

# Head Movement in Germanic Doubly-Filled Comp Constructions

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**Abstract:** Taking our cue from Bayer and Brandner (2008), in this paper we investigate the feature composition of so-called (morphologically) “simplex” wh-elements in German, e.g. *wer* “who” or *was* “what”, versus “complex” wh-elements with internal structure, e.g. “how many” or “for which student”. We show that simplex wh-elements do not contain any features other than [+wh]; in particular, they do not contain the features D (including its sub-features Person, Number, and Gender), Case, nor Animacy. This approach makes correct predictions on at least two accounts: (i) headless relatives are headed by simplex wh-words, and not by relative pronouns, due to the lack of features of the antecedent; and (ii) combined with Roberts’ (2010) theory of head movement, we derive the data of Bavarian and Alemannic doubly-filled complementizer constructions reported in Bayer and Brandner (2008) for embedded questions, which despite (possibly cross-generational) speaker variation, crucially also represent our own grammar, and we also extend our analysis to doubly-filled complementizer effects in relative clauses in the same varieties.

**Keywords:** German; doubly-filled complementizer; wh-words; relative pronouns; r-pronouns

## 1. Introduction

South German varieties, such as Bavarian and Alemannic, display a Doubly-Filled Comp in some but not all embedded questions, as shown in (1a) versus (1b), and in relative clauses, as shown in (2):<sup>1</sup>

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- (1) (a) I frog mi fia wos dass =a des kauft hot.  
 I ask myself for what that =he this bought has  
 “I wonder why he bought this.”

- (b) I frog mi wen (\*dass) =a gsej hot.  
 I ask myself who that =he seen has  
 “I wonder who he has seen.”

- (2) Da Tisch, den wos i kauft hob, gfoit da Mama.  
 the.NOM table REL.SG.ACC what I bought have pleases the.DAT mom  
 “Mom likes the table that I have bought.”

Concentrating on their observation of the contrast between data like (1a) and (1b), Bayer and Brandner (2008) argue that wh-elements fall into two classes, namely: (i) class 1, which contains morphologically complex wh-elements, such as *wia-vü* “how much/many”, *wa-rum* “what-for” (i.e. “why”), *mit wem* “with whom”, which appear with *dass* “that” in C, as shown in (1a); and: (ii) class 2 wh-elements, which are morphologically simplex, such as *wos* “what”, *wer* “who.NOM”, *wen* “who.ACC”, *wia* “how”, *wo* “where” etc. In the variety of Bayer and Brandner as in ours, the latter (i.e., class 2 wh-elements) are incompatible with *dass*, as shown in (1b).

Bayer and Brandner (2008) analyze this contrast to mean that simplex (i.e., class 2) wh-elements occupy C<sup>0</sup>, thus blocking the insertion of *dass*, which is in their account further corroborated by evidence from clitic placement (namely, the so-called Wackernagel position) and clitic phonology, namely sandhi and *r*-epenthesis: specifically, simplex but not complex wh-elements show sandhi and *r*-epenthesis effects at vowel hiatus with clitics, as illustrated in (3) through (5)<sup>2</sup>.

The examples in (3) show that the simplex wh-word *wer* “who” displays sandhi before vowels (3a), but not before consonants (3b), and the complex wh-word *welch-einer* “which one” doesn’t show any sandhi, even before vowels (3c).

- (3) (a) I frog mi wer [vea-r] =i bin.  
 I ask myself who =I am  
 “I wonder who I am.”

- (b) I frog mi wer [vea] =ma san.  
 I ask myself who we are  
 “I wonder who we are.”

2 While stating the observation, Bayer and Brandner (2008) do not illustrate sandhi and epenthesis effects; the examples in (3) through (5) are part of our own data collection.

- (c) \*I frog mi welch-einer [vø:ç-a:na-r] =a is.  
I ask myself which-one =he is  
Intended: “I wonder which one he is.”

The examples in (4) and (5) illustrate *r*-epenthesis between vowels. In (4a) and (4b), we see *r*-epenthesis between the simplex wh-words *wo* “where” and *wia* “how” and the vowel-initial clitic. In (5a) and (5b) we see that *r*-epenthesis is not possible with the complex wh-words *von wo* “from where” and *wia-vü* “how much”.

- (4) (a) I frog mi wo-[r] =a woa.  
I ask myself where =he was  
“I wonder where he was.”
- (b) I frog mi wia-[r] =a des gmocht hot.  
I ask myself how =he this done has  
“I wonder how he did this.”
- (5) (a) \*?I frog mi von wo-[r] =a herkommt.  
I ask myself from where =he comes  
Intended: “I wonder where he comes from.”
- (b) \*I frog mi wia-vü-[r] =a kauft hot.  
I ask myself how-much =he bought has  
Intended: “I wonder how much he bought.”

Bayer and Brandner’s (2008) findings are summarized in Table 1.

	Simplex wh-elements	Complex wh-elements
<i>Dass</i> -insertion in embedded questions	No	Yes
Sandhi with clitic pronouns	Yes	No
<i>R</i> -epenthesis with clitic pronouns	Yes	No

**Table 1.** Bayer and Brandner (2008)

The main theoretical problem with Bayer and Brandner’s (2008) account, as well as Bayer’s (2014), is that they propose a dubious re-Merge operation: a lexical item can contain an (effectively) Greedy selection feature, and after this item has entered the derivation, the Greedy feature will wait for a predefined context to arise and will then trigger its

re-Merge by selecting the derivation's root node. Concretely for the cases at hand, this works in the following way. Wh-words contain a Greedy ("latent") feature [ $?C$ ], which is on the lookout for a configuration where the wh-word can become the sister of TP. When this possibility arises, this feature triggers to re-Merge the wh-word as C-head, projecting a CP. This possibility arises for simplex wh-words, but not for complex ones, as they are embedded inside their own phrase. Thus, complex wh-words do not become C-heads.

Empirically, Bayer and Brandner's (2008) account says nothing about the fact that the same phenomenon (i.e. Doubly-Filled Comp) is in the same varieties found not only in embedded questions with complex wh-elements, but also in relative clauses, as was shown in (2). Furthermore, unlike embedded questions, relative clauses always allow  $C^0$  insertion, with  $C^0$  taking the form of *wos* or *wo*, depending on the variety (Bayer 1984). Thus, a core observation we make, is that the simplex wh-word *wen* in (1b) and the relative pronoun *den* in (2) behave differently in this respect.

In what follows, we provide a uniform and unified account of the phenomenon of Doubly-Filled Comp in both embedded questions and relative clauses in these varieties of German, which also evades the theoretical problems (namely, Greed and re-Merge by selecting the derivation's root node) of this previous approach.

## 2. Proposal

The analysis that we propose for the data described in the previous section contains three core ingredients. Firstly, we argue that simplex wh-elements are underspecified in terms of their feature constitution. Secondly, we assume Roberts' (2010) theory of head movement. Thirdly, we assume default spell-out rules arguing in particular that the default spell-out of empty  $C^0$  in the varieties of German that exhibit the Doubly-Filled Comp in embedded questions is *dass*. We now turn to each of these three ingredients.

### 2.1 The Feature Constitution of Wh-Words

We argue that wh-elements in Bavarian and other Southern German varieties have no features other than [+wh]. In particular, they do not contain the features Case, Animacy, nor D (including its sub-features Person, Number, and Gender).

As far as Case is concerned, we follow Marantz (1991) and many others who take Case to be assigned post-syntactically (i.e., Case is not a feature that is present early in the derivation).<sup>3</sup>

3 Specific to such post-syntactic approaches is the idea that Case is assigned in a competitive manner:

- (i) Assign lexical cases (as governed by verbs or adpositions);
- (ii) Assign dependent cases (based on structural relations between arguments);
- (iii) Assign unmarked and default cases.

Furthermore, we argue that *wh*-elements do not encode animacy, and more specifically that animacy is actually not grammaticalized in German. Instead, we follow Wurmbrand (2017) in that each noun has a formal gender feature out of the set {M, F, N} (for masculine, feminine, and neuter, respectively), and may have a semantic gender feature out of the set {M, F}. Inanimacy is then simply *non-animacy*: Inanimate nouns are characterized by the absence of a semantic gender feature. In this way, animacy falls out of the gender system without the need to postulate an independent feature [ $\pm$ animate]. This approach derives the following two constructions that could potentially be understood as counter-arguments to the absence of animacy in the syntax, namely (i) gender mismatches and (ii) so-called “R-pronouns” (van Riemsdijk 1978), to which we turn next.

There seems to exist an animacy/inanimacy split in gender mismatch constructions. For instance, the noun *Mädchen* “girl” has the formal gender N and the semantic gender F. A possessive pronoun agreeing with *Mädchen* can however appear with either feature, as shown in (6).

- (6) Das Mädchen sitzt an {✓seinem / ✓ihrem} Platz. ✓formal/✓semantic  
 the.N girl(N) sits at its.N.3SG her.F.3SG spot  
 “The girl is sitting at her seat.”

In contrast, as shown in (7), an inanimate noun like *Gabel* “fork” with formal gender F can only take possessive pronouns that agree with F, not with N as might be expected given that a fork is a thing.

- (7) Die Gabel liegt an {✓ihrem / \*seinem} Platz. ✓formal/\*semantic  
 the.F fork(F) lies at her.F.3SG its.N.3SG spot  
 “The fork is lying in its spot.”

We argue that the absence of neuter agreement for *Gabel* “fork” in (7) is not due to this word’s inanimacy, but to *Gabel* “fork” not having a semantic gender feature.<sup>4</sup>

Turning to R-pronouns (such as e.g. *darauf* “there on”/“thereafter”, *darüber* “above”/“across”/“furthermore”, etc.), these expressions in German can famously refer to inanimate nouns, but not to animate nouns.<sup>5</sup> We argue that the class of expressions that R-pronouns can refer to is correctly characterized not by inanimacy, but rather by *non-animacy*, which derives why R-pronouns may not only refer to inanimate nouns,

4 This argument is analogous to the discussion of formal versus semantic number features in Hiaki (Harley 2019).

5 As, to our knowledge, first generalized by Helbig (1974). See also van Riemsdijk (1978), Fleischer (2002), among many others.

but also to infinitives (8a), CPs (8b), and events (8c), none of which are characterizable in terms of (in)animacy features.

- (8) (a) Ich warte darauf, ihn morgen zu sehen.  
 I wait there-on him tomorrow to see.INF  
 “I am waiting to see him tomorrow.”
- (b) Ich warte darauf, dass ich ihn morgen sehe.  
 I wait there-on that I him tomorrow see.1SG  
 “I am waiting that I see him tomorrow.”
- (c) Er hat ihr gratuliert. Darüber freut sie sich.  
 he has her congratulated there-over is.happy she REFL  
 “He congratulated her. She is happy about that.”

Finally, we argue that *wh*-elements do not contain the feature *D* when they are not *D*-linked. In this, they differ from *D*-linked *wh*-elements, which we argue to contain *D*, building on Pesetsky (1987) and Heck and Müller (2000). Along with many others, notably Richards (2004, 2008) and Bárány (2017), we understand the features *Person*, *Gender*, and *Number* to be sub-features of *D*, and therefore to be absent in non-*D*-linked *wh*-elements.

As we discuss in more detail in section 2.2, the third person singular agreement of simplex *wh*-words such as *wer* “who” and *was* “what” with verbs and pronouns is not agreement triggered by a *Person* or *Number* probe, but just default agreement. Evidence for this abounds: infinitives (9a), finite CPs (9b), and impersonal passives (9c) also trigger third person singular neuter agreement.

- (9) (a) Genug zu schlafen ist wichtig.  
 enough to sleep.INF is.3SG important  
 “It is important to get enough sleep.”
- (b) Dass du gekommen bist, hat auch seinen Vorteil.  
 that you come.PPP are has.3SG also its.3SG.N advantage  
 “There is also an advantage to your having come.”
- (c) Im Saal wird getanzt.  
 in.the ballroom becomes.3SG danced.PPP  
 “People are dancing in the ballroom.”

That *wh*-words are featureless is evidenced from their appearance in headless relative clauses. While in headed relative clauses as in (10) the relative pronoun *d-* carries the features Number and Gender as copied from the head noun, in headless relatives the appearance of the relative pronoun *d-* is impossible even with the default features for animates M.SG. Instead, a *wh*-word appears, as in (11).

- (10) Ich mag den Arzt, { $\checkmark$ den / \*wen } sie mag.  
 I like the.M doctor(M) REL.M.SG who she likes  
 “I like the doctor she likes.”

- (11) Ich mag, { \*den /  $\checkmark$ wen } sie mag.  
 I like REL.M.SG who she likes  
 “I like who(ever) she likes.”

We now turn to the second core ingredient of our analysis, namely syntactic head movement, as developed in Roberts (2010).

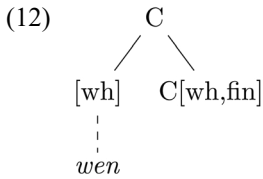
## 2.2 Roberts’ (2010) Theory of Head Movement

Roberts (2010) develops a syntactic theory of head movement, which we adopt wholesale. Specifically, Roberts (2010) argues that for a constituent  $\alpha$  to attach to  $\beta$  via head movement, two conditions need to be met, namely: (i)  $\alpha$  must be simultaneously a minimal and a maximal projection; and (ii)  $\alpha$ ’s features must be a subset of  $\beta$ ’s features.

With this background, let us now see how we derive (1b), repeated here for ease of reference:

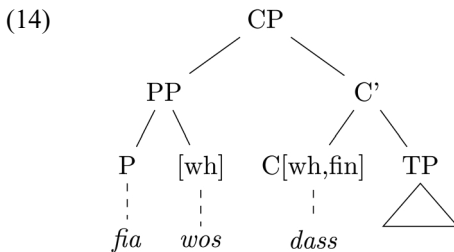
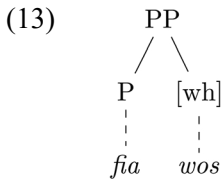
- (1) (b) I frog mi wen (\*dass) =a gsen hot.  
 I ask myself who that =he seen has  
 “I wonder who he has seen.”

In (1b), the embedded C is C[wh,fin]. As we have argued above, *wen* “who” has exactly the feature set [wh], and it does not have internal structure. This means that both of Roberts’ conditions for head movement are fulfilled: [wh] is a subset of [wh,fin]. The derivation would thus include the following steps: (i) C needs to check its [wh] feature; (ii) C attracts a constituent with [wh], namely *wen*; (iii) *wen* moves into C via head movement thus blocking the presence of the overt complementizer *dass* “that” and turning C into a complex head, as shown in (12):



In contrast, with complex wh-elements there can be no head movement to C and only phrasal movement is possible. Thus, in (1a), repeated below for ease of reference, the embedded C is C[wh,fin] and *fia* *wos* “for what” is a complex wh-element with internal structure since the wh-element in it is the complement of a prepositional head, which means that Roberts’ (2010) first condition for head movement is not fulfilled since the mover is not a minimal category; see the structures in (13) and (14).<sup>6</sup>

- (1) (a) I    frog    mi        fia    wos    dass    =a    des    kauft    hot.  
          I    ask    myself    for    what    that    =he    this    bought    has  
          “I wonder why he bought this.”



6 Nota bene that movement of *wos* alone, stranding *fia*, is not possible in general since German does not have English-style preposition stranding. The only preposition-stranding available in German occurs with R-pronouns, and only in some German dialects, crucially not in the ones discussed here.

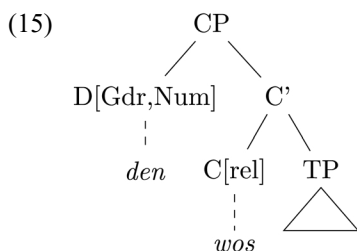


We also correctly derive that simplex *wh*-words undergoing successive-cyclic movement do not land in C of intermediate landing sites, since these Cs' features are not a superset of [+*wh*].

Let us now turn to Doubly-Filled Comp in relative clauses as in (2), repeated here for ease of reference.

- (2) Da Tisch den was i kauft hob gfoit da Mama.  
 the.NOM table REL.SG.ACC what I bought have pleases the.DAT mom  
 "Mom likes the table that I have bought."

Relative pronouns such as *den* in (2) agree with their antecedent in gender and number. The C in a relative clause, namely *wos* in (2), has the feature [rel] but certainly not the features gender and number since this is invariable no matter what the gender and number of the head noun is. Head movement of *den* to the embedded C is not possible because its features are not a subset of the features of the attachment site, which means that Roberts' (2010) second condition for head movement is violated. More specifically, the derivation in this case includes the following steps: (i) C[rel] attracts the relative pronoun *den*, and (ii) *den* undergoes phrasal movement to Spec,CP, as given in (15).



### 2.3 Default Spell-Out of Empty C

We propose that Bavarian (and similar varieties such as Alemannic) differ from Standard German in a micro-parameter (Roberts 2019) setting, namely: (i) Bavarian/Alemannic empty C[*wh*] is spelled out as *dass*; (ii) Bavarian/Alemannic empty C[rel] is spelled out as *wos* or *wo*; (iii) Standard German empty C[*wh*] and empty C[rel] remain unpronounced.

The motivation for this involves the following reasoning. While Standard German does not have clitic pronouns (Cardinaletti and Starke 1999), in Bavarian and Alemannic many pronouns are clitics that attach themselves, or move, to C, which is traditionally known as the Wackernagel position. When clitics attach to a host, the host must be phonologically overt. Thus, C must be overt in contexts with clitics for the derivation to succeed. We propose that C is overt not only in these cases, but has been grammaticalized

into being overt. Simplex wh-words fill C themselves, and they can host clitics, as the presence of sandhi (3a) and r-epenthesis (4) evidence (as reported in Bayer and Brandner 2008). Complex wh-words on the other hand move to Spec,CP, and they cannot host clitics, as witnessed by the absence of sandhi (3c) and r-epenthesis (5) (see again Bayer and Brandner 2008). In these cases, C is filled by *dass* or *was* or *wo*, depending on C's features and the variety.

### 3. Conclusion

Our aim was to provide an account of doubly-filled complementizer effects observed in embedded questions and relative clauses in Bavarian and other Southern German varieties. We have followed Bayer and Brandner's (2008) observation about embedded questions, particularly that there are two classes of wh-words with different syntactic properties and that only the simplex ones (which are located in C), but not the complex ones (which are located in Spec,C) show doubly-filled complementizer effects, and we have provided a simpler account of these data. Our analysis relies on and provides additional empirical coverage for Roberts' (2010) theory of head movement, which is based on two conditions, namely no internal structure of the mover, and features of the mover being a subset of the features in the landing site. We have shown that complex wh-elements violate Roberts' first condition for head movement, and that relative pronouns, which have  $\varnothing$ -features, violate Roberts' second condition, and are thus unable to undergo head movement. We have furthermore proposed that if no head movement happens, C is parameterized to be filled by default with *dass* or *was/wo* in order to host clitics, which unlike in Standard German are as pervasive in these varieties as the doubly-filled comp. Further scrutiny notwithstanding, our analysis can also account for similar constructions found in other Germanic languages, such as in Swiss German embedded questions and relative clauses (van Riemsdijk 1989), in Yiddish relative clauses (Lowenstamm 1977), and even in Standard English relative clauses (Pesetsky and Torrego 2006).

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