptive pronouns with Kind*-whs *in Romanian* (Dobrovie-Sorin1994:207)

a. [***Ce elev***] *ai putea tu suporta*?
'What student could you stand?'

b. *[***Ce elev***] ***l-****ai putea tu suporta*?
what student him-have could you stand
'What student him could you stand?'

c. [***Care elev***] ***l-****ai putea tu suporta*?
'Which student him could you stand?'

The differences between these and similar examples to the corresponding clauses involving *which*-phrases will occupy much of the discussion in chapter 2. For now, it suffices to note the differences, which I want to explain in this thesis. These examples show that a conception of "complexity" based on the dichotomy between *wh*-pronouns and *wh*-determiner phrases is too coarse and has to be replaced by a more fine-grained distinction among complex *wh*-phrases as I have proposed in (5). Given the contrasts regarding DL-S effects between different types of complex *wh*-phrases (e.g. *which N* vs. *what N*), DL-S seems to be irreducible to pragmatic or semantic factors, regardless of whether are necessarily involved or not. There appear to be structural properties of D-linked *wh*-phrases which non-D-linked phrases lack, and these properties are what I label M-DL.

The conclusion I draw is that the D-linking (both DL-S and DL-I) of a *wh*-phrase is mainly determined by the properties of the adnominal *wh*-element, thus the

[17] Felix Schuhmann (p.c.) pointed out to me that the difference between (14) and (8) could be due to the availability of a pair-list reading in (8) which (14) lacks. Although I agree with him that the differences in available readings for (multiple) *wh*-questions ultimately must be addressed, I will not touch upon this issue in this thesis for expository reasons.

claim in (12) that DL-S is triggered by structural properties has to be divided into two components, with the first one obviously being more important for DL-S effects while the second one is relevant for presuppositions and DL-I:[18]

(17) *Morphosyntactic triggers for D-Linking (M-DL)*
  a. The structural make-up of the *wh*-determiner
  b. The presence of the NR

The Nominal Restrictor is one of the main M-DL triggers for DL-I, but how to model the influence on DL-S effects is not clear, especially in light of the fact that some bare *wh*-phrases exhibit DL-S effects. Empirical evidence that it could not just be the presence of an overt Nominal Restrictor that is responsible for DL-S comes from cases where bare *which* behaves like a DWH and not like an ordinary bare *wh*-pronoun as in the following examples from Romanian (Comorovski 1996:2):[19]

(18) a. ***Pe care***$_j$ *cine*$_i$ t$_i$ *l*$_i$*-a* *vazut* t$_j$?
  PE which-ACC who him has seen
  'Which (one) was last seen by whom?'
  b. ****Ce***$_j$ *cine*$_i$ t$_i$ *a* *vazut* t$_j$?
  what who has seen

As we will see later in this dissertation, the Nominal Restrictor-Morphological Restrictor distinction I proposed in section 1.1 is relevant for a number of DL-S effects (e.g. resumption). Some cases of bare *wh*-phrases will be analysed as instances of a wh-item with a silent Nominal Restrictor, i.e. these *wh*-items really are concealed *wh*-determiner phrases. This result is in accordance to the observation that *wh*-determiner-phrases can receive a DL-I more readily than simple *wh*-phrases.[20]

[18] Cardinaletti (1994) independently argues for "a close connection between the intended structure of a pronominal DP and its syntactic distribution", and Tsai (1997:36) concludes that "wh-phrases vary in their internal structure, not only across languages, but also across categories".
[19] The role of specificity-markers like Romanian *pe* for the availability of DL-S effects will be discussed in detail in section 3.2. Regarding the appearance of *one* in the English translation of (18a), the reader is referred to subsection 4.3.2 for discussion.
[20] Take, for example, the following quote from Comorovski (1996:140): "As we have seen, which-phrases and wh-phrases of the form "what kind / type of N" can only receive a D-linked interpretation, irrespective of the context in which they are used".

Despite this, as (18) shows, there are still cases where bare *wh*-pronouns receive a DL-I (or alternatively: can be used in the environment a DWH is preferred), and even exhibit some DL-S effects. I will give some of these examples in the following, but argue that due to their low frequency they do not constitute relevant counterarguments to the analysis in this dissertation. Bolinger (1978) claims that when the context of utterance forces a DL-I ("a proper contextualization"), a *wh*-phrase need not obey superiority (cf. (19)); and Pesetsky (1987) cites the parallel example in (20) (stress from originals):

(19) I know that among all the disasters in that kitchen, Jane scorched the beans and Lydia put salt in the ice tea; but **what** did **who break**? I know somebody broke something, so stop evading my question.

(20) I know that we need to install transistor A, transistor B, and transistor C, and I know that these three holes are for transistors, but I'll be damned if I can figure out from the instructions **where what** goes!

The Bulgarian examples in (21) from Pesetsky (2000:43) illustrate the fact that a superiority-violating order is possible if the violating regular *wh*-phrase receives a DL-I:

(21) a. *Koj kakvo dade na Stefan*? → no DL under "normal" movement
who what gave to Stefan

b. ***kakvo*** *koj dade na Stefan*? →* if non-DL; i.e. better with DL
what who gave to Stefan

"Who gave what to Stefan?"

Kroch (1989) gives the following sentences with bare *wh*-phrases which are acceptable even without a context (i.e. without obviously being D-linked). In (22a) the set of possible persons to visit is not arbitrary, and in (22b), the set of meals one can choose from to prepare for dinner can be said to be limited by convention:

(22) a. **Who** were you wondering [whether to visit on your vacation]?

b. **What** were you wondering [whether to make for dinner]?

Pesetsky (2000) reminds us that one has to be aware of the fact that judgements on these sentences are delicate and there is considerable variation amongst speakers in case the *wh*-phrases are not *which*-phrases. Examples like (19) and (20) further demonstrate that even in case a *wh*-pronoun like *who* or *what* receives a DL-I, the syntactic effects of DL-S still need to be supported by devices like stress. A consequence of this situation is that examples like (19) to (22) are rarely discussed in the literature, although the D-linking of regular *wh*-phrases is often assumed. I take these considerations to further support my claim that while some morphosyntactic structures (M-DL) make it easier for a phrase to receive a DL-Interpretation, it are exactly these structural properties of a *wh*-phrase which are the relevant triggers for DL-S effects.

1.4 DWH Subtypes as the Expression of Functional Layers in Nouns

An important result of the discussion in this thesis is that D-linking is a gradual phenomenon, no matter whether looking at DL-S or DL-I. The Token- and Kind-*wh* distinction introduced in this thesis provides us with a way to approach distinctions between *wh*-determiners, but is not isomorphic to the D-linked vs. non-D-linked contrast. Thus, Comorovski's observation that Kind-*wh*s are also D-linked is not in opposition to the claim that *which*-phrases (as prototypical Token-*wh*s) are inherently D-linked. I conclude that *wh*-expressions can be arranged on a scale with Token-*wh*s occupying the end of the scale representing the strongest form of D-linking:[21]

(23) *Gradualism of D-Linking*

WH_{BARE} << WH_{KIND} + NR << WH_{AMOUNT} + NR << WH_{TOKEN} + NR

Although it is basically the case that the token-reading of a *wh*-determiner phrase is triggered by the same projections which trigger DL-S, not all DL-S effects are triggered by exactly the same properties of a given *wh*-phrase (DWH).[22] Rizzi (2005), for example, points out that we have to follow Starke's (2001) suggestion that a sharper

[21] Compare the similar scales in Grewendorf (2014) and Cinque and Krapowa (2005).

[22] Dobrovie-Sorin (1994:238), discussing the best candidate notion to describe weak islands extractees, claims that "we may wonder what the various cases […] have in common; we may even ask whether […] they are all sensitive to exactly the same type of locality conditions".

characterization of the notion of D-linking is necessary. This thesis intends to provide for such a sharper characterization of different types of D-linking. As long as we do not qualify what the trigger for a particular DL-S effect is, it does not suffice to claim that 'phenomenon x in language y is due to D-Linking', since this would not explain anything and is just restating the facts.[23] In this thesis, I will focus on three ways by which a *wh*-phrase can become a DWH, giving rise to the following typology of DWH. Although all of these types of DWH are "discourse-anaphoric", they differ significantly in the range of DL-S effects they show. Below is a list of the structural triggers for DL-S. Presuppositions and cardinality (individuality) are missing, because, as I will argue, they are only triggering DL-I and cardinality will also be shown to be subsumed under DWH_{SPEC}, because it is linked on specificity:

(24) *Typology of DWH*

a. based on partitivity → DWH_{PART}

b. based on specificity → DWH_{SPEC}

c. based on topicality → DWH_{TOPIC}

The proposal at hand argues that the gradualism of D-linking in (23) is a reflex of the differences in phrase-structural complexity between *wh*-phrases. Together with the distinction in (11), this can account for the fact that scholars mean different things when they use the term "D-linking". Some use it in the narrowest sense, i.e. they use it to refer to the properties rendering *which*-phrases inherently D-linked. Others apply the term D-linking to all types of presuppositional *wh*-phrases (Comorovski 1996). And finally, a number of linguists apply the term outside the realm of *wh*-phrases (Rizzi 2005, Alboiu 2002; among others). Accepting that D-linking is not a unified phenomenon but a gradual one, the proposed *wh*-determiner typology encompasses all the above positions on D-linking. On my proposal, DWH are no longer an unexpected quirk – instead, their syntactic behaviour follows straightforwardly from their morphological properties.

This thesis is written in the spirit of the so-called 'Cartographic Approach' (Rizzi 1997; among others). Cartography is based on the assumption that what has traditionally been perceived as monolithic blocks (i.e. functional categories like D) are really the accumulation of projections each headed by a single feature. For example,

[23] Grohmann (2006:281, fn21) notes that "there does not exist an explicit *theory* of D-linking. Pesetsky [1987] notwithstanding, very little has been done to formalize the intuitions expressed there".

what has traditionally been labeled CP is really a series of projections like FinP, FocP, TopP, and ForceP. This approach sparked a whole range of split-XP approaches, amongst which split-DP is of particular interest for this thesis. I also agree with Julien (2002:3), who proposes that ”it is the syntax that determines the order of morphemes within each complex word, in very much the same way as it determines the order of words in phrases and sentences.”. Under this view, different morphology must lead to different syntax, because words are really assembled in syntax.[24] Another idea central to this thesis is that the features of functional projections are ordered, and this order is part of UG: “There exists an ‘fseq’ – a sequence of functional projections – such that the output of merge must respect the fseq” (Starke 2001:155). The existence of such an fseq is also argued for in e.g. Adger (2003), or Williams (2003). It sometimes goes under the label of ‘hierarchy of projections’ and is related to the concept of “extended projection” (cf. Grimshaw 1990, 1991, 2000).

Regarding the general structure of the nominal domain, Abney (1987) set in motion an entirely new direction in research on nouns which shifted focus from items like articles to uncovering functional layers in the nominal structure. Following his DP hypothesis, a universal DP-NP structure for nominal-projections has been widely accepted. But the DP-shell itself has been further split-up into specialized projections (split-DP), and much effort has been invested in uncovering possible functional categories in the nominal domain.[25] Against this background, I argue that the differences between the types of *wh*-determiner denotations I will discuss in this thesis are triggered by different syntactic structures. I thus follow e.g. Zamparelli (2000:3) in identifying as a main goal of this work „to reconcile the idea of a strict mapping between syntactic and semantic categories […] with the natural idea that different noun phrases may have different types of denotations”.

No matter how fine-grained the decomposition of the DP-shell is in particular, many authors assume that the many projections proposed in the literature can be grouped into distinctive layers with very distinctive properties (e.g. Benincà & Poletto 2004). A simple version is the noun-phrase structure proposed by Déchaine &

[24] In Nanosyntax (cf. Starke 2009, 2011), it is claimed that the smallest building-blocks of syntax are sub-morphemic, i.e. the building blocks of syntax aren’t words or morphemes, but features (and phonological material is inserted after the syntactic derivation).

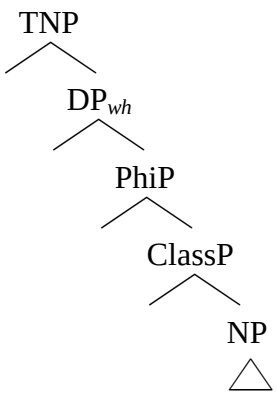
[25] Nonetheless, the research has not yielded definite results regarding the functional material inside nominals, and the ordering of these projections (e.g. Ritter 1991; Szabolcsi 1994; Witschko 1998; Zamparelli 2000; Bernstein 2001; Déchaine & Witschko 2002; Rijkhoff 2002; Haegeman 2004; Laenzlinger 2005; Borer 2005; Julien 2005; Schwarzschild 2006).

Wiltschko (2002) in (25), that expresses the idea that the functional architecture above NP can in principle be split-up into two domains (one for discourse-oriented functions, and one for agreement properties; parallel to the sentential layers CP and IP):

(25) [DP [PhiP [NP]]]

I argue that there is an additional projection between PhiP and NP (cf. Zamparelli 2000 claim that nominals come in three types). This is not a novel idea, and as in most other proposals, I take the topmost layer to be responsible for the referential properties of the nominal expression (it is thus the "classical DP"). The middle layer is the locus of e.g. numerals and the like. I claim that this layer is parallel to the PhiP in the analysis of Déchaine & Wiltschko (2002) and to the #P in Borer (2005). The lowest layer (KDP in Zamparelli's (2000) terminology) is the one missing in the proposal of Déchaine & Wiltschko. This layer is argued by Zamparelli to turn a concept into a property that can be predicated. This layer can be analyzed as being on a par with the category forming head in Borer (2005) which she labels Class(ifier)P (see also Sleeman 1996; Picallo 2008). This layer is obviously related to a category-forming head like nP in Distributed Morphology and related frameworks (cf. Marantz 1997). It could be that the properties I ascribe to ClassP are really part of nP, it appears to me to be more plausible to assume that nP is only the locus of what is received as the syntactic category nouns, and that nominal categories are further divided into sets based on the presence or absence of the projections that make up ClassP.[26]

(26) *Order of Projections in* Wh-*Pronouns*



[26] But Garzonio & Poletto (2013:9) argue that a phrase receives a non-nominal status if ClassP is missing.

The root node of a nominal phrase is labelled TNP (Traditional Noun Phrase) throughout this dissertation to avoid the double use of the term 'DP'. A cartographic split-up of projections like DP gives rise to terminological confusion. On the one hand, DP is used to refer to the whole sequence of split-projections. On the other hand, DP is used to refer to the topmost projection of this sequence of projections. I will use the term 'D-layer' I refer to the former and 'TNP' when I refer to the latter.[27]

I argue that the *wh*-determiner typology I propose in (5) reflects the fundamental distinction of the elements in DP. As a first approximation, I claim that prototypical Token-*wh*s are exponents of DP and Kind-*wh*s to be closely related to ClassP. Amount-*wh*s are distributed over different layers, depending on the feature-contents of the respective *wh*-item:[28]

(27) [$_{DP}$ Token-*wh*/Amount-*wh* [$_{PhiP}$ Amount-*wh* [$_{ClassP}$ Kind-*wh*/Amount-*wh* [NP]]]]

During the course of this thesis I will make some proposals concerning the contents of these layers and the repercussions of the presence of a respective projection on the syntax of *wh*-phrases. I will argue that DP subsumes SpecificP, TopP, and FocP, among other projections, PhiP subsumes e.g. CardP (expressing cardinality), and ClassP is the locus of NumP (expressing plurality) and will be argued to host specialized projections which express ontological concepts like TIME, PLACE, and presumably also KIND.

There is much variation across languages regarding the way these distinctions are expressed in the functional field of nominals. Therefore, the *wh*-determiner systems of languages can differ significantly when it comes to the range of oppositions expressed overtly.[29] As a consequence, the types of *wh*-determination listed in (5) do not always show up in this pure form, since the respective language does not differentiate between the relevant notions lexically (French/Italian vs. English/German). It could also be the case that a single LI in a given language is the spell-out of several features/projections which are expressed by different LIs in another language. The way

[27] Also, in chapter 4 I claim that interrogative pronouns are dominated by a QP.

[28] Given the parallelism between the kind-reading and adjectives mentioned at the end of section 1.1, this threefold distinction is plausibly related to Greenberg's (1966) U20:

(i) [DET [NUM [ADJ [NP]]]]

[29] Take for example the definiteness/specificity distinction. Although it has effects on the interpretation (and thus syntax) of nominals, only a few languages regularly express it in their determiner systems.

a language arranges its *wh*-determiners is a window into how the language arranges its functional nominal field.

1.5 Structure of the Dissertation

In chapter 2, I show that (i) *which*-phrases as the canonical DWH show a special syntax I label DL-S, and (ii) that there are systematic differences between the two types of *wh*-determiner phrases which I labelled Token-*wh* and Kind-*wh*. In the first section, the five most prominent and frequent DL-S effects are introduced. These are (i) the absence of superiority-effects with DWH, (ii) the ability of DWH to be extracted out of weak islands, (iii) the fact that DWH licence resumptive elements, (iv) the obviation of WCO effects by DWH, and finally (v) the possibility for DWH to stay in-situ where regular *wh*-phrases must move. We will see that *which*-phrases (as the prototypical Token-*wh*s) stand out among *wh*-phrases regarding these empirical phenomena in a wide range of typological diverse languages.

In the second section, the syntax of the Token-*wh*s and Kind-*wh*s will be compared. It will be demonstrated that regardless of the actual form of the *wh*-determiner, there are basically only the types of *wh*-determination argued for in this thesis. This result is corroborated by facts involving aggressively non-D-linked *wh*-phrases and prepositional *wh*-phrases in the third and fourth section of chapter 2. The data support my proposal from chapter 1 that the DL-S effects observable with DWH are triggered by structural properties of the *wh*-determiners heading DWH.

In chapter 3, I will discuss two of the triggers for DL-S introduced in section 1.2 and section 1.4. I will begin with presuppositionality in the first section, and argue that although presuppositions projected by the NR are important for triggering DL-I, they do not directly influence DL-S. Then, the ambiguity of Amount-whs is examined and the conclusion reached is that there are two #P projections: A NumP in the ClassP layer and a CardP in the PhiP layer.

In the second section of chapter 3, I proceed to the structurally represented notions of definiteness and specificity and see how these can help us capturing the *wh*-determiner typology proposed here. Token-*wh*s are argued to be necessarily specific.

The third section of chapter 3 begins with a discussion on how the term 'topic' should be understood to make the idea plausible that one type of D-linking can be explained by recourse to topicality. I will provide empirical evidence for the existence of *wh*-topics in general and for the claim that one type of DWH can be construed as *wh*-topics. After the introduction of the relevant empirical data, I discuss formal implementations of this link and how the results can explain some of the phenomena subsumed under DL-S in the fourth section of chapter 3.

In chapter 4, I examine the general pattern on which *wh*-pronouns are built, and it is argued that the result bears directly on the topic of this thesis since *wh*-determiners are universally derived from pronouns. *Wh*-pronouns are diachronically built out of an element indicating the function of the proform (*wh*-morpheme), and an element denoting the range of the proform (Range Restrictor).

In the second section, I will show that the *wh*-morpheme does not mark interrogativity, and argue for adopting Q-theory (Cable 2010). I will also briefly touch upon the issue whether the results in this thesis are compatible with the hypothesis that *wh*-determiner phrases are Small Clauses. One claim is that all *wh*-pronouns are fossilized interrogative sentences, lending further support to the parallelism between sentential and nominal structures proposed in Abney (1987). So the findings in this thesis further support the idea that the sentential and the clausal domains are structured in parallel (cf. Abney 1987).

In section 3, it is then argued that Morphological Restrictors can be subdivided in Formal Features and Functional Nouns, and that elements which can become Functional Nouns are taken from the pool of Basic Ontological Categories. The question I will answer in this chapter is how these elements synchronically contribute to the meaning of the *wh*-determiners. After I examine the role of the Nominal Restrictor to the syntax of *wh*-determiners, I will also investigate how Nominal Restrictors are related to Functional Nouns (and Morphological Restrictors in general).

The final section of chapter 4 expands the discussion on the structural correlates for DL-S effects. I demonstrate how the results can be applied to *wh*-split constructions, and also sketch how they could be implemented formally to explain differences between empty categories. But the most relevant structural point discussed is partitivity as a structural trigger for DL-S. The result of the section on partitivity corroborates the idea that the occurrences of most of the DL-S effects I discussed in this dissertation seem to

strongly depend on the presence of a second nominal constituent in the structure of *wh*-phrases. This second nominal can be either a FN inside the *wh*-item used as *wh*-pronoun or an overt second noun as in wh-partitive phrases.

Chapter 5 closes the dissertation off by a summary of the preceding chapters. It also discusses the results reached, and finally open questions and areas for future research are listed.

2. Types of *Wh*-Determiners and their Relation to DL-Syntax

In this chapter, I will show that (i) *which*-phrases as the canonical DWH show the special syntax I labelled DL-Syntax (DL-S) in chapter 1, and (ii) that there are systematic differences between the two types of *wh*-determiner phrases which I labelled Token-*wh* and Kind-*wh*. I argue that this distinction is encoded in the morphosyntax of the *wh*-item used adnominally. As Token-*wh*s tend to be DWH and Kind-*wh*s become DWH only under certain conditions, the conclusion I reach in this chapter is that the DL-S effects observable with DWH are triggered by structural properties of the *wh*-determiners heading DWH. No explanations for which type of DWH triggers which type of DL-S effects will be given. This task is postponed until the following chapters.

2.1 The DL-Syntax of *Which*-Phrases

As *which*-phrases are prototypical instances of DWH I will start with illustrations of these effects of DL-S using *which*-phrases. The best-known DL-S effects are: (i) lack of superiority effects; (ii) ability to escape weak islands; (iii) licensing of resumption; (iv) obviation of WCO-effects; (v) inability to appear in existential sentences; and (vi) ability to stay in-situ (other DL-S effects will be introduced throughout this dissertation).[1]

2.1.1 Superiority Effects

I will start with superiority, illustrated for English in (1a). As (1b) shows, DWH are exempt from this constraint:[2]

[1] The exceptional status of *which*-phrases has been noted as early as Wasow (1972), and Bolinger (1978), who already discuss their behavior with regard to WCO and Superiority; see also Kartunnen (1977).
[2] The phenomenon was first observed for English by Kuno & Robinson (1972:474), who noted that "a wh-word cannot be preposed, crossing another wh (element)"; see also Fiengo (1980), and Guéron & May (1984).

(1) a. ***What***$_i$ did **who** see t_i?

b. [**Which movie**]$_i$ did **which boy** see t_i?

The term 'Superiority' for the phenomenon in (1a) is introduced in Chomsky (1973:101) and is defined there as follows:

(2) *Superiority Condition*

No rule can involve X, Y in the structure

…X…[a …Z…WYV…]…

where the rule applies ambiguously to Z and Y, and Z is superior to Y.

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.

Rudin (1988) notes that the order restrictions some multiple *wh*-fronting languages (MWFL) impose on their *wh*-phrases resemble the conditions on *wh*-fronting in languages like English, and Lubanska (2005:38) concludes that "there is a parallel between possible orders of fronted *wh*-phrases in languages like Bulgarian and Romanian and the Superiority effects in languages like English". Regardless of how superiority manifests itself in a given language, central to our discussion is that an ungrammatical sentence becomes grammatical once we replace bare *wh*-words with *which*-phrases. The following examples illustrate this effect for Bulgarian (Richards 2001:89):[3]

(3) a. ***Kogo***$_i$ ***koj***$_j$ t_j e vidjal t_j?

whom who AUX saw

'Who saw whom?

b. ?[***Koja kniga***]$_i$ [***koj profesor***]$_j$ t_j *e* *vidal* t_i?

which book which professor AUX saw

'Which professor saw which book?'

[3] In Bulgarian, subject *wh*-phrases are superior and the other *wh*-phrases order freely (Lambova 2003):

(i) a. *Koj **kakvo na kogo** e kazal*?
who what to whom did said

b. *Koj **na kogo kakvo** e kazal*?
who to whom what did said

'Who said what to whom?'

I will come back to superiority data and discuss them in more detail in section 3.4.

2.1.2 Escape Weak Islands

Another well-known property that sets DWH apart from other *wh*-phrases is their ability to escape weak islands (eWI; cf. Starke 2001). Weak islands are structures that prohibit movement out of themselves except for certain elements like DWH.[4] The contrast in extraction possibilities between regular *wh*-phrases and DWH is illustrated for English in (4), for Swedish in (5), for Bulgarian in (6) (cf. Maling 1978; Engdahl 1980a, b; Kraskow 1991):

(4) a. *[**What**]$_i$ does John wonder [$_{\text{ISLAND}}$ whether Mary likes t_i]?
b. [**Which dress**]$_i$ does John wonder [$_{\text{ISLAND}}$ whether Mary likes t_i]?

(5) a. ****Vad** *visste ingen* [$_{\text{ISLAND}}$ *vem som skrev*]?
'What did no one know who wrote?'
b. ***Vilka** *böcker mindes alla studenter* [$_{\text{ISLAND}}$ *vilken författare som skrivit*]?
‚Which books did all the students remember which authors had written?'

(6) a. ****Kogo** *si se chudil*, [$_{\text{ISLAND}}$ *koj e vidjal*]?
'Whom were you wondering who saw?'
b. ***Koj** *zhena si se chudil*, [$_{\text{ISLAND}}$ *koj e vidjal*]?
'Which woman were you wondering who saw?'

Sometimes, it is claimed that the superiority data and the eWI data can be subsumed under the same constraint (for example, that the data in (5) and (6) are in between superiority and weak islands), and I will discuss this issue in chapter 5. No matter what the outcome of this debate will be, it is a fact that DWH extract easily out of weak islands. The following examples (from Bošković 2008:14-15) illustrate that this

[4] Depending on the element inducing the island, weak islands can be subdivided. Szabolcsi (2006:492) notes that *wh*-islands are the paradigmatic and maybe only case of weak islands (cf. Huang 1982; Lasnik & Saito 1984; Chomsky 1986). In this thesis, "weak island" is to be read as meaning "*wh* island".

phenomenon is attested in a wide array of languages (Albanian, Hebrew, Norwegian, and Icelandic, respectively):[5]

(7) a. ***Cil-ët libra*** *pyet veten se kush shet*?
'Which-the books do you ask yourself who sells?'
b. ****Çfarë*** *pyet veten se kush shet*?
'What do you ask yourself who sells?'

(8) a. ***Eyze sfarim*** *ata tohe mi moxer*?
'Which books do you wonder who sells?'
b. ****Ma*** *ata tohe mi moxer*?
'What do you wonder who sells?'

(9) a. ***Hvilken film*** *var det gu gjerne ville vite hvem som hadde regisert*?
'Which film did you want to know who had directed?'
b. ****Hva*** *spurte Jan hven son skrev*?
'What did John ask who wrote?'

(10) a. ***Hvaða mynd*** *var það sem þú vildir gjarnan vita hver hefði stjórnað*?
'Which film did you want to know who had directed?'
b. ****Hvað*** *spurði Jón hver hefði skrifað*?
'What did John ask who wrote?

Cases involving weak islands will play an important role throughout this thesis. See especially chapter 3 and section 4.4.

[5] *Which*-phrases also seem to have more extraction possibilities in classical subjacency-cases, as the following examples from Kiss (1993:96, fn2) illustrate:

(i) a. *?**What**$_i$ did you hear [a rumour that he bought t_i]?
b. ?[**Which house**]$_i$ did you hear [a rumour that he bought t_i]?

I doubt that the defiance of (ia) is due to a subjacency violation, and argue that it is due to the indefinite character of the DP out of which extraction takes place. Note the following contrast (Polinsky 2005):

(ii) a. ***Who** did she say [there was [**A** rumor that they hired]]?
b. ?**Which professor** did she say [there was [**A** rumor that they hired]]?
c. ?/***Who** did you hear [**THE** rumor that they hired]?
d. **Which professor** did you hear [**THE** rumor that they hired]?

2.1.3 Licensing of Resumption

DWH are also known for being special among *wh*-phrases in being able to license resumption in languages which have e-g- resumptive clitics. The Romanian examples in (11) from Kraskow (1991) illustrate the relevant aspect of this DL-S effect: the improvement of an illicit structure by substituting a bare *wh*-phrase by a DWH is sometimes accompanied by the presence of a resumptive element.[6] This holds for e.g. eWI, as the following Romanian data illustrate:

(11) a. ****Pe cine*** *nu ştii* [$_{\text{ISLAND}}$ *cine a văzut*]?
'Whom don't you know who saw?'

b. ***Pe care femeie*** *nu ştii* [$_{\text{ISLAND}}$ *cine a văzut-o*]?
'Which woman don't you know who saw her?'

The improvement of otherwise illicit orders of *wh*-phrases by resumption is not confined to islands. It also shows up in superiority-violating cases where there are only regular *wh*-phrases present. This is illustrated by the Romanian data in (12), where all *wh*-phrases have been extracted out of the subordinate clause, and the clitic-resumed indirect object-*wh* precedes the direct object-*wh* (from Comorovski 1986):[7]

(12) *Cine*$_i$ ***cui***$_k$ *ce*$_j$ *ziceai că* t_i *(***i***$_k$-)*a* *promis* t_j t_k*?*
who to-whom what you-said that to-him-has promised
'Who did you say promised what to whom?'

Even without superiority-, or island-configurations, languages which regularly clitic-double fronted arguments in non-interrogative contexts double *which*-phrases, while

[6] I propose to assimilate resumptive pronouns and clitic-doubling; cf. Kallulli (2008:235): "The term resumption here is used broadly, to include […] the phenomenon of clitic doubling as well". The resumptive is transformationally related to its antecedent inasmuch as an additional element in the structure of doubled phrases is spelled-out as a resumptive (cf. Boeckx 2003; Boeckx & Grohmann 2004).

[7] Romanian *wh*-phrases normally obey superiority (Rudin 1988):

(i) a. ***Cine ce*** *a văzut*
who what has seen
'Who saw what?'

b. ****Ce cine*** *a văzut*
what who has seen
'What did who see?'

other *wh*-phrases are normally not doubled (cf. Doron 1982; Sharvit 1999:591). In the southern Slavic languages and Romanian, specific nominals (marked by *pe* in Romanian) are systematically doubled (see section 3.2).[8]

The situation that *which*-phrases license resumption while other *wh*-phrases do not has been reported e.g. for Romanian (Dobrovie-Sorin 1991:352), Hebrew (Boeckx & Grohmann 2004:7), and Albanian (Kallulli 2009:208):

(13) a. ***Pe care*** (___/*baiat*) *(*l-*)*ai* *vazut*?
PE which (one/boy) him-have (you) seen?

b. ***Pe cine*** (**l-*)*ai* *vazut*?
PE who him-have (you) seen?

(14) a. ***Mi** nifgaSta it-**o***?
who you.met with-CL?

b. ***Eyze student** nifgaSta it-**o***?
which student you.met with-CL?

(15) a. ***Çfarë*** (***e***) *solli* *Ana*?
What 3SG.CL.ACC brought Ana.NOM
'What did Ana bring?'

b. ***Cil-in libër*** (***e***) *solli* *Ana*?
Which-the.ACC book 3SG.CL.ACC brought Ana.NOM
without clitic → 'Which book did Ana bring?'
with clitic → 'Which is the book that Ana brought?'

As the Albanian data in (15b) suggest, it is not the case that resumption is obligatory with *which*-phrases.[9] It is rather the case that the presence of a resumptive element correlates with a certain interpretation. In cases in which the resumptive clitic is absent, we can witness a change in meaning as indicated by the translations. Strikingly, a clitic-doubled *wh*-phrase has to be fronted in Albanian (Kallulli 2009:209-210) in contrast to

[8] Bianchi (2008) claims that clitic-doubling/resumption involves a "specific/D-linked" element as double.
[9] It could be that (15) is a relative clause construction (cf. section 4.1). Kallulli proposes a bi-clausal analysis for (15b), based on the assumption that this is a cleft-structure. I will come back to the sentential aspects of the syntax of certain (complex) *wh*-phrases in section 4.2.

a non-doubled *wh*-phrase which can remain in-situ as the difference in grammaticality between (16a) and (16b) shows:

(16) a. *Ana solli **cil-in** libër*?
Ana.NOM brought which-the.ACC book
'Ana bought which book?'

b. **Ana **e** solli **cil-in** libër*?
Ana.NOM 3SG.CL.ACC brought which-the.ACC book
'Ana bought which book?'

In the following data from Romanian (Dayal 1996:129), it is nevertheless the case that no resumptive clitic appears with bare *care*-phrases. This shows that it is not necessarily the *wh*-determiner which triggers the clitic-doubling. We will come back to resumption in section 4.3 (see section 2.5 for discussion of prepositional *wh*-phrases):

(17) a. [***Despere care***$_i$ cine$_i$ [t_j *ti -a vorbit* t_i]]?
about which who to.you-have told?'
'Who told you about which one?'

b. [***Pe care***$_i$ [*nu stii* [*cine*$_j$ [t_j *a cumparat-o*$_i$ t_i]]]]?
PE which not know-you who have brought-her?
'Which don't you know who bought?'

I take this to show that resumption itself is not triggered by DL-I, but rather that in some languages, the properties of nominals which trigger DL-S are the same as the ones triggering resumption in these languages.

2.1.4 Obviation of WCO

The fourth DL-S effect I turn to now is the obviation of WCO-effects by DWH. Interesting from the perspective of our discussion is that in some cases where a DWH obviates a WCO-effect, we also observe resumption (Boeckx 2003:152-155). For

example, May (1985:156) reports the following facts from Irish, where the use of a *which*-phrase together with a resumptive renders a WCO-configuration acceptable:[10]

(18) a. [***Cén fear***]$_i$ *a sábháil* [a_i *mháithair*] ***e***$_i$?
Which man aN saved his mother him
b. *[***Cén fear***]$_i$ *a sábháil* [a_i *mháithair*] t_i?
Which man aN saved his mother him
'Which man did his mother save?'

Similarly, in Albanian the obviation of WCO-effects by DWH is only possible if the DWH is taken up by a resumptive element (Kallulli 2009:209-210):

(19) a. ***Cil-in djalë***$_i$ *pa nëna e tij*$_i$?
which-the.ACC boy saw.3SG mother AGR his
'Which boy did his mother see?'
b. *Cil-in djalë*$_i$ *e pa nëna e tij*$_i$?
which-the.ACC boy 3SG.CL.ACC saw.3SG mother AGR his
'Which boy is such that his mother saw him?'
'Which boy is the one that his mother saw?'

But the obviation of WCO by DWH can also appear without overt resumption, even in languages which make use of resumption, indicating once more that resumption itself is not directly related to D-linking (Polish data from Lubanska 2005:76):

(20) a. ***Kogo***$_i$ [*jego*$_i$ matka] kocha t_i?
who.ACC his mother loves
‚Who$_i$ does his$_i$ mother love?'
b. ?[***Które dziecko***]$_i$ [*jego*$_i$ rodzice] kochają t_i?
which child.ACC their parents love
‚Which child$_i$ do their$_i$ parents love?'

[10] WCO is poorly understood and notoriously rejects a satisfactory account, thus I will not have much to say about it. Nevertheless, the WCO facts clearly show that DWH are special among *wh*-phrases.

(i) *Definition of WCO in Terms of C-command*
A WCO-effect arises if an operator binds two variables that do not c-command each other.

As with the other DL-S effects, this one can also be detected in a wide range of languages, illustrated for Romanian (Dobrovie-Sorin 1991:357-358), Bulgarian (Kraskow 1991:162), Swedish (Engdahl 1980), Italian (Delfitto 1990), and Japanese (Pesetsky 1987, fn23):

(21) a. **Pe* ***cine***$_i$ *a certat mama lui*$_i$*?*
'Whom$_i$ did his$_i$ mother scold?'
b. *Pe* [***care băiat***]$_i$ *l*$_i$*-a certat mama lui*$_i$*?*
'Which boy$_i$ did his$_i$ mother scold?'

(22) a. ****Kogo***$_i$ *udari majka mu*$_i$*?*
'Whom$_i$ did his$_i$ mother scold?'
b. ***Koe momche***$_i$ *udari majka mu*$_i$*?*
'[Which boy]$_i$ did his$_i$ mother scold?'

In the following examples, the configuration in which the constituents relevant for our discussion are is different slightly from the one in the examples I discussed until now. In (23) to (25), the pronoun is located inside a relative clause.[11] Regardless of these issues, these examples illustrate the effect of *which*-phrases on the grammaticality of WCO-configurations:

(23) a. ****Vad***$_i$ *tyckte de flesta som sett det*$_i$ *bra om?*
'What$_i$ did most people who had seen it$_i$ like?'
b. ***Vilken film***$_i$ *tyckte de flesta som sett det*$_i$ *bra om?*
'[Which movie]$_i$ did most people who had seen it$_i$ like?'

(24) a. ??***Chi***$_i$ *pensi che la donna cho lo*$_i$ *ama abbia tradito?*
'Who$_i$ do you think that the woman who loves him$_i$ betrayed?'
b. ?***Quale studente***$_i$ *pensi che la donna che lo*$_i$ *ama abbia tradito?*
'[Which student]$_i$ do you think that the woman who loves him$_i$ betrayed?'

[11] Thanks to Eric Fuß (p.c.) for reminding me to point out this difference; see section 4.1.

(25) a. **Mary-ga sono hito*$_i$*-o semeta koto-ga* ***dare***$_i$*-o*
Mary-NOM that person-ACC criticized fact-NOM who-ACC
odorokaseno?
surprised
'That fact that Mary criticized [that person]$_i$ surprised whom$_i$?'

b. *Mary-ga sono hito*$_i$*-o semeta koto-ga* ***dono hito***$_i$*-o*
Mary-NOM that person-ACC criticized fact-NOM which man-ACC
odorokaseno?
surprised
'That fact that Mary criticized [that person]$_i$ surprised [which man]$_i$?'

The WCO facts are often used to argue for the claim that *which*-phrases lack operator properties (e.g. Kraskow 1991; Wiltschko 1997; this is also to result reached by Pesetsky 1987). A problem for this claim is that it is at odds with the widely accepted assumption that all *wh*-constructions involve an operator-variable dependency (see section 3.2). A possible way out of this conundrum is to adopt the claim that the element left behind by DWH is not an ordinary variable, but *pro*.[12] Related to this are proposals which try to reduce the superiority facts to cases of WCO (Chierchia 1991, Hornstein 1995). Following Lasnik & Stowell (1991), the authors just cited proposed two types of "traces" for elements which trigger WCO and elements which do not trigger WCO. Falco (2007) concludes that (26a) is to (26b) what (26c) is to (26d):[13]

(26) a. ***What**$_i$ does **who** like t_i?
b. [**Which woman**]$_i$ does [**which man**] like t_i?
c. ***Who**$_i$ does [**his**$_i$ mother] admire t_i?
d. [**Which boy**]$_i$ does [**his**$_i$ mother] admire t_i?

I will discuss these proposals and the idea that DWH leave behind a special type of empty category in section 4.4.[14]

[12] Kraskow (1987, 1991) proposes that null objects in Bulgarian have the same trigger as "D-linking".
[13] But see Haider (2000:243) for arguments against collapsing superiority- and WCO-contexts.
[14] In English this contrast is normally absent. But as (i) shows, WCO-obviating effects sometimes occur in English (van Craenenbroeck 2008:4):

(i) ?Which grade did [***his***$_i$ teacher] give to [***which student***]$_i$?

2.1.5 Inability to appear in Existential Sentences

Another empirical domain where *which*-phrases show a different behavior then regular *wh*-phrases is the frequently reported inability of DWH to appear in existential sentences (ES), illustrated here for English:

(27) a. **What** is there in Austin?
b. **Who** was there {in Austin / drunk}?
c. ??**Which one of the two men** was there {in the room / *drunk}?
d. ??**Which actors** were there {in the room / *laughing}?

The same effect obtains in Norwegian (Vangsnes 2006a:1):

(28) a. ***Hva*** *ligger* (*det*) *på bordet*?
What lies EXPL on table-DEF
b. ***Hvilken bok*** *ligger* (**det*) *på bordet*?
Which book lies EXPL on table-DEF

The ES facts together with the resumption data are often used as arguments for the claim that DWH are definite while regular *wh*-phrases are standardly analyzed as indefinites. This issue will be discussed in section 3.2, where we will see that things aren't that simple, and where I argue that it is really specificity which is at work here.

2.1.6 *Which*-Phrases in-situ

All of the empirical facts discussed so far illustrate situations where DWH have more movement-possibilities then other *wh*-phrases. This conjecture receives further support from cases in which substituting a moved bare *wh*-phrase with a *which*-phrase renders a

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Wasow (1972) originally noted differences in grammaticality with different *wh*-elements, i.e. he did not star examples like (ia), but marked them with a question-mark. One rare example of an English sentence argued to show differences in grammaticality is the following from Culicover & Jackendoff (1995):

(ii) a. [Which famous senator]$_i$ did [his$_i$ constituents] despise?
b. ??Who$_i$ do [his$_i$ constituents] despise?

construction acceptable, as is the case when we substitute English *wh*-adverbs like *how* with the corresponding *wh*-determiner phrase (van Craenenbroeck 2008):[15]

(29) a. *__How__ did he say he behaved?
b. **Which way** did he say he behaved?

Complicating any account of DL-S is the paradoxical fact that at least in some languages, *which*-phrases can stay in-situ, as in the following examples from Serbo-Croatian (Reglero 2003:199), English (Reinhart 1998:31, 44), and Bahasa Indonesia (Sato & Yuliani 2008); cf. Wachowicz (1974), Pesetsky (1987), and Bošković (1997):[16]

(30) a. *Ko je kupio **koju knjigu***?
who is bought which book
'Who bought which book?'
b. **Ko je kupio **šta***?
who is bought what
'Who bought what?'

(31) a. **Who fainted when you behaved **how***?
b. *Who fainted when you behaved **what way***?

(32) a. **Esti mem-beli buku **bagaimana***?
Esti TR-buy book how
'How did Esto buy a book?'
b. *Esti mem-beli buku **dengan cara apa***?
Esti TR-buy book with way what
'In what way did Esti buy a book?'

[15] It is not always the case that the insertion of a *which*-phrase renders sentences grammatical which would be rejected if a regular *wh*-adverb is used (Kiss 1993:90); but note the grammaticality difference:

(i) a. *__Why__$_i$ would you like to know who was fired t_i?
b. ?* [**For which reason**]$_i$ would you like to know who was fired t_i?

[16] DWH can also remain in-situ in Polish (cf. Dornich 1995, Lubanska 2005).

We can even observe this phenomenon in Hungarian, a language where *which*-phrases normally do not show any of the other DL-S effects like eWI (Surányi 2006:300):

(33) a. **Ki jot el* ***miert***?
who came along why
'Who came along why'

b. **Ki viselkedett* ***hogyan***?
who behaved how
'Who behaved how?'

c. *Melyik erkezett* ***melyik modon***?
which-NOM arrived which way-on
'Which one arrived in which way?

The in-situ data together have been used to argue for a non-movement approach to the syntax of *which*-phrases. Pesetsky (1987:108) even argues that DWH do not even move at LF and concludes that they are not quantifiers in an A'-position. This position is filled by a silent operator unselectively binding all *wh*-phrases (cf. Baker 1970):

(34) $[_{CP}\,[_{C}\,Q_{i,j}$ ***which man***$_i]$ $[t_i$ *read* ***which book***$_j]$.

Although this approach appears to be attractive, I side with Baltin (1996:251), who points out that Pesetsky's analysis of DWH in terms of non-movement is at least dubious, since there are numerous examples involving DWH showing overt syntactic movement. In addition, we are left puzzled why other *wh*-phrases should not have this option at their disposal (cf. Shields 2008).

There are a number of other empirical domains where we can detect differences between *which*-phrases (DWH) and other *wh*-phrases, and we will discuss some of them throughout the dissertation. Having established that *which*-phrase and their cognates in other languages systematically show what I call DL-S, in the next section we turn to the second type of *wh*-determiner phrase argued for in this thesis, namely Kind-*wh*s.

2.2 Differences between Token and Kind *Wh*-Determiners

In this section, we turn to another type of *wh*-determiner phrase, and see how these behave in relation to the DL-S phenomena discussed in the preceding section. I demonstrate that prototypical instances of what I label Kind-*wh*s have a different syntax than Token-*wh*s.

2.2.1 The Basics of the Token-Kind Dichotomy

To start, recall the threefold *wh*-determiner typology introduced in chapter 1, and repeated here as (35):

(35) *The three Main Types of* Wh-*Determiner-Phrases*

a.	TOKEN-WH	→	*which* NP
b.	KIND-WH	→	*what (kind of)* NP
c.	AMOUNT-WH	→	*how many* NP

The opposition between phrases of the type (35a) and phrases of the type (35b) reflects fundamental aspects of how grammar categorizes objects and expresses this categorization in the representation of nominal elements. It is reflecting a universal linguistic division in the nominal domain, namely the one between Token-nouns and Kind-nouns.[17] As I have already claimed in chapter 1, I propose that the triggers for the token-reading of *wh*-phrases are the same as the triggers for DL-S effects. We will see that Kind-*wh*s can show DL-S, but do so only under special circumstances (including overt marking for specificity or partitivity).[18]

It has been noted that nouns can denote either a set of individuals (tokens) or a set of kinds (Carlson 1980:330ff.). See e.g. Heine, Claudi & Hünnemeyer (1991:69), who observe that "[a] distinction is made, respectively, between concepts in their token and concepts in their type value". A determiner can take as an argument either a set of individuals or a set of kinds:

[17] There is sometimes made a distinction between KIND, SORT, and TYPE, but I follow Alrenga (2009:52-54) in arguing that "the distinction between types and natural kinds is a sortal distinction not an ontological one", therefore I will only use KIND.

[18] The ambiguity of Kind-*wh*s has been noted by e.g. Haider (2000:233): "The wh-phrase [*was für Radios*] can get a group reading equivalent to "which radios" alternative to the kind-of reading".

(36) a. Two birds have just flown away. → two TOKENs of birds flew away.
b. Two birds are extinct. → two KINDs of birds are extinct.

As it stands, (36) appears to be a counter-argument to the claim that token and kind are represented inside the functional layer of noun phrases, since we do not see any overt marking on the nouns in (36) that can be the source of this distinction. But such a situation is not unknown to linguists. Take for example the specific/non-specific readings of indefinites in languages like English, where we cannot detect any overt morphological differences between the two readings. The following sentence is a typical illustration of this dichotomy (from Haspelmath 1997:37):[19]

(37) Nobuko wants to marry a native speaker of Ainu.
a. …she fell in love with him during fieldwork sessions. →SPECIFIC
b. …because she is Ainu herself, and she wants her children to acquire her ancestors' language. →NON-SPECIFIC

But still, in a number of cases we do find overt markers for specificity. One example is the case with Romanian *pe* (cf. section 2.1), that will be discussed at length in section 3.2 (cf. also *certain* in English). Thus, it is plausible to postulate something like a SpecificP even in the cases we do not see overt marking for specificity but (syntactic) effects of such a specificity-marking, and I propose to apply a similar reasoning to the token-kind distinction. When we can detect morphological markers with the *wh*-determiners triggering the token-reading and triggering the Kind-reading in some languages, I conclude that there are similar phonetically null markers in other languages.

At this point, it is important to stress that I do not make the strong claim that the token-kind distinction is expressed by designated projection one could label TokenP or KindP. Rather, it appears to me that kind is the default reading and token is triggered by projections/features in the functional structure of noun phrases which express

[19] Under the view that the readings in (37) are distinguished by assigning different scope relations to the existential quantifier believed to be a necessary part of the semantic interpretation of these sentences, the two readings can be captured by the following formulae:

(i) a. *de-re*: (∃: Ainu x) (Nobuko **wants** to marry x)
b. *de-dicto*: Nobuko **wants** (∃: Ainu x)(Nobuko to marry x)

"referential" properties of nouns (the DP-layer introduced in section 1.4). Thus, the Token-Kind distinction can manifest itself in different ways, leading to a wide array of possible markings (and typologies):

(38)

KIND		*TOKEN*
mass	vs.	count
indefinite	vs.	definite
non-specific	vs.	specific
non-topic	vs.	topic

What is crucial for my analysis is that all the features in the left column have been independently argued to be the default (unmarked) value of nouns, i.e. they do not need the presence of a designated projection to arise.[20] For example, Longobardi (1991, 2000) argues that mass and indefinite are unmarked values on the basis of the observation that there are no languages with just bare singulars, only languages which also have bare plurals and bare mass nouns, and also, that we find many determiner-less indefinite nouns, but never determiner-less definite nouns in languages which possess determiners as understood here (cf. Latin and Slavic for examples of bare definite nouns).[21]

I thus follow Borer (2005) in arguing that „kind and mass-noun interpretations are the default interpretation of nouns", and also claim (i) that the Token-reading needs additional functional projections to arise, and (ii) that if a language distinguishes between Token-*wh*s and Kind-*wh*s, the projections spelled-out by Token-*wh*s are hierarchically higher than the ones spelled-out by Kind-*wh*s:[22]

(39) *Token-Marking Generalization*

Whenever a language makes the Token-Kind distinction, it is expressed by additional functional material on the Token-items, which can be overt or null.

[20] (Jackendoff 1983:78) notes: "We will refer to the representation of the thing being categorized as a [TOKEN] and that of the category as a [KIND] concept".
[21] Thanks to Helmut Weiß (p.c.) for making me aware of this qualification of Longobardi's claim.
[22] In chapter 4, I will claim that Kind-*wh*s lack all the projections above ClassP. And also, I claim in chapter 3 and chapter 4 that one of the two #P projections (NumP) I argue for is also part of the ClassP layer. Note that this is not fully incompatible with the ideas voiced in the text.

Take for example Manipuri, where *kerembe* 'which' incorporates the morphemes *mbe* and *keri* 'what', which by itself contains the PFM *ke-* and the RR *ri* (Bhat 2004:170). Another example for (39) is the case of Icelandic, *hvaða* 'which' can be decomposed into *hvað* 'what' plus suffix *–a* (Vangsnes 2008a):

(40) a. ***Hvaða*** ***bát*(*a***) *keyptir þú*?
What.AFF boat(s) bought you
'Which boat(s) did you buy?'

b. ***Hvaða*** ***bill*** *er thinn*?
What.AFF car is yours
'Which car is yours?'

Vangsnes also reports that, on the one hand, the token-reading in Scandinavian is a very restricted reading for *wh*-items: Only one *wh*-item in a given variety can be used to express it, and no other reading is available for this particular *wh*-item in the majority of cases. On the other hand, the kind-reading can be expressed by different *wh*-items at a synchronic stage, and the range of *wh*-items that can be used to form Kind-*wh*-phrases is broader than for Token-*wh*s.

When Kind-*wh*s acquire a token-reading, there is often a subsequent loss of the kind-reading (see also Haspelmath 1997 for similar observation). For instance, Norwegian/Swedish *(h)vilken* 'which' stems from the Kind-*wh* *hvilikr* which itself comes from *hvi-likr* 'what-alike', and the same is true about *which* and *welch*: at older stages, they only had a kind-reading (Vangsnes 2006b). Given the development of Kind-*wh*s into Token-*wh*s, Vangsnes (2008a:230) concludes that "[a]dnominal wh-expressions are subject to a grammaticalization cycle whereby modification is extended to determination" (see also Vangsnes 2006b, 2008b). Against the background of the "gradualism of D-linking" I discussed in section 1.4, I propose the following, related grammaticalization path of *wh*-items (see also section 4.2):

(41) *wh*-pronoun → Kind-*wh* → Token-*wh*

Not all languages have a distinct set of lexemes for Token- and Kind-*wh*s, respectively. In Romance, the distinction seems to be less clear-cut than in Germanic, and this could

be explained by appealing to the stage on the grammaticalization path it occupies (cf. Latin *qualis* queried for kind like the Germanic *wh*-items based on **lika*; cf. Vangsnes 2008a:245). For example, the Italian *wh*-determiner *che* can head Token- or Kind-*wh*s, depending on context, and French *quell* 'what, what kind of, which, who' can also be used to ask for Token or Kind. Compare the following examples taken from Comorovski (2004:131):[23]

(42) a. [***Quels contes de fees***] *a-t-elle lus*? →TOKEN
'Which fairy tales has she read?'

b. [***Quels oiseaux***] *vivent dans ces forêts*? →KIND
'What (kinds of) birds live in these woods?'

In many cases, external factors trigger one reading or the other, but it is not always the case that such a trigger can be identified and as (43) shows, ambiguities arise:[24]

(43) *Dans* ***quel restaurant*** *irez-vous ce soir*?
in what restaurant will.go-you this night
a. '*Which* restaurant will you go to tonight?'
b. '*What kind of* restaurant will you go to tonight?'

Bare *quell* in French allows both readings freely (Comorovski 2004:137, fn6), and I take this to support the claim that the ambiguity is not triggered by properties of the NR:

(44) Q. ***Quelle*** *est* ***cette voiture***?
what is this car
A1: *C'est la voiture de ma soeur.*
'It's my sister's car.'
A2: *C'est une Renault.*
'It's a Renault.'

[23] The properties of present day *quell* are a rather recent innovation. Comorovski (2004:134, fn4) gives provides examples from classical French showing that as late as 1781, it was used only to query for kind.

[24] D-linked *quell* receives an interpretation equivalent to the compound Token-*wh lequelle* 'the.which' (Comorovski 2004). *Lequelle (*attested since the 11th century) is thus another example for (39):

(i) [***Quelle fille***] *etait la plus belle des trois*? →TOKEN
'Which girl was the prettiest of the three?'

(45) Q: ***Quel*** *est* ***cet homme***?
What/who is this man
A1: (*C'est*) *mon garagiste*.
'(It's) my mechanic.'
A2: *C'est un très bon médecin*.
'It's a very good doctor.'

Next, I provide data that I take to show that the Token-Kind distinction is ubiquitous in the domain of *wh*-determiners. The examples in the following subsections are examples that illustrate how the token-kind distinction has systematic repercussions on the syntax of *wh*-determiners.

2.2.2 Superiority with Kind-*Wh*s

I again begin with superiority data. As (46) shows, English *what*-phrases show superiority-effects (data from Boeckx 2003:190, fn15):

(46) a. *[**What book**]$_i$ did [**what school**] order t_i?
b. [**Which book**]$_i$ did [**which school**] order t_i?

A similar effect is illustrated by the following data from Kiss (1993:85), where exchanging the *wh*-determiners improves the status of the sentence (cf. section 3.4):

(47) a. ???[**What person**]$_i$ do you wonder [**which present**] to give to t_i?
b. [**Which person**]$_i$ do you wonder [**what present**] to give to t_i

Strikingly, although superiority-effects normally do not arise with bare *wh*-pronouns in simple sentences in German, they do arise with *was für ein* (cf. Wiltschko 1997b:435):[25]

(48) a. ***Was***$_i$ *hat* ***wer*** t_i *empfohlen*?
what had who recommended
'What did who recommend?'

[25] The lack of superiority in German can be explained by recourse to the notion of *wh*-Topic as in Grohmann (1998; 2006); see sections 4.3 and 4.4 for extensive discussion of this type DWH.

b. [***Welches Buch***]$_i$ *hat* [***welcher Dozent***] t_i *empfohlen*?
which book had which lecturer recommended
'Which book did which lecturer recommend?'

c. ??[***Was für ein Buch***]$_i$ *hat* [***was für ein Dozent***] t_i *empfohlen*?
what for a book had what for a lecturer recommended
'What book did what lecturer recommend?'

2.2.3 No Resumption with Kind-*Wh*s

Regarding resumption, the following Romanian data (Dobrovie-Sorin 1994:197-198) show that while *care* 'which' is taken up by a resumptive clitic, this does not hold for *cine* 'who' in all cases, and (most relevant for our discussion) never for *ce N* 'what N':

(49) a. *Pe* ***cine*** (**l*)*-ai vazut*?
PE who him-have (you) seen

b. ***Ce*** (***roman***) (**l*)*-ai citit*?
What (novel) it-have (you) seen

c. *Pe* ***care*** (***baiat***) *(*l*-)*ai vazut*?
PE which (boy) him-have you seen
'Which boy did you see?'

d. **Ce elev** (*l)-ai putea tu suporta
what student (him)-have could you stand
'What student could you stand?'

These examples demonstrate that animacy does not seem to be relevant for DL-S. This is surprising given the standard claim in the literature that there are animacy effects with *wh*-phrases. For example, Billings & Rudin (1996:46) claim that in Bulgarian, animated subjects must appear first in a *wh*-cluster, and Blaszczak & Fischer (2001:58) report that in case there is a clitic with an animated object, it must (and is not just preferred to) appear first:

(50) a. ?? *Kakvo* ***na kogo*** *mu* *xaresva*?
what-NOM to whom-DAT CL-DAT.3SG is-pleasing

b. ***Na kogo*** *kakvo* *mu* *xaresva*?
To whom-DAT what-NOM CL-DATR.3SG is-pleasing
'Who is likeable to whom?'

In subsection 2.3.2, it is argued that animacy does only indirectly trigger the DL-S effects reported in the literature.

2.2.4 Kind-*Wh*s trigger WCO

A difference between Token- and Kind-*wh*s regarding the presence of WCO-effects can be found in German (cf. Wiltschko 1997b:435), and Romanian (Dobrovie-Sorin 1994:202-203):[26]

(51) a. [***Welchen Studenten***]$_i$ *hat* [*sein*$_i$ *Bruder*] *besucht*?
which student had his brother visit
'Which student did his brother visit?'

b. *[***Was für einen Studenten***]$_i$ *hat* [*sein*$_i$ *Bruder*] *besucht*?
what for a student had his brother visit
'what (kind of) student did his brother visit?'

(52) a. *[***Ce copil***]$_i$ *ar* *pedepsi* [*părintii lui*$_i$] t$_i$?
what child would punish parents his
'What child would his parents punish?'

b. [***Pe care***]$_i$ *l*$_i$*-a* *certat* [*mama* *lui*$_i$] t$_i$?
PE which him-has scolded mother his
'Which one did his mother scold?'

[26] Andreas Blümel (p.c.) points out that the ungrammaticality of (51b) persists under *was für*-split; see chapter 4 for discussion.

2.2.5 Kind-*Wh*s in Existential Sentences

While *which*-phrases are exempt from appearing in existential sentences, Kind-*wh*s are allowed (cf. Zamparelli 2000; English judgements by Erich Groat, p.c.):

(53) a. *[**Which boy**] was there in the garden?
b. (?)[**What boy**] was there in the garden?

In Norwegian (Vangsnes 2006b), where an expletive cannot appear together with a *which*-phrase, this is possible with Kind-*wh*s (see section 4.3 for discussion of the kind-noun in (54c),):

(54) a. ***Hvilken bok*** *ligger* (**det*) *på bordet*?
which book lies EXPL on table-the
b. ***Hvem sitter*** (**det*) *på gangen*?
Who sits EXPL on hall-the
c. ***Hva*** (***for***) ***slags bok*** *ligger* (*det*) på *bordet*?
What for kind-of book lies EXPL on table-the
d. ***Hva ligger*** (*det*) *på bordet*?
What lies EXPL on table-det

2.2.6 Kind-*wh*s must stay in-situ

We have seen in section 2.1 that sometimes, DWH have to move where other *wh*-phrases can stay in-situ (cf. the Albanian data in (15) and (16)). And also, in the Nakh-Dagestanian language Tsez, the Token-*wh nasi N* 'which N' has to front, while regular *wh*-phrase like *sebi* 'what' must stay in-situ, and the Kind-*wh didiw N* 'what N' has both options (Polinsky 2001:16). These examples are another illustration of the gradual nature of D-linking and also illustrate the systematic difference between Token-*wh*s and Kind-*wh*s:

(55) a. [***Nāsi biša***] *užā rac'ā*?
which food boy ate

b. #*Užā* [***nāsi biša***] *rac'ā*?
boy which food ate
'Which food did the boy ate?'

c. *Užā* ***šebi*** *rac'ā*?
boy what.ABS ate
'What did the boy eat?'

d. *Užā* [***didiw biša***] *rac'ā*?
boy what food ate

e. [***Didiw biša***] *užā rac'ā*?
what food boy ate
'What food did the boy ate?'

In this section, I illustrated a correlation between the *wh*-item used as a *wh*-determiner and the syntax of the resulting *wh*-phrase. Since the token-kind distinction can manifest by different projections inside the functional architecture of noun-phrases, we would expect *wh*-determiners other than WHICH and WHAT to also express the Token-Kind dichotomy. That this prediction is borne out is shown in the next section.

2.3 Other Forms of *Wh*-Determiners and the Token-Kind Distinction

In this section, I want to demonstrate that regardless which *wh*-pronoun is used in the formation of a *wh*-determiner phrase, the resulting phrase is either a Token-*wh* or a Kind-*wh* and there are no other types emerging. The outcome will be that there are just two kinds of *wh*-determiners, no matter which *wh*-item is used as determiner. This result will be transferred to Amount-*wh*s in section 4.1.

2.3.1 The Universality of the Token-Kind Distinction

So far, I looked at *wh*-determiners cognate to English *which* and *what* (WHICH and WHAT). It is not a surprise to find these two *wh*-items used frequently to express the Token-Kind dichotomy, since their canonical meanings match the Token- and Kind-

readings: *Which* is individual denoting, while *what* is in the majority of cases property denoting.[27] In (56A), the "coda" denotes a property, and as the follow-up questions in (56Q) show, *wh*-phrases which refer to individuals aren't appropriate following (56A):

(56) A: Mary is [a person]
Q: a. **What** (**kind of**) person is Mary?
b. #**Which** person is Mary?

In a number of cases, cognates to English *who* and *how* are used to express Token- and Kind-*wh*s, respectively. Examining the syntax of these *wh*-phrases, I arrive at the conclusion that the typology of *wh*-determiners I defend in this thesis is universal. No matter which other *wh*-items is used as *wh*-determiners, the resulting phrases can be subsumed under either of the two main types:[28]

(57) a. KIND = {WHAT, HOW, …}
b. TOKEN = {WHO, WHICH, …}

I start with (57a). Concerning the items used to form Kind-*wh*s, Vangsnes (2006a, 2008b) notes that it is very common across Norwegian dialects to use as a *wh*-determiner the element corresponding to English (manner) *how*. The examples provided by Vangsnes (2008b) show that (except for the Tromsø dialect) no matter what the morphological shape (or etymology) of these items, only the Kind-reading is available:

(58) a. ***Korsn bil*** *kjøpte du*?
how car bought you
'Which/what kind of car did you buy?' (Tromsø Norwegian)
b. ***Åssen bil*** *kjøpte'ru*?
how car bought'ya
'What kind of car did you buy?' (Eastern Norwegian I)

[27] Munaro & Obenauer (1999:183) report that WHAT "quite often has a number of possible additional meanings or uses that are intuitively quite different from the canonical meaning, roughly equivalent to 'what thing'". Note that WHAT can also denote a proposition, as in *what happened*, and that e.g. Warlpiri has different *wh*-forms for THING and PROPOSITION (Dayal 1996:82f).
[28] Szabolcsi & Zwarts (1997:237) propose a slightly different typology and pattern *which N* and *who* together, as well as *who/what the hell* and *how many pounds*, *how much attention*, *how tall*, *how*, and *why*. They claim that *how many men* is in-between these two classes, as the system in this thesis predicts.

c. ***Hvordan bil*** *kjøpte du*?
how car bought you
'What kind of car did you buy?' (Eastern Norwegian II)

d. **Kelaisen bil** kjøpte'ru?
how car bought'ya
'Which/what kind of car did you buy?' (Leikanger Norwegian)

A trait of Old Norse which all Scandinavian languages have retained is that WHO can be used as Token-*wh* (data from Vangsnes 2008a, 2008c:239, 2009), not to query for KIND (cf. also (55)):

(59) a. ***Hvør leikari*** *skal skiftast út*?
who player should changed.PASS out?
'Which/what player should be replaced?' (Faroese)

b. ***Vemm shole*** *ær de du gå på a*?
who school is it you go to then
'Which/*what school is it that you have gone to, then?' (Norwegian)

c. ***Ukin bil*** *ir den*?
who car is yours
‚which car is yours?' (Övdalian Swedish)

d. ***Hvem bil*** *kjøpte'ru*?
Who car bought'ya
'Which car did you buy?' (Eastern Norwegian I)

b. ***Åkken politiker*** *ær kjent for dialekta si*?
Who politician is known for dialect his
'Which politician is known for his dialect?' (Northeastern Norwegian)

It is important to keep in mind that we cannot automatically conclude from the appearance of a form for WHAT in a *wh*-determiner phrase that this particular *wh*-phrase receives a kind-interpretation. For example, when there is no overt kind-noun in Nynorsk Norwegian, it is possible to get a token-reading for a *was für*-phrase, but an overt kind-noun restricts the possible reading to a kind-reading (Vangsnes 2006b:2). But On the other hand, the use of the *wh*-item for WHO forces a token-reading for the

respective *wh*-phrase in colloquial Eastern Norwegian (Vangsnes 2006b:6). It appears that once a *wh*-item is used exclusively for Token-*wh*s, it cannot be used as a Kind-*wh* anymore, and this is in accordance with (39) (see next subsection for more discussion):

(60) a. ***Kva for ein*** *bil kjøpte du*?
what for a car bought you
'Which car did you buy?'

b. ***Kva slags*** *bil kjøpte du*?
what kind-of car bought you ?

c. ***Hvem*** *bil kjøpte'ru*?
who car bought'ya
'Which car did you buy?'
'#What kind of car did you buy?'

And finally, possessor phrases like *whose N* pattern with *which*-phrases (i.e. Token-*wh*s) in terms of superiority-effects (Hornstein & Weinberg 1990:144; 150, fn24):

(61) a. John can't remember who thought **whose pictures** are on sale.
b. John can't remember who thought **which pictures** are on sale.
c. *John can't remember who thought **what** was on sale.
d. [Which book]$_i$ did **whose friend** review t_i?
e. [**Whose book**]$_i$ did which friend review t_i?
f. [**Whose book**]$_i$ did **whose friend** review t_i?

Possessor *wh*-phrases also pattern with *which*-phrases with respect to clitic-doubling, as shown by the following Romanian data from Dobrovie-Sorin (1994:202-203):

(62) [*Pe* ***al cui elev***]$_i$ *îl*$_i$ *nedreptăţesc* [*prientii lui*]$_i$ t_i?
PE whose student him wrong friends his
'Whose student do his friends wrong?'

Possessor *wh*-phrases also pattern with Token-*wh*s with respect to existential sentences:

(63) a. *[**Whose drink**] is there left on the table?
b. *?[**Whose book**] did who order?

An explanation for these facts will be proposed in chapter 4, which makes use of the relation of the semantics of possession to the notion of 'individuality' and the structural correlates of this notion.

2.3.2 Animacy and the Token-Kind Distinction

Recall from subsection 2.2.3 that there is a controversy surrounding the role that the animacy of a *wh*-phrase has on the grammaticality of certain syntactic structures in which the respective *wh*-phrase appears in. Some languages seem to not make the distinction between Token- and Kind-*wh* determiners, but employ the dichotomy between animate and inanimate nouns. Take, for example, Antakarana Malagasy and Merina Malagasy (Polinsky 2004):

(64) a. *Tsaiky **azôvy***
Child who
'Which/what child'
b. *Boky **ino***
book what
'Which/what book'

(65) a. *Boky **inona***
Book what
'Which/what book'
b. *Zaza **iza***
child who
'Which/ what child'

Interestingly, there are no syntactic differences between the two types of *wh*-determiner phrases and regular *wh*-phrases in Malagasy; they all front, and are ungrammatical in-situ. The same can be observed in Chamorro (Chung 1994), where *wh*-determiners

consist of a *wh*-pronoun whose form is governed by the semantic category of the restriction (e.g. the form for *who* is used with a restriction referring to humans) and the linking element *-na*:

(66) a. ***hafa****-na NP* → (nonhuman)
what-na-NP
b. ***hayi****-na NP* → (human)
who-na-NP

Both types of phrases can escape weak islands in Chamorro. The same is true for the two *wh*-determiners *didiw* 'what' and *nāsi* 'which' in Tsez, which also can both escape weak-islands (Polinsky 2005:5):

(67) a. [*Nesā* ***didiw mašina*** *bok'ek-zaλ'*] *turmaqyor* *kur-ā*?
3SG what car.ABS steal-when prison-POSS-LAT throw-PST.INT
'What car was it that when he stole (it) they put him in jail?'

What these examples show is that the differences between classes of *wh*-phrases regarding DL-S effects seem to arise only if the Token-Kind distinction is lexicalised in a given languages.[29] There are cases where the simpler animate-inanimate distinction does not trigger these effects. Recall the case of French *quel* from subsection 2.2.X. In the following French sentences (Comorovski 2004:137), only the Kind-reading is possible, showing that it is not simply the lexical semantics of the Nominal Restrictor which influence the interpretation. Animacy does not directly lead to a token-reading:

(68) a. ***Quel homme*** *est ce médecin* ?
'What kind of man is this doctor?'
b. ***Quel collègue*** *est-il* ?
'What kind of colleague is he?'

This is also true in case the Nominal Restrictor refers to a non-human referent (i.e. is inanimate). Here, both the token- and the kind-readings are possible:

[29] Conrad (1978:95) reports few languages where we do not find *who* and *what* clearly distinguished.

(69) Q: ***Quelle voiture*** *est cet amas de feraille*?
what car is this heap of metal
'What kind of car is this heap of metal?'
A1: *C'est la voiture de mon petit frère*.
'It's my younger brother's car.'
A2: *C'est une vieille Renault*.
'It's a(n old) Renault.'

Relevant for our discussion is the fact that *wh*-words cognate to *who* are only employed to form Token-*wh*s, never to form Kind-*wh*s (see the discussion surrounding (60) in the preceding subsection).[30] This calls for a link to the notion of individuality as I have proposed in the discussion of possessor *wh*-phrases at the end of the preceding subsection.

The tendency of WHO to be used as a Token-*wh* determiner could be explained by appeal to the idea that the features expressing individuality are part of the lexical entry for WHO. It seems as if in the Scandinavian cases above, the *animate*-feature (if it exists) was lost, but the features denoting individuality were retained.[31] This secondary role of animacy would also explain that WHAT can normally precede a Nominal Restrictor denoting a human referent, and WHO can precede a Nominal Restrictor denoting all types of nouns (cf. the Romanian examples in subsection 2.2.3, and footnote 23 in chapter 3). I take the animacy-effects sometimes reported with multiple interrogatives not to be syntactic, but pragmatic in nature. For example, the experiments in Fanselow & Féry (2008) show that the animacy-effect is weak and easily overridden, and this calls for a non-syntactic source of these effects. In subsection 4.4.3 I will discuss another possible explanation for this situation based on the results I will reach in chapter 3 and chapter 4 of this dissertation.

[30] Note that in English, *who* and *which* are used as relative pronouns (but *what* cannot be used as a relative pronoun), and as Dobrovie-Sorin (1994:211) observes for Romanian, "relatives and interrogatives headed by *which* (the same is true for *quell N'* in French, *cual N'* in Spanish, and so on) do not contrast with the ones headed by *who*: both types of wh-structures [are equal] with respect to weak crossover effects, parasitic gaps, and the distribution of clitic pronouns bound to the wh-phrase". In a similar fashion Comorovski (1996:14) claims that in Romanian "[*w*]*ho* […] must be interpreted as D-linked; i.e. meaning 'which person' or 'what kind of person'". See section 4.1 for more discussion.

[31] That the animate-inanimate distinction does not have the same impact on grammaticality in many languages can be an effect of the fact that the "distinction […] is located at a lower conceptual level", as Haspelmath (1997:21) speculates.

The data and discussion in this section show that no matter which *wh*-item is used as *wh*-determiner, the resulting *wh*-phrases can be grouped according to the typology proposed in this thesis. In the following two sections, I introduce two other types of *wh*-phrase which also can be used to illustrate the fact that the properties of the *wh*-determiner are relevant for the emergence of DL-S effects.

2.4 Aggressively Non-D-linked *Wh*-Phrases

It is not only possible to overtly mark a *wh*-phrase as D-linked (by e.g. choice of *wh*-determiner, or overt partitivity), but also to mark a *wh*-phrase as non-D-linked. This is achieved by the addition of elements similar to English *the hell* to a *wh*-phrase. The resulting phrases are termed 'Aggresively Non-D-linked' (ANDL),[32] and do not show DL-S effects. For example, ANDL show superiority effects in German:

(70) a. [***Wer zum Teufel***]$_i$ *hat* t_i *wen gesehen*?
'Who the hell saw who?'

b. ?*[***Wen zum Teufel***]$_i$ *hat wer* t_i *gesehen*?
‚Whom the hell did who see?'

In Japanese, the effect of ANDL on the extraction possibilities manifests itself as a constraint on available interpretations. In (71), (*ittai*) *dono sensi-ga* can only have narrow scope with respect to the Q-particle in the matrix clause (Nishigauchi 1986):

(71) Q: *John-wa [**ittai dono sensi-ga** dono computer-o o-moti ka]*
John-TOP hell which professor-NOM which computer-ACC have Q
oboe-te-i-masu-ka?
remember-is-Q

a. 'Does John remember which professor has which computer?'

b. #'For which x, x a professor, does John remember [which computer y, x has y]?'

[32] "The simple addition of a phrase like *the hell* or *on earth*, which express surprise or ignorance of the possible answer, and is thus incompatible with the choice among the elements isolated in the previous discourse, suffices to exclude any such discourse linking" (Cinque 1996:239).

ANDL also trigger WCO-effects as regular *wh*-phrases do in e.g. English (Falco 2007). This is also true for German, although regular *wh*-phrases do not trigger WCO-effects in this language (see also Wiltschko 1997b:435):

(72) a. ?*[**Who the hell**]$_i$ do his$_i$ students admire?
b. [**Which (famous) professor**]$_i$ do his$_i$ students admire?

(73) **Wen zum Teufel wird sein$_i$ Bruder* t$_i$ *besuchen*?
who to.the devil will his brother visit
'Who the hell will his brother visit?'

And ANDL also contrast with Token-*wh*s in being licit in existential sentences like regular *wh*-phrases (Zamparelli 2000):

(74) we are in trouble…
a. but **who** (**the hell**) is there that can help us?
b. *but **which person** is there that can help us?

In Italian, the addition of the ANDL-marker to any *wh*-item renders a sentence ungrammatical that would be fine if a DWH is used. Compare the following Italian data (Cinque 1991) with the parallel sentence in French (Comorovski 2004):

(75) a. [***Che articoli***]$_i$ *no sai chi*$_j$ t$_j$ *abbia letto* t$_i$?
[which article] don't you know who read
b. *[***Che diavolo***]$_i$ *no sai chi*$_j$ t$_j$ *abbia letto* t$_i$?
[what the hell] don't you know who read

(76) *[**Que diable**] as-tu dit comment manger?
'what the hell did you say how to eat?'

Recall that both languages do not display a strict divide between Token- and Kind-whs as Germanic does. The question arises if we can detect a difference between the ANDL-

marking of Token-*wh*s and Kind-*wh*s in languages which make this distinction in their lexicon.[33] The following data from Reglero (2003:200) seem to favour this claim:

(77) a. **What the hell book** did you read that in?
b. ***Which the hell book** did you read that in?

That the effects of the addition of an ANDL-marker depend on the type of *wh*-item heading the *wh*-determiner phrase is also corroborated by the following German facts:

(78) a. [***Was für ein Buch zum Teufel***] *hast du gelesen*?
what for a book to.the devil did you read
b. [***Was zum Teufel für ein Buch***] *hast du gelesen*?
what to.the devil for a book did you read
c. *[***Welches zum Teufel Buch***] *hast du gelesen*?
which to.the devil book did you read
d. ?[***Welches Buch zum Teufel***] *hast du gelesen*?
which book to.the devil did you read
e. (?)[***Welches zum Teufel***] *hast du gelesen*?
which to.the devil did you read
'What the hell (book) did you read?'

I take these facts to show that the possibility of adding an ANDL-marker to a particular *wh*-phrase depends on the respective *wh*-item used as determiner. That it is not just a question of taking the right Nominal Restrictor becomes clear ones from the following data from Tsez (Polinsky 2005:6), where ANDL-marking is achieved by reduplication of the *wh*-item, and the availability of an ANDL is governed by the *wh*-determiner:

(79) a. ***łus-xo-łus*** *mašina xiziyo bexurā*?
whose-whose car.ABS again broke
'Whose the hell car broke again?'

[33] Den Dikken & Giannakidou (2002:42, fn14) argue that Pesetsky's (1987:111) is wrong in taking *what the hell book* to be as bad as *which the hell book* (cf. Merchant 2002). They conclude that "[*w*]*hat the hell book* is semantically equivalent not to the presuppositional *which book* but to the nonpresuppositional, kind-referring *what kind of book*". See section 3.1 on the role of presuppositions.

b. ****Nāsi-x-nāsi*** *mašina xiziyo bexurā*?
which-which car.ABS again broke
("Which the hell car broke again?")

The facts presented in this section again support the view that WHICH as the prototypical Token-*wh* stands out of the rest of possible *wh*-determiners, inasmuch as it displays special properties when it comes to ANDL-marking.

2.5 Prepositional *Wh*-Phrases

In a number of approaches to the syntax of D-linking, it has been claimed that what sets apart DWH from other *wh*-phrases is their nominality (see Tsai 1997; Rizzi 2001).[34] This discussion is related to the idea that nominality is the key factor which differentiates between adjunct and arguments. For example, Grewendorf (2001:116) argues that *wh*-adverbs lack a "D-head" and thus cannot participate in a *wh*-cluster (cf. Surányi 2006; see also Reinhardt 1997 on the dichotomy between nominal specific adverbial *wh*-phrases and non-specific *wh*-adverbials). This conjecture seems to be plausible once we look at cases where substituting a *wh*-adverb with a *which*-phrase renders an otherwise illicit sentence grammatical:

(80) a. ***How**$_i$ does he think he behaved t_i?
b. [**Which way**]$_i$ does he think he behaved t_i?

Another manifestation of these asymmetries is the difference in extraction possibilities between direct objects and adverbial *wh*-elements, as first discussed in Huang (1982) (data from Rizzi 2001:147):

(81) a. [**Which problem**]$_i$ do you wonder how to solve t_i?
b. ***How**$_i$ do you wonder which problem to solve t_i?

[34] Tsai (1997:59) concludes that "[t]he availability of long movement is determined by the 'referentiality' or 'individuality' of the wh-phrase involved, whereas the availability of unselective binding hinges on their nominality".

That nominality is a key factor can also be argued on the basis of cases where preposition stranding renders a construction acceptable. Rizzi (2001) argues that transforming a PP into a DP by stranding the preposition opens up the possibility of marking a *wh*-phrase as D-linked, but Kroch (1989) argues against a PP-DP asymmetry on the basis of data like (82):

(82) a. ?[**To which child**] were you wondering whether to give books?
b. [**Which child**] were you wondering whether to give books to?

Comparing (82) with the following data from Malone (1978:43) makes clear that it is the range of the *wh*-phrase governed by the preposition which renders constructions involving preposition-stranding grammatical:

(83) a. ***What**$_i$ did John send the package to t_i?
b. [**What place**]$_i$ did John send the package to t_i?

Prepositional arguments (clearly not headed by a DP) are in principle also extractable in other languages than English, and this possibility is also governed by the type of *wh*-determiner used in the *wh*-PP. Note the Italian examples from Rizzi (1996):

(84) a. [***Quale libro***]$_i$ *non sai a chi dare* t_i?
which book not you know to whom to give
'Which book don't you know to give to whom?'
b. [***Di quale libro***]$_i$ *non sai a chi parlare* t_i?
of which book not you know to whom to speak
'Which book don't you know to speak to whom about?'

Bošković (2008:35, fn55) notes "[that] Albanian, Bulgarian, Romanian, and Hebrew do allow argumental PP extraction out of wh-islands", and observes that it is not the case that transforming a *wh*-adjunct into a *wh*-determiner phrase always improves the status of a sentence (Bošković 2008:12f). (85a) is from Bulgarian, (85b) from Swedish:

(85) a. ****Zašto**$_i$/[***Poradi kakva pričina***]$_i$ *znae* [*dali Boris e zaminal* t_i]?
why/ for which reason knows whether Boris is left
'Why/For which reason does he know whether Boris left?'

b. ****Varför**$_i$/[***Av vilket skä***]$_i$ *undrar han* [*vem som lagade bilen* t_i]?
‚Why/For which reason does he wonder who fixed the car?'

That *wh*-PPs are fundamentally different in respect to DL-S effects is also implausible in light of cases where WHICH is embedded inside a PP, resulting in a grammatical sentence, as shown by the following Italian examples (Cinque 1996):

(86) a. ??***A chi*** *non ti ricordi/chiendi quanti soldi hai dato*?
to whom don't you remember/wonder how much money you gave?

b. ***A quale dei tuoi figli*** *non ti ricordi/chiendi quanti*
to which of your children don't you remember/wonder how much
hai soldi dato?
money you gave?

In Romanian, we can observe a similar contrast in superiority contexts (Comorovski 1996:2) and island contexts (Lubańska 2005:75):

(87) a. ***Despre care***$_j$ *cine*$_i$ t_i *ţi-a vorbit* t_j?
about which who to-you has told
'Who told you about which (one)?'

b. ****Despre ce***$_j$ *cine*$_i$ t_i *ţi-a vorbit* t_j?
about what who to-you has told
'Who told you about what?'

(88) a. [***Despre care***]$_i$ ştii cine$_j$ t_j i-a povestit t_i?
about which know-2SG who to-him had said
'About which (one) do you know, who told him something?'

b. *[***Despre ce***]$_i$ ştii cine$_j$ t_j i-a povestit t_i?
about what know-2SG who to-him had said
'About what do you know, who told him that?'

Thus, the fact that replacing a prepositional bare *wh*-adjunct with a *which*-phrase denoting the same concept renders sentences grammatical shows that the PP status of a *wh*-phrase is not enough to explain its inability to extract, simply because this conjecture is not borne out (data from Dobrovie-Sorin 1994:272):

(89) a. ?[**For which of these reasons**]$_i$ do you wonder [if they can fire you t_i]?
b. ?[**On which of these days**]$_i$ doesn't Mary remember [whether she was wearing a white dress t_i]?
c. ?[**In which bookshop**]$_i$ did you forget [when you last bought a book t_i]?

There are some interesting cases where *which*-phrases show a special relationship to the prepositions they are embedded under, for example "swiping cases" (swiping is an acronym for "sluiced wh-word inversion in Northern Germanic"; sluicing is the deletion of the complement of a *wh*-item in embedded *wh*-sentences), where the *wh*-item is followed by an inversed preposition. Crucially, it is restricted to simple *wh*-phrases, as Merchant (2002) observes:

(90) a. Ed gave a lecture, but I don't know **what about**.
b. *Ed gave a lecture, but I don't know **which topic about**.

The following example from Radford (1993:111) shows again that it is again the *wh*-determiner itself (not the overtness of the Nominal Restrictor) that is relevant:

(91) *Ed gave a lecture, but I don't know **which about**.

Because *which*-phrases can strand a preposition, as the following data from Radford (2004:192) again show, this calls for a key role of the *wh*-item heading the *wh*-phrase, regardless of the presence of a governing preposition:[35]

(92) a. IKEA only actually has ten stores [**from which** to sell **from**]
b. The hearing mechanism is a peripheral, passive system [**over which** we have no control **over**].

[35] The two occurrences of the prepositions in (92) can be explained by appealing to the 'copy-theory of movement' that will be discussed in chapter 4.

All the data in this section show that the *wh*-item used as a *wh*-determiner is relevant for the syntax of the whole *wh*-phrase, even if the *wh*-phrase is itself embedded inside a PP.[36] I take this result to be another argument in favour of the claim that the properties of *wh*-determiner phrases are for the most part governed by the properties of the *wh*-item used as *wh*-determiner.

2.6 Chapter Summary

In this chapter, I illustrated how *which*-phrases as the canonical DWH show a special syntax I label DL-Synatx, and also showed that there are systematic differences between the two types of *wh*-determiner phrases which I labelled Token-*wh* and Kind-*wh*. I argued that Token-*wh*s tend to be DWH and that Kind-*wh*s become DWH only under the addition of functional material. I took this correlation as support for the claim made in chapter 1 that the DL-Synatx effects observable with DWH are triggered by structural properties of the *wh*-determiners heading DWH.

The data in the last two sections were included to underline the importance of the properties of the *wh*-item used as determiner for the presence of effects only observable with a certain type of *wh*-phrase, most notably Token-*wh*s. The discussion of prepositional *wh*-phrases in section 2.5 even showed that these effects "percolate" up the structure and have repercussions beyond the "core" DP.

It appears to be the case that the single DL-S effects are triggered by different properties of the *wh*-determiner phrases. The gradual character of D-linking (i.e. the fact that certain *wh*-determiner constructions show only a subset of DL-Syntax effects even if they are headed by what could be analysed as a Token-*wh* determiner of the respective language) is esplained by the fact that the token-reading itself can have several structural triggers and that the specific DL-Syntax effects we can observe with DWH can have several of these triggers. The remainder of this thesis is dedicated to

[36] E.g. Dutch is a partial preposition-stranding language: Only R-pronouns and empty operators can strand a preposition (van Riemsdijk 1978), but *which*-phrases can also strand (van Craenenbroeck 2008):

(i) a. ****Wie*** *wil je niet mee samenwerken*?
who want you not with cooperate
'Who don't you want to cooperate with?'
b. ?***Welke jongen*** *wil je niet mee samenwerken*?
which boy want you not with cooperate
'Which boy don't you want to cooperate with?'

uncovering the relation of the structural properties of a given *wh*-determiner phrase (or any other *wh*-phrase) and the DL-Syntax effects this *wh*-phrase shows.

3. The 'Referential' Properties of D-linked *Wh*-Phrases[1]

In this chapter, I explore presuppositions, specificity and topicality as possible triggers for DL-Syntax effects. In the first section, it will be argued that although presuppositions are contingent on the semantics of the Nominal Restrictor, DL-Syntax effects only depend on the features encoded in the *wh*-determiner. In the second section, I examine definiteness and specificity as triggers for DL-Syntax effects, and also how they are related to DL-Interpretation. The effect of overt marking for these features will be investigated, as well as the relation of specificity to resumption as one DL-Syntax effect in particular. In the third section, I turn our attention to *wh*-topics. I will first show that *wh*-topics exist, and subsequently argue that *wh*-topics exhibit several of the DL-Syntax effects of DWH. In the fourth section, I discuss how the assumption that topicality of a *wh*-phrase triggers some DL-S effects can be captured formally.

3.1 Presuppositional *Wh*-Phrases

Because DWH pick up entities which have already been introduced to the discourse, and thus refer to objects whose existence is presupposed, they are often labelled 'presuppositional *wh*-phrases'. Wiltschko (1997b:41), for example, proposes that "presuppositionality (in Diesing's 1992 sense) and D-linking in Pesetsky's (1987) sense can be assimilated (cf. Kiss 1993; Beghelli 1995). Both, D-linked wh-words and specific/presuppositional NPs presuppose the existence of a previously established set". See also Kennelly (2003:1017), who argues that a "presupposed DP is [+anaphoric] and therefore must be given information since it has already appeared in discourse". Despite the correctness of these claims, the outcome of the discussion in this section is that presuppositionality is not a trigger for DL-Syntax.

[1] 'Referentiality' is argued to be synonymous with D-linking, and is often used in the sense the term 'specific' is used in this thesis (cf. Comorovski 1989; Kroch 1989; Rizzi 1990; Cinque 1990; Heycock 1995). Cinque (1996:239) claims that „the notion of 'referentiality' as the ability to refer to specific members of a set in the mind of the speaker or of one pre-established in discourse, recalls Pesetsky's (1987) important notion of D-Linking. The two are one and the same notion, or perhaps, more accurately, the notion of referentiality subsumes that of D-Linking". Zamparelli (2000:45) makes the opposite claim that 'referentiality' is a narrower notion than 'specificity', i.e. a specific NP is not necessarily referential. I use 'referentiality' as a cover term for definiteness, specificity, and also for presuppositionality.

3.1.1 The Role of the Nominal Restrictor as Presupposition-Trigger

Building on Karttunen & Peters' (1979) proposal that *wh*-phrases need to have an existential implicature to be assigned an appropriate meaning, Comorovski (1996:14) argues that *which*-phrases presuppose the existence of an individual (of the type denoted by the nominal restriction), while other *wh*-determiner phrases are not context bound and do not presuppose the existence of an individual of the type denoted by the nominal restriction. This becomes evident comparing her claim that "[t]he wh-NP *what boy* does not presuppose the existence of a boy" (20) to her claim that "[t]he presupposition of a *which*-NP is the same as that of a definite description" (22). In a similar fashion, Pesetsky (1987:104) attributes the difference in the following example to a context relation. In his view, (1b) "presupposes" the existence of a set of men in the discourse world of which some read books. Thus, for Pesetsky, *which*-phrases carry an existential presupposition, too:[2]

(1) a. **Mary asked what*$_i$ *who read* t_i?

b. *Mary asked which book*$_i$ *[which men] read* t_i?

Despite these conceptual similarities between the notion of 'presupposition' and the notion of 'discourse-anaphoricity', the assumption that the availability of DL-Syntax can be reduced to the ability of a *wh*-phrase to trigger presuppositions is not self-evident. For one, it depends on how the term 'presupposition' is understood, since there are different types of presuppositions.[3] I argue that even if we narrow down the presuppositions triggered by DWH to the presupposition of existence, it is not clear why other *wh*-phrases do not presuppose the existence of a referent.

Second, no matter how presuppositions are modelled in semantic theory, as the semantic component can only have the output of syntax to compute meaning, I believe

[2] There are two presuppositions here: One is triggered by the sentence, the other by the presence of the NR. It is this second presupposition that proponents of the presupposition approach to DL refer to.

[3] Presuppositions come in at least three different types (cf. Ionin 2006:189ff.):

(i) *Types of Presuppositions*
a. Existence
b. Familiarity
c. Uniqueness

Since a discussion of this distinction will lead us straight into the realm of semantics, I will gloss over these differences in this primarily syntactic work.

that there is a trigger for the difference in presupposition in the morphosyntactic structure, and this is the Nominal Restrictor, cf. Ionin (2006:209), who also speculates that the presupposition is triggered by the Nominal Restrictor. This position is also defended by Simík (2007:11), who argues that "[s]ome people argue that this is not a DP-complexity matter but rather a semantic/pragmatic effect called 'D-linking' […]. I believe these two views are not incompatible; it has been argued that D-linking may semantically be represented as an existential presupposition, which in turn may stem from the presence of an NP in syntax". I agree with Simík on the role of the NR as presupposition-trigger, but additionally want to argue that the presupposition triggered by the NR is not itself a trigger for DL-S effects.

The presupposition approach to DL-I is based e.g. on the assumption that in (2), B's first question is inappropriate since the discourse does not provide the interlocutors with the information that Peter wanted to buy a car, or house (i.e. it does not trigger the presupposition necessary for the *which*-phrase to be used felicitously). The second question is argued to be appropriate, since it does not presuppose the existence of a pre-defined set of object from which the answer has to be drawn:

(2) A: Peter went shopping/bought something expensive yesterday.
B: a. #**Which** car/painting/house did he buy?
b. **What** (#car/painting/house) did he buy?

The effect of presuppositions on the appropriateness of the occurrence of *which*-phrases surfaces even without a previous context as in (3). It is not clear whether there really is a person who took the key in (3b), or the key simply has been lost, whereas it is generally assumed that (3a) presupposed not just that someone took the key, but that this individual has the property of being a student:

(3) a. **Which student** took the keys to the dean's office?
b. **Who** took the keys to the dean's office?

Although differences in presupposition seem to work as an explanation for cases like (2) or (3), there are reasons believe that they cannot be used to explain the syntactic differences between *wh*-determiner phrases. This is in opposition to the view defended

in Pesetsky (1987:107), where it is argued that *how many* cannot be D-linked because it does not presuppose the existence of its referent, and this is taken as evidence against a structural source of the contrasts in (2) and (4):

(4) a. *I need to know* ***how many people*** *voted for whom*?
b. **I need to know whom*$_i$ ***how many people*** *voted for* t_i?
c. *I need to know whom*$_i$ ***which men*** *voted for* t_i?
d. **I need to know whom*$_i$ ***how many men*** *voted for* t_i?

A first argument against Pesetsky's conclusion is, that the claim that Amount-*wh*s cannot be D-linked (in the sense of not showing DL-S) is simply false, which I will demonstrate in subsection 3.1.2. Therefore, even if we accept that *how many* does not trigger a presupposition, the ungrammaticality of (4d) is not necessarily linked to this lack of presupposition.

Second, although the semantic import of the Nominal Restrictor seems to be relevant for the presupposition(s) triggering DL-Interpretation, Haider (2004:157) argues that if it is the presuppositions triggered by the Nominal Restrictor of a *which*-phrase which trigger DL-Syntax effects in (4c), we would expect (4b) to become acceptable if we replace *people* by *men* – in this way, the discourse common ground would be identical to (4c), i.e. they should project the same presupposition. But as shown by (4d), this prediction is not borne out, as the two sentences differ in acceptability, and this supports an analysis which takes the difference in e.g. (4) is not to be contingent on the presence or absence of a presupposition triggered by the Nominal Restrictors, but to properties of the adnominal *wh*-items.

A third argument against approaches like Pesetsky's is that it is even doubtful that regular *wh*-phrases do not trigger presuppositions. Kroch (1989:6) points out that every question entails an existential presupposition and thus introduces "discourse referents just in the way that declarative sentences with wide scope existentially quantified NPs do". Therefore, (5a) presupposes (5b):[4]

(5) a. Who left?
b. Somebody left.

[4] See Weiß (1998:31f.) for the claim that *wh*-questions presuppose the action expressed by the predicate.

If D-linking (i.e. DL-Interpretation) is defined as limiting the range of felicitous answers to a *wh*-question to the members of a contextually (or lexically) defined set, and regular *wh*-words do also constrain answers to be drawn from a fixed set (i.e. are presupposed), they thus could also be analysed as "D-linked".[5] But the sets that come with regular *wh*-phrases are very broadly defined and do not (necessarily) emerge out of discourse. If we change the definition of D-linking to include those sets, the notion of D-linking will become obsolete. Despite the criticism on the imprecise and ambiguous usage of the term D-linking in the literature I raised in chapter 1, this is not the desired result. In the system proposed in chapter 4, we can maintain the original definition of D-linking and still are able to differentiate between the types of structural presupposition-triggers for different *wh*-phrases in terms of different types of Range Restrictors.

As long as we do not qualify the nature of these sets so as to ensure that only some restrictions on the reference of *wh*-phrases count as 'D-linked', a presupposition account to DL-Syntax faces problems, no matter whether we differentiate between types of presuppositions (cf. footnote 3 in this chapter), or not. The general problem with the view that presuppositionality is at the core of D-linking is that it overgeneralizes. Although it seems to be safe to claim that all DWH are presuppositional, there are also presuppositional *wh*-phrases not showing DL-Syntax. Also, the use of certain *wh*-expressions should lead to ungrammaticality in far more cases, since the presupposition-requirement should be active in all *wh*-clauses. This prediction is not borne out. I conclude that as plausible as it appears to be as a trigger for DL-Interpretation, presuppositionality cannot be the source of DL-Syntax. Since we find (i) *wh*-determiner phrases which do not show DL-Syntax, and (ii) *wh*-pronouns which trigger presuppositions, it could not be the Nominal Restrictor which triggers DL-S effects. I want to argue that although differences in the projected presuppositions could be the right explanation for the oddness of (2B), presuppositionality cannot be used as an explanation for most of the DL-S effects I have discussed in chapter 2.

If it is correct that the presupposition triggered by the Nominal Restrictor is no trigger for DL-Syntax, the question arises which structural features of DWH trigger DL-S effects. As a first approximation to an answer, take for example the position of Starke

[5] Pesetsky (2000:16) reaches a similar conclusion, writing that "[c]ontexts sets previously mentioned in the discourse qualify a phrase as D-linked, but so do sets that are merely salient (e.g. *which book*, in a context where speaker and hearer both know that reference is being made to a reading list for a course) and sets whose salience is culturally determined (e.g. *what day of the week*, *which sign of the zodiac*)".

(2001:19), who claims that what enables elements to eWI is their ability to carry one of the two following types of presuppositions, which he claims are both triggered by structurally represented properties of the respective phrase:

(6) *Types of Presuppositions relevant for eWI (Starke 2001)*

a. SPECIFICITY-based presupposition

b. RANGE-based presupposition

Boeckx argues that (6b) is related to partitivity, a notion which I will discuss as a structural trigger for DL-Syntax in subsection 4.4.1. Before I proceed to examine specificity (cf. (6a)) as a structural trigger for DL-S in the next section of this chapter, I want to turn the attention to Amount-*wh*s in the next subsection. This type of phrase is often used to illustrate the validity of a presupposition-based approach to DL-S effects. I strongly believe that this situation is not a coincidence, it arises because examining amount-quantified phrases, the mass-count distinction among nouns becomes important; and in turn, this distinction is, as I will argue, due to a difference encoded in the functional nominal field (not to lexical semantics).[6]

3.1.2 The Ambiguity of Amount-*Wh*s

Amount-*wh*s are good objects of study if we want to investigate the influence of the lexical content of the Nominal Restrictor to DL-Syntax effects. While Token-*wh*s are "inherently D-linked", and Kind-*wh*s show DL-Syntax only under special circumstances (cf. chapter 2), amount-quantified *wh*-expressions are ambiguous (see Cinque 1990; Heycock 1989; among others). The link to the discussion in the preceding subsection is that the ambiguity of Amount-*wh*s regarding DL-Syntax has been claimed to be related to the potential of the respective *wh*-phrase to trigger presuppositions. In this section, I will argue that these differences in presuppositions are themselves the effect of structural properties of the *wh*-determiners used; i.e. the ambiguity is explained by projections which can be part of Amount-*wh*s or not. Prima facie, as Kroch (1989)

[6] Topicality is another notion which has been claimed to be related to presuppositions and D-linking alike. One of the results in section 3.3, where the role of topicality as another trigger for DL-S is examined, will be that the NR is not only triggering the presupposition of existence necessary for a DL-I, but is also crucial in enabling a *wh*-phrase to become a DWH_{TOPIC}.

notes, a main class of phrases which resist extractability out of weak islands are amount quantified objects. This appears also to be true for superiority-configurations (data adapted from Pesetsky 1987:107):

(7) a. I need to know [**how many people**]$_i$ t_i voted for whom.
b. *I need to know [whom]$_i$ [**how many people]** voted for t_i.

But there are numerous cases reported in the literature where an Amount-*wh* shows DL-S (cf. Dobrovie-Sorin 1991; Comorovski 1996:85). Central to our discussion on triggers for DL-S is that it seems to be the cases that certain lexical choices for the Nominal Restrictor can reinforce a DL-Interpretation and thus appear to trigger DL-S more readily than other lexical choices, as the following data from Frampton (1991) shows:

(8) a. ***How many dollars** do you wonder whether I think are on the table?
b. ?**How many books** do you wonder whether I think are on the table?

Rizzi (2001:155) comments on this example that it is "easy to imagine a context in which the question [(8b)] may quantify over a specific set of books pre-established in discourse, whereas, under normal discourse circumstances, [(8a)] does not quantify over a specific set of dollars". In a similar fashion, he argues that that the difference between (9a) and (9b) is the DL-I of *pazienti*:

(9) a. ****Quanti chili** *ti ha chiesto* [*se pesavi*]?
how many kilos you has asked-1sg. whether weighed-2sg.
'How many kilos has he asked you whether you weighed?'
b. (?)***Quanti pazienti** *non ricordi* [*se lui avesse visitato*]?
how many patients not remember-2sg. whether he had visited
'How many patients don't you remember whether he had visited?'

Discussing parallel examples, Kroch (1989:8) claims that (10a) is unacceptable since the presupposition of the mass-noun *money* cannot contain reference to a set, but only to a sum, and that this presupposition is "semantically well-formed but odd" (there seems

to be no unambiguously identifiable set "sum of money", but an unambiguously identifiable set "number of books"):

(10) a. *__How much (money)__ did Bill wonder whether the book cost?
b. __How many books__ did Bill wonder whether the editor would publish this year?

Kroch concludes that there is a fundamental difference between the measure of count-nouns, which is their cardinality, and the measure of mass-nouns, which is a simple amount in (10), and that "it follows that the unacceptability of long-movement of 'non-referential' amount quantifiers is due, not to any semantic non-referentiality but rather to their quantifying over (hence, referring to) amounts rather than more usual sorts of entities" (see Haider 2004 for a similar argument). The following data seem to corroborate this view:

(11) a. *[__How much__]$_i$ did Bill wonder whether the book cost t_i?
b. *[__How much__]$_i$ did Bill wonder whether to pay t_i for the book?

One conclusion that can be drawn from the data presented above is that the trigger for the ungrammaticality of certain Amount-*wh*s is not the (type of) presupposition triggered by the Nominal Restrictor, but simply that the whole *wh*-phrase denotes a mass-noun. Since the presuppositions of mass- and count-nouns differ, this would explain why researchers are (mistakenly) leaded to analyse presuppositions as the trigger for DL-S effects. Therefore, accepting the claim that presuppositions do not trigger DL-S effects, it still appears to be the case that one factor which influences the possibility to trigger DL-S effects of Amount-*wh*s is whether the Nominal Restrictor denotes a mass- or a count-noun. In the remainder of this thesis, I will assume that it is not the denotation of the Nominal Restrictor which is relevant, but rather that the use of the mass-noun *wh*-determiner *much* renders the constructions in (11) ungrammatical.

Accepting the claim made in section 2.2 that mass need not be marked by a designated projection, we could simply claim that #P is the relevant projection. But as e.g. Szabolcsi & Zwarts (1993) argue there exists a "numbers" reading distinct from the "amount" reading and this opposition is, if not the equivalent of, related to the mass-

count distinction. Take the following Romanian example, where one of the two readings is triggered by the specificity marker *pe*, which I will examine later in this chapter:

(12) a. ***Cîţi studenţi*** *ai examinat*?
how many students have (you) examined
'How many students have you examined?'

b. ***Pe cîţi studenţi i****-ai examinat*?
PE how many students them-have (you) examined
'How many students have you examined?'

(12a) asks about an amount of individuals who are students (no set is presupposed), but (12b) asks about the cardinality of a subset of students included in a larger set which itself constitutes shared knowledge between speaker and hearer (Dobrovie-Sorin 1994:208). Antedating parts of the discussion in section 4.3, I want to claim that these readings are expressed by designated projections, which I label NumP and CardP, and also that CardP is located below DP and NumP below ClassP. The lower #P is argued for in Abney (1987:338f) and Löbel (1990), the upper #P is argued for in Shlonsky (1991) and Giusti (1991):[7]

(13) $[_{TNP}\,[_{DP}\,[_{PhiP}\,[_{CardP}\,[_{ClassP}\,[_{NumP}\,[NP]]]]]]]$

Regarding the semantic contents of these projections, I take NumP to be the expression of singularity or plurality without any reference to the exact amount. Bouchard (2002:230) argues that number-marking is a means to "atomize a set and provide access to individuals", i.e. plurality only means "more than one". I also want to propose that CardP is by and large part of the PhiP-layer introduced in chapter 1. Regarding the count-mass distinction among noun-phrases, note that both Token-*wh*s and Kind-*wh*s can combine with mass-nouns as well as with count-nouns without overt marking in German, whereas Amount-*wh*s in German can only do so if they lack agreement morphology. In English, the distinction with Amount-*wh*s is expressed by the choice between *many* and *much*:

[7] See footnote 22 in chapter 2 for a related discussion.

(14) a. ***Was für ein*** *Reis/Mann*
What for a rice/man
'What kind of rice/a man'

b. ***Welcher*** *Reis/Mann*
'Which rice/man'

c. ***Wieviel-e*** *Männer*
how many-AGR men
'How many men'

d. ***Wieviel*** *Reis*
how many rice
'How much rice'

Note that CardP can also combine with singular items (Eric Fuß p.c.). For example, compare German *zwei-Mann Trupp* 'two man squad' with **zwei-Männer Trupp* 'two-man squad'. This shows that CardP is independent of number-marking in terms of the singular-plural dichotomy.[8] At the end of subsection 4.4.1 we will see examples where certain modifiers which favour a "quantitative reading" of the modified *wh*-phrase block the DL-I, and also, these *wh*-phrases cannot be extracted out of a weak island. These cases will be explained by the assumption that in the ungrammatical cases, the *wh*-phrases are associated with NumP and not with CardP. I claim that both Token-*wh*s and Kind-*wh*s can express plurality, but only the former regularly express cardinality.[9]

In the next section, I will discuss the role of specificity as a trigger for DL-S effects. In this regard, note that Kiss (1993:93-94) argues that specific readings of Amount-*wh*s are impossible with mass nouns. According to her, the specific reading in (15a) is impossible because we cannot identify the members of the set denoted by NP individually (nor by some criterion of classification), and therefore, the reading "which and how many members of the set of votes" is infelicitous:

[8] That there is a low NumP is evident from the fact that there is singular agreement with mass nouns:

(i) a. *Etwas Wein*
Some wine.SG
b. *Einige von den Wein-en*
Some-PL of the.PL wine-PL

Strikingly, (ib) is a partitive construction, and partitivity has independently been claimed to be a trigger for DL-S, as I will discuss in subsection 4.4.2.

[9] As pointed out to me by Helmut Weiß (p.c.), this difference is plausibly also related to the notion of distributivity. For discussion of this notion, see e.g. Beghelli & Stowell (1997).

(15) a. *[**How many votes**]$_i$ don't you know which candidate received t_i?

b. [**How many voters**]$_i$ don't you know which candidate received t_i?

Eric Fuß (p.c.) pointed out to me that there exist specific readings of phrases for which no cardinality is known. I want to argue that this fact is explainable in the present system by assuming that even though a *wh*-phrase is not marked for cardinality overtly, the fact that the *wh*-phrase is interpreted as referring to a specific set entails that this set must have a cardinality, i.e. incorporates CardP. In other words: I propose that CardP is a prerequisite for the specific-reading, which is due to a SpecificP that is structurally higher than CardP (see section 3.2 on SpecificP).

To summarize, I argued that the ambiguity of Amount-*wh*s is not an effect of differences regarding presuppositions (and thus ultimately to lexical semantics), but triggered by projections inside the *wh*-determiner.[10] I now turn to definiteness and specificity as triggers for DL-S and the role of resumption in the derivation of questions involving DWH in the next section.

3.2 D-Linking, Definiteness, and Specificity

One of the most prominent claims about DWH is that they are definite or specific as opposed to regular *wh*-phrases which have been analyzed as indefinite since the beginning of generative grammar. The aim of this section is to investigate which of these notions is a trigger for DL-S effects.

3.2.1 Definiteness and the D-head

The idea that *which*-phrases share characteristics with definite noun phrases can already be found in Katz & Postal (1964:93), who adopted Klima's (1962) proposal concerning the indefiniteness of forms like *who* and *what* (cf. Chomsky 1964:38ff) and proposed that *which* stands out, because it is marked as definite:

[10] Boeckx & Jeong (2005:102) also appeal to *phi*-features as the characteristic and defining locus of the "presuppositional reading" of *wh*-phrases, i.e. them being interpreted as DWH.

(16) a. **What** lay on the table ? → *indefinite*

b. **Which** lay on the table? → *definite*

This assumption is supported by the determiner usage of the two *wh*-elements WHICH and WHAT. Among others, Pafel (1996:40) argues that German Kind-*wh*s are indefinite on the basis of the inappropriateness of a definite determiner on the constituent replacing the questioned constituent in case the *wh*-phrase is a Kind-*wh*. Examples (17) and (18) are illustrations of the well-known fact that the answer to a question containing a Kind-*wh* must be answered by an indefinite noun phrase and question containing a Token-*wh* must be answered by a definite noun phrase:

(17) Q: ***Was für ein*** *Auto fährst du*?
what for a car drive you
'What (kind of) car do you drive?'
A1: #*Das Rote*.
The red (one)
A2: *Ein Rotes*.
A red (one)

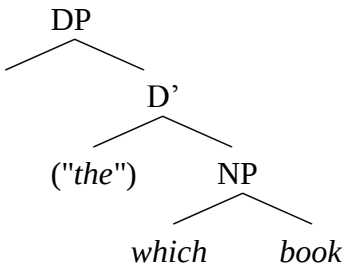
(18) Q: ***Welches*** *Auto fährst du*?
which car drive you
'Which car do you drive?'
A1: *Das Rote*.
The red (one)
A2: #*Ein Rotes*.
A red (one)

Investigating the properties of *which*-phrases from a semantic perspective, Rullmann & Beck (1998) show that the presuppositions projected by *which*-phrases resemble the ones projected by definite descriptions.[11] To capture this parallelism structurally,

[11] In light of the discussion in section 3.1, it is interesting to note that Rullmann & Beck do not explicitly argue that other *wh*-phrases do not trigger presuppositions. They just link these presuppositions to the presence of what they call a "D-head".

Rullmann & Beck propose that DWH involve a silent D-head which is responsible for this presupposition:

(19)



This claim was taken up and further refined by e.g. Boeckx (2003) and Boeckx & Grohmann (2004).[12] These authors also point out that (20) bears similarities to the structures assigned to clitic-doubling structures by Torrego (1988), Uriagereka (1988, 1995), Belletti (1999), and Cechetto (2000). In these approaches, the doubled element starts out as the complement of the D-head, which surfaces as a resumptive element after the NP in (19) moves away (the so-called 'stranding approach') For further discussion see subsection 3.2.3 and especially subsection 4.3.2, where I propose an alternative analysis (cf. subsections 2.1.3 and 2.2.3 for relevant data).

Pesetsky (2000:16) observes that "[t]he semantics of D-linked *wh*-phrases closely tracks the semantics of the definite article *the*".[13] This semantically motivated approach to the internal structure of *which*-phrases in terms of a D-head is supported by a large number of empirical data where *which*-phrases and definite articles co-occur. This is not only true for the interrogative use of these pronouns, but for example also for the relative use. Bošković (2008:31, fn46) observes that "D-linked wh-phrases and relative wh-pronouns in fact often co-occur with an overt (definite) article […], while this never happens with non-D-linked wh-phrases" (cf. subsection 4.1.3). Data like the following from Albanian support this view (Boeckx 2003:30):

(20) ***Cil-et*** *libra* (*i*) *solli* *Ana*?
Which-the books them bought Ana.
'Which books did Ana buy?'

[12] If the "D-head" would be responsible for the presuppositions of definite descriptions and *which*-phrases alike, a problem for Boeckx (2003) or Boeckx & Grohmann (2004) arises, inasmuch as resumption is expected to show up with all presuppositional *wh*-phrases, a prediction that is not borne out.
[13] For example, Chung (1987:200) claims that *manu* 'which' and *hayi* 'who' in Chamorro are both definite.

The same pattern can be observed in Scottish Gaellic, where *which*-phrases can be accompanied by definite articles, while other *wh*-phrases cannot (Adger & Ramchand 2005:169):

(21) ***De`am*** *bocsa a* *chuir* *thu am peann ann/*anns.*
which'the box C-REL put-PAST you the pen in-3SG/*in-DEF
'Which box did you put the pen in?

It is even the case that in some languages, the co-occurrence of a definite article renders an otherwise non-D-linked *wh*-phrase a DWH, like the use of *o* in Portuguese o *que* (data from Boeckx 2003:30):

(22) *A maria viu* *(***o***) ***que***?
the maria saw (the) what
'Which thing did Maria see?'
#'What did Marie see?'

Analyzing *which*-phrases as definite can also explain why they cannot appear as the coda in existential sentences. Since Milsark (1974) proposed the definiteness restriction on the coda of an existential sentence, it has been accepted that the coda in existential sentences cannot bear a *definite*-feature. The following English data from Klinge (2008:254) illustrates this "definiteness effect" (cf. (23a) and (23b)), and the corresponding DL-S effect of *which*-phrases in comparison to other *wh*-phrases:[14]

(23) a. There was [**a boy**] in the garden.
b. *There was [**the boy**] in the garden.
c. **Who** was there in the garden?
d. ?[**What boy**] was there in the garden?
e. *[**Which boy**] was there in the garden?

Concerning the central structural claim of Rullmann & Beck, the view that the presence of a "D-head" is the source of the special properties of *which*-phrases cannot be

[14] Dobrovie-Sorin (1994:207, fn25) notes a parallelism between strong quantifiers and D-linked expression on the one hand, and between weak quantifiers and "D-free" phrases on the other hand.

maintained in a split-DP framework. All nominal projections, *wh*-phrases among them, are nowadays standardly analysed as involving a D-head and thus, the occurrence of a simple D-head cannot be the difference between DWH and other *wh*-phrases. What seems to be more in line with a split-DP framework is the idea voiced in Bošković (2002) that DWH are endowed with a "special D-head".

What could the content of this "special" D-head be, feature-wise? Against the background of the empirical facts above, and given that the canonical function of the definite article is to express definiteness, these facts seem to support an analysis of *which*-phrases in terms of definiteness, i.e. as bearing a *definite*-feature projecting a DefP in the functional nominal structure. Despite the attractiveness of the claim that a DefP is the trigger for DL-S of *which*-phrases, I argue that it is not definiteness but rather specificity which is the trigger for DL-S of *which*-phrases (cf. Enç's 1991 claim that DWH are endowed with a D-head with a *specific*-feature).

A main argument in favor of this conclusion can be built on the fact that *wh*-items can be used as indefinites and this would lead to a feature-clash in case of *which*-phrases used as indefinite pronouns (cf. footnote 14 in chapter 4 for data). Furthermore, it is disputed that all occurrences of the definite article are always expressing definiteness. Thus, the simple presence of an element which canonically marks definiteness with some instances of *which*-phrases cannot be taken to clearly indicate that definiteness is relevant for the D-linking of a *wh*-phrase.[15]

3.2.2 Specificity as a Trigger for DL-Syntax

Bolinger (1978:127) was the first to explicitly argue that *which* is referring to a specific entity, not a definite NP, and in this thesis, I follow Kiss (1993, 2002), Comorovski (1996), Falco (2007), and Grewendorf (2012), and claim that *which*-phrases are specific.[16] It is generally the case that comparing the definitions given for definiteness and specificity in the literature, we face the problem that these definitions systematically overlap. For one, both notions are claimed to be discourse based (cf. Ionin 2006:214) and to share presuppositions of uniqueness and familiarity (cf. Abbott 1996, 2003).

[15] Even for morphemes which are standardly analysed as markers for definiteness it has been claimed that they mark Specificity, as is the case with the Scandinavian definite suffix (Julien 2005; Andersen 2005).
[16] See also Vangsnes (2008a:237), who reaches the conclusion "that specificity quite clearly must be an integral component of the semantics of reference of TOKEN".

Given this, it is not surprising that both notions sometimes refer to the same thing.[17] Also, complications in differentiating definiteness from specificity arise because many languages do not possess a morphological marker for specificity and use definite articles to mark both notions. Nevertheless a number of languages mark the distinction by morphological means, e.g. the Niger-Congo language Gungbe (Aboh 2007:27):[18]

(24) a. *távò* ***lɔ***.
table DET$_{[+spec\ ;\ +def]}$
'that/the (specific) table'

b. *távò* ***ɖé***
table DET$_{[+spec\ ;\ -def]}$
'a certain table'

A third, theory-internal, reason for the confusion regarding the boundary between specificity and definiteness may be the success of Enç's (1991:9) theory of specificity, which is explicitly modelled to "ensure that all definites are specific [and that] there will be no non-specific definite NPs". This view has been challenged on basis of the fact that there exist noun-phrases with a definite form which receive a non-specific interpretation (Ihsane & Puskás 2001:53f; see also (Ionin 2006). Also, Falco (2007), among others, argues that the difference between (25b) and (25c) show that the definite article is always definite while a demonstrative is not necessarily definite, but only specific:

(25) a. There is **a** (**certain**) **man** in the garden.

b. *There is **the man** in the garden.

c. There is **that**/**this man** in the garden.

Recall that *wh*-phrases are standardly argued to be indefinites and this would be at odds with the assumption that DWH are definites. Analyzing Token-*wh*s as being specific (not definite), and given the well-known fact that indefinites can also be specific (cf.

[17] For a thorough discussion of this topic, see also Zimmermann (2011).

[18] The translation of *lɔ* given here is the demonstrative *that*. This is done to give a translation which is close to the original meaning. There are demonstratives in Gungbe, and these can co-occur with *lɔ*:

(i) *Kɔkú mɔn* ***távò cè*** ***títán éhè*** ***lɔ*** *bò* *ɖɔ*.
Koku see table 1sg-POSS first DEM DET COORD sa
'Koku saw this first table of mine and said ….'

section 2.2; see also Haspelmath 1997), we predict that Token-*wh*s can be specific indefinites. German data suggests that this is the case. Maintaining the view that *which*-phrases are definite, we would not be able to explain the grammaticality of (26):[19]

(26) *Ich habe* ***welch-e*** *gesehen.*
I have which-AGR seen
'I saw some.'

Supporting evidence comes from adjectival modification in Tsez. In Tsez, restrictive adjectives are possible only with specific expressions, whereas non-restrictive adjectives can also occur with non-specific expressions (Polinsky 2001:15). *Nāsi N* 'which N' can only appear with restrictive adjectives, while Kind-*wh*s can appear with all adjectives:

(27) a. ***Nāsi*** *aluka-t'ani gagalibi ris-ā*?
which white-RESTR flowers buy-PST.INTER
'Which white flowers did you buy?'

b. ****Nāsi*** *aluka gagalibi ris-ā?*
which white-NONRESTR flowers buy-PST.INTER
'Which white flowers did you buy?'

c. ***Didiw*** *aluka-t'ani gagalibi ris-ā*?
what white-RESTR flowers buy-PST.INTER
'What white flowers did you buy?'

d. ***Didiw*** *aluka gagalibi ris-ā*?
what white-NONRESTR flowers buy-PST.INTER
'What white flowers did you buy?'

Polinsky comes to the same conclusion regarding the connection between specificity and D-linking, writing that "[t]he use of a restrictive adjective with a wh-word entails that there is a set of referents from which the selection needs to be made; this is fully

[19] In German, the indefinite article can only occur if the *wh*-phrase lacks agreement morphology. See footnote 14 in chapter 4 for more discussion:

(i) a. ****welch-er*** *ein Mann*?
which-AGR a man
b. ***welch- ein*** *Mann*!
which a man

compatible with d-linking". Adopting the idea that the D-head is also the locus of specificity (c.f. Surányi 2006), Rullmann & Beck's core idea can be so adjusted that the defining property of one type of DWH is the presence of a projection SpecificP.

This is a weaker claim than the ones made by Rizzi or Enç, inasmuch as I do not claim that D-linking can be reduced to specificity. Rizzi (2001:153) makes the strong claim "from now on I will use the terms D-linked and Specific interchangeably", and Enç (1991:7, fn8) also proposes that D-Linking can be equated with specificity: "An NP may be considered specific if it bears a subset relation to a discourse familiar set, or if the presence of an appropriate referent may be inferred from the previous discourse". I propose that whereas definite nouns are identical with a certain discourse referent, specifics only have to be included in the set of discourse-referents, and they need not be identical with a previously mentioned member of that set. See also von Heusinger (2002), who, rejecting the idea that specificity is a subcategory of indefiniteness, as well as the pragmatic speaker-oriented definition of specificity, argues: "Specificity differs from definiteness in that definiteness is discourse bound and it identifies discourse items with each other. Specificity, on the other hand, is sentence bound and links a new discourse item to an already introduced discourse item (in that sentence) or to the speaker (or context index) of that sentence" (272). Ihsane & Puskás (2001:40) give the following definitions, which I adopt for the purpose of this study:[20]

(28) a. *Definiteness*
Selects one object in the class of possible objects

b. *Specificity*
Relates to pre-established elements in the discourse and signals that the existence of a uniquely identifiable referent is presupposed

As a last note, I want to point out that analysing DWH as specific *wh*-phrases is compatible with the existential presupposition argued to be projected by DWH. Both Diesing (1992) and Tsai (1997:163) argue that specifics are presuppositional and non-

[20] Ihsane & Puskás (2001) give arguments for both a DefP and a SpecificP (which they ultimately identify as TopP; cf. also Ionin (2006:223): "a specificity marker does not encode definiteness".

specific aren't; see also Kiss (1993:86), who concludes that "[i]t follows from Enç's definition of specificity that specific NPs carry an existential presupposition".[21]

Against the background of what has been said in the two preceding subsections, I think it is plausible to adopt the view that the defining (referential) property of *which*-phrases as the prototypical DWH is specificity, and propose to classify DWH which involve a SpecificP as DWH_{SPEC}. In the next section, data involving clitic-doubling is discussed which constitute additional evidence in favour of this claim.[22]

3.2.3 Specificity and Resumption

Independent of the issue of D-linking, clitic-resumed elements are generally interpreted as specific. See for example Cinque (1990:74ff.), where it is claimed that quantifiers (including *wh*-phrases) which bind a resumptive are always specific in Italian. Cinque shows that resumptive clitics become obligatory in case a specific interpretation of the antecedent is contextually forced, and Dobrovie-Sorin (1991:355, fn9) notes that clitic-doubling generally depends on specificity and certain semantic features of the NR.[23]

A strong argument for analysing DWH as specific *wh*-phrases comes from resumptive *wh*-structures in languages like Romanian (cf. Cinque & Krapova 2005; Grewendorf 2001). As is the case in other languages which possess markers for specificity, both the specificity-marker *pe* in Romanian and *a* in Spanish precede objects which receive a specific reading (Jaeggli 1982; Torrego 1998; Boeckx 2003:36), are associated with doubles in clitic doubling structures (Dobrovie-Sorin 1991:378), and

[21] For a different view, see Ionin (2006:209), who argues that "specificity is quite distinct from presuppositionality" (but also speculates that the presupposition is triggered by the NR), and see Gil (2008) and Higginbotham (1987:64) for claims that specificity is not D-linking.

[22] Taking seriously the idea that the fseq constraints the form-meaning mapping and that grammaticalization can only proceed along the fseq, Greenberg's (1979) four stages of the development of demonstratives into noun markers in (ia) supports the proposed ordering of projections in (ib):

(i) *Greenberg's four developmental stages of nominal modifiers*
  a. Stage 0: Demonstrative
     Stage I: Definiteness
     Stage II: Specificity
     Stage III: Gender/Class or Noun Marker
  b. $[_{DemP}\ [_{DefP}\ [_{SpecP}\ [_{ClassP}\ [NP]]]]$

[23] When the *wh*-determiner shows agreement, the Nominal Restrictor is interpreted as having referential properties which trigger clitic-doubling. Comorovski (1996:73) notes that clitic-doubling in Romanian is a property of NPs carrying an existential presupposition, and summarizes that "proper names, personal pronouns, and [animate] definite descriptions, specific indefinites, partitive NPs, and D-linked wh-NPs" are clitic-doubled. I argue that the *pe* and the clitic marking trigger DL-I, not the other way round.

regularly accompany *which*-phrases. Data from Comorovski (1996) show that *care* 'which' takes resumption, but other *wh*-phrases are not able to license resumption:

(29) a. [***Pe* cine**]$_i$ (**l*$_i$)- *ai* *vazut* t$_i$?
PE who (him) you-have seen
'Who did you see?'

b. [***Ce* (*film*)**]$_i$ (**l*$_i$)- *ai* *văzut* t$_i$?
What movie him you-have seen
'What movie have you seen?'

c. [***Pe care***]$_i$ *(*l*$_i$)- *ai* *văzut* t$_i$?
PE which him you-have seen
'Which (one) have you seen?

d. [***Pe care* (*dinitre ei*)**]$_i$ *l*$_i$- *ai* *văzut* t$_i$?
PE which (of them) him you-have seen
'Which on (of them) have you seen?

The link between resumption and the specificity-marker *pe* is evident by the fact that in case a doubling clitic is present, *pe* is compulsory (Dobrovie-Sorin 1994:209):

(30) a. ***Pe care elev*** *l-ai* *întîlnit*?
PE which student him-have (you) met
'Which student have you met?'

b. ??***Care elev*** *l-ai* *întîlnit*?
which student him-have (you) met
'How many students have you examined?'

c. ***Pe cîţi elevi*** *i-ai* *examinat*?
PE how many students them-have (you) examined.
'Which student have you met?'

d. ??***Cîţi elevi*** *i-ai* *examinat*?
how many students them-have (you) examined.
'How many students have you examined?'

Concerning the contrast between *wh*-determiner phrases, Dobrovie-Sorin (1994:207) notes: "The contrast in the distribution of clitics correlates with a systematic semantic difference between ce N and care n: care structures can be used only if a certain set of students has already been mentioned or is implicit in a given dialogue". In Romanian *pe* is not good with other *wh*-determiner phrases unless there is a special context which resembles the condition on D-linking.[24]

Recall from subsection 3.1.2 that Amount-*wh*s are ambiguous between DWH and non-DWH. The possible readings of an Amount-*wh* are also reflected in its ability to be accompanied by resumptive clitics. Dobrovie-Sorin (1991:362) reports that in Romanian, the clitic is optional with *citi* 'how many', and that it appearance correlates with differences in interpretation, inasmuch as the presence of the clitic depends on the "definiteness" of the moved *wh*-expression. According to Dobrovie-Sorin (1994:208-209), (31a) asks a question about a number of individuals without presupposing a given set, but (31b) ask for a subset of a set of given students (the *wh*-phrase receives a DL-I besides showing DL-S), and the *wh*-phrase in (31b) is not only marked by *pe*, but also clitic-doubled:

(31) a. ***Cîţi*** ***studenţi*** *ai* *examinat*?
how many students have (you) examined

b. ***Pe cîţi*** ***studenţi*** *i-ai* *examinat*?
PE how many students them-have (you) examined.

c. ***Cîţi elevi*** *ai putea tu suporta*?
how many students could you stand

d. ****Pe cîţi elevi*** *ai putea tu suporta*?
PE how many students could you stand

[24] Regarding the discussion on animacy in subsection 2.3.2, note that *pe* prefers animate referents. In (i), *pe* is dis-preferred, because the NR of the *care*-phrase is inanimate (Dobrovie-Sorin 1994:209, fn26):

(i) (??***Pe***) [***Care carte***]$_i$ *ai* *citit-o*$_i$?
PE which book have read.2SG-it
'Which book have you read?'

But this does not exclude an inanimate NR from being clitic-doubled (Dobrovie-Sorin 1994:228):

(ii) ***Ce*** (***roman***) ***l-****ai* *citit*?
what novel it-have.you read
'Which (novel) have you read?'

As the following data show, this difference in interpretation does not necessarily correspond to a difference in grammaticality in island-contexts (Dobrovie-Sorin 1994:269). I conclude that is not the interpretation (DL-I) which is responsible for eWI:

(32) a. ***Cîte*** ***femei***$_i$ *regreţi* *că* *ai* *iubit* t_i?
how-many women you-regret that you-have loved
b. ***Cîte*** ***femei***$_i$ *regreţi* *că* ***le***$_i$*-ai* *iubit* t_i?
how-many women you-regret that her-you-have loved
'How many women do you regret to have loved?'

Although both sentences are grammatical, Comorovski (1996:177) detects a difference in interpretation. (32a) can only receive the interpretation in (33a); an interpretation like (33b) is unavailable for (32a), while (32b) is preferably interpreted as (33b):

(33) a. 'How many women are such that you regret having loved them?'
ANSWER: There are three such women.
b. 'For what amount of women, you regret having loved that amount of women?'
ANSWER: Three (women).

Comorovski notes that the *wh*-phrase in (33a) does not take as an argument a set already introduced in the discourse (it does not show DL-I), and also cannot receive a partitive reading, while (33b) can.

Facts like these are taken by Dobrovie-Sorin (1991, 1994:269), and Szabolcsi & Zwarts (1993), as an indication that D-linking in the sense of previous mentioning is not the crucial property that enables extraction out of weak islands. Rather, it is the "individual interpretation" as opposed to the "amount interpretation" (Szabolcsi & Zwarts 1997:238). A view corroborated by the results in this thesis (see subsection 4.4.3 for discussion on the notion of 'individuality').

Clitic-doubling is also used to disambiguate the two possible readings which arise when two *which*-phrases appear in one clause in Bulgarian (Grohmann 2006:274; Jaeger 2003, 2004). If there is no clitic in the sentence, both interpretations are possible,

no matter which order the two DWH have at the surface. In (35c) the clitic is interpreted as picking up the superior *wh*-phrase, which in turn is interpreted as the object *wh*-phrase:

(34) a. ***Koj māž koja žena*** *običa*?
which man which woman love.3SG
b. ***Koja žena koj māž*** *običa*?
which woman which man love.3SG
'Which man loves which woman?'
'Which woman loves which man?'
c. ***Koj māž koja žena*** *go običa*?
which man which woman DOC love.3SG
'Which woman loves which man?'

Recall from section 3.2.1 that I reject the claim that it is the "D-head" which is stranded and spelled-out as a resumptive element (cf. footnote 6 in chapter 2 for remarks on the theoretical treatment of resumption). Bianchi (2008) argues that since the doubled element must be a full DP, this poses a problem for this approach to resumption, because we would expect the doubled phrase to be less than a DP (cf. (19)). Given this problem, a question to be answered is where the clitic originates. In subsection 4.3.2, I provide an answer based on the distinction between types of Range Restrictors.

Independent of this question, it has been noted independently that there are languages where topicality of a constituent is signalled by resumption of this constituent (Szabolczi 2006; Citko & Grohmann 2000; Boeckx & Stjepanović 2001; Jaeger 2004). For example, in Gungbe, Topics require a resumptive pronoun (Aboh 2007:29-30). Kallulli (2000, 2001), and Franks & King (2000) have shown that clitic-doubling licences topichood in Albanian, Greek, and Bulgarian ("in the sense of giveness", as Kallulli 2001:237 notes). Jaeger (2004) arrives at the following generalization:

(35) *WH-Topic Fronting Hypothesis*
Clitic-doubling in Bulgarian wh-question indicates that clitic doubled wh-phrase is the topic of the question. Thus, fronting of clitic-doubled wh-phrases is due to the same feature (topicality) that causes topic-fronting in non-question clauses.

Independent of the discussion of whether resumption is triggered by specificity or not, it has been argued that resumption is also triggered by topicality (Comorovski 1986, 1996; Kuno 1991; Cinque 1996, Baltin 1996). This is not surprising given the well-known connection of topicality to specificity. Aboh (2007:30) argues that "definiteness […] or specificity marking […] is a pre-requisite for clausal topicalization. This is not surprising since topics are discourse-anaphoric (or D-linked) by definition", and according to Frascarelli (2007), the notion of specificity overlaps with the notion of familiar topic, and Lewis (1999:318, fn11) points out that Enç's (1991) version of specificity is roughly discourse familiarity. Given this intricate relation of specificity to topicality and also given the claim that DWH are syntactic topics (see below), I will discuss what I call the 'Topic-Theory of D-linking' in the next two sections.

3.3 The Topic-Theory of D-linking

That D-linking is related to the possibility for an *wh*-phrase to be a topic was first proposed by Wu (1996), and later adopted in Grohmann (1998, 2006), Richards (2001), Rizzi (2001, 2005), Hornstein (2001), Boeckx & Grohmann (2004), Grewendorf (2012). In this section, I lay out the basic arguments for analysing (most instances of) DWH as *wh*-topics (familiarity topic), and based on these argue for the existence of the subtype of DWH that I labelled DWH_{TOPIC} in section 1.4. The section starts with arguments for treating *wh*-topics and *wh*-phrases as both receiving a DL-I (i.e. they are similar in interpretive terms), continues with the discussion of data illustrating the fact that *wh*-topics in fact also show DL-S, and ends with a discussion on how the results of this section are compatible with two promising candidate analyses which have been proposed for superiority and eWI, respectively.

3.3.1 Similarities between *Wh*-Topics and DWH

First, consider the fact that *wh*-phrases endowed with the topic-marker *wa* in Japanese show that the interpretation of *wh*-topics is parallel to that of DWH (i.e. these *wh*-topics

show DL-I).[25] Miyagawa (1987) notes that "w*a* always anaphorically refers to a textually determinable set of individuals" (185), and that "the thematic *wa* phrase (used anaphorically) refers to a definite individual or a definite set of individuals […,] it must be the case that the knowledge of a set of definite individuals is shared by the speaker and the hearer" (186).[26] In the following example provided by Miyagawa, the D-linking is introduced by the utterance of speaker A. Speaker B's response is set up on this, and B's question in (36) is ungrammatical once the second *wh*-clause is omitted:

(36) <u>*Speaker A:*</u>
Taroo to hanako ga saakasu e ikitagatteita kedo, hotiri shika ikenakatta
Taro and Hanako SB circus to wanted-to-go but one only couldn't-go
soo da.
hear COP
'Taro and Hanako were waiting to go to the circus, but I heard that only one of them was able to go.'
<u>*Speaker B:*</u>
Dare ***wa*** *itte* (*, *dare* ***wa*** *ikanakatta*) *no*?
who TP go:GER who TP didn't-go QU.
'Who went, and who didn't?'

That an identifiable set must be introduced prior to the use of *wa* can be seen from the inappropriateness of B's response in (37):

(37) <u>*Speaker A:*</u>
Futari saakasu e ikitagatteiru hito ga ita kedo, hotiri shika ikenakatta
two circus to want-to-go person SB existed but one only couldn't-go
soo da.
hear COP
'There were two people who wanted to go to the circus, but I heard that only one of them was able to go.'

[25] Comorovski (1996) assimilates DWH and topics on semantic grounds, since both have to be "under the scope" of an existential presupposition.
[26] NPs marked with *wa* can only be interpreted as definite or specific. If a set involves an indefinite member, this cannot be asked for by using *wh-wa* phrases.

Speaker B:

Dare* ***wa* *itte,* *dare* ***wa*** *ikanakatta no*?

Who TP go:GER who TP didn't-go QU.

'Who went, and who didn't?'

These examples show that topic-marked *wh*-phrases in Japanese receive what I call a DL-Interpretation. The idea that D-linking is reducible to the topicality of a *wh*-item is not unproblematic, given alone that there exist different notions of topic (cf. Grohmann 2006:279, fn12). Frascarelli (2007), being aware of the importance of this point for the analysis of D-linking in terms of topicality, notes that "D-linking is not a property of all types of Topic, and, in particular, not a property of the Aboutness-Shift-Topic [,] the relevant Familiar Topic is thus D-linked". Familiarity as understood here implies that parts of the information conveyed by a sentence are known to the interlocutors, and this is the essence of Pesetsky's (1987:108) definition of D-Linking. Rizzi (2001:161) also makes this explicit in writing "that D-linked means contextually given or presupposed information. Now, this is reminiscent of the notional characterisation of topic: a topic is a contextually given element that is made salient".[27]

Another (more fundamental) problem with analyzing DWH as *wh*-topics is that the very idea that *wh*-topics exist is in conflict with the widespread assumptions that *wh*-phrases are focused elements, and that focus and topic are antonyms. To my knowledge, the observation that an answer must contain a focused expression replacing the *wh*-expression in the question goes back to Chomsky (1971), who argues that the focused expression in the answer provides a value for the variable in the question:

(38) a. WHO gave Peter the book?

b. JOHN_{FOC} gave Peter the book.

With the work of Horváth (1986), the claim that focus is expressed syntactically, and that *wh*-phrases are equipped with a *focus*-feature gained prominence. Arguments for this view come from languages like Italian or Hungarian, where focused and *wh*-constituents are in complementary distribution. For example, Brody (1990) identifies

[27] Some authors refer to "aboutness-topic" as the relevant conception in their analyses of the data (e.g. Jaeger 2004). Lambrecht (1994:157-158) argues that aboutness-topics also can be construed such that they presupposes the existence of the topic-referent, representing given information.

FocP as the target of both *wh*- and *focus*-movement. That *wh*-fronting is in many cases triggered by a *focus*-feature (and not a *wh*-feature) is also argued for by e.g. Sabel (1998), Bošković (1997, et seq.), and Stjepanovic (1998); cf. also Reglero (2003:197-198) for Basque.[28] I will come back to the relevance of a *focus*-feature for the derivation of *wh*-phrases in section 4.4.

The general problem with an analysis of certain *wh*-phrases as topics is that if *wh*-element seeks new information (represented by focus in many theories), and a (familiarity) topic is representing old information, we arrive at a contradiction concerning the correct interpretation of the respective *wh*-phrase. But there are ways out of this putative paradox. First, note that independent of the issue of D-linking and *wh*-phrases, there are a number of works where the mutually exclusiveness of *topic*- and *focus*-features is dismissed (cf. Krifka & Féry 2009; see Cable 2008 on Hungarian). Support for this view comes from cases where a single constituent bears both a topic- and a focus-marker simultaneously, as in the following Gungbe example (from Aboh 2007:21): [29]

[28] Strong evidence for this claim comes from African languages (cf. Weiß 1998:38), where *wh*-phrases systematically co-occur with focus-markers. In Gungbe, the focus-marker *wɛ́* occurs both on the *wh*-phrase, and on the constituent providing the value for the variable in the answer (from Aboh 2007:19):

(i) a. *Ùn kànbíɔ dɔ* ***étɛ́ wɛ́*** *Kòfí hù*?
1sg ask that what FOC Kofi kill
'I asked what did Kofi kill?'
b. *Ùn sè dɔ* ***dàn lɔ wɛ́*** *Kòfí hù.*
1sg hear that snake DET FOC Kofi kill
'I heard that Kofi killed THE SNAKE.'

The following example from the Chadic language Lele illustrates the frequent case where a *wh*-phrase is not accompanies by a focus-marker in the in-situ case, but in the ex-situ cases (from Aboh 2007:16-17):

(ii) a. *Mè ày* ***wéy gà***?
2sg[f] marry who Q/Inter
'Who did you marry?'
b. ***Mè ba*** *gol dí* ***gà***?
what FOC see 3sg[m] Q/Inter
'What did he see?'

Other languages which mark focus syntactically in a position which also hosts *wh*-phrases: Somali, Chadic, Aghem, Basque, Omaha, Quechua, Greek, Finnish (cf. Horváth 1986 and Rochemont 1986).

[29] In (39) Q is realised as an additional low tone on the ultimate syllable, which is presumably the leftover of a full morpheme as in the other languages of the Gbe group. Cf. the following example from Fongbe:

(i) *É ɖù nú* ***à***?
3sg eat thing Inter
'Did he eat?'

(39) *Ùn kànbíɔ ḍɔ Kòfí ní xɔ mótò* ***wɛ́*** ***yà***?
1sg ask that Kofi MOOD buy car FOC TOP-Q/Inter
'I asked whether KOFI SHOULD BUY A CAR (as mentioned)?'

Second, it could be argue that avoiding the simultaneous appearance of a focus-and a topic-feature on the same items (words in most cases, but see chapter 4) we also avoid a feature-clash. So, an argument for analyzing (some instances of) DWH as *wh*-topics could be derived from the very fact that DWH are often *wh*-phrases with a Nominal Restrictor. Strictly speaking, it is the set denoted by the Nominal Restrictor which is familiar, therefore a way out of this conundrum is to analyse the Nominal Restrictor to be equipped with the *topic*-feature; cf. Rizzi (2001:61), who claims that "D-linked lexical restrictions are topic-like in that they express contextually given information" (see also Erteshik-Shir 1997). This avoids the problematic co-occurrence of a *focus*- and a *topic*-feature on the same LI, and would also explain why bare *wh*-phrases do not show DL-S effects easily: With the Nominal Restrictor missing, a conflict in the feature-specification arises.

Alternatively, it could be the case that a DWH does not bear a *focus*-feature at all, as Reinhart (1997:158) observes that "D-linked constituents are not particularly good foci". That DWH are excluded from the focalized preverbal position in Basque (Reglero 2003:211) supports this claim:[30]

(40) a. *?***Nork zein liburu** *erosi zuen*?
Who-ERG which book-ABS buy AUX
'Who bought which book?'

b. ***Zein ikaslek zer*** *irakurri zuen*?
Which student-ERG what-ABS read AUX
'Which student read what?'

I will adopt the first assumption and use it e.g. to explain properties of DWH regarding eWI in section 4.4. The second assumption will not be further discussed, but I see no reason why it could not be implemented into the present analysis.

[30] In Basque, all *wh*-phrases front to the left periphery of the clause and obey strict superiority, i.e. all *wh*-phrases must appear in the order of the corresponding constituent in a declarative sentence.

Against this background, and following Rizzi (1997) and much subsequent work, I assume that topics move to a designated topic-position 'TopP' to check their *topic*-feature, and that regular *wh*-phrases target FocP. In Rizzi's original proposal for the fine-structure of the CP, there exist two TopP, one preceding FocP and one following it, but starting with Benincà (2001), who convincingly argues against a recursive Topic-position below FocP in Italian, many researchers adopted the idea that topics are always higher than foci. For example, Jaeger (2003:182) observes that "[i]n Bulgarian and other Slavic languages, fronted topics precede fronted foci", and many similar observations about the ordering of TopP and FocP in the left periphery of the clause have been made in the literature (for Hungarian see Radó 1997, Kiss 1998, Lipták 2001. I therefore assume that cross-linguistically TopP dominates FocP (cf. Benincà & Poletto 2004).[31]

But given the different notions of topic mentioned above, one could still ask whether grammar provides for designated positions for these different types of topics, and indeed this is the position taken in e.g. Frascarelli (2007) and Frascarelli & Hinterhölzl (2007). Frascarelli (2007:724) proposes that Aboutness-Topics target ShiftP, and "that continuing topics are merged in the FamP projection, in which D-linked information is realized". But FamP in her (41) is below FocP and therefore, we would expect DWH to end up lower in the structure than regular *wh*-phrases:

(41) $[_{\text{ForceP}}\ [_{\text{ShiftP}}\ [_{\text{GroundP}}\ [_{\text{ContrP}}\ [_{\text{FocP}}\ [_{\text{FamP}}\ [_{\text{FinP}}\ [_{\text{TP}}\ \ldots]]]]]]]]$

To overcome this problem, I propose that Token-*wh*s further rise to ContrP [32] This can be argued for on the definitions in Neeleman et al. (2007), who claim that 'contrast' is marking a constituent to belong to a contextually given set out of which members are selected to the exclusion of at least some other members of that set (cf. Rizzi 1997; Kiss 1998; and Boeckx & Grohmann 2004:4, fn2). In this regard, it is interesting that Miyagawa (1987) also claims that the *wa* with the Japanese *wh*-topics must be contrastive. As this discussion would lead us too far afield, I will leave it at that, and

[31] Poletto (2000), Benincà & Poletto (2004), and Poletto & Pollock (2004:283) all argue that the left periphery is divided into two parts, with the lower half hosting new information, and the upper part hosting old information.

[32] Being 'contrastive' entails that the referent is picked out among possible alternatives. For discussion, see Rooth 1992, and Partee 1992.

adopt the assumption that TopP dominates FocP, which enables us to explain a number of phenomena associated with DWH, as we will see in the remainder of this chapter.

Adopting the idea that the relevant TopP is higher than FocP and assuming that FocP is the target for regular "*wh*-movement", I predict that DWH_{TOP} move past FocP to a position preceding other *wh*-phrases.[33] This is the configuration we find with phrases violating superiority and escaping weak islands, making the Topic-Theory so attractive for the analysis of DL-Syntax effects. Taking the island-inducers in the *wh*-island cases to sit in FocP, the *topic*-feature enables a DWH to move past FocP and to subsequently extract out of the island. This is reminiscent of the escape-hatch approach in Rudin (1986, 1988) for MWFL. But with the Topic-Theory, the possibility of using an escape-hatch is in principle available in every language, and not tied to phenomena like multiple *wh*-fronting. I will come back to this in section 3.4 and in section 4.4.

Examples involving *which*-phrases targeting positions higher than regular *wh*-fronting show up many languages.[34] Take for example the following facts from Strijen Dutch discussed in van Craenenbroeck (2008). (42) illustrates that *which*-phrases end up in a position rather high up in the C-domain (they can only precede *of*), whereas other *wh*-phrases can also occupy a lower one (preceding *dat* but following *of*):[35]

(42) a. *Ik weet nie* (***of***) [*met wie*] (***of***) *Jan oan et proate was*.
I know not if with who if John on it talk was
'I don't know who John was talking to.'

b. *Ik weet nie* ***of*** [*met wie*] ***dat*** *Jan oan et proate was*.
I know not if with who that John on it talk was
'I don't know who John was talking to.'

c. *Ik vroag me af* (****of***) [*welke jonge*] (***of***) *die maisjes gistere gezien hebbe*.
I ask me PRT if which boy if the girls yesterday seen have
'I wonder which boy the girls saw yesterday.'

[33] Surányi (2006:7-9): "[H]igh wh-elements are interpreted at the interfaces as topics (and not as foci)".
[34] Compare also the Hindi data discussed in Sinha (2000), where the *wh*-phrase appears clause-initially and receives a D-linked interpretation; i.e. the answers can only be taken from a contextually salient set (together with *wh*-scope marking, this is the only way for a *wh*-phrase to scope out of an island in Hindi).
[35] In (43a) and (43c) the brackets indicate that the wh-phrase can either follow or precede *of*. The same pattern can be observed in Frisian; for data see van Craenenbroeck (2008).

d. **Ik vroag me af* ***of*** [*welke jonge*] ***dat*** *die maisjes gistere gezien hebbe*.
I ask me PRT if which boy that the girls yesterday seen have
'I wonder which boy the girls saw yesterday.'

That *which*-phrases and non-*wh* topics target the same position is evident from data from Antakarana Malagasy (Austronesian), where *wh*-determiner phrases can appear in-situ, and this A'-position is a dedicated topic-position (Polinsky 2004:12):

(43) a. **Nisitriky* ***azovy***?
hide.ACT who
'Who is hiding?'

b. *Nisitriky* ***tsaiky azovy***?
hide.ACT child who
'Which child is hiding?'

c. **Nivakinao* ***ino***?
read.PASS what
'What did you read?'

d. *Niviakinao* ***boky ino***?
read.PASS book what
'Which book did you read?'

In the next section, I turn to examples of the similar syntactic behaviour of DWH and topics and empirical data supporting the *wh*-topic analysis of a subset of DWH.

3.3.2 The DL-Syntax of *Wh*-Topics

I now turn to data which illustrate that topical *wh*-phrases show DL-S effects (in a number of unrelated languages). Wu (1996) was the first to explicitly claim that D-linked *wh*-phrases are in fact to be analysed as *wh*-topics. In his study of fronted *wh*-phrases in Chinese, he shows that properties of these Chinese *wh*-topic resemble the properties of *which*-phrases in other languages, proposing that "[i]t is indisputable that a topicalized phrase is D-linked, therefore specific" (176). Wu shows that *wh*-fronting is used in exactly the contexts *which*-phrases are used in other languages. For example, a

question like (44b) can only be uttered if there is a list of items the answer to be drawn from, i.e. (44b) receives a DL-I:

(44) a. *Zhangsan mai-le* ***shenme***?
Zhangsan buy-ASP what
'What did Zhangsan buy?'

b. ***Shenme*** *Zhnagsan mai-le*?
what Zhangsan buy-ASP
'What did Zhangsan buy?'

As mentioned by Wu (1996:181), (44b) cannot be uttered in an out-of-the-blue context. And also, (44a) does not presuppose the existence of any particular set of things *Zhangsan* has bought, whereas (44b) does presuppose such a set. The parallelism between DWH and Chinese *wh*-topics extends beyond interpretation. For one, Chinese *wh*-phrases *wh*-topics do not trigger superiority effects (Wu 1996:177):

(45) a. ***Shenme***$_i$ ***shei*** *mai le* t_i?
what who buy-ASP
'What did who buy?'

b. [***Shenme dongxi***]$_i$ *ni quan* ***shei*** *bu yao mai* t_i?[36]
what thing you persuade who not buy
'What (thing) did you persuade who not to buy?'

Second, Chinese *wh*-topics can extract out of weak-islands (1996:174):

(46) a. [***Shenme dongxi***]$_i$ *Zhangsan xiang zhidao Lisi mai mei mai* t_i?
what thing Zhangsan want know Lisi buy-not-buy
'What (thing) did Zhangsan want to know whether Lisi bought?'

The third property of Chinese *wh*-topics relevant for our discussion is the obviation of WCO-effects (Wu 1996:179):

[36] In this particular case the *wh*-word cognate to English *what* is used; resulting in the meaning of German *was für ein*. Chinese also has a *wh*-word equivalent to English *which*, namely *na*.

(47) a. ***Shei***$_i$ *ta*$_i$ *de muqing hen xihuan* t$_i$?
who he DE mother very like
'Who does his mother like?
b. **Ta*$_i$ *de muqing hen xihuan* ***shei***$_i$?
he DE mother very like who
'Who does his mother like?

Wu (1996:183) concludes that "[t]he behaviour exhibited by D-linked *wh*-phrases in English is very similar to that exhibited by fronted *wh*-phrases in Chinese. It is highly desirable, if not necessary, to treat them alike". I adopt this conclusion, and in the following want to present data which corroborates it. The first set of data showing that *which*-phrases are *wh*-topics comes from Tsez, a Nakh-Dagestanian language spoken in the north-eastern Caucasus (see also subsection 2.2.6). Tsez exhibits 'Long-Distance-Agreement' (LDA), a construction in which a verb in the matrix clause agrees with an absolutive argument in a subordinate clause. Polinsky (2001:8) argues that LDA is contingent on the topichood of this absolutive argument:

(48) LDA occurs when the referent of the embedded absolutive NP is the topic of the embedded clause.

The absolutive argument in the subordinate clause has to be morphologically marked as Topic by means of a suffix to trigger LDA (compare (49a) to (49b)). If the embedded argument is marked for e.g. focus, LDA is not possible (cf. (49c)):

(49) a. *Eni-r* [*uža-ā magalu* ***-gon*** *b-āc'-ru-λi*] *b-iy-xo*.
mother-DAT boy-ERG bread**.ABS.III-TOP** III-eat-AGR **III-**know-PRS
'The mother knows that the bread, the boy ate'
b. **Eni-r* [*už-ā magalu* ***-gon*** *b-āc'-ru-λi*] *r-iy-xo*.
mother-DAT boy-ERG bread**.ABS.III-TOP** III-ate-AGR **IV-**know-PRS
c. **Eni-r* [*už-ā magalu* ***-kin*** *bāc'-ru-λi*] *b-iy-xo*
mother-DAT boy-ERG bread**.ABS.III-FOC** III-eat-AGR **III-**know-PRS

Crucial for the discussion is the fact that there are three *wh*-words which can bear absolutive case in Tsez:

(50) *Absolutive* Wh-*Phrases in Tsez*

a. *šebi* 'who'; 'what'

b. *didiw N* 'what N'

c. *nāsi N* 'which N'

The first two can, but do not have to trigger LDA, but in case the embedded absolutive argument takes the form *nāsi N*, it obligatorily triggers LDA, just like the appearance of the topic-marker in (49):

(51) a. *Dar [nāsi kec' nesir b-ati-ru-λi] b-iy-x-anu*
me-DAT which song.**III.ABS** him.DAT III-like-PSTP-NL **III**-know-PRS -NEG
'I don't know which song he liked.'

b. **Dar [nāsi kec' nesir b-ati-ru-λi] r-iy-x-anu*
me-DAT which song.**III.ABS** him.DAT III-like-PSTP-NL **IV**-know-PRS -NEG

Any other topic in the embedded clause blocks LDA with the embedded absolutive argument, and the appearance of another topic-marked expression renders *nāsi*-phrases infelicitous. Whenever a non-*wh*-topic is introduced into the sentence, a co-occurring *nāsi*-phrase cannot also be a topic, illustrated by the lack of LDA (Polinsky 2005:9):

(52) *Absolutive topic + D-linked non-absolutive*

a. *Nāzo užā yedu t'ek-gon t'āt'ruɬi* ***r****-iyx-ānu.*
which boy.ERG this book.ABS.II-TOP read **IV**-know-NEG
'I don't know which boy, this book read.' (PLA)

b. *Nāzo užā yedu t'ek-gon t'āt'ruɬi* ***y****-iyx-ānu.*
which boy.ERG this book.ABS.II-TOP read **II**-know-NEG
'I don't know, this book, which boy read.' (LDA)

(53) *D-linked Absolutive + Non-absolutive topic*

a. *Užā-gon nāsi t'ek t'āt'ruɬi* ***r****-iyx-ānu*.
boy.ERG-TOP which book.ABS.II read **IV**-know-NEG
'I don't know this boy, which book he read.' (PLA)

b. *Užā-gon nāsi t'ek t'āt'ruɬi* ***y****-iyx-ānu*.
boy.ERG-TOP which book.ABS.II read **II**-know-NEG
'I don't know, which book, this boy read.' (LDA)

I conclude that topics and DWH are in competition for the same structural position (in Tsez). This seems to be also to be true for Russian. Scott (2012:56-57) shows that superiority in Russian does not arise if there is an (additional) topic-projection available in the C-layer as a landing-site for *wh*-phrases, but does arise if this position is filled with other material, or is not present at all (as in embedded contexts):

(54) a. ***Kto*** ***čto*** *posovetoval Darii*?
who.NOM what.ACC advised Daria.DAT

b. ***Čto*** ***kto*** *posovetoval Darii*?
what.ACC who.NOM advised Daria

c. *Darii* ***kto*** ***čto*** *posovetoval*?
Daria.DAT who.NOM what.ACC advised

d. **Darii* ***čto*** ***kto*** *posovetoval*?
Daria.DAT what.ACC who.NOM advised

'Who advised what to Daria?'

(55) a. ***Kto*** ***komu*** *predstavil Petra*?
who.NOM who.DAT introduced Peter.ACC

b. ***Komu*** ***kto*** *predstavil Petra?*
who.DAT who.NOM introduced Peter.ACC

c. *Petra* ***kto*** ***komu*** *predstavil*?
Peter.ACC who.NOM who.DAT introduced

d. **Petra* ***komu*** ***kto*** *predstavil*?
Peter.ACC who.DAT who.NOM introduced

'Who introduced Peter to who(m)'

It thus seems that *wh*-topics and normal topics are in complementary distribution in these languages (cf. also Radó 1997 for a similar analysis of Hungarian data.). Since *which*-phrases are not always ungrammatical when they co-occur with a topic, I conclude that *which*-phrases need not be topics, but become topics by default (if no other element receives a topic-marking). Independently, Cinque & Krapova (2005) reach the conclusion that in Bulgarian *wh*-topics always precede Token-*wh*s if these are not marked for topicality themselves:[37]

(56) clitic-resumed topical *wh*-Phrases > TOKEN > […] > AMOUNT > KIND > […]

Besides the resumption data in subsection 3.2.3, Bulgarian provides us with another fact that favors an analysis of DWH in terms of *wh*-topics. As with other multiple *wh*-fronting languages, all *wh*-elements have to be fronted and normally precede all other material (forming a "*wh*-cluster") in Bulgarian.[38] As shown in (58), Topics and topicalized adverbs may precede *wh*-phrases (cf. Richards 2001:95):

(57) [$_{\text{TopP}}$ ***Ivan*** *včera* [$_{\text{CP}}$ ***kakvo*** *kupi*]]?
Ivan yesterday what bought
'What did Ivan buy yesterday?'

Topicalized adverbs cannot intervene between the *wh*-elements of the *wh*-cluster, as shown in (58a). This ordering is possible only if the fronted *wh*-phrases are DWH, as shown in (58b):[39]

(58) a. *[$_{\text{TopP}}$ ***Koj*** ***včera*** [$_{\text{CP}}$ ***kavko*** *kupi*]]?
who yesterday what bought
'Who bought what yesterday?'

b. ?[$_{\text{TopP}}$ [***koja*** ***žena***] ***včera*** [$_{\text{CP}}$ [***koja*** ***kniga***] *kupi*]]?
which woman yesterday which book bought
'Which woman bought which book yesterday?'

[37] In (56), I have only listed the classes of *wh*-phrases relevant for our discussion.
[38] I use the term in a theory-neutral, descriptive sense. I do not argue that the fronted *wh*-phrases in Bulgarian form a cluster along the lines proposed in Grewendorf (2001), but I do not reject this option.
[39] Richards (2001) reports that although (58b) is not fully grammatical, his informants can detect a clear contrast between (58a) and (58b).

I conclude that in Bulgarian, DWH target the same position in the left-periphery of the clause non-*wh*-Topics target. Also, the fact that *wh*-extraction out of embedded *wh*-clauses is generally prohibited in German (as discussed in d'Avis 1995, among others) falls out naturally adopting Grohmann's suggestion that all fronted *wh*-phrases in German in fact target TopP. In Grohmann's (2006) analysis of *wh*-fronting in German multiple *wh*-questions, it is claimed that material intervening between *wh*-phrases is in a Topic-position (259):[40]

(59) *Topicalizability Generalization*
Only topicalizable elements may appear in between two *wh*-phrases; nontopicalizable elements may only follow them (in German multiple *wh*-questions).

According to Grohmann, if we accept that all *wh*-movement in German is ultimately movement to TopP, the lack of Superiority-effects with short *wh*-movement in German follows immediately under the assumption that the topic-projection is iterative (as was originally claimed by Rizzi 1997:297). But there are problems arising for the analysis of weak island extractions that I will discuss in section 3.4. See also the discussion below (61) in this subsection.

Another argument for the topic-status of *which*-phrases based on German data is developed in Grewendorf (2012), who observes that in German, the degree of grammaticality of extraction from *wh*-islands is the same for DWH as for topics. Although extraction out of islands is(, if not ungrammatical, so at least) dis-preferred in Standard German even with DWH, in some varieties both movements lead to only a mild deviance, whereas extraction of a non-DWH out of a *wh*-island is ungrammatical:[41]

(60) a. ***Was**$_i$ *weißt du nicht,* [*wem du* t$_i$ *geben sollst*]?
what$_{acc}$ know you not who$_{dat}$ you give should

[40] The resulting structure for a German multiple-*wh* question is given in (i):

(i) [$_{CP}$ [$_{TopP}$ WH1 XP WH2 [$_{TOP}$] [$_{?P}$ ….]]]

[41] Note that *wh*-extraction from *wh*-islands normally results in strict ungrammaticality in Standard German, even with arguments. This underlines the significance of the data in (60).

b. ?[***Welches Buch***]$_i$ *weißt du nicht,* [*wem du* t$_i$ *geben sollst*]?
which book$_{acc}$ know you not who$_{dat}$ you give should

c. ?[***Radios***]$_i$ *kann ich mich nicht erinnern,* [*wie man* t$_i$ *repariert*].
radios$_{acc}$ can I refl not remember how one repairs

Grewendorf (2012) discusses another type of example from the southern varieties of German: Whereas island-effects induced by non-DWH constitute weak islands, DWH pattern with topic islands, which belong to the class of strong islands (see Cinque 1990 for evidence for this claim) in these varieties:

(61) a. ?*Den Siemenskonzern$_i$ weiß ich nicht,* [***was*** t$_i$ *ruiniert hat*].
the Siemens trust$_{ACC}$ know I not what$_{NOM}$ ruined has

b. ?**Den Siemenskonzern$_i$ weiß ich nicht,* [w***er*** t$_i$ *ruiniert hat*].
the Siemens trust$_{ACC}$ know I not who$_{NOM}$ ruined has

c. **Den Siemenskonzern$_i$ weiß ich nicht,* [***welcher Manager*** t$_i$ *ruiniert hat*].
the Siemens trust$_{ACC}$ know I not which manager$_{NOM}$ ruined has

Bošković (2003:45, fn10) notes that "questions involving extraction of a D-linked wh-phrase out of an island are worse if they involve extraction across another D-linked wh-phrase". This approach would also explain the following data from Bulgarian and Swedish, respectively:[42]

(62) a. ?[*Koja ot tezi knigi*]$_i$ *se čudiš* [***koj*** *znae koj prodava* t$_i$?
which of these books REFL wonder who knows who sells
'Which of these books do you wonder who knows who sells?'

b. *[*koja ot tezi knigi*]$_i$ *se čudiš* [[***koj čovek***] *znae* [*koj učitel*] *prodava* t$_i$?
which of these books REFL wonder which man knows which teacher sells
'Which of these books do you wonder which man knows which teacher sells?'

[42] Independently, Cinque & Rizzi (2010) observe "that if a position has island-creating properties, it must be higher than other positions filled by movement, for instance, the hanging topic (which has island creating properties) must precede the ordinary topic expressed in Romance Clitic Left Dislocation".

(63) a. **Vad frågade Jan* [***vem*** *som skrev*]?
'What did John ask who wrote?'

b. *Vilken film var det du gärna ville veta* [***vem*** *som hade regisserat*]?
'Which film did you want to know who had directed?'

c. **Vilken film var det du gärna ville veta* [***vilken skådespelare*** *hade regisserat*]?
'Which film did you want to know which actor had directed?

That *was* 'what' in (61) does not block extraction (by virtue of sitting in TopP) can be explained by the assumption I will make in section 4.2 that *was* is just the spell-out of QP (i.e. a kind of "*wh*-operator" in the traditional generative sense), therefore cannot be analyzed as a topic, and thus sits in the lower FocP position in the left-periphery, leaving the escape-hatch TopP open for topical *wh*-phrases.[43] That *vem* 'who' does block extraction in (63a) but not in (63b) is only apparent. Under the current analysis, these cases are the mirror image of the German facts in (61). Since *vad* 'what' cannot bear a topic-feature, it cannot target TopP and thus cannot extract out of the island, passing the *wh*-item *vem* 'who' in FocP.

In this section, I have established the claim that *wh*-topics show DL-S syntax, and also provided a first discussion on how the topicality of certain *wh*-phrase can form the basis of a syntactic account of DL-S. In the next section, I will continue this discussion.

3.4. Discussing the Topic-Theory of D-linking

After having established that a large number of instances of DWH can faithfully be analyzed as *wh*-topics in the preceding section, in this section, I will discuss how this approach to the properties of DWH can be used to explain DL-S effects. Although the Topic-Theory can help us explain some of the data, the result will be that we need to look at the structure of *wh*-items even in more detail.

[43] Boeckx & Grohmann (2004), among others, argue that both movement of DWH and topic-movement is movement to a position in the left-periphery of the clause without operator properties.

3.4.1 Superiority and *Wh*-Subjects

In this subsection, we will compare the Topic-Theory of D-linking to approaches to superiority based on Attract Closest. It will be argued that the Attract Closest approach is flawed. Originally intended to apply to all movement rules, superiority became a descriptive term for constraints on the ordering of moved *wh*-phrases. Many authors proposed to subsume it under general locality-constraints like Attract Closest (AC) (cf. Richards 2001; Dayal 2006:304), or the Minimal Link Condition (MLC) (cf. Chomsky 1995:311):[44]

(64) *Attract Closest Principle*
A head that attracts a given kind of constituent attracts the closest constituent of the relevant kind.

In light of this, note that Chafe (1970:332) already observed that "[t]he […] SUBJECT has priority so far as […] moving is concerned". This is not surprising under an AC-approach to superiority, since the subject normally is closer to the probe than other arguments it is thus expected to move first. Examples in which only object-*wh*-phrases co-occur in a sentence (what Hendrick & Rochemont 1982 call 'Pure Superiority') also support an AC-approach:

(65) a. **Who**$_i$ did you persuade t_i [PRO to buy **what**]?
b. ***What**$_i$ did you persuade **who** [to buy t_i]?

The AC-approach is also compatible with the observation that in English, it suffices for the subject-*wh* to be D-linked to amnesty superiority-effects (Boeckx & Grohmann 2004:2; Dayal 2006:294). This has been claimed by Pesetsky (1987), and the following data from van Craenenbroeck (2008:2) illustrate this configuration:

(66) a.***What**$_i$ did **who** buy t_i?
b. **What**$_i$ did [**which boy**] buy t_i?

[44] Cf. Pesetsky (2000:16): "[The possibility] to violate AC […] typically arises when the answers to the question are supposed to be drawn from a set of individuals previously introduced into the discourse, or when the set forms part of the 'common ground'".

This is expected under the unselective binding non-movement account of DWH proposed by Pesetsky (see subsection 2.1.6): In case the *wh*-subject is a DWH, which can check all its features in-situ, the relevant head in CP probes the next *wh*-phrase, and on the surface, an AC-violating configuration arises. This explanation can also be applied to the following Serbo-Croatian data from (Bošković 2007:164):

(67) a. [***Kakvu***] *je* [***koji*** ***student***] *ocjenu dobio*?
what.kind.of is which student grade got
'What kind of grade did which student get?'

b. ??[***Kakvu***] *je* [***ko***] *ocjenu dobio*?
what-kind-of is who grade got
'What kind of grade did who get?'

The conclusion that superiority is due to AC is not agreed on by everybody, since there are good arguments against it that I will introduce in what follows. For one, it seems not to be the case that the "D-linking" of the subject is the controlling factor in superiority-configurations in all cases. For example, Bolinger (1978) takes the status of the moved *wh*-item to be the controlling factor (i.e. the *wh*-object in the relevant cases). Supporting this claim, the following data from Romanian show that the (morphological) D-linking of the in-situ *wh*-phrase cannot be the only determining factor:[45]

(68) a. [*Cine*$_i$ ***de care***$_j$ [t_i *s-a plins* t_j]]?
who of which has complained

b. [***De care***$_j$ *cine*$_i$ [t_i *s-a plins* t_j]]?
of which who has complained
'Who complained of which one?'

c. *[***De ce***$_j$/***cine***$_j$ *cine*$_i$ [t_i *s-a plins* t_j]]?
of what/who who has complained

Comparing (68a) to (68b), we can conclude that the in-situ *wh*-phrase can be a regular *wh*-phrase without triggering superiority effects, if the moving *wh*-phrase is a DWH. If

[45] Comorovski (1996:143) claims that "[t]he prohibition against fronting a non-D-linked wh-phrase over a wh-subject observed in Romanian is just an instantiation of a more general condition that requires the leftmost wh-phrase occurring in a matching question to be D-linked".

this holds, (68c) can only be out because of the status of the moved *wh*-phrase: It seems not to be able to bear the relevant feature to obviate superiority. The same reasoning can be applied to the following data from Bulgarian (Grohmann 2000:120):

(69) a. [***Koja studentka*** / ***ot studentkite***]$_i$ *ne znaes* [***koj***$_j$ t_j *e pokanil* t_i]?
which student / of students-the not know-2s. who is invited.
'Which student don't you know who invited?'

b. *[***Kakvo***]$_i$ *ne znaes* [***koj***$_j$ t_j *e vidjal* t_i]?
what not know-2s. who is seen
'What don't you know who saw?'

Problems for an approach based on AC also arise from cases discussed in Haider (2000:240). In (70a), the indirect object *wh*-phrase *to whom* is analysed to be deeper embedded than the direct object *wh*-phrase *what*, but it is moved across what, violating AC.[46] In (70b) the moved *wh*-phrase is embedded inside an infinitival phrase, and this should lead to the attraction of *when* (cf. Reglero 2003; Jeong 2007 for Basque):

(70) a. [**To whom**]$_i$ did you give what t_i?

b. **Who**$_i$ did you try [to phone up t_i] when?

Similar problems for the AC account arise from Bulgarian, where there is no ordering restriction between the non-subject *wh*-phrases, i.e. the *wh*-subject must precede all other *wh*-phrases, but these can appear in any order. As the following Bulgarian data from Grewendorf (2001:97) illustrate, both the orders *direct object > indirect object* and *indirect object > direct object* are possible (these sentences are standard Bulgarian which does not possess object-clitics):

(71) a. ***Kakvo na kogo*** *e dal Ivan*?
what to whom is given Ivan

b. ***Na kogo kakvo*** *e dal Ivan*?
to whom what is given Ivan

'What has Ivan given to whom?'

[46] As Helmut Weiß (p.c.) reminded me, this view on the basic order of objects is not unchallenged.

The picture emerges that subject-*wh* and DWH pattern together because they share the ability to be endowed with a *topic*-feature. Accepting the old idea that a subject is a type of 'grammaticalized topic' (cf. Jayaseelan 2001), the special status of subject-*wh*s in superiority-configurations falls out immediately (see Radó 1997 for a similar claim regarding English and Hungarian). If the superior *wh*-phrase gains its status from the *topic*-feature, and the subject is marked as topic by default, we would expect the *wh*-subject to appear first in a string of *wh*-phrases in a multiple *wh*-fronting language. At the same time, only *wh*-objects which can bear a topic-feature can violate superiority.[47] The special status of the *wh*-subject could thus in principle be explained without recourse to AC: When there are two *wh*-phrases in a sentence, the subject-*wh* will receive the topic-marking by default if no other devices force an interpretation of the *wh*-object in terms of topicality.

But why is (66a) ungrammatical and (67a) and (69a) grammatical?[48] I believe that the difference lies in the internal structure of the *wh*-items in Slavic and English. In chapter 4 we will see that some *wh*-pronouns involve a nominal projection that is absent in e.g. English *what*. These additional nominal projections (I will identify these as Functional Nouns or silent Nominal Restrictors), enable a *wh*-phrase to bear a topic-feature. Note in this regard that the Slavic instances of WHO all seem to also be part of the exponents for WHICH in these languages.

In light of my claim that DL-S is based on specificity, and because topicality is also argued to be facilitated by specificity, it is interesting that Ihsane & Puskas (2001:43) remind us "that objects tend to have a non-specific reading whereas subjects are more easily interpreted as specific". This also explains why there are normally only object-clitics, and that *pe* is only obligatory with objects. If subjects are interpreted as default-topics, the specificity requirement for topics forces grammar to interpret subjects as specific DPs, and as a consequence, no additional marking for specificity is required for subjects, but for objects. We can thus explain (71) by assuming that both

[47] Comorovski (1996:144) comes to the same conclusion on independent grounds: "[S]ubjects frequently carry old information. Thus, subjects are much more likely to function as topics than objects are; topics generally carry old information. Now, the constituent which answers a wh-phrase is obligatorily focused. But that, of course, does not preclude its functioning as a topic at the same time, given the existence of contrastive topics. […] In sum, it is the high rate of occurrence of subject topics in declaratives that ultimately explains why a wh-subject of a question will tend more than a non-subject to be interpreted as D-linked even in the absence of a context".

[48] Thanks to Eric Fuss (p.c.) for pointing this problem out to me.

the indirect and the direct objects can optionally bear a *topic*-feature and therefore precede the other *wh*-element.

It seems reasonable to assume that the linear order of *wh*-phrases in Bulgarian is determined by the presence of a *topic*-feature on the highest *wh*-element. The subject is special not due to its closeness to CP, but because it is a topic. Jaeger (2004) makes the following hypothesis regarding the order of *wh*-elements and their ability to be topics:

(72) *Topics First! Hypothesis*

Like order constraints on the left-periphery of non-interrogatives, wh-phrase ordering (including so-called Superiority effects) in Bulgarian wh-question is (partly) determined by topicality.

In this regard, it is interesting to note that clitic-doubling is only confided to topics in the languages which use it. For example, Comorovski (1996:75, fn75; 123) reports that Romanian *ce* can never (even with altered intonation) be the first in a string of *wh*-phrases, and can also never be clitic doubled (while other *wh*-phrases can do both). It is even the case that "*ce* can only occupy the final position in a string of fronted wh-phrases (122)". The same has been reported by Rudin (1986, 1988) for Bulgarian *kakvo* 'what':

(73) a. *Cine*$_i$ *cui*$_j$ ***ce***$_k$ /$^{??}$***ce***$_k$ *cui*$_j$ t$_i$ i$_j$-*a spus* t$_k$ t$_j$?
who to-whom what /what to-whom to-him has said
'Who said what to whom?'

b. *Cine*$_i$ *despre cine*$_j$ ***ce***$_k$ /****ce***$_k$ *despre cine*$_j$ t$_i$ *ti-a povestit* t$_k$ t$_j$?
who about whom what /what about whom to-you has told
'Who told you what about whom?'

I think that all of these examples fall under the QP-approach discussed below (63) and to be pursued further in chapter 4. The alleged AC-effects observed in the superiority cases are thus only apparent and Bollinger (1978) is right in his claim that it are the properties of the moved *wh*-phrase which count regarding the occurrence of superiority effects in multiple *wh*-questions.

3.4.2 Escape Weak Islands and Relativized Minimality

The most elaborated account of superiority in Multiple Wh-Fronting Languages (MWFL) is developed in Bošković (1997, 2002, 2003). This approach argues that only one *wh*-phrase fronts for *wh*-feature checking reasons, the other *wh*-phrases front only to check a *focus*-feature. The phrase which checks the *wh*-feature targets a position higher than the *focus*-checking position in Bošković's system. This derives the linear precedence of the superior *wh*-phrase. I agree with Jeong (2007) that Bošković's approach is flawed, since it just stipulates that superiority does only arise with *wh*-feature checking, but does not explain why this should be the case.

Bošković explains multiple fronting to one head by an "Attract-All" property of FocP (which is functionally equivalent to a multiple specifier-analysis; see also Pesetsky 2000). I refrain from using such meta-features, since they are just restating the fact that in MWFL several instances of *wh* are in CP. The theory does not provide an explanation for why an $\text{ATTRACT}_{\text{ALL}}$-head should not impose an ordering-restriction on moved elements (cf. Jeong 2007). This later point is even more severe in light of the fact that such a head must be part of the lexicon of Basque, where all wh-elements are attracted to CP and all obey superiority under normal circumstances.

As the *wh*-feature is always supplemented by other features in Bošković's approach, it is a small step to claim that the *wh*-feature is only a mnemonic device of the theory (cf. Bošković's 2002, 2003 claim that in SC and Russian, there is no "true wh-movement"). If it is possible to form constituent questions without a *wh*-feature, it could well be that the *wh*-feature is not involved in the derivation of *wh*-questions at all. The only function of the *wh*-feature in Bošković's system is to ensure that at least one *wh*-item fronts for other reasons than the rest. Nothing hinges on this feature being the *wh*-feature (except linguistic tradition). I will pick up this topic in chapter 4, where I argue for the non-existence of a *wh*-feature on independent grounds. Since there being no such thing like a *wh*-feature, Bošković's claim that the superior *wh*-phrase fronts to check a *wh*-feature and that the other *wh*-phrases front to check *focus*-features has to be reconsidered. What Bošković has to stipulate, but what comes for free in the Topic-Theory of D-linking, is that the landing site of $\text{DWH}_{(\text{TOPIC})}$ is higher than the landing site of regular *wh*-phrases. All the facts explained by Bošković's account are thus also

captured under the Topic-Theory of D-linking, but at the same time, we avoid the complications that Bošković's approach is troubled with.

It has been claimed that superiority and eWI could possibly be subsumed under the same constraint (cf. Rudin, 1986, 1988; Comorovski 1996; even Chomsky 1973 proposes that the Superiority Condition also rules out weak island violations). This is intuitive, since both phenomena seem to display the same basic configuration (cf. subsection 4.4.1 for further discussion):

(74) a. *Weak Island*
[WH2] ….. [$_{\text{Island}}$ [WH1] ….. ~~[WH2]~~ …..]

b. *Superiority*
[WH2] ….. [$_{\text{Intervener}}$ WH1] ….. ~~[WH2]~~ …..

Recall that the data in (5) and (6) in subsection 2.1.2 are in between superiority and weak islands. In the canonical cases of weak islands, there is an interrogative complementizer which induces the island, and in (5) and (6) in subsection 2.1.2, the island itself is a multiple *wh*-clause with a moved (superior) *wh*-phrase in CP.[49] This can be explained by the analysis of DWH in terms of *wh*-topics: (i) DWH can escape weak islands (induced by an element in FocP), because they use TopP as an escape-hatch, and (ii) they give rise to strong islands, because they target a high position in the CP, minimizing the number of escape-hatches available to other *wh*-phrases (see subsection 4.4.1 for additional discussion and an alternative explanation).

It thus appears that features of the moved element are responsible for weak island-extractability, and not features of the C-domain (cf. Boeckx & Jeong 2004). Elements extractable out of weak islands are endowed with feature which enables them to pass the intervener, target an escape-hatch, and subsequently move out of the island. Note that this is the opposite result I reached in the preceding subsection for the superiority cases. I thus conclude that as attractive as treating superiority- and island-cases together, they resist a unified account.

[49] Together with the fact that DWH are able to both escape weak islands and violate superiority, this strongly supports the view that superiority effects and *wh*-island effects are both instances of a single UG principle (as Comorovski 1996 stresses). It is not clear if this reasoning can be applied to other types of weak-islands, but as all accounts of superiority face this problem, I will leave this issue at that for the moment.

Approaches to weak island extractability based on the reasoning sketched above can be summarized under the label of feature-based Relativized Minimality (FB-RM), as proposed in e.g. Starke (2001). The core idea is that an element *A* can only cross an element *B* iff *A* possesses a feature which it does not share with element *B*:[50]

(75) a. *A[α] … B[α] … <A[α]>
b. A[αβ] … B[α] … <A[αβ]>
c. *A[α] … B[αβ] … <A[α]>

In (75a), *B* intervenes between the two positions of *A*, simply because the feature *α* which is the trigger for the movement of *A* is also a property of *B* and there is no way for *A* to "choose" a different type of movement, since no other trigger for movement is available. This possibility for *A* is available in (75b): it can choose the *β*-route (as Starke puts it) for movement, and since *B* does not share this feature, *B* does not intervene. For Starke, (75b) depicts the situation of an element escaping a weak-island, and (76c) depicts a strong island. As well as this FB-RM approach seems to work well for the island cases, there are problems for such an account to eWI to be applicable to the superiority cases:

(76) a. **Which book** did **which man** read <which book>?
b. ***Which book** did **who** read <which book>?
c. **What** did **which man** read <what>?

The FB-RM logic leads us to expect that (76a) is ungrammatical since it is a variant of (75a), that (76c) is ungrammatical since it is a variant of (75c), and that (76b) is grammatical since it is an instantiation of pattern (75b). All these expectations are not borne out. In other words: the grammaticality is the exact opposite of the one predicted by an approach along the lines of Starke (2001). Please note that the grammaticality status of both (76b) and (76c) is controversial, as we discussed in the preceding subsection. Thus, the result reached here is only preliminary. If we nevertheless stick to the view that the eWI facts can be explained by appeal to FB-RM, we have to develop

[50] Starke (2001:6) notes: "[An] important fact – often missed – is that weak islands are about *classes* of features, not about features themselves". So, in the schema in (78), *α* stands for a (super-)class C and *β* for a subclass SC.

separate analyses for superiority and extraction out of weak islands, respectively, thus corroborating the result reached in the text above (75).[51]

This brings me back to the question of the role of the Nominal Restrictor as a trigger for the topic-status of a *wh*-phrase. Rizzi (2001), for example, develops an account of the extraction asymmetries based on the following ingredients: (i) the copy theory of movement; (ii) reconstruction of all non-operator/non-quantificational material into non-CP positions, i.e. selective copy-deletion at LF/post-transfer/post-spell-out. Under his analysis, the special behaviour of DWH arises because the Nominal Restrictor of Token-*wh*s is endowed with a *topic*-feature, and topical material is reconstructed. This approach would explain why in e.g. Antakarana Malagasy both types of *wh*-determiner phrases can appear in the topic-position (see the examples in (43) in this chapter for data). But for this system to work, we have to assume a silent Nominal Restrictors in case a bare *wh*-item functions as a *wh*-topic. This is especially true for the Mandarin Chinese examples in (44) to (48).

But Rizzi's approach remains silent on the influence of the *wh*-determiner on the ability of a *wh*-phrase to become a DWH that I have argued for in chapter 1. I argue that this influence is indirect inasmuch as the properties of the relevant *wh*-determiners provide the Nominal Restrictor with the ability to bear such a *topic*-feature. In other words: The licensor for topiclity varies from language to language and this is reflected in the ability of *wh*-determiners to license a *topic*-feature on their Nominal Restrictor. I speculate that one of these properties is the SpecificP projection which is also responsible for the individual interpretation of e.g. *which*-phrases (cf. subsection 4.4.3). Another such trigger could possibly be partitivity as discussed in chapter 4. [52]

3.5 Chapter Summary

In this chapter, I examined three related domains. In the first section, I showed that the existential presuppositions triggered by *which*-phrases as the prototypical DWH can be derived from the properties of the *wh*-determiner, not the Nominal Restrictor. This

[51] One solution for this problem could be that Relativized Minimality is only "evaluated" at certain locality boundaries like phases. Thanks to Eric Fuß (p.c.) for pointing this out to me.

[52] Rizzi (2005) shows that clitic left-dislocation (CLLD) in Italian is less constrained then CLLD in French as CLLD in Italian seems to require only contextual D-Linking (C-DL). He argues that the relevant notion for the licensing of topics is partitivity in Italian, but specificity in French.

result was applied to Amount-*wh*s, which are ambiguous regarding DL-Syntax. I argued that, contrary to first appearance, the differences regarding DL-Syntax effects are due to presence or absence of projections in the functional architecture of the *wh*-determiner. These projections are argued to be situated in either the PhiP-layer or the DP-layer.

In the second section, I discussed whether definiteness or specificity is the relevant "referential" property of nouns triggering DL-Synatx effects. The result was not univocally, but I nevertheless proposed that the presence of a SpecificityP in the structure of a *wh*-item is one of the prime sources for DL-Syntax effects to arise. In other words: The presence of a SpecificP in the structure of a *wh*-item renders the *wh*-phrase incorporating this projection a DWH_{SPEC}. Supportive data involving clitic doubling/resumption was presented in the last subsection.

These data lead us directly to the second half of this chapter, namely the claim that some instances of DWH could best be analyzed as DWH_{TOPIC}. In the third section, empirical data was presented which support the claim that *wh*-topics show DL-Syntax. Also, the relation of topicality to the notion of D-linking was examined from a conceptual perspective. In the last section, the Topic-Theory of D-linking was discussed in light of two existing approaches to superiority and eWI, respectively. The result reached was that although the Topic-Theory of D-linking explains a number of properties of DWH, we still need more knowledge about the internal structure of *wh*-items to fully explain the range of DL-Syntax effects. This sets the stage for the last chapter of this dissertation.

4. The Morphosyntax of *Wh*-Determiners

In this chapter, we will examine the internal structure of *wh*-items. Section 1 starts with general considerations regarding the relation of pronouns to determiners and the morphology of *wh*-pronouns in particular. A basic pattern for the formation of pronouns and determiners is identified, and a central claim is that the *wh*-morpheme does not necessarily mark interrogativity. An account of the internal structure of *wh*-determiner phrases is developed in section 2, where it is argued that some *wh*-items spell-out a QP (marking interrogativity) while others do not. Also, the idea that some *wh*-phrases involve a SC (Small Clause) is developed and supported by data involving copular-clauses (sometimes analysed as SC) where Token-*wh* phrases show a special relation to the copular. What will concern us in section 3 are (i) types of Morphological Restrictors and (ii) the licensor of the absence of the Nominal Restrictor in the adnominal use of some *wh*-determiners. The QP-approach is used to analyse empirical phenomena like eWI in section 4. Also, the relation of partitive *wh*-phrases to DWH is examined, and it is shown how the analysis put forward here can derive the generalization that only "individual traces" are allowed inside islands.

4.1 The Basics of *Wh*-Pronoun Morphology

In this section, it will be shown (i) that *wh*-determiners diachronically derive from *wh*-pronouns, and (ii) that the (Indo-European) *wh*-morphemes do not mark interrogativity synchronically.

4.1.1 *Wh*-Determiners are *Wh*-Pronouns

'Determiner' is a cover term for elements which set the reference of nouns, limiting or expanding the basic meaning of nominal elements. Notions expressed by determiners include the relationship of noun to speaker/hearer (e.g. *my*), specificity (e.g. *this*), specific quantification (e.g. *one, two, many*), or general quantification (e.g. *a*). With such a diverse array of concepts to express, it is not surprising that determination (in the broadest sense) can be expressed by a wide array of items including demonstratives,

articles, possessives, quantifiers, or cardinal numerals (cf. Longobardi 2003:580). Diachronically, prototypical determiners like articles have a number of different sources, but non-personal pronouns are frequently used to form determiners (cf. Haspelmath 1997, among others), and it is this diachronic source of determiners which makes *wh*-pronouns relevant for the analysis of *wh*-determiners.

Although many linguists would prima facie agree with Haspelmath (1997:11) that "[d]eterminers are not pronouns because they do not replace anything", this is not the only take on the relation of pronouns to determiners, as Haspelmath himself admits, noting that "in traditional grammar determiners are often treated as pronouns or at least together with pronouns". In recent generative frameworks, this view manifests itself in the fact that determiners are analyzed as part of the extended projection of nouns, and that different types of determiners are believed to head specialized heads in a split-DP (cf. (Cardinaletti 1994; Ritter 1995; Noguchi 1997; Wiltschko 1998, Elbourne 2001; see also section 1.4). I agree with Boeckx (2003:28) that "the morphological component spells out D as a determiner if its complement is non-null, but as a pronoun otherwise" (thus, some pronouns are to be analysed as intransitive determiners. See Postal 1966; Abney 1987; among others).

Some authors make a further distinction between 'determination' and 'modification', which is related but not central to our discussion. Some authors even argue that determiners are similar to adjectives in delimiting the reference of a noun and in their positional properties.[1] For example, Vangsnes (2008a) analyses *which* as a determiner and *what for* as an adjective-like modifier, and Haspelmath (1997:30) notes that "many languages have a determiner ('which') that is different from both the substantival 'who'/'what' and the adjectival 'what kind'". Although I will not have much to provide to this debate, I think that this distinction is related to the Token-Kind distinction adopted in this thesis. Anticipating the results of our enterprise, the view that Token-*wh*s are real determiners (denote individuation), and Kind-*wh*s are adjective-like modifiers (denote a property) is com partible with the view defended in this thesis. I will use the term '*wh*-determiner phrase' in a purely descriptive sense, without committing myself to a certain analysis of the respective *wh*-phrase in terms of the distinction between determination and modification (or any debate on the taxonomy of nominal modification in general).

[1] Determiners have also been called "delimiting adjectives", and adjectives are sometimes included in the conception of determination.

4.1.2 Pronoun Function Markers and Range Restrictors

Besides agreement-markers, case-markers and other functional material, every pronoun is build out of an element coding the "function", and an element coding the "range" (denotation) of the pronoun (see Borer 2005, and Poletto & Pollock 2004 for this use of the term 'range'). I introduce the terms 'Pronoun Function Marker' (PFM) and 'Range Restrictor' (RR) for these two constituent elements of pronouns (and determiners):[2]

(1) *The Main Morphological Parts of* Wh-*Pronouns*

a. *Pronoun Function Marker*

A *Pronoun Function Marker* (PFM) is a morphological marker used in the formation of pronouns which marks the function of the respective pronoun.

b. *Range Restrictor*

A *Rang Restrictor* (RR) is a morphological marker used in the formation of pronouns which marks the scope/range/reference of the respective pronouns.

The prototypical examples for pronoun function markers (PFM) are the English morphemes *wh-* or *th-* (see subsection 4.1.2). Pronouns can be arranged in series of LI sharing the same PFM, and this is also the way (non-personal) pronouns are presented in the grammars and textbooks (cf. Bhat 2004; among others). This classification gave rise to the term "*wh*-pronoun" for elements sharing the PFM labelled "*wh*-morpheme" in Indo-European, and this usage of the term was adopted to other languages as well (another term used for this series is "interrogative pronoun", but we will see that this term appears to be a misnomer). Therefore, I will follow common usage and use terms like *wh*-pronoun, *wh*-proform, or *wh*-phrase to refer to this group of non-personal pronouns which are broadly (functionally) equivalent to English *wh*-words. When it comes to the number of pronoun function markers used in a language, we nearly universally find a four-way partition. The following paradigm from Classical Greek is representative for such a pronoun-paradigm (adopted from Haspelmath 1997:30):[3]

[2] That this pattern is relevant is not a novel claim: Bhat (2004) uses the equivalent terms "pronominal element" and "general term", Haspelmath (1997:22) uses the terms "formal element" and "a stem indicating the ontological category", and Leu (2008) calls them "determiner" and "deictic element".

[3] Haspelmath (1997:29) notes: "Independently of genetic and areal affiliation, languages express roughly the same ontological categories as interrogative and demonstrative pronouns, as well as several other more specific pronoun types (e.g. relative pronouns) that are not universal. […]. Such an organization of

(2) *Example Paradigm for the Classification of Pronouns*

Ontological Category	***Demonstrative Pronouns***	***Relative Pronouns***	***Interrogative Pronouns***	***Indefinite Pronouns***
Person	*Hoũtos*	*Hós*	*Tís*	*Tis*
	'this'	'which'	'who?'	'someone'
Thing	-	-	*Tí*	*Ti*
			'what?'	'something'
Property	*Toiósde*	*Hoĩos*	*Poĩos*	*Poiós*
	'this kind'	'which kind'	'what kind?'	'some kind'
Place	*Ekeĩ*	*Hoũ*	*Poũ*	*Pou*
	'there'	'where'	'where?'	'somewhere'
Time	*Tote*	*Hóte*	*Póte*	*Poté*
	'then'	'when'	'when?'	'sometime'
Manner	*Hoútōs*	*Hōs*	*Põs*	*Pōs*
	'like this'	'as'	'how?'	'somehow'
Amount	*Tosósde*	*Hósos*	*Pósos*	*Posós*
	'this much'	'how much'	'how much?'	'some amount'

Regarding the objects I label Range Restrictors (RR) I propose that these come in two variants.[4] On the one hand, we find the Nominal Restrictors (NR), which are the "head-nouns" in *wh*-determiner constructions, e.g. *house* in *which house*. In section 4.2 I present an analysis which I believe shows that it is justified to classify these nouns on a par with MR not only from the functional perspective, but also when taking diachronic facts into account (see also the comments below (3)).

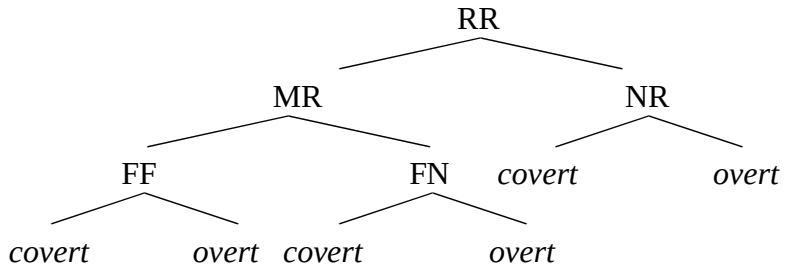
The second type of Range Restrictors is the set of elements that I call Morphological Restrictors (MR). Examples for these are English *-at* in *what* or German *-er* in *wer* 'who', which are both bound morphemes. An important aspect of my analysis is that I argue that there exists another type of MR: I claim that Morphological Restrictors can surface either as Formal Features (FF), for which English *-o* and *-at* are

various types of pronouns is not only typical of Indo-European languages but can be observed in languages of different types".

[4] The term is modelled on Borer's (2005) term "Range Assigner" which she applies to articles, quantifiers, and the like.

expressions, or as Functional Nouns (FN), which I will introduce below.[5] I further assume that all instances of Range Restrictors can be either overt or covert:

(3) *Types of Range Restrictors*



Taking a closer look at the possible meanings of proforms (i.e. their range), it is evident that there are restrictions on which ontological/encyclopaedic concepts can develop into what kind of MR.[6] Whereas the etymology of PFM remains unclear in most cases, I have proposed in section 1.1 that the sources for Morphological Restrictors can often be traced back to nouns denoting basic ontological categories (BOC).[7] In the section 4.3, I will discuss this claim in more detail and qualify it inasmuch as a restriction to BOC applies first and foremost to Functional Nouns.

Support for such an etymological decomposition comes from some Norwegian dialects, where a *wh*-item used to express MANNER-*how* can be decomposed along these lines (Vangsnes 2008b:134):

(4) *Korleis* → *Kor-lei-s*
how WH-way-GEN

The case of Icelandic manner *how* is parallel (Vangsnes 2008b:133). Note that this *wh*-item does only receive a Kind-reading:

---

[5] See Kayne (2003a, 2003b, 2006), Kayne & Pollock (2009), Leu (2008), Poletto & Pollock (2004), among others, for discussion on and arguments for (silent) Functional Nouns.

[6] Non-nominal Range Restrictors can only develop into Formal Features. An example is the case of *hurdan* in Swedish, which is made up of the element meaning *how* and an element derived from a verb meaning *to do* (cf. Vangsnes 2008b:132).See subsection 4.4.2 for discussion on this type of RR:

(i) *Hur - dan* *N* → 'what' N
how + to do/done

[7] Heine, Claudi & Hünnemeyer (1991:55) observe that "one area where the [basic ontological] categories […] are perhaps most clearly reflected in language is that of pronoun".

(5) *Hvernig* → *hvern veg*
how what.ACC way.ACC.SG.MASC

Another interesting case is the Italian *wh*-item *cossa* 'what', which I will argue in section 4.3 to be a Nominal Restrictor turned into a Functional Noun with subsequent phonological deletion of the Pronoun Function Marker.

I want to point out that decomposing interrogative pronouns diachronically faces several problems. Bhat (2004:171) notes that the tendency for constituent elements in proforms to lose their identity and get fused into unitary expressions "appears to affect interrogative (and indefinite) pronouns more prominently than demonstrative pronouns. […] There are several languages in which the constituent elements of demonstrative pronouns are easy to identify and separate from one another whereas the constituents of interrogative-indefinite pronouns are difficult or impossible to identity." In a similar fashion Haspelmath (1997) notes that interrogative pronouns often resist etymological analysis since they are far more stable than indefinite pronouns. Despite these problems, the cases where an etymology can be derived clearly support the proposal regarding the relation of Nominal Restrictors to Morphological Restrictors in section 4.2.

4.1.3 The Polyfunctional Nature of *Wh*-Morphology

In a number of cases, a single Pronoun Function Marker (PFM) is used to form (two or more) pronoun-series with different functions in a language (cf. the interrogative and the indefinite series in (2)). Smits (1989:60) observes that "[b]arring a few exceptions, the pronouns that are used as relativizers also fulfil some other function in the languages in question, like interrogative pronoun or demonstrative pronoun". Strikingly, the possible syncretisms among pronoun-series are constrained cross-linguistically. On the one hand, there seems to be no language which uses a single paradigm for relatives and indefinites, but a separate on for interrogatives, or a language which uses a single paradigm for demonstratives and interrogatives, but a separate one for relatives. I also know of no language where indefinites and demonstratives share a form. On the other hand, most Indo-European languages have homophonous relative and interrogative pronouns, and in Mandarin, relatives, interrogatives and indefinites share a single form, while demonstratives have a distinct morphological realization. Also, In Kenyan Pidgin

Swahili, demonstratives and relatives share the same form (Heine, Claudi & Hünnemeyer 1991:57). The German data in (6) are an illustration of the universally possible syncretisms:

(6)	DEM	REL	WH	INDEF	
	der	*der*	**der*	**der*	‚the$_{MASC}$‘
	**welch-*	*welch-*	*welch-*	**(irgend)welch-*	‘which‘
	**was*	**was*	*was*	*(irgend)was*	‘what’

Adopting the idea that a possible syncretism signals structural adjacency (e.g. Starke 2010), we arrive at the following relative order of Pronoun Function Markers:[8]

(7) DEM >> REL >> WH >> INDEF

The “hierarchy” in (7) is not intended as a statement to the effect that there are dedicated projections like DemP, RelP, or WhP. Rather it is expressing the idea that the projections which trigger the demonstrative-reading on pronouns are located higher than the once responsible for the relative-reading, and that the former incorporate the later.[9] Imagine, for example, that DEM is defined by the presence of something like a DefP, this cannot be a defining projection for DEM, because there are also instances of REL which incorporate the same projection. Similarly, REL can be argued to incorporate a SpecificP , but as shown in chapter 3, WH can also encompass this projection.

Not crucial for our discussion, but interesting to note is that fact that (i) relative pronouns are sometimes formed by addition of a morpheme marking specificity or definiteness to a *wh*-word, and that (ii) the best candidate for the *wh*-item to become a relative *wh*-pronoun is a Token *wh*-determiner. This can be observed in Italian, where they on the one hand can be formed by adding the determiners *il/la* ‘the’ to *quale* ‘which’ or *che* ‘what’. While overt marking for specificity is not necessary for the Token-*wh*s quale to be used as a relative-pronoun, *che* can only be used as a relative pronoun when it is preceded by a definite article. The following facts from Albanian

[8] Michal Starke (p.c.) reached a similar conclusion on independent grounds.
[9] Uncovering the exact content of these layers is beyond the scope of this dissertation. The order in (7) possibly arises because features must be merged in a particular order to get the intended meaning: INDEF introduces entities, WH introduces a set of alternatives, REL picks out one of these, and DEM signals that we are dealing with a particular individual.

and Romanian illustrate that, like the Token-*wh*s in these languages, *wh*-pronouns used as relative pronouns are marked with the definite article *-in* or the specificity-marker *pe*, respectively (Bošković 2008:14):

(8) *Lexakova një libër të **cil-in** pyes veten se kush e mori në bibliotekë*.
,I read a book which I ask myself who got (it) from the library?'

(9) *Am văzut o carte **pe care** mă întreb cine o vinde*.
'I saw a book which I ask myself who sells?'

Based on similar observations, Simík (2007) claims that only those *wh*-items can be used as *wh*-determiners that can function as relative pronouns. But this claim is falsified by English *who*, and the opposite claim, that only *wh*-items which can also be relative pronouns can be used as *wh*-determiners, is falsified by English *what*. Nevertheless, there appears to be a correlation between the possibility of an item to take a NR and its referential properties, signalled by the appearance of (definiteness and) specificity markers with both relative *wh*-phrases and DWH, but not regular interrogative *wh*-phrases.[10] Thus, the ability of a *wh*-element to be used as a *wh*-determiner seems to be related to the possibility to be used as a relative pronoun.

Note that in Romanian, *care* (or *cine*), when used as a relative pronoun, is obligatorily doubled by a clitic, supporting the claim that the features of the *wh*-item are relevant (cf. Dobrovie-Sorin 1991).[11] In this regard, it is interesting to note that in generative grammar, the asymmetry in extractability out of weak islands was first taken to be one between interrogative and relative pronouns, later to be one between *wh*-arguments and *wh*-adjuncts, and finally, the group of *wh*-elements able to escape weak islands was narrowed down to DWH. The link of Token-*wh*s to relative pronouns

[10] The demonstrative reading is related to DWH like the relative reading. This is expected if the claim is correct that the PFM build on one another. For example, Kuroda (1968) speculates that *which* should be decomposed into *wh* plus the demonstrative *that*. Supporting for this proposal comes from French, where *wh* in-situ is possible if the *wh*-phrase receives a DL-I (Bošković 2002). In these cases, the simple form for *que* 'what' is excluded and has to be preplaced by *quoi*, which is a more complex form of *que*. Also, *qui* 'who' can only appear in-situ together with a demonstrative *ça* (Boeckx 2003:30):

(i) *Marie a vu **que*/*quoi*/*qui ça*?
Marie has seen what/what/who that
'What/what thing/who(which person) did Marie see?'

[11] See also footnotes 6 and 9 in chapter 2, and above (34) and (63) in chapter 3.

illustrated above could explain why the asymmetry was taken to be one between relatives and interrogatives in the first place.

I now turn to the Pronoun Function Marker (PFM) labelled WH in (7). Most linguists identify the "*wh*-morpheme" as the exponent of this PFM, and postulate a corresponding "*wh*-feature". The role-model for this is the group of etymologically related morphemes used in most Indo-European languages to form pronouns, which all derive from the early Indo-European particle(s)/pronoun(s) $*k^we/k^wi/k^wo/k^wu$ (Shields 1979; Haspelmath 1997; Meier-Brügger 2003).[12] Since interrogativity appears to be the canonical usage of the *wh*-pronoun-series, it is concluded that *wh*-morphemes cross-linguistically mark interrogativity. Despite the wide acceptance for this assumption, I want to argue (i) against analysing the *wh*-morpheme as the locus of interrogativity, (ii) against a *wh*-feature, and will present two arguments for these conclusions in the following.

Regarding the first argument, consider the well-known fact that a number of languages possess two or more relative pronouns series (e.g. English *wh*- and *th*-pronouns). As both *wh*-pronouns and relative pronouns front and can share the WH-Pronoun Function Marker, this has led generative linguists to believe that both interrogative and relative pronouns front to check the *wh*-feature. See for example den Dikken (2003:79), who claims that "what *wh*-relative pronouns and *wh*-question words have in common is their possession of the morphological feature [+wh]. [I]t is this [+wh] feature that is apparently the driving force for *wh*-fronting in relative clauses". This is not a necessary conclusion: If fronting of the relative pronouns is triggered by the *wh*-feature, we would expect non-*wh*-relative pronouns to not front, but this prediction is not borne out. I conclude that *wh*-fronting is not "*wh*-movement" in the sense that the displacement of a *wh*-phrase is triggered by the presence of a *wh*-feature on this *wh*-phrase.

Regarding the second argument, it is a well-known fact that in many languages, indefinite pronouns and interrogative pronouns share some forms (the infamous 'Interrogative-Indefinite Puzzle').[13] Now, if the presence of the *wh*-morpheme is the

[12] Similar morphemes can be found in other languages families. Semitic *wh*-words begin with /m/, and Nilo-Saharian uses initial nasal or prenasalized sounds like /nd/, /ɲ/ or /ŋg/ to mark *wh*-words (Köhler 2008). See below for a short note on Finnish "*wh*-morphology" and its relation to a Q-particle in this language.

[13] Bhat (2004:227) notes that "[the] number of languages that really distinguish between interrogative and indefinite pronouns [is] rather small" (cf. also Klima 1964:252; Ultan 1978; Haspelmath 1997).

trigger for movement of interrogative *wh*-pronouns, this would lead us to predict that *wh*-indefinites front (in *wh* ex-situ languages), a prediction that is generally not borne out. In (10b) from German, the preferred interpretation is indefinite, but when the bare *wh*-pronoun is fronted, the only possible reading is interrogative (cf. Weiß 2002:140):[14]

(10) a. ***Wer** kommt da*?
who comes EXP
OK‘Who is coming?’
*‘Somebody is coming.’

b. *Da kommt* (*irgend-*)***wer***/*jemand*.
EXP comes (any-)who/somebody.

c. *Irgend**wer**/jemand kommt da*.
somebody comes EXP
OK‘Somebody is coming.’
*‘Who is coming?’

In light of these considerations presented in this subsection, I think it is justified that the idea that *wh*-morphology is the locus of interrogativity and also a trigger for

[14] Adding *irgend-* to *wh*-items is not necessary for the indefinite reading to arise, as *irgend-* marks only one type of indefinites. Note that the indefinite usage of *welch-* as in (ia) is restricted to the plural forms. (ic) can only refer to mass nouns:

(i) a. *Da kommen **welche***.
There come which.PL
‘There are some (of them) coming.’
b. *Ich habe **wen** gesehen*.
I have who.ACC seen
‘I have seen someone.’
c. **Ich habe **welch-en** gesehen*.
I have which-AGR seen.

The expected singular forms *irgend-welch-er/e/es* are out with count-nouns, but fine with mass-noun. The grammaticality of (iid) indicates that mass-nouns are plural nouns, i.e. must bear number-marking. See subsection 4.3.1 for related discussion:

(ii) a. *irgendwelche Frau vs. irgendeine Frau
b. *irgendwelcher Mann vs. irgendein Mann
c. *irgendwelches Kind vs. irgendein Kind
d. irgendwelches Zeug vs. irgendein Zeug

displacement can be questioned.[15] Of course, one could object that the *wh*-feature is not active in the *wh*-indefinite cases, and not audible with *that*-relatives, but this would undermine the argument that *wh*-marking of a constituent is of relevance for the fronting of this phrase. This conclusion gains momentum from the fact that *wh*-movement comes in many different guises. It is analysed as being at least supplemented by different features, including *focus*- and *topic*-features (Giusti 2006; Poletto 2008; Stroik 2009; Grewendorf & Poletto 2011; Haegemann 2012; Grewendorf 2014). Adopting this assumption derives the fact that different *wh*-items end up in different positions inside the C-domain. This "split-*wh*" also constitutes an argument against WhP (as proposed in e.g. Giusti 2006 or Grewendorf 2014), and also, this view on *wh*-morphology is a welcomed results since this would support the conclusion reached in subsection 3.4.1.

Finally, I want to remark that what has just been said should not be understood as arguing for the claim that *wh*-morphology is not related to interrogativity. As will be demonstrated in the next section, many instances of "*wh*-morphology" developed out of particles marking interrogativity.

4.2 The Internal Structure of *Wh*-Items

In this section, I will argue that *wh*-pronouns diachronically derive from structures which resemble *wh*-determiner phrases, and that the element which is marking the interrogative reading is a Q-particle, not necessarily linked to the *wh*-morpheme proper. I will also propose to analyse a number of *wh*-phrases as involving a Small Clause (SC).

4.2.1 Q-Theory and *Wh*-Phrases as Small Clauses

From a sematic perspective, a *wh*-element introduces an open proposition which has to be assigned a value, i.e. it behaves like a semantic variable. In generative grammar, *wh*-constructions are standardly analysed as operator-variable dependencies, and as such have a distinguished representation at the syntax-semantic-interface: The operator must

[15] A similar conclusion is reached by Chung (2000:365), who argues that "[t]he existence of […] non-interrogative/quantificational wh-expressions indicate that the overtly realized part of English wh-expressions does not contain the interrogative operator-feature".

take scope over the variable and the variable must be in the position it is interpreted.[16] It is a widespread assumption that *wh* ex-situ construction are overt instances of this configuration, and it is also the case that this configuration is represented by the pattern I proposed for *wh*-items and other "quantifiers". See for example Longobardi (1994:663), who claims that "[d]eterminers are semantically understood as operators binding a variable, whose range is always the extension of the natural kind referred to by the head noun":[17]

(11) a. S_{WH} b. DP_{WH}

OP(erator) VAR WH_{OP} RR_{VAR}

The following quote from Bayer (2006:2) is representative for this view on the internal structure of *wh*-elements: "In natural language, the operator is usually a phrase which consists of the operator proper, the pure wh-part, and a restrictive part. Thus, *who* is composed of the features [wh] and [person], *what* is composed of [wh] and [thing], *which student* is composed of [wh] and [student]". I picked this particular quote, because the last clause of the quote illustrates an important point I want to make, namely, that many works on *wh*-pronouns simply miss the fact that *which* itself does not only consists of a Pronoun Function Marker but also a morphological bound Morphological Restrictor.[18] As is the case with most Germanic instances of WHICH, they are derived from the (Proto-)Germanic noun **lika* 'kind, sort' (see section 1.1 below (5), and subsection 4.3.1 for further discussion).

Before I will look at the syntactic representation of different kinds of Range Restrictors in the next section, I have to provide an answer to the following, inevitable

[16] To my knowledge, Baker (1970) was the first to model syntactic formulae on the corresponding semantic ones and to implement the logical elements Operator (*Q*) and Variable (*wh*) into the syntactic description of questions (cf. Malone 1978:64; Wachowicz 1978:151). Baker proposes that *Q* triggers the interrogative meaning in all questions, and is realized as a particle in some languages (see below).

[17] According to e.g. Diesing's (1992) 'mapping hypothesis', all *wh*-phrases have to be split up into (a) an operator part, (b) the existential part, and (c) the restrictive clause (cf. also Tsai's 1997). The existence of (b) can be derived from (a) and (c) by the 'Restrictive Quantification Constraint' (Delfitto & Schroten 2009): existential interpretation is available if two logically different elements are present, filling distinct syntactic positions, and providing the "domain of quantification" and "quantifying in" operator. See also Weiß (2002:140f.) for a related discussion about the threefold partition of quantifying elements like *wh*-phrase, indefinites, and negative quantifiers.

[18] Other examples for this view are Leu (2008), and also Reich (2002:9), who analyses *which* as a simple *wh*-operator without any constraints on its range: "The internal structure of *who* is analysed as consisting of a DP […] whose specifier is a lexical interrogative item [+w] - which can be conceived of as the covert counterpart to overt *which* – encoding the functional part of the wh-pronominal".

question: Given the claim that the *wh*-morpheme is not the locus of interrogativity, and that the "interrogative C-head" does not establish the syntactic and semantic relations necessary for an interrogative interpretation with the *wh*-morpheme, what are these relations established with? The answer I want to give is: A Q-particle projecting a QP that dominates the whole nominal projection (Cable's 2010 "Q-Theory"). Baker (1970) was among the first to notice that the typological data suggest a strong correlation between the occurrence and position of overt Q-particles (in languages like Japanese) and the position of *wh*-words. In this thesis, I adopt the idea that the interrogative reading of a *wh*-phrase arises when the *wh*-word is probed by an interrogative element which sometimes surfaces as a Q-particle that is responsible for clause-typing and *wh*-scope marking (cf. Katz & Postal 1964; Baker 1970; Pesetsky 1987; Cheng 1997; Bayer 2006).[19] I also adopt the claim that this Q-particle originates with the *wh*-phrase and crucially also that it can be null (Cable 2010; Slade 2011).[20]

Adding to the assumption expressed by Q-theory that Q-particles are the synchronic locus of interrogativity, I adopt Kenneth Shields' (1977) proposal that Q-particles are the diachronic source of *wh*-morphology (in Indo-European) as well. This would derive the canonical meaning of *wh*-items as interrogatives. Shields (1977) proposes that the Indo-European *wh*-morpheme derived from the sentence-initial Q-particle $*k^w$-. He modelled this Q-particle on other modal indicators in Indo-European dialects, which appear sentence-initial and connect with pronominal clitics. He argues that in the earliest dialects, the words which mark the range of the query (the Range Restrictors) front to a position adjacent to these Q-particles.[21]

In analogy to demonstratives, the newly formed enclitic interrogative pronoun became a free unbound morpheme in an instance of the breakdown of morphological boundaries witnessed in Indo-European:

[19] See Kratzer (2005:118) for the claim that "[t]he semantic behaviour of indeterminate pronouns crucially depends on their location with respect to operators linked to existential closure, negation, universality, genericity, and interrogative force".

[20] Miyagawa (2001) and Hagstrom (1998) also argue for Japanese that the Q-particle and the *wh*-item originate within the same constituent.

[21] In the early dialects of Indo-European there are some interrogative particles (sentence connectives): Skytic *nu*; Greek *nú, ê*, Latin *ne*. These are different from $*k^w$, but seem to be based on the same inherited pattern, as Shields (1979) argues. See also Lehmann (1974:121) on sentence-initial "interrogative pronouns or particles" in the "historical dialects".

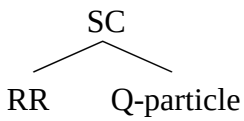
(12) *Rise of* Wh-*Words in Indo-European (Shields 1979)*[22]

a. sentence connective + interrogative particle + enclitic pronoun

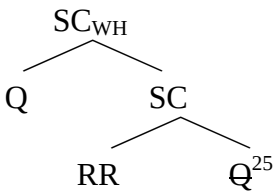
b. sentence connective + enclitic interrogative pronoun

Accepting the correctness of Shields' (1979) hypothesis, I propose that the two constituents (Range Restrictor and Q-particle) get "reanalysed" as being in a Small Clause (SC) configuration (see below), as depicted in (13a).[23] Then, the Q-particle covertly fronts (to a specifier-position), as shown in (13b). Then a reanalysis as proposed by Shields happens as shown in (13c). Subsequently, the two objects amalgamate to form the *wh*-proforms observable in e.g. German, as illustrated in (13d). The resulting phrases must front, so the Q-particle they involve ends up in the C-domain:[24]

(13) a.

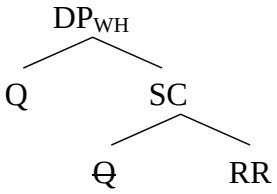


b.



→REANALYSIS 1

c.



→REANALYSIS 2

[22] If it is true that the "Indo-European pronoun is a fusion of the earlier sentence connectives plus the enclitic pronoun" (Anttila 1972:359), this pattern could plausibly also explain the rise of the *th*-morpheme.

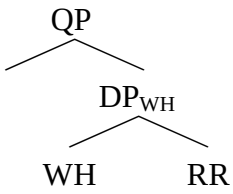
[23] The order inside the SC is not relevant. The elements gain their function from their position after the movement in (13b) has applied. It is not clear that being a *wh*-item is enough to decide whether an element is the predicate of the SC, or the subject (cf. Bauke 2012).

(i) [$_{SC}$ Bill Zoro] → [$_{SC}$ who Zoro] *or* [$_{SC}$ Bill who]

[24] Goedegebuure (2009) argues against *wh*-movement in Hittite, supporting the ideas defended in the text.

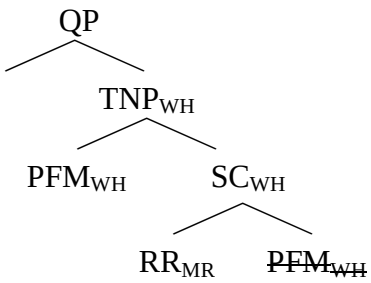
[25] In this thesis, I assume a version of the copy-theory of movement (Chomsky 1995, and much subsequent work), and strikethrough indicates non-spell-out. See subsection 4.4.3 for discussion.

d.

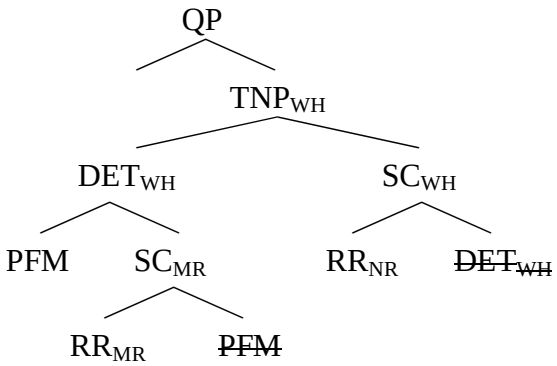


I argue that the diachronic pattern on which *wh*-pronouns are formed in general resembles the pattern on which *wh*-determiner phrases are formed. *Wh*-determiner structures thus appear to be the blueprint on which *wh*-pronouns are modelled.[26] I left out the some projections, because they are not relevant at this point of the discussion:[27]

(14) Wh-*Pronouns*



(15) Wh-*Determiner Phrases*



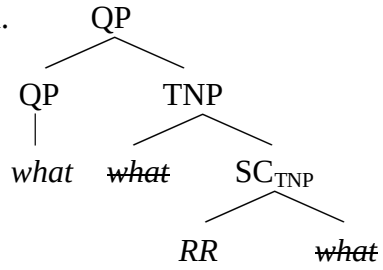
[26] This is in accordance to the conclusions reached in Reich (2002), namely that "complex *wh*-phrases [are] a kind of 'generalized' *wh*-constructions" (7), and that the "syntax and semantics of complex wh-phrases is completely parallel to the syntax and semantics of wh-interrogatives" (13).

[27] In subsection 3.1.2 I criticized that the fact that many instances of WHICH themselves contain a Morphological Restrictor is often neglected. But early on in generative grammar, Katz & Postal (1964) proposed a generalized structure for *wh*-items which they apply not only to *who* and *what*, but also to *which* that did not neglect this point (cf. Klima 1964, Kuroda 1968). Their approach also was the first instance for the claim that the definiteness-indefiniteness distinction is of relevance for the classification of *wh*-items. Sadly, their point that there was a structural parallelism between *wh*-determiners and *wh*-pronouns did not gain the attention it deserved.

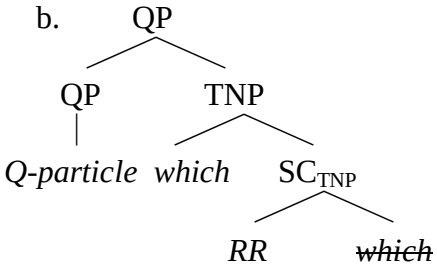
These structures differ in the complexity of the "SC-subject" (cf. footnote 23). In (14), it is a morpheme and in (15), it is a word. This is a result of different spell-out options the lexicon of a language provides for the respective *wh*-item. This difference in the morphological status of the elements involved is captured by the Morphological Restrictor-Nominal Restrictor and the Functional Noun-Formal Feature distinctions introduced in this thesis (see subsection 4.4.2 on the relation of SC to ClassP).

As I have articulated it so far, the ideas about the source of (Indo-European) *wh*-morphology apparently contradict the claim that *wh*-morphology is not the expression of interrogativity. My analysis offers a possible way out of this paradox by analysing the *wh*-morpheme as the exponent of the Q-particle in some cases (e.g. *what*) and as spelling-out only projections below QP in others. In the latter cases, QP is spelled-out by a silent Q-particle.[28] This difference between the parts of the "extended projection" of a noun a *wh*-item spells-out is due to movement of the *wh*-morpheme from ClassP to QP (in ClassP, both the PFM and the MR are inserted). Other *wh*-items stay at the DP level, and the QP is spelled-out by a silent Q-particle.[29] In (16), again only the relevant projections are given:

(16) a.



b.



In the following subsection, I will present data from a wide array of languages that support the claims about the relation of wh-morphology to Q-particles and also for the claim that (some) *wh*-phrases show properties of predicational structures (i.e. SC). The ideas regarding different spell-out options for different *wh*-items will be elaborated and further discussed in section 4.3 and 4.4.

[28] Cable (2010) argues that the *wh*-morpheme is not an instance of a Q-particle, since it is "inside" the *wh*-phrase and not outside of it, and assumes a silent Q-particle in cases we cannot detect an overt one. My proposal is in principle compatible to this view on Q-particles.

[29] Miyagawa (2001) proposes that the Q- and the *wh*-feature in languages like English are inseparable; cf. also Chomsky's (1995). This could explain why English lacks the *wh*-split possibility.

4.2.2 Discussion and Empirical Evidence

The scenario of the relation of Q-particles to *wh*-fronting sketched here is supported by the situation in the first half of the Old Japanese period described in Watanabe (2002, 2006:51). At this stage in the development of Japanese, the Q-particle attached to a fronted (*wh*-)phrase. This is parallel to the fronting of the "pronominal stem" proposed by Shields (1979) for early Indo-European, i.e. it is an instance of (13a). This pattern changed in the second half of the Old Japanese period: With the disappearance of the particle *ka*, we witness the loss of *wh*-movement in Japanese. This indicates that the fronting of the *wh*-phrase was triggered by properties of the particle, thus corroborating the approach developed here:[30]

(17) a. 7^{th}-8^{th} centuries: [wh-**ka** [$_{TP}$ subj-nom …t…] Ø]
b. 10^{th}-11^{th} centuries: [[TP …wh-Ø…] (**particle**)]

I therefore expect Q-particles to be functionally equivalent to *wh*-determiners at least in some languages. One example could be the all-purpose *wh*-marker *tan* in Passamaquody described in Bruenning (2001) which seems to consist only of a Pronoun Function Marker (i.e. either a Q-particle or *wh*-morpheme), with no Morphological Restrictor in its structure. Köhler (2008) also provides us with many examples for the existence of a developmental stage as depicted in (13a) from the Khoisan languages, where we can witness how a Q-particle is used as a *wh*-determiner and the resulting phrase being used as a functional equivalent to a single-word *wh*-pronoun in e.g. English:

(18) N|huki
tyú ***xè*** *ʔà* *ʘwà*
person Q your.SG child
'Who is your child?'

[30] Problems arising from the existence of clause-final Q-particles can be solved by adopting an idea in Koopman (2000), who claims that in cases with clause-final Q-particles, the C-head attracts IP into its specifier. Thus, *wh*-morphologies do not arise easily in languages with sentence-final Q-particles because the Q-particle and the RR are not in the right configuration for the transformations in (12) to apply.

There are languages where the transformation of a Q-particle to a *wh*-morpheme as in the Indo-European languages is happening in synchronic syntax. In Gungbe, the *wh*-item *étɛ́,* glossed as *what*, really consists of the 3rd person singular marker *é-* and the Q-particle *–tɛ́*. In (19), examples for this pattern from Gungbe are provided (Aboh 2007):

(19) a. *Nú-tɛ́*
Thing-Q
'what'

b. *Fí-tɛ́*
place-Q
'where'

c. *Dawe tɛ́*
man Q
'which man'

In (19c) *tɛ́* is phonetically separated from the Nominal Restrictor and thus seems to be a real determiner, as indicated by the translation (i.e. it is an instance of (13c)). There is no such intonational break possible with the phrases in (19a) and (19b). I propose that because the Range Restrictor in (19a) and (19b) belong to the group of BOC, they are on the way of becoming Morphological Restrictor (i.e. are instances of (13d+e)). Nevertheless, they still have retained some of their *wh*-determiner phrase properties (they have not fused with the PFM completely yet). This is shown in (20) by the fact that e.g. *fí* and *tɛ́* can be separated by modifiers of the noun (it is an instance of (13b)):

(20) [*Fí* ***jɔ-fí*** *tɛ́*] *wɛ́* *Kòfí trɔn* *bò* *dɔ* *kú* *dĺó mɔn*?
Place well-known Q FOC Kofi come and has die dirt so
'What possible important place could Kofi come from to be so dirty?'

The case of the LI expressing WHEN in Asheninca is presumably an instance of the transformation of a Q-particle into a *wh*-morpheme (Bhat 2004:195). It thus appears to me that there is a diachronic cycle such that interrogative/*wh*-pronouns develop into Q-particles via the intermediary stage of *wh*-determiners:

(21) *Grammaticalization cycle for Wh-Morphology*

QP + RR → Wh-DET + NR → Wh-PRO → Wh-MORPH → **QP**

The case of *Ǻ* in colloquial Norwegian spoken in Oslo described by Lie (1982:199) is an example for the rising of an all-purpose *wh*-marker/determiner out of a *wh*-pronoun, since *å* is argued to have developed out of the *wh*-word *hva* '*what*'. It is not a phonologically reduced form of *hva* used as a *wh*-determiner, since it cannot be use without an overt Nominal Restrictor (for additional data see also Vangsnes 2008b:128, who claims that *å* developed out of *åssen* 'how'):

(22) a. *Ǻ er det for noe*?
WH is that for something
'What kind is he?'

b. *Hva er det*?
'What is that?'

c. ??*Ǻ er det*?
WH is that

d. *Ǻ gammal er han*?
'How old is he?'

e. *Ǻ dag var that*?
'Which day was that?'

f. *Ǻ bor du henne?*
WH live you LOC
'Where do you live?'

Another piece of evidence in favour of the proposal on the relation of Q-particles and *wh*-morphology defended here comes from Finnish. Finnish possess what can be labelled '*wh*-morphology' (cf. *miksi* 'why', *mikä* 'what', *missä* 'where', *miksi* 'where to', *mikom* 'when') and also a Q-particle *-ko*/*-kö* which is attached to the most prominent constituent or the verb in yes/no-questions. Note further that Creole languages use the *wh*-determiner plus Nominal Restrictor pattern for all types of *wh*-phrases (Taylor 1971:293-294). If *wh*-pronouns are derived from *wh*-determiner phrases

whose constituents fuse into a single LI over time, this situation is expected in languages which have a rather "young" lexicon.

Having established the validity of the version of Q-theory defended on this thesis, I now turn to the nodes labelled SC (small clause) in (13). It is not a novel claim that *wh*-determiner phrases are small clauses; see for example Bennis et al.'s (1998). According to Bennis et al, the *wh*-element is the SC-predicate and fronts to a "specifier" preceding the "SC-subject". They stipulate a projection 'FP' above the SC providing the landing site for movement 'out of' the SC, and claim that the preposition *für* in *was für ein N* is the overt realization of their F-head (cf. (31)). I gloss over the categorical nature of the SC-projection, but the nature of the landing site will become relevant for our discussion in section 4.3 and also subsection 4.4.2 (see Zamparelli 2000 and Leu 2008).[31]

Concerning the presence of a SC in the synchronic structure of *wh*-items, it appears to me that WHICH has a special status among *wh*-items regarding the retention of SC-properties. This gains support from the following data reported in Barros (2010). Brazilian Portuguese allows for omission of the copula in questions involving bare *quale* 'which' as in (23a). The presence of a Nominal Restrictor (cf. (23b)) or the use of *wh*-pronouns or any other nominal renders (cf. (23c) and (23d)) renders the construction ungrammatical:

(23) a. ***Qual*** (*é*) *o seu tipo de sorvete favorito*?
Which (is) the your type of ice cream favorite
'What's your favorite type of ice cream?'

b. ***Qual*** (**jogador*) *o melhor*?
Which (*player) the best
'Which player is the best?'

c. ***Quem*** *(*é*) *o professor dessa classe*?
who *(is) the teacher of-this class
'Who's the teacher of this class?'

[31] This analysis has already been applied to one particular instance of WHICH in Haegeman (2007), who proposes that Westflamish *wek* originates inside the SC, raises to a functional projection below "DP", and then raises to "DP". Under my theory, we can analyse her projection "below DP" as the PhiP-layer and her "DP" is presumably SpecificP, or any other projection in my DP-layer.

d. ***O meu tipo de sorvete favorito*** *(*é*) *chocolate*.
the my kind of ice cream favorite *(is) chocolate
'My favorite kind of ice cream is chocolate.'

Adopting Moro's (2000) proposal that some copular sentences are SC, the data in (23) can be analyzed as an 'online' reanalysis of a copular sentence to a complex *wh*-phrase.[32] Possibly, the lexical entry for Brazilian Portuguese *quale* and thus can spell-out the syntactic structure of a copular-clause without an instance of a verbal predicate. Evidence also comes from French where bare *quel* 'which' can only appear as an argument of the verb *être* 'be', never with non-copulars (Comorovski 2004).

(24) a. *Quelle a* ***été*** *votre réaction*?
'What has been your reaction?'
b. *Quel a i**nvité** Georges?
'Who has invited George?'

The ANDL-marker *diable* cannot occur immediately after bare *quel*, but can occur immediately after *être* (cf. (25)). A *wh*-question introduced by an interrogative proform other than *quel* is unacceptable (with normal intonation) if *diable* occurs after the copular, but *diable* can occur immediately after *être* in these cases (cf. (28)). Comorovski (2004:134) concludes that "*quel*+*être* together form an interrogative":

(25) a. **Quelle diable est la question*?
what/which devil is the question
b. ***Quelle** est **diable** la question*?
what/which is devil the question
'What the hell is the question?'

(26) a. ***Qui diable** est leur chef*?
who devil is their boss
'Who the hell is their boss?'

[32] See e.g. Kraskow (1991:163) for the claim that DWH are akin to clefts, and Bruenning (2001), who reports that in Passamaquoddy both token- and kind-questions can only be asked by copular clauses. See footnote 26 in this section.

b. ****Qui*** *est* ***diable*** *leur chef*?
who is devil their boss

To summarize this section, I have argued (i) that most *wh*-pronouns derive from *wh*-determiners phrases, and (ii) that *wh*-items can be grouped according to which stage in this diachronic process they represent. Thus, even in a single language there can be fundamental differences between *wh*-proforms which look quite similar on the surface.

4.3 The Syntactic Representation of Range Restrictors

This section explores the Range Restrictors in the structure of *wh*-pronouns and *wh*-determiners. One crucial result of the first part will be that Morphological Restrictors come in two flavours: Formal Features and Functional Nouns. A typology of *wh*-pronouns is proposed that is based on this distinction. The second part examines how to distinguish between "real" *wh*-pronouns and *wh*-determiners with a silent Nominal Restrictor. The typology proposed in the first section is discussed in light of the fact that both types of wh-pronouns can be used as *wh*-determiners.

4.3.1 Morphological Restrictors, Functional Nouns, and ClassP

In subsection 4.1.2 I have mentioned the fact that most Morphological Restrictors (for which there exists a reconstructed etymology) derive from nouns. This is expected under the proposal that (most) pronouns start out as QP-Nominal Restrictor structures, and Nominal Restrictors are nouns by definition. Whereas e.g. Kayne (2006) and Kayne & Pollock (2009) do not restrict the (ontological) concepts which can manifest as Functional Nouns, I claim that although there are generally no restrictions on which nouns can become the Nominal Restrictor of a *wh*-determiner phrase, only nouns denoting a basic ontological category (BOC) can grammaticalize into a Functional Noun. Such restrictions are well-known: Discussing the "constraining effects of semantics" on morphosyntax, Cinque & Rizzi (2008), for example, note that "it is not the case that any imaginable semantic property or distinction can be grammaticalized, expressed by a functional element, a special morphology, a morphosyntactic feature

[footnote omitted]: there is a fairly restrictive universal set of properties that can be expressed by functional elements entering into the different hierarchies associated to clauses and phrases. […] UG expresses the possible items of the functional lexicon and the way in which they are organized into hierarchies".

The domain of *wh*-pronouns is not the only empirical domain where lexical nouns turn into dependent functional elements.[33] Another instance are the so-called 'Semi-Lexical Nouns' discussed in e.g. Emonds (1985). Strikingly, the list of Semi-Lexical Nouns from Emonds in (27) overlaps with the BOC-lists proposed in the literature. Based on this parallelism, I propose that Semi-Lexical Nouns are a bound overt variant of Functional Nouns, which are free morphemes, but tend to be silent:[34]

(27) *Semi-Lexical Nouns*
-one; -self; -thing; -place; -time; -way; -body

Independent of the relation to Semi-Lexical Nouns, the questions arises how FN are represented in the structure of *wh*-pronouns. Schütze (2001:127) claims that Semi-Lexical Nouns (i.e. Functional Nouns) "are used as a last-resort spell-out for syntactic positions present in the syntactic structure", and Emonds (1985) also proposes that Semi-Lexical Nouns become part of the extended projection of the head-noun, thus the projections which host Functional Nouns exist independent of them. Concerning the Formal Feature-Functional Noun distinction I argue for, those nouns not denoting a basic ontological category can only grammaticalize into a Formal Feature, never a Functional Noun. Therefore, although both Formal Features and Functional Nouns could be analysed as part of the fseq of the extended projection of a noun, I claim that Formal Features do not constitute constituents in their own right, i.e. they cannot be spelled-out as separate words.

To capture this difference between Formal Features and Functional Nouns, I employ an idea developed in Wiltschko (2008), where a classification of features into inherent features and modifying features is made. Inherent features are argued to project

[33] Although the functional-lexical division is central to modern linguistics, Haspelmath (1997:10) notes: "When new pronouns are created in a language they are often grammaticalized from nouns that have a very general meaning […], and since grammaticalization is a gradual process, there must be plenty of cases in many languages that are somewhat in the middle on their way from the lexicon to the grammar".
[34] Jackendoff's (1983:51) BOC include AMOUNT, THING, PLACE, DIRECTION, ACTION, EVENT, and MANNER. Accepting the universality of (2), PERSON and TIME must be added to this list. *-one* and *-self* in (29) are special. See subsection 4.3.2 on *one*, and subsection 4.4.3 for remarks on *-self*.

their own phrases while modifying features don't. I adopt the basic idea and want to argue that Wiltschko's inherent Formal Features are my Functional Nouns:[35]

(28) a. *Inherent Feature = FN* b. *Modifying Feature = FF*

Based on this, I propose a two-way distinction between *wh*-pronouns. In the following, I will show that there are heavy repercussions of this distinction on the availability of DL-S effect for a *wh*-pronoun:

(29) a. TYPE I Morphological Restrictor = Formal Feature
b. TYPE II Morphological Restrictor = Functional Noun

The question arises where exactly in the functional architecture of noun phrases the projections "hosting" Functional Nouns sit. Given the assumption that Semi-Lexical Nouns surface as classifiers in classifier languages, but as Functional Nouns in non-classifier languages, I thus analyse Functional Nouns as being merged in ClassP.[36] That there are classifier-like elements even in languages which are normally not analysed as having classifiers in their lexicon is not a novel claim (see Sharvy 1978; Borer 2005; Picallo 2008; Cheng & Sybesma 1999; Alexiadou & Gengel 2011). Bernstein (1991, 1993), for example, proposes the structure in (30) for (Romance) DPs, and remarks that her WMP is related (or even synonymous) to ClassP:

[35] This claim contradicts Adger's (2013) proposal that inside the extended projection there is no labelling mechanism required, because the universal order of positions in an f-fseq is a primitive. Given the existence of optional orders of the same elements in some languages, there is the need for a labelling mechanism even for those parts of the structure for which an f-fseq exists. Bobaljik (1999) suggests that there are independent hierarchies, conceived of as separate tiers of the syntactic representation ultimately collapsing into a single structure ('*relativized cartography*'). This has been proposed independently for the domain of *wh*-determination by Vangsnes (2013), who claims that TOKEN, KIND, and HUMAN form an fseq and MANNER, DEGREE and PROPERTY form a separate one.

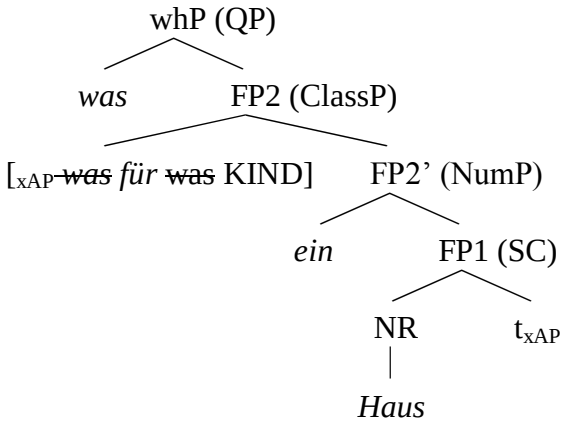
[36] Support can be drawn from the fact that like FN, classifiers are derived from nouns (Bhattacharya 2001:194). For a good example for a diachronic reconstruction of such a grammaticalization path in the Mon-Khmer language Pacoh see Alves (2007).

(30) $[_{DP}\ [_{NumP/\#P}\ [_{WMP/ClassP}\ [_{NP}]]]]$

This is in essence the structure I propose in section 1.4, where I additionally claim that ClassP is a functional layer consisting of a number of projections. My approach shares this crucial assumption with the approach in Poletto & Pollock (2004:288, fn14), who propose that what they call "token" and "quantity" are in fact projections inside DP. They also argue that Functional Nouns are located in a projection they label 'RestrictorP' (see also Giusti & Poletto 2011, and Garzonio & Poletto 2013), and which I take to be synonymous to my ClassP.

There is already one analysis of a *wh*-determiner which makes heavy use of the notion of Functional Noun, namely Leu (2008). Leu speculates that the structure he proposed for the *was für wh*-determiner in (Swiss) German in (31) is the blueprint for other (Germanic) determiners. Although I do not agree with all of Leu's (2008) conclusions, I agree with him that (i) some *wh*-determiners include a Functional Noun, and that (ii) the Nominal Restrictor and the *wh*-element start out in a SC-configuration:

(31) *Structure of* was für ein N *(Leu 2008)*



Leu (2008) (cf. also van Riemsdijk 2005:165) claims that the *was für*-constructions in both Dutch and German involves a silent kind-noun, which can sometimes be overtly realized in some Germanic varieties (cf. (32c)).

In Dutch, the "spurious indefinite article" in (32) is argued by both authors to agree with a singular Functional Noun and not with the plural Nominal Restrictor. In the cases in which there is no overt kind-noun (cf. (32c)), Leu (2008) proposes that there is a silent Functional Noun:

(32) a. ***Wat voor*** (***een***) ***slag meisjes*** *gaan naar die kroeg*?
what for a.SG kind girls.PL go to that bar
'What kind of girls go to that bar?'

b. ***Wat voor (een) sort bloemen*** *doen het hier goed*?
What for a.SG sort flowers.PL do it here well
'What sort of flowers thrive here?'

c. ***Wat voor*** (***een***) ***musea*** *heb je bezocht*?
What for a.SG KIND museums.PL have you visited
'What museums have you visited?'

In Scandinavian and in Dutch, the token-reading becomes available in case the indefinite article is missing (van Riemsdijk 2005; Vangsnes 2006a, 2008a).[37] This is in accordance with my assumption that the token-interpretation can only apply to definite/specific elements: The presence of the indefinite article renders the phrase indefinite/unspecific and excludes the token-reading.

Regarding the relation of classifiers to number-marking in the broadest sense, Alexiadou & Gengel (2011) argue that they "introduce a division and create individuals", and Löbel (1999, 2001) analyses them as "unit-counters" and argues that their function is to render nouns countable. This can be to argue for a designated number-projection dominated by ClassP.[38] Alexiadou & Gengel (2011) argue for such a low #P, and evidence for such a #P associated with classifiers in Eastern Armenian and Persian is discussed in Megerdoomian (2008) and Travis (1992). Note also that Bantu classifiers can spell-out both singular and plural, which is compatible with the assumption made in section 3.1 that NumP spells-out "plurality". That this conclusion is correct could also be argued for on the basis of the German data in (32):[39]

(33) a. $[_{\text{CardP}}$ *drei* $[_{\text{ClassP}}$ $[_{\text{NumP}}$ $[\textit{Bäum}]_i$ - *e*]] $[e_i]$
three tree - s

b. $[_{\text{CardP}}$ *drei* $[_{\text{ClassP}}$ *Stück* $[_{\text{NumP}}$]] [*Wild*]
three piece(s) of game

[37] In e.g. Swedish and German, the indefinite article agrees with the NR, it is thus not "spurious":
[38] Bouchard (2002) lists various ways for a set to be atomized: Chinese and Vietnamese use a classifier system, whereas English and Greek exploit features like number, definiteness, or specificity.
[39] The role of the preposition in the English translation of (33b) will be examined in subsection 4.4.2.

Similar to Cheng & Sybesma (1999), who argue that classifiers "are for numerals" Vangsnes (2001:260) claims that container-nouns (cf. *a glass*) and classifiers are needed to have a numeral with a noun. If this is a universal property 8as it seems to be), I conclude that Functional Nouns sit in a projection below the position Numerals occupy, and this is presumably CardP. This is supported by the facts in (34) from Vangsnes (2008a:229), who notes that in English an overt kind-noun "cannot […] be combined with a numeral that scopes over the modified noun", supporting the structure proposed in this subsection:

(34) a. *[What [kind] of [three cars]] do you have?
b. [What [three cars]] do you have?
c. [Which [three cars]] do you have?

But there are of course numerous examples which show that at least numerals are above ClassP (cf. Schütze 2001, who argues for the presence of a CardP which is higher than NumP). Thus, there seems to be a contradiction. But in section 3.1, I claimed that that there are two #P, one inside ClassP and one below DP. So, based on these relations between functional projections in the noun phrase, I propose the following order of projections in the noun phrase:

(35) $[_{QP}\ [_{TNP}\ [_{DP}\ [_{SpecificP}\ [_{PhiP}\ [_{CardP}\ [_{ClassP}\ [_{NumP}\ [_{FNP}\ [_{NP}]]]]]]]]]]$

I claim that the token-reading of Amount-*wh*s is triggered by the presence of SpecificP which dominates the CardP. Thus I take CardP to not to being able to trigger DL-S effects on its own, it must be supplemented by the higher SpecificP. Note that this is not compatible with van Riemsdijk's (2005:173) proposal that in the case of a token-interpretation there is a silent Functional Noun NUMBER with Type II *wh*-pronouns. If this kind of number number-marking is expressed by a FN in CardP (which is part of PhiP), we would expect all Amount-*wh*s including CardP are on a par with Token-*wh*s, but this is not the case (see below).

I now turn to the unbound Nominal Restrictor of the *wh*-determiner phrase. Central aspects of the discussion will be the trigger for the omission of the Nominal Restrictor, and the relation of Nominal Restrictors to Functional Nouns.

4.3.2 Nominal Restrictors and DP-internal Agreement

Regarding the presence of a silent Nominal Restrictor with bare *wh*-items which can be used as *wh*-determiners, Dobrovie-Sorin (1993:205), explicitly argues that in Romanian, bare *care* incorporates a silent Nominal Restrictor (NR). But what is the trigger for the silent NR? The answer given in the literature is "agreement morphology" (Borer 1989; Kester 1996; Torrego 1988). Wiltschko (2002:171) reminds us that "[i]t is a well-known fact that the presence or licensing of empty elements is related to agreement. In purely descriptive terms, the presence of sufficient agreement allows for empty elements".[40]

(36) *Identificational Licensing for Empty NPs* (Wiltschko 1998)
Strong AgrD licences an empty NP

The idea behind this is that ellipsis needs an antecedent to be licensed and that agreement provides for such an antecedent.[41] Thus, not all pronouns can be analysed as involving a silent Nominal Restrictor since they simply lack sufficient agreement.

It has been noted independently of silent Nominal Restrictors that DP-internal agreement triggers differences between *wh*-phrases. For example, Gallmann (1997) shows that the behaviour of German *welch-* 'which' depends on whether it shows DP-internal agreement or not, and in Spanish *cuále* 'which' is possible with preverbal subjects, while non-agreeing *wh*-phrases are not (Goodall 2004, Suñer 1998):

(37) a. ***Qué*** *leyó Ana*?
what read Ana
'What did Ana read?'

b. ****Qué*** *Ana leyó*?
what Ana read

c. ?***Cuáles de esos libros*** *Ana leyó*?
which of those books Ana read
'Which of those books did Ana read?

[40] There is no consensus on the identity of this projection, thus Wiltschko (2002:169, fn11) notes that " Ritter (1995) uses Num(ber)P, Cardinaletti & Starke (1999) use $I(nfl)_NP$, Wiltschko (1998) uses AgrP, and Déchaine & Wiltschko use PhiP".

[41] I do not claim that Functional Nouns are silent because they are NPE.

In this regard, note the following contrast between German and English:[42]

(38) a. Which *$^{/??}$(one/DVD-player) did he buy?
b. Welchen (DVD-Spieler) hat er gekauft?

In German, the silent Nominal Restrictor *one* could be argued to be triggered by agreement on the Token-*wh welch*- (see also (43)). Thus, omitting *one* seems to be dis-preferred in English because of the lack of agreement. This much given, consider the following contrast:

(39) a. *which* (*one*)
b. *what* (**one*)

I follow Borer (2005) in labelling *one* a classifier, and I thus analyse it as projecting not only a NP, but also a ClassP.[43] For the relevance of this claim, see also Schütze (2001:128), who argues that „one is the last-resort spell-out of a functional syntactic position". I propose that *one* spells-out a stretch of structure which is a subset of the structure spelled-out by *which*. With *what*, *one* is in a superset relation, i.e. all the nodes spelled-out by *what* are also spelled-out by *one*, with nothing left for *what* to spell-out except QP, thus they are incompatible:[44]

(40) a. WHAT → $[_{QP}$ $[_{ClassP}$ $[_{NumP}$ $[_{NP}$]]]
b. ONE → $[_{CardP}$ $[_{ClassP}$ $[_{NumP}$ $[_{NP}$]]]]
c. WHICH → $[_{QP}$ $[_{DP}$ $[_{PhiP}$ $[_{ClassP}$ $[_{NumP}$ $[_{NP}$]]]]]

Languages make use of other devices to overtly distinguish between the adnominal and the pronominal version of *wh*-elements. Bhat (2004:169) notes that "several languages

[42] The noun *one* (i) started as a numeral, lost part of its number-specification and can be marked for plural (*one* cannot pick up mass nouns, just count nouns), and (ii) cannot be modified by the indefinite determiner, but only the definite one (*the*/**a one*). I conclude that the noun *one* spells out the position spelled-out by the indefinite article, not the position spelled-out by the definite article.

[43] Bernstein (1991, 1993) argues that ClassP hosts agreement morphemes which are responsible for ellipsis, see also Alexiadou & Gengel (2011) claim that classifiers can licenses ellipsis. As Lobeck (2006) notes, ellipsis was initially analysed as proper government of *pro* (cf. Postal 1969 where it was argued that (personal) pronouns are definite articles with a silent ONE in NP position.

[44] See Starke (2009, 2011) for the relevance of the superset principle for spell-out options and the competition for lexical insertion between different lexemes.

[…] differentiate between adnominal and pronominal interrogatives by attaching different general terms [RR – B.K.] to the interrogative (or indefinite) pronominal element [PFM – B.K.]. For example Tibetan […] has the forms *ga.gi* 'which' and *ga.re* 'what' both containing the interrogative element *ga*". Another example for a systematic marking of the adnominal-pronominal distinction comes from Japanese, within every pronoun series there are two sets of items (Hirose 2002). One series can only function as pronouns, while the other can only function as determiners:

(41)	a.	*do-no* *(N)	*ko-no* *(N)	*a-no* *(N)
		which N	this N	that N
	b.	do-re (*N)	ko-re (*N)	a-re (*N)
		which	this	that

Hirose (2002) proposes that there is a *pro* sandwiched between the overt morphemes in (41a), and that the morpheme *-re* in (41b) is a cognate of English *one*. (Hirose also argues that *-no* signals the presence of a noun, cf. subsection 4.4.2). Hirose (fn3) speculates that his *pro* could be the same as PhiP in Déchaine & Wiltschko (2002). I agree and propose the following relations between the elements in (41):[45]

(42)	*do*	-	(*re*)	-	(*no*	*N*)
	PFM		MR		GEN	NR

It appears to me that agreement is only indirectly linked to DWH inasmuch as agreeing Type II *wh*-pronouns still has two nominal constituents in their structure although they appear to be bare *wh*-pronouns, and thus could possibly be Type I *wh*-pronouns.

Support for my proposal comes from the sources for some (pro)nominal agreement-markers in German. For example, the masculine singular agreement-morpheme *-er* is argued to be derived from a personal pronoun *er* 'he' (note that personal pronouns do not involve a Pronoun Function Marker, and thus are more readily reanalysed as functional material; cf. also the sources for the Morphological Restrictors in the earliest dialects of Indo-European in section 4.2). For example, Wiltschko (1998:149) proposes the following structure for articles in contemporary German (cf.

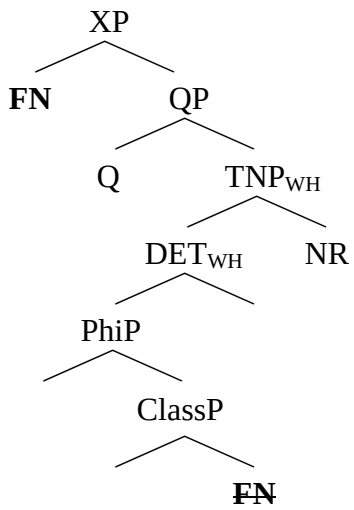
[45] He speculates that the empty pronominal is parallel to overt morphemes based on **lika* in Germanic.

Trutkowski & Weiß to appear). I analyse the element in AGR as originally being a Functional Noun which is no longer merged in ClassP but in the PhiP-layer because it was reanalysed as an agreement-morpheme:

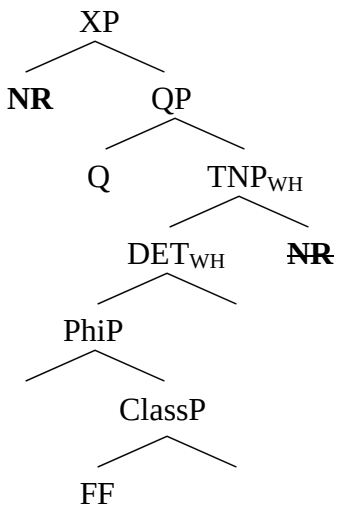
(43) $[_{DP}$ d- $[_{AGR}$ er $[_{NP}$ Mann]]]

I now turn to resumption as a DL-S effect. In footnote 6 in section 2.1.3 I laid out the assumption that an additional constituent in the structure of doubled phrases can be spelled-out as the resumptive element (cf. Boeckx 2003; Boeckx & Grohmann 2004). Recall also the question from subsections 3.2.3 below (34) whether the clitic is the spell-out the Nominal Restrictor or not. My answer is: sometimes it does, sometimes not. I claim that either the Functional Noun of a Type II-pronoun is copied to the root node of the TNP/QP and later is "stranded" as a resumptive clitic (cf. (44a)), or the Nominal Restrictor (cf. (44b)):

(44) a. *Clitic spells-out FN*



b. *Clitic spells-out NR*



The presence of two nominal inside a noun-phrase opens up the possibility to separate the two nouns and spell them out at different positions in the sentence. This is the same result I will reach in the discussion of the relation of partitive *wh*-phrases to DWH. Since Functional Features cannot be separated from the other functional material (cf. (28) in section 3.2) their "copy" cannot be spell-out as a separate item. So there are two types of wh-phrases which can license resumption: (i) Type II *wh*-pronouns; and (ii)

wh-determiner phrases (no matter whether the *wh*-item is a Type I or a Type II *wh*-pronoun).

If this is correct, bare *wh*-pronouns which can license resumption are Type II *wh*-pronouns, and we would thus expect all clitic-doubled *wh*-phrases to show DL-S effects. This prediction is borne out, as can be seen by the fact that in Bulgarian, a superiority-violating order of the *wh*-phrases is licensed in case the superior *wh*-phrase is clitic doubled (Jaeger 2003:183):[46]

(45) a. ***Kogo**$_i$ **kakvo** *(go$_i$) ubi*?
whom what DOC killed
b. ***Kakvo kogo**$_i$ (?go$_i$) ubi*?
what whom DOC killed
'What did whom kill?'

Grohmann (2006:274) and Jaeger (2004) note that example (45a) should be translated with two *which*-phrases instead of the bare *wh*-phrases to reflect "native speakers' intuition about the interpretation". Even the superiority of a subject-DWH can be overwritten by a clitic-doubled regular *wh*-phrase (Grohmann 2006:274):

(46) ***Kogo/koj*** [*koja žena*] **(go) običa*?
whom/who which woman DOC love.3SG
'Who(m) does which woman love?'

Another fact supporting the approach can be adduced from Italian data involving the LI *cossa*.[47] Munaro & Obenauer (1999:186-187, fn4) show that in the variety of Bellunese, complex *wh*-phrases always front, pronominal usages of Token-*wh*s and Amount-*wh*s have both options open to them, and bare *wh*-words never front:

(47) a. ***Che libro*** *avé-o ledést*?
what book have-you read
'Which book have you read?'

[46] See example (34) in section 3.2.3 for similar data and related discussion.
[47] The Italian LI *cossa* originated as a nominal element meaning 'thing', and from the 18th century on, it developed into an interrogative, it could thus be analysed as a Range Restrictor.

b. **Avé-o ledést che* ***libro***?
have-you read what book

c. ***Quanti pon*** *compre-lo*?
how many apples buys-he
'How many apples does he buy?'

d. **Compre-lo* ***quanti pon***?
buys-he how many apples

Poletto & Pollock (2004:261) report bare *cos*(*s*)*a* can appear fronted in the variety of Bellunese. As predicted by my approach, *cos(s)a* patterns with *wh*-determiner phrase:[48]

(48) a. ****Che*** *avé-o magnà*?
b. *Avé-o magnà* ***che***?
'What have you eaten?'
c. ***Cossa*** *avé-o magnà*?
d. **Avé-o magnà* ***cossa***?
'What have you eaten?'

Poletto & Pollock (2004: 266) argue that "*wh*-stranding […] seems restricted to cases in which the complements of *qual* and *quant*(*i*) are phonetically null". But since bare *wh*-determiners can appear in-situ, but *cossa* cannot, I propose that *cossa* is a rare example of a *wh*-determiner phrase with a silent wh-determiner and an overt Functional Noun:[49]

(49) a. ***Quant*** *ghén'à-tu magnà*?
b. *Ghén'à-tu magnà* ***quant***?
'how much of it have-you eaten?'
c. ***Qual*** *à-tu sièlt*?
d. *À-tu sièlt* ***qual***?
'Which one have-you chosen?'

[48] Poletto & Pollock (2004:261) propose that *cossa* can have a null version they call "restrictor". Munaro (1999) also expresses the idea that *cossa* has a structure similar to complex *wh*-phrases. Munaro & Obenauer (1999:188) analyse it as an operator "in DP".
[49] See also Radford (1993:105ff.), who claims that there are cases of either "QP" or "NP" being null (*che cossa*; *che* EMPTY; EMPTY *cossa*) and compares *cossa* to *one* and *body*.

4.4 Further Structural Aspects of *Wh*-Determination

In this section, several types of so-called *wh*-split constructions and how these are explained under the present approach are discussed in the first part. In the second part, it is proposed that the structural parallelism between Type II *wh*-pronouns to partitive *wh*-phrases is responsible for the observable similarities regarding DL-Syntax effects and SC-properties. In the third part, the influence of the structure of the "copies" of displaced *wh*-phrases on their syntax is briefly discussed against the background of the results reached in this thesis.

4.4.1 *Wh*-Split, Intervention Effects, and Q-Theory

The proposal about the different spell-out options of *wh*-items regarding QP in section 4.2 provides us with a possible explanation for why e.g. the *wh*-element *was* in the German *was für*-construction can be split from the rest of the phrase. Recall that I claimed that some instances of WHAT only spell-out QP and skip all projections between ClassP and QP (spelled-out by other material). This approach thus derives the special status of WHAT among *wh*-forms (cf. Munaro & Obenauer 1999; Grewendorf 2010, 2012). I further propose that *wh*-determiners that spell-out projections of TNP below QP cannot be separated from their Nominal Restrictor:[50]

(50) a. ***Was***$_i$ *hast du* [t_i ***für Radios***] *repariert*?
What have you for radios repaired
'What (kind of) radios did you repair?'

b. ****Was***$_i$ *hast du* [t_i ***für Radios***] *wie repariert*?
What have you for radios how repaired

c. ****Was***$_i$ *hast du wie* [t_i ***für Radios***] *repariert*?
what have you how for radios repaired

d. [***Was für Radios***] *hast du wie repariert*?
what for radios have you how repaired
'How did you repair what (kind of) radios?'

[50] In case of the *wh*-split only the Kind-reading is possible (Beck 1996; Pafel 1996; Haider 2000).

The German data in (50) illustrate the fact that the split is ungrammatical across an island, and this holds also for Dutch (Corver 1991:208-9):

(51) a. [***Wat voor boeken***]$_i$ heft Jo [zonder [ei te lezen] t_i weggegeooid?
What kind of books has Joe without to read thrown-away
'What kind of books has Joe thrown away without reading (them)?'

b. ??[***Wat voor boeken***]$_I$ *vraag jij je af* [*wanneer Jo* t_i *gekocht heeft*]?
what for books wonder you REFL PRT when Joe bought has
'What kind of books do you wonder when Joe bought?'

c. ??[***Wat***]$_i$ *vraag jij je af* [$_{CP}$ *wanneer Jo* t_i *gekocht heeft*]?
what wonder you REFL PRT when Joe bought has
'What do you wonder when Joe bought?'

d. *[***Wat***]$_i$ *vraag jij je af* [$_{CP}$ *wanneer Jo* [t_i ***voor boeken***] *gekocht heeft*]?
what wonder you REFL PRT when Joe for books bought has
'What kind of books do you wonder when Joe bought?'

In Italian, where some form of the *wh*-split is possible (cf. (52b)), this is also ill-formed across a weak island (cf. (52d)), as illustrated by the following data (Rizzi 2001:148) for Italian and French, respectively:

(52) a. [***Che cos'altro***]$_i$ *hai fatto* t_i?
what else did you do

b. [***Che cosa***]$_i$ *hai fatto* [t_i ***d'altro***]?
what did you do of else
'What else did you do?'

c. ?[$_{DP}$ **Che cos'altro**]$_i$ non sai come faro t_i?
what else don't you.know how to.do

d. *[$_{QP}$ ***Che cosa***]$_i$ *non sai come faro* [t_i ***d'altro***]*?*
what not you.know how to.do of else
'What else don't you know how to do?'

(53) a. ?[$_{DP}$ **Combien de problèmes**]$_i$ sais-tu [$_{WI}$ comment résoudre t_i]?
how many of problems know-you how to solve

b. *[$_{QP}$ **Combien**]$_i$ sais-tu [$_{WI}$ comment résoudre [t_i **de problèmes**]]?
how many know-you how to solve of problems
'How many of the problems do you know how to solve?'

In the spirit of the analysis put forward in section 3.4, I want to argue that if eWI is due to an escape hatch only available to topics and QP can never be topics, this derives the prohibition on splitting the *wh*-phrase across an island (cf. section 4.4). Alternatively, analysing weak islands as an instance of intervention-effects, the *wh*-split data could be analysed as instances of an intervention-effects. Beck (1996) argues that intervention effects typically obtain when an operator is separated from its restriction by certain c-commanding expressions, and Pesetsky (2000:67) proposes the following constraint:

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

Pesetsky (2000) notes that intervention effects as described by Beck surface in English in the case of D-linked *wh*-phrases violating superiority:

(55) a. What **didn't** John give to who(m)?
b. What did **only** John give to who(m)?
c. Which book did which person read?
d. *Which book **didn't** which person read?
e. Which student did John give which book to?
f. *Which student did **only** John give which book to?

Given (54), we can conclude that the examples (50) to (58) and example (55) are related to the weak island, and the superiority cases. (56a) is the schema of intervention effects and (56b) and (56c) the ones of weak island- and superiority-configurations:

(56) a. *[[QP] … [[INTERVENER] … [RR]]]
b. [WH2] ….. [$_{Island}$ [WH1] ….. ~~[WH2]~~ …..]
c. [WH2] ….. [$_{Intervener}$ WH1] ….. ~~[WH2]~~ …..

Given the problems of the existing theoretical treatments (cf. section 3.4), if my version of Q-theory could possibly help in these cases, too. Now consider French. In French, past participle agreement can show up with certain *wh*-phrases, and Obenauer (1994) argues that past participle agreement triggers a DL-Interpretation of the *wh*-phrase. In case of a *wh*-split, past participle agreement is ungrammatical, and a DL-I is impossible:

(57) a. [***Combien de voitures anciennes***]$_i$ *a-t-il conduit*(es) t_i?
b. [***Combien***]$_i$ a-t-il *conduit*(**es*) [t_i ***de voitures anciennes***]?
'How many old cars has he driven?'

To account for these cases, Rizzi (2001) proposes that only DPs can past through the head responsible for past participle agreement. For the *wh*-split cases, he argues that a non-DP moves directly to the left periphery and thus no agreement is triggered. This explanation shares properties with the present account, where a QP moves in the split-case, and because this QP does not contain a D-head, it does not trigger agreement.[51]

In accordance with the results I reached in subsection 3.1.2 regarding the presence of a NumP and a CardP (cf. 4.3.1), Szabolcsi (2006:496) observes that in the non-split cases, past participle agreement is out on the non-specific reading and optional on the specific reading, which she links to the cardinality of set. Crucial here is the observation made by Obenauer (1994) and discussed in subsection 3.1.2 that certain modifiers which favour a quantitative reading of the modified *wh*-phrase (i.e. a reading triggered by NumP) block the DL-Interpretation, and as predicted by my account (a NumP-*wh* is interpreted as lacking SpecificP if no overt marking is present), these *wh*-phrases cannot be extracted out of a weak island (Rizzi 2000:156):

(58) a. ?*Quanti problemi non sai come risolvere*?
'How many problems don't you know how to solve?'
b. **Fino a quanti problemi non sai come risolvere* (*in un'ora*)?
'Up to how many problems don't you know how to solve (in an hour)?'

[51] Boeckx (2003:60) speculates that in the agreement cases in French, there is a silent resumptive pronoun the participle agrees with. This is supported by the fact that pp-agreement improves eWI:

(i) a. *[*Quelles filles*]$_i$ *Jean est-il parti après que Pierre a vu* t_i?
which girls Jean is-he left after that Pierre has seen
'Which girl did jean leave after Pierre saw?'
b. ??[*Quelles filles*]$_i$ *Jean est-il parti après que Pierre a vues* t_i?

As expected under the present proposal, past participle agreement is also out in these cases (Rizzi 2001:165):

(59) a. *Dis-moi* [***combine de fautes***]$_i$ tu as faites t_i.
'tell me how many mistakes you have made-AGR."

b. **Jusqu'à** [***combine de fautes***]$_i$ *ont-ils fait*(**-es*) t_i, *vos élèves*?
'Up to how many mistakes have they made(-AGR), your students?'

In the next subsection, I will propose an analysis of partitive *wh*-phrases which is compatible with the results on the morphosyntax of *wh*-items reached so far.

4.4.2 Partitive *Wh*-Phrases, Functional Nouns, and DL-Syntax

A notion often claimed to be inherent to D-linked *wh*-phrases is partitivity (Dobrovie-Sorin 1991, 1994; Szabolcsi & Zwarts 1993; Wiltschko 1997a; Bošković 2003; Boeckx 2003). In his discussion on superiority phenomena, Pesetsky (2000) points out that "[a] reliable rule of thumb is that if a wh-word in a multiple question can be felicitously paraphrased with an expression of the form *which of the X*, it can cause the superiority condition to disappear". Generally, a partitive noun-phrase refers to an entity which is a member of the set denoted by the "Nominal Restrictor" as e.g. *students* in (60a). The corresponding *wh*-question involving a partitive *wh*-phrase is given in (60b):

(60) a. [**One of the students**] tried to cheat on the test.

b. [**Which** (**one**) **of the students**] tried to cheat on the test?

From a semantic perspective, partitive *wh*-phrases make overt the set from which an alternative has to be picked as an answer to a *wh*-question.[52] Therefore, one part of the parallelism of partitive *wh*-phrases to DWH derives from the fact that partitivity and D-linking both involve set-membership and saliency in discourse as important components of their definitions:

[52] As Cardinaletti & Giusti (2006:60) note: "All quantifiers select a quantitative DP that realizes their restriction, and that some quantifiers also select a partitive PP that realizes the set out of which such a restriction is picked".

(61) *Partitivity* (Ionin 2003)

If a DP is [+partitive], it denotes an individual which is a member of a set introduced by previous discourse.

Drawing a comparison between *which*-phrases (*which* (*of the*) *N*s) and partitive noun phrases (e.g. *several of the trees*), Comorovski (1996:11) analyses Kind-*wh*s as D-linked because, as she argues, they show the "same partitivity" as *which*-phrases, and argues that "a partitive NP, [is] an NP whose determiner takes as an argument a set already referred to in the discourse" (93). Below, I will propose a structural analysis which is essentially based on this parallelism.

It is also often claimed that a main function of partitive constructions is to make certain sets or entities accessible for quantification (cf. de Hoop 2003:209; Kiss 1993:94). I take it as support for the analysis of DWH proposed there that Alexiadou & Gengel (2011) argue that classifiers "generate structures with an interpretation close to that of partitive NPs", and that e.g. Jackendoff (1977), Selkirk (1977), and Lobeck (1995, 2006) connect syntax of ellipsis to partitives. This is reminiscent of the function of classifiers and the distinction I made between CardP and NumP in section 4.3 and subsection 3.1.2.[53] The account proposed later in this subsection explains this through the claim that there is a ClassP also in the structure of (some) partitive *wh*-phrases (recall that ClassP is argued to responsible for "atomization" or "individuation" in section 4.3).

Partitive *wh*-phrases indeed can appear in environments which favour the use of a DWH or at least Token-*wh*s. As an illustration, imagine a situation where there is an mp3-player with only five songs on it. In this situation, it is odd to ask (62a), but the overtly partitive (62c) is acceptable like the DWH in (62b):

(62) a. #***Was für ein Lied*** *möchtest du hören*?
'What (kind of) song do you want to hear?'

b. ***Welches Lied*** *möchtest du hören*?
'Which song do you want to hear?'

c. ***Was für eines von den/diesen Liedern*** *möchtest du hören*?
'Which of the/these songs do you want to hear?'

[53] Lobeck (1995, 2006) argues for a *partitive*-feature together with a number-feature signalling plurality as the relevant features.

The parallelism between partitive *wh*-phrases and DWH extends beyond interpretative similarities, for example, they can obviate superiority in English (Hornstein & Weinberg 1990:152):

(63) a. What type of book does **what type of man** read?
b. I need to know whom [**what type of people**/**which people**] voted for.

And also, overt marking for partitivity enables a *wh*-phrase to be extractable out of weak islands in e.g. Italian (Rizzi 2001), and Polish (data from Dornish 1998:183):

(64) a. *[***Quanti soldi***]$_i$ *non sai* [*come guadagnare* t$_i$]?
'How much money don't you know how to earn?'
b. ?[***Quanti dei soldi che ti servono***]$_i$ *non sai* [*come guadagnare* t$_i$]?
'How much of the money that you need don't you know how to earn?'

(65) a. ***Co** *zastanawiasz się* [*kto kupił* t$_i$]?
what.ACC wonder.2-SG REFL who bought
'What do you wonder who bought?'
b. ?***Którą z tych książek** *zastanawiasz się* [*kto kupił* t$_i$]?
which one of these books wonder.2-SG REFL who bought
'Which one of these books do you wonder who bought?'

Rizzi (2001:156) observes that the influence of the Nominal Restrictor can be overwritten if an explicit partitive form is chosen as in (66), thereby again showing that the influence of the lexical meaning of the Nominal Restrictor is not strong (see the discussion of Amount-*wh*s in section 3.1). The data from Kiss (1993:91) in (67) demonstrate that this also holds for English:

(66) a. *[***Quanta benzina***]$_i$ *non sai* ***come*** *procurarti* t$_i$*?*
'How much gas don't you know how to get?'
b. ?[***Quanta della benzina** di cui hai bisogno*]$_i$ *non sai* ***come*** *procurarti* t$_i$*?*
'How much of the gas that you need don't you know how to get?'

(67) a. *[**How much wine**]$_i$ do you wonder who can drink t_i?

b. [**How much of this wine**]$_i$ do you wonder who can drink t_i?

c. *[**How much money**]$_i$ do you wonder who to give t_i to?

d. [**How much of the money**]$_i$ do you wonder who to give t_i to?

Concerning the role of specificity as one trigger for DL-Syntax I discussed in detail in section 3.2, the question arises whether partitivity is really another independent trigger of DL-Syntax, or if partitive *wh*-phrases just show DL-Syntax because, as Enç (1997) argues, "specificity of an NP is determined by whether it is an element or member of a set that is already established in the discourse [and] all partitives are specific". It could be that partitivity is like cardinality, which I argued to be only indirectly linked to DL-S effects in section 3.1.

In the same spirit, Kiss (1993:91) claims that "specificity is an inherent, lexical property of the determiner *which*, [and] specificity is an inherent property of partitives as well". According to her, the specific reading in (68a) is impossible because the members of the set denoted by NP cannot be identified individually (nor by some criterion of classification), and therefore, the reading "which and how many members of the set of votes" is infelicitous. But once an overt marker for partitivity is added as in (68b), the sentence becomes grammatical. Kiss concludes that "[t]he use of a partitive construction even makes uncountables specific and thus extractable out of a Wh-island":[54]

(68) a. *[**How many votes**]$_i$ don't you know which candidate received t_i?

b. [**How many of the votes**]$_i$ don't you know which candidate received t_i?

[54] Suñer (1988) provides the following Spanish examples involving clitic-doubled *wh*-partitives and considers the differences being due to the fact that partitives are specific (see also Dobrovie-Sorin 1991:370, fn44). Against the background of the analysis of clitic-doubling in section 4.3 these data support the relevance of two nominal constituents approach:

(i) a. ***A cuál de las dos candidatas***$_i$ *la*$_i$ *entrevistaron*?
A which of the two candidates her interview.2PL
'Which of the two candidates did they interview?'

b. **A cuáles de ellos**$_i$ *los*$_i$ *interrogaron*?
A which of them them question.2PL
'Which of them did they question?'

c. ***A cuántas de las actrices***$_i$ *las*$_i$ *reconocieron*?
A which of the actresses them recognize.2PL
'Which of the actresses did they recognize?'

All these facts notwithstanding, there are data showing that regardless of the many parallelisms between specific *wh*-phrases (represented by *which*-phrases) and partitive *wh*-phrases, they have to be kept apart as far as triggers for DWH are concerned (see Wiltschko 1997a:113 for a related claim). For example, the use of partitive *wh*-phrases trigger ungrammaticality in existential sentences even more than *which*-phrases, as illustrated by the following Italian data (Zamparelli 2000:71):

(69) a. ??[***Quale soluzione***]$_i$ *c'è* t_i?
which solution there is
b. *[***Quale delle soluzioni***]$_i$ *c'è* t_i?
which of the solutions there is

The importance differentiating DWH_{SPEC} from DWH_{PART} is underlined by the behavior of Amount-*wh*s. In existential sentences, only the purely quantitative reading of *how many* is available, i.e. only NumP can be present and CardP must be absent in the structure of the relevant *wh*-phrase. Thus, a sentence like (70a) is just a question about the amount of books, regardless of the actual identity of the books (cf. the discussion about (68)). If a partitive form is chosen, such sentences become defiant (Rizzi 2001:155), and this can be explained by claiming that *wh*-partitives include CardP, but not SpecificP:[55]

(70) a. [**How many books**]$_i$ do you think there are t_i on the table?
b. *[**How many of the books**]$_i$ do you think there are t_i on the table?

Combining a weak island extraction with an extraction from an existential sentence, the whole sentence becomes ungrammatical. To be extractable out of an existential sentence, a *wh*-phrase cannot be a partitive *wh*-phrase, but being non-partitive blocks the subsequent extraction out of the island:

(71) *[**How many books**]$_i$ do you wonder whether I think there are t_i on the table?

[55] Van Geenhoven (1996) argues that partitives trigger the presupposition of a set which the variable they introduce is an element of.

There are other empirical domains where differences between DWH_{SPEC} and partitive *wh*-phrases can be observed. According to Dobrovie-Sorin (1994:224), partitives give rise to a WCO violation in Romanian, but adding the specificity-marker *pe* as in (72b), the sentence becomes acceptable. At least for WCO-cases, specificity is the relevant factor:

(72) a. ??*Mama ei*$_i$ *va ajuta* [***una din studentele tale***]$_i$.
mother her will help one of students your

b. *Mama ei*$_i$ *va ajuta* [***pe*** [***una din studentele tale***]$_i$].
mother her will help PE one of students your

'Her mother will help one of your students.'

Against this background, I conclude that some effects of DL-Syntax can be triggered by the "partitivity" of the respective *wh*-phrases, i.e. that (some) partitive *wh*-phrases should be classified as DWH_{PART}. In the remainder of this subsection, I want to show that structural similarities between partitive *wh*-phrases and Type II *wh*-pronouns used as wh-determiners are responsible for the occurrence of DL-Syntax effects with partitive *wh*-phrases. To achieve this goal, I want to utilize a suggestion made and speculated on in the literature, namely that some copulars and prepositions are the spell-out of the projection labelled FP1 in (31) and that the presence of these elements signals the presence of a SC (see Bennis et al. 1998; Zamparelli 2000; den Dikken 2006 ; Moro 2000; among others).

One obvious parallelism to Type II *wh*-pronouns used as *wh*-determiners is the presence of two nominal constituents in the structure of partitive *wh*-phrases. The basic structural schema for partitive phrases is given in (73a), where Y must always denote an individual, either entity-level (token) or group-level (kind) (cf. Ladusaw 1982).

(73) a. $[_{XP}\ [DET_1]\ [X]]$ of $[_{YP}\ [DET_2]\ [Y]]\ ]$

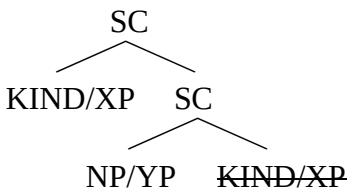
If we follow e.g. den Dikken (2006) and assume that the position filled by *of* in (73) can be empty, this structure is parallel to a *wh*-phrase consisting of a Type II *wh*-pronoun and a Nominal Restrictor, with the Functional Noun presumably occupying the position

of X in (73).[56] That partitive *wh*-phrases are related to construction involving Functional Nouns has also been argued by Kayne (2008), who takes the occurrence of the preposition *de* in French partitive constructions to signal the presence of a silent Functional Noun like AMOUNT/NUMBER.[57] If Kayne is correct, there seems to be a link between Functional Nouns and case.

I propose that no matter how we model the syntactic representation of case, the relevant projection sits between the ClassP-layer and the PhiP-layer. I would like to propose that case, although sometimes analysed as belonging to the set of *phi*-features, is really a part of the ClassP-layer. Recall from section 4.3.2 that I argued that overt agreement on a *wh*-phrase is only triggering DL-S effects (or a token-reading) in case the *wh*-item is a Type II *wh*-pronoun with a Functional Noun. Below, I will come back to this point, but before I can lay out the analysis, we have to reconsider the relation of certain *wh*-determiner phrases to SC.

Of special relevance for our discussion is the *kind of N*-construction, which has been proposed to be an SC independent of the *wh*-determiner issue (e.g. Zamparelli 2000). In (74) I illustrate the parallelism I argue for between the relations of FN/NR and the constituent labelled YP in (73):

(74)



A related proposal is made by Vangsnes (2006b:10), who argues that *wh*-determiners are complements that roll-up:

(75) *what kind of car*

a. [*car* [*of* [*what kind*

b. [*car* [[*what kind*] *of*

c. [[[*what kind*] [*of*]] *car*

[56] Only in case where this "head" is missing two objects can fuse into a single lexeme like the elements in (13b) or (13c) in section 4.2.

[57] In French, the "partitive preposition" *de* 'of' can fuse with articles to give rise to the masculine "partitive article" *du* (*de* + *le* 'of + the'). The plural indefinite article in French has a similar etymology, supporting a link between plurality and partitivity (Vangsnes 2001:281).

Grohmann (1998:26) proposes a similar structure for *which*-phrases with a PartP sandwiched between two DPs and WHICH in the specifier of the upper DP and the Nominal Restrictor being the complement of the lower DP.

But both proposals face the problem of constituency: All the overt elements are directly merged to the nominal spine and thus we would expect them to be spell-out as a single constituent, a prediction that is not borne out, as the numerous examples in this thesis show. Thus I want to argue that we need a structure which allows both nominal constituents assumed to be part of the relevant structures to be spelled-out as separate constituents (i.e. words). Structures like the ones I proposed in (15) in section 4.2 or (44b) in section 4.3 provide for this spell-out option and I take this as support for my analysis.

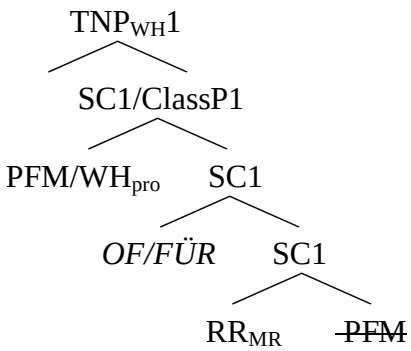
There is another aspect of *wh*-determination which can be captured by assuming such a structure, namely the fact that throughout Germanic, there are differences regarding the agreement of the indefinite article appearing in the Kind-*wh*s of this language family. As illustrated in section 4.3.1, in Dutch, the indefinite article seems to agree with a Functional Noun, while in e.g. German and Swedish, it agrees with the Nominal Restrictor (see footnote 37 in this chapter). Van Riemsdijk (2005) further observes that in Swedish, kind-nouns are obligatory in Kind-*wh*s, but their presence excludes the presence of the indefinite article. I conclude that in German and Swedish, the indefinite article agrees with Nominal Restrictor which sits in YP, and in Dutch, the indefinite article sits in XP. In Norwegian, the situation is a little more complicated, as *hvilken* 'which' cannot be accompanied by the indefinite article (**hvilken en N*), and can be accompanied by the noun *slags* 'kind' only without the preposition *for* (*hvilken (*for) slags*).

Vangsnes (2008b:134) observes that all the instances of the *what for*-determiner in Germanic "involve a case-assigner".[58] Against the background of what I said below (73), I propose that the SC in the relevant structures can be reanalyzed as ClassP, and that case is an "extended projection" of ClassP. Therefore, the prepositions *of* and *for*, which is the spell-out of the SC-linker proposed in Bennis et al. (1998), is (in a restricted sense) an exponent of ClassP:[59]

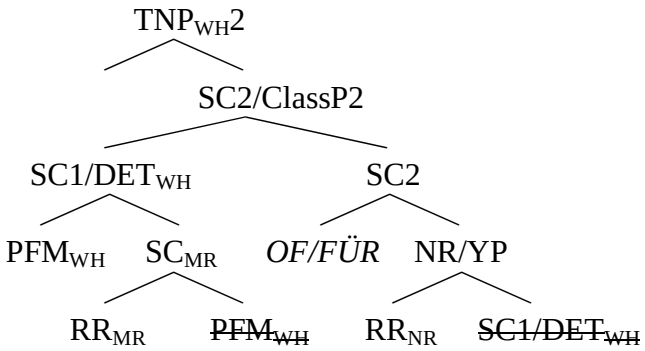
[58] *Hur-dan* 'how done' even contains a verb (cf. footnote 6 in section 4.1). In analogy, he assigns formatives like *-s* in *korleis* 'how' in Nynorsk Norwegian a case-morpheme status like in *kva slag-s* 'what kind' he draws a comparison to partitives (134). Strikingly, Icelandic *hvernig* and Swedish *hurdan* can only ask for TOKEN.

[59] The same holds for the linker *-na* in Chamorro (Chung 1987); cf. (66) in section 2.3.

(76) Wh-*Phrase involving one SC*:



(77) Wh-*Phrase involving two SC*:



The configurations in (76) parallel to the one I proposed as (14) in section 4.2 and (77) is parallel to (15) in section 4.2. My proposal departs from Leu's (2008) in arguing that *ein* in the *was für*-construction forms a constituent with the Nominal Restrictor, and this constituent is thus parallel to YP in (73). The node labelled FP1 in (31) is thus my NR-node and FP2 in (31) is parallel to my ClassP. Regarding the *was für*-construction, it is important that the preposition *für* in *was für* is also not a real preposition. It does not govern the case of the Nominal Restrictor:

(78) a. [Was für [$_{AKK}$ **einen Mann**]] hast du gesehen?
b. [Was für [$_{NOM}$ **ein Mann**]] hat dich gesehen?
c. Mit [was für [$_{DAT}$ **einem** Mann]] hast du gesprochen?

I follow Fábregas (2009) in that "de/of/von lack any definite conceptual semantics […], and have been argued to be morphological markers of genitive case". In languages

where there is no separate morpheme for partitive. Genitive, dative, and partitive often collapse into one morpheme, because they are adjacent on the fseq (Caha 2009:114):[60]

(79) [… [Recipient-Dative [Partitive [Possessor-Genitive […]]]]

Adopting Longobardi's (2003) claim that genitive is a structural case inside the DP like nominative and accusative are in CP, genitive case-marking inside DP can be used as a diagnostic of constituency. If the *wh*-determiner and the Nominal Restrictor can receive different cases, the *wh*-determiner cannot simply be analyzed as the spell-out of a D forming a constituent with the Nominal Restrictor, because we would expect both to receive the same case.

Now, what makes these considerations relevant for the discussion in this subsection is the frequent occurrence of genitive case-markers with WHICH. One example for this link comes from Japanese. The element *-no* in Japanese *do-no* 'which' is the leftover of an old genitive case-marker (Fukui 1995:105, fn10), and only the pronoun-series which are used adnominally incorporate this morpheme (cf. (41)). If it is true that nouns inside a DP (which are not the "head-noun") must bear this marker, the situation in Japanese supports the importance of a double-nominal structure for DWH.

Another example is the Token-*wh* determiner in Standard Arabic which assigns genitive case to the Nominal Restrictor (Razaq 2012:95) and also differs from other *wh*-items in Arabic in that it can host clitics – an option that is only available to nouns in Arabic.

4.4.3 Individuality in Structural Terms

Before I close this chapter on the morphosyntax of *wh*-items and how this affects the presence or absence of DL-S effects. In this subsection, I argue that the "copies" of *wh*-phrases which show similarities at the surface can nevertheless differ significantly, and that this is due to the different structures of *wh*-phrases I identified in the preceding sections. It is a benefit of the copy-theory of movement that it is able to capture these differences without further assumptions or additional technical devices.

[60] Meier-Brügger (2003:271) claims that in Indo-European, "[i]n its partitive root meaning the genitive expresses that a part is meant of the noun in the genitive case. Originally, the genitive relates only to the contents of the lexeme, a noun featuring the genitive ending".

Central to the discussion is the widespread assumption that *which*-phrases are 'individual denoting'. Szabolcsi & Zwarts (1993:243) note: "D-linking plays an important role when it forces, and facilitates, the individuation of a domain that is originally not individuated". Regarding the second claim, one argument could be that if the property of being an individual is encoded in the structure of a phrase, it should also be reflected by the type of empty category left behind by a moved phrase. In work which does not assume the copy-theory, it has been suggested numerous times that e.g. a variable inside a *wh*-island must be of the individual type to render phrases extractable out of it (cf. Aoun 1986; Frampton 1990; Cresti 1993, 1995):

(80) *Island Condition (Szabolcsi & Zwarts 1993:116)*
A *wh*-operator outside of a given island can licitly bind a trace within that island iff the trace is interpreted as a variable ranging over individuals.

If (80) holds, DWH as the prototypical island-extractees should be analysed as leaving behind an individual variable. [61] Independent of the island-cases, Dobrovie-Sorin (1994:204) claims that the empty categories found with Romanian *care*-phrases are not ordinary variables (Baltin 1996:252 generally argues that pronouns linked to DWH "cannot be viewed as variables"), and to support this conclusion, she presents parasitic gap data. Since parasitic gaps are licensed by a variable, the inability of *care*-phrases to licence a parasitic gap corroborate the non-variable status of the empty category:[62]

(81) a. ***Pe cine***$_i$ *ai apreciat* t_i *înainte de a cunoaste* e_i?
Pe who have (you) appreciated before knowing
b. ***Ce elev***$_i$ *ai apreciat* t_i *înainte de a cunoaşte* e_i?
What student have (you) appreciated before knowing
c. ****Pe care***$_i$ l_i*-ai apreciat* t_i *înainte de a cunoaşte* e_i?
Pe which him-have (you) appreciated before knowing

[61] Concerning presuppositions, the condition of individual variable and the condition on existential presupposition are the same phenomenon described from different perspectives: sentential and discoursal. While every occurrence of a *wh*-phrase in an island requires existential presupposition it also must be linked to an individual variable.

[62] Compare (i) where a DWH can enter a co-reference relation, but a non-DWH cannot (Cinque 1990:17):

(i) a. [**Which boy**]$_i$ started a fight with [**which girl**]$_j$ wasn't clear even to **them**$_{i+j}$.
b. ***Who**$_i$ started a fight with **whom**$_j$ wasn't clear even to **them**$_{i+j}$.

It is not clear how to capture (80) under the copy-theory of movement, but I argue that the results in this thesis can possibly bring (80) and the copy-theory together. The starting point is the claim in Dobrovie-Sorin (1994:198, fn7) that "unlike standard wh-structures, the ones that violate islands present not a "standard" variable, but a "pronominal variable"".[63] Kraskow (1987, 1991) argues that DWH leave behind a *pro* on the basis of the assumption that WCO-effect do only arise when the trace is a variable: If we cannot detect WCO effects, the trace is not a variable, but a *pro* (cf. Chierchia 1991; Williams 2003; Haider 2000). Steriade (1980) postulates an "invisible pronominal copy" in (82c) to explain the contrast to (82a) and (82b) (cf. Sharvit 1999):

(82) a. *[***Pe cine***]$_i$ *a certat* [*mama lui*$_i$] t$_i$?
PE who has scolded mother his
'Who did his mother scold?'

b. *[***Ce copil***]$_i$ *ar pedepsi* [*părintii lui*$_i$] t$_i$?
what child would punish parents his
'What child would his parents punish?'

c. [***Pe care***]$_i$ *l*$_i$*-a certat* [*mama lui*$_i$] t$_i$?
PE which him-has scolded mother his
'Which one did his mother scold?'

Discussing WCO, superiority, and eWI, Hornstein (1995) assumes that non-individual traces are of the functional type [*pro t*] and individual traces are of type [*t*]. He proposes the following reformulation of (80) in terms of structural differences between the empty categories:

(83) A trace inside an island must be of the form [t_i]; a trace of the form [*pro* t_i] is illicit.

Although Hornstein's terminology is misleading, I think his findings can be made compatible to my approach. Hornstein (1995) proposes that "quantification is resolved"

[63] Independent of *wh*-expressions, Adger & Ramchand (2005) conclude that: "[t]he core difference is whether the bottom of the dependency is occupied by a *pro* or a trace". See also Chung (1994), who claims that empty categories can be either null pronouns or variables, and Kallulli (2009), who generally argues for a distinction between a trace (a "variable") and a "silent resumptive *pro*". Cinque (1990:151) claims that "[t]he immunity to weak crossover effects is also a prerogative of resumptive pronominals".

inside a *wh*-determiner phrase leads to a trace of type [*t*]. *Wh*-pronouns, as Hornstein argues, lack the possibility of DP-internal quantification and therefore both [*pro*] and [*t*] remain visible.[64]

Without going into a detailed discussion and far from providing an analysis, I would like to claim that the situation just described is a reflex of the morphosyntax of the respective *wh*-phrase. Note that to ensure that the interfaces assign the correct interpretation to each copy, they cannot be identical (at least the copies in the base- and in the target-position differ). Mechanisms like Rizzi's (2001) 'selective copy deletion', or Fox's (2002) 'trace conversion rule' (which ensure that the higher copy be translated as an operator while the lower copy is interpreted as a variable) are attempts to modified the copy-theory of movement to be coherent with the demand on the syntactic representation to be as unambiguous as possible. This compatible with the conclusion reached in Wiltschko (1997b:439) regarding different types of *pro*: "[W]e expect (at least) three types: pros that have the syntax and semantics of DP, of PhiP, or of NP. […] The existence of these different types of pro is expected if pro instantiates different syntactic categories. In such a theory […] the semantics can be read directly from the syntax".

4.5 Chapter Summary

In this chapter, I investigated the morphosyntactic structure of several complex *wh*-phrases. I started the first section giving some general remarks on the relation of pronouns to determiners and subsequently proposed that all *wh*-items are built of a

[64] Dobrovie-Sorin (1993:206) speculates that "[*care's*] domain of quantification is limited by the NP to which it belongs. Care ranges […] over the class of elements that satisfy the referential properties defined by the lexical properties of N". Wiltschko (1997a:168) argues that "[s]ince the variable needs a range, and the variable itself cannot contain this range, it follows that the binder of the variable has to provide the range". A descriptive generalization is that *wh*-determiner phrases receive their restrictive interpretation early and keep it throughout the derivation (Rett 2006:364; Beck 1996; Cresti 1995; Kallulli 2009):

(i) The restriction of a DWH is interpreted in CP

Note the difference regarding principle C effects ('antireconstruction') in (ii), that we cannot explain if the Nominal Restrictor of *wh*-phrases would reconstruct (Heycock 1995):

(ii) a. [*Which stories about* ***Diana***$_i$]$_k$ *did she*$_i$ *most object to* t$_k$?
b. [*How many stories about* ****Diana***/^{OK}***herself***] *is she*$_i$ *likely to invent* t$_i$?
c. [*What stories about* ***Diana***$_i$]$_k$ *did she*$_i$ *most object to* t$_k$?

Pronoun Function Marker and A Range Restrictor. In the following section, I showed that *wh*-morphology cannot plausibly be the locus of interrogativity and proposed that there is an element I identified as QP which fulfils this function.

In the second section, I laid out an analysis of *wh*-pronouns which links them diachronically to *wh*-determiner phrase. One second claim of this section is that, at least diachronically, all wh-items have a SC at the bottom of their structure, and that some *wh*-phrase still exhibit this link synchronically. Also, some differences between *wh*-items are argued to be due to them spelling-out QP or not.

In the third section, another crucial difference between *wh*-pronouns and *wh*-determiners is introduced, namely whether they incorporate a Functional Noun into their structure or not. I labelled *wh*-items which include such Functional Nouns as Type II *wh*-pronouns. In the second half of this section, the influence of this distinction on the Nominal Restrictor of *wh*-determiner phrases is examined. It was speculated that only *wh*-determiners which involve a Type II *wh*-pronoun show the whole range of DL-Syntax effects. Thus, the main outcome of this section is the importance of the presence of a "double nominal" structure for the syntax of *wh*-phrases.

In the fourth section, I first showed that the QP-approach to the properties of WHAT is compatible with the theory of intervention effects and can explain properties of constructions involving past-participle agreement in French. Then, the parallelism between different *wh*-phrases involving SC is discussed against the background of the syntax and structure of partitive *wh*-phrase. I argued that what I label ClassP is derived from a SC and that this links all *wh*-phrase involving SC to the structures discussed in section 4.2. The results of this subsection further corroborate the validity of my claim that a "double nominal" approach to DL-Syntax is very promising. And finally, the influence of the structure of the "copies" of displaced *wh*-phrases on their syntax was briefly discussed against the background of the claim that only individual traces can escape weak islands. Again, it was argued that the "double nominal" approach has the potential to explain the facts.

5. Summary and Concluding Remarks

In this final chapter, first, I want to recapitulate the results of each respective chapter, discuss aspects which probably did not receive the attention they deserve, and point towards areas for further research. In short, this thesis investigated aspects of so-called *wh*-determination. It is based on the assumption that there are basically two types of *wh*-determination, no matter what the actual form of the *wh*-item used as *wh*-determiner is: Token-*wh*s and Kind-*wh*s. The notion of D-linking was examined and used to uncover and explain properties of constructions involving *wh*-determiners. To achieve this goal, D-linking was decomposed into four components. In addition, three triggers for the syntactic effects so-called D-linked *wh*-phrases show were identified. A central claim of this thesis is that as useful as D-linking is as a descriptive term, it is not a primitive of grammar. Rather, it seems to be the result of the interplay of a number of independently well-motivated notions and the way these are represented and interact in morphosyntax. While DL-Interpretation appears to be an epiphenomenon, DL-Syntax effects can be derived from the underlying structure, not from lexical semantics of the Nominal Restrictor of *wh*-determiner phrases (even in cases it plays a role, the effects are triggered or blocked by functional projections).

Based on this, I derived the differences between D-Linked and non-D-Linked *wh*-determiners by arguing that they do not only differ in interpretation, but also fundamentally in their morphosyntactic structure. It was argued that these structural differences can be partly traced back to the etymologies of the respective *wh*-items. The distinction between Formal Features and Functional Nouns was identified as an important difference which is a direct reflex of diachronic development. I specifically argued that some nouns grammaticalize to Functional Nouns and thus remain visible to the synchronic computation as independent syntactic objects. I concluded that we should abandon the notion of D-Linking and replace it by a more fine grained distinction among adnominal *wh*-elements.

Chapter 1 set the stage for the discussion to follow, and the main characters were introduced. We began with a comparison of *wh*-pronouns and *wh*-determiner phrases, and it was argued that there are intricate relations between these two groups of linguistic objects. One aspect was the difference regarding the morphosyntactic status of the so-

called 'Range Restrictors' (RR). These elements restrict the denotation of a *wh*-pronoun (and indirectly of a *wh*-determiner derived from a *wh*-pronoun as the thesis showed):

(1) a. *who* → ranges over PERSON
b. *when* → ranges over TIME
c. *how* → ranges over MANNER or DEGREE

I argued that Range Restrictors come in two variants. For one, we have 'Morphological Restrictors', elements which fused with the "*wh*-morpheme" to give rise to a morphological complex *wh*-pronoun. Second, we have 'Nominal Restrictors, i.e. nouns which have retained their status as free morphemes/words. I mentioned the problem that the *wh*-pronouns which appear together with Nominal Restrictor are themselves often morphological complex (i.e. they consist of an element I labelled Pronoun Function Marker in chapter 4 and a Morphological Restrictor), a situation that complicates any thorough account:

(2) a. *who* → *wh* + MR_{PERSON}
b. *which person* → *wh* + NR_{PERSON}
c. *which* → *wh* + $MR_{????????}$

Another important aspect introduced in chapter 1 is the Token-Kind distinction which is expressed by *wh*-determiners. The labels Token-*wh*s and Kind-*wh*s were chosen because I strongly believe that this dichotomy can be found in all areas of nominal morphosyntax.

My aim was to show that these two types of *wh*-phrases stand out from the rest because they denote not only concepts of encyclopedic knowledge, like *wh*-pronouns do via their MR, but linguistic features that are encoded in the morphosyntax of the respective *wh*-item used as *wh*-determiner. I argued that the notion of D-linking as introduced by Pesetsky (1987) and refined in numerous other works can be used to unfold the details of the token-kind dichotomy. To achieve this goal, I additionally argued that we need to keep DL-Syntax and DL-Interpretation and the triggers for both aspects of D-linking apart:

(3) *Three Types of Wh-Determiner-Phrases*

a. Token-*wh* → *which* NP

b. Kind-*wh* → *what (kind of)* NP

c. Amount-*wh* → *how many/much* NP

Then, we introduced the concept of D-linking which figures prominently in the discussion on certain *wh*-determiner phrases in the literature. It was argued that D-linking has to be split-up into subtypes, and that this explains why researchers mean different things when they refer to the term D-linking. I conclude that D-linking is not a unified phenomenon, and that we have to keep at least DL-Syntax and DL-Interpretation apart:

(4) *The four components of 'D-linking'*

a. DL-Interpretation (DL-I)

b. DL-Syntax (DL-S)

c. Contextual DL (C-DL)

d. Morphosyntactic DL (M-DL)

Based on this distinction, I proposed that the following hypothesis is correct:

(5) *DL-S effects have morphosyntactic triggers*

DL-S effects are triggered by structural properties of *wh*-phrases (i.e. M-DL).

To prove that (5) is correct, I introduced data that showed that Kind-*wh*s do not trigger the DL-Syntax effects I observed with Token-*wh*s. Discussing the sources for these difference between different types of *wh*-determiner phrase, I concluded that it is not just the presence of the Nominal Restrictor which functions as a trigger for DL-Syntax, but rather that the crucial features are located in the *wh*-item used a *wh*-determiner in a complex *wh*-phrase:

(6) *Morphosyntactic triggers for D-Linking (M-DL)*

a. The structural make-up of the *wh*-determiner

b. The presence of the NR

I further argued that we need to differentiate between at least three types of M-DL triggers for DL-Syntax effects:

(7) *Typology of DWH*

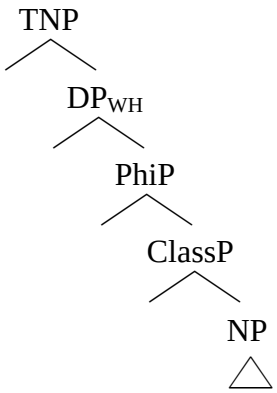
a. based on partitivity → DWH_{PART}

b. based on specificity → DWH_{SPEC}

c. based on topicality → DWH_{TOPIC}

The chapter was closed by a short summary of the basic assumptions regarding the structure of the nominal functional field and how this thesis attempts to derive the effects of DL-Syntax from the interplay of the functional projections present with certain *wh*-determiners and absent with others. I proposed the following basic structure for *wh*-phrases:

(8) *Order of Projections in* Wh-*Pronouns*



In chapter 2, it was shown that *which*-phrases stand out among *wh*-determiner phrases not only because of the DL-I they receive, but mainly because they are prototypical Token-*wh*s. Then, the syntax of the Token- and Kind-*wh*s was compared, and the result confirmed the ideas put forward in chapter 1: There are systematic differences between the two types of *wh*-determiner phrases I labelled Token-*wh* and Kind-*wh*. I continued to argue that this distinction is encoded in the morphosyntax of the *wh*-item used adnominally.

I started chapter 2 by demonstrating that (i) *which*-phrases as the canonical DWH show a special syntax I label DL-Syntax in the first section. The best-known DL-S effects are: (i) lack of superiority-effects; (ii) ability to escape weak islands; (iii)

licensing of resumption; (iv) obviation of WCO-effects; (v) inability to appear in existential sentences; and (vi) ability to stay in-situ. In the second section, I showed that there are systematic differences between the two types of *wh*-determiner phrases which I label Token-*wh* and Kind-*wh*. Specifically, I showed that prototypical instances of Kind-*wh*s have a different syntax than Token-*wh*s. I further argued that while Token is triggered by projections in the extended projection of nouns, Kind is the default:

(9)

KIND		*TOKEN*
mass	vs.	count
indefinite	vs.	definite
non-specific	vs.	specific
non-topic	vs.	topic

As Token-*wh*s tend to be DWH and Kind-*wh*s become DWH only under certain conditions, I proposed that the following generalization holds:

(10) *Token-Marking Generalization*
Whenever a language makes the Token-Kind distinction, it is expressed by additional functional material on the Token-items, which can be overt or null.

In the third section, I then turned to other types of *wh*-determiner phrases, and examined how these behave in relation to the DL-Syntax phenomena discussed in the preceding sections. It was demonstrated that regardless of the actual form of the *wh*-determiner, every *wh*-determiner phrase can be classified as either a Token-*wh* or a Kind-*wh*, so there are basically only these two types of *wh*-determination. This result was corroborated by facts involving aggressively non-D-linked *wh*-phrases and prepositional *wh*-phrases in the last two section of chapter 2.

The conclusion I reached was that the DL-S effects observable with DWH are triggered by structural properties of the *wh*-determiners heading DWH. I have also tried to show that the distinction between Token-*wh*s and Kind-*wh*s is not isomorphic with D-linking, as all types of *wh*-determiners can receive a DL-Interpretation, but only some show DL-Syntax. This is the gradualism of D-linking which I already introduced in chapter 1, and that will be supported by the results of the following chapters:

(11) *Gradualism of D-Linking*

WH_{BARE} << WH_{KIND} + NR << WH_{AMOUNT} + NR << WH_{TOKEN} + NR

In chapter 3, I examined three of the possible triggers for D-linking introduced in chapter 1. The chapter began with the question whether it is the possibility of DWH to trigger presuppositions (of existence) that is relevant for DL-Syntax. Because DWH pick up entities which have already been introduced to the discourse, and refer to objects whose existence is presupposed, they have often been labelled 'presuppositional *wh*-phrases'. I derived the existential presuppositions triggered by *which*-phrases (as prototypical DWH), not just from properties of the Nominal Restrictor, but also from the properties of the *wh*-determiner. The result of the first section was that although presuppositions projected by the NR are important for triggering DL-Interpretation, they do not directly influence DL-Syntax.

After having demonstrated that the presuppositions projected by the Nominal Restrictor are a trigger for DL-Interpretation, but not DL-Syntax, it was shown that Amount-*wh*s are either Token- or Kind-*wh*s. Although it was argued that only certain Amount-*wh*s trigger DL-S effects, it was also shown that this could not plausibly be derived from the mass-count distinction. But I argued for two instances of #P as shown in (12). NumP as part of the ClassP layer and CardP as part of the PhiP layer

(12) $[_{TNP}[_{DP}[_{PhiP}[_{CardP}[_{ClassP}[_{NumP}[NP]]]]]]]$

We then proceeded to the (as I claim structurally represented) notions of definiteness and specificity and investigated how these can help capturing the proposed *wh*-determiner typology in the second section of chapter 3. One of the most prominent claims about DWH is that they are either definite or specific as opposed to regular *wh*-phrases which have been analyzed as indefinite since the beginning of generativism. In this section, I examined how definiteness and specificity are related to DL-Interpretation and more importantly why they are triggers for DL-Syntax effects. I claimed that the relevant notion in respect to DL-S effects is specificity and further proposed a SpecificP above CardP as the trigger for certain DL-S effects, i.e. I proposed that there is a type of DWH I label DWH_{SPEC}. At the end of the second section, special emphasis was on the relation of these notions to resumption. It was argued that the structures we arrived at in

chapter 3 can explain the differences regarding the abilities of *wh*-items to trigger resumption.

In the third section of chapter 3, I discussed the properties of *wh*-topics. The section begins with a discussion on how the notion of 'topic' should be understood to make plausible the widespread idea that D-linking can be reduced to topicality. I provided empirical evidence for the existence of *wh*-topics in general, and the specific claim that DWH can be construed as *wh*-topics. It was shown that topicality builds on specificity and that most DL-Syntax effects can be traced back to either of these two notions (see below). After having established that *wh*-topics exist, and that *wh*-topics show several of the DL-S effects of DWH, I laid out the basic arguments for analysing (one type of) DWH as *wh*-topics (familiarity topic), and argue for a subtype of DWH which I label DWH_{TOPIC}.

In the fourth section of chapter 3, I discussed formal implementations of this link and how this approach to the properties of DWH can explain some of the phenomena subsumed under DL-Syntax. Specifically, I showed that an approach to superiority-effects based on the Attract Closest principle is flawed but that an approach to superiority based on the assumption that the superior *wh*-phrase bears a topic-feature while other *wh*-phrases bear focus-features can explain a wide range of data.

Finally, I briefly discussed how a feature-based relativized minimality approach could possibly explain weak island phenomena. The result of this discussion was that none of them can account for the whole range of data and I concluded that we have to explore the internal structure of wh-items more carefully.

In chapter 4, I laid out the basic assumptions concerning the internal structure of *wh*-determiners I assume in this thesis. The first section of chapter 4 began with a few considerations on the relation of pronouns to determiners in general, and the morphology of *wh*-pronouns, which I utilized to derive some of the relevant properties of complex *wh*-phrases (Token as well as Kind *wh*-determiner phrases, and as we saw later also partitive *wh*-phrases) in the later sections of chapter 4.

I continued to examine the general pattern on which *wh*-pronouns are formed. I argued that *wh*-pronouns themselves diachronically from the amalgamation of an element indicating the function of the proform (that later became the *wh*-morpheme), and an element denoting the range of the proform (Range Restrictor):

(13) *The Main Morphological Parts of* Wh-*Pronouns*

a. *Pronoun Function Marker*

A *Pronoun Function Marker* (PFM) is a morphological marker used in the formation of pronouns which marks the function of the respective pronoun.

b. *Range Restrictor*

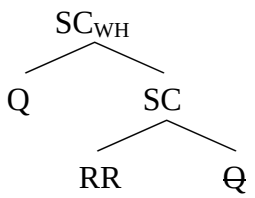
A *Rang Restrictor* (RR) is a morphological marker used in the formation of pronouns which marks the scope/range/reference of the respective pronouns.

After this, I turned to the phrase-structural aspect of the proposal, and argued that the *wh*-morpheme does not mark interrogativity, and also opted for adopting a version of Q-theory (Cable 2010). Based on this, I claimed that the element which is marking the interrogative reading is a Q-particle.

Depriving the *wh*-morpheme of the interrogative function allowed me to develop an account of the peculiar properties of some *wh*-determiner phrases, as in so-called wh-split constructions. I specifically claimed that certain *wh*-items are only the spell-out of this Q-particle, while other *wh*-items do not spell-out the Q-particle at all.

I then proceeded to show that *wh*-pronouns are universally derived from *wh*-determiners which are themselves derived from clausal structures:

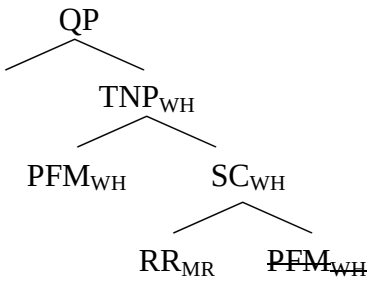
(14)



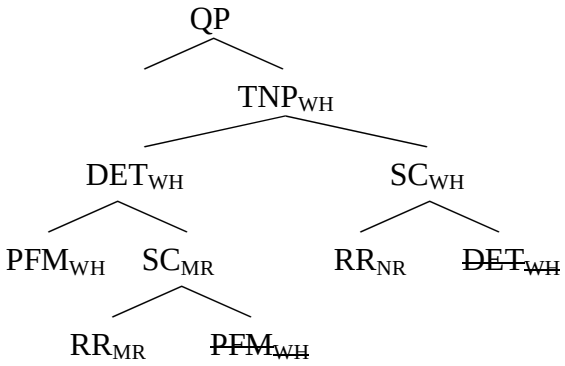
As another argument for the correctness of this conclusion, I demonstrated that the results in this thesis are compatible with the hypothesis that *wh*-determiner phrases are really Small Clauses.

The basic idea was that all *wh*-pronouns are fossilized interrogative sentences, i.e. all *wh*-pronouns are diachronically derived from *wh*-determiner constructions, which themselves are modelled on *wh*-clauses. This is lending further support to the parallelism between sentential and nominal structures first proposed in Abney (1987). I proposed the following structures:

(15) Wh-*Pronouns*



(16) Wh-*Determiner Phrases*



What concerned me in section 3 were differences amongst Morphological Restrictors. Examining instances of lexical nouns becoming functional elements, I claimed that Morphological Restrictors come in two variants: either Formal Features or Functional Nouns. I subsequently argued that the elements which can become Functional Nouns are exclusively taken from the pool of noun denoting Basic Ontological Categories (BOC). I proposed that while Functional Nouns are separate constituents in the structure of *wh*-items, whereas Formal Features do not form a separate constituent, and that this is a reflex of the "functional" nature of BOCs:

(17) a. *Inherent Feature = FN* b. *Modifying Feature = FF*

I concluded that Functional Nouns head projections inside the ClassP-layer I assume in this thesis. I proposed a two-way distinction between *wh*-pronouns:

(18) a. TYPE I one Range Restrictor: Formal Feature-MR
b. TYPE II one Range Restrictor: Functional Noun-MR

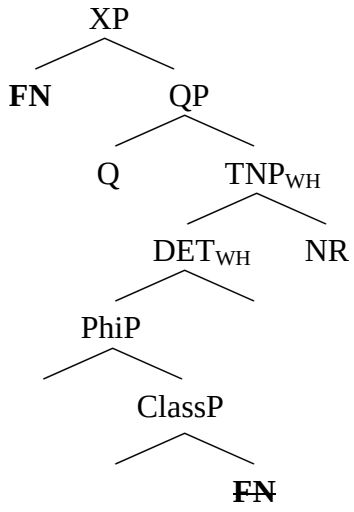
An important observation was that in cases of what I call a Type II *wh*-pronouns, we often witness DL-Syntax effects which otherwise do only occur with *wh*-determiner phrases.

I turned to the unbound Range Restrictor, i.e. the Nominal Restrictor of the *wh*-determiner phrase in the second part of section 3 of chapter 4. A question I had to answer was whether there is a silent Nominal Restrictor in case a *wh*-item which can be used as *wh*-determiners is used as a *wh*-pronoun. I arrived at the conclusion that despite surface-similarities, *wh*-determiners and *wh*-pronouns have diverse internal structures and show differences regarding these sometimes unpronounced projections:

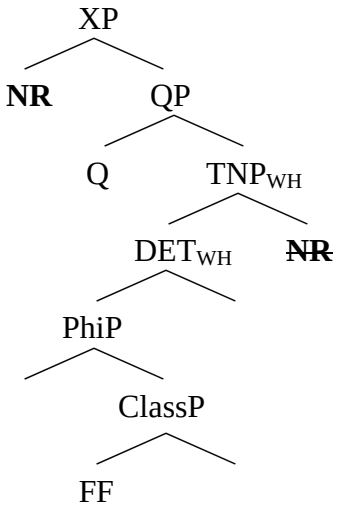
(19) $[_{QP}\ [_{TNP}\ [_{DP}\ [_{SpecificP}\ [_{PhiP}\ [_{CardP}\ [_{ClassP}\ [_{NumP}\ [_{FNP}\ [_{NP}]]]]]]]]]]$

I then utilized the difference between Type I *wh*-pronouns and Type II *wh*-pronouns to explain a standing problem regarding the relation of resumption to the ability of a *wh*-item to head a DWH. Only wh-items which incorporate a Functional Noun can license resumption, and also, these *wh*-items are frequently used as *wh*-determiners:

(20) a. *Clitic spells-out FN*



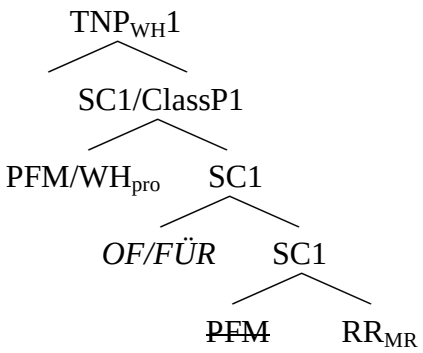
b. *Clitic spells-out NR*



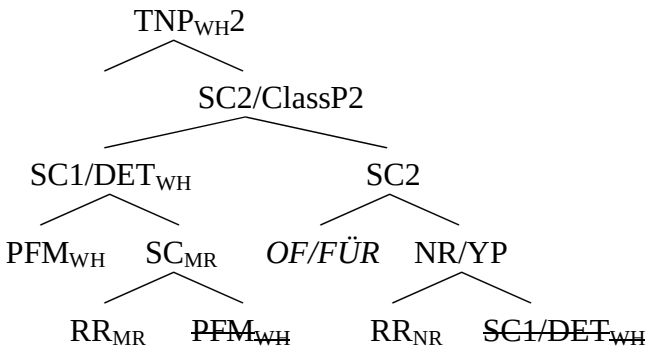
The last section of chapter 4 expands the discussion on the structural sources for DL-Syntax effects. In the first part, I discussed how the adaption of Q-theory can open up new way to analyse *wh*-split constructions. I also speculated that the approach to the morphosyntax of *wh*-phrase proposed in this thesis could be superior to the two approaches to superiority and island effects discussed in section 3.4.

After that, I looked closely at partitivity as a structural trigger for DL-Syntax. I arrived at the conclusion that the strong structural parallels between partitive *wh*-phrases and *wh*-determiner phrases are the main source for the DL-Syntax effects both of these types of *wh*-phrases show:

(21) Wh-*Phrase involving one SC*:



(22) Wh-*Phrase involving two SC*:



In the last subsection, I sketched how the differences between empty categories sometimes argued to be the crucial distinction between DWH and regular *wh*-phrase can be captured in structural terms adopting the basic assumptions promoted in this dissertation, especially the ones proposed in chapter 4.

The main outcome of especially the last chapter of this thesis is that DL-Syntax effects are mainly triggered by the structural complexity of the respective *wh*-item inasmuch as only *wh*-items which involve two nominal constituents (Functional Noun and Nominal Restrictor, or the two nouns in partitive *wh*-phrases) are capable of triggering certain DL-Syntax effects; this is what I called the "double nominal" approach to DL-Syntax.

"Complexity" is therefore to be understood in a more abstract sense than simply "*wh*-determiner plus Nominal Restrictor". This reasoning can also be applied to cases of *wh*-pronouns acting as *wh*-topics although they do not involve an overt Nominal Restrictor. For the Chinese examples in chapter 4, I want to argue that will be argued to always have a Functional Noun because Chinese as a classifier language and ClassP is the locus of Functional Nouns. I also claim that the behaviour of possessive *wh*-phrases as discussed in section 2.3 can also be explained by the "double nominal" approach. If the semantics of possession demand the possessor to be overtly realized (cf. *Peter's house*), a possessor *wh*-phrase is automatically interpreted as a Type II *wh*-pronoun.

Based on these findings, I propose that *wh*-items (no matter if used as *wh*-pronouns or as *wh*-determiners) can be classified with respect to the occurrence of a Functional noun in their structure:

(23) *Typology of (Germanic) Wh-determiners*

	Token	Kind
Functional Noun	*Welches N*	*Was für ein N*
Formal Feature	*Which N*	*What N*

It was beyond the scope of this thesis to provide a full-fledged analytic proposal for every single one of the DL-S effects listed in this chapter. Rather, the systemisation undertaken in this chapter is in itself a contribution to linguistic theorizing. Although I have introduced a lot of terminology doe types of morphosyntactic constituents, I believe that the outcome of this proliferation of terms is a sharper picture of the intricate relations between the internal structures of the *wh*-items used a *wh*-ddeterminers, the Nominal Restrictor, Functional Nouns and the QP heading *wh*-phrases.

The next step will be to take the results and apply them to specific empirical data while simultaneously taking into consideration language-specific properties which have often been neglected in this thesis. One of these language-specific aspects is the strong

resemblance between the forms for WHO and WHICH in Slavic, which presumably is due to developments as I described them in chapter 4. Also, the ideas voiced in section 4.3 must be sharpened, since it is not clear whether the assumption that a class of syntactic objects 'Functional Nouns' exist is warranted. And finally, there are many questions remaining regarding the correct spell-out mechanism to assume (how are different fseqs and the notion of constituency related) and how labelling (if relevant) is involved in the processes described in chapter 4.

Despite the lack of dedicated technical analyses for specific empirical phenomena, the second main contribution of this dissertation is the conclusion that the concept of D-linking, as attractive and justified as it is from a descriptive perspective, is not a basic notion. It is comprised of four components (of which DL-Syntax and Morphological-DL have been scrutinized in this thesis). This assumption explains why DWH do not constitute a homogeneous class. The gradual character of D-linking (i.e. the fact that certain *wh*-determiner constructions show only a subset of DL-S effects even if they are headed by what could faithfully be classified as a/the Token-*wh* determiner of the respective language) is argued to be related to the fact that the Token-reading itself can have several triggers:

(24) *Idealized Correlations between DWH-types and DL-S effects*

	PART	**SPECIFIC**	**TOPIC**	**section**
eSUP	**/OK+ResPro*	*OK*	*OK*	3.3
eWI	**/OK+ResPro*	*OK*	*OK*	4.4.3
oWCO	*	*OK*	*?*	4.4.3
RES	*NA*	*NA*	*NA*	4.3.2/4.4.2
ES	*OK*	*	*?*	3.2
In-situ	*?*	*OK*	*NA*	

Even if e.g. the "double nominal" approach turns out to be on the wrong track in the end, the facts as I described them in this dissertation remain. I will leave the discussion at that for this time and postpone all further discussion to future research.

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