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German Is a Multiple Wh-Fronting Language![*]

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1. Introduction

In this paper I am going to explore properties of multiple Wh-question formation in a variety of languages, concentrating on syntactic and interpretive facts from or relevant to German. I will propose two theses which might at first sound both unexpected and contradictory. First I will argue that German is like Bulgarian, in that in multiple Wh-questions all Wh-phrases (henceforth, WHs) move overtly into a finer articulated CP (the Comp-layer of the clause). Then I suggest that German is like Italian, in that it does not form true multiple constituent questions to begin with; displacement of WHs must thus have a different trigger. Putting both theses together, however, it becomes clear that the obligatory multiple Wh-fronting argued for here is of a different nature than standardly assumed for languages with multiple Wh-movement.

Relevant for the first claim are cross-linguistic patterns of single-pair and pair-list readings of all WHs in multiple Wh-questions.[1] As the discussion in section 2 will show, the typological characterization of the types of WH-displacement (which is not necessarily Wh-movement) in multiple questions I suggest and the terminology I employ are the following:

(1) Typology of Wh-displacement
   (i) Multiple Wh-movement languages A'-move all WHs in the overt component.
   (ii) Singular Wh-movement languages A'-move one WH in the overt component and might A-move others.
   (iii) Zero Wh-movement languages don't A'-move any WHs in the overt component, but may A-move them.

As will become clear presently, I take WH-displacement to be different from Wh-movement. The latter term will be reserved for movement of a WH to check some Wh-related property — for example, an arbitrary feature [Wh] or a focus-feature [Foc] (see the discussion of the "Hagstrom-Bošković approach" in section 3); in other words, operator A'-movement into Comp. WH-displacement simply denotes movement of a WH for other reasons, such as Wh-scrambling as observed in Japanese or the fronting of WHs in languages like Serbo-Croatian (see sections 2 and 3 for clarification); this movement is arguably not of the same type as the former, but rather A-movement within Infl.

In section 3, I will present an adaptation of two recent approaches to (the syntax and semantics of) multiple Wh-questions and illustrate the main ideas from that and the previous section. As I implement Bošković's (1998) version of Hagstrom's (1998) original theory into the current framework, I term this the "Hagstrom-Bošković approach."

With the interpretive facts as initial motivation to hypothesize multiple Wh-fronting in German and a theory of Wh-question licensing at our disposal, I will investigate this claim further in section 4. Here I will present evidence for multiple A'-displacement of WHs in German, which will come from apparent intervention effects (cf. Beck 1996, Pesetsky 2000) and an extension thereof, the behaviour of adverbs, binding effects, and finally, discourse requirements (from Grohmann 1998 and subsequent work).

To complete the initial promise, I provide a brief discussion of and comparison with relevant facts from Italian in section 5 to demonstrate that German only looks like Bulgarian on the surface. The truth is somewhat more complicated, with the result that German is a language that fronts all WHs into Comp without Wh- or operator A'-moving them. Or, to put it differently, German does not make available true multiple Wh-questions, just like Standard Italian (Rizzi 1978, Calabrese 1984). Section 6 summarizes this paper.

2. Interpretation and Typology of Multiple Wh-Questions

This section presents the lay of the land. I will introduce some general points about multiple Wh-questions across languages and discuss interpretive issues. Here I will be concerned with the availability of single-pair and pair-list readings in multiple Wh-questions by basically dissecting the findings and explanations of Bošković (1998), who in turn extends Hagstrom's (1998) proposal. These two sources form the base of what I dub the "Hagstrom-Bošković approach" (see section 3). To be as close to this line of reasoning as possible, I will have to consider the data available as briefly and limited as Bošković does (see also Bošković 2002). This and the following section can thus be taken as a slightly extended exegesis of his interpretation of the facts and the relevance of Hagstrom's work.

2.1. Single-Pair and Pair-List Readings

As noted first, to my knowledge, by Wachowicz (1974), multiple Wh-questions are often ambiguous between a single-pair (SP) and a pair-list (PL) reading. Thus the question in (2) may be answered in two ways, identifying a singular referent for each WH (pairing each WH with a single answer, SP) or giving an exhaustive set of referents (matching a list of WH-answer pairs, PL), where the felicity of either answer depends on the context:

(2) Q: Who bought what?
A: Mary bought a sweater. (SP)
A': Mary bought a sweater, Jane bought shoes, Anne bought a skirt… (PL)

However, while contexts may be used to "disambiguate" the appropriate answer, the availability of SP- or PL-interpretations differs across languages. What follows is a cursory look at the data (as alluded to above, mostly taken from Bošković 1998[2]).

In a scenario like the one in (3), for example, where the context ensures that each WH is paired with a single referent, Japanese allows, but English disallows, the SP-reading; in

other words, the multiple Wh-question is felicitous only in Japanese:[3]

(3) *Scenario I:* John is in a department store and off in the distance sees somebody buying an article of clothing, but he does not see who it is, and neither does he see exactly what is being bought. He goes to a shop assistant and asks:

a. #Who bought what? (English: *SP)

b. *Dare-ga nani-o katta no*? (Japanese: SP)
who-NOM what-ACC bought Q
'Who bought what?'

Following Bošković's discussion (see among others also Hornstein 1995, Comorovski 1996), we could entertain the following generalization:

(4) Descriptive generalization
Japanese allows, but English disallows, SP-readings in multiple Wh-questions.

One difference between Japanese and English generally agreed upon is that only the latter exhibits overt Wh-movement, viz. operator A'-movement into Comp of one WH. I will thus refine the following working hypothesis (from Bošković 1998):

(5) Working hypothesis (to be revised)
Overt Wh-movement forces PL-interpretation.

2.2. A Cross-linguistic Perspective

If we consider the same type of scenario, but look at French, a language which allows two strategies to form Wh-question, overt Wh-movement ("French I") and Wh-in situ ("French II"), we find the following pattern:

(6) *Scenario I':* Mary sees John down the corridor. Not wearing her glasses, she notices that John gives something to someone but can't figure out what the item nor who the person is. So she asks her friend to find out:

a. *#Qu' a-t-il donné à qui?* (French I: *SP)
what has-he given to whom
'What did he give to whom?'

b. *Il a donné quoi à qui?* (French II: SP)
he has given what to whom
'What did he give to whom?'

French I seems to pattern in the relevant respect with English, French II with Japanese.

Looking at languages in which all WHs are obligatorily fronted (such as Bulgarian, Serbo-Croatian, Romanian, Polish, Russian etc.; cf. Rudin 1988 for the original and, among many others, Bošković 2002 for more recent discussion), we find the following, different

patterns:

(7) *Scenario I* (cf. (3))
a. *#Koj kakvo e kupil?* (Bulgarian: *SP)
b. **Kakvo koj e kupil?*
what who is bought
'Who bought what?'

(8) *Scenario I* (cf. (3))
a. *Ko je šta kupio?* (Serbo-Croatian: SP)
b. *Šta je ko kupio?* (Serbo-Croatian: SP)
what is who bought
'Who bought what?'

Bulgarian (and also Romanian, which I will briefly address below), strictly observing the Superiority Condition (Chomsky 1973), disallows (7b) on purely grammatical grounds, unlike Serbo-Croatian. But the question that arises is why Serbo-Croatian[4] should allow an SP-reading in both cases.

2.3. Three Types of Superiority

Bošković (1998) formalize three types of Superiority effects to further describe cross-linguistic variation in multiple Wh-question formation and interpretation.[5] In some languages, a bare, non-D(iscourse)-linked WH may not be fronted over a structurally higher one, the standard Superiority effect of note 5 (see section 5 for more on D-linking); these languages are sensitive to "Syntactic Superiority." In others, this restriction does not hold: syntactically, any WH may front over another ("Apparent Superiority"). In languages that are sensitive to a third type of Superiority, called "Interpretive Superiority" by Bošković, the PL-reading gets lost in those cases where a lower WH (WH2) is fronted over an originally higher one (WH1). This three-way split of Superiority effects is listed in (9), and I will briefly discuss each one in turn.[6]

(9) Types of Superiority
(i) *Syntactic Superiority:* *non-D-linked WH2 > non-D-linked WH1
(such as English, Bulgarian, Romanian, Chinese, French)
(ii) *Apparent Superiority:* (any) WH2 > (any) WH1
(such as Japanese, German, Serbo-Croatian)
(iii) *Interpretive Superiority:* loss of PL-reading when WH2 > WH1
(such as English, Japanese, Serbo-Croatian)

Checking with the languages just considered, the effects of this tripartite formulation of Superiority seem to be borne out. The next scenario forces a pair-list answer; in a given language, the question may or may not be felicitous, just along the lines of (9i-iii):

(10) *Scenario II:* Mary sees John finishing off his daily dealings. She sees a bunch of people that she knows walk away and John stacking his leftover merchandise, so she asks him:

a. *Dare-ga nani-o katta no?* (Japanese: PL)

b. *#Nani-o dare-ga katta no?* (Japanese: *PL)
what-ACC who-NOM bought Q
'Who bought what?'

In Japanese, a strict Wh-in situ language, the PL-reading gets destroyed if the lower WH2 moves over WH1 (presumably, some sort of "Wh-scrambling").

Next, consider languages in which all Wh-phrases are obligatorily fronted:

(11) *Scenario II* (cf. (10))

a. *Koj kakvo e kupil?* (Bulgarian: PL)

b. **Kakvo koj e kupil?*
what who is bought
'Who bought what?'

(12) *Scenario II* (cf. (10))

a. *Ko je šta kupio?* (Serbo-Croatian; PL)

d. *#Šta je ko kupio?* (Serbo-Croatian: *PL)
what is who bought
'Who bought what?'

While in a PL-enforcing context WH2 may precede WH1 in Serbo-Croatian syntactically, the desired reading is not available, i.e. the PL-interpretation is lost. This is an instance of Interpretive Superiority. In Bulgarian, this is not even an option. This separates the two languages already, supporting the conclusion that in multiple Wh-fronting language the WHs need not all move the same way (cf. Rudin 1988, Bošković 2002 and references cited). Leaving the "why" for later, this immediately suggests that with simple WHs, Bulgarian and English fit the bill projected by (9a), while Serbo-Croatian seems to fit (9c).

Interestingly, some questions in English do so too, namely those that contain two D-linked WHs:

(13) *Scenario II* (cf. (10))

a. Who bought what? (English: PL)

b. Which guy bought which drug? (English: PL)

c. #Which drug did which guy buy? (English: *PL)

Thus English mulitiple D-linked Wh-questions are subject to Interpretive Superiority, just as all multiple Wh-questions in Serbo-Croatian are.

It is well-known that D-linking allows for more freedom regarding (Syntactic) Superiority violations (Pesetsky 1987). As Citko and Grohmann (2001) note, Bulgarian D-

linked multiple Wh-questions do allow movement of either WH. Furthermore, if a D-linked WH2 moves over WH1, the preferred reading is a PL-reading (Roumyana Izvorski, p.c.); the same applies to Romanian (Ileana Comorovski, p.c.): it is thus not Interpretive Superiority that plays a role in these languages, but Apparent Superiority. The relevant examples are given in (14):

(14) *[along some variation of Scenario II]* (cf. (10))

a. *Koga kniga koj covek e kupil?* (Bulgarian: PL)
which book which person is bought
'Which book did which person buy?'

b. *La care cînd te ai gîndit?* (Romanian: PL)
of which when you have thought
'Which one have you thought of when?'

This suggests that whatever the exact landing site of WHs in Bulgarian (D-linked or not), it is different from the one(s) in Serbo-Croatian in licensing a PL-interpretation and yet, conforming to the original working hypothesis in (5), destroying an SP-reading. As I will explore in the next section, the landing site is indeed the crucial difference. I will tie it in with a larger re-interpretation of A- vs. A'-movement. These patterns, coupled with that re-interpretation (section 3), will allow us to restate our initial working hypothesis slightly:

(15) Working hypothesis (extension)

(i) A'-movement of any WH forces PL-interpretation regardless of Superiority.

(ii) A-movement of all WHs showing Apparent Superiority destroys PL reading (leading to Interpretive Superiority).

(iii) A-movement of all WHs without Apparent Superiority allows SP-reading.

This extension, in turn, applied to the data presented above, implies a cataloguing such as that in Table 1 (basically adopted from Bošković 1998):[7]

If a language has:	It allows readings:	But:
Zero Wh-movement languages (Japanese, Chinese, Serbo-Croatian, French II…)	WH1 > WH2: PL/SP WH2 > WH1: SP *(such as Wh-scrambling)*	
Singular Wh-movement languages (English, French I, German, …)	WH1 > WH2: PL WH2 > WH1: SP *(such as D-linking)*	German: WH2>WH1: PL *(even D-linking)*
Multiple Wh-movement languages (Bulgarian, Romanian…)	WH1 > WH2: PL WH2 > WH1: PL *(even D-linking)*	

Table 1: Quasi-tripartition

Note that one consequence of this tripartition is that languages like Serbo-Croatian — such as Polish or Russian, i.e. those multiple Wh-fronting languages that arguably target a

position lower than Comp[8] — are now characterized as "Zero Wh-movement" languages. This does not mean that they leave all WHs in situ proper; it just says that no WH undergoes movement to check a Wh-feature (or whatever the trigger for Wh-movement into Comp).

So far I have not looked at German; its position in Table 1 is inferred from Bošković's discussion (in line with Hagstrom's suggestion that German employs "Q-stranding," which I address in section 3.4 below). But it turns out that at closer inspection, this is not correct.

2.4. Oddball German

The third column in Table 1 makes the table look pretty ugly, so in the following I will clean it up. Beyond cosmetic-surgical aspirations, I intend to motivate this clean-up empirically by showing that German patterns with the Multiple Wh-movement language Bulgarian in making only PL-readings available, not with the Singular Wh-movement language English (the standard assumption; cf. Grewendorf 2002: 244, for example).

First, looking at the context that forces a PL-reading, German patterns like Bulgarian or Romanian (Scenario II is repeated for convenience from (10) above):

(16) *Scenario II:* Mary sees John finishing off his daily dealings. She sees a bunch of people that she knows walk away and John stacking his leftover merchandise, so she asks him:

a. *Wer hat was gekauft?* (German: PL)

b. *Was hat wer gekauft?* (German: PL)
what has who bought
'Who bought what?'

Second, in a context that forces an SP-reading, such as Scenario I (repeated from (3)), German does actually not pattern with Japanese or French II (compare with (3) and (6b), respectively) — the syntactically well-formed question does not allow for SP-interpretation:

(17) *Scenario I:* John is in a store and off in the distance sees somebody buying an article of clothing, but he does not see who it is, and neither does he see exactly what is being bought. He goes to a shop assistant and asks:

a. *#Wer hat was gekauft?* (German: *SP)

b. *#Was hat wer gekauft?* (German: *SP)
what has who bought
'Who bought what?'

c. *#Welcher Kunde hat welches Produkt gekauft?* (German: *SP)

d. *#Welches Produkt hat welcher Kunde gekauft?* (German: *SP)
which product has which customer bought
'Which customer bought which product?'

I take these data to suggest — admittedly, on the limited grounds considered here, i.e. little more than an exegesis of Bošković (1998) — a cleaner table:

If a language has:	It allows readings:
Zero Wh-movement languages (Japanese, Chinese, Serbo-Croatian, French II …)	WH1> WH2: PL/SP WH2 > WH1: SP
Singular Wh-movement languages (English, French I…)	WH1 > WH2: PL WH2 > WH1: SP
Multiple Wh-movement languages (Bulgarian, Romanian, German…)	WH1 > WH2: PL WH2 > WH1: PL

Table 2: An improved tripartition

In the next section I will present the Hagstrom-Bošković approach to questions and explore the initial working hypothesis (revised from (5) in (18)), before addressing the proposal that German might actually be a multiple Wh-movement language, as Table 2 suggests. The full characterization of the syntactic formation of a multiple Wh-question and the resulting interpretive possibilities is captured in (18). I will return to the issue of what it means to be a "Wh-movement" language and what other options could look like later on.

(18) Working hypothesis (revised)
- (i) Movement of any WH targeting the Comp-layer forces PL-interpretation.
- (ii) Movement of any WH inside the Infl-layer allows SP-interpretation.
- (iii) a. Movement of any WH within the Infl-layer forces SP if WH2 > WH1.
  b. Movement of any WH within the Infl-layer allows PL if WH1 > WH2.

3. The Hagstrom-Bošković Approach to Questions

After presenting one possible argument in favour of overt multiple Wh-movement in German from typological considerations, I follow further Bošković's (1998) extension of the syntax and semantics of questions by Hagstrom (1998), the Hagstrom-Bošković approach, the theoretical underpinnings of which I will sketch in a concise manner in this section. For more details on the semantics, see the original sources. The syntactic implementation also draws from the framework outlined in Grohmann (2000).

3.1. A Semantics for Multiple Wh-Questions

Let's start with the basic semantics assumed. In the Hagstrom-Bošković approach questions are licensed by a question particle [Q] (which may or may not be overtly realized), rather than by movement of a WH.

Displacement of WHs is driven by other properties of the grammar (such as focus; see e.g. Horvath 1986, Stjepanović 1995, Sabel 2000, Bošković 2002). [Q] always moves to C to type the clause interrogative (cf. Cheng 1991), and it may do so from one of two positions: a high position, c-commanding all WHs, or a low position (where it is adjoined to the lowest WH).

The trace left behind by [Q]-movement to C serves as a choice function variable driving the semantics of questions (Hagstrom 1998). What Bošković (1998) finds is that

languages fall into two categories, whether they allow SP-readings in a multiple questions or not:

(19) a. [Q] moves from some clause-internal position to C^0 ➞ low [Q]: pair-list
b. [Q] is generated above both WHs and moves to C^0 ➞ high [Q]: single-pair

A single question is a set of propositions, which can be responded to either by choosing one proposition from the set or by denying the presupposition that there is an answer.

(20) Single Question Recognition (Hagstrom 1998: 148)
If the semantic value of an utterance is of type <pt> (a set of propositions), then the utterance is a (single) question.
To respond: (a) one proposition from the set is selected,
or (b) the presupposition (that there is an answer) is denied.

By extension, the rule "Multiple Question Recognition" identifies a (pair-list) multiple question as a set of questions, which can also be responded to in two ways: by selecting one proposition from the set A for each member set A or by denying the presupposition that there is an answer in A. [Q] is an existential quantifier over a choice function.

(21) Multiple Question Recognition (Hagstrom 1998: 148)
If the semantic value of an utterance is of type <pt, t> (a set of questions), then the utterance is a (pair-list multiple) question.
To respond: For each member set *A*,
(a) one proposition from the set *A* is selected,
or (b) the presupposition (that there is an answer in *A*) is denied.

(22) Choice Function (Hagstrom 1998: 130)
A function *f* is a *choice function* if it applies to a (non-empty) set and yields a member of that set.

The semantic value of a WH is a set of individuals. Merging with WH2 and moving on to C, the choice function variable left behind by [Q] takes WH2 as its argument and returns an individual, which is taken as an argument by the verb. The value of the higher WH1 is a set, as it is outside the scope of the choice function variable. Further composition of WH1 yields a set of sets of propositions, one set of propositions for each value x in the set of WH1. Hagstrom (1998: 142ff.) calls this composition Flexible Function Application, a repair strategy for semantic type mismatches. It applies when a function receives a set of arguments instead of a single argument, in which case it is applied to each argument in the set of arguments. The result of this function application yields a set.

By the Multiple Question Recognition rule, an appropriate answer to a question such as (23a), where [Q] is merged low (attached on WH2), provides an answer to each of the constituent questions of the set {What did A buy?, What did B buy?, …} or, more formally:

(23) a. Who bought what?
b. {{A bought f_1 (WHAT), A bought f_2 (WHAT), …}, {B bought f_1 (WHAT), B bought f_2 (WHAT), …}, …}

Merging [Q] low thus yields a set of questions — but merging [Q] high yields a set of propositions. Both WHs are contained within the argument of the choice function variable. Composition of WH2 (qua Flexible Function Application) returns a set of properties which, once applied to the set WH1, yields one proposition for each possible subject with each possible object, namely (24). So the Single Question Recognition rule gives an SP answer.

(24) {A bought a, A bought b, …, B bought a, B bought b, …}, (where WH1={A, B, …} and WH2={a, b, …})

If the choice function variable left behind by [Q]-movement to C scopes over WH2 only ("low [Q]"), we get a PL-interpretation; if it scopes over both WHs ("high [Q]"), we get an SP-interpretation (in the following, strikethrough indicates a lower copy or trace and bold strikethrough the position of the choice function variable, i.e. the original position of [Q]):

(25) Choice Function Variable and Question Interpretation
a. [Q]-C … WH1 … WH2-~~**[Q]**~~… (low [Q]: PL)
b. [Q]-C … ~~**[Q]**~~… WH1 … WH2 (high [Q]: SP)

3.2. The Syntax of Multiple Wh-Questions

Let us now turn to the syntax of the Hagstrom-Bošković approach and identify the structural positions of high [Q], low [Q], and other important players. I assume an articulated Comp-layer, slightly modifying Rizzi's (1997) structure, where F^0 generates "high [Q]":

(26) CP > TopP* > FocP > TopP* > FP

Applying Hagstrom's analysis, the generalization emerges that syntactic movement of a WH over high [Q] destroys the SP-reading and only allows a PL-interpretation (cf. (18)):

(27) Availability of SP-/PL-interpretation
(i) Wh-in situ languages always allow SP-interpretation
(Japanese, Chinese, French II — and, under this criterion, Serbo-Croatian);
(ii) Singular Wh-movement languages allow SP-interpretation only with D-linked WHs
(which arguably do not have to move so high — English, French I);
(iii) Multiple Wh-movement languages never allow SP-interpretation
(assumption: all WHs move into Comp-layer — Bulgarian, Romanian).

According to the tripartition from Table 2, German falls into category (27iii). Let's see how. The two options — Wh-scrambling within the Infl-layer (WH2 > WH1) or retaining base order (WH1 > WH2) — are available to Wh-in situ languages, which explains why both SP- and PL-readings are felicitous in either context (section 2). With high [Q], the choice function computed over the variable ranges over all WHs in situ (yielding SP), whereas with low [Q] it ranges only over WH2 (yielding PL). I suggest (29) to be the rough and relevant structures for a multiple Wh-question in Chinese, such as (28):

(28) *Shei mai-le shenme?* (Chinese)
who buy-ASP what
'Who bought what?'

(29) a. $[_{CP}$ [Q]-C … $[_{TP}$ WH1 T … $[_{vP}$ ~~WH1~~ … WH2-~~[Q]~~ …]]] (PL)

b. $[_{CP}$ [Q]-C … $[_{FP}$ ~~[Q]~~-F $[_{TP}$ WH1 T … $[_{vP}$ ~~WH1~~ … WH2 …]]]] (SP)

The same strategies apply to other Zero Wh-movement languages as well:

(30) a. *Dare-ga nani-o katta no?* (Japanese)
who-NOM what-ACC bought Q
'Who bought what?'

b. *Ko je šta kupio?* (Serbo-Croatian)
who is what bought
'Who bought what?'

(31) a. $[_{CP}$ [Q]-C $[_{TP}$ WH1 T $[_{AgrOP}$ WH2-~~[Q]~~ AgrO $[_{vP}$ ~~WH1~~ *v* ~~WH2 [Q]~~]]]] (PL)

b. $[_{CP}$ [Q]-C $[_{FP}$ ~~[Q]~~-F $[_{TP}$ WH1 T $[_{AgrOP}$ WH2 AgrO $[_{vP}$ …]]]] (SP)

3.3. Wh-Scrambling

Wh-scrambling (reordering of WHs) in Zero Wh-movement languages stays within the Infl-layer; for simplicity's sake, TP for Wh-subjects and AgrOP for Wh-objects.[9] Thus the relevant derivations underlying (32a) and (32b) would be (33a) and (33b), respectively:

(32) a. *Nani-o dare-ga katta no?* (Japanese)
what-ACC who-NOM bought Q
'Who bought what?'

b. *Šta je ko kupio?* (Serbo-Croatian)
what is who bought
'Who bought what?'

(33) a. [$_{CP}$ [Q]-C [$_{AgrOP}$ WH2-~~[Q]~~ AgrO [$_{TP}$ WH1 T [$_{vP}$ ~~WH1~~ *v* ~~WH2-[Q]~~]]]] (SP)

b. [$_{CP}$ [Q]-C [$_{FP}$ ~~[Q]~~-F [$_{AgrOP}$ WH2 AgrO [$_{TP}$ WH1 T [$_{vP}$ …]]]]] (SP)

Given that a bare WH2 may never move over a bare WH1 in Singular Wh-movement languages, the only interpretation we can get here is PL. Regardless of whether WH2 stays really in situ at the point of Spell Out or whether it moves into the Infl-layer overtly, movement of low [Q] to C leaves behind the choice function variable which invariably only has WH2 in its scope and thus takes WH2 as its argument:

(34) Who bought what?

(35) a. [$_{CP}$ [Q]-C [$_{FocP}$ WH1 Foc [$_{TP}$ ~~WH1~~ T [$_{vP}$ ~~WH1~~ *v* WH2-~~[Q]~~]]]] (PL)

b. [$_{CP}$ [Q]-C [$_{FocP}$ WH1 Foc [$_{FP}$ ~~[Q]~~-F [$_{TP}$ ~~WH1~~ T [$_{vP}$ ~~WH1~~ *v* WH2]]]]] (PL)

3.4. A Note on "Q-Stranding"

Under the assumption that English and German only differ in that the latter allows WH2 to move over WH1 (presumably targeting FocP too), the resulting configuration would look as follows, where, Hagstrom (1998) argues, [Q]-movement is unaffected by Wh-movement in that WH2 and [Q] move separately ("Q-stranding"):

(36) [$_{CP}$ [Q]-C [$_{FocP}$ WH2 Foc [$_{TP}$ WH1 T [$_{AgrOP}$ ~~WH2-[Q]~~ AgrO [$_{vP}$ …]]]] (PL)

Q-stranding seems like an ad hoc mechanism, most likely applicable to German only. Moreover, it's not quite clear what [Q] looks like, where it's inserted, how it moves etc.[10] Thus, if we could find a way to not invoke this strategy, we would save Table 2 and (18). This would imply that the syntactic operations in multiple Wh-questions in German would look more like those in Multiple Wh-movement languages, namely that all WHs undergo movement into the Comp-layer of the clause.

Let's look at what the Hagstrom-Bošković approach has to say for these. One assumption I am making for the time being is that FocP and FP are the landing sites for multiply fronted WHs (where F hosts high [Q]; cf. Cardinaletti and Roberts 1991, Uriagereka 1995, Rizzi 1997, Roussou 1998, and many more for a low Comp-position). This assumption would assign the structures in (38) for (37):

(37) a. *Cine ce a vazut?* (Romanian)
who what has seen
'Who saw what?'

b. *Koj kogo vižda?* (Bulgarian)
who whom sees
'Who sees whom?'

(38) a. $[_{CP}$ [Q]-C $[_{FocP}$ WH1 Foc $[_{FP}$ WH2-~~[Q]~~ F $[_{TP}$ ~~WH1~~ ~~WH2-[Q]~~ …]]]] (PL)

b. $[_{CP}$ [Q]-C $[_{FocP}$ WH1 Foc $[_{FP}$ WH2 ~~[Q]~~-F $[_{TP}$ ~~WH1~~ ~~WH2-[Q]~~ …]]]] (PL)

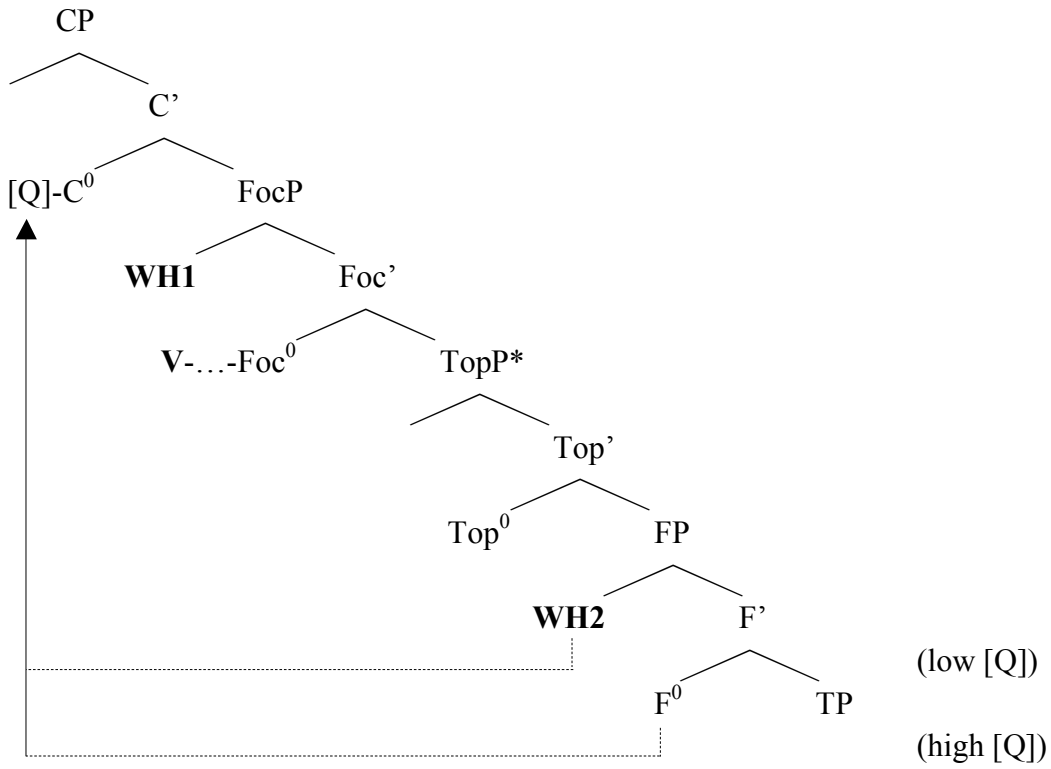
The rough structures in (38) apply to all relevant questions in Multiple Wh-movement languages: WH2 > WH1 is not attested, as the languages in question are sensitive to Syntactic Superiority — though not German, the "new unlikely candidate."

In the following, I will explore a finer characterization of the three different WH-displacement types in general and, more narrowly, the relevance of the notion "Multiple Wh-movement language" for German. It will turn out that by understanding Wh-movement to denote a displacement operation of a WH into the Comp-layer, an articulated CP, we can analyse German as involving multiple Wh-movement. This claim warrants some reconditioning which will be done in section 5. The upshot will be that while patterning with Bulgarian in moving all WHs into CP, German differs in the nature of the movement operation.

4. Some Evidence in Favour of Multiple Wh-Fronting in German

If all WHs in German were fronted the same way as in "regular" Multiple Wh-movement languages (e.g. Bulgarian or Romanian), it should have syntactic consequences or reflexes. In particular such an approach would make certain predictions, e.g. low [Q] is higher than high [Q], only topics may appear in between the WHs etc. The target structure would be this:

(39)



A simple application of the above discussion would yield this rough structure:

(40) [$_{CP}$ [Q]-C [$_{FocP}$ *wer hat*-Foc [$_{FP}$ *was* ~~[Q]~~-F [$_{TP}$ ~~*wer*~~ … ~~*was*~~ … *gekauft*]]]]
who has what bought
'Who bought what?'

Let's see whether we can find independent evidence for such a derivation.

4.1. "Intervention Effects"

One type of argument in favour of multiple Wh-fronting comes from so-called "intervention effects." Beck (1996) observes that certain quantificational elements may not appear in between two WHs, but may well follow them. She postulates a barrier created by these "intervening" quantifiers, on the assumption that all WHs must move at LF.

This assumption is not shared here; see Hornstein (1995, 2001), Sabel (1998), Simpson (2000) and others for doubts on covert Wh-movement. And indeed, it will be shown that the "intervention" phenomenon is more general, namely that non-topicalizable elements cannot sit in TopP, ruling out the ungrammatical cases as desired.

Many elements can occur between two WHs as well as follow them:

(41) a. *Wer hat Maria/seine Freundin/einen Porsche (gestern) wo geküßt?*
b. *Wer hat wo Maria/seine Freundin/einen Porsche (gestern) geküßt?*
who has where Maria/his girlfriend/a Porsche yesterday kissed
'Who kissed Maria/his girlfriend/a Porsche (yesterday) where?'

This is not so for all quantificational phrases, though (cf. Beck 1996):

(42) a. *Wer hat alle Bücher wo gekauft?*
who has all books where bought
'Who bought all (the) books where?'
b. **Wer hat kein Buch wo gekauft?*
who has no book where bought
'Who bought no book where?'

Universal quantifiers seem to be able to appear in between the two WHs, while negative ones do not. If all WHs really must end up in CP at one point (through Wh-movement at LF, for example), Beck's barrier-approach would constitute one possibility. Note that nothing rules out the co-occurrence of two WHs and a negative quantifier: if the quantifier follows all WHs, the question is well-formed.

(43) a. *Wer hat gestern wo alle Bücher gekauft?*
who has yesterday where all books bought
'Who bought all books where yesterday?'
b. *Wer hat gestern wo kein Buch gekauft?*
who has yesterday where no book bought
'Who bought no book where yesterday?

However, not only negative quantifiers are prohibited from "intervening." And the class of possible interveners is not restricted to universal quantifiers either.

(44) a. *Wer hat viele/die meisten/mehr als drei Bücher wo gekauft?*
who has many/the most/more than three books where bought
'Who bought many/the most/more than three books where?'
b. **Wer hat wenige/höchstens drei/weniger als drei Bücher wo gekauft?*
who has few/at-most three/fewer than three books where bought
'Who bought few/at most three/fewer than three books where?'

And again, if the quantifiers follow the WHs, everything is alright:

(45) a. *Wer hat wo viele/die meisten/mehr als drei Bücher gekauft?*
who has where many/the most/more than three books bought
'Who bought many/the most/more than three books where?'
b. *Wer hat wo wenige/höchstens drei/weniger als drei Bücher gekauft?*
who has where few/at-most three/fewer than three books bought
'Who bought few/at most three/fewer than three books where?'

These contrasts allow for the following generalization (from Grohmann 1998; cf. Beck 1996: 30 in passing, Citko and Grohmann 2000 for discussion, and Boeckx 1999 for French):

(46) Quantifier-intervention generalization
Monotone increasing quantifiers may appear in between two Wh-phrases, while monotone decreasing quantifiers may not appear in between two Wh-phrases.

We can now restate the "intervention effect." Given the articulated Comp-layer and the purported landing sites for A'-moved WHs in (39), any material intervening between the two WHs must target TopP. An explanation for the ungrammaticality of WH > Q_{decr} > WH is that decreasing quantifiers cannot be topicalized.

4.2. Non-topicalizability

There is independent evidence for the assumption that (monotone) decreasing quantifiers are "non-topicalizable" (i.e. that they may not be topicalized/move to SpecTopP):[11]

(47) a. *VIELE Bücher hat Peter gestern gelesen (, nicht ALLE).*
many books has Peter yesterday read not all
'MANY books Peter read yesterday (, not ALL).'
b. *Viele Bücher hat Peter gestern gelesen. (Er ist fleißig.)*
many books has Peter yesterday read he is industrious
'Many books, Peter read yesterday. (He is a hard worker.)'

(48) a. *WENIGE Bücher hat Peter gestern gelesen (, nicht VIELE).*
few books has Peter yesterday read not many
'FEW books Peter read yesterday (, not MANY).'
b. **Wenige Bücher hat Peter gestern gelesen. (Er ist faul.)*
few books has Peter yesterday read he is lazy
*'Few books, Peter read yesterday. (He is lazy.)'

In this context, consider the following questions:

(49) a. What happened?
b. What did Peter do yesterday?
c. Did Peter read few/many books yesterday?
d. How many books did Peter read yesterday?

For a felicitous answer to (49a-b) in German, the new information appears in a default focus position, where the type of focus is "information focus" (Kiss 1998) and the "default" position is rather low in the structure (see e.g. Abraham 1995, Meinunger 2000). Considering (49b), the relevant one for us, note that neither construction in (47) or (48) can be used; the only word order of a felicitous answer is in (50):

(50) a. *Peter hat gestern viele Bücher gelesen.*
Peter has yesterday many books read
'Peter read many books yesterday.'
b. *Peter hat gestern wenige Bücher gelesen.*
Peter has yesterday few books read
'Peter read few books yesterday.'

However, (47a) and (48a) can be used as felicitous answers to questions like (49c-d), where the answer contains a contrastive element as part of the new information. (47b) and (48b) are simple topic structures: there is no contrastive stress, and the fronted elements can only pick up a referent already established in the discourse; both are infelicitous.[12]

4.3. Intervening Adverbs

Certain adverbs may not "intervene" in between two WHs either (Citko and Grohmann 2001), and it can be shown that these too are non-topicalizable. Obviously, this could hardly be captured under a barrier-approach, even assuming LF-movement. As it turns out, however, non-topicalizable adverbs may be fronted if they are contrastively stressed. In these cases we would expect them also to be legitimate in between two WHs.

Take, for example, manner adverbs, which arguably sit low in the clause structure. These must follow the direct object, unless it is focused:

(51) a. *Peter hat das Buch gerne/komplett gelesen.*
Peter has the book with.pleasure/completely read
'Peter read the book with pleasure/completely.'
b. *Peter hat gerne/komplett das BUCH gelesen.*

In combination with multiple WHs, these adverbs may not appear in between the two:

(52) a. *Wer hat was gerne/komplett gelesen?*
who has what with.pleasure/completely read
'Who read what with pleasure/completely?'
b. **Wer hat gerne/komplett was gelesen?*
c. *Was hat wer gerne/komplett gelesen?*
d. **Was hat gerne/komplett wer gelesen?*

Moreover, such adverbs may not be topicalized, in contrast to sentence adverbs like *gestern* 'yesterday' and epistemic modal adverbs such as *wahrscheinlich* 'probably':

(53) a. **Gerne/Komplett hat der Peter das Buch gelesen.*
with.pleasure/completely has the Peter the book read
'*With pleasure/Completely, Peter read the book.'

b. *Wahrscheinlich/Gestern hat der Peter das Buch gelesen.*
probably/yesterday has the Peter the book read
'Probably/Yesterday, Peter read the book.'

But again, they may be fronted when focalized. In this case, they may also appear in between the two WHs (see note 12):

(54) a. *GERNE/KOMPLETT hat der Peter das Buch gelesen.*
'WITH PLEASURE/COMPLETELY, Peter read the book.'
b. *Wer hat GERNE/KOMPLETT was gelesen?*
'Who read what PLEASURE/COMPLETELY?'

The same contrasts can also be found in embedded contexts.

4.4. Non-Operator A'-Properties

If all WHs do indeed (A'-)move overtly into an articulated Comp-layer in German, we would expect this operation to have syntactic consequences that go beyond co-occurrence or "intervention" effects, such as A'-binding.[13] Now, as it turns out, such effects are notoriously difficult to show in German. But interestingly, we can find some — and while these don't necessarily suggest A'-movement proper, such as Wh-movement in English, they do suggest some sort of movement, even (and especially) of the lower WH, or at least are not in conflict with the current proposal. I will turn to a finer understanding of this in the next section.

Take parasitic gaps, for example, which are licensed by overtly A'-moved elements only — at least in English (see Chomsky 1982, Engdahl 1983, and much subsequent work).[14] As it turns out, the lower WH in German may license a parasitic gap PG, thus at first glance suggesting overt A'-movement:

(55) a. *Wer hat wen$_i$ ohne* PG$_i$ *zu kennen eingeladen?*
who has who without to know invited
'Who invited whom without knowing *(him)?'
b. *Wer hat was$_i$ ohne* PG$_i$ *gelesen zu haben rezensiert?*
who has what without read to have reviewed
'Who reviewed what without reading *(it)?'

In order to go through as a bona fide argument in favour of overt displacement of the lower WH into the Comp-layer, it has to be shown that German does indeed have parasitic gaps on a par with English.[15] But since WHs don't scramble in German (viz. Japanese "Wh-scrambling"), the landing site of the lower WH cannot be the "typical" scrambling position. In effect, the licensing of parasitic gaps by the lower WH can indeed be integrated into the analysis that the landing site is within the Comp-layer, and even as things stand now concerning the status of parasitic gaps in German, data such as (55) don't provide a counter-argument to my proposal.

Weak crossover effects are obviated by A'-elements (Chomsky 1977 and much subsequent work). In fact, these elements must be in a non-operator A'-position (in English). Again, the lower WH in German acts accordingly which is predicted if it is indeed A'-moved:[16]

(56) a. *Was hat wem$_i$ seine$_i$ Mutter gegeben?*
what has who his mother given
'What did his$_i$ mother give to who$_{*i/k}$?'
(cf. 'Who$_i$ did his$_i$ mother give what?')

b. *Wann hat wen$_i$ sein$_i$ Vater geschlagen?*
when has who his father beaten
'When did his$_i$ father beat who$_{*i/k}$?'

While these data might be interesting in and of themselves, and possibly serve as further corroborating evidence for the hypothesis that German is a multiple Wh-fronting language like Bulgarian, they might also suggest an alternative implementation of this hypothesis. Both WHs may be fronted into an articulated CP-layer — but maybe not to the positions indicated in (39), clear A'-operator positions. Maybe these fronted WHs target A'-positions, but don't bear operator-status (as the current section suggested). Next I will explore where this suggestion could lead to.

5. The Italian Caveat: No "Real" Multiple Wh-Questions in German?!

The non-traditional proposal that all WHs in German move very high in the clause structure is driven by typological and interpretive considerations. It is further empirically supported by the interaction with non-topicalizable material and other syntactic effects, given reasonable assumptions on Wh-question formation in general.

At the same time, one difference between German and the "regular" Multiple Wh-movement languages (like Bulgarian or Romanian) relates to the fact that the quantificational character of WHs in multiple questions is restricted by the discourse, an observation which could be linked to the absence of multiple question formation in Italian, tying it in with the syntactic derivations proposed. The ensuing discussion will thus follow up on the remarkable result from the previous section that although German fronts all WHs into Comp, they don't seem to have the same quantificational A'-status as a singularly fronted WH in, say, English.

5.1. Italian

In passing, Rizzi (1978) mentions that Italian does not allow multiple Wh-questions at all.

(57) a. **Chi ha scritto che cosa?* (Italian)
who has written what
'Who wrote what?'

b. * *Chi è partito quando?*
who is left when
'Who left when?'

Calabrese (1984, 1992) offers an explanation for this "odd" ban: a multiple Wh-question, if not used as an echo or quiz question, asks for "new information" regarding all WHs. New information in a declarative sentence is construed with non-default sentential stress — or focus. The type of focus relevant for a felicitous reply to a question is information (or presentational) focus, not identificational (or, as I use it, contrastive) focus (see the discussion in Kiss 1998, for example). In Italian, the position for information focus is unique and so, argues Calabrese, it follows that multiple Wh-questions are ill-formed: the multiple information requested cannot be realized in the answer.

(58) a. **MARIO ha scritto una LETTERA.* (Italian)
Mario has written a letter
'MARIO wrote a LETTER.'
b. **FRANCO è partito alle CINQUE.*
Franco is left at five
'FRANCO left at FIVE O'CLOCK.'

This state of affairs is independent of an SP- or PL-reading, as Calabrese shows:

(59) *#MARIO ha scritto una LETTERA, FRANCO un ARTICOLO, CARLO un LIBRO…* (Italian)
'MARIO has written a LETTER, FRANCO an ARTICLE, CARLO a BOOK…'
(Calabrese 1984: 67)

The intended interpretation of (59) is not contrastive, but information focus (cf. 'What did people write, and who did it?'), hence the hash mark. (Presumably, an utterance like (59) is felicitous and well-formed in a context that focuses contrast.) As it turns out, we can detect a similar effect in German: the analogue of (59) can only be used contrastively as well.

5.2. Discourse Restrictions

After the evidence suggested above, a further argument for multiple Wh-displacement into the Comp-layer in German comes from discourse restrictions. For example, compare the following two discourse contexts and the (in)felicity of a multiple Wh-language between English and German:

(60) *Context I:* A man comes to a newsstand and just sees three people leaving in different directions, each fiddling with their purchases. Asking the newsagent whether he sold anything interesting to those three people, the newsagent replies: "I can't believe it! I just sold an Anarchist newspaper, a Fascist magazine and the

Christian church news."

a. Who bought what?

b. *Wer hat was gekauft?*
who has what bought
'Who bought what?'

(61) *Context II:* A jeweler comes home to his wife for lunch and says excited: "I had a great morning! I sold a platinum watch, a gold necklace and a titanium wedding band."

a. Who bought what?

b. *#Wer hat was gekauft?*
who has what bought
'Who bought what?'

As can be seen, German only allows for a felicitous binary Wh-question if the set of individuals is part of the common ground between speaker and hearer, introduced in the discourse, where (61a) is a perfectly reasonable question and a potential answer would be something like (62):[17]

(62) A businessman bought the platinum watch, an old lady bought the gold necklace and a young groom bought the titanium wedding band.

This felicity condition is captured by Discourse Restricted Quantification:

(63) Discourse Restricted Quantification (DRQ; from Grohmann 2000: 269)
Questions involving two Wh-expressions are well-formed if the value of both Wh-expressions is determined by the context; determination of values is satisfied by providing a set of at least two possible referents in the discourse.

In other words, DRQ forces a certain salience of the referents to all WHs in a multiple Wh-question. As the above contrasts show, it strictly applies to German, but not to English.

5.3. Absence of Multiple Information Questions

What DRQ essentially says is that all WHs in a German multiple Wh-question must be D-linked (Pesetsky 1987). While a WH in an information question represents a novel set of individuals ("new information"), the set of individuals represented by D-linked WHs is to some degree known ("old information"). The term DRQ can be used to distinguish a condition of D-linking on all WHs (in German), while D-linking simply applies to those elements commonly identified as such (e.g. *which*-phrases).

It seems that German and Italian pattern alike. In a sense, then, German multiple Wh-questions are not really questions. However, German has the option of marking contrastiveness in two positions: by fronting the relevant element or by assigning it heavy

stress in low position. Thus, if a question is formed that asks for contrastive information (in a syntactically well-formed way), a possible answer is also well-formed syntactically.

However, German and Italian apparently differ with respect to D-linking:

(64) **Quale ragazza ha dato un bacio a quale ragazzo?* (Italian)
which girl has given a kiss to which boy
'Which girl kissed which boy?' (Calabrese 1984: 67)

I leave this discrepancy for future research. But note that if a multiple question with two bare WHs is D-linked, it might provide us with a clue as to why Syntactic Superiority may be violated in German: the two Wh-elements are actually D-linked, which — for reasons that are beyond the scope of this discussion — may circumvent the Superiority Condition (see Boeckx and Grohmann, to appear for suggestions).

5.4. More on "D-linking"

German requires all DRQed/"D-linked" WHs to move into the Comp-layer and as a result always force a PL-reading, where the individuals of each set are contrasted with one another. A clue comes from pairing the order of WHs in the question and the order of the values for each WH in the answer:

(65) a. *Wer hat was gekauft?*
b. *Was hat wer gekauft?*
'Who bought what?'

(66) a. *Der Peter hat das Buch gekauft, der Martin hat das Fahrrad gekauft…*
b. *Das Buch hat der Peter gekauft, das Fahrrad hat der Martin gekauft…*
'Peter bought the book, Martin bought the bicycle…'

If the order of WHs in the question is WH1 > WH2, the appropriate answer follows the same order for the values of each WH. However, if the order in the question is WH2 > WH1, the order in the answer is analogous (see also Kiss 1993: 103f., fn. 6 for Hungarian).

If the first position in a declarative matrix clause can be a contrastive position, and if contrastive focus can also be assigned in situ, it follows that not only a PL-reading is available, but also the two positions are made use of in the same way.

Here we find a contrast with English. Consider the following:

(67) a. Which man killed which Kennedy? (English: PL)
b. #Which Kennedy did which man kill? (English: *PL)

Following Barss' (1990) observation that D-linked Wh-questions in English which front WH2 over WH1 can only have an SP-reading, (67b) is predicted to be ill-formed (cf. Barss 1999). Incidentally, (67) is a good example to show that the PL-reading is not available

in these contexts. Not surprisingly, the analogues of (67) are both well-formed in German:

(68) a. *Welcher Mann hat welchen Kennedy ermordet?* (German: PL)
which man has which Kennedy killed
'Which man killed which Kennedy?'
b. *Welchen Kennedy hat welcher Mann ermordet?* (German: PL)
which Kennedy has which man killed
#'Which Kennedy did which man kill?'

However, the only felicitous replies for the a- and b-cases are the following:

(69) a. *Lee Harvey Oswald hat John ermordet und Sirhan Bishara Sirhan Robert.*
'Lee Harvey Oswald killed John and Sirhan Bishara Sirhan Robert.'
b. *John hat Lee Harvey Oswald ermordet und Robert Sirhan Bishara Sirhan.*
lit. 'John, Lee Harvey Oswald killed and Robert, Sirhan Bishara Sirhan.'

5.5. Final Comparison

In sum, while German seems to pattern with Bulgarian in multiple Wh-question formation in that both move all WHs into the Comp-layer, it also resembles Italian in not forming an information multiple question, but necessarily D-links all WHs. Unlike English, however, (at least bare) D-linked WHs must be licensed in the Comp-layer, a fact we might want to explain by the prolific nature of the left periphery in German, in that it allows much more discourse-related movement into the articulated Comp-layer.

Fronted WHs in Bulgarian may not be split up, and topics precede (rather than follow).

(70) a. Ivan včera kakvo kupi?
b. *Včera Ivan kakvo kupi?*
yesterday Ivan what bought
'What did Ivan buy yesterday?' (Richards 1997: 111)

(71) a. *Koj včera kakvo kupi?
b. *Včera koj kakvo kupi?*
yesterday who what bought
'Who bought what yesterday?'

The same effects can be found in Romanian (Ileana Comorovski, p.c.). We will thus have to say something more about the landing sites, and what's going on in the Comp-layer(s).

6. Conclusion

I first proposed a typological tripartition of Wh-movement into Zero, Singular and Multiple Wh-movement languages, based on the (non-)availability of single-pair readings. I suggested that German is like Bulgarian in that neither allows such a reading which seems to be a general property of languages in which all WHs move overtly into the Comp-layer. I then substantiated this claim with syntactic evidence of two types: intervention effects with quantifiers and adverbs in between the two WHs and binding effects with parasitic gaps and in weak crossover configurations. I finally suggested that German is like Italian in not forming "real" (= information) multiple Wh-questions to begin with on the basis of Discourse Restricted Quantification, where all (bare) WHs in German multiple questions are essentially D-linked, and the availability of high and low focus positions plays a role to distinguish the two. I leave further issues for future research (such as a finer exploration of the different projections in the Comp-layer, the role of discourse-driven displacement, cross-linguistic variation, and certainly a better-informed view of focus regarding its syntactic and semantic licensing through stress, interpretation, positions, movement etc.). If on the right track, this investigation sheds new light on a typology of (multiple) Wh-question formation on the one hand and the syntax of D-linked WHs, still a rather understudied property of grammar, on the other. Especially when we consider the discourse properties observed in German — and possibly linked to Italian, but also applied to D-linking in English —, the unorthodox view that German is a multiple Wh-fronting language should not sound so strange anymore, which I would take as a positive result.

Notes

* This article is a slightly revised version of Grohmann (2002), itself an adaptation of Grohmann (2000: ch. 5). It benefited from additional presentations at the *Workshop on the Syntax-Semantics Interface in the CP-Domain* (ZAS Berlin, March 6-8, 2002), the *Linguistischer Arbeitskreis* (University of Cologne, December 4, 2002), and the workshop *"On Wh-Movement"* (Leiden University Centre for Linguistics and Utrecht Institute of Linguistics, December 11-13, 2002), whose audiences I am very grateful to for valuable feedback. My gratitude extends to the audiences of various other presentations relating to multiple Wh-questions in German over the past five years or so. I am particularly grateful to Cedric Boeckx, Željko Bošković, Lisa Cheng, Robert Kemp, Howard Lasnik, Horst Lohnstein, Øystein Nilsen, Marga Reis, Luigi Rizzi, Joachim Sabel, and Peter Svenonius for constructive pointers and discussion from which the present version gained a lot.

1. For purposes of presentation, I concentrate exclusively on binary Wh-questions. At this point, I have to leave open how, or even whether, the claims carry over to questions with more than two WHs. It would not be at all surprising if they didn't (at least not without further refinements), given, for example, the well-known "additional Wh-effect," first noted for English by Kayne (1984).

2. See also Dayal (2002) for some relevant discussion, especially in long-distance contexts.

3. Throughout, infelicitous questions will be marked with the hash mark '#', while unavailability of a particular reading receives the standard marker for ungrammaticality, the star '*'.

4. And by extension, presumably the other multiple Wh-fronting languages that don't target Comp as well, pending a more careful investigation of the facts in Czech, Polish, Russian etc.

5. "Superiority" refers to movement of a lower WH2 over a higher WH1, where the variations discussed in the text all draw from the original descriptive Superiority Condition (Chomsky 1973: 246):

(i) a. No rule can involve X, Y in the structure … X … [$_{\alpha}$ … Z … __ WYV] … where the rule applies ambiguously to Z and Y, and Z is superior to Y.
b. The category A is 'superior' to the category B if every major category dominating A dominates B as well but not conversely.

In this work, I will not be concerned with theoretical means to capture Superiority. But note that the tripartite line pursued by Bošković (1998) is nothing but a differentiated line of explanation also explicit in other approaches. Haider (2000: 247), for example, also denies Superiority the status of a "uniform grammatical property" and links Superiority effects to the interplay of syntax, semantics, parsing and discourse properties of a language. This not only fits with Bošković's approach, but also with the reasoning developed in section 5 below, when I address Superiority issues in German (and English).

6. Among the limited array of languages listed in (9), I only mention those for which I offer at least one piece of data in this paper. Note that this list by far not exhaustive.

7. Regarding the languages cited, see note 6. Other Wh-in situ languages arguably include Hindi, for example, singular Wh-movement languages Swedish, to name just two. It would be expected that the multiple Wh-fronting languages Czech, Polish or Russian classify like Serbo-Croatian (and Japanese!) rather than Bulgarian.

8. I abstract away from those cases, in which Serbo-Croatian does in fact show Superiority effects (of the standard sort, viz. "Syntactic Superiority"). As Bošković (1997, 2002) shows, these occur, making Serbo-Croatian look like Bulgarian, when there is overt evidence for C.

9. In this context, TP and AgrOP are simply mnemonics; a scrambling analysis doesn't concern me here, but in line with Grohmann 2000, I want to avoid XP-movement/adjunction within this layer.

10. See Grohmann (2000) for some discussion beyond Hagstrom (1998).

11. There seems to be disagreement among speakers as to whether universal (monotone increasing) quantifiers may indeed be topicalized, or whether fronting into the first position of a matrix clause is necessarily focus-driven. The data presented in the text reflect my own judgements and at least some speakers' intuitions. The observation that monotone increasing quantifiers may, but monotone decreasing ones may not topicalize was to my knowledge first made explicit by Citko and Grohmann (2000, 2001). Interestingly, Grewendorf (2002: 77-79) comes to virtually the same conclusion.

12. In this connection it may be interesting to note that once contrastively stressed, the quantifiers identified by Beck as "interveners" — monotone decreasing quantifiers — become suddenly good (even clearer with the focus particles *sogar/nur*):

(i) a. *Wer hat (sogar) VIELE Bücher wo gekauft?*
who has even many books where bought
'Who bought (even) MANY books where?'
b. *Wer hat (nur) WENIGE Bücher wo gekauft?*
who has only few books where bought
'Who bought (only) FEW books where?'

These questions carry quite a different meaning, however, and I will this leave them aside.

13. I am grateful to Joachim Sabel for bringing these diagnostics to my attention.

14. Nissenbaum (2000) suggests a revision of Engdahl's (1985) original claim that Wh-in situ cannot license parasitic gaps: multiple parasitic-gap licensing is possible in English, and it bears on overt A'-movement of the so-called "in situ" WH (which seems to be "D-linked" by necessity, a property I return to in the next section).

15. This is not at all clear. See, among many others, Koster (1987) on parasitic gaps in SOV languages, Bennis and Hoekstra (1984) for Dutch, Felix (1985) and Webelhuth (1992) for German. Grewendorf (2002: 234) also employs the idea that German Wh-movement licenses parasitic gaps.

16. And again, it is not clear that German shows real weak crossover effects as English; see Haider (1993) for critical inspection, and also Grohmann (2000: ch. 4), Grewendorf (2002: 74-80, 234-236, 296-299) and Sabel (2002) for discussion. I assume here that obviation of weak crossover effects is indeed a property of non-operator A'-moved elements, though not necessarily exclusively.

17. In fact, as Peter Svenonius points out, this state of affairs carries over to English. While in a situation that conforms to DRQ (see below), such as (60), even the structure violating Syntactic Superiority is well-formed, it is not so in (61). In other words, English speakers may employ *What did who buy?* in a context that identifies potential referents of both WHs. This further confirms Haider's (2000) intuition that Superiority is not a uniform condition on the grammar, evident in much current research, but rather a complex epiphenomenon of the interplay of various grammatical properties. More has to be said which ones it actually concerns. Haider concentrates on syntax-semantics/parsing, Bošković (1998) on syntactic word order and interpretive constraints, while I investigate the role of discourse proper on the syntax (viz. D-linking/DRQ).

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