Are doubly-filled COMPs governed by prosody in Swiss German? The chameleonic nature of *dass* ‘that’

1. Introduction

Several decades ago, Chomsky and Lasnik (1977) stipulated the doubly-filled COMP filter according to which the co-occurrence of a wh-constituent and a complementizer is banned. In those days, COMP was a single position that could either contain a wh-constituent or a complementizer, but not both. Nowadays two positions, SpecCP, hosting maximal projections, and C, hosting heads, correspond to what was once labelled as COMP. There is thus no a priori reason why a wh-constituent in SpecCP could not co-occur with a complementizer in C, since these two elements do not compete for the same position. Indeed, many languages exist that violate the doubly-filled COMP filter. In some, doubly-filled COMPs (DFCs) are obligatory, e.g. West Flemish (see Haegeman 1992) and in others, DFCs are optional, at least to a certain extent, e.g. Bavarian and Alemannic (see Bayer and Brandner 2008a, 2008b; Bayer 2015; and Penner and Bader 1995; Penner 1986 for Bernese Swiss German; Schönenberger 2010 for Lucernese Swiss German) and Belfast English (Henry 1995). In yet others, they seem to be banned, e.g. Standard German and Standard English, but this may be due to normative pressure, since earlier stages of these languages allowed them. Zwicky (2002), for instance, lists various examples with DFCs produced by speakers of different varieties of modern English (see [1] and [2]).

(1) We asked what sort of health care that they rely on.
(2) What a mine of useless information that I am!

Based on acceptability judgement data, Bayer and Brandner advance a structural account for DFCs in Alemannic and Bavarian, in which wh-words are generally incompatible with *dass* ‘that’ while wh-phrases generally require the presence of *dass*. These authors embrace a non-split CP and assume that wh-words are complementizers in C, which straightforwardly accounts for why wh-words are incompatible with *dass*, since that would also occupy C. Based on spontaneous production data from another Alemannic dialect spoken in eastern Switzerland I argue against a purely structural account, and try to show that prosody is also relevant. As in the dialects described by Bayer and Brandner, monosyllabic wh-constituents (‘wh-words’) in this Swiss-German dialect are incompatible with *dass*, while non-monosyllabic wh-constituents (most of these corresponding to ‘wh-phrases’) generally require *dass*. There are several counter-examples to both generalizations, but in many of these the stress pattern seems unusual. This suggests that we are not dealing with a purely structural issue.

The paper is organized as follows: Section 2 summarizes previous findings from the Swiss-German dialect under investigation, and reports the generalizations derived from these data that rely on the number of syllables of the wh-constituent. Section 3 discusses the syntactic analysis proposed by Bayer and Brandner (2008a, 2008b) for Bavarian and Alemannic. Section 4 introduces more spontaneous production data from Swiss German, which show much more variation than the previous sample from the same dialect. In Section 5 the predictions made by the syllabic account and by the syntactic account are evaluated.

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1 The research presented here was carried out in the project ‘Studying variation in syntax: a parsed corpus of Swiss German’, which is supported by a three-year grant (SNSF 146450) from the Swiss National Science Foundation. I am grateful to two anonymous reviewers for very detailed and constructive comments, and to Antoine Auchlin, Giuliano Bocci, Eric Haeberli, Christopher Laenzlinger, Peter Öhl and Ur Shlonsky for discussion of various aspects of this topic.
against these data. Neither can fully cover the variation found in these data. Both analyses concentrated on the type of wh-constituent itself, but DFCs crucially also involve dass, and its function has not been examined in depth until now. Here the possible function of dass is examined, and an analysis is outlined that attempts to show that dass plays an important part in the prosodic phrasing of a wh-complement clause. Section 6 contains my tentative conclusions.

2. Previous findings on Swiss German

Concentrating on Bernese Swiss German, Penner and Bader (1988: 10) pointed out that “Bernese German displays an unrestricted distribution of interrogative element […] and dass”. This observation was modified in Penner and Bader (1995: 118), who suggested that a DFC is “generally preferred” with simple wh-phrases and “strongly preferred” with complex wh-phrases. They provide the examples in (3) but no description of what they mean by “simple” and “complex”. Penner (1996: 65) noted that DFCs are optional with light wh-phrases in Bernese and obligatory with heavy wh-phrases, but he does not clarify what “light” and “heavy” mean either.

(3)  a. I ha ne gfragt wo (dass) er wohnt.
    I have him asked where that he lives
    ‘I asked him where he lives.’

    b. I ha ne gfragt i welem Huus ?*(dass) er wohnt.
    I have him asked in which house that he lives
    ‘I asked him in which house he lives.’

(Penner and Bader 1995: 128)

Despite the vagueness in description, it is apparent that not all wh-constituents are equally compatible with dass in Bernese.

Based on spontaneous production data from speakers of another Swiss-German dialect, I maintained in Schönenerberger (2010) that there is a clear contrast between monosyllabic and non-monosyllabic wh-constituents. Monosyllabic wh-constituents do not co-occur with dass in this dialect, while non-monosyllabic wh-constituents do. As can be seen from Table 1, the data seem to be clear-cut, but the amount of data is limited and comes from only a small number of speakers.

Table 1: Distribution of DFCs in wh-complement clauses in St. Galler German (classified according to the number of syllables of the wh-constituent)

<table>
<thead>
<tr>
<th>Speaker</th>
<th>One syllable</th>
<th>Two syllables</th>
<th>&gt; two syllables</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS</td>
<td>1/40</td>
<td>8/8</td>
<td>2/2</td>
</tr>
<tr>
<td>KS</td>
<td>0/20</td>
<td>1/1</td>
<td>1/1</td>
</tr>
<tr>
<td>MS</td>
<td>0/56</td>
<td>12/12</td>
<td>3/3</td>
</tr>
<tr>
<td>Total</td>
<td>1/116</td>
<td>21/21</td>
<td>6/6</td>
</tr>
</tbody>
</table>

(cf. Schönenerberger 2010: 48)

I also discussed spontaneous production data from another Swiss-German dialect, Lucernese Swiss German, collected for a longitudinal acquisition study, in which the input to a child was examined. These data, summarized in Table 2, look different from those from St. Galler German. DFCs did generally not occur in wh-complement clauses with monosyllabic wh-constituents, but they also often did not occur in those with non-monosyllabic wh-constituents. The data sample is larger but the number of speakers is again small.
Table 2: Distribution of DFCs in wh-complement clauses in Lucernese Swiss German (classified according to the number of syllables of the wh-constituent)

<table>
<thead>
<tr>
<th>Speaker</th>
<th>One syllable</th>
<th>Two syllables</th>
<th>&gt; two syllables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>1/397</td>
<td>36/75</td>
<td>26/33</td>
</tr>
<tr>
<td>Father</td>
<td>1/17</td>
<td>0/0</td>
<td>2/2</td>
</tr>
<tr>
<td>Sister</td>
<td>0/27</td>
<td>4/4</td>
<td>2/2</td>
</tr>
<tr>
<td>Total</td>
<td>2/441</td>
<td>40/79</td>
<td>30/37</td>
</tr>
</tbody>
</table>

(cf. Schönenberger 2010: 48)

Several shortcomings of this comparative study were pointed out (2010: 48):

While the St. Galler German data are taken from a conversation between adults, the Lucernese data arise from adults interacting with a child. Moreover, most of the adult data in the Lucernese sample come from a single speaker, the mother, who speaks a mixed dialect. It is also noticeable that she often speaks particularly clearly when addressing the child, which might subtly distort the data. If prosody is indeed relevant to the occurrence of DFCs then clear speech might influence the overall prosodic structure.

In these two Swiss-German samples I also looked at the type of element selecting a wh-complement, as well as what kind of element immediately followed a wh-constituent with or without dass. I concluded that the type of selector does not play any role in whether a DFC is used, but that the type of element following the wh-constituent may play a role. I also considered D-linking as a potential influence on the production of DFCs, and concluded that the number of syllables of a wh-constituent is indeed relevant while D-linking is not.

Based on the difference between the two samples, the following tentative conclusions were reached (2010: 47):

- If the wh-phrase and the following constituent form a prosodic unit – a trochaic foot – DFCs are excluded.
- If the constituent following the wh-phrase is a clitic, which cannot be integrated into the prosodic structure of the wh-phrase, a DFC must be inserted. The clitic and dass form a trochaic foot.
- In all other contexts, DFC may be optional in Lucernese, while in St. Galler German they are obligatory with all non-monosyllabic wh-phrases.

This account in terms of the number of syllables of a wh-constituent is purely descriptive. While the predictions for the occurrence of DFCs in St. Galler German are clear, the relation between the occurrence of DFCs and prosody is not. In the face of new data from St. Galler German presented in Section 4, in which variation is also visible, in the sense that a given wh-constituent can occur with or without dass, this account is no longer tenable.

3. A syntactic account in terms of a latent C-feature

Bayer and Brandner (2008a, 2008b) investigated the distribution of DFCs in Middle Bavarian and Lake Constance Alemannic by carrying out a judgement study. Between 8 and 15 dialect speakers per dialect were asked to rate the acceptability of a sentence on a scale from 1 to 6, 1 being good and 6 being bad. There were 70 test items with wh-items that varied in length and in whether they were followed by dass. These sentences were read to the informants by a native speaker of the dialect.

Bayer and Brandner found that short wh-items (wer ‘who.NOM’, wen ‘who.ACC’, was ‘what’, wie ‘how’, wo ‘where’), which they label as ‘wh-words II’, combined with dass were
generally judged as bad, while phrasal wh-constituents (e.g. *womit ‘with what’, *welcher Student ‘which student’) combined with *dass were judged as good. The word-sized wh-items *wem ‘who.DAT’, *warum ‘why’ and *wie viel ‘how much’, which are labelled as ‘wh-words I’, occupied an intermediate status. The authors consider these three wh-items as morphologically more complex. Both *warum and *wie viel are bi-morphemic: *warum contains the preposition *um, and *wie viel consists of *wie ‘how’ and Q(P) *viel ‘much’. Following Bayer, Bader, and Meng (2001) they analyse dative *wem as containing a Kase Phrase (KP) in contrast to nominative and accusative *wer and *was. Hence *wem is structurally also more complex. Bayer and Brandner suggest that the co-occurrence of these three word-sized wh-items with *dass may have been judged as quite acceptable because from a syntactic point of view they are phrasal. Since the authors discuss group data and not individual data, it is unclear whether any one informant’s judgements were consistent across all three wh-items and whether some informants clearly accepted and others clearly rejected these. Their findings are summarized in Table 3.

Table 3: Hierarchy of wh-items with respect to DFC

<table>
<thead>
<tr>
<th>X-bar status</th>
<th>Subtype</th>
<th>DFC restriction</th>
</tr>
</thead>
<tbody>
<tr>
<td>wh-phrase</td>
<td>wh-DP, wh-PP</td>
<td>best with overt C</td>
</tr>
<tr>
<td>wh-word I</td>
<td>*warum, *wie viel, *wem</td>
<td></td>
</tr>
<tr>
<td>wh-word II</td>
<td>*wer, *wen, *was, *wie, *wo</td>
<td>worst with overt C</td>
</tr>
</tbody>
</table>

(from Bayer and Brandner 2008a: 89)

Similar findings from two studies with Bavarian speakers are reported in Bayer (2015). These studies used the same test design but fewer items. The findings of the first study with 10 informants closely resemble those in Bayer and Brandner. The second study with 13 informants involved test items with various wh-words of type II, one kind of wh-word of type I (*wem), and one kind of wh-phrase (P+wh-word). Test items containing a wh-word of type II and *dass were judged as bad and test items with P+wh-word and *dass were judged as good, replicating earlier findings. But, in a subgroup of the informants, no clear contrast in acceptability was found between wh-words of type II and *wem.2

To account for the distribution of DFCs, these authors propose that wh-items contain a latent C-feature, as in (4), which can be activated when the wh-item undergoes movement to the left periphery.

(4) Latent C-feature

Wh-items may possess a latent C-feature αC. If α can be set to +, the wh-item is simultaneously C and will project a CP. If α is set to −, the C-feature will delete.

(Bayer 2015: 12)

In the case of wh-words of type II the C-feature is activated when the wh-word is merged with TP, a movement that is triggered by the requirement for embedded questions to be typed as <interrogative>, in the sense of Cheng’s (1991) Clausal Typing Hypothesis. This is an instance of internal merge (‘move’) that is not feature-driven. By discharging the C-feature the wh-word projects a CP. Since a wh-word also contains a wh-feature, the projection of a wh-CP results from “self-attachment”. The overt realization of a DFC with a wh-word is excluded for reasons of economy. Such a derivation would be more costly since it would

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2 In the second study, results are reported separately for 3 informants, aged 25–35, with a university education and for 10 young informants (no age-range is given) with a mixed educational background. A difference in educational background or age might have led to a difference in judgement of test items with *wem in these two (sub)groups.
involve external merge of *dass* and then internal merge of the wh-word. However, if the wh-word receives contrastive stress, *dass* insertion is possible, as shown in (5). Following Cardinaletti and Starke (1999), Bayer and Brandner assume that a focussed wh-word just like a strong pronoun has more syntactic structure than a weak or clitic pronoun and that therefore the focussed wh-word can no longer merge as a head.

(5)  
\[\text{Ich woass } WO \text{ dass er abfahrt aber noit WENN.} \]

I know where that he leaves but not yet when

‘I know WHERE it (the train) will leave but not WHEN.’  
(Bayer and Brandner 2008a: 93, attributing this example to Noth 1993: 424)

In the case of wh-phrases, the C-feature is trapped in a branching structure, e.g. *für was* ‘for what’ [\(\text{pp für [\text{NP was}]}\)]. Therefore the wh-item will never be a sister of TP and the structural conditions for discharging the C-feature will not be met. The wh-phrase moves as a maximal projection (e.g. PP) to SpecCP and “the insertion of the complementizer *dass* is possible, resp. required” (Bayer and Brandner 2008: 90). Apparently, the latent C-feature in contrast to ‘regular’ features, e.g. a wh-feature, does not need to be discharged/valued, and unlike the wh-feature it does not percolate up. In root wh-questions, which typically show the Verb-Second pattern, the finite verb moves to C and therefore a wh-item with a latent C-feature can no longer merge as a head with TP. The wh-item merges as a maximal projection instead, ending up in SpecCP, and the C-feature is not discharged (see Bayer and Brandner 2008a: 93).

From a theoretical point of view this syntactic account of the distribution of DFCs is not unproblematic. For example, how can a wh-phrase merge with TP before C is filled with *dass* in an embedded clause? What prevents merging the wh-item with TP before the finite verb undergoes movement in a matrix clause? In other words, when merging with TP is to take place, what determines what kind of clause – embedded or matrix – is being derived? The authors address some of these problems, e.g. chain-uniformity, economy. (See also Bayer 2015 for a detailed discussion of how this account can be recast in modern theoretical terms and in particular, how the various features of a wh-item are discharged). I shall not dwell on these, but instead point out a potential problem regarding their assumptions about variation.

Bayer and Brandner (2008b: 4) note that there may be an artefact in their data, because all their informants know Standard German as well, which does not have DFCs. This may in general have biased them towards rejecting rather than accepting a test item presented with a DFC. Bayer (2015) acknowledges that “*was* is the most underspecified wh-element of the German lexicon and as such the top candidate in adopting additional features [e.g. the C-feature: added by MS] without running into conflicts, and that there are other wh-lexemes which can do so to a higher or lower degree, and that this variation may be a matter of the individual mental lexicon” (2015: 19). Elsewhere he concedes that wh-PPs can be interpreted as syntactic heads (see my footnote 7). To tie variation to the lexicon is a perfectly natural assumption and to ascribe some remaining variation to the influence of German is defensible, but both of these notions need to be made precise.³ There is also some redundancy. For

³ One reviewer observes that prepositional elements such as *bis* ‘until’ and *(so) bald* ‘as soon as’ co-occurred with *dass* up until Early New High German, and that in the modern languages they no longer do. This reviewer suggests that reanalysis of *bis* and *(so) bald* as heads could explain why this is. In our data, there are no examples of *bis dass* (0/121), but examples of *sobald dass* (5/33), *bevör dass* ‘before that’ (1/53) and *nochdäm dass* ‘after that’ (5/8) do occur. Penner and Bader (1995: 145) distinguish adverbial clauses with *dass* from wh-complement clauses with *dass*, and refer to the former as ‘multiply-headed’, involving two heads – a preposition and a complementizer. There is no reason to assume that *bis*, *sobald*, *bevör* and *nochdäm* are anything but heads in these constructions. The distribution of *dass* in these adverbial clauses is quite different from that in wh-complement clauses (see also Schönenberger 2010: 56–59 for child and adult data in Lucernese). For example, clitics can surface adjacent to bisyllabic *sobald* (*sobald mer* ‘as soon as we.CL’) and *bevör* (*bevör mer* ‘before
example, is a test item with *wie viel* ‘how much’ and *dass* judged as bad because of the influence from German or because of the variation in the individual speaker’s lexicon? Is the test item more likely to be rejected if the two conspire? Bayer’s evaluation of *war* as the top candidate suggests that other *wh*-words of type II are less likely to be such candidates, i.e. are ultimately less likely to be heads. If this is so, why were test items with any *wh*-word of type II, and not just *war*, consistently judged as bad with a DFC? And if a *wh*-PP can be interpreted as a head, why were test items with *wh*-PPs consistently judged as good with a DFC?

I shall now consider the empirical evidence that is used by Bayer and Brandner to support the assumption that *wh*-words of type II are heads resembling interrogative complementizers. To support this assumption the authors observe that in several languages short *wh*-items, in particular the *wh*-item corresponding to *what*, have been grammaticalized as declarative complementizers (e.g. *que* ‘what’ in French and *che* ‘what’ in Italian). Similarly, *wo* ‘where’ can function as a relative complementizer in certain Alemannic dialects. They also note that *n*-intrusion – an instance of consonantal epenthesis – can occur in intervocalic contexts of adjacent words but not phrases, and that *n*-intrusion typically occurs when the word starting with a vowel is a pronominal clitic. According to Ortmann (1998), *n*-intrusion is only possible if the host of the pronominal clitic is a functional word. Importantly, *n*-intrusion is possible in an embedded context, as in (6a), where *wa* is taken to occupy C, but *n*-intrusion is not possible in a root context where *wa* occupies SpecCP, as in (6b). *N*-intrusion is also excluded when the potential host is contained in a phrase, as in the examples in (7). Insertion of *dass* can render the latter grammatical, as shown in (8), since *dass* “establishes a proper context for cliticization to succeed” (Bayer and Brandner 2008a: 92).

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4 The phenomenon of *n*-intrusion is quite complex and its domain of application seems to vary across dialects. In St. Galler German, for example, *n*-intrusion is also possible with emphatic pronouns (in capitals), as in (i), provided these are in the nominative. *N*-intrusion is not possible with emphatic pronouns in e.g. the dative (ii), or with possessive pronouns independent of whether they are stressed or not (iii). Furthermore, *n*-intrusion is possible even if the monosyllabic *wh*-word is stressed (see [iv]). However, if the vowel is long, i.e. WOO rather than *WO*, *n*-intrusion becomes unacceptable. (See Cooper 1994: 76–78 for *n*-intrusion in Zurich German). In Bayer and Brandner’s analysis a stressed *wh*-item is phrasal and moves to SpecCP not C in an embedded clause. *N*-intrusion is therefore expected to be impossible, but in this dialect it is possible (see also Section 5.5).

(i) *Ich waiss wo-nÄR woont aber ha kan Blasse wo SII woont.*
   I know where-N-he lives but have no faint where she lives
   ‘I know where HE lives but do not have the faintest idea where SHE lives.’

(ii) *Ich waiss wo-*n-EM de Josef über de Wääg glöffen isch aber…*
   I know where-N-him the Josef on the path walked is but
   ‘I know where Josef came across HIM, but…’

(iii) *I waiss au nänd wo-*n-eren Maa woont.*
   I know also not where-N-her husband lives
   ‘I also don’t know where her husband lives.’

(iv) *Mi interessiert nöd WIE-n-er s fickt söndern WO-n-er s fickt.*
   me interest not how-N-he it repairs but where-N-he it repairs
   ‘I am not interested in HOW he repairs it but in WHERE he repairs it.’
(6) a. ... wa-n-er tuet
    what-N-he does
    ‘...what he does’

b. *Wa-n-isch denn do passiert?
    what-N-is PART there happened
    ‘What has happened there?’

   (Bayer and Brandner 2008a: 92)

(7) a. *... vo wo-n-er herkommt?
    from where-N-he comes
    ‘where he is coming from’

b. *... wieso-n-er nümme kunnt.
    why-N-he no-longer comes
    ‘why he doesn’t show up any more’

   (Bayer and Brandner 2008a: 92)

(8) ... wieso dass-er nümme kunnt.
    why that-he no.longer comes
    ‘why he doesn’t show up any more’

   (Bayer and Brandner 2008a: 93)

Bayer (2015) observes that, in general, “'Wackernagel-type’ morpho-phonological processes – cliticization, consonantal epenthesis, comp inflection – uniformly apply to the C-position” (2015: 26) and that wh-words of type II show the same morpho-phonological properties as complementizers and verbs in the V2 position.

These observations, which are offered as evidence that wh-words can be syntactic heads, raise several questions. The first was raised by one of the reviewers. (i) The observation that wh-items corresponding to what have been grammaticalized as declarative complementizers does not mean that in those cases where grammaticalization has taken place there was a previous stage at which these wh-items (in their purely interrogative meaning) already occupied the C-head. Instead, they could have been reanalysed as heads, but only once their interrogative meaning had been bleached. (ii) Is the wh-item wieso, which is also bimorphemic and also means why, treated in the same way as warum, i.e. sometimes as a head? If wieso is treated as a head, the unacceptability of example (7b) is unexpected, because n-insertion is said to be possible with heads. Similarly, n-insertion is expected to be possible in (7a) if wh-PPs can be heads, as suggested by Bayer (2015: footnote 20). (iii) As concerns the difference in acceptability between the examples in (6), it may not be due to a difference in the syntactic status of wa. Consider the examples in (9) from St. Galler German, in which the relative complementizer wo is a head. Example (9b) is unacceptable although in both (9a) and (9b) wo is a head. Perhaps isch, as opposed to a pronominal clitic, is not the right kind of element to surface in n-insertion contexts.\(^5\) If this is indeed the case then the observation that

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\(^5\) One of the reviewers observes that (9b) may be degraded for independent reasons, referring to work by Salzmann et al. (2013). Based on detailed questionnaire studies, Salzmann et al. show that the sequence ‘C-Vfin’, i.e. COMP followed by a finite verb, is judged as degraded in Swiss German and German, as opposed to the sequence ‘C-Adverbiał-Vfin’. These authors assume a minimal tree-structure for these languages, with basically just one maximal projection (CP) above vP. To account for the difference in acceptability between ‘C-Vfin’ and ‘C-Adverbiał-Vfin’, they propose a phonological EPP that requires that a projection referred to as FP, which occurs between CP and vP, be overtly filled at PF. Positioning ‘uf Bern’ between ‘wo’ and ‘isch’ in example (9b) would result in ‘wo uf Bern isch…’, which does indeed sound less marked than ‘wo isch uf Bern…’.

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\(^6\)
n-insertion is possible in (6a) but not in (6b) cannot be used as evidence that wa occupies different positions in the two examples.

(9) a. De Maa wo-n-i gescht gsee ha ...
the man who-N-I yesterday seen have
‘the man who I saw yesterday’
b. De Maa wo-n-isch uf Bern go singe ...
the man who-*N-is to Berne go sing
‘the man who’s gone to Berne to sing’

(iv) Although in Germanic pronominal clitics and reduced pronouns tend to ‘migrate’ to the C-position, they can surface in other positions. In Hessian, for example, a prominent object pronoun can intervene between a complementizer and a reduced subject pronoun, as in (10). In Dutch an object clitic must not be separated from the finite verb in a subject-initial sentence (11a), but it cannot occur on the finite verb in a non-subject-initial sentence (11b). In West Flemish an object clitic can be separated from the complementizer by intervening material, as shown in (12) (see also Cooper 1994 for Zurich Swiss German; Penner 1991 for Bernese Swiss German).

(10) weil /MIR se NET gfalle.
because me.DAT they.NOM not please
‘because I don’t like them’
(Gärtner and Steinbach 2003: 480)

(11) a. Jan heeft *gisteren ‘r gekust.
John has yesterday her kissed
‘John has kissed her (yesterday)’
b. *Heeft ‘r Jan gekust?
has her John kissed
‘Has John kissed her?’
b.’ Heeft Jan ‘r gekust?
has John her kissed
(Zwart 1997: 63)

(12) da Valere verzkerst Marie t a/ no/ we gegeven eet
that Valere probably Marie it already still well given has
‘that Valere has probably already/still/well given it to Marie’
(Haegeman 1993: 13)

However, without the adverbial ‘uf Bern’, the sequence ‘wo isch go singe’ sounds perfectly fine while ‘wo-n-isch go singe’ does not.

Interestingly, contraction between da ‘this’ in SpecCP and isch ‘is’ in C is possible in rapid speech, as shown in (ii). Contrary to expectation, isch can lean on an element in SpecCP but not on an element in C (cf. example [9b]).

(i) Da isch nöd möglech.
this is not possible
(ii) Dasch nöd möglech.
These data, in which clitics and reduced pronouns are separated from the element in the C-position, clearly show that they cannot have moved to the C-position. And even if an enclitic leans onto the preceding word, we cannot conclude that the clitic has syntactically adjoined to it. To illustrate, if the enclitic r had adjoined to the finite verb heeft in (11a) it would have moved along with it, but (11b) is ruled out. To account for the distribution of clitics in West Flemish, Haegeman (1993) proposes that clitics, just like shifted objects in general, undergo A-movement before they adjoin to empty Agr(eement)-heads or C, which is assumed to also have agreement features. In Gärtner and Steinbach’s analysis reduced pronouns in German and Dutch and their dialects also undergo XP-movement, but they do not adjoin to heads in the syntax. These authors argue that reduced pronouns, because of their phonological deficiency, have to prosodically integrate into an adjacent phonological word (𝜋-word). In contrast to Romance clitics, reduced pronouns can be integrated into different types of π-words: complementizers, finite verbs in root clauses, nouns, adverbials and prepositions. Müller (2001) argues that unstressed, weak and reduced pronouns in German move to the Wackernagel position, which he situates below TP, since these pronouns can follow the subject (in SpecTP). It seems that cliticization data in Germanic do not support the assumption that short wh-items are heads.  

To summarize, in contrast to the syllabic account, Bayer and Brandner’s account is grounded in syntactic theory. However, their core assumption – the treatment of certain wh-elements as C-heads – is not unproblematic from a theoretical point of view, and there seems to be little empirical evidence to support it. Their ideas of why there is variation are plausible but have not yet been fully worked out.

4. Overview of the data from St. Galler German

The data reported here come from a larger project, the aim of which is to gain a better understanding of inter- and intra-speaker variation in syntax based on spontaneous speech data from a dialect of Swiss German. Swiss-German dialects are perfectly suited for dialect studies because they are used naturally in everyday life by members of all social classes. There is no normative pressure from a ‘standardized dialect’ and the various Swiss-German dialects seem to be relatively resistant to influences of the standard (i.e. German). Although native speakers of Swiss German also know German, which they learn at school from a very early age, it is learned as a second language (L2).

The specific dialect in question is that spoken in Wil, a town in the canton of St. Gallen in north-eastern Switzerland with about 24 000 inhabitants. The St. Galler German sample discussed in Schönenberger (2010) comes from the same area. The corpus we are compiling is steadily growing, and so far contains roughly 650 000 words produced by 35 adult speakers during informal interviews of about 90 minutes each. These speakers include 7 young (20–30), 17 middle-aged (45–55) and 11 elderly (75+) male and female informants. Many more interviews have been conducted, but have not yet been transcribed. Ultimately we hope to

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7 Bayer (2015) shows that comp inflection is found on complementizers as well as on short wh-words in Bavarian. He notes that some speakers have comp inflection even on a short wh-word contained in a wh-PP, as in (i), which leads him to concede that wh-PPs can be heads (“I tend to say that PP is an extension of the category in its complement. If the complement is X°, P+X° is also an X°” [2015: footnote 20]). This is not a very natural assumption, and, as noted above, would not agree with the finding that test items with a wh-PP and a DFC were judged as good rather than bad by Bavarian informants.

(i) … [an wof-st du schon wieder denk-st] at what-2SG you already again think-2SG

‘…what you already have thoughts about’

In contrast to Bavarian, comp inflection in St. Galler German is restricted to t (2SG) and is rare in our data (see Cooper 1994: 106–109 for t in Zurich German).
have data from 20 speakers per age group (10 male and 10 female), and in total about 1 million words.

The wh-complements in the transcribed data were searched for by hand, as so far only a fraction of the data have been grammatically annotated and parsed. There were 1066 wh-complements. Table 4 summarizes the occurrence of DFCs in these wh-complements, divided into monosyllabic and non-monosyllabic wh-constituents, and into age groups. The interviews were conducted by two middle-aged interviewers – Anna and Thea – who also speak the local dialect. Their data are not subsumed under those from the middle-aged group, but are listed separately, because there are much more data from these two speakers. As can be seen from this table, wh-complement clauses with monosyllabic wh-constituents occurred about 4 times more often than those with non-monosyllabic ones. Monosyllabic wh-constituents usually occurred without dass while non-monosyllabic ones usually occurred with dass. This is clearly visible in all three age groups.

Table 4: Distribution of DFCs in wh-complement clauses (with mono- and non-monosyllabic wh-constituents) in spontaneous production data (St. Galler German)

<table>
<thead>
<tr>
<th>Age groups</th>
<th>mono +DFC</th>
<th>mono -DFC</th>
<th>non-mono +DFC</th>
<th>non-mono -DFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1: young (n=7)</td>
<td>12 (7.2%)</td>
<td>154 (92.8%)</td>
<td>66 (92.9%)</td>
<td>5 (7.1%)</td>
</tr>
<tr>
<td>G2: middle-aged (n=15)</td>
<td>7 (3.6%)</td>
<td>190 (96.4%)</td>
<td>63 (91.3%)</td>
<td>6 (8.7%)</td>
</tr>
<tr>
<td>Interviewers (n=2)</td>
<td>4 (1.3%)</td>
<td>305 (98.7%)</td>
<td>66 (89.2%)</td>
<td>8 (10.8%)</td>
</tr>
<tr>
<td>G3: elderly (n=11)</td>
<td>1 (0.7%)</td>
<td>152 (99.3%)</td>
<td>23 (85.2%)</td>
<td>4 (14.8%)</td>
</tr>
<tr>
<td>Total (n=35)</td>
<td>24 (2.9%)</td>
<td>801 (97.1%)</td>
<td>218 (90.4%)</td>
<td>23 (9.6%)</td>
</tr>
</tbody>
</table>

All three age groups also produced some counter-examples. The production of DFCs in wh-complement clauses with monosyllabic wh-constituents by the young group differs significantly from that by the interviewers (p<0.002) according to Fisher’s exact test. None of the other comparisons between groups reached significance, i.e. the p-values are all >0.05. Note, though, that the number of speakers per group is very different.

Table 5a lists the frequency of occurrence of the different monosyllabic wh-constituents with and without dass. Some of these received heavy stress (see Section 5). We found many examples with wa ‘what’ and wie ‘how’, fewer with wo ‘where’ and very few with wär ‘who’ and wenn ‘when’. Although wäm ‘whom’ is a possible word in this dialect, in these data it did not occur on its own but only as the complement of a preposition.

Table 5a: Distribution of DFCs in wh-complement clauses with monosyllabic wh-constituents

<table>
<thead>
<tr>
<th></th>
<th>+DFC</th>
<th>-DFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>wär ‘who.NOM/ACC’</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>wa ‘what’</td>
<td>2</td>
<td>320</td>
</tr>
<tr>
<td>wo ‘where’</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>wie ‘how’</td>
<td>10</td>
<td>328</td>
</tr>
<tr>
<td>wenn ‘when’</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>801</td>
</tr>
</tbody>
</table>

Table 5b lists the frequency of occurrence of the various non-monosyllabic wh-constituents with and without dass. Worum and wiso, both meaning ‘why’, wie Adj ‘how ADJ’ and wi vil

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8 For the transcription EXMARaLDA (‘Extensible markup language for Discourse Annotation’) was used. EXMARaLDA is a program designed for the transcription of spoken language (see Schmidt and Wörner 2009), which is easy to use and which is free of charge and downloadable from the URL: www.exmaralda.org. A tool for extracting patterns (EXACT) is also available from this link. EXACT was used to search for wh-items.
(N) ‘how much (N)/how many (N)’ occurred quite often. Monosyllabic wh-items selected by a preposition occurred less often, and there were even fewer wh-items containing e.g. wele ‘which’ and wa för ‘what kind of’.

Table 5b: Distribution of DFCs in wh-complement clauses with non-monosyllabic wh-constituents

<table>
<thead>
<tr>
<th></th>
<th>+DFC</th>
<th>-DFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>währ/wie au immer ‘who ever/how ever’</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>P wa ‘what’/wo ‘where’/wenn ‘when’/wäm ‘whom’</td>
<td>27</td>
<td>6</td>
</tr>
<tr>
<td>wohär ‘from where’/wohi ‘where to’</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>P wohär ‘from where’</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>wurum/wiso ‘why’</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td>wie ADJ ‘how ADJ’</td>
<td>39</td>
<td>8</td>
</tr>
<tr>
<td>wa för N ‘what type of N’</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>P wa för N ‘what type of N’</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>wele/weli/weles ‘which one/ones’</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>wele/weli/weles N ‘which N’</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>P welne N ‘which N’</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>wi vil ‘how much’</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>wi vil/wenig N ‘how many, much/few N’</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>218</td>
<td>23</td>
</tr>
</tbody>
</table>

The most frequently used predicate selecting a wh-complement was (Neg) wüsse ‘know’ (392×). Other predicates that were attested 20 or more times are: luege ‘see, check’ (72×), fröège ‘ask’ (69×), säge ‘say’ (43×), gsee ‘see’ (43×), intressiere ‘be interested’ (28×), druf aacho ‘depend on’ (26×), and ka Aanig (ha) ‘(have) no idea’ (24×). These eight predicates make up almost 2/3 of the predicates selecting a wh-complement. The element that most often occurred after a DFC is an unstressed subject pronoun, an issue I shall return to in the next section.

5. How to account for the data from St. Galler German?

After applying the syllabic account and the syntactic account to the Swiss-German data, I shall try to show that the production of a DFC also depends on the prosodic phrasing a speaker uses in the wh-complement clause. Thus not only the stress pattern of the wh-item itself but also that of the words following it is relevant. I cannot offer a solution, but I argue that examination of the surrounding prosody is an avenue worth exploring. If the production of DFCs is indeed also influenced by prosody then reading out a given test item, as was done in the studies in Bayer and Brandner (2008a, 2008b) and Bayer (2015), may have influenced its acceptability.

5.1. The syllabic account

The generalizations derived from a much smaller sample of St. Galler German (see Section 2), in which monosyllabic wh-constituents never combined with dass, while all non-monosyllabic ones did, are no longer valid. There are counter-examples to both of those generalizations. In all 24 counter-examples with monosyllabic wh-constituents, the latter is stressed, as in the examples in (13).9 In the examples, the age group a speaker belongs to is

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9 In the examples, conventions for the transcription in EXMARaLDA are implemented, where one to three dots “•••” stand for short intonational breaks of varying length, a forward slash “/” signals a false start, and capital letters highlight syllables with heavy stress. For the broad transcription of Swiss German the rules proposed by
appended to their name: G1 = young speakers, G2 = middle-aged speakers, and G3 = elderly speakers.

(13) a. *tüe mer luege WIE dass mer dòò* •
do we.CL look how that we.CL here
löösigsorientiert fürschimachet (Arabella G2)
solution.oriented ahead.make
‘we’ll see HOW, with a solution in mind, we can proceed’
b. *Wäisset Si nò WOO dass da gsi isch z Gämfl?* (Anna)
know you still where that this been is in Geneva
‘Do you still know WHERE this was in Geneva?’

That a stressed monosyllabic wh-constituent can co-occur with *dass* is unexpected, since a clitic and the wh-constituent could form a trochaic foot, e.g. in (13a). And in contexts without a pronominal clitic, as in (13b), there would be no need for *dass*.

There are many more counter-examples with non-monosyllabic wh-constituents. These are expected to combine with *dass*, but 23 do not, as shown in (14).

(14) *Die wüsset immer zu welere Zit wäär döt ischt.* Anja (G2)
they know always at what time who there is
‘They always know who is there and at what time.’

Even if it cannot be excluded that Swiss-German speakers are also influenced by their knowledge of Standard German, in which DFCs are ruled out, there seem to be too many examples that would have to be ascribed to this factor, i.e. almost 10%. If Standard German did have a major impact on a dialect speaker’s production of DFCs then a dialect speaker with more extensive exposure to German might be expected to produce more examples without a DFC in wh-complement clauses with non-monosyllabic wh-constituents than a dialect speaker with less extensive exposure. This is not confirmed by the data from the interviewers. Anna spent over 15 years living and working in Germany, using German almost exclusively at work and in private, but she produced fewer examples without a DFC than did Thea, who has spent only 3 months living and working in Germany, and who generally uses Swiss German at work and in private. Only 5 of 61 (8%) of Anna’s examples lack a DFC while 3 of 13 (23%) of Thea’s examples do.

Note that my earlier conclusions that a monosyllabic wh-constituent and a clitic form a prosodic unit – a trochaic foot – and that *dass* and a pronominal clitic do so too, cannot be maintained. Neither the combination of *wa* and *s ‘they’* in (15a) nor the combination of *dass* and *d ‘you.2SG’* in (15b) form a trochaic foot.

(15) a. *si higet kai Aanig wa s machet* (Anna)
they have.COND no idea what they make
‘they have no idea what they are going to do’
b. *Egaal wi vil Chind dass d häsch...* (Leonard G2)
irrelevant how many children that you have
‘It is irrelevant how many children you have…’

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Dieth (1986) were used. According to these rules, the 2SG clitic and the clitic article are both transcribed as *d*, although *t* would be more accurate, since neither the pronominal clitic nor the clitic article are voiced.
5.2. The syntactic account

The assumption is that wh-items that can function as heads discharge a C-feature when they merge with TP and therefore insertion of dass is prevented. The wh-items wär ‘who. NOM/ACC’, wa ‘what’, wo ‘where’, wie ‘how, and wenn ‘when’, if they are unstressed (i.e. wh-words of type II), are assumed to be heads. If wh-words of type II are indeed heads that would account for all 801 examples that contain a monosyllabic wh-item and no DFC.10 Furthermore, it is assumed that the C-feature is trapped inside a wh-item that is phrasal, and insertion of dass is possible and required. Some wh-items are assumed to vary in syntactic status, and therefore they are predicted to occur without dass if they are heads and with dass if they are not heads. According to Bayer and Brandner (2008a, 2008b) these are the wh-items of type I: warum ‘why’, wie viel ‘how much’, and wäm ‘whom’. Presumably wiso ‘why’ is treated on a par with warum. Wäm does not occur in the data, but there are a number of examples with wi vil and with warum/wiso. These generally occur with a DFC: wi vil (24/25 examples), warum (29/32) and wiso (22/22). There is thus some variation, albeit little. According to Bayer (2015) a wh-PP may also behave like a head if the complement of P is a wh-word and therefore some variation is expected to occur with these as well. And indeed there is some variation: most wh-PPs co-occur with dass (27 examples) but there are also several without dass (6 examples), illustrated in (16).

(16) Dā hāt gnau gwüsst um wa s göt. (Franz G3)
   ‘He knew exactly what it goes
   this has exactly known about what it goes
   ‘He knew exactly what it was all about.’

All other wh-items are phrasal, including stressed wh-words of type II (and presumably also stressed wām). Phrasal wh-items are predicted to combine with dass, which is not borne out by the data. There are several counter-examples with wie ADJ ‘how ADJ’: 8 of 47 examples do not have a DFC, as shown in (17). There are 5 additional counter-examples with other wh-phrases (cf. [14]).

(17) Mi intressiert da überhaupt nöd aso wie alt die Brugg isch. (Anna)
   me interests this totally not PART how old this bridge is
   ‘I am not at all interested in how old this bridge is.’

When a wh-word of type II is stressed it often, but not always, occurs with dass. In their discussion of example (5), Bayer and Brandner (2008a) specifically mention contrastive focus, not stress. In the St. Galler German sample none of the examples with a stressed monosyllabic wh-item involves contrastive focus. There are 37 such examples: 24 examples contain a DFC and 13 do not, as shown in (18).11 If Bayer and Brander mean that only monosyllabic wh-items with contrastive focus are syntactically complex, i.e. phrasal, then none of these 37 examples should contain a DFC, because the monosyllabic wh-item, although stressed is not contrastively focussed, and therefore it would be a head. If Bayer and Brandner mean that any

10 Bayer (2015) observes that “one can easily find examples of wer dass and even was dass, i.e. of the least favoured combinations” (2015: 18) and he does not mention contrastive stress on wer and was. We have over 300 examples with unstressed wer oder was in our data and in none is a DFC used.

11 In the data from the elderly group, 1 of 4 examples with a stressed monosyllabic wh-constituent contains a DFC, in the middle-aged group 11 of 20 examples do, and in the young group 12 of 13 examples do. The group of young speakers behaves significantly differently from both the elderly group (p<0.03) and the middle-aged group (p<0.05) according to Fisher’s exact test, while there is no significant difference between the elderly and the middle-aged group.
stressed monosyllabic wh-item is syntactically more complex, then all 37 examples should contain a DFC, because a phrasal wh-item requires the presence of dann.

(18) a. *Denn händ s müese usefinde WOO daa isch.* (Zacharias G3)
   then have they must out.find where this is
   ‘Then they had to find out WHERE this is.’

   b. *Gseesch immer ... WENN WOO irgendöppis loos isch.* (Nadine G1)
   see.2SG always when where something on is
   ‘You can always see WHEN something is on and WHERE.’

The 8 (of 47) counter-examples with wie ADJ and the 13 (of 37) examples with stressed wh-words of type II could be ascribed to influence from German, but as mentioned above, German influence seems minimal in Swiss German. Moreover, the number of counter-examples in these two contexts is unexpectedly large, particularly as compared to the number of counter-examples with wh-words of type I. These are expected to sometimes occur without a DFC, but only 1 (of 25) examples with wie vil ‘how much’ and 3 (of 32) examples with warum ‘why’ do.

5.3. Intermediate summary

My earlier generalizations that monosyllabic wh-constituents do not combine with dann, while non-monosyllabic ones do, are not supported by this larger data sample. Bayer and Brandner’s syntactic account cannot cover these data either. The syllabic account would predict that DFCs never occur in wh-complement clauses with stressed monosyllabic wh-constituents, but in fact they sometimes do. The syntactic account would predict that stressed monosyllabic wh-constituents either always combine with dann or never combine with dann, depending on whether the authors mean ‘stress’ in general or ‘contrastive focus’ specifically. Neither prediction is supported. The syllabic account cannot account for any of the examples with a non-monosyllabic wh-constituent but without a DFC. The syntactic account can at least cover some of these examples, although not entirely convincingly. On one hand, some variation was found where none is expected to occur, and on the other, some variation was expected to occur but hardly any was found. Attributing any example in which a DFC does not occur, although it is expected to, solely to the influence of Standard German on Swiss German does not seem warranted. Some noise is expected in the data but not to this extent. Thus another explanation is called for to account for the lack of DFCs in certain wh-complement clauses.

5.4. Outline of a prosodic approach and the function of dann ‘that’

5.4.1. Dann as a phonological host for prosodically weak elements

Both the syllabic account and the syntactic account imply that dann is relevant as a host for clitics. If this were its only function then in all the wh-complement clauses with a DFC dann should be followed by a clitic. This is not the case. There are two types of clitics in this dialect: clitic pronouns and clitic articles. Following Cardinaletti and Starke (1999), I classify pronouns as clitics if they cannot occur in the sentence-initial position of a V2 clause, and as weak pronouns if they can occur in the sentence-initial position but they cannot co-ordinate. Strong pronouns can also occur sentence-initially, but in contrast to weak pronouns they can also co-ordinate (or co-occur with a focus particle, e.g. nur ‘only’). This is shown for the 3PL pronoun in (19).
(19) a. Si/ *s fräuet sich wenn s gwünet.  
   they.WEAKP they.CL please self if they.CL win  
   ‘They’ll be pleased if they win.’

   b. Si/ *si/ *s und au mir säget da.  
   they.STRONGP they.WEAKP they.CL and also we say this  
   ‘They and also we are saying this.’

Only a few pronouns have distinctive clitic forms and weak forms in the nominative: 2SG: d vs. du; 1PL/3SG.impersonal mer vs. me (or mir); 3PL: s vs. si. The weak pronoun of the polite form (3PL) is Si, and the clitic form S only surfaces when it precedes another clitic with an initial vowel, as in (20). For all other pronouns the clitic form and the weak form seem to coincide in the nominative.

(20) Wenn S en gseend händ Si /*S Glück.  
   if you.CL him.CL see have you you.CL luck  
   ‘If you see him you are in luck.’

Note that due to assimilation clitics can sometimes be inaudible or hard to discern. The clitic d is particularly audible in intervocalic contexts, as in (21a). In other contexts it can induce gemination and sometimes it cannot be heard at all, as in (21b) (see Werner 1999).

(21) a. Wo d en gsee häsch isch er überascht gsi.  
   when you.CL him.CL seen have.2SG is he surprised been  
   ‘When you saw him he was surprised.’

   b. Wenn ggōðsch isch guet dass au wider zrruggchusch.  
   if you.CL.go.2SG is good that also again back.come.2SG  
   ‘If you go it’s good that you’ll come back again.’

In our data, in 160 (of a total 242) wh-complement clauses with a DFC the element following dass is an unstressed pronoun, and in 158 cases this pronoun is in the nominative.\(^\text{12}\) Besides many examples with a clitic (22a), there are many examples with a pronoun whose form is ambiguous between a clitic and a weak pronoun (22b) – I shall refer to these as ‘clitic/weak pronoun’ – and also a few examples with an unambiguous weak pronoun (22c).

(22) a. dass clitic (n=74)
   18× d (2SG); 36× mer (1PL); 19× s (3PL); 1× em (3SG.IMPERSONAL.DAT)

   b. dass clitic/weak pronoun (n=81)
   16× i; 6× ich (1SG); 6× er (3SG.M); 9× si (3SG.F); 28× s (3SG.N);
   15× Si (3PL.polite form); 1× sich ‘REFL.ACC’

   c. dass weak pronoun (n=5)
   4× du (2SG); 1× si (3PL)

In an additional 10 examples the element following dass is an article, either a clitic (23a) or a non-clitic (23b). The clitic article d ‘the.SG.FEM.NOM/ACC; the.PL.NOM/ACC’, just like the 2SG clitic d, is sometimes inaudible (see Krähenmann 2009). The 2SG clitic is an enclitic, but the clitic article seems to be a proclitic, given the contrast between dass d Ida… (that the.CL Ida…) and dass *d/di iffrig Ida… (that the.CL/the busy Ida…). Despite this, Lahiri and Plank

\(^\text{12}\) In 14 of the 242 wh-complements with DFC the ‘element’ that immediately follows dass is a subject-trace. Because a trace is never audible, I considered the element that immediately follows it.
(2010: 390) say that they “do not want to rule out that even plain consonantal t [the clitic article d, added by MS] does lean left rather than right” in non-sentence initial position.

(23) a. 
*dass* clitic article (n=4)
\[4 \times \text{d ‘the.F.CL’}\]

b. 
*dass* non-clitic article (n=6)
\[3 \times \text{de ‘the.M’}; 1 \times \text{di ‘the.F’}; 1 \times \text{s ‘the.N’}; 1 \times \text{e ‘a’}\]

In most of the remaining 72 examples with a DFC a light element – light in the sense of being monosyllabic – follows *dass*. Many of these elements bear word-stress (e.g. the proper name *Wiil*, the demonstrative pronoun *dä ‘this.M’*) or heavy stress (e.g. *äär ‘he.stressed’*). Only in 11 examples does a non-monosyllabic element follow *dass*. I illustrate these three cases in (24). In example (24a) the element following *dass* is an unstressed monosyllabic element (a clitic/weak pronoun), while in example (24b) the element following *dass* is a stressed monosyllabic element (a strong pronoun). In example (24c) the element following *dass* is a non-monosyllabic word with word-stress. The audio characteristics of examples (24a) and (24b), visualized in Praat\(^ {13}\), are shown in Figures 1 and 2.

(24) a. *Waiss nümé gnau WOO dass er reklamiert hät.* (Nora G3)
know.1SG no.longer exactly where that he complained has
‘I no longer know WHERE he complained.’

b. *Wi vil Begaabige dass ÄÄR ka hät da chan*
how many talents that he had has this can
\[i \text{ etz nöd säge.} \] (Nora G3)
I now not say
‘How many talents HE has had I cannot say now.’

c. *I waiss nöd wi vil dass Hürööte chőschtet.* (Arabella G2)
I know not how much that marrying costs
‘I don’t know how much it costs to get married.’

\[^{13}\] All the visual representations in the paper were created with Praat (www.praat.org), a free software package for the analysis of speech in phonetics, developed and actively maintained by Paul Boersma and David Weenink. The continuous line in each figure shows the intensity contour, and the non-continuous line the pitch contour with units of semitones re 1Hz.
Figure 2: Visualization of example (24b)

Note that *dass* and the weak monosyllabic element in (24a) form a prosodic unit, a trochaic foot: a stressed or long syllable is followed by a short or unstressed syllable. The trochee is the preferred stress pattern of Germanic dialects according to Kabak and Schiering (2006), who examined the combination of two function words. Korth (2014) suggests that the trochee is the preferred stress pattern even in larger prosodic entities in these dialects. In example (24b) the pattern is iambic: an unstressed syllable is followed by a stressed syllable. Based on the fact that the element immediately following *dass* is often, but by no means always, weak, I conclude that the sole function of *dass* cannot be to provide prosodic support for clitics or, more generally, for an adjacent prosodically weak element.

5.4.2. *Dass* as a provider of an extra syllable

Besides surfacing in contexts where it functions as a phonological host for prosodically weak elements, *dass* can surface in others contexts to bring about a more natural rhythm in the wh-complement clause. On one hand, *dass* can add weight to a prosodic unit to make it more similar in length to that of an adjacent prosodic unit, and on the other, *dass* can provide an unstressed syllable between stressed syllables.

Let us first consider the case where *dass* adds weight to a prosodic unit. Both examples in (25) contain the same stressed wh-constituent, but in (25a) *woo* co-occurs with *dass* while in (25b) is does not.

(25) a. *i däm i ... Merkmööl erarbeitet ha ... und*  
    in that I features explored have and  
    *au Öört WOO dass Komnikazioon • schtattfindet* (Alisia G1)  
    also places where that communication place.takes  
    ‘in that I explored features and also places WHERE communication happens’

b. *Denn händ s müesen uesefinde WOO daa isch.* (Zacharias G3)  
    and then they must out.find where this is  
    ‘And then they had to find out WHERE this is.’

In (25a) the word *Komnikazioon* following *dass* is polysyllabic and lasts 0.87s, while *woo* by itself only lasts 0.26s, but the sequence *woo dass* of course lasts longer. Figure 3 suggests that *woo* and *dass* form a prosodic unit. Although the duration of *woo dass* is shorter than that of the following prosodic unit (0.45s vs. 0.87s), the two units are less unbalanced in duration.
In example (25b) the words in the wh-complement clause are all pronounced individually and the vowel not only in *woo* but also in *daa* is long. As can be seen in Figure 4, *woo*, *daa* und *isch* all have their own well-defined contour. Had *dass* been used, the prosodic phrasing would have been different: e.g. [woo] [dass da] [isch], and the vowel in *da* would be short.

In the examples in (26) larger prosodic units in the wh-complement clauses can be discerned, which show similar intensity contours and are of roughly the same duration.

(26) a. *Mängmöł lärnt mer sich jò au ersch im Verlauf vom* sometimes learns one self *PART* also only in the duration of the *Läbe käne oder • WAS am würklech • WICHtig isch.* (Thea)

   life know *PART* what one.DAT really important is

   ‘Sometimes one only realizes over a life span what is really important to one.’

b. *Daa hät mi intressiert nöd wie hooch die Brugg isch.* (Anna)

   this has me interested not how high this bridge is

   ‘I found this interesting and not how high the bridge is.’

As shown in Figure 5, the prosodic unit *WAS am würklech* is slightly longer than *WICHtig isch*. If *dass* were used it would further lengthen the duration of the first unit. Note in passing
that both units are preceded by a short intonational break and start with a heavily stressed syllable, which enhances their ‘rhythmic symmetry’.

In Figure 6 the prosodic units formed by *wie hooch* and *die Brugg* are both iambic and of roughly the same duration. Had the speaker used *dass* the prosodic phrasing would have been different: e.g. *[wie hooch] [dass die] [Brugg] [isch]*.

Example (27) is interesting because a pronominal clitic follows a non-monosyllabic wh-constituent (a wh-PP). I assume that the fact that the clitic’s host is contained inside a PP is not relevant: as long as they are adjacent, the clitic (*d*) can prosodically integrate into the host (*wa*), in the spirit of Gärtner and Steinbach (2003). As shown in Figure 7, ‘*uf wa d usewilsch*’ is of similar length to ‘*en Aier*’ (0.69s vs. 0.73s). Had *dass* been used it would have unnecessarily lengthened the duration of the prosodic unit. Moreover, *dass* is not required to host the clitic, since *wa* can apparently do so.

(27)  
\[I \text{ waiss } uf \ wa \ d \ usewilsch \ en \ Aier.\]  
(Isabelle G2)  
I know on what you out.want an egg
‘I know what you have in mind, an EGG.’

\[\text{A typical feature of this dialect is that a few words in the singular look like plural forms, e.g. } en \ Aier \ ‘an egg’ \ (instead of } en \ Ai) \ vs. \ Aier \ ‘eggs’; \ e \ Tochter \ ‘a daughter’ \ (instead of } e \ Tochter) \ vs. \ Töchter \ ‘daughters’. \ These forms seem to be dying out.\]
Let us now turn to the case where *dass* provides an unstressed syllable. Consider the examples in (28), which contain a stressed monosyllabic wh-constituent that co-occurs with *dass* in (28a) but not in (28b). The three words following *dass* in (28a) are monosyllabic and carry word-stress. Figure 8 suggests that *dass* helps to bring about a stress pattern that is trochaic, since *waa* is more stressed than *dass*, and *Gründ* is more stressed than *chönd*.

(28) a. Sind langsam achli bekannt *WAA* dass gGründ chönd si. (Nadine G1) ‘It has gradually become clear WHAT the causes may be.’

In (28b) *wa* is also stressed, but in contrast to (28a) its duration is shorter (*wa* 0.16s vs. *waa* 0.28s). Apparently it can ‘host’ the adjacent prosodically weak pronominal *s*. As can be seen in Figure 9, the stress pattern in the wh-complement clause is again trochaic. Note that before Anna finishes pronouncing *isch*, her interlocutor starts to mumble *mmh*, thus there is a slight overlap between the two speakers.

(28) b. *I cha der etz nöd gnau säge WA s isch.* (Anna) ‘I cannot tell you exactly WHAT it is.’
Examples of the type in (29) are interesting because they contain a finite verb in the 2SG but no ‘audible’ subject. Perhaps the 2SG clitic has assimilated to dass and that is why it cannot be heard. But there may be another explanation. Dass may be used to provide an unstressed syllable between two heavily stressed syllables. At the same time, using dass gives rise to a trochee, as shown in Figure 10. For examples like these Cooper (1994) proposes that DFCs are used to mark a clause as clearly being subordinate. It seems to me that without dass the 2SG clitic would be audible in these examples, so that no ambiguity would arise as to whether the wh-complement is an embedded main clause or a subordinate clause.

(29) a. *Chunt immer druf aa WOO dass BISCHT.* (Leo G2)  
‘It always depends on WHERE you ARE.’

b. *Je nochdäm WIE dass SCHAFFSCH …* (Nadine G1)  
‘Depending on how you work…’

In example (30) dass follows worum, which is bisyllabic with word-stress on the second syllable, and precedes three heavily stressed monosyllabic words. Although the resulting pattern is not trochaic, dass provides an unstressed syllable between stressed syllables.
söndern würklech au eri persönellech Idrück vom • Daavid
but really also her personal impressions of the David
aso worum dass SII DÄÄ SCHÖÖ findet (Anna)
so why that she him beautiful finds
‘but also her personal impression of David, why SHE found HIM BEAUTIFUL’

The above examples show that dass can be used to add weight to a short prosodic unit in order to counter-balance the length of an adjacent longer prosodic unit, and dass can also be used to provide an unstressed syllable in a ‘stressed’ environment. In either case the use of dass has an impact on the prosody in the wh-complement clause and, by assumption, helps bring about a more natural rhythm, which is often more trochaic.

5.4.3. A note on prosodic ‘disruption’ in the wh-complement clause

I assume that any disfluency during the production of a wh-complement clause, or the use of a long pause or an unusual stress pattern may have an impact on prosodic phrasing and on the use of dass. The following examples illustrate these three cases. In (31a) the speaker first produces a monosyllabic wh-constituent, which he then replaces by a wh-PP. In (31b) the speaker pauses after the wh-constituent and then produces a heavily stressed pronoun. In (31c) WIE and GROOSS are stressed individually, which is rather unnatural, and a slight hesitation can be heard before GROOSS.

5.5. Towards an explanation of the distribution of DFCs

As has been noted for Alemannic (on both sides of the lake of Constance) and Bavarian, DFCs rarely occur in wh-complement clauses with short wh-constituents, while they do in those with non-short wh-constituents. I would now like to address the question why dass is never found with monosyllabic wh-constituents that do not bear stress, while it is sometimes found with them when they do bear stress.

In our data, there are no examples in which an unstressed monosyllabic wh-constituent co-occurs with dass. Why is this? Consider the examples in (32). The wh-constituent is followed by a clitic/weak pronoun in (32a), a stressed pronoun in (32b), and a proper name with stress on the first syllable in (32c).
(32) a. *Ich habe das früher gesagt* (Anna)
   I can no longer remember what he was like in the past.
   ‘I can no longer remember what he was like in the past.’

   b. *Waisch wie-n-II da mach?* (Nikolaus G1)
   know how-N-I this do
   ‘Do you know how I do this?’

   c. *Ich habe doch nödel emöl gewusst wo Frankreich isch.* (Lars G2)
   I have PART not even known where France is
   ‘I didn’t even know where France is.’

I take the occurrence of *n*- intrusion in (32a) and (32b) to signal that the wh-constituent and the following pronoun form a prosodic unit, resulting in a trochee in (32a) and in an iambus in (32b) (see Figures 1 and 2 above for an illustration of these patterns). What would have happened if a DFC had been used in these examples? In (32a) *dass* would take over the function of phonological host from *wie*. Although *dass*+er would also form a trochee, *wie* would no longer be part of the trochaic foot and the resulting structure would be less optimal. In (32b) the insertion of *dass* would not result in a trochee, since *dass* cannot be stronger than the emphatic pronoun. Thus inserting *dass* would not result in a more optimal stress pattern in (32a) and it would not change an overall dispreferred pattern, the iambus in (32b), into a more preferrable one, a trochee. If *dass* were inserted in (32c) and neither *wo* nor *dass* were stressed, they would not combine to form a prosodic foot, since they would be of the same prosodic strength. There are no examples with stressed *dass* in our data, but *dass* can be stressed in cases where it has verum focus and, in this case, *dass* is quite acceptable even in German (see [33]), which does not usually allow DFCs.

(33) *Ich weiss zwar wer es NICHT gelesen hat aber nicht wer DASS*  
   I know indeed who it not read has but not who that  
   es gelesen hat.  
   it read has  
   ‘I know, in fact, who has NOT read it, but not who HAS read it.’

There are 37 examples with a stressed monosyllabic wh-constituent, and 24 of these contain a DFC. The distribution of DFCs per wh-item is summarized in Table 6, and the type of element following *dass* (+) or the wh-constituent without *dass* (−) is classified into prosodically weak or non-weak.

<table>
<thead>
<tr>
<th>währ ‘who(m)’</th>
<th>wie ‘how’</th>
<th>wenn ‘when’</th>
<th>wa ‘what’</th>
<th>wo ‘where’</th>
</tr>
</thead>
<tbody>
<tr>
<td>weak</td>
<td>1</td>
<td>0</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>non-weak</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

These data seem puzzling for the following reason: if stressed monosyllabic wh-constituents can prosodically support the following weak element why do they ever co-occur with *dass*? The combination of the stressed monosyllabic wh-constituent and the adjacent weak element could result in a trochaic foot, as in *WIE mer ‘HOW we*. In footnote 4 I pointed out that *n*-insertion is possible with stressed *wo* (and *wa*) provided the vowel is short. Perhaps vowel length is relevant here as well. Interestingly, in all 8 examples in which *wo* co-occurs with *dass* the vowel is long (average length of *woo*: 0.25s, ranging from 0.21s–0.34s). The same is
true of the two examples of \(wa\) combined with \(dass\) (length of \(waa\): 0.26s and 0.28s). The vowel is also long in the two examples in which \(wo\) immediately precedes a non-weak element and in the example in which \(wa\) does (length of \(woo\): 0.21s and 0.25s; length of \(waa\): 0.26s). In total, there are 6 examples in which the stressed monosyllabic wh-constituent is immediately followed by a non-weak element, and in five of these this element is monosyllabic and its vowel is also long (cf. [25b] above), and in the remaining example the element is polysyllabic. In contrast, in the three examples in which stressed \(wa\) immediately precedes a prosodically weak element, it is pronounced twice with a short vowel (length of \(wa\): 2\(\times\) 0.16s, cf. [28b] above) and once as \(was\), but again with a short vowel (cf. [26a] above). A similar effect can be found in wh-PPs that contain \(wa\). There are five examples with and four without a DFC. In the five examples with a DFC the vowel in \(wa\) is relatively long (average length of \(waa\): 0.17s, ranging from 0.14s–0.19s), while in three of the examples without a DFC the vowel in \(wa\) is relatively short (average length of \(wa\): 0.1s, ranging from 0.09s–0.12s). In the fourth example \(durch\ waa\ sich\ dää\ ‘by what self this’ the vowel of \(wa\) is long (length of \(waa\): 0.18s) as is the vowel in \(dää\) (length of \(dää\): 0.23s). There is only one example of a wh-PP with \(wo\), and it contains a DFC. The vowel in \(wo\) is long (length of \(woo\): 0.16s).

These data suggest that vowel length may indeed be relevant. If the vowel in \(wo\) or \(wa\) is long and \(wo\) or \(wa\) would be followed by a prosodically weak element – a clitic or a clitic/weak pronoun – \(dass\) is used. Encliticization to the wh-constituent may be blocked in these cases because some phonotactic rule is violated (cf. Gärtner and Steinbach 2003: 482). Moreover, \(n\)-intrusion is blocked just as with non-monomylabic wh-constituents (e.g. \(wiso\ ‘why’, \(wele\ ‘which’)). And if \(wo\) or \(wa\) is followed by a non-weak monosyllabic element that element’s vowel is also pronounced as long, presumably to make the two items more similar in length.

Let us now briefly consider DFCs in clauses with a non-monomylabic wh-constituent. Whenever such a wh-constituent would be followed by a clitic, our data show \(dass\) is used. However, \(dass\) also often precedes a weak monosyllabic element that is not a clitic. Why is this? The word-stress in a bisyllabic wh-constituent can either be iambic or trochaic. Using \(dass\) either brings about a more trochaic rhythm or it helps maintain such a rhythm. This hypothesis can be extended to wh-constituents with more than two syllables, and using \(dass\) in these cases also helps to ‘adjust’ the weight of an adjacent prosodic unit. Thus the impression that \(dass\) seems to become more ‘obligatory’ with long wh-constituents could receive quite a natural explanation: not only does \(dass\) promote a trochaic rhythm but it also helps to counter-balance the weight of adjacent prosodic units.

To summarize, not only is the length of the wh-constituent relevant but so is the type of element following it. In contexts where a prosodically weak element can be hosted by the wh-constituent \(dass\) is never used. The only such contexts involve monosyllabic wh-constituents with short vowels, i.e. \(wä\), \(wo\), \(wa\), \(wenn\) or with a diphthong moving to schwa (\(wie\)). Since other wh-constituents do not qualify as hosts, \(dass\) must be used to host the prosodically weak element, i.e. \(dass\) is obligatory. In other contexts \(dass\) seems to be used by native speakers for the purpose of prosody, to reinforce the natural rhythm of Swiss German. In these contexts \(dass\) seems to be more or less optional. A speaker can influence the prosodic phrasing in different ways, by a change in speech rate, by using an intonational break, by adding stress to a syllable, etc. Optionality seems to require different prosodic phrasing. How could this be tested? In an experiment one could remove \(dass\) from the original recorded utterances with

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15 In varieties of German that have deficient pronouns but no DFCs other strategies would be used in cases like these, e.g. using a strong pronoun instead of a deficient one.

16 In the visualization of some of the examples with \(woo\) or \(waa\) two intensity peaks can be seen, which suggests that the speaker may have pronounced \(woo\) or \(waa\) as bisyllabic, cf. (28a) and (29a).
DFCs and check how native speakers judge these edited utterances. A different response would be expected depending on whether dass is optional or obligatory.

6. Concluding remarks

The phenomenon of DFCs seems to be very much alive in St. Galler German, as attested by the data described in this paper, which come from 35 speakers who were classified into different age groups. Young speakers are just as likely as older speakers to produce DFCs. Standard German, which is learned at school, does not seem to greatly influence the production of DFCs in these dialect speakers. Note that dialect speakers in Germany are typically exposed to Standard German considerably earlier than those in Switzerland, and thus the influence from Standard German could be larger.

In these spontaneous production data from Swiss German, DFCs never occurred in wh-complement clauses with unstressed monosyllabic wh-constituents, but they often occurred with stressed monosyllabic wh-constituents, and very often with non-monosyllabic wh-constituents. Some variation was found in these data that was not attested in a previous, smaller, sample from the same dialect. My previous account in terms of the number of syllables of the wh-constituent was based on this smaller sample, but is no longer tenable because of this variation.

Instead of concentrating on the wh-constituent itself, as in my previous syllabic account, I examined the role of dass more closely. In this approach, the influence that dass can have on the overall prosody of a wh-complement clause is seen as playing an important role in whether a DFC is used. By providing a stressed or unstressed syllable, dass can lead to a more trochaic pattern, and by adding an extra syllable it can increase the length of a prosodic unit which otherwise seems too short compared to an adjacent prosodic unit. In either case dass is somewhat optional. Whether a native speaker actually uses dass is largely dependent on the prosodic phrasing used during the production of the wh-complement clause. However, when a phonologically deficient pronoun needs to be prosodically integrated and the wh-constituent does not qualify as an appropriate host then using dass is obligatory. Almost two decades ago, Weiss (1998) proposed that DFCs should be dealt with at the level of Phonological Form and provided a rough outline of how this could be done. I do not wish to claim that DFCs are governed by prosody alone. Syntax also plays a role. In future work I intend to explore the interface between syntax and phonology to account for DFCs. Although I have said nothing about how DFCs are derived, I continue to assume that even short wh-constituents are maximal projections, because the empirical evidence used by Bayer and Brandner (2008a, 2008b) and Bayer (2015) to support their core idea that short wh-constituents are syntactic heads does not extend to St. Galler German. Finally, I outlined an approach to the occurrence of DFCs that may be worth pursuing. We continue to collect and analyse spontaneous production data from Swiss-German speakers which I hope will clarify the issues discussed above.

References
Bayer, Josef & Ellen Brandner. 2008a. On wh-head-movement and the doubly-filled-comp


