

# Complementisers, word order and a non-cartographic approach to the CP-domain\*

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## 1 Introduction

Complementisers have an important role in typing the clause, and Complementiser Phrases (CPs) can host various non-complementiser elements as well (such as interrogative operators). The CP-domain refers to the functional left periphery of the clause (above the TP) and as the name suggests, it is assumed to be more complex than just a single C. This complexity is obvious in cases when more than one element is present.

One such phenomenon is the so-called doubly filled COMP pattern, illustrated below:

- (1) They discussed a certain model, but they didn't know **which model that** they discussed.  
(Baltin 2010: 331, ex. 1)

In this case, the CP-domain contains both the complementiser *that* and the complex *wh*-phrase *which model*.

Another relevant phenomenon is that of multiple complementisers, for instance in hypothetical comparatives:<sup>1</sup>

- (2) a. Mary speaks **as though** she were afraid.  
b. Tilla läuft, **als wenn** sie um ihr Leben liefe.  
Tilla runs than if she for her.N life run.SBJV.3SG  
'Tilla is running, as if she were running for her life.'  
(Jäger 2010: 469)

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<sup>1</sup>The combinations *as though* and *als wenn* represent monoclausal constructions, where a separate conditional clause and a separate comparative clause cannot be reconstructed. In other combinations, full clauses can be recovered:

- (i) a. Mary speaks **as if** she were afraid.  
b. Mary speaks **as** she would speak **if** she were afraid.

The elements *as* and *als* are regular comparative complementisers (see Bacskai-Atkari 2018b also for German) in the respective languages, hence their analysis as complementisers in combinations like (2) is independently motivated. An alternative to CP-recursion is provided by Jäger (2018), who labels the higher projection as ConjP: however, since this projection is supposed to belong to the left periphery of the subordinative (hypothetical comparative) clause in her analysis as well, this stance raises exactly the same problems for the left periphery regarding complexity.

In these cases, it is assumed that the highlighted elements occupy distinct functional heads in the left periphery (Jäger 2010, Bacskai-Atkari 2018b).

The question arises how one should model the CP-domain and maintain constraints on word order. There are various possibilities to be found in the existing literature. First, one may assume a COMP projection, as in Chomsky & Lasnik (1977) and other earlier analyses. This approach is problematic for multiple complementisers and not fully satisfactory when it comes to doubly filled COMP. Second, one may assume that there is a single CP: this is compatible with normal X-bar theoretic notions and it makes good predictions in terms of doubly filled COMP, but it is compatible with multiple complementisers only if projections other than CP are allowed to host complementisers (as ConjP in Jäger 2010). Third, one may assume various designated CP layers, including ones associated with information-structural notions, as is done in cartographic approaches, going back to Rizzi (1997). This approach is compatible with doubly filled COMP and with multiple complementisers, but the question remains whether this basic compatibility equals descriptive and especially explanatory adequacy. Fourth, one may adopt a more flexible minimalist approach building on CP-recursion (see, for instance, Browning 1996, Vikner 1995, Vikner et al. 2017), where features play an important role but are not tied to specific projections in a one-to-one fashion (see Bacskai-Atkari 2018d). In this model, the left periphery is by definition as minimal as possible, CP-recursion being limited by Greed (Browning 1996, following Chomsky 1993). In essence, multiple CPs in this model are similar to multiple vPs, multiple AspPs (as for the combination of the perfective and the progressive aspect in English), or multiple MoodPs (as for double modals in certain varieties of English, whereby an epistemic and a deontic modal auxiliary co-occur).

This paper is primarily concerned with showing the problems in connection with the third approach and argues for the fourth approach. While the relevant model is compatible with a non-cartographic view of information structure (see, for instance, Fanselow & Lenertová 2011), in the present investigation I will restrict myself to discussing clause-typing elements only, as these unarguably constitute the basic structure of the left periphery.

The paper is structured as follows. In section 2, I briefly describe doubly filled COMP patterns. Section 3 presents the problems that arise with a cartographic template. In section 4, I argue that an analysis in which features are not tied to pre-given positions can also constrain the orders and evades the problems that arise with cartographic approaches. While the structures in 4 involve a single CP, I briefly point out in 5 that even non-templatic approaches may successfully integrate cases where multiple CP projections are necessary.

## 2 Doubly filled COMP

The notion of doubly filled COMP (and the corresponding filter) originates in the idea of Chomsky & Lasnik (1977), who assumed that in operator constructions such as relative clauses and embedded interrogatives, the *wh*-element is adjoined to the left of the complementiser (Chomsky & Lasnik 1977: 434) in COMP, yet only one of the elements are permitted to occur overtly:

- (3) \*<sub>[COMP *wh*-phrase complementiser]</sub>  
(Chomsky & Lasnik 1977: 435, cf. Keyser 1975)

However, some problems arise with this approach. One obvious problem for later analyses is that COMP is not compatible with X-bar notions; this may be obviated by any approach that does not strictly follow the X-bar template, though. A more serious problem concerns the notion of head adjunction: while this may well be a viable option for head-sized *wh*-elements like *who*

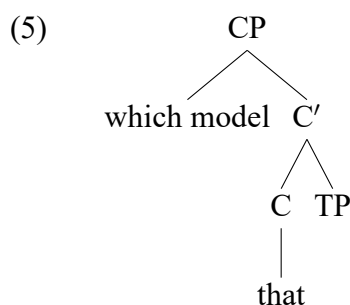
(as in the examples of Chomsky & Lasnik 1977), it does not carry over to complex *wh*-phrases (e.g. *in which street*). This problem disappears if COMP is taken to be a CP instead (following Chomsky 1986, based on Stowell 1981).

Another problem arises from the fact that, as Chomsky & Lasnik (1977) also acknowledge, the filter is not universal, not even when one considers varieties of English only (synchronically or diachronically). The presence or absence of the surface filter in the given variety thus seems to be a very construction-specific restriction that does not immediately follow from any independent property of the given grammar.

In the X-bar schema, complementisers and *wh*-operators have distinct positions. Complementisers are base-generated as C (complementiser) heads, while *wh*-elements are located in the specifier position of the CP. Given that the two positions are distinct (motivated by distinct syntactic behaviour), this analysis predicts that the co-occurrence of both an overt specifier and an overt head should be possible, given that such co-occurrences are attested also in other domains of the clause (e.g. in English, the subject DP lands in [Spec,TP] and T can be headed by a base-generated modal such as *should*). Indeed, doubly filled COMP patterns are common in West-Germanic dialects, even though these patterns are ruled out in the standard varieties. This is illustrated by the following examples from English, German (Alemannic) and Dutch, respectively:

- (4) a. %They discussed a certain model, but they didn't know **which model that** they discussed.  
(Baltin 2010: 331)
- b. %I frog-me, **fia wos dass**-ma an zwoatn Fernseher braucht.  
I ask-REFL for what that-one a second TV needs  
'I wonder what one needs a second TV for.'  
(Bayer & Brandner 2008: 88)
- c. %Peter vroeg **wie dat** er boeken leuk vindt.  
Peter asked.3SG who that of.them books likeable finds  
'Peter asked who liked books.'  
(Bacskai-Atkari & Baudisch 2018)

Based on what was said about the relative positions of the complementiser and the operator above, especially concerning their potential co-occurrence, one possibility regarding their structure is demonstrated by the single CP in (5) below:



This is a classical doubly filled COMP arrangement. For the standard varieties, the doubly filled COMP filter should then be formulated as follows (whereby both *wh* and COMP refer to overt elements):

(6) \*<sub>[CP wh COMP]</sub>

The notion of a filter is problematic from a minimalist perspective. Alternatively, it could be viewed as an economy principle ruling out the co-occurrence of elements with largely overlapping functions (see van Gelderen 2009). Such an approach is applicable in relative clauses, where the complementiser and the specifier element both mark the clause as relative, but it proves to be more problematic in embedded interrogatives, where the complementiser does not have the same clause-typing function (interrogative) as the specifier element.

Taking the filter to be some kind of economy constraint on clause-typing elements is still more attractive than stating that an overt specifier and an overt head in the CP would be problematic per se; as mentioned above, such co-occurrences are attested in other projections more generally, so there is no straightforward reason why this should not be the case with the CP as well. Indeed, the CP is “doubly filled” in main clause *wh*-interrogatives in English and in V2 clauses in German (and in most Germanic languages), as the verb occupies the C position and another constituent moves to the specifier, as triggered by an [edge] feature (see Fanselow 2002; 2004a;b, Frey 2005, Den Besten 1989). This suggests that the ban on the co-occurrence of the form given in (6) applies specifically to two clause-typing elements in the CP, not to just any two elements located in the CP. In other words, the problem is not primarily a positional one but rather one that has to do with the particular properties of the respective elements.

### 3 Doubly filled COMP in a cartographic framework

As the two elements in doubly filled COMP patterns in embedded *wh*-interrogatives have distinct functions, it is expected that they can be associated with separate projections in cartographic approaches, where a single projection is associated with a single semantic property, represented by a designated feature. In this way of thinking, Baltin (2010) proposed that there is no genuine doubly filled COMP in the sense of (5), but we rather have two separate CPs with designated functions, following the original proposal made by Rizzi (1997; 2004). This state of affairs is represented in (7b) below, contrasting with the representation in (5), repeated here as (7a):

- (7) a. <sub>[CP which model that]</sub>  
b. <sub>[CP which model [CP that]]</sub>

Regarding (7b), the following questions arise: (i) whether this configuration matches independently motivated projections in the cartographic template (descriptive adequacy), and (ii) whether the resulting analysis is able to account for why such patterns arise in the first place in the way they do (explanatory adequacy).

The fine structure of the left periphery, as proposed by Rizzi (2004: 242) is shown below (the original proposal made by Rizzi 2004: 242 contains fewer projections); the asterisks indicate iterable projections:

- (8) Force Top\* Int Top\* Focus Mod\* Top\* Fin IP

In this scenario, Force and Fin represent genuine complementiser positions, while Top (topic) and Foc (focus) host material that moves to the left due to information structural reasons.

Taking the representation in (8) into account, the structure in (7b) can correspond to three configurations. First, (7b) can be a combination of Force and Fin, whereby the *wh*-operator is primarily regarded as an element marking the Force of the clause. Second, (7b) can be a combination of Int and Fin; in this case, the *wh*-element is seen primarily as interrogative, and as

such located in a designated projection distinct from Force. Third, (7b) can be a combination of Focus and Fin, assuming that *wh*-elements target FocP, as originally proposed by Rizzi (1997); in fact, this is the analysis Baltin (2010) proposes. In all of the configurations, the lower projection is taken to be FinP: this is because no matter which projection the *wh*-phrase is associated with, the only remaining possibility for the complementiser is Fin. In principle, as we see, *that* may be taken as a Force marker (for declarative), but that would produce the wrong word order and it is highly questionable why a declarative Force marker would appear in an interrogative clause.

One obvious problem that arises generally with this framework is that while the above configurations are all based on independent properties of the respective elements, the projection to be taken for each element is question does not straightforwardly follow from the system. I will return to this question later; let us first consider the particular problems arising with the individual options mentioned above.

### 3.1 Problem 1: *that* as a Fin head

The first problem concerns the aforementioned property that the “*wh*-phrase + *that*” word order always produces *that* as a Fin head. Disregarding for the moment the potential problems regarding the *wh*-element, the primary question is whether the analysis of *that* as Fin is independently motivated.

In contexts such as simple embedded declaratives, *that* and its zero counterpart are functionally equivalent:

- (9) a. I know [**that** Peter likes cats].  
 b. I know [ $\emptyset$  Peter likes cats].

Rizzi (1997: 312) assumes that “the force-finiteness system can be expressed on a single head”, meaning that both complementisers encode declarative Force and finiteness in (9) above. However, if Force and Fin are structurally split, *that* is supposed to encode Force (declarative) only and the zero complementiser is supposed to encode finiteness only.<sup>2</sup> Rizzi (1997: 312–313) provides support from topic constructions and from extraction asymmetries. Topicalisation is illustrated below:

- (10) I think [that/\* $\emptyset$  next year \*that/ $\emptyset$  John will win the prize].  
 (Rizzi 1997: 313)

Since *that* is primarily a force marker, if the CP is split, as it is when a TopP is generated, it necessarily ends up in Force and precedes the topic.

Extraction asymmetries are illustrated below:

- (11) a. \*Who do you think [that [ $t$   $\emptyset$  [ $t$  will win the prize]]]?  
 b. \*Who do you think [ $t$  that  $\emptyset$  [ $t$  will win the prize]]]?  
 c. Who do you think [ $t$   $\emptyset$  [ $t$  will win the prize]]]?  
 (Rizzi 1997: 312)

Since the *wh*-element *who* is a subject in the embedded interrogative clause, its extraction to the higher clause leaves a subject gap. In line with the Empty Category Principle (ECP), traces

<sup>2</sup>This way of splitting declarative Force and finiteness appears counter-intuitive, as the complementiser *that* is specified for finiteness; indeed, complementisers appear in most cases to have a finiteness specification. In Rizzi’s system, the split serves to maintain the structural distinction, which in turn serves to explain certain differences between *that* and its zero counterpart.

need to be properly governed. This condition is met in (11c): Rizzi (1997: 312) assumes that the empty complementiser has an Agr specification, which turns it into a governor. In (11c), then, the subject gap in [Spec,TP] is governed by the zero Fin complementiser, while the trace in [Spec,CP] is governed by the matrix verb. In (11b), the bracketing provided by Rizzi (1997), it is assumed that *that* has the same feature specification and position as the zero complementiser. The configuration is ungrammatical because *that*, according to Rizzi (1997), cannot agree with the subject, leaving the subject trace ungoverned. In (11a), the bracketing is in accordance with the assumption that *that* is primarily a Force head and hence located higher; in this case, the subject trace can be properly governed in the same way as in (11c) but the trace in [Spec,CP] cannot be properly governed by the verb, as *that* acts as a barrier. While it is not immediately clear why *wh*-movement targets FinP (as no triggering feature is evidently located here), the conclusion would actually hold if we assumed movement to target a higher projection.

While the observed facts seem to be adequately described by the aforementioned assumptions, various problems arise. For one thing, the assumption that the zero complementiser can be specified for Agr but *that* cannot does not seem to follow from any independent property. Specifically, there is nothing that would rule out Agr on visible complementisers per se, as demonstrated by the existence of agreeing complementisers in Bavarian (see, for instance, Fuß 2004). This can be relatively easily explained away as some sort of lexical specification, though.

A more serious problem arises with the conclusion Rizzi (1997) draws from the data in (11). Based on the bracketed representations in (11b) and (11c), he argues that the unacceptability of *that*-traces follows from the fact that *that* cannot be a Fin head. However, using an alternative bracketing, as in (11a) above, which in fact follows from Rizzi's very conclusion that *that* is Force and not Fin, the construction is still ungrammatical and can be explained by assuming that *that* is a barrier to proper government. In other words, the presence of *that* is problematic in itself and does not directly follow from which position it occupies as it does not agree with the subject gap anyway: the same effects can be derived from a system that involves only a single CP in these cases:

(12) \*Who do you think [*t* that [*t* will win the prize]]?

Deciding on the relative position of *that* is thus problematic as there are no other visible elements in these constructions that could provide conclusive evidence; the relative position should therefore be established on the basis of observable effects, but we have just seen that these effects can be accounted for either way.

The only possibility to save the analysis would be to say that Fin heads can always agree with the subject gap and whenever a visible complementiser leads to an ungrammatical configuration, it is not available as Fin. This assumption, however, leads back to the problem mentioned before in connection with doubly filled COMP patterns, where cartographic approaches are forced to assume that the complementiser *that* is located in Fin: this is apparently not in harmony with the basic cartographic template, at least as far as Rizzi (1997) argues that this complementiser is in Force. In principle, one might argue that the two instances of *that* differ: declarative clauses like (9a) contain the declarative complementiser *that*, located in Force, and doubly filled COMP patterns like (4a) contain the finite complementiser *that*, located in Fin. The availability of *that* as a simple finiteness marker is, after all, motivated by doubly filled COMP patterns, where it occurs in interrogative clauses and is thus not expected to encode declarative force. However, once a proper Fin complementiser *that* is in fact available, we would expect it to be able to govern subject gaps in constructions like (11), which is evidently not the case: these constructions are supposed to be ruled out in Rizzi's system precisely due to *that* being unavailable as Fin.

### 3.2 Problem 2: IntP

The problem of *that* as a Fin complementiser underlies all the three possibilities for a cartographic approach to doubly filled COMP patterns. The second problem relates to the analysis of the projection hosting the *wh*-element as IntP. For varieties allowing doubly filled COMP patterns, we can assume that IntP can co-occur with FinP, whereas for standard varieties, the assumption is that it cannot.

While this might appear to be an attractive proposal at first sight, it is not without problems. The IntP is supposed to host complementisers like Italian *se* as well (Rizzi 2004), so it seems logical to suppose that it can host English *if* or German *ob*, too. In varieties that allow the co-occurrence of IntP and FinP, it is expected that combinations like *\*if that* in English and *\*ob dass* in German arise; however, they do not.

Let us consider the corresponding abstract structure given below:

(13) [CP if<sub>[Q]</sub> [CP that<sub>[fin]</sub>]]

This structure could correspond to Force–Fin or to Int–Fin; the problems and the conclusions mentioned here apply to both possibilities.

In (13), the feature tied to the interrogative complementiser is [Q], not [wh]: while [wh] is a proper interrogative feature, [Q] is a disjunction feature (see Bayer 2004, Bacskai-Atkari 2018e). Given this distinction, one may be tempted to assume that the availability of doubly filled COMP patterns with *wh*-phrases and the absence of doubling patterns with complementisers like *if* can be traced back to this feature difference, which should be reflected by different projections in a cartographic approach. Indeed, following Rizzi (2004), we might assume that *wh*-elements land in FocP and *if* is located in IntP. In other words, once the difference between constituent questions and polar questions is encoded in the template, we might suppose that there are different selectional restrictions as well: FocP is presumably compatible with FinP, while IntP is not.

However, the problem is that doubling in polar interrogatives is in fact possible, as attested in (earlier and non-standard) English for *whether*:<sup>3</sup>

- (14) a. If þai ani child miht haue, **Queþer þat** it ware scho or he  
if they any child might have whether that it were she or he  
'If they might have any child, whether it were a she or he.'  
(*Cursor Mundi* 10205, van Gelderen 2009: 155)
- b. I just wondered **whether that** as a next step we might look to see why this seems to be the case.  
(*Corpus of Spoken English* FACMT97, van Gelderen 2004: 96)

Selectional restrictions (and the related feature differences) are thus not a good argument for ruling out the aforementioned combinations. Rather, the status of the interrogative element seems to matter, that is, whether it is a complementiser (such as English *if*) or an operator (such as *whether*; see Boef 2013: 141–142 on *of*).

### 3.3 Problem 3: Relative clauses

The third problem arises in connection with relative clauses: as observed by Bacskai-Atkari (2018d), the functional split underlying cartographic analyses is not tenable in relative clauses.

<sup>3</sup>The same applies to (non-standard) Dutch with *of*, see Bayer 2004: 65, quoting Hoekstra 1993.

This matters primarily because the doubly filled COMP filter was originally proposed mainly for relative clauses by Chomsky & Lasnik (1977).

Indeed, doubling patterns in English involve the combination of a *wh*-element and *that* both in interrogative and in relative clauses:

- (15) a. %They discussed a certain model, but they didn't know **which model that** they discussed.  
(Baltin 2010: 331)
- b. %It's down to the community **in which that** the people live.  
(Van van Gelderen 2013: 59)

According to Rizzi (1997), relative operators should be located in ForceP. This leaves us with two possibilities regarding the status of *that*: it is either in Fin or in Force. Locating *that* in Fin implies that *that* is a finiteness marker and that there is a functional split between a relative operator and a finite complementiser (as in Baltin 2010). Again, just as with the interrogative clauses examined above, locating *that* in Fin is in conflict with the assumption made by Rizzi (1997) that it is in Force. On the other hand, we may assume that *that* is in Force: in this case, the relative operator being in [Spec,ForceP], the result is a doubly filled COMP pattern, which is precisely what the proposal of Baltin (2010) intended to avoid.

Additional counterarguments come from German dialects. While the combination of a *wh*-element and *dass* 'that' is attested in interrogatives, see (16a), in relative clauses showing doubling, the relative pronoun is followed by the relative complementiser *wo* and not by *dass*, as shown in (16b):

- (16) a. I frog mich **wege wa dass** die zwei Autos bruchet.  
I ask REFL for what that they two cars need  
'I wonder why they need two cars.'  
(Alemannic; Bayer & Brandner 2008: 88)
- b. Des Geld, **des wo** ich verdiene, des geheert mir.  
the.N money that.N REL I earn.1SG that.N belongs I.DAT  
'The money that I earn belongs to me.'  
(Hessian; Fleischer 2017)
- c. Ich suech ebber **wo** mer helfe künnt.  
I search someone REL I.DAT help.INF could  
'I am looking for someone who could help me.'  
(Alemannic; Brandner & Bräuning 2013: 140)

As (16c) shows, *wo* can also occur on its own: this element is the general relative marker in South German dialects.

Since in South German relative clauses the complementiser cannot be treated as a mere finiteness marker, there is no reason to postulate a functional split in the same way as it is at least plausible for embedded constituent questions: both elements involved in doubling in patterns like (16b) are relative elements, which are not expected to require separate designated projections.



### 3.4 Interim summary

To sum up what we have seen so far, we can conclude that the above-mentioned cartographic-style split for avoiding doubly filled COMP is problematic even for descriptive adequacy and it certainly does not reach explanatory adequacy. Namely, the ordering patterns that would be expected based on independent constructions are not compatible with the ordering restrictions observed in embedded interrogatives (and in relative clauses). This leads to the problem that the description achieved by the model is unsatisfactory. The only way to ameliorate descriptive adequacy would be to stipulate additional rules. For instance, one could stipulate that the complementiser *that* appearing in embedded interrogatives is distinct from the one appearing in embedded declaratives (within the same dialect); further one would have to stipulate that the former is prohibited to occur in declaratives – even though it is compatible regarding its features (as it marks finiteness only) and the availability of FinP headed by its zero counterpart is stipulated by the model anyway. However, once stipulations become extremely construction-specific, the ultimate goal of reaching explanatory adequacy is failed. Indeed, one of the most attractive properties of the cartographic model would be to account for ordering restrictions across constructions and based on the independently motivated lexical properties of the individual elements. Once this is replaced by construction-specific ordering restrictions of construction-specific elements, a formalised description of the linguistic facts arises, lacking explanatory force.

## 4 A feature-based approach to doubly filled COMP

In what follows, I would like to outline the basics of an alternative approach to doubling patterns; under this view, there is a single CP for canonical doubly filled COMP structures, that is, the operator element merges to the complementiser directly. This approach stipulates that ordering restrictions do not follow from a pre-given template but arise due to the specific features involved.

Specifically, there are certain assumptions that should be avoided as they are either descriptively inadequate or they hamper investigations seeking to provide explanation. In Chomsky & Lasnik (1977), these assumptions are (i) that the *wh*-element and *that* in doubly filled COMP patterns are more or less equivalent and either of them can be left out, and (ii) that the underlying doubling is specifically related to COMP elements. In Baltin (2010), it is assumed that (iii) the *wh*-element and *that* are functionally distinct and do not overlap, and (iv) doubling patterns are construction-specific.

As should be clear, assumptions (i) and (iii) are mutually exclusive and, as discussed in the previous section, neither of them can be maintained. Chomsky & Lasnik (1977) developed their analysis for English relative clauses: in relative clauses, there is a partial functional equivalence, but not in embedded interrogatives. Further, while the elements in English relative clauses are surface-identical to the ones in embedded interrogatives, the conclusions for relative clauses cannot be automatically carried over to embedded interrogatives: among other reasons, the information-structural properties of the operators differ. Baltin (2010), on the other hand, examined exclusively embedded interrogatives, where a functional distinction is motivated; however, as discussed in the previous section, the analysis cannot be carried over to relative clauses for a number of reasons.

Assumptions (ii) and (iv) are highly similar to each other; the differences are rather due to there being differences in the respective frameworks. In essence, both approaches postulate a major syntactic difference between languages (and varieties) allowing doubly filled COMP patterns (DFC varieties) and ones that do not (non-DFC varieties). For Chomsky & Lasnik (1977),

the difference can be expressed in terms of a surface filter that applies in non-DFC varieties and it does not apply in DFC varieties. For Baltin (2010), the difference lies in whether FinP is overt or not (though how this exactly functions, i.e. whether selectional restrictions or lexical differences play a primary role, is not specified). At any rate, both kinds of analyses heavily rely on the constructions in question being qualitatively different from all other constructions in the same variety.

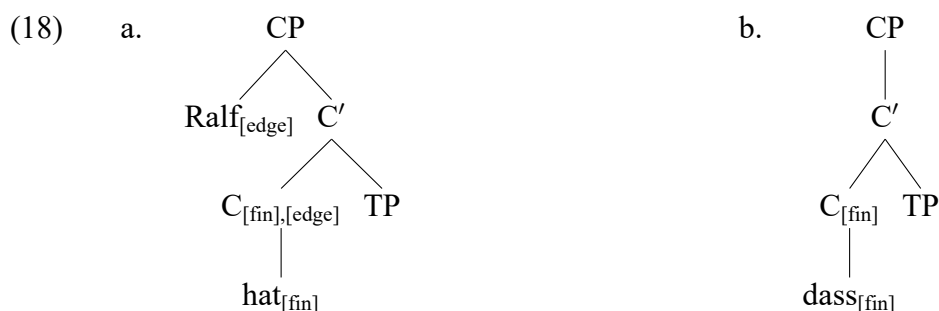
#### 4.1 Doubly Filled COMP in the syntactic paradigm

As mentioned already in the introductory section of this paper, this may well not be true: Germanic V2 constructions, as well as T-to-C structures in English interrogatives show similar doubling effects in the CP. If so, relating doubly filled COMP to these constructions may draw us closer to an explanation for why these patterns arise in the first place. As German V2 provides more relevant construction types than T-to-C movement in English, I am going to concentrate on German in the remainder of this paper.

In German, the lexicalisation of [fin] in C is generally observed: an element specified as [fin] merges with the TP and checks off the uninterpretable [u-fin] feature of the TP (see Fanselow 2004b on verb movement). In German declaratives, we have the following patterns:

- (17) a. Ralf **hat** eine Torte gebacken.  
 Ralph has a.F cake baked.PTCP  
 ‘Ralph has baked a cake.’
- b. Ich weiß, **dass** Ralf eine Torte gebacken hat.  
 I know.1SG that Ralph a.F cake baked.PTCP has  
 ‘I know that Ralph has baked a cake.’

As indicated, either a finite verb or a finite complementiser is located in C. The schematic representations are given below; note that, for the sake of simplicity, I use the CP as a template to indicate the relative positions of the elements better, as this will be relevant later; in a proper Bare Phrase Structure analysis, a moved verb simply merges with the TP and projects further, without being labelled as C (see Bacskai-Atkari 2020). As finiteness is a C-feature, however, this difference can be disregarded for the time being.

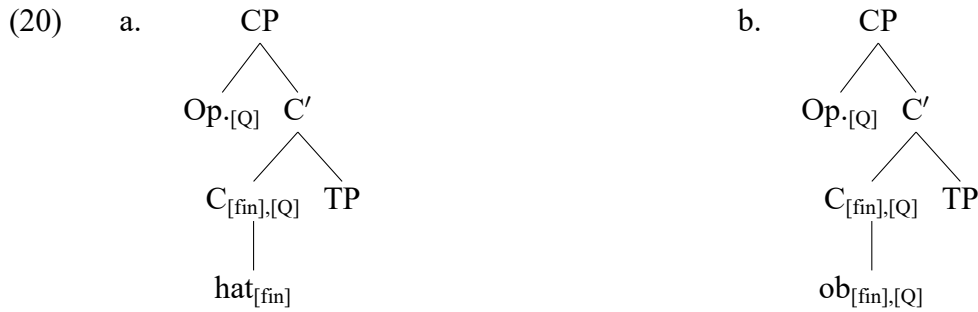


Polar interrogatives in German are illustrated below:

- (19) a. **Hat** Ralf eine Torte gebacken?  
 has Ralph a.F cake baked.PTCP  
 ‘Has Ralph baked a cake?’

- b. Ich weiß nicht, **ob** Ralf eine Torte gebacken hat.  
 I know.1SG not if Ralph a.F cake baked.PTCP has  
 ‘I don’t know if Ralph has baked a cake.’

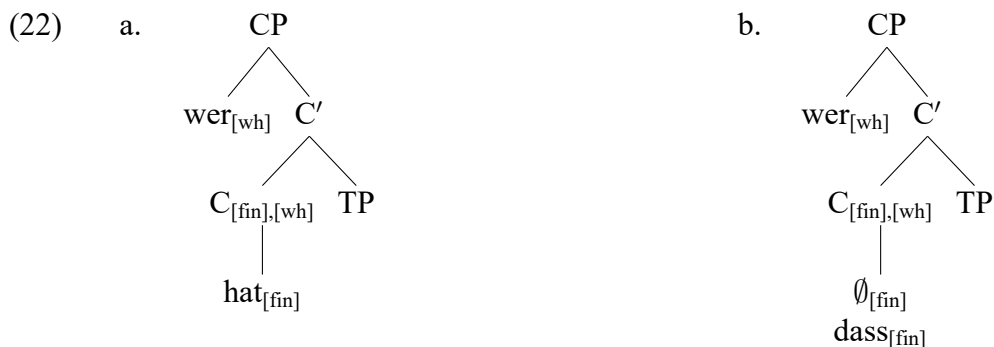
These constructions differ from declaratives only in terms of the clause-typing feature; otherwise, the main clause interrogative contains a finite verb in C, while in the embedded version a complementiser appears. The structures are as follows:



Regarding constituent questions, German shows variation in embedded clauses but not in main clauses:

- (21) a. Wer **hat** eine Torte gebacken?  
 who has a.F cake baked.PTCP  
 ‘Who has baked a cake?’
- b. Ich weiß nicht, wer (%**dass**) eine Torte gebacken hat.  
 I know.1SG not who that a.F cake baked.PTCP has  
 ‘I don’t know who has baked a cake.’

In the main clause version, it is again a finite verb that appears in C; in embedded clauses, *dass* is inserted in many non-standard varieties (doubly filled COMP pattern) but not in the standard variety. The structures are as follows:



Relative clauses in South German show a doubling pattern involving relative pronouns and complementisers, with a general preference for the complementiser strategy (see the data in section 3.3 above; for a detailed analysis, see Bacskai-Atkari 2020; 2021). As should be evident, doubly filled COMP patterns are in line with the general syntactic paradigm in German (see the observation of Pittner 1995); the same applies to Germanic languages in general (whereby English is slightly exceptional regarding its declaratives). In most patterns, there is both an overt head element and an overt specifier element. Specifier elements either move due to an unspecified [edge] feature (Fanselow 2004a) or they occupy this position because they are clause-typing operators that have to take scope over the clause. Head elements are either base-generated in C

(complementisers) or they undergo movement to check off [u-fin] on TP. In any case, doubling simply arises because both elements happen to be overt; however, there is no requirement or prohibition per se on doubling as such.

This has two consequences. First, there is no reason to postulate a rule specifically related to COMP regarding doubling: doubly filled COMP patterns can be analysed in the same way as V2 patterns (or as main clause *wh*-interrogatives in English). It follows that any analysis not postulating multiple projections for V2 (or for main clause *wh*-interrogatives in English) does not need to do so for doubly filled COMP patterns either. The lack of doubling patterns arises under specific conditions, namely when either of the elements is zero (with the exception of embedded declaratives, where there is no reason to postulate a clause-typing operator in the specifier). The difference between DFC varieties and non-DFC varieties ultimately lies in whether zero complementisers are allowed in the relevant constructions; in this sense, the difference can be traced back to a simple lexical difference (rather than assuming a difference in syntactic projections or a filter). The observed word order arises naturally: the head element is always directly merged with the TP (and it projects further), while the specifier element is merged afterwards (and it does not project).

Second, complementisers like *that* in doubly filled COMP patterns are primarily related to finiteness, just like verbs and auxiliaries that move to C; at any rate, it can be excluded that the complementiser in patterns like (22b) would encode declarative Force, as the clause is typed as interrogative. It follows that in a cartographic model, *that* should be located in Fin and definitely not in Force, which raises the problems discussed in section 3.1. It can be concluded that, as far as this point is concerned, the cartographic template fails to provide descriptive adequacy. In the alternative approach proposed here, the same problem does not arise, as the feature [fin] is not positionally bound.

## 4.2 Revisiting declaratives

In section 3.1, it was pointed out that postulating two separate *that* items, one as Force and one as Fin, would be still problematic for the cartographic approach, as the availability of the Fin head *that* would go against the assumptions regarding topicalisation and declaratives. Once a feature-based approach is adopted, the question arises how declaratives can be analysed in the first place: while the [fin] specification is straightforward, the encoding of declarative Force is not. Importantly, as discussed in section 4.1 above, varieties of West Germanic differ regarding the availability of *that* as a mere finiteness marker (and in turn regarding the availability of zero complementisers). It follows that the two groups of varieties differ in the feature specifications of the element *that*.

As far as non-DFC varieties are concerned (such as the standard varieties of West Germanic languages), we can assume that the complementiser *that* is specified as declarative, or as [-wh], since it cannot occur in embedded interrogatives at all. As for DFC varieties, the occurrence of *that* in embedded constituent questions suggests that it is underspecified for the same feature and thus compatible with both declaratives and interrogatives. Consider now the following examples:

- (23) a. Peter says [**that** Martha is tired].  
b. \*Peter wonders [**that** Martha is tired].

For non-DFC varieties, the difference between (23a) and (23b) can be explained simply by stating that since the complementiser *that* is specified as a declarative complementiser, it is incompatible with the necessary interrogative specification of the subordinate clause in (23b),

while it successfully types the subclause as declarative in (23a). For DFC varieties, the underspecification of *that* means that in (23a), no overt clause-typing element is present in the subordinate clause. Notice, though, that the same applies to main clause declaratives, which are not morphosyntactically marked either: declaratives constitute the unmarked clause type and they need not necessarily be morphosyntactically marked (as also shown by the fact that a zero complementiser is sufficient in many cases in examples like (23a) above). On the other hand, embedded interrogatives are regularly marked morphosyntactically: as this condition is not met in (23b), the sentence is not grammatical. This contrasts with the doubly filled COMP patterns mentioned above, where an overt *wh*-element occurs and marks clause type overtly.

In other words, the proposed analysis sketched out in section 4.1 can be carried over to non-doubling cases as well, without the necessity of postulating distinct Force and Fin heads: the differences observed in the feature specification hold not between distinct positions in the template but rather across varieties (DFC versus non-DFC), so that a single lexical item is sufficient in each variety, ultimately leading to a more economical setup.

### 4.3 Topics

As discussed in section 3, especially in section 3.4, one of the most attractive properties of the cartographic model would be to account for ordering restrictions across constructions and based on the independently motivated lexical properties of the individual elements. On a descriptive level, this approach faces some ordering problems, though; consider again the following examples:

- (24) a. They discussed a certain model, but they didn't know [**which model that** they discussed].  
(Baltin 2010: 331, ex. 1)
- b. I think [**that next year** John will win the prize].  
(following Rizzi 1997: 313)

In (24a), *that* follows the *wh*-element; in (24b), *that* precedes a topic. This is problematic for the cartographic template as (24a) suggests an analysis as Fin and (24b) suggests an analysis as Force. For the feature-based account proposed here, (24a) is unproblematic as a single CP can host the highlighted elements only in this order; the question is rather how to account for (24b). If we were to assume a single CP hosting the topic in the specifier position and the complementiser in the head, we would expect the exact opposite order, namely *\*next year that*, which is clearly ungrammatical. In other words, if the topic (*next year*) is located in a CP-projection, we would expect the head to be filled by *that*, which is clearly not the case. Notice also that the auxiliary is located in T: unlike in main clause interrogatives, T-to-C movement is not triggered.

Since there are no indicators for the topic to be located in a specifier of a clause-typing projection, I assume that topics appearing to the left of the TP are actually adjoined to TP rather than move to a [Spec,CP] or a [Spec,TopP] position on the left periphery proper. As put by Fanselow & Lenertová (2011: 190), “unaccented XPs generated in *vP* can be scrambled and adjoined to any segment of TP, so they can easily reach the leftmost point of TP in an intermediate scrambling step”. Accordingly, various adverbials can appear adjoined to TP (see also Fanselow 2002). Given this, the ordering in (24b) falls out naturally, as the complementiser is in C and the topic is left-adjoined to TP:

- (25) [<sub>CP</sub> that [<sub>TP</sub> next year [<sub>TP</sub> John will win the prize]]]

Regarding topicalisation, the ordering restrictions and possibility with respect to complementisers arise primarily due to the possible positions where topics can be adjoined; adjunction to TP leads to the order observed in (24b). Given this, the feature-based approach does not face a problem regarding topicalisation, as this operation is taken to be distinct from operator movement driven by clause-typing features. In fact, this assumption also predicts that multiple relative positions should be available for topics and that they should be iterable, since the same properties hold for adjunction more generally.

## 5 More on multiple CPs

The last question to be addressed in the present paper is whether the “classical” CP (consisting of a specifier and a head) is always sufficient. As mentioned already in the introduction, there seem to exist certain constructions where this is evidently not the case (setting aside information-structural movement).

The approach outlined in the previous section does not exclude this; on the contrary, as the analysis relies on the way merge operates, it is actually expected that more complex structures can arise than a single CP, in case there are more features and more lexical elements to be located in a single clausal left periphery. Merging clause-typing elements is constrained by semantic properties and not by a pre-given template (either a cartographic one or a single CP).

One such issue concerns the split of [Q] and [wh] in Dutch dialects (and beyond, see Bayer 2004), as illustrated below:

- (26) Ze weet **wie of dat** hij had willen opbellen  
 she knows who if that he had want call  
 ‘She knows who he wanted to call.’  
 (Bayer 2004: 66, citing Hoekstra 1993)

For these cases, either multiple specifiers (Bacskai-Atkari 2018a) or a double CP is necessary, since the two interrogative elements cannot be taken to be in a single specifier. Note that constructions like (26) contradict the template in (8), as proposed by Rizzi (2004): *wie* is a *wh*-element presumably located in FocP and *of* is the regular polar interrogative complementiser, to be located in Int in Rizzi’s model (and *dat* is presumably in Fin, with the same considerations applying as for English *that* in doubly filled COMP structures). However, in Rizzi’s model IntP is higher than FocP, so that the expected order would be \**of wie dat*. Once more, the cartographic template proves to be descriptively inadequate. The attested ordering follows directly from the semantics: in constituent questions, [wh] has to take scope over [Q], see Bayer (2004).

A second construction that clearly involves a left periphery larger than a single CP is comparatives: in these cases, a double CP is necessary due to comparative semantics (Bacskai-Atkari 2014; 2016; 2018c). In varieties like Standard English and Standard German, only the canonical (high) comparative complementiser is visible (*than* and *als*, respectively), but patterns like the ones in (27) arise in non-standard varieties:

- (27) a. %Mary is taller **than how tall** Susan is.  
 b. %Ich bin gresser **als wie** du  
 I am taller than as you  
 ‘I am taller than you.’ (Upper Saxonian)  
 (Jäger 2018: 292, ex. 494b, citing Weise 1918: 174)

Again, such examples constitute a problem for the template in (8): while Rizzi (1997) takes comparative to be a clause type, suggesting that *than/als* is in Force, the position of the comparative operator (*how*) or the lower complementiser (*wie*) is more problematic as these elements are closest to relative markers (Bacskai-Atkari 2016) and as such should be located in ForceP themselves, which would produce the wrong word order. Doubling rather comes from semantics directly: the higher CP is headed by an element lexicalising the maximality operator, which has the comparative operator (overt or covert) in the lower CP in its scope.

The third construction where a single CP clearly does not suffice involves hypothetical comparatives, mentioned already in the introduction:

- (28) a. Mary speaks **as though** she were afraid.
- b. Tilla läuft, **als wenn** sie um ihr Leben liefe.  
 Tilla runs than if she for her.N life run.SBJV.3SG  
 ‘Tilla is running, as if she were running for her life.’  
 (Jäger 2010: 469)

It would be at least counter-intuitive to treat the first complementisers (*as/als*) to be a specifier element, since independent evidence suggests that they are clearly complementisers. The combination of two distinct CPs is predicted by semantics: these structures involve the combination of a conditional and a comparative clause (Bacskai-Atkari 2018b). Again, the cartographic template is not particularly insightful for these cases: both elements would presumably be categorised as Force on their own, which would lead to the impossibility of these combinations according to the template. Just as in the cases above, the ordering restrictions can be derived from semantics.

The data discussed briefly in this section strongly suggest that a single CP is not sufficient to cover all combinations in the left periphery; in this respect, cartographic approaches make a relevant point. However, the same data also refute the idea that the cartographic template could account for them.

## 6 Conclusion

The present paper examined doubly filled COMP effects in Germanic and the evidence they provide for various analyses of the CP-domain of the clause, concentrating on the question to what extent these approaches achieve descriptive and explanatory adequacy.

A simple COMP projection is not even descriptively adequate: in particular, this would rule out complex *wh*-phrases (such as *which train*) to appear in the left periphery. A single CP can successfully handle this problem and it is, as we saw, sufficient for ordinary doubly filled COMP patterns. However, it fails to account for more complex combinations that straightforwardly require more layers: for this reason, a single CP approach fails to meet descriptive adequacy.

Regarding cartographic approaches, one obviously attractive property is that co-occurrences and ordering restrictions should be traced back to a unified template. However, doubly filled COMP patterns, as well as some other combinations, point to the conclusion that the template either fails to meet descriptive adequacy or it requires a large set of additional assumptions that are not independently motivated. This latter scenario is evidently problematic for explanatory adequacy: at best, then, the cartographic template can achieve description.

These facts point to the conclusion that no pre-given template (COMP, single CP or a cartographic template) can account for the observed phenomena properly; instead, a flexible CP

based on features seems to be desirable. This proposal takes into account more general properties of the given lexical elements (as seen in the syntactic paradigm) and may explain why certain elements are preferably present, leading to doubling effects. It was also argued that the proposed lexical differences between surface-similar complementisers are not ad hoc differences between constructions but they differ rather across dialects, so that a single lexical entry is sufficient for a single variety. Further, it was pointed out that certain operations, such as topicalisation, are not indicative of positional differences in the left periphery but they constitute syntactic operations distinct from movement associated with clause typing.

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