On Wh-Head-Movement and the Doubly filled Comp Filter

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1. Introduction

The Doubly filled Comp Filter (DFCF) of the type in (1)

\[(1) \ast_{[\text{CP WH that}]}

is known to be fully operative in the standardized languages (Standard English, Standard German) whereas in the dialects, we find violations of this filter. Examples are known from Bavarian (BAV), Bayer (1984), West Flemish, Haegeman (1992), Swiss German (SG), Bader & Penner (1988), but also in Alemannic (ALM) dialect spoken in the South-West of Germany:

(2) Ich weiss nicht wieviel (*dass) er für das Auo bezahlt hat
   I know not how-much (that) he for the car payed has
   "I don't know how much he payed for the car"

(3) I woass it wieviel dass er für des Auto zahlt hät
   I know not how-much (that) he for the car payed has
   "I don't know how much he payed for the car"

(4) Ich habe mein Handy immer an die Boxen gehalten
   I have my mobile phone always at the boxes held
   und 10 Sekunden später wusste ich, von wem dass der Song wirklich ist
   and 10 seconds later knew I from whom that the Song really is
   (http://hitparade.ch/interview.asp?id=55)

Standardly, it is assumed that both language varieties have the same structure, i.e. Spec-CP (the landing site of the wh-phrase) with the respective C-head (the position of the complementizer) and that the difference lies merely in the fact that in the dialects, it is allowed to spell-out the complementizer overtly whereas it is phonetically null in the standardized varieties.

The standard approach is essentially a PF-approach: the overt realization of the complementizer in the dialects is not conceived as being governed by rules of the core grammar, but rather as a typical instance of redundancy, found also in other areas of dialect grammars, (e.g. Schleicher, 1858). However, it is reported already in traditional grammars (cf. Noth, 1993; Schiepek, 1899; Steininger, 1994) that the complementizer dass virtually never co-occurs with the wh-expressions ‘what’ and ‘who’, i.e. short wh-words do not tolerate an additional complementizer.

We examined this phenomenon more systematically in the dialects called Bodensee Alemannic (ALM) and Middle Bavarian (BAV). The above mentioned observation was indeed confirmed. This immediately casts doubt on a simplistic pronunciation approach to the DFCF.

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1 Schleicher (1858: 63) comments the South-Thuringian example from the dialect of Sonneberg

(1) West duu öpper, wi lang daß di walt beschtenna wörd?
   know you PRT how long that the world exist will
   ‘Do you know how long the world will last?’

as follows: ‘daß steht überflüßig in abhängigen fragen’ [daß appears superfluous in dependent questions]. August Schleicher (1858: 63)
In the following, we will show that the restrictions on the DFC found in these dialects raise interesting questions about the nature of the Left Periphery in embedded interrogatives. Specifically, we will claim that the ban on DFC with simple wh-words can be explained if these wh-words occupy the $C^0$ position themselves and thus act as complementizers - in addition to their clause typing function which they have to fulfill due to their status as wh-elements.

This will be implemented by assuming a "latent feature" (in the lexical entry) which is visible to the computational system only in certain definable configurations such that we can avoid the (clearly undesirable) consequence that every instance of a short wh-word is also a complementizer – irrespective of its environment.

Section 2. illustrates the empirical study. Section 3. introduces the concept of "latent feature" and the structural environments in which it is activated. Section 4 provides some independent morphophonological evidence for the head-status of short wh-words. Finally, we discuss briefly root questions in North Norwegian dialects where we find astonishing parallels with the patterns in Alemannic and Bavarian. Speculations about the microvariational space of the DFCF phenomenon (including Standard German) will finish the paper.

2. Empirical research on South-German

Questionnaire study: between 8 and 15 informant per dialect, judgement task
Types of test sentences:

- **Genuine wh-phrases:**
  a. wh-PPs with a simplex wh-word (bis wann "until when"; wegen was "because of what"; für was "for what"; mit was "with what")

  (5) I frog-me, fia wos dass-ma an zwoatn Fernseher braucht BAV
      I ask-REFL for what that-one a second TV needs
      "I wonder what one needs a second TV for"

  (6) I frog mich wege wa dass die zwei Autos bruchet ALM
      I ask-REFL for what they two cars need
      "I wonder why they need two cars"

  b. wh-DPs, wh-PPs with a wh-phrase (wieviele Leute "how many people"; welche Farbe "which color"; was für ein Depp "what kind of idiot"; mit welcher Farbe "with which color")

  (7) I hob koa Ahnung, mid wos fia-ra Farb dass-a zfrien waar BAV
      I have no idea with what for-a color that-he content would.be
      "I have no idea with what color he would be happy"

  (8) I ha koa Ahnung, mid wa für-e Farb dass-er zfriede wär ALM
      I have no idea with what for-a color that-he content would.be
      "I have no idea with what color he would be happy"

- **Word-size wh-elements:**
  wer ("who-NOM"), wen ("who-ACC"), wem ("who-DAT"), wie ("how"), wo ("where"), warum ("why"), was ("what"), wieviel ("how much")

  (9) *I woass aa ned, wer dass allas am Sunndoch in da Kiach gwen is BAV
      I know too not who all at sunday in the church been is
      "I don't know other who all has been to church on sunday"

  (10) *I wett gern wisse, wa dass i do ausfülle muss ALM
      I like willingly know, what that I there fill-in must
      "I'd like to know what I have to fill in"
Table 1 summarizes the core result for both ALM and BAV:

<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-DPs, Wh-PPs</td>
<td>best with overt C</td>
</tr>
<tr>
<td>wh-word I</td>
<td>warum (hidden PP)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[wieviel (hidden DP/AdvP)]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>wem (hidden KP)</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>

Table 1 Hierarchy of wh-elements w.r.t. DFC

How can one explain the intermediate status of wh-word I: warum, wem and wieviel?
- warum ("why") is actually [P P war [P um was]] and therefore underlingly complex and phrasal
- wem ("who-DAT") is according to Bayer, Bader & Meng (2001) underlingly more than X° due to a Kase Phrase (KP) that dominates dative (and possibly also genitive) NPs: [KP K° [NP wem]]
- wieviel ("how much") is composed of wh wie and Q(P) viel, i.e. it is syntactically DP or AdvP.

Generalization:
Word-size wh-elements are in complementary distribution with complementizer

Suggestion:
Word-size wh-elements are indeed merged in the same position as complementizers, i.e. the wh-element is in C° and can fulfill the function of the complementizer.

But this can happen only under certain structural conditions...

3. Analysis
3.1 Background assumptions
(i) An embedded CP must be syntactically marked for clause type (i.e. <interr>, <decl> etc.), but there is no force feature present; the embedded CP is not an utterance. Instead, it fulfills the selectional restrictions of the matrix predicate.
(ii) A clause is syntactically typed as <interr> if a wh-element has been moved to its left edge. If the language has a peripheral Q-particle, there is no wh-movement (see Cheng's (1991) Clausal Typing Hypothesis).
(iii) For proper typing as <interr>, wh moves in both root and embedded clauses.

3.2 A latent C-feature
Wh-words II (wer, was, wen etc.) are lexically specified for the feature <wh> and they have additionally a latent (categorial) feature <C> in their lexical entry, i.e. they are <αC>.
If certain structural conditions are met, the value is activated and the wh-word will project to the CP level and thus head the clausal projection as a complementizer. If these structural conditions are not met, the feature will not be activated and thus the non-checking of this feature will do no harm to the derivation.
The concept of the latency of a feature provides the necessary flexibility which is needed in order to account for the data.
3.3 The structural conditions

Standard phrasal movement: the target projects!
Standard head movement: adjunction to a pre-established head (non-extension property)

However, head movement can be re-analyzed as movement of a (potential) head to the highest maximal projection iff the head in question contains a (so-far unactivated) categorial feature which is able to induce its own X-bar projection.

Similar considerations have been employed in the work of Koeneman (2000; 2002), Bury (2002), Fanselow (2002) and Brandner (2004) to account for verb-movement, i.e. V-T and/or V-C (V2), see also Donati (2006) for nominal wh-heads.

In our case, the feature that licenses this head-movement is the latent C-feature <αC>, (note that the wh-element has to move in any case, due to the assumption in 3.1. (ii)). Once it is merged to the clausal projection (TP in this case), it is in a selection relation to its complement and thus it is in the right configuration to project, see Surányi (2003).

It is exactly this configuration where the latent feature <αC> turns into <+C> and can thus project a CP (i.e. the projection of a lexical complementizer). In this case, the insertion of a complementizer is superfluous and therefore ruled out by economy. The projected CP is of course also endowed now with the feature <+wh>, due to the lexically specified wh-feature of the wh-word.

Sample derivation:
In the first step of the derivation, the wh-item is externally merged, and the verb – being the selecting element – projects.

(11)

```
  VP
  / \  
what V°
 <+wh, αC >
```

The wh-element has to move to the left edge, see 5.1. (ii), i.e. it will be re-merged ("internally merged") with TP. It is then in a sister-relation with TP, and TP is accordingly its structural complement; in other words, the wh-element selects TP. The latent C-feature can now be activated, the wh-word projects to CP-level.

(12)

```
  CP
  / \  
what TP VP
 <+wh,+C> ... what .. V°
```

Here, the wh-word is a "typing particle" in the sense of Cheng (1991), and it is simultaneously a complementizer. It is basically an interrogative particle(similar to German ob ("if", "whether") but with the difference that expresses a semantic restriction and binds a variable within VP (constituent question).
Turning to complex WH-phrases (P+wh, which X etc.) it is immediately clear that here the wh-element will never be able to activate its C-feature, because it merges in the first step with some other constituent. E.g. für was („for what“):

(13) \[pp \text{für } [np \text{was}]\]

"Trapped" in a branching phrase, the Wh-element will never become a sister to TP, i.e. its \(<\alpha C>\) feature cannot be activated. This phrase then moves as a maximal projection (PP, DP, KP etc.) to the specifier of CP. In this case, the insertion of the complementizer dass is possible, resp. required.

(14)

\[
\begin{array}{c}
\text{CP} \\
\text{PP}_{<\text{wh}, C>} \\
\text{mit was} \\
\text{with what} \\
\text{dass} \\
\text{that} \\
\text{VP} \\
\text{PP}_{<\text{wh}, C>} \\
\text{mit was} \\
\text{with what} \\
\end{array}
\]

Finally, in the case of wh-in-situ/multiple questions, the latent feature remains unactivated too:

(15) (Ich will wissen) wer wen gesehen hat
    I want to know whom seen has
    "I want to know whom saw whom"

Assuming that the second wh-phrase is still in its base position, it will not appear in a sister relation to TP and thus the feature is not activated. The derivation converges because a \(<-\alpha C>\) can be removed without any damage.

3.4 Chain uniformity
In (11) it is the verb that projects, and its sister is non-projecting. Therefore it is \(X^\text{max}\) by definition. If thus selection by a verb forces a wh-word to be \(X^\text{max}\), how can the head of the chain project and therefore have \(X^\text{min}\) status? Stranded adjuncts to the wh-element show that the base position indeed cannot have been a head position.

(16) (Ich will wissen) wen sie [wen aus Paris] gesehen hat
    I want to know who she whom from Paris seen has
    "I want to know who she saw from Paris"

However, the shape of short wh-elements permits a dual X-bar interpretation, i.e. simple lexical items can be interpreted as a phrase or as a head. We thus suggest the following condition:

(17) **Morphological condition of chain uniformity**
The chains \(CH = <X^° ... XP>\) and \(CH = <XP ... X^°>\) are uniform iff \(X^°\) is surface-equivalent with XP and XP is surface equivalent with \(X^°\).
For concreteness, the chain headed by *wen* in (16) is $X_{\text{max}}^\text{w}$ at the foot and can therefore license the PP adjunct *aus Paris*, while it is $X_{\text{min}}^\text{w}$ at the head of the chain, it can as such activate $\alpha C$ and project a wh-CP. Since a genuine wh-phrase always branches, no ambiguity of this sort can arise in the other cases.

### 3.5 Reconstruction

Wh head-movement is well compatible with reconstruction in the sense of the copy-and-delete mechanism. The assumption is that at LF the restrictive term $\text{REST}$ appears only in the base and is (normally) deleted in the operator position. Thus, a word-size wh-element which activates the C-feature will at LF be stripped down to a pure wh-operator whose semantics is similar to a disjunctive operator. The variable in the scope of this operator is the residue of wh-movement minus the wh-part.

\[(18)\quad X^\circ_{\text{wh},+C,\text{REST}} [\ldots \text{XP}_{\text{wh},-C,\text{REST}} \ldots]\]

(18) closely resembles the visible structure of embedded interrogatives in typical wh-in-situ languages which make use of an $\text{<interr>}$ typing particle, e.g. Japanese –*ka*, while leaving an indefinite DP in situ which serves as a variable. Naturally, the typing particles are attributed head status.

### 3.6 Economy of projection

The proposed system entails two economy conditions:

\[(19)\quad \text{Head Preference or Spec to Head Principle} \]

**Be a head rather than a phrase!**

(van Gelderen (2004:10))

This principle has been shown by van Gelderen to be operative in grammaticalization, We would like to suggest that the introduction of a latent C-feature in the lexical entry of an element (which enables the element to re-merge as a head) is the first step of a grammaticalization process for which (i) is relevant. So the variation that is attested in the South German dialects seems to be the ‘precursor’ structure for grammaticalization.

The second economy principle could be formulated as follows:

\[(20)\quad \text{Do not merge more lexical items then necessary!}\]

This entails that a single lexical head may host several functional features that are projected to the maximal projection, much in the spirit of Bobaljik and Thrainsson's (1998) approach to split IP, see also Sobin's (2002) suggestions concerning ‘very minimal CPs’. Finally, also much in line with Sobin, the system does not require necessarily that all operations of feature projection involve a spec-head configuration.

If we are right, then we have found a case where internal merge(movement) is closer to the optimal design than external merge, see Chomsky (2005).

### 3.7 Further motivation

Certain wh-words are good candidates for the reanalysis as a function word:

- this class of lexemes belongs to the functional vocabulary (closed class)
- the items have a morphophonological shape (monosyllabic) by which they qualify as function words such as complementizers

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2 Cf. Jayaseelan (2001) and Bayer (2004) for details about disjunctivity and the relevance of this form of interrogatives for the partition approach to questions in semantics.
"What": in many languages, wh-words or historical derivatives of the wh-word "what" act as the (unmarked declarative) complementizer (cf. que in French/Portuguese/Spanish, che in Italian, умо (shto) in Russian, çо in Polish, τί (ti) in Greek which comes out as the complementizer ὥτι (otì), che in Persian which changes to the complementizer ke, ki in Hindi-Urdu and various other Indo-Aryan languages.

If van Gelderen (2006) is right in assuming that it is the loss of features which is necessary in order for grammaticalization to become 'complete', then we can categorize the Alemannic/Bavarian situation as "being on the way" whereas e.g. in French and Italian, the process is completed in the sense that 'what' has started a new life as <-wh> complementizer.

"Where": German wo as well as English where have acquired the status of C for relative clauses. The same seems to hold for που ("where") in Greek.

A latent C-feature is found also in prepositions, which can have a dual status too: Examples from English would be after and for, see van Gelderen (2006).

In German, prepositions like seit ("since"), bis ("until"), ohne ("without"), can act as pure prepositions, combining with a noun, or as complementizers, combining with a clause:

(21) a. Ich warte seit dem Mittagessen auf dich     [P   DP]
    "I am waiting for you since lunch(time)"

b. Seit sie nicht mehr raucht, ist sie unerträglich [P/C TP]
    "Since she stopped smoking, she is unbearable"

4. Evidence from cliticization for the head status of the wh-C

Alemannic has a so-called "intruding n-", see Ortmann (1998) for a detailed discussion. He establishes the generalization that n-intrusion is only possible if the clitic pronoun is (right-) adjacent to a functional head.

Notice that the form of was ("what") in (22a) is /wa/. For wo in (22b) there is equally no underlying /n/-phoneme. (The following examples are all Alemannic)

(22) a. …wa -n -er tuet
    what-N-he does
    "what he does"

b. …wo -n -er ani isch
   where-N-he towards is
   "Where he has gone to"

N-intrusion is not possible if the wh-word is in the Spec-CP-position of a root clause:

(23) *Wa -n- issesch du denn?
    what-N-eat you PRT
    "What do you eat?"

It typically occurs also in the V-cluster (which arguably involves head amalgamation), but not with A(P) predicates heading their own projection. (24a) shows a case of external sandhi, as in French mo-n-ami ("my friend"), i.e. there is an underlying /n/ phoneme in /ganen/ which is normally not pronounced.

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3 According to Gernot Windfuhr (p.c.)
4 Dickens is an author where I’d rather see the movie (Bernard Comrie, p.c.)
(24) a. ... wo-n-er gange-\text{n} -isch (cf. er isch gange\text{Ø})
   as-N-he went -N-is
   "as he left"

b. *... dass es schö-n-isch (cf. es isch schö\text{Ø})
   that it nice-N-is
   "that it is nice"

Interestingly, N-intrusion and sandhi seems to be blocked when the potential host of the clitic is part of a phrase.

(25) a. *... [wege wa] -n-er sich so uffregt\textsuperscript{5} because what-N-he REFL so excites
   "what he gets so upset about"

b. *... [wieso]-n-er nümme kunnt
   why -N-he no-longer comes
   "why he does not show up any more" (Schönenberger, 2006)

(26) *... [vo wo] -n-er herkommt
   from where-N-he comes
   "where he comes from" (Susanne Trissler, p.c.)

Generalization: n-intrusion and external sandhi is only possible if the host is in a head-position.

Similar facts can be observed in Bavarian. Bavarian has a rule of r-intrusion as well as external sandhi. The former holds for wia ("as") in (27a), the latter for wer ("who") in which /r/ is normally unpronounced. Both processes fail when the potential clitic host is dominated by a phrasal node.

(27) a. ... wia –r -e hinte schau as/how-R-I back look
   "as/how I look back"

b. ... we -r-e bin who-R-I am
   "who I am"

c. *... [wos fia Schua]-r -e ooozig d. *... [um wiavui Uh-r]-e geh
   what for shoes -R-I put-on
   "which shoes I put on"
   at how-much clock-R-I leave
   "at what time I’ll leave"

In both dialects, cliticization can proceed again normally as soon as dass is merged in the C-position.

\textsuperscript{5}Some Swiss German speakers (as Rebekka Studler informs us, p.c.) allow the insertion of –n- in this case. But these speakers allow also the activation of an underlying (plural) –n- in cases such as
(i) Bire-n-esse tut er it
   pears-N-eat does he not
   "He doesn't eat pears" (generic)

These were rejected by our informants. So there seems to be variation w.r.t. the exact syntactic conditions under which n-intrusion can apply. Swiss German speakers seem to be more liberal. The fact that the cliticizing element is bi-syllabic (es-se) in (i) cannot be the relevant factor in the Alemannic judgements since sequences like wo-n-ena (where-n-them) are possible.
(28) a. ... [wege wa] dass-er sich so uffregt
    because what that-he REFL so excites
    "what he gets so upset about"
  b. ... [wieso] dass-er nümme kunnt
    why that-he no-longer comes
    "why he does not show up any more"

(29) a. ... [wos fia Schua] dass-e ooziag
    what for shoes that -I put-on
    "which shoes I put on"
  b. ... [um wiavui Ua] dass-e geh
    at how-much clock that-I leave
    "at what time I’ll leave"

In sum, cliticization provides strong evidence that the short wh-words (wh-word II) are internally merged as heads and not as phrases.

7. North-Norwegian dialects
There is evidence from the Tromsø dialect of Norwegian that short wh-words should be analyzed as heads, see Westergaard & Vangsnes (2005); Vangsnes (2006). If the left periphery hosts a head-type wh-element, head-raising (V-second) is – for certain speakers – blocked. If the left periphery hosts a genuine wh-phrase, V-second is obligatory:

(30) a. Verb-second
    (*)Ka sa han Ola?  Ka han Ola sa?
    what said ART-Ola what ART-Ola said
    "What did Ola say?"  "What did Ola say?"
  b. No Verb-second

(31) a. Verb-second
    [Ka slags bil] har han Jens kjøpt sæ?
    what kind-of car has ART-Jens bought himself
  b. No Verb-second
    *[Ka slags bil] han Jens har kjøpt sæ?
    what kind-of car ART-Jens has bought himself
    "What kind of car has Jens bought for himself"

This distribution is strikingly parallel to our findings in embedded clauses in South German dialects.
Interestingly, even the findings about word-size complex wh-elements (wh-word I) in Southern German are echoed in the Tromsø dialect. Bi-syllabic wh-words of the warum type also do not allow for non-V2. According to Vangsnes (2006), they are historically phrase-like.

(32) koffør  "why"  <  kor + før  how + for
  katti  "when"  <  ka + tid  what + time

Furthermore, the effect of focusing the Wh-word (e.g. by stress) are parallel in both languages:

(33) a. KA sa han Ola?  b. *KA han Ola sa?
    what said art-Ola what art-Ola said
    NNORW
8. What about symmetrical DFC/DFCF-languages?

Hypothesis I
All types of wh-elements have the latent C-feature; thus, C never gets spelled out.

This hypothesis is clearly untenable as it would ascribe the capacity of projection to phrases, and it would undermine the grammaticalization scenario by which wh-items can adopt a C-feature and ultimately even turn into –wh complementizers.

Hypothesis II
All types of wh-elements lack the latent C-feature; thus, either (i) or (ii) holds:

(i) C is overt throughout
(ii) C is covert throughout

Contemporary Standard German like many other (standardized) languages is only compatible with (ii). To the extent that the head can be generally predicted from the syntactic environment, economy considerations favor an empty complementizer.

Nevertheless, there seem to be also languages which follow (i), i.e. C must always be spelled out by an overt –wh complementizer. West-Flemish seems to be such a case (cf. Haegeman, 1992). The variety of ALM spoken in and around Ortenau (Baden) may be another such case (cf. note 13).

Assuming that there is no arbitrariness here, on which basis should a choice be made between (i) and (ii) according to hypothesis II?

Speculation

- In Standard German (SG), the presence of an overt head is not required because the language lacks true Wackernagel-type clitics (cf. Cardinaletti, 1999) and therefore does not require a suitable X° landing. Thus, insertion of an overt complementizer would not serve any purpose.

- West-Flemish (WF) as well as the South German dialects (including the dialect of Ortenau (ORT)) have genuine clitic systems which require the presence of an overt functional head to serve as a clitic host. However, since they have no latent C-feature in the lexical entries of the wh-elements, the insertion of a complementizer is necessary in all cases.

If this speculation is on the right track, the discussed varieties can be distinguished by the following minimal lexical variation:

<table>
<thead>
<tr>
<th></th>
<th>ALM / BAV</th>
<th>WF / ORT</th>
<th>SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>latent &lt;C&gt; on wh-words</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>overt C-head</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>clitic pronouns</td>
<td>+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 Properties of wh-words and pronouns
9. Summary and conclusions

- Wh-elements may contain a latent C-feature in their lexical entry which is only activated if the wh-element is internally merged as an extension of the clausal projection.
- The lexicon is the natural place to account for this variation.
- Latency (of a functional feature) can be considered as one of the transitional states in the process of grammaticalization, i.e. latency is probably a concept that is necessary for independent reasons. The languages cited in section 5.3. have presently a second entry for the equivalent of "that"/"what" which has lost its <wh> feature and thus can type a clause as declarative. The <interr> word continues to exist side by side. This scenario mirrors a typical grammaticalization process.
- For the purpose of clausal typing, wh-elements may be used to extend the projection up to CP-level without external merger of a C-head.
- Lexical packaging of the features <wh> and <C> in a single lexical item LI in combination with LI’s projecting capacity renders splitting up the C-field superfluous.
- Our account escapes the criticism by Kathol (2000: 124) who points to the ad-hoc character of PF-deletion in order to comply with the actually pronounced elements in a language.

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