The syntax of functional left peripheries

Clause typing in West Germanic and beyond

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Für Ralf

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1 Introduction

1.1 Aims and scope

The core problem to be dealt with in this book is the syntax of functional left peripheries in West Germanic. In particular, I will concentrate on how sentence types are marked at the leftmost edge of the clause and how the presence of multiple visible markers can be accounted for. Regarding syntactic structure, I adopt a minimalist framework (as proposed by Chomsky 2001, 2004, 2008, among others), according to which syntactic structures are derived by merge (external or internal). Further, in line with the principles of mainstream generative grammar, I assume that the derivation of structures is constrained by economy, and hence the number of projections, as well as of syntactic processes, is as minimal as possible.

The study of various issues associated with the left periphery of the clause has always been central in generative grammar and it continues to be one of the most well-researched areas of syntax. Among other functions, left peripheries are associated with defining the type of the clause, and they are also responsible for establishing connections between clauses that make them into complex sentences. Apart from purely syntactic concerns, left peripheries raise a number of questions that make this domain extremely relevant for the interfaces of syntax, referred to as PF (Perceptible Form or, more traditionally, Phonological Form[1]) and LF (Logical Form, indicating the semantic component) in standard generative grammar. The interaction with the interfaces becomes evident when considering issues related to the left periphery beyond clause typing proper: certain phrases appear to be located in the left periphery due to their specific information structural status. Apart from that, clausal ellipsis is also related to various functional heads (see Merchant 2001).

[1]Since generative theory was initially limited to the study of oral languages, the term "Phonological Form" was established, and many properties of this interface reflect the properties of oral languages, even though sign languages also evidently have an interface connected to their perceptible form. In this sense, as proposed by Sigurðsson (2004), the term "Perceptible Form" is more appropriate as it does not treat sign languages as secondary. See also van der Hulst (2015) for the distinction of the two. In this book, I will restrict myself to examining selected oral languages, mostly from Germanic.

It is most probably this diversity of problems that led to a significant interest in the left periphery of the clause in generative grammar already in the 1970s, most notably in Chomsky & Lasnik (1977), followed by the well-known cartographic enterprise from the 1990s onwards, especially by Rizzi (1997, 2004) and various analyses with more or less shared concerns: for example, Sobin (2002), Poletto (2006), Bayer & Brandner (2008), Brandner & Bräuning (2013). I will both rely on these previous findings and critically evaluate them. In addition, while many questions have indeed been answered by previous accounts, there are several others that have remained unresolved and have not received an adequate explanation which would hold both cross-linguistically and specifically for West Germanic as well. In addition, I assume that any proposal should follow from general principles of the grammar rather than by applying construction-specific mechanisms. In other words, the specific configuration of the left periphery of one construction should be comparable to the left periphery of other clause types within a single model by applying predictable properties of the grammar. The aim of this work is to provide such an analysis and to enable a better understanding of functional left peripheries.

In the following, I will briefly provide an overview of the most important issues concerning functional left peripheries and clause typing in West Germanic, and then I will provide a concise outline of the problems to be dealt with in this book.

1.2 Functional left peripheries

Clauses can fulfil various functions in discourse; in canonical cases, the form of the clause is indicative of its discourse function. Consider the following examples:

(1)   a.   Ralph is interested in poetry.
       b.   Is Ralph interested in poetry?

In (1a), we have a statement and the type of the clause is declarative. By contrast, (1b) is a question and the type of the clause is interrogative. In the first case, a proposition (p) is true; in the second case, the truth of the proposition is asked (p or $\neg p$). The two utterances differ in their form. The declarative sentence represents the neutral, unmarked word order in English, which is SVO: crucially, the subject (*Ralph*) precedes the aspectual auxiliary (*is*). In the interrogative clause, these two elements have exactly the opposite order: the aspectual auxiliary has been moved to the front of the clause.

In many cases, the form of an utterance is not indicative of its discourse function in a straightforward way. Consider the example in (2):

(2)   Could you open the window?

In this case, the speaker does not ask the addressee about the truth of the proposition but expresses a request: a simple *yes* answer, which is satisfactory in (1b), would not be pragmatically appropriate in (2) if it is not accompanied by the speaker also opening the window. The pragmatic function of sentences is thus not in a one-to-one correspondence with the observed grammatical form; these issues are examined extensively in speech act theory, going back to the work of Austin (1962). As the present book is concerned with the formal properties, especially the syntax of functional left peripheries and clause typing, these issues will not be addressed here.

The two clauses in (1) differ not only in their word order but also regarding their intonation: declarative clauses have falling intonation, while interrogative clauses have rising intonation. However, there are discrepancies in this respect as well; consider:

(3)   Ralph is interested in poetry?

The example in (3) is a declarative question: formally the clause is declarative but it has a rising (interrogative) intonation; regarding its function, it constitutes a special type of question which does not ask about the truth of a proposition but rather asks for confirmation or expresses surprise. Again, these cases will not be discussed in the present thesis as they are not immediately relevant to the specific syntactic issues to be examined.

The clauses in (1) are main clauses. Clause types are identified in slightly different ways in embedded clauses such as (4):

(4)   a. I think [**that** Ralph is interested in poetry].
       b. I wonder [**if** Ralph is interested in poetry].
       c. It is important [**for** Ralph to study Byron].

The highlighted complementisers determine the type of the embedded clause: (4a) and (4c) are declarative, while (4b) is interrogative. Apart from clause type, complementisers can also determine whether the clause is finite, as in (4a) and (4b), or non-finite, as in (4c). Finiteness, as determined by the C head, has an effect on whether the clause contains a tensed element (e.g. *is* in (4a) and (4b) above) above or not (in which case, as in (4c), English uses the element *to* and

the infinitival form of the verb). The incompatibility of finite complementisers with a non-finite clause, and vice versa, is illustrated in (5) below:

(5)　a.　*I think [for Ralph is interested in poetry].

　　　b.　*It is important [that Ralph to study Byron].

Likewise, the type of a complement clause must also be compatible with the lexical properties of the matrix verb: verbs like *think* select for declarative complements, while verbs like *wonder* select for interrogative complements. If these sectional restrictions are violated, the result is ungrammatical:

(6)　a.　*I think [if Ralph is interested in poetry].

　　　b.　*I wonder [that Ralph is interested in poetry].

In other words, it is evident that the left periphery of the clause has a dual function. On the one hand, it connects the clause to the matrix clause (in the case of embedded clauses) or to the discourse (in the case of root clauses). On the other hand, it has an impact on the internal properties of the clause itself.

Besides complementisers, the CP is known to host other elements as well, such as *wh*-phrases in interrogative clauses:

(7)　a.　I wonder [**who** Mary will invite].

　　　b.　I asked Louisa [**which city** she was travelling to].

In (7a), the *wh*-element consists of a single operator (*who*), while in (7b) the *wh*-phrase is visibly phrase-sized, containing not only the operator *which* but also a lexical element, the NP *city*. This indicates that *wh*-phrases can occupy only a phrase position, namely [Spec,CP], and not C. Further, since they also fulfil a role in the TP, that is, they are arguments, it is assumed in generative grammar that they undergo movement from a clause-internal position to the CP-domain. This is illustrated in (8) below:

(8)　a.　I wonder [**who** Mary will invite ~~who~~].

　　　b.　I asked Louisa [**which city** she was travelling to ~~which city~~].

In line with current minimalist theory, I assume that movement involves the copying of the moved constituent: by default, the higher copy is realised phonologically at the PF interface, while PF eliminates lower copies of a movement chain. In English, *wh*-elements move to the left periphery in interrogatives, leaving the higher copy in the CP overt. Operators moving to the left periphery thus

differ from complementisers not only with respect to their relative position in the CP but also in that they land there via movement, while complementisers are base-generated in the left periphery.

Relative clauses also contain operator movement:

(9) a. This is the linguist [**who** Mary will invite].
     b. The candidate [**who** we voted for] has already left the city.

Relative clauses differ from interrogative clauses in that they modify a nominal head, referred to as the head noun, while embedded interrogatives are complements of a matrix predicate (and interrogative clauses can also be root clauses). Again, relative operators undergo leftward movement:

(10) a. This is the linguist [**who** Mary will invite ~~who~~].
      b. The candidate [**who** we voted for ~~who~~] has already left the city.

Such operators (both in interrogative and relative clauses, and beyond) move to the left periphery because they have a function regarding clause typing: cases like (7) are identifiable as interrogative clauses precisely because there are overt interrogative elements in the left periphery, there being no distinctive interrogative intonation or word order changes (such as subject–auxiliary inversion) in embedded clauses.

1.3 The problems to be discussed

1.3.1 The model

In current minimalist theory, the Complementiser Phrase (CP) is responsible for typing clauses and for encoding finiteness in finite clauses. Apart from complementisers, as pointed out in Section 1.2 above, various operators can appear in this domain. Consider:

(11) a. I wonder **if** Ralph has arrived.
      b. I wonder **whether** Ralph has arrived.

In (11a), *if* is a complementiser and it types the subordinate clause as interrogative. In (11b), there is no overt complementiser but the operator *whether* is present. In such cases, it is assumed that a zero complementiser types the clause (since the CP can be projected only by a C head, which in this case is not visible,

though; see Bacskai-Atkari 2020c: 137–138 for discussion), yet a sound model of the CP-periphery must also clarify the role of the overt operator in (11b).

On the other hand, the CP is not restricted to hosting a single overt element: depending on the particular construction and the dialect, multiple elements may appear in the CP-domain. This is illustrated by (12a) for non-standard English and by (12b) for Norwegian (Bacskai-Atkari & Baudisch 2018: 175):

(12)   a.   % I wonder **which book that** Ralph is reading.

        b.   Peter spurte   **hvem som** likte bøker.
           Peter asked.3sg who   that liked books
           'Peter asked who liked books.'

A proper formal account of the CP-domain must be able to condition when multiple overt elements are allowed and when not. Further, it must be clarified whether the appearance of several overt elements requires multiple CP projections, and in cases where it does, how word order restrictions can be modelled. The generation of multiple functional layers is in principle possible, yet it should be appropriately restricted to exclude the generation of superfluous layers that are empirically not motivated. This question is likewise relevant in cases involving a single overt C-element, since then the question arises whether and to what extent covert elements and phonologically not visible projections are present.

Apart from the exact position of various elements in the CP, their function(s) must also be addressed. For instance, interrogative complementisers regularly mark finiteness as well. Consider:

(13)   a.   I don't know **if** I should call Ralph.

        b.   I don't know **whether** I should call Ralph.

        c.   * I don't know **if** to call Ralph.

        d.   I don't know **whether** to call Ralph.

In (13a), the complementiser *if* introduces a finite embedded interrogative clause, and as the ungrammaticality of (13c) shows, it is incompatible with a non-finite clause, suggesting that it encodes finiteness apart from the interrogative property, too. By contrast, the operator *whether* is compatible with both a finite clause, see (13b), and with a non-finite clause, see (13d), indicating that the overt marking of the interrogative property is not incompatible with a non-finite clause in English. Since *whether* is not specified for finiteness, it should be clear that finiteness is specified by some other element in (13b); the question is

whether there is a separate element encoding finiteness in (13a) as well and, if so, how the restriction of *if* to finite clauses can be explained.

Finally, the function(s) of various left-peripheral elements must be clarified also because there are some non-trivial combinations in which elements seem to be largely similar, as in the non-standard German example in (14a) below:

(14)   a.   % Ralf   ist größer **als**   **wie** Maria.
             Ralph is taller   than as   Mary
             'Ralph is taller than Mary.'

       b.   Ralf   ist größer **als**   Maria.
            Ralph is taller   than Mary
            'Ralph is taller than Mary.'

       c.   % Ralf   ist größer **wie** Maria.
            Ralph is taller   as   Mary
            'Ralph is taller than Mary.'

       d.   Ralf   ist so groß **wie** Maria.
            Ralph is so tall   as   Mary
            'Ralph is as tall as Mary.'

In (14a), the elements *als* and *wie* both seem to mark the comparative nature of the clause, whereby single *als* is the comparative particle in Standard German comparatives, as shown in (14b), and single *wie* is the comparative particle in equatives, see (14c), and in certain dialects also in comparatives, see (14d). In such cases, the question is to what extent there is genuine doubling at hand and how it can be modelled.

A central issue for the theory regarding the above-mentioned constructions is how the various properties associated with clause typing are encoded in the syntax. The occurrence of multiple overt elements in the left periphery indicates some complexity and raises the question whether a single CP projection is sufficient or whether multiple projections are necessary. In this respect, cartographic approaches (starting from Rizzi 1997) have a relatively clear answer, inasmuch as they assume a designated projection (generated in narrow syntax) for each feature, which necessarily leads to multiple projections in the above cases. In turn, this kind of approach is prone to reducing analysis to description, as the observed surface patterns are restated as syntactic projections; the question in this regard is whether such models are tenable or at least favourable to more minimalist approaches. These questions will be addressed in Chapter 2.

1.3.2 Embedded interrogative clauses

In Standard English, Standard German and Standard Dutch, there is no overt complementiser with an overt interrogative operator. This is illustrated in (15) for English embedded interrogatives:

(15)   I don't know **who (*that)** has arrived.

As can be seen, the complementiser *that* is not permitted in Standard English in embedded constituent questions. This phenomenon is traditionally termed as the "Doubly Filled COMP Filter" (going back to the work of Chomsky & Lasnik 1977). By contrast, there are languages and also many West Germanic varieties that allow such patterns, as in (12) above. Further examples are given in (16) below from non-standard English (Baltin 2010: 331, ex. 1) and from non-standard Dutch (Bacskai-Atkari & Baudisch 2018: 32):

(16)   a.   % They discussed a certain model, but they didn't know **which model that** they discussed.
       b.   % Peter vroeg   **wie dat** er   boeken leuk   vindt.
            Peter asked.3sɢ who that of.them books   likeable finds
            'Peter asked who liked books.'

Such patterns are often referred to as doubling patterns, indicating that there are two overt elements in a single CP: the *wh*-phrase in the specifier and the complementiser in C. Note that this is not exceptional: the specifier of the CP and the C head can be both lexicalised overtly in main clauses, as in T-to-C movement in English interrogatives, and in V2 clauses in German and Dutch main clauses. Consider the examples for main clause interrogatives in Standard English:

(17)   a.   **Who saw** Ralph?
       b.   **Who did** Ralph see?

In this case, doubling in the CP involves a *wh*-operator in [Spec,CP] and a verb in C. T-to-C movement is visible by way of *do*-insertion in (17b), though not in (17a): in principle, one might analyse (17a) as not involving the movement of the verb to C, but the CP is clearly doubly filled in (17b).

Similarly, in German (and Dutch) V2 declarative clauses a verb moves to C, while another constituent moves to [Spec,CP] due to an [edge] feature (see Thiersch 1978, Fanselow 2002, 2004a,b, Frey 2005, den Besten 1989). Consider:

(18) a. **Ralf hat** morgen   Geburtstag.
         Ralph has tomorrow birthday
         'Ralph has his birthday tomorrow.'

   b. **Morgen   hat** Ralf   Geburtstag.
         tomorrow has Ralph birthday
         'Ralph has his birthday tomorrow.'

As can be seen, the fronted finite verb is preceded by a single constituent in each case, and since the first constituent is not a clause-typing operator in either case, it is evident that doubling in the CP in V2 clauses is independent of the interrogative property.

It is therefore clear that the "Doubly Filled COMP Filter" should be more restricted in its application domain. In principle, one could say that an operator and a complementiser with largely overlapping functions are not permitted to co-occur in standard West Germanic languages, or that the Doubly Filled COMP Filter should be seen as some kind of an economy principle. Still, the problem remains that the notion of the Doubly Filled COMP Filter implies that the C head and [Spec,CP] position would be filled without the Filter, and the Filter is responsible for "deleting" the content of C.

Regarding this, at least two major questions arise. First, it should be clarified what requirement is responsible for filling C even in the presence of an overt operator in [Spec,CP], as in (16). Second, the question is what kinds of elements may appear in C: in particular, if elements other than complementisers can satisfy the requirement of filling C, then the deletion approach is probably mistaken.

In addition, there is a theoretical problem with the notion of the Filter, which arises from a merge-based, minimalist perspective, while it is less problematic in X-bar theoretic terms. X-bar theoretic notions can at best taken to be descriptive designators that are derived from more elementary principles, in the vein of Kayne (1994) and Chomsky (1995).[2] Under this view, the position of an element (specifier, head, complement) is a result of its relative position when it is merged with another element, and which element is chosen to be the label. By contrast, the notion of the Doubly Filled COMP Filter, as applied to a CP (as in Baltin 2010), implies that a phrase is generated with designated, pre-given head and specifier positions, and that there are additional rules on whether and to what extent they can be actually "filled" by overt elements. In a merge-based account, there are no literally empty positions, as no positions are created independent of merge: zero heads and specifiers reflect elements that are either lexically zero or have

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[2]Note that I will also use X-bar structures for representational purposes in this book.

been eliminated by some deletion process (e.g. as lower copies of a movement chain or via ellipsis). In other words, Doubly Filled COMP effects should be accounted for in a way other than referring to a pre-given XP. These questions will be addressed in Chapter 3.

1.3.3 Relative clauses

West Germanic languages show considerable variation in terms of elements introducing relative clauses. There are two major strategies: the relative pronoun strategy and the relative complementiser strategy. In present-day Standard English, both of these strategies are attested. Relative pronouns are illustrated in (19) below:

(19)   a. I saw the woman **who** lives next door in the park.
       b. The woman **who/whom** I saw in the park lives next door.
       c. I saw the cat **which** lives next door in the park.
       d. The cat **which** I saw in the park lives next door.

As can be seen, relative pronouns show partial case distinction and distinction with respect to whether the referent is human or non-human. In particular, *who/whom* is used with human antecedents, as with *the woman* in (19a) and (19b); the form *who* can appear both as nominative and as accusative, while the form *whom* used for the accusative is restricted in its actual appearance (formal/-marked). With non-human antecedents, such as *the cat* in (19c) and (19d), the pronoun *which* is used, which shows no case distinction. Note that apart from human referents, *who(m)* is possible with certain animals: these are the "sanctioned borderline cases" (see Herrmann 2005: 41, quoting Quirk et al. 1985). On the other hand, non-standard dialects allow *which* with human referents, as illustrated in (20) below (Herrmann 2005: 42, ex. 4a):

(20)   […] And the boy **which** I was at school with […]
       (*Freiburg English Dialect Corpus* Wes_019)

At any rate, English relative pronouns are formed on the *wh*-base and no longer on the demonstrative base: note that this is historically not so, and the present-day complementiser *that* was reanalysed from a pronoun, while the *wh*-based relative operators appeared only in Middle English (van Gelderen 2009).

Accordingly, the complementiser *that* constitutes the second major strategy:

(21)   a. I saw the woman **that** lives next door in the park.

     b. The woman **that** I saw in the park lives next door.

     c. I saw the cat **that** lives next door in the park.

     d. The cat **that** I saw in the park lives next door.

The complementiser *that* is not sensitive to case and to the human/non-human distinction, which follows from its status as a C head.

Given the availability of two strategies, a number of questions arise regarding their distribution. First, while it seems logical that the two strategies can be combined, doubling, as mentioned above, is less likely to appear in relative clauses than in embedded interrogatives, which raises the question what restrictions apply here. Second, as also mentioned above, there seems to be a preference for the complementiser strategy in West Germanic varieties that have a choice in the first place: it should be investigated why this should be so and why relative operators still exist even in dialects that have the complementiser strategy. Third, apart from their syntagmatic distribution (combinability), the paradigmatic distribution of the two strategies must likewise be examined, that is, whether the individual strategies can relativise all functions and how potential differences correlate with the featural properties of the respective items. These questions will be addressed in Chapter 4.

1.3.4 Embedded degree clauses

Embedded degree clauses fall into two major types: degree equatives, also called comparatives expressing equality, as given in (22a), and comparatives expressing inequality, as given in (22b):

(22)   a. Ralph is as tall **as** Mary is.

         b. Ralph is taller **than** Mary is.

In (22a), the subclause introduced by *as* expresses that the degree to which Mary is tall is the same as to which Ralph is tall, while in (22b) the subclause introduced by *than* expresses that the degree to which Mary is tall is lower than the degree to which Ralph is tall.

The comparison constructions presented in (22) above are instances of degree comparison: there is one degree expressed in the matrix clause and another one expressed in the subclause. The matrix degree morpheme is *as* in degree equatives and it selects an *as*-clause, while the matrix degree morpheme in degree comparatives is *-er* (or *more*, which is actually a composite of *-er* and *much*, see Bresnan 1973, Bacskai-Atkari 2014c, 2018c). However, it is possible to have comparison without degree; consider:

(23) a. Mary is tall, **as** is her mother.

  b. Mary is glamorous **like** a film-star.

  c. Farmers have other concerns **than** the farm bill.

  d. % Life in Italy is different **than** I expected.

In these cases, there is obviously no matrix degree element. The sentences in (23a) and (23b) express merely similarity with respect to the property denoted by the adjective; in (23b), the subclause is introduced by *like* and not by *as*, a further difference from degree equatives. Given the availability of non-degree equatives, Jäger (2018: 35) suggests that comparison constructions can be grouped into three major categories: non-degree equatives, degree equatives, and comparatives; these constitute a markedness hierarchy in this order (non-degree equatives being the least marked). However, constructions like (23c) and (23d) indicate that there is in fact a fourth category as well: these are non-degree comparatives expressing difference. This category seems not to be productive as the availability of the *than*-clause is dependent on the presence of a particular element expressing difference in the matrix clause: the word *other* or, at least in American English, the adjective *different* are potential candidates.

While the patterns in (22) suggest a relatively simple left periphery consisting of a single CP at first sight, further data indicate that comparatives regularly demonstrate doubling, similarly to the German pattern given in (14a) above, which seems to be present at least underlyingly in comparatives proper in all cases, while equatives may indeed have a single CP in the subclause. Further, the left periphery of degree clauses is also relevant in terms of polarity marking. In English, both degree equatives and comparatives are negative polarity environments, as illustrated by the following examples containing the negative polarity items *any* and *ever*:

(24) a. Sophia is as nice as **any** other teacher in the school.

  b. Sophia is nicer than **any** other teacher in the school.

  c. Museums are as popular as **ever** before.

  d. Museums are more popular than **ever** before.

Negative polarity items are licensed in other negative polarity contexts (cf. Klima 1964) such as interrogatives, clausal negation and conditionals, but not in affirmative clauses (Seuren 1973: 531, ex. 11):

(25) a. * **Any** of my friends could **ever** solve those problems.

b. Could **any** of my friends **ever** solve those problems?

c. At no time could **any** of my friends **ever** solve those problems.

d. If **any** of my friends **ever** solve those problems, I'll buy you a drink.

While the data in (24) suggest that English is symmetrical regarding negative polarity across the two major types of comparison clauses, German shows an asymmetric pattern: comparatives but not equatives have negative polarity:

(26) a. *Museen   sind so beliebt   wie **jemals** zuvor.
        museums are   so popular how ever   before
        'Museums are as popular as ever before.'

  b. Museen   sind beliebter   als **jemals** zuvor.
        museums are   more.popular as ever   before
        'Museums are more popular than ever before.'

The data point to the conclusion that the role of the left periphery in comparatives extends to marking polarity, not in terms of designated projections but as part of the featural makeup of the individual projections that are present in the derivation anyway due to independent clause-typing and semantic properties. These issues will be investigated in Chapter 5.

1.3.5 Information structure and ellipsis

Certain constituents may undergo topicalisation or focalisation involving movement to the left periphery of the clause. Consider the following examples taken from Rizzi (1997: 285, ex. 1 and 2):

(27) a. [Your book]$_i$, you should give t_i to Paul (not to Bill).
  b. [YOUR BOOK]$_i$ you should give t_i to Paul (not mine).

The construction in (27a) illustrates topicalisation, and the one in (27b) focalisation. Apart from interpretive differences, they crucially differ in their intonation patterns: a topic is separated by a so-called "comma intonation" from the remaining part of the clause (the comment), while a focus bears focal stress and is thus prominent with respect to presupposed information (see Rizzi 1997: 258).

Such movement operations are clearly instances of A-bar movement, and since they are apparently not driven by clause-typing features either, they raise the question what triggers movement in the first place. The cartographic model proposed by Rizzi (1997), adopted by others such as Poletto (2006), proposes that

leftward movement in these cases targets designated left-peripheral positions: TopP and FocP. Movement is driven by specific features making reference to information-structural properties: this operator-like feature agrees with the functional head (Top or Foc). In essence, this kind of movement is supposed to be similar to ordinary operator movement involving *wh*-operators or relative operators. Such an assumption is problematic, though: while [wh] and [rel] features are lexically determined, [topic] and [focus] features are obviously not. Taking the examples in (27) above, in both cases the entire phrase *your book* is topicalised or focussed, and the phrase as such, being compositional, is not part of the lexicon. This indicates that features like [topic] and [focus] would have to be added during the derivation. In addition, even if one were to assume that a lexical element like *Mary* can be equipped with information-structural features in the lexicon (contrary to generally accepted views about the lexicon and lexical features, cf. Neeleman & Szendrői 2004 and den Dikken 2006), this would leave us with various lexical entries for *Mary*: a neutral entry (not specified for any information-structural category), a focussed one, a topicalised one, not to mention possible fine-grained categories such as contrastive topic or aboutness topic.

Moreover, foci (and topics) can occur in non-fronted positions. This is illustrated by the following examples taken from Fanselow & Lenertová (2011: 172, ex. 6c and 6d), both answering the question *What happened?*:

(28)   a. **Eine   LAWINE** haben   wir gesehen!
           a.F.ACC avalanche have.1PL we seen
           'We saw an AVALANCHE!'

       b. Wir haben   **eine   LAWINE** gesehen!
           we   have.1PL a.F.ACC avalanche seen
           'We saw an AVALANCHE!'

This kind of optionality obviously contrasts with the behaviour of ordinary *wh*-movement (and relative operator movement) in German, which always targets the CP-domain. Note also that there are certain fronted elements in the German CP (occupying the "first position") that clearly do not correspond to information structural categories such as topic and focus. Consider the following examples from Fanselow & Lenertová (2011: 173, ex. 7a):

(29) **Wahrscheinlich** hat ein   Kind einen   Hasen gefangen.
      probably   has a.N.NOM child a.M.ACC rabbit caught.PTCP
      'A child has probably caught a rabbit.'

In this case, the adverb *wahrscheinlich* 'probably' is a sentential adverb that evidently lacks a discourse function such as topic or focus.

These considerations indicate that movement is not always driven by lexical features; if so, this has consequences regarding the way functional left peripheries are organised.

As mentioned above, clausal ellipsis is also closely connected to the issue of functional left peripheries. The prototypical case for this is sluicing, demonstrated in (30) below:

(30)   Someone phoned grandma but I don't remember **WHO** ~~phoned grandma~~.

The elliptical clause is embedded in a clause conjoined with another main clause: this clause (*someone phoned grandma*) contains the antecedents for the elided elements in the elliptical clause. The elliptical clause contains a single remnant, the subject *who*, which bears main stress: it contains non-given information. Ellipsis is licensed as all elided information is recoverable. The assumption regarding the implementation of ellipsis in grammar (Merchant 2001: 55–61 and Merchant 2004: 670–673) is that there is an ellipsis feature, [E]. This is merged with a functional head (such as C) and the complement of this head is elided. The [E] feature is specified as having either an uninterpretable [wh] or an uninterpretable [Q] feature, ensuring that it occurs only in (embedded) questions. As shown by van Craenenbroeck & Lipták (2006) and Hoyt & Teodorescu (2012), this particular syntactic condition is highly unsatisfactory as many languages allow canonical ellipsis processes such as sluicing also from non-interrogative projections, including relative clauses and projections hosting foci. Rather, it seems that the [E] feature is not tied to a specific projection or features; indeed, Merchant (2004) also proposes that a functional projection, FP, can be headed by [E] in fragment answers, illustrated in (31) below:

(31)   A: Who phoned grandma?
       B: **Liz** ~~phoned grandma~~.

In this case, the remnant (*Liz*) is the subject and the rest of the clause is elided. Since in English the subject DP in declarative clauses is located in [Spec,TP] and not in [Spec,CP], the ellipsis mechanism assumed for sluicing (the [E] feature located in C) does not automatically carry over. As Merchant (2004) assumes, there is an unspecified FP projection hosting the remnant in its specifier, landing there by movement. In this vein, it seems that leftward movement can target functional projections due to reasons other than clause-typing. This raises the

question whether such functional projections may not ultimately have a more substantial role in the architecture of a clause than merely enabling ellipsis.

Questions related to information structure and ellipsis, particularly regarding their relevance for the proposed model, will be addressed in Chapter 6.

1.4 Methodology

This book aims at examining the syntax of functional left peripheries in West Germanic from a generative perspective, applying the minimalist framework in the analysis of syntactic structure. The main focus lies on the analysis of English and German, and to a lesser extent on Dutch. As language variation is a central issue, other Germanic languages will also occasionally be considered, as well as other European languages (mostly Romance and Slavic, and to some extent also Greek and Uralic). Language comparison can help to understand the cross-linguistic status of the West Germanic patterns: beyond that, however, the present investigation cannot carry out a more detailed analysis of these languages.

Since the clausal left periphery is a well-studied area of linguistics (see Section 1.1), part of the investigation is dedicated to the analysis of already known patterns, also taken to be a basis for further inquiries. In addition, however, the book presents novel empirical data gained via corpus studies, questionnaires, and grammaticality judgement experiments. Regarding this, it must be kept in mind that the individual West Germanic languages (and their varieties) under scrutiny differ considerably in terms of how accessible the relevant data are and to what extent they have been discussed in the literature.

As far as historical data are concerned, the present investigation relies on parsed corpora to identify which patterns were used in the given periods and what their frequency is. Regarding English, the Michigan Corpus of Middle English Prose and Verse was used; in addition, I compiled a database on relative clauses in the King James Bible and its modernised version. Regarding German, the DDD Referenzkorpus Altdeutsch was used. For present-day dialect data, the SyHD atlas on Hessian dialects and the SynAlm database on Alemannic dialects have been used.

As part of my project (BA 5201/1) on functional left peripheries, I obtained data from various Germanic languages (Dutch, Swedish, Danish, Norwegian, Icelandic) via an online questionnaire; this allows for a direct comparison of the languages involved. For each language, two informants were gathered who translated sentences from English as well as answered specific questions about the

combinability of certain elements. The questionnaire contains 147 questions altogether. The results have been published in an open access database under Bacskai-Atkari & Baudisch (2018) and will be referenced throughout this work.

Finally, the book also presents the results of a grammaticality judgement experiment (see Schütze 2016 on the methodology) on elliptical comparative clauses in German. This allows for a more fine-grained analysis than the mere grammaticality judgements available thus far in the literature.

1.5 Previous work

The present book builds on results gained in my research projects and partly published in earlier papers; these works will be referenced in the relevant chapters as well. In this section, I would like to point out how the present investigation relates to and differs from these articles, to provide better orientation for the reader in this respect.

Chapter 2 summarises the most important principles regarding the proposed non-cartographic model. The basic ideas were spelt out in Bacskai-Atkari (2018d) regarding data from South German dialects and some major concerns regarding the cartographic model were also expressed in terms of the proposal made by Baltin (2010). In the present book, the scope of the investigation is naturally larger; in addition, this chapter contains a detailed critical review of the literature, pointing out additional problems that were not discussed before, in particular regarding the original cartographic proposal by Rizzi (1997, 2004).

Chapter 3 discusses embedded interrogative clauses. The core part of this chapter was published in Bacskai-Atkari (2020c), with a particular emphasis on the relation between Doubly Filled COMP patterns in German and V2 syntax. The present investigation has a wider empirical and theoretical scope. In the original study, results from a corpus study on Middle English *whether* were discussed: this was based on a smaller sample from the two versions of the Wycliffe Bible. The present study includes the results from the entire text (for both versions). Regarding the theoretical scope, the present study includes a detailed critical study of alternative analyses of Doubly Filled COMP effects, in particular that of the original proposal made by Chomsky & Lasnik (1977), which was not discussed before. In addition, the present book contains a section on long movement.

Chapter 4 examines relative clauses. A core part of the discussion is centred on a corpus study carried out on the King James Bible. Some implications regarding the subject/object asymmetries observed in the choice of relativisation strategies were discussed in Bacskai-Atkari (2020b). This previous study was based

on a smaller data set: for the present study, the entire King James Bible was taken into account, using the parallel loci to relative clause introduced by *who(m)*, *which* and *that* in the modernised version. The present book also discusses some statistical findings that were not included in the previous investigations at all. In addition, the present study connects the findings to the general non-cartographic approach, as well as to the dialectal German data and it also presents a detailed account of equative relative clauses, also connecting the findings to the proposal made by Brandner & Bräuning (2013).

Chapter 5 is dedicated to embedded degree clauses. Some of the findings regarding German historical data and their diachronic development were discussed in Bacskai-Atkari (2021). The present study is more extensive in this respect and it also places the discussion of these data into a cross-linguistic setting, showing that the polarity differences between equative and comparative clauses hold across languages. The analysis is also connected to the model proposed in this book, showing the importance of analysing multiple left-peripheral projections in a non-cartographic model. The proposed account relies on many insights of Jäger (2018), yet there are some important differences in the syntactic structure between the two models: this issue is also discussed in detail.

Chapter 6 analyses ellipsis processes in embedded clauses, concentrating on elliptical comparatives in German. The key idea behind the proposed analysis for German was expressed in Bacskai-Atkari (2017b); however, that study was entirely based on classical, introspective grammaticality judgements in very specific context, explicitly targeted at measuring ambiguity. The present study includes the results of a grammaticality judgement experiment and it also relates the findings to the general theory of ellipsis and information structure.

1.6 Roadmap

This book is structured as follows. In Chapter 2, I will introduce the basic assumptions regarding the proposed model. Following this, the book offers in-depth analyses of the three major constructions that will be examined here: Chapter 3 addresses embedded interrogatives, Chapter 4 addresses relative clauses, and Chapter 5 addresses embedded degree clauses. In Chapter 6, I show that the analysis can be extended beyond the scope of clause typing proper, connecting it to issues related to information structure and ellipsis.

2 A feature-based approach to functional left peripheries

2.1 Introduction

In this chapter, I am going to present the basic assumptions concerning a minimal, feature-based approach to the syntax of functional left peripheries, showing that the proposed analysis applies to various clause types, in each case correctly predicting the surface order of clause-typing elements appearing in combinations. Since the relevant combinations are restricted to embedded clauses in Germanic languages, this chapter will be focusing on subordinate clauses, even though, as will be indicated, the analysis is also applicable to main clauses. In particular, I will be arguing against cartographic approaches, showing that clause-typing elements appearing on functional left peripheries are not in a one-to-one relationship with syntactic features, and the assumption that there are designated projections for the various semantic properties is fundamentally flawed. Instead, I propose that functional left peripheries are as minimal as possible, and multiple projections are generated when the relevant semantic properties cannot be marked in a single projection; whether this is the case is ultimately dependent on the lexical properties of the individual clause-typing elements. To put the analysis into an appropriate context, I am first going to review some previous proposals of relevance: the papers discussed here are not meant to be a representative summary of the state of the art but they are selected analyses that have been particularly influential and/or are of particular interest for the analysis pursued here.

This chapter is structured as follows. Section 2.2 provides an overview of some previous accounts. Section 2.3 introduces the basic ideas regarding the flexible approach to left peripheries put forward in this book. This basic proposal will be refined with more details in the subsequent sections: Section 2.4 discusses embedded interrogatives, Section 2.5 discusses relative clauses, and Section 2.6 discusses embedded degree clauses. These clauses types will be dealt with in more details in the rest of this book.

2.2 Previous accounts

2.2.1 The problems to be discussed

In current minimalist theory, the Complementiser Phrase (CP) is responsible for typing clauses and for encoding finiteness in finite clauses.[1] Apart from complementisers, various operators can appear in this domain. Consider:

(1)   a. I wonder **if** Ralph has arrived.
       b. I wonder **whether** Ralph has arrived.

In (1a), the element *if* is a complementiser and it types the subordinate clause as interrogative. In (1b), there is no overt complementiser but the operator *whether* is present. In such cases, it is generally assumed that the zero complementiser types the clause, yet a sound model of the CP-periphery must also clarify the role of the overt operator in (1b), especially because its appearance in dialects like Standard English is tied to the absence of the overt complementiser:

(2)   * I wonder **whether if** Ralph has arrived.

On the other hand, the CP is not restricted to hosting a single overt element: depending on the particular construction and the dialect, multiple elements may appear in the CP-domain. This is illustrated by (3a) for non-standard English and by (3b) for Norwegian[2]:

(3)   a. % I wonder **which book that** Ralph is reading.
       b. Peter spurte   **hvem som** likte bøker.
           Peter asked.3SG who   that liked books
           'Peter asked who liked books.'

A proper formal account of the CP-domain must be able to condition when multiple overt elements are allowed and when not. Further, it must be clarified whether the appearance of several overt elements requires multiple CP projections, and in cases where it does, how word order restrictions can be modelled. The generation of multiple functional layers is in principle possible, yet it should

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[1]See, for instance, Rizzi (1997: 283), for anchoring finiteness in the CP-system. Note that finiteness is ultimately inherited from the inflectional system (see Chomsky & Lasnik 1977 and den Besten 1983). This also means that a clause can be finite without a CP layer, as is the case for English main clause declaratives, which are standardly assumed to be TPs.

[2]The Norwegian data stem from the cross-Germanic survey of Bacskai-Atkari & Baudisch (2018: 175). Both of the informants marked the sentence in (3b) as grammatical.

be appropriately restricted to exclude the generation of superfluous layers that are empirically not motivated. This question is likewise relevant in cases involving a single overt C-element, since then the question arises whether and to what extent covert elements and phonologically invisible projections are present.

Apart from the exact position of various elements in the CP, their function(s) must also be addressed. For instance, interrogative complementisers regularly encode finiteness as well, imposing finiteness restrictions on the complement TP. Consider:

(4)   a.   I don't know **if** I should call Ralph.

      b.   I don't know **whether** I should call Ralph.

      c.   *I don't know **if** to call Ralph.

      d.   I don't know **whether** to call Ralph.

In (4a), the complementiser *if* introduces a finite embedded interrogative clause, and as the ungrammaticality of (4c) shows, it is incompatible with a non-finite clause, suggesting that it encodes finiteness apart from the interrogative property. By contrast, the operator *whether* is compatible with both a finite clause, as shown in (4b), and with a non-finite clause, as shown in (4d), indicating that the overt marking of interrogativity is not incompatible with a non-finite clause in English. Since *whether* is not specified for finiteness, it should be clear that finiteness is specified by some other element in (4b); the question is whether there is a separate element encoding finiteness in (4a) as well and, if so, how the restriction of *if* to finite clauses can be explained.

Finally, the function(s) of various left-peripheral elements must be clarified also because there are some non-trivial combinations in which elements seem to be largely similar, as in the non-standard German example in (5a) below:

(5)   a.   % Ralf   ist größer **als   wie** Maria.
              Ralph is taller   than as   Mary
              'Ralph is taller than Mary.'

      b.   Ralf   ist größer **als**   Maria.
              Ralph is taller   than Mary
              'Ralph is taller than Mary.'

      c.   % Ralf   ist größer **wie** Maria.
              Ralph is taller   as   Mary
              'Ralph is taller than Mary.'

d. Ralf   ist so groß **wie** Maria.
Ralph is so tall as   Mary
'Ralph is as tall as Mary.'

In (5a), the elements *als* and *wie* both seem to mark the comparative nature of the clause, whereby single *als* is the comparative particle in Standard German comparatives, see (5b), and single *wie* is the comparative particle in equatives, see (5c), and in certain dialects also in comparatives, see (5d). In such cases, the question is to what extent there is genuine doubling at hand and how it can be modelled.

2.2.2 The cartographic approach – Rizzi (1997, 2004)

I will start reviewing the relevant literature with Rizzi's work, since it is generally taken to be the foundation of cartographic approaches.[3] While his model was primarily developed for Romance languages (and for Italian in particular), the model implies a universal applicability; indeed, the Germanic left periphery has been analysed in a (partial) cartographic fashion as well (see, for instance, Haegeman 2007, 2012, 2013, 2014, 2017 and Hinterhölzl & Petrova 2010b,a).[4]

The basic observation underlying Rizzi's model is that while in the 1980s the layers VP, IP and CP were taken to be composed of single projections each, there

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[3]The original model was extended by later work by several scholars working in the cartographic framework, such as Frascarelli (2000, 2008), Paoli (2003, 2007), Benincà & Poletto (2004), Poletto & Pollock (2004), Benincà (2006), Frascarelli & Hinterhölzl (2007), Cinque & Rizzi (2008, 2010), Bocci (2013), Poletto & Zanuttini (2013), Bianchi et al. (2017, 2018), Bocci & Cruschina (2018), Rizzi & Bocci (2017), Bocci, Cruschina & Rizzi (2021), Bocci, Bianchi, et al. (2021). As these works do not fundamentally differ from the original idea in spirit (in fact, they explicitly adopt Rizzi's framework), the concerns expressed here in connection with Rizzi (1997, 2004) also apply to them. The aim of this section is not to provide an overview of the cartographic approach but rather to focus on the motivating factors underlying the original idea, as well as potential problematic points.

[4]While there are certainly differences in the exact combinations that are attested in the two language groups, the similarities are altogether overwhelming. In both Germanic and Romance, clause-typing elements such as complementisers and operators (e.g. interrogative and relative operators) can occur in the left periphery, as well as other XPs that are fronted to the CP-domain without encoding clause type. In Chapter 6, I argue that XP-fronting is largely due to an unspecified [edge] feature. In this respect, Germanic seems to be more restrictive, as there is generally only a single XP fronted to the CP (leading to the canonical V2 pattern); however, this is not necessarily the case, as will be discussed in connection with V3 patterns in Chapter 3. Note also that while the Romance left periphery appears to be able to host multiple fronted XPs, fronting is not the only option for marking information structure: in fact, as shown by Samek-Lodovici (2015) for Italian, contrastive focus occurs in situ by default.

is evidence for there being a more intricate structure underlying these domains, as was already established for the VP and the IP[5] towards the end of the 1980s (Rizzi 1997: 281). Essentially, Rizzi (1997) assumes that the same holds for the left periphery of the clause, that is, the domain above IP.

According to Rizzi (1997: 283), the CP-domain has two major functions. On the one hand, it relates the clause to the outside, that is, either to a superordinate structure or, in the case of root clauses, to the articulation of the discourse. This kind of information expresses whether the clause is, for instance, a question or a declarative, and is referred to as the clausal Type by Cheng (1991) and the specification of Force by Chomsky (1995), whereby Rizzi (1997: 283) adopts the latter term. As pointed out by Rizzi (1997: 283), "Force is expressed sometimes by overt morphological encoding on the head (special C morphology for declaratives, questions, relatives etc.), sometimes by simply providing the structure to host an operator of the required kind, sometimes by both means". The last option is considered to be rare by Rizzi (1997), who attributes this to economy principles on representation, following Cheng (1991) among others.

On the other hand, the CP-domain has an effect on its complement domain, namely the IP, and Rizzi (1997: 283–285), following Holmberg & Platzack (1988), among others, assumes that the CP is responsible for encoding finiteness. That is, contrary to Den den Besten (1983), Rizzi (1997: 283–284) claims that the C is not specified for tense as such, the selection of the C not making any selection on the particular tense (that is, whether it is present or past, etc.) but it rather encodes whether there is tense at all, correctly accounting for the observation going back to Chomsky & Lasnik (1977) that in English the complementiser *that* co-occurs with tensed verbs while the complementiser *for* co-occurs with infinitives. Some languages replicate additional information from the IP in the CP, such as subject agreement in various Germanic varieties (Haegeman 1992, Bayer 1984, Shlonsky 1993), yet this is far from being obligatory and the exact content of replication (e.g. mood, negation) shows considerable cross-linguistic variation (Rizzi 1997). Regarding the distinction between the IP and the CP, Rizzi (1997: 284–285) argues that the CP cannot be regarded as an extension of the verbal domain (as opposed to the IP) since the "inflectional" properties expressed by C are carried rather by free functional morphemes that are more nominal than verbal (cf. the resemblance between certain demonstratives and complementisers): the CP is therefore not V-related.

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[5]In this book, I will restrict myself to the discussion of cartographic approaches to the CP-domain; note that such approaches have also been proposed for the IP-domain, see, for instance, Cinque (1999), Belletti (2004), Cardinaletti (2004).

Apart from Force and finiteness, Rizzi (1997: 285) claims that the C-system "can have other functions which are by and large independent from selectional constraints". For instance, sentences can have a topic–comment articulation, as in (6a), and they can also have a focus–presupposition articulation, as in (6b), examples taken from Rizzi (1997: 285, ex. 1 and 2):

(6)   a.   [Your book]$_i$, you should give t_i to Paul (not to Bill).
       b.   [YOUR BOOK]$_i$ you should give t_i to Paul (not mine).

While both constructions involve fronting an element to the left periphery, they differ in their intonation and their interpretation. A topic is separated by a so-called "comma intonation" from the remaining part of the clause and it normally expresses "old information, somehow available and salient in previous discourse", whereas "the comment is a kind of complex predicate, an open sentence predicated of the topic and introducing new information" (Rizzi 1997: 258). A focus bears focal stress and it "introduces new information, whereas the open sentence expresses contextually given information, knowledge that the speaker presupposes to be shared with the hearer" (Rizzi 1997: 258). As Rizzi (1997: 258) points out, "the interpretive relation of the preposed element to the open sentence is (…) virtually the opposite in the two cases". Other languages demonstrate a similar difference, notably Italian. Consider the examples taken from Rizzi (1997: 286, ex. 3 and 4) in (7) below (the glosses are mine):

(7)   a.   Il   tuo   libro, lo   ho   letto.
         the.M your.M book that.M.ACC have.1SG read.PTCP
         'Your book, I have read it.'
     b.   IL   TUO   LIBRO ho   letto   (, non il   suo).
         the.M your.M book   have.1SG read.PTCP   not the.M his.M.ACC
         'Your book I read (, not his).'

The topic–comment construction in (7a) shows Clitic Left Dislocation (CLLD), a term introduced by Cinque (1990), and this involves "a resumptive clitic coreferential to the topic" (Rizzi 1997: 285). The focus–presupposition articulation in (7b) involves a special kind of stress (called focal stress), on the preposed element: this construction is restricted to contrastive focus in Italian,[6] while in other languages fronting is also possible with other kinds of foci (Rizzi 1997: 286, see Tsimpli 1995 for Greek and Horvath 1986, É. Kiss 1987 and Brody 1990 for Hungarian).

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[6]See Paoli (2009) for a mroe fine-grained study of focus in varieties of Italian.

Rizzi (1997: 286) assumes that both constructions involve a designated left-peripheral position, TopP and FocP, respectively, which conform to the X-bar schema (whereby the X-bar schema is not necessarily taken to be a primitive but as derived from more elementary principles, in the vein of Kayne 1994 and Chomsky 1995).[7] Accordingly, a TopP hosts the topic in its specifier and the complement of the Top head is the comment, while the FocP hosts the focussed constituent in its specifier and the complement of the Foc head expresses presupposed information (Rizzi 1997: 286–287). Further, Rizzi (1997: 286) assumes that the Top head defines a "higher predication", that is, "a predication within the Comp system", and its function is analogous to that of the AgrSP in the IP system, with the important difference that the specifier of TopP is an A′-position (Rizzi 1997: 286). Regarding FocP, Rizzi (1997: 287) suggests that foci move to the specifier of this projection either before spellout or at LF, whereby the second type is an instance of lower focalisation and can be observed in languages like Italian, where focal stress can appear on an element remaining in situ (cf. Antinucci & Cinque 1977, Calabrese 1982, Cinque 1993, Belletti & Shlonsky 1995).

While in English and Italian the Top and Foc heads are phonologically null, there are languages where topic and focus markers are located here (Rizzi 1997: 287, Rizzi 2004: 238), such as the topic particle *ya* and the focus particle *wè* in Gungbe (see Aboh 1999).[8] The heads are also relevant in terms of specifier–head agreement: Rizzi (1997: 287) assumes that topicalised and focussed constituents are equipped with topic and focus features which must be checked against a head, just like in the case of interrogative and negative features. Rizzi (1997: 287–288) assumes that TopP and FocP are integrated into the C-system and are present in all non-truncated clauses; however, if there is no topic or focus to be fronted, these layers are not activated. They are always located in between ForceP and FinP, since these two "must terminate the C system upward and downward, in order to meet the different selectional requirements and properly insert the C system in the structure" (Rizzi 1997: 288). Ultimately, Rizzi (1997: 297, ex. 41) suggests the structure given in Figure 2.1 for the split CP.

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[7]The same applies to other discourse-related left-peripheral positions (Rizzi 2004: 237).

[8]This is illustrated by (i) below (Rizzi 2004: 238, ex. 47, cf. Aboh 1999):

(i) …do Kofi ya gankpa me we kponon   le su I   do
       that Kofi TOP prison in   FOC policemen PL shut him there

    '…that Kofi was shut into PRISON by policemen'

   Rizzi (2004: 238) concludes "that other languages use analogous structures with null heads" and they differ "from Gungbe and similar languages in the morphological manifestation of a fundamentally uniform syntactic system".

```
                    ForceP
                    /    \
                   Force′
                   /    \
               Force   TopP*
                       /    \
                     Top′
                     /    \
                   Top   FocP
                         /    \
                        Foc′
                        /    \
                     Foc   TopP*
                           /    \
                         Top′
                         /    \
                      Top   FinP
                            /    \
                           Fin′
                           /    \
                         Fin   IP
```
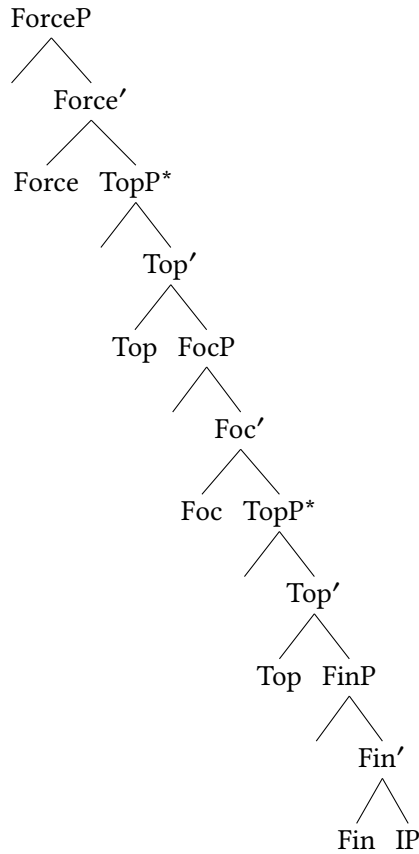
Figure 2.1: The cartographic left periphery

The star indicates that TopPs are iterable; otherwise, the order of the phrases is fixed (Rizzi 1997: 288–298). The ordering restrictions are based on the observed patterns in Italian (and, to a minor extent, other languages, mainly English).

In all the examples provided by Rizzi (1997), either only the Force or only the Fin head is filled by overt material but not the two at the same time. Indeed, Rizzi (1997) uses examples only from Germanic and Romance languages, and as Rizzi (2004: 237) points out, "Romance and Germanic typically overtly express type Force head in finite clauses" (take, for instance, Italian *che* 'that' or English *that* introducing embedded declarative clauses), but it is possible that Fin is expressed overtly, as with prepositional complementisers like Italian *di* 'of' in Romance

in non-finite clauses.[9] However, "Celtic languages like Irish appear to normally express Fin in finite clauses as well", so the complementiser *go* 'that' follows other material in the left periphery (Rizzi 2004: 237, following McCloskey 1996 and Roberts 2004). Consider (8) from Irish (Rizzi 2004: 237, ex. 45):

(8) Is doíche   [faoi cheann cúpla lá [go bhféadfaií imeacht]]
     is probable about end   couple day that could   leave
     'It is possible to leave after a couple of days.'

Apart from patterns involving an overt Fin head in finite clauses, there are languages such as Welsh that allow both Force and Fin to be lexicalised (Rizzi 1997: 237, quoting Roberts 2004). This is illustrated by the following example (taken from Roberts 2005: 122, ex. 8, identical to the example quoted by Rizzi 1997: 237), where both *mai* and *a* are overt:

(9) Dywedais, i [mai 'r dynion fel arfer a   [werthith y   ci]].
     say   I that the men   as usual that sell   the dog
     'I said that it's the men who usually sell the dog.'

Again, the two clause-typing heads Force and Fin are separated by topics.

There are several important differences between topics and foci, which affect not only their interpretation but also their syntactic behaviour. First, as Rizzi (1997: 289–290) shows, while topics "can include a resumptive clitic within the comment", foci are incompatible with resumptive clitics (see Cinque 1990 regarding foci). Second, topics never give rise to Weak Cross-Over effects, while such effects are detectable with foci (Rizzi 1997: 290, cf. Culicover 1992 regarding English foci). Third, bare quantificational elements cannot be topics but they can be foci (Rizzi 1997: 290). These first three differences can be traced back to the basic difference that focus is quantificational, while topic is not (Rizzi 1997: 291–295, based on Cinque 1990). Fourth, while multiple topics can be fronted, there is only one structural focus position (Rizzi 1997: 290–291, Benincà 1988). Rizzi (1997: 295–300) suggests that this is due to an interpretive distinction between the constructions. Fifth, a *wh*-operator in main clause questions is compatible with a preceding topic but not with focus (Rizzi 1997: 291, ex. 24a and 25a):

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[9]Consider the following example, taken from Rizzi (1997: 288, ex. 10b):

(i) Credo   [**di** apprezzare   molto il   tuo   libro].
     believe.1SG of appreciate.INF much the.M your.M book
     'I believe to appreciate your book very much.'

Rizzi (1997) assumes that *di* in such cases is in Fin.

(10) a. A Gianni, che cosa gli   hai   detto?
          to Gianni what thing he.DAT have.2SG said.PTCP
          'To Gianni, what did you tell him?'

      b. * A GIANNI che cosa hai   detto   (,non a Piero)?
          to Gianni   what thing have.2SG said.PTCP   not to Piero
          'What did you tell GIANNI (, not to Piero)?'

By contrast, both topics and foci are compatible with relative operators (Rizzi 1997: 291).[10]

Based on the observed patterns regarding ordering restrictions, Rizzi (1997: 291, 298–299) concludes that relative pronouns are located in [Spec,ForceP], while question operators are located lower in the structure, namely in [Spec,FocP], which is why they are in complementary distribution with foci.

The TopP projection is also relevant in terms of adverb preposing: here the analysis of Rizzi (1997) differs crucially from his later views expressed in Rizzi (2004). Rather than assuming that adverbs are adjuncts to the IP, Rizzi (1997: 300–301, 308–309) argues that adverbs move to [Spec,TopP], satisfying a Topic Criterion, just as in the case of argumental topicalisation. In this way, topicalisation is triggered properly as any other movement process, and the fact that topics appear in an IP-peripheral position (but not within the IP or above the CP) can be accounted for by assuming TopP to be an integral part of the clause (Rizzi 1997: 300–301). This view is contested by Rizzi (2004: 238–243), in that the most typical position of left-peripheral adverbs is the specifier of a dedicated modifier phrase, ModP, while under certain circumstances an adverb may act as a regular topic (in TopP) or be focussed (in FocP). The reason behind this is partly interpretive (topics express given information, adverbs not necessarily), partly distributional (adverbs occupy different relative positions from ordinary topics), see Rizzi (2004: 238–239). The assumption that adverbs move to specifiers of designated left-peripheral positions is in line with the general spirit of

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[10]This is illustrated by the examples in (i) and (ii) below (Rizzi 1997: 289 and 298, ex. 12a and 44a):

(i) Un uomo a cui, il   premio Nobel, lo   daranno   senz'altro.
     a.M man   to whom the.M prize Nobel it.M.ACC give.FUT.3PL undoubtedly
     'A man to whom, the Nobel Prize, they will give it undoubtedly.'

(ii) Ecco un uomo a cui   IL   PREMIO NOBEL dovrebbero dare   (non il
     here a.M man   to whom the.M prize Nobel should.3PL give.INF not the.M
     premio X).
     prize X
     'Here is a man to whom they should give THE NOBEL PRIZE (not prize X).'

the cartographic approach and with the implementation of Cinque (1999) for ad-
verb positions in particular.

The revised theory of the fine structure of the left periphery is hence as follows
(Rizzi 2004: 242, ex. 60):

(11)   Force   Top*   Int   Top*   Focus   Mod*   Top*   Fin   IP

The novelty lies in the introduction of an iterable ModP for various adverbs
and also the IntP, interrogative phrase, which hosts higher *wh*-elements such
as *perché* 'why' in Italian (see Rizzi 2004: 242; see also Rizzi 2001) for details.
The importance of the various positions lies in a revised analysis of Relativized
Minimality. Rizzi (2004: 247) claims that the "positional system is amenable to a
typology of few featurally defined natural classes: argumental, quantificational,
and modificational elements".

An important point made by Rizzi (1997: 312–315) concerns the actual size of
the CP-periphery. Namely, in "simple cases (...) the force–finiteness system can
be expressed on a single head", such as *that* in English embedded declaratives or
its zero counterpart (Rizzi 1997: 312). More precisely, Rizzi (1997: 312) assumes that
that "expresses declarative force and may optionally express finiteness", while
its zero counterpart "expresses finiteness, and may optionally express declarative
force". Rizzi (1997: 312) distinguishes between "simple cases" and "complex cases":
in simple cases, there are no TopP or FocP projections and hence "the force–
finiteness system can be expressed on a single head" (in which case *that* and the
zero complementiser are functionally equivalent), while in complex cases "force
and finiteness must split because the topic–focus system is activated" (in which
case *that* occupies Force and the zero complementiser occupies Fin). This kind
of split can be observed in the following example (Rizzi 1997: 313, ex. 91):

(12)   ...[that [next year [∅ John will win the prize]]]

Importantly, the higher specification (Force) cannot be realised as zero and
the lower specification (Fin) cannot be realized as *that* in such "splitting" cases
(Rizzi 1997: 313, following Rochemont 1989 and Grimshaw 1997 among others).
If, however, the topic–focus field is not activated, the split between Force and
Finiteness is barred by an economy constraint that can be referred to as "Avoid
structure" (Rizzi 1997: 314, in line with analogous proposals made by Crisma 1992,
Safir 1993, Speas 1994, Grimshaw 1997, among others, as well as with the economy
constraints of Chomsky 1991, 1993, 1995). Ultimately, this is taken to be responsi-
ble for the following extraction asymmetry (based on Rizzi 1997: 312 and 314, ex.
88 and 97):

(13)   a.   * Who do you think [that [*t* ∅ [*t* will win the prize]]]?

      b.   Who do you think [*t* ∅ [*t* will win the prize]]?

The idea is that (13a) is a violation of the *that*-trace filter, while (13b) is not, and that while (13a) involves a separate ForceP and a FinP, in (13b) there is only one CP projection (Rizzi 1997: 313–314). As Rizzi (1997: 313–314) assumes, the FinP projection must be generated for agreement purposes if the subject is extracted, but this is possible only with the zero complementiser and not with *that*, an assumption made by Rizzi (1997: 312) regarding the feature specification of the respective complementisers. Hence, the insertion of *that* implies that a separate ForceP is present. This is licensed if there is a topic in between the two, which is why the *that*-trace effect does not arise if there is a topic. However, if the topic–focus field is not activated, the generation of a separate ForceP is not licensed, due to the economy principles described above. In his later analysis, Rizzi (2004: 241) points out that the "anti-adjacency effect" can be observed with adverbs but not with regular topics, which again speaks for different positions for adverbs and topics in the left periphery mentioned above.

Regarding the exact mechanism of the economy principle, Rizzi (1997: 314–315) argues that the blocking effect making (13a) cannot be due to the numeration (as the economy principles of Chomsky 1995 would suggest) but it rather follows from a principle allowing the insertion of functional elements only if they are necessary, as maintained by Grimshaw (1993) for *do*-support: in this sense, functional elements are not part of the reference set in the numeration. Rizzi (1997: 315) assumes that a similar principle may underlie the distribution of expletives in languages like German and Icelandic, where the expletive is licensed (and required) by the V2-constraint.

Importantly, the C head can host verbs as well, and this can also be observed in English to some extent. One such context is negative inversion, where Rizzi (1997), following Culicover (1992, 1993), discusses a difference between patterns where a subject has been extracted and ones where there is no subject extraction. Consider the following examples involving the preposed negative element *only in that election* (Rizzi 1997: 315–316, ex. 104 and 105):

(14)   a.   ?? Leslie is the person who I said that only in that election did run for public office.

      b.   Leslie is the person who I said that only in that election ran for public office.

      c.   I think that only in that election did Leslie run for public office.

      d.   * I think that only in that election Leslie ran for public office.

In (14a) and (14b), the subject is extracted: as demonstrated by the grammaticality of (14b), no inversion is required, while the inversion pattern involving *do*-insertion in (14a) is degraded. The exact opposite can be observed if no subject extraction applies, as in (14c) and (14d): the inversion pattern in (14c) is grammatical, while the absence of inversion in (14d) results in unacceptability. As Rizzi (1997: 316) summarises, it seems that "inversion with a preposed negative element must apply except in case the subject has been extracted". In fact, the same asymmetry can be observed in main clause interrogatives, as pointed out by Rizzi (1997: 317, ex. 106 and 107):

(15) a. Who did you see *t*?
      b. * Who you saw *t*?
      c. * Who did see you?
      d. Who saw you?

As pointed out by Rizzi (1997: 317), a *wh*-element has to move to [Spec,CP], regardless of whether it is a subject or an object. The difference lies in whether there is I-to-C movement. This is obligatory in (15a): the [wh] feature is generated under T and it has to move to C in order for the Wh Criterion to be satisfied. By contrast, in (15d) the subject moves ultimately from [Spec,TP] to [Spec,CP] and hence C agrees with a specifier that is coindexed with the specifier of T, where the [wh] feature is located. Hence, "they are in the appropriate local relation (no other head intervenes)" and "they can form a representational chain which possesses the Wh feature (still sitting under T)" (Rizzi 1997: 317). The same option is not available for (15a) because the specifiers of C and T "are contra-indexed, so that the heads are contra-indexed, too, and no representational chain connecting C to T can be built" (Rizzi 1997: 317).

By analogy, Rizzi (1997: 317) assumes that I-to-C movement (more precisely, movement to Foc) in negative preposing structures "is triggered by the Negative Criterion" (based on Rizzi 1991, Haegeman & Zanuttini 1991, Haegeman 1995), whereby the Neg feature is "generated under T on a par with the Wh feature" and it "must be brought up to the C system if a negative element is preposed in order to create the required Spec/Head configuration". This involves the insertion and movement of *do* to C (Foc) in constructions like (14c), since the specifier of the CP (FocP) is not coindexed with the specifier of the TP, while no verb movement is required in constructions like (14b), where the subject has been extracted and hence a representational chain can be created (Rizzi 1997: 317–318).[11]

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[11]Naturally, languages show differences with respect to the projections generated in the CP-

The approach proposed by Rizzi (1997, 2004) is important for various reasons. First, it recognises the availability of a complex left periphery, indicating that a single CP is not always tenable. Second, it shows that not only clause-typing elements but also topics and foci may move to the left periphery, and that the two also differ in their syntactic behaviour. Third, it is evident that while multiple elements may be allowed to co-occur, there are certain ordering restricting applying to them.

However, there are also some problems that cannot be overlooked. While TopP and FocP are taken to be designated left-peripheral projections that appear along genuine CPs, it is clear that the movement operations targeting these must be different from the movement of clause-typing operators. Namely, while the movement of a relative operator is tied to its lexical property (call it a [rel] feature), topicalised and focussed elements do not have lexically inherent [topic] and [focus] features (cf. Fanselow & Lenertová 2011), unless one were to assume that the different occurrences of the DP *Gianni* in (10) feature a lexical item *Gianni*[topic] and a lexical item *Gianni*[focus], while a neutral lexical item *Gianni* must also exist. Moreover, while the fronting of topicalised and focussed elements is indeed triggered in certain languages, it is not the case in others: in English, for instance, the sentences in (6) are less natural versions and normally topics and foci would

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domain, as well as regarding the properties of various elements located there. For instance, Rizzi (1997: 318–325) argues that in French an independent AgrP can be projected, which results in a lack of anti-adjacency effects of the English type. This property of French also follows from the properties of the finite complementiser, which cannot be zero, unlike in English (Rizzi 1997: 320, ex. 114), as shown in (i) and (ii):

(i)   I think (that) John will come.

(ii) Je crois   *(que) Jean viendra.
      I think.1SG   that John come.FUT.3SG
      'I think that John will come.'

The distribution of the zero complementiser is restricted in English: it is allowed in internal argument clauses, as in (iii), but not in subject clauses, see (iv), or in preposed clauses, as in (v) below (Rizzi 1997: 320, ex. 115):

(iii)   I didn't expect [∅ [John could come]].

(iv)   *[∅ [John will come]] is likely.

(v)   *[∅ [John could come]], I didn't expect.

As pointed out by Kayne (1984) and Stowell (1981), the zero finite complementiser has the same distribution as traces, and Pesetsky (1995) actually claims that there is a trace involved: the zero complementiser is affixal and it incorporates onto the higher V head (Rizzi 1997: 320).

not be fronted. In other words, while the notions of topic and focus are not completely independent of syntax, it is evident that they cannot be reduced to the insertion of syntactic features. On the other hand, non-operator material may be fronted to the CP-domain in certain languages, such as in German V2 clauses, which is not tied to any specific informational structural property (termed "formal movement" by Frey 2004, 2005; see also den Besten 1989, Fanselow 2002, 2004b,a, 2009 on German V2). This kind of movement is not covered by any of the designated positions of Rizzi (1997, 2004).

A second problem concerns selectional restrictions, which was also pointed out earlier by Sobin (2002: 534–536) and Abels (2012: 231), among others (see also Lahne 2009, following Newmeyer 2003). Rizzi (1997, 2004) assumes that TopP and FocP are essentially independent of selectional restrictions, yet if the left periphery is structured in the way given in Figure 2.1, a Force head selects a TopP as its complement, and the Top head selects a FocP, and ultimately a FinP is selected by a Top head. While the ForceP and the FinP are the core projections of the functional left periphery, if a complex periphery is generated, there is no way for them to be in a direct selectional relationship. It is unclear how designated Top and Foc heads can be equipped with features responsible for selection of other CP-type projections. Rizzi (1997, 2004) argues that the TopP and FocP layers are present in all clauses, though they may not be activated. If they are not activated in the syntax, this affects selectional restrictions, and the question arises how such variability can be modelled, as sometimes a given head appears to select for diverse complements. To give one example, a Top head may select a FocP, but if there are multiple topics, another TopP is supposed to be generated and selected by the higher Top head, and if the FocP is not generated, the complement of Top is either again a TopP, or a FinP. In addition, the notion of activating layers is problematic from a minimalist perspective since elements that are not merged into the structure cannot be taken to be part thereof.

Third, related to this, the ForceP and the FinP are apparently not always split: if there is only a single *that* on the left periphery, it can express both Force and Finiteness. However, this sort of optionality is problematic inasmuch as finiteness is part of the lexical entry of *that*, since it clearly cannot appear in non-finite clauses. This is supposed to happen if there is no intervening topic (or focus) between the two layers, and in essence this would be a ban on two adjacent complementisers (in this case *that* and its zero counterpart). However, complementiser combinations are actually possible across languages, such as the German comparative in (5a) above containing the combination *als wie* 'than as', where the two complementisers (see Jäger 2010, 2018, Bacskai-Atkari 2014a,c on the status

of *wie* as a complementiser) have largely overlapping functions (just as in the case of *that* and it zero counterpart).

This leads to the fourth problem, which is the separation of Force and Fin and whether complementisers are inserted according to this template. As mentioned above, *that* is lexically specified for finiteness, and while examples for complementiser reduplications such as (9) above indicate that doubling is indeed possible, it is highly questionable to claim that a finite declarative complementiser encodes finiteness in certain constructions but not in others. In addition, examples like (5a) with the doubling of two comparative complementisers indicate that the separation is also problematic because both elements have largely identical lexical properties, and the lower complementiser *wie* is not a finiteness marker (which would be *dass* 'that').

Fifth, the relative position of various left-peripheral elements does not seem to conform to the template in general. This was already pointed out by Neeleman & van de Koot (2008) in connection with scrambling in Dutch: many word order patterns involving discourse functions (topics, foci) in Dutch are not borne out by the template. I will briefly return to scrambling in Chapter 6; for now, the point is simply that the template in many cases does not generate certain patterns, while it does not restrict others. Similar problems arise in connection with clause-typing elements as well. Rizzi (1997) assumes that relative operators are in [Spec,ForceP], while interrogative operators are in [Spec,FocP]. If English *that* is in the Force head, it is expected that interrogative operators appear lower: however, Doubly Filled COMP patterns such as (3a) above (and similar pattern across Germanic) show that this is empirically untenable as the *wh*-operator precedes *that*. As pointed out by Sobin (2002: 534–536), one way to overcome this for Rizzi (1997) is to say that interrogative operators target [Spec,FocP] in root clauses but they target [Spec,ForceP] in embedded clauses, which would give the right order in Doubly Filled COMP structures, yet the separation is problematic and unmotivated. Moreover, the IntP of Rizzi (2001, 2004) does not solve the restrictions either: this is the position where interrogative complementisers such as Italian *se* 'if' are supposed to be located, yet applying this to English *if* raises the question why *whether* cannot be inserted simultaneously into [Spec,ForceP] in embedded clauses, as demonstrated by the ungrammaticality of (2). In short, while the cartographic template is able to describe certain ordering restrictions, it cannot account for the possibility or the impossibility of others.

In this way, the cartographic template of Rizzi (1997, 2004) runs into problems in terms of both descriptive and explanatory adequacy. As pointed out by Abels (2012), the descriptive gains predicted by the template (as mush as this is indeed the case), are borne out also on the basis of locality constraints, that is, without

the need to postulate a template as a theoretical primitive: rather, what appears to be a template is merely the consequence of independently motivate locality constraints. In his analysis, Abels (2012) concentrates on ordering constraints involving topics and foci (also in interaction with clause-typing projections proper, such as interrogative and relative operators). The question arises whether an alternative analysis for the cartographic approach in the same spirit is possible in the domain of clause-typing elements only; in Sections 2.3–2.6, I will show that this is indeed the case.

2.2.3 A minimal CP – Sobin (2002)

As mentioned at the end of Section 2.2.2, Sobin (2002) expressed criticism towards the cartographic approach of Rizzi (1997). In this section, I am therefore going to review and evaluate his proposal. This approach involves a minimal CP in accounting for the Comp-trace effect (also known as *that*-trace effect) and the adverb effect, based on the proposal made by Carnie (2000) "that constituents may adjoin to lexical heads forming complex lexical heads" (Sobin 2002: 527).

Recall that the insertion of *that* next to a subject trace is marked (*that*-trace effect), while the construction improves if there is an adverb between *that* and the trace (adverb effect),[12] as illustrated in (16) below (Sobin 2002: 528, ex. 1a, 2a and 3):

(16) a. % Who did you say **that** would hate the soup?
      b.   Who did you say would hate the soup?
      c.   Who did you say **that** without a doubt would hate the soup?

A traditional explanation (see Sobin 1991, Culicover 1993, Browning 1996; see also the discussion in Section 2.2.2) for (16a) was that the trace of the subject and C (which would license the trace) are not co-indexed; however, the adverb effect in (16c) constitutes a problem for this approach (Sobin 2002: 528).

Browning (1996) adopts CP-recursion and in her analysis, (16a) is not licensed because a lexical complementiser (as opposed to a zero complementiser) is not allowed to be coindexed. The problem with this is, as pointed out by Sobin (2002: 530–531), that lexical complementisers can be coindexed: the Dutch counterpart of (16a) is grammatical, and French exhibits similar phenomena (see Perlmutter 1971 and Maling & Zaenen 1978 for Dutch and Kayne 1981 for French). Moreover,

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[12]The same effect was observed by Bruening (2010) in various constructions; notably, Bruening (2010: 55) assumes that the adverb effect arises because the constraint is not about the subject but about the highest constituent.

the same indexing seems to be licensed in relative clauses with *that* and a subject trace (Sobin 2002: 537, ex. 7):

(17)   The person **that**$_i$ t$_i$ likes anchovies ordered the pizza.

In fact, as pointed out by Sobin (2002: 535), either the complementiser or a relative pronoun (*who*) is required in subject relative clauses, and hence these constructions show exactly the opposite of what can be observed in clauses exhibiting the *that*-trace effect.

Regarding the adverb effect, Browning (1996), following the analyses of Cheng (1991) and Watanabe (1992), assumes that a [Spec,CP] position is generated only in *wh*-clauses, and since the adverbial is located in [Spec,CP], the complementiser *that* has to move up to a higher C head position in order to satisfy the requirement of the highest CP-node lacking a base-generated specifier. The rest of the analysis is reminiscent of the arguments presented by Rizzi (1997). However, unlike in the cartographic approach, the CP is by default minimal: CP-recursion is limited by Greed, following Chomsky (1993). With respect to the adverb effect, Sobin (2002: 531) notes that the position of the adverb assumed by Browning (1996) is probably wrong: the adverbials do not involve agreement with the C head, unlike *wh*-phrases, and there is no reason to assume that they are located in this position. This is further strengthened by the experimental data given by Sobin (2002: 540–545).

Concerning the split CP account of Rizzi (1997), Sobin (2002: 534–536) criticises the general approach, especially the problems regarding selectional restrictions and the feasibility of given elements always targeting the same designated projections: see the discussion at the end of Section 2.2.2.

Importantly, Sobin (2002: 536–537) points out that there is considerable variation concerning the *that*-trace effect and the adverb effect. Empirical studies suggest that English speakers differ with respect to the acceptability of these constructions and that judgements are not rigid either (see, for instance, Pesetsky 1982: 328 and Sobin 1987 on American English). It seems plausible that "for adults, the *that*-trace effect in English may be 'softer' and more variable than much of the literature anticipates" and that the "*that*-trace effect appears to be weak or absent from the grammars of learners of English", its acquisition being comparatively late (Sobin 2002: 537). The problem with previous approaches is, then, that while they may be aware of variability, they fail to account for it, categorically blocking or allowing the constructions in question instead (Sobin 2002: 537).

As Sobin (2002: 537) posits, the *that*-AdvP sequence may form one prosodic unit, depending on the preferences of the speaker. In fact, the possibility of coordinating such units indicates that they may well be constituents. Consider (Sobin 2002: 538, ex. 21a):

(18)   John claimed **that in the last election and that in all earlier ones** ballot boxes were stuffed.

Following the idea proposed by Carnie (2000), Sobin (2002: 538) claims that "the phrase/head distinction may be derived rather than primitive" and hence "phrases and heads may have overlapping properties", so that it is possible "that lexical heads may combine with phrase-like sequences, projecting a lexical category". The complex C head has the following structure (based on Sobin 2002: 539, ex. 22):

(19)   [$_C$ [$_C$ that] AdvP]

This complex head constitutes, according to Carnie (2000), an extraction island.

Interestingly, adverbials may interact with Doubly-Filled Comp, as the insertion of the adverbial may license Doubly Filled COMP patterns for speakers who otherwise do not accept it. Consider (Sobin 2002: 539–540, ex. 25a and 25e):

(20)   a.   I just saw a person **WHO, that for all intents and purposes**, could pass for Albert Einstein!
         b.   *I just saw a person **who that** could pass for Albert Einstein!

In order to account for the observed phenomena, Sobin (2002: 545) introduces the notion of Fuse. In essence, this means that "under specific conditions, the Spec and head elements of CP collapse or fuse together into a single indexed element" (Sobin 2002: 545, following Pesetsky 1982 and Sobin 1987). According to Sobin (2002: 546), phenomena like the Doubly Filled COMP Filter or the interchangeability of *who* and *that* in relative clauses are indicative of there being strong pressure on the CP to collapse, something that is not attested in, for instance, the IP, where the subject and the I head are not prohibited to be spelt out simultaneously. Fuse is triggered when a chain head is merged in [Spec,CP] and if either the specifier or the C head is overt (Sobin 2002: 546–547). This is also supposed to account for asymmetries between subject and object relative clauses (Sobin 2002: 547–548). In subject relative clauses, the trace of the subject in [Spec,IP] must be properly governed: this is possible if either *who* or *that* is

inserted, since by way of Fusion the resulting element can be indexed and can therefore properly govern the trace. However, if neither the relative pronoun nor the complementiser is overt, Fusion cannot take place, and since the complementiser cannot govern the subject trace by its own virtue, the subject trace remains ungoverned and the structure is ungrammatical. The same problem does not arise in object relative clauses because the trace is located elsewhere.

Regarding Doubly Filled COMP, the idea is that Fuse allows a more economical configuration than Doubly Filled COMP, and hence the latter is blocked in favour of the former option (Sobin 2002: 548–549). If there is an adverb, then Fuse either applies to the sequence *who that* and eliminates *that*, or it applies to *who* and the complex C element (consisting of *that* and the AdvP), in which case it cannot apply fully and it leaves *who* adjoined to the already complex C head (Sobin 2002: 549). Crucially, this does not lead to the collapse of the CP, as with a simple initial C head (Sobin 2002: 550). The variability of the adverb effect lies in the weighting of the derivational cost of a more complex (non-collapsed) syntactic structure versus a relatively complex C head (Sobin 2002: 553).

Importantly, Fuse operates differently if the element in the specifier is not a chain head but merely a trace: in this case, Fuse is possible also if there is no overt element in the CP (Sobin 2002: 550–551). This accounts for the difference between subject relative clauses, where an overt element in the CP is necessary, and subject extractions, where an overt element in the CP is not licensed (Sobin 2002: 550). More precisely, a collapse of the CP is possible if the complementiser is covert, but when it is overt, like in (16a), the trace fails to collapse with it, leaving the subject trace unlicensed: this is subject to variation (Sobin 2002: 551). That is, there are speakers of English for whom the non-phonetic condition on traces is suspended and they hence allow the insertion of *that* in constructions like (16a), and similar patterns can be observed in language acquisition data and in languages like Dutch and French (Sobin 2002: 552). Fuse is ultimately an operation creating simpler structures and it can be viewed as an extreme form of agreement; it is most probably restricted to apply more broadly by recoverability conditions (Sobin 2002: 556).

The proposal made by Sobin (2002) in favour of a minimal CP is altogether favourable and the relative flexibility of this approach is also able to handle fine-grained variation and gradience in terms of acceptability. It is also more in line with a minimalist perspective in that there is no predefined template with a large number of possibly non-activated projections. At the same time, there are some problems that arise both on theoretical and empirical grounds.

On the one hand, the approach seems to build very strongly on X-bar theoretic assumptions, that is, on the notion that there is a pre-given specifier and a pre-

given head position, which may Fuse and ultimately collapse together. In the constructions under scrutiny, there is always some (overt or covert) specifier element, but it is perfectly possible to have configurations where no specifier is merged, such as in English embedded declaratives introduced by *that*. The question arises how these notions can be considered by syntactic derivations. As Fuse operates on already merged elements, this operation is introduced on top of Merge in syntax[13] and it remains unclear whether there is any clear advantage of this. Of course, similar considerations arise also in connection with the analysis of Browning (1996), where it is assumed that only *wh*-CPs have a specifier: apart from the question to what extent this is X-bar specific, the problem is that V2 languages like German are known to have an active [Spec,CP] in declarative clauses as well.

On the other hand, Sobin (2002) explicitly states that Fuse is favourable over Doubly Filled COMP, yet data like (3), repeated here as (21) clearly indicate that Doubly Filled COMP patterns do exist in Germanic languages:

(21)   a. % I wonder **which book that** Ralph is reading.

         b. Peter spurte   **hvem som** likte bøker.
             Peter asked.3sg who   that liked books
             'Peter asked who liked books.'

This pattern is completely acceptable in Norwegian, see (21b), and subject to dialectal variation in English and other West Germanic languages, whereby the standard West Germanic languages prohibiting Doubly Filled COMP patterns contrast with many regional dialects. In other words, while Fuse is supposed to be compatible with variation as well, one of its major operation domains is empirically refuted by a number of Germanic varieties, including non-standard English. Further, it is not clear how double complementisers like German *als wie* in (5a) can be handled since multiple CPs are not discussed by Sobin (2002), who explicitly assumes that the CP is very minimal. Finally, regarding subject relatives, it is assumed throughout by Sobin (2002) that subject relative clauses are uniformly introduced by an overt element (either *who* or *that*). However, this is in fact also subject to variation: zero subject relatives constitute a historical pattern that is on the retreat but nevertheless available for many speakers of British English (for instance, in the dialects of Northern Ireland, see Herrmann 2005: 55–56; see also Kortmann & Wagner 2007). As no variation is supposed to

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[13]In this respect, it is reminiscent of incorporation (cf. Baker 1988 or of the operation fusion in Distributed Morphology (see Halle & Marantz 1993). However, the exact location of Fuse in the grammatical system remains unclear.

be available regarding Fuse on chain heads, the dialect data are not covered by the analysis.

2.2.4 Lower left peripheries – Poletto (2006)

So far I have concentrated on the CP-domain when discussing functional left peripheries. I will now briefly review the study of Poletto (2006), which argues for the availability of a lower functional left periphery, at the functional vP-edge. As Poletto (2006: 261) mentions, similar views were expressed by Jayaseelan (2001), Belletti & Shlonsky (1995) and Belletti (2004) for Modern Italian,[14] and by Paul (2002) for Chinese. Apart from considering data that are not covered by the analysis of Rizzi (1997), this proposal is important because it extends the cartographic approach beyond the CP-periphery. As pointed out by Belletti (2004: 17–18), the importance in recognising a similarity between the CP and the vP in this respect lies also in the fact that these projections, as proposed by Chomsky (2001), are considered to be phases in the Minimalist Programme. I am concentrating on the analysis of Poletto (2006) here, since her particular instantiation of focus in a lower periphery is immediately relevant for certain embedded interrogatives, as will be discussed in Section 2.4 and in Chapter 6.[15]

Old Italian demonstrates properties of a V2 language, which involves the movement of a finite verb to C (Poletto 2006: 261–262, citing Benincà 1984). Consider the following example from Old Italian (Poletto 2006: 262, ex. 2a):

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[14]Belletti (2004), just like Poletto (2006), maionly concentrates on the availability of a focus projection in a clause-internal position, which she claims to be potentially surrounded by topic projections, in the same way as originally proposed by Rizzi (1997) for the CP-periphery.

[15]Notably, this analysis addresses a problem in the vP-periphery in Old Italian that is analogous to the V2 requirement in the CP-domain. Naturally, the vP-periphery also constitutes a well-researched area of syntax; see Bonan (2021) for a recent analysis (and references there). The considerations not only apply to focus: A similar analysis is suggested by Hinterhölzl (2006) for Old High German topicalisation, presenting evidence from verb clusters. Hinterhölzl (2018) also argues that the vP-periphery contains an AspP at its left edge, and that the movement operations targeting the vP-periphery altogether conform to an analysis of the German AspP/vp/VP as head initial, which is essentially in line with the model proposed by Kayne 1994 regarding basic assumptions about headedness. (Note that the same conclusions would apply to further verbal projections, such as VoiceP, which is standardly located below AspP. The importance of AspP in the aforementioned analysis is that Hinterhölzl 2006: 249 assumes AspP to be a phase head.) For similar view regarding OV orders in Old English, see also Struik & van Kemenade (2022), relying on Struik & van Kemenade (2020) and Biberauer & Roberts (2005). See also Roberts (1997) on Old English, Hinterhölzl (2004, 2009, 2010, 2015) and Hinterhölzl & Petrova (2010a) on Old High German, and Hróarsdóttir (2000) on Old Icelandic.

(22) **quali   denari   avea**   Baldovino lasciati loro
which.M.PL money.PL had.3SG Baldovino left.M.PL them
'(...) which money Baldovino had left them' (*Doc. fior.* 437)

Similar patterns are also attested with non-finite verbs, which do not move to C, raising the question how these patterns should be treated (Poletto 2006: 261, ex. 1):

(23) Allora il   cavalero, che 'n sì alto   mestero avea   **la   mente**
then   the.M knight   that in so high.M work   had.3SG the.F mind
misa
set.F.PTCP
'then the knight, who had set his mind in so high a work'
(Brunetto Latini, *Tesoretto*, v. 1975)

Apart from the surface word order in examples like (22), pro drop patterns strongly suggest that the verb in Old Italian moved higher than in Modern Romance languages: pro drop is attested in main clauses but not in embedded clauses (cf. Vanelli 1987), and the standard analysis for this is "that pro can only be licensed when the verb has moved to the CP layer" (Poletto 2006: 263, quoting Benincà 1984 for Old Italian and Roberts 1993 for Old French).[16] However, Old Italian was not a strict V2 language as V3 orders are frequently attested (Poletto 2006: 236, ex. 4a):

(24) E **dall' altra   parte Aiaces era**   uno cavaliere franco
and on.the other.F side   Ajax   was.3SG a.M knight   courageous.M
'and, on the other hand, Ajax was a courageous knight'
(Brunetto Latini, *Rettorica* 94)

Following Benincà (2006), Poletto (2006: 263) assumes that the verb in these cases moves to the head of a FocP position, and hence the topic positions above FocP are still available for fronting operations. Apart from V3 orders, Poletto (2006: 263–264) notes that Old Italian demonstrates the widespread use of V1 orders: this is compatible with V2 in Germanic languages as well, and in fact used to be more frequent in Old Germanic languages than in their modern counterparts (Fuß 2005).

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[16]This idea has been questioned by other authors as well; see Cognola & Walkden (2019, 2021) for a recent account relying on different types of Agree in asymmetric *pro*-drop languages such as Old High German and Old Italian.

Interestingly, however, there are examples in which a focussed object cannot be located in the CP-periphery, as it follows the finite auxiliary; consider (Poletto 2006: 264, ex. 7a):

(25)   i   nimici   avessero già   **il   passo pigliato**
        the.M.PL enemies had.3PL   already the.M pass   taken.M
        'the enemies had already occupied the pass'
        (Bono Giamboni, *Orosio* 88, r. 15)

As can be seen, the object precedes the auxiliary, similarly to (23), and the finite auxiliary is preceded by the subject: note that this cannot be due to Old Italian being an OV language as unmarked word orders clearly show that Old Italian, similarly to the general Romance pattern, was a VO language (Poletto 2006: 265). Given this, it is logical to suppose that the object has undergone scrambling to the left: following Belletti (2004), Poletto (2006: 267) assumes that this position is located at edge of the low vP phase, and that it can host essentially any type of constituent (arguments, adverbials, verbal modifiers), which is a freedom frequently observed with left peripheral positions. Poletto (2006: 267) suggests that the left periphery of any phase is fundamentally construed by merging a Topic-Focus field below the highest projection of the given phase, e.g. Force in the CP (in the sense of Rizzi 1997).

Citing Egerland (1996), Poletto (2006: 267–268) observes that in OV orders like (23) and (25), agreement between the object and the participle (masculine plural in (23) and masculine singular in (25) above) is obligatory, whereas this agreement is optional in VO orders; the difference can be observed in certain modern dialects like Friulian (see Paoli 1997). Further, the eventual loss of OV orders went in parallel with the eventual loss of agreement with the past participle (Poletto 2006: 268). The differences in object agreement are similar to what can be observed in subject agreement: preverbal subjects (moving to AgrSP) show more agreement morphologically than postverbal subjects (Poletto 2006: 268–269, citing Guasti & Rizzi 2002). Hence, Poletto (2006: 269, 271) concludes that in OV orders the object has undergone fronting to AgrOP, while in VO cases the null hypothesis is that there is no movement; moreover, since OV patterns are related to focus, movement ultimately targets a lower FocP, the verb moving to the Foc head. Importantly, Poletto (2006: 271) points out that "Focus in Old Italian maintains the same property throughout all the phases where it occurs" in that "it must be filled by a verbal head in all phases", whereby the Focus head is filled by the inflected verb in the high phase and it is filled by the past participle in the low phase.

There are a number of properties that are similar to what can be observed in the high periphery. First, just as V3 orders exist in the CP-domain, multiple elements can occur in front of the past participle (Poletto 2006: 275). Consider (Poletto 2006: 275, ex. 25a):

(26) ed ha'mi **la cosa molte volte ridetta**
      and has.to.me the.ꜰ thing many.ꜰ.ᴘʟ times retold.ꜰ
      'and has retold me the thing many times' (Bono Giamboni, *Trattato* 131)

In addition to the similarity to V3, the low periphery allows orders akin to V1 and just like in the case of V1, enclisis is attested (Poletto 2006: 276).

Apart from V2 and IP scrambling, Old Italian shows scrambling phenomena in the DP, which is likewise not possible in Modern Italian: this indicates that functional properties are independent of the particular phase (Poletto 2006: 277). Namely, Old Italian allows modified adjectives in a prenominal position and also adjectives that are possible only in a postnominal position in Modern Italian (Poletto 2006: 277–278). Consider (Poletto 2006: 277, ex. 30c):

(27) il **ben usato cavaliere** disidera battaglia
      the.ᴍ well behaved.ᴍ knight wants battle
      'the well-behaved knight wants battle' (Bono Giamboni, *Vegezio* 70, r. 6)

The prenominal position is a result of fronting; this can be seen in examples where the adjective moves to the left but leaves its modifier behind (Poletto 2006: 278, ex. 31a):

(28) e di **gentile** aspetto **molto**
      and of kind appearance very
      'and of a very kind appearance' (Dante, *Vita nuova*, cap. 8, par. 1, v. 11)

Importantly, the word order patterns that result from a Focus position on the left periphery (V2, IP-scrambling, DP-scrambling) were lost at the same time and at the same rate: the examination of Renaissance texts shows that they were already limited to few constructions in this period (Poletto 2006: 278–285).

The proposal made by Poletto (2006) for Old Italian is crucial especially because it shows convincingly that focus fronting is not tied to a single position in the CP-domain and that once new information focus can be fronted, it is true in all functional domains. At the same time, the analysis makes use of the cartographic approach and assumes that there are designated Focus projections, and thus the concerns expressed in connection with the analysis of Rizzi (1997, 2004)

apply here as well. In particular, if the notion of focus (just like topicalisation) is independent of a particular projection, inasmuch as it is clearly not just a type of CP that can be associated with focus fronting, the question arises whether focus fronting is not better treated in a model where the interface conditions on focusing (such as prosodic requirements) are taken into consideration without trying to transform them into syntactic rules (see the proposal made by Fanselow & Lenertová 2011).

In addition, Old Italian V2 is related to focusing in this proposal, while this is clearly not transferable to Germanic V2, where no information-structural constraint can be observed regarding the first constituent in [Spec,CP]. Likewise, while V2 is attested in German and most Germanic languages, the presence of an analogous vP-periphery (and DP-periphery) is questionable. Importantly, when discussing peripheries, Poletto (2006) exclusively considers focus and topic fronting but not complementisers, even though complementisers are canonical elements in the CP-periphery. The analogy seems to be straightforward in the case of the DP-domain, where determiners may well have similar functions; the question is rather whether there are functional elements in the lower periphery (vP-domain) that would provide additional evidence for the existence of a periphery analogous to the higher periphery.[17]

2.3 Introducing a flexible approach

As was mentioned in Section 2.2, the cartographic approach, as implemented by Rizzi (1997, 2004) and Poletto (2006) among others, is problematic for a number of reasons, especially concerning the one-to-one relationship between syntactic position and function, and the designated positions regarding information structure. For these reasons, I am going to propose a more minimal, feature-based model. The goal is ultimately similar to that of Sobin (2002), yet I will not resort to operations like Fuse or the notion of collapse but will argue that minimal structures directly follow from the way Merge operates and from the lexical properties of the individual elements.

In this section, I am going to show that a flexible approach to the CP-domain is needed. Recall that in the model given by Rizzi (1997, 2004), there are ideally two

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[17]This problem of course relates to the more general problem of what exactly belongs to the vP-periphery and which projections count as phase boundaries. Projections such as AspP or VoiceP are either treated as separate from vP or as subtypes of vP. Likewise, vP is standardly assumed to be a phase boundary (Chomsky 2001), but VoiceP (Baltin 2007) and AspP (Hinterhölzl 2006) have also been proposed as phase boundaries.

CP projections enclosing the CP-periphery, encoding Force and Finiteness. As I partly pointed our earlier, this is problematic inasmuch as the empirical data do not always conform to this pattern. Specifically, there are (i) patterns that clearly involve a single complementiser encoding both clause type and finiteness, (ii) patterns that involve a combination of two complementisers that do not conform to the Force–Finiteness split, and (iii) patterns that involve three complementisers.

Let us consider the first scenario. As was pointed out in connection with the Force–Finiteness distinction made by Rizzi (1997), the complementiser *that* encodes both declarative Force and finiteness, and even though Rizzi (1997) assumes that it encodes finiteness only optionally, this is counter-intuitive as *that* cannot occur in non-finite environments[18] and it is therefore logical to assume that finiteness is part of its lexical entry (see the discussion at the end of Section 2.2.2). The same applies to other complementisers, such as *if*, as illustrated in (4), repeated here as (29):

(29) a. I don't know **if** I should call Ralph.

 b. I don't know **whether** I should call Ralph.

 c. * I don't know **if** to call Ralph.

 d. I don't know **whether** to call Ralph.

Obviously, since both *if* and *whether* can occur as overt markers of an interrogative clause (in embedded polar interrogatives), the ungrammaticality of *if* in (29c) cannot be related to the clause type (or Force, in the sense of Rizzi 1997), especially because *whether* is licensed in (29d). Rather, the difference is related to finiteness: *whether* is not specified for finiteness, while *if* is: *if* is thus incompatible with a non-finite clause. It is therefore logical to assume that finiteness is part of its lexical entry and not a property that it marks only optionally.

Without discussing this issue in detail at this point, the left periphery of (29a) is assumed to have the structure in Figure 2.2 and the left periphery of (29b) is

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[18]At first sight, subjunctive clauses introduced by *that* may seem to be a counter-example:

 (i) I demand that he leave.

 In (i), the verb is not morphologically inflected for 3Sg, present tense, as it would be in the indicative mood. Note, though, that this merely indicates that the subjunctive paradigm is different from the indicative one: in language with more verb inflection, such as German, the present and the past tense paradigm of the subjunctive differ and they are both inflected for person and number. Note also that the subject of the embedded clause in (i) is in the nominative case: this indicates that the TP must be present (cf. Kanno & Nomura 2012: 86–87 for a similar observation), since in English, the nominative is not the default case (see Chapter 6 for discussion).

assumed to have the structure in Figure 2.3 (note that both representations show overt elements only).

CP
└─ C′
   ├─ C
   │ └─ if
   └─ TP

Figure 2.2: The position of *if*

CP
├─ whether
└─ C′
   ├─ C
   └─ TP
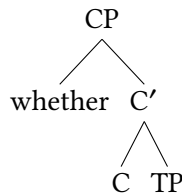
Figure 2.3: The position of *whether*

In either case, the CP encodes both the interrogative nature of the clause and finiteness, as defined by the head; there is no need for a separate overt element to encode finiteness, and the interrogative nature of the clause can be encoded either by the complementiser or by the operator located in the specifier. I will return to the features involved here later in this chapter. Note that in this section I adopt X-bar theoretic structures for representational purposes, but I will return to the issue of what the structures actually mean in a merge-based minimalist account.

Let us now turn to the second scenario, namely the combination of two complementisers that do not follow the Force–Fin distinction. One such example was discussed already: in certain dialects of German (see Jäger 2010, 2018, Eggs 2006, Lipold 1983, Weise 1918 on dialectal variation), comparative clauses can be introduced by the combination *als wie* 'than as'. This is illustrated in (5a), repeated here as (30):

(30) % Ralf   ist größer **als**   **wie** Maria.
      Ralph is taller   than as   Mary
      'Ralph is taller than Mary.'

As was pointed out earlier, there is independent evidence that both *als* and *wie* are heads in configurations like (30), see Jäger (2010, 2018) and Bacskai-Atkari (2014a,c) especially regarding the arguments against treating *wie* as the comparative operator. Note that Jäger (2010, 2018) treats *als* as a Conj head and *wie* as a C head, while I assume that both elements are C heads, as a (partial) coordination analysis of comparatives (as in Lechner 1999, 2004) is rather problematic (see the argumentation in Bacskai-Atkari 2014c: 78–84). Based on this, the structure of the left periphery in (30) can be represented as given in Figure 2.4.

```
            CP
            |
            C′
           /  \
          C    CP
          |    |
         als   C′
              /  \
             C    TP
             |
            wie
```
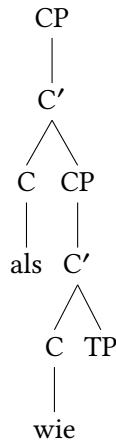
Figure 2.4: The structure of *als wie*

The configuration does not match the Force–Finiteness distinction as clearly both elements mark the comparative nature of the clause in some way. At the same time, the combination shows that CP-doubling is certainly possible; similar patterns are found in many languages (see Bacskai-Atkari 2014c, Bacskai-Atkari 2016 for details).[19]

Ordinary comparatives are not the only syntactic environment where the doubling of the CP can be observed. Hypothetical (or irreal) comparatives involving

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[19]As will be shown in Chapter 5, the combination *als wie* involves two separate syntactic heads and not one complex head (*alswie). The fusion of such heads is in principle possible and indeed attested in the history of German: present-day *als*, for instance, goes back to the original combination *all so* 'just as' (see Chapter 5). However, there is no evidence for such a change regarding *als wie*. Both components are independently attested in German embedded degree clauses and there is no phonological reduction indicative of fusion either. Most importantly, the behaviour of the combination in terms of polarity also points to the conclusion that it cannot be a single C head (see Chapter 5).

the combination *as if* are such an environment, where there are apparently two Force heads. Consider:

(31) a. Mary speaks **as if** she were afraid.
      b. Mary speaks **as though** she were afraid.

One might wonder whether the two complementisers are in a single left periphery or whether they are in separate clauses, whereby the higher (equative or similative) clause is elliptical. However, a higher clause is available only with *as if* but not with *as though*:

(32) a.   Mary speaks **as** she would speak **if** she were afraid.
      b. * Mary speaks **as** she would speak **though** she were afraid.

This indicates that *as* and *though* must be in the same clause; there are reasons to believe that the generation of the equative/similative clause is not necessary with *as if* either. The German pattern is even clearer in this respect (Jäger 2010: 469, ex. 4):

(33) a. Tilla läuft, **als liefe**   sie um ihr   Leben.
          Tilla runs as run.SBJV.3SG she for her.N life
          'Tilla is running, as if she were running for her life.'
      b. Tilla läuft, **als ob** sie um ihr   Leben liefe.
          Tilla runs as if   she for her.N life   run.SBJV.3SG
          'Tilla is running, as if she were running for her life.'
      c. Tilla läuft, **als wenn** sie um ihr   Leben liefe.
          Tilla runs as if   she for her.N life   run.SBJV.3SG
          'Tilla is running, as if she were running for her life.'
      d. Tilla läuft, **wie wenn** sie um ihr   Leben liefe.
          Tilla runs as if   she for her.N life   run.SBJV.3SG
          'Tilla is running, as if she were running for her life.'

The availability of *als* and *ob* shows that the relevant patterns cannot be the combination of a reduced *as*-clause and an ordinary *if*-clause; the only pattern that can involve ellipsis is *wie wenn* 'as if', which is transparent, *wie* being the canonical equative complementiser and *wenn* being the canonical conditional complementiser in Modern (Standard) German, cf. also Jäger (2010). Observe (Jäger 2010: 487, ex. 43 and 45a):

(34) a. Tilla läuft, **wie** sie laufen würde,   **wenn** sie um ihr   Leben
          Tilla runs   as   she run.ɪɴꜰ would.3sɢ if   seh for her.ɴ life
          liefe.
          run.sʙᴊᴠ.3sɢ
          'Tilla is running, as if she were running for her life.'

      b. * Tilla läuft, **als** sie laufen würde,   **ob** sie um ihr   Leben
          Tilla runs   as she run.ɪɴꜰ would.3sɢ if   she for her.ɴ life
          liefe.
          run.sʙᴊᴠ.3sɢ
          'Tilla is running, as if she were running for her life.'

      c. * Tilla läuft, **als** sie laufen würde,   **wenn** sie um ihr   Leben
          Tilla runs   as she run.ɪɴꜰ would.3sɢ if   she for her.ɴ life
          liefe.
          run.sʙᴊᴠ.3sɢ
          'Tilla is running, as if she were running for her life.'

This indicates that hypothetical comparatives of the type in (33b) represent a complex clause type involving multiple CPs in the same clausal periphery (and not two independent clauses). As indicated by (33a), the lower C is available for movement as well: this is in line with the Minimal Link Condition, according to which movement should target the first available position (see Fanselow 1990, 1991, Chomsky 1995).

The structure of the left periphery of (33b) and (33c) can be represented as given in Figure 2.5.

Again, similarly to Figure 2.4, there are two complementisers on the same left periphery, and the configuration is not compatible with the Force–Fin model.

Finally, let us turn to the question of triple combinations. Since the combination *als wie* is available in various German dialects, one might suppose that these dialects allow a triple combination in hypothetical comparatives. This is indeed the case: as Jäger (2016: 279) reports, the combination *als wie wenn* is indeed attested in present-day dialects (cf. also Thurmair 2001: 62). The unavailability of *als wie ob* has historical reasons. The pattern involving *als wenn* is attested since Early New High German (Eggs 2006: 178; see also Jäger 2010) and the combination *wie wenn* is attested since the 17th century, first only in complex comparatives (in parallel with the replacement of *als* by *wie* in equatives), then also in hypothetical comparatives and in comparatives expressing equality (Eggs 2006: 178; see also Jäger 2010). At the time of the appearance of *wie* in comparatives, *ob* was already obsolete in conditional clauses; hence, combinations such as *wie ob*

```
                    CP
                    |
                    C′
                   / \
                  C   CP
                  |   |
                 als  C′
                     / \
                    C   TP
                    |
                    ob
                   wenn
```
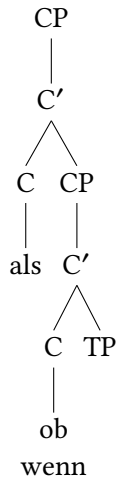
Figure 2.5: Doubling in hypothetical comparatives

and *als wie ob* were not possible. Consider now the following Bavarian example for *als wie wenn* (Jäger 2016: 280, ex. 582, citing Alber 1994: 19):

(35) Er locht, **als wia wenn** er nimmr   aufhearn kannt.
      he laughs as as   if   he no.more stop.INF could.3SG
      'He is laughing as if he could never stop it.'

The structure on the basis of Figures 2.4 and 2.5 should involve three complementiser heads. In the system of Rizzi (1997, 2004), the two CP projections marking the left periphery are not the only projections hosting clause-typing elements: for instance, an IntP can be located in between the two CP layers. However, in combinations like (35), the middle head is clearly not interrogative and hence the entire configuration is incompatible with basic cartographic assumptions. The structure of *als wie wenn* is represented in Figure 2.6.

Importantly, a rigid cartographic approach is not tenable for modelling clause typing, in addition to the problems mentioned in connection with information structure. I propose that the size of the CP-domain is flexible and it depends on the particular features involved in the given clause type and the availability of lexical elements specified for these features, as well as overtness requirements (essentially interface requirements) regarding the lexicalisation of the relevant features. Apart from complementisers, clause-typing operators are crucial because they can overtly encode clause-typing features. They are categorically distinct from complementisers heads, but both take part in overt encoding: features
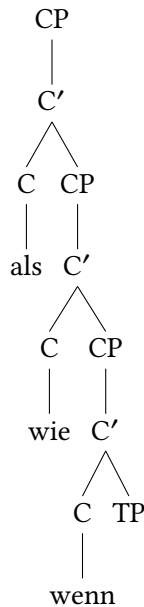
Figure 2.6: The combination *als wie wenn*

of a head can be checked off either by inserting an element into the head or by inserting a phrase into the specifier.

At this point, three major questions might arise. First, given the possibility of accommodating two elements in a single CP, one might wonder why this is not possible for cases like *als wie* (that is, *als* in the specifier and *wie* in the head). After all, a minimal CP would be undoubtedly more economical, in line with general principles of avoiding superfluous structure. I will argue that multiple CPs arise if they are semantically necessary: certain features cannot be encoded in a single CP (due to semantic incompatibility on a single lexical element). Notice that surface doubling may be underlyingly more complex, in that phonologically zero elements (if they are independently motivated by semantics) also occupy positions in the syntax. These questions will be elaborated in Section 2.6 and in Chapter 5.

Second, given the relative flexibility of generating structure (there being no pre-given template), the question arises how the system can prevent overgeneralisation (the same concerns also applying to cartographic models, see Grewendorf 2002 and Speyer 2009), among others). Just like in the case of the previous question, the answer lies in semantic restrictions: further CP layers are generated only if clause-typing features cannot be accommodated in a single projection, as required by the underlying semantic properties.

The third questions concerns to what extent the proposed model is specific for clause typing and whether it can be extended to other domains as well. As discussed already in Section 2.2, similar considerations have been discussed in the literature concerning projections related to information structure. I will return to information structure in Chapter 6; in essence, however, a flexible approach to such left-peripheral elements is indeed desirable, especially as there is no on-to-one correspondence between certain information structural categories and left peripheral positions (in West Germanic languages, foci are typically realised in situ). In addition, some information structural categories such as contrastive topics, which are readily assumed to have designated projections in cartographic approaches, seem to be by definition complex: topicality is not associated with contrast per se. According to Krifka (2008: 267–268), a contrastive topic is essentially a combination of a topic and a focus (see also Robert 1996 and Büring 1997, 2003): more precisely, in these cases an aboutness topic contains a focus. Consider the following example (Krifka 2008: 268, ex. 44):

(36) A: What do your siblings do?
      B: [My [SISter]$_{Focus}$]$_{Topic}$ [studies MEDicine]$_{Focus}$, and
          [my [BROther]$_{Focus}$]$_{Topic}$ is [working on a FREIGHT ship]$_{Focus}$.

In cartographic terms, a [topic] feature and a [focus] feature should have separate projections, yet it is clear that the highlighted phrases do not contain two separate constituents: rather, the very same phrase has both discourse properties.[20] In other words, the combination of discourse-related semantic properties is also possible, similarly to the combination of clause-typing features.

Another domain where a non-cartographic approach seems to be fruitful is that of sentential adverbs. Cinque (1999) extended the cartographic framework to the syntax of adverbs, and this approach was later taken up by others such as Alexiadou (1997), Laenzlinger (2004), and Haumann (2007). This approach faces various problems that are similar to the ones raised in this chapter regarding clause typing (see Ernst 2014 for an overview). An alternative approach is termed the "scopal" approach, going back to Jackendoff (1972); this framework was later extended by others such as Ernst (1984, 2002) and Haider (1998, 2000, 2004); under this view, the observed ordering arise naturally based on the scopal restrictions, ultimately thus going back to semantic constraints. While the cartographic

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[20]In principle, the phrase in question could undergo movement from one position to the other, but this stance would introduce an otherwise unmotivated step in the derivation and it would not account for the prosodic properties associated with contrastive topics. Likewise, assuming a contrast feature (as done by Frascarelli & Hinterhölzl 2007) does not immediately account for the mixed properties of contrastive topics.

template suggests a rigid order for adverbs, some adverbs such as *often* show considerable flexibility regarding their positions, without creating interpretive differences. This is problematic for the cartographic approach inasmuch as positional variation is assumed to be the surface result of two different projections (which, however, would imply interpretive differences), or to the fact that movement has taken place (which would in such cases be unmotivated), so that the cartographic template fails to provide the desired descriptive and explanatory adequacy (see also Ernst 2014: 119–120). The scopal approach provides a more flexible way to deal with ordering constraints, essentially building on the lexical properties of the individual elements rather than on pre-defined categories. The same considerations can be raised in connection with the ordering of adjectives.

These considerations indicate that a flexible approach is not restricted to clause typing but can be viewed as a more general principle underlying the generation of syntactic structures. Since it would be impossible to deal with all of these issues in a single book, I will restrict myself to discussing clause typing. In the following sections, I will sketch the proposed structure for the types of embedded clauses to be discussed in more detail in subsequent chapters. The reason why embedded clauses are discussed is that several functional elements appearing on the left periphery occur only in embedded clauses, which have therefore been much more discussed in the relevant literature in this respect.

2.4 Embedded interrogatives

In embedded interrogatives, there are two important properties to be encoded: the interrogative nature of the clause, [Q] or [wh], and finiteness, [fin]. I will return to the distinction between [Q] and [wh] later: at this point, suffice it to say that [Q] is a disjunctive feature appearing in polar interrogatives, while [wh] is associated with constituent questions (see Bayer 2004). Both will be referred to as interrogative features in this section. In addition, certain restrictions apply since the clause is subordinated: in contrast to main clause polar questions, English requires an overt complementiser or an operator in embedded interrogatives; the clause must be syntactically typed (cf. Bayer & Brandner 2008: 89, citing the Clausal Typing Hypothesis of Cheng 1991). This is relatively straightforward as no distinctive interrogative intonation is available in embedded interrogatives in the languages under scrutiny. In turn, complementisers like *if* are restricted to embedded clauses. Subordination itself does not have to be treated as a syntactic feature: the matrix predicate can impose selectional restrictions on the head of the argument CP. Finiteness does not have to be marked overtly in the CP.

In principle, an uninterpretable interrogative feature of a functional head can be checked off by merging an interrogative operator (on which the feature is interpretable), or an interrogative complementiser is inserted with an interpretable interrogative feature. Consider the following English examples:

(37)   a. I asked **if** Anthony had eaten the cheese.
        b. I asked **who** had eaten the cheese.

The structure showing the relative position of *if* is given in Figure 2.7. The structure showing the relative position of *who* is given in Figure 2.8.
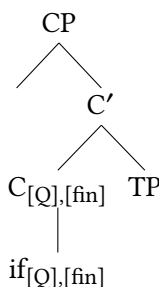
Figure 2.7: Clause typing with *if*
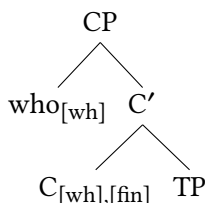
Figure 2.8: Clause typing with a *wh*-element

There is only a single CP, which can fulfil the function of marking the interrogative nature of the clause and finiteness: there is no need to postulate a separate projection for finiteness, since either *if* or a zero complementiser can encode this property.

Let us now turn to the Doubly Filled COMP data given in (3) for English and Norwegian, repeated here as (38):

(38)   a. % I wonder **which book that** Ralph is reading.
        b. Peter spurte   **hvem som** likte bøker.
            Peter asked.3sg who   that liked books
            'Peter asked who liked books.'

Doubly Filled COMP effects can be observed across Germanic, at least dialectally. In German, such patterns are attested in several regional dialects, for instance in Alemannic and Bavarian (Bayer & Brandner 2008). Consider the following examples from Alemannic (Bayer & Brandner 2008: 88, ex. 3b and 4b):

(39) 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.'

     b. I ha   koa Ahnung, **mid wa   für-e Farb   dass**-er zfriede wär.
          I have no   idea   with what for-a colour that-he content would.be
          'I have no idea with what colour he would be happy.'

In all of these cases, the complementiser is specified for finiteness but not for [Q] or [wh]. Based on the representations in Figure 2.7 and Figure 2.8 showing the relative position (syntactic status) of complementisers and *wh*-operators, the Doubly Filled COMP patterns should have the representation of Figure 2.9.
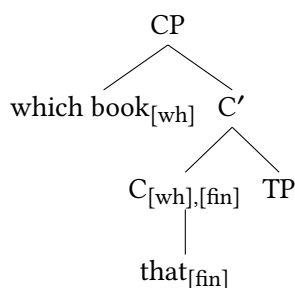
Figure 2.9: Doubly Filled COMP

The point is that the two elements, *that* and the *wh*-phrase, can be merged directly and it is not necessary to assume two separate projections for the two distinct functions: the complementiser marks finiteness in the head and the *wh*-phrase checks off the [wh] feature in the specifier. In traditional X-bar terms, this is compatible with the assumption that a phrase has distinct head and specifier positions that can be filled by overt elements each (but note that a strict distinction is not necessary in minimalist terms and will be revised in Chapter 3).

One clear advantage of this analysis is that it is minimal, as opposed to a rigid cartographic template. Naturally, one of the main reasons for cartographic approaches is that they can describe word order restrictions as the order of projections in the template is supposed to match the observed empirical data. However, the fact that the order of the interrogative phrase and the finite complementiser

is fixed is also predicted by Figure 2.9 since the specifier precedes the complementiser head, which is directly merged with TP. In sum, there is no need to assume multiple projections to account for word order restrictions.

The question arises whether the linear order of *wh*-elements and finite complementisers is universal: the reverse order might indicate a doubling of the CP. As far as linear order is concerned, Hungarian seems to constitute a counterexample to the linear restriction, as demonstrated by (40a):

(40)   a.   Nem tudom,   **(hogy) ki**   ette   meg a   sajtot.
            not   know.1sg   that   who ate.3sg prt the cheese.acc
            'I do not know who has eaten the cheese.'

       b.   Nem tudom,   **(hogy)** Mari ette-**e**   meg a   sajtot.
            not   know.1sg   that   Mary ate.3sg-Q prt the cheese.acc
            'I do not know if it was Mary who has eaten the cheese.'

In (40a), the *wh*-element immediately follows the finite complementiser in the linear structure. However, as indicated by (40b), the interrogative element is not necessarily adjacent to the C head: a topic (the subject DP) and the finite verb appear in between the two elements. In fact, topics[21] are available in front of the *wh*-element in constituent questions as well:

(41)   Nem tudom,   **(hogy)** tegnap   **ki**   ette   meg a   sajtot.
       not   know.1sg   that   yesterday who ate.3sg prt the cheese.acc
       'I do not know who has eaten the cheese.'

This indicates that the [wh]/[Q] property in Hungarian is located considerably lower in the clause than the CP, as pointed out already by Horvath (1986) and É. Kiss (2002). Importantly, *wh*-operators differ from relative operators in this respect, which target the CP (see Horvath 1986). Moreover, as shown by Lipták & Zimmermann (2007), a Hungarian clause may host a *wh*-element clause-internally as in (41) above and a relative operator in the CP, and the *wh*-operator can be extracted without triggering an island violation effect, indicating that the CP is not a landing site for the *wh*-element. This indicates that high clause-typing markers (including the subordinator *hogy* and relative operators) are not in the same left periphery as low clause-typing markers (including the interrogative marker -*e* and interrogative operators), so that the elements under scrutiny in (40) cannot be captured by postulating a split CP in the sense of Rizzi (1997).

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[21]Topics are iterable in the language, see É. Kiss (2002).

The projection hosting interrogative elements is generally assumed to be a FocP (see É. Kiss 2002 and van Craenenbroeck & Lipták 2006), which is a projection located above TP (see also É. Kiss 2008a,b on its exact relative position). There are, however, reasons to believe that interrogative elements, such as the question particle *-e* occurring in polar questions, appear in this position independently of focus (see also Bacskai-Atkari 2017b). For this reason, I am going to refer to this projection simply as FP, standing for functional projection. Note that the appearance of such a functional projection (hosting e.g. foci) is not surprising in the light of Poletto (2006), see Section 2.2.4 above.

The structure for the subclause in (40a) is given in Figure 2.10. The structure for the subclause in (40b) is given in Figure 2.11.
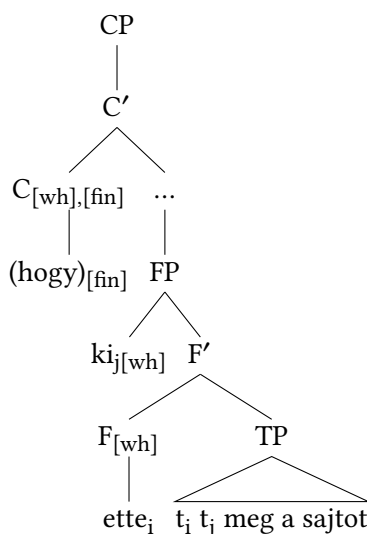
Figure 2.10: The CP and the FP in constituent questions

The dots between the CP and the FP indicate the optional topic field. As can be seen, the complementiser *hogy* is regularly located in the CP, while the overt marking of the interrogative property is tied to a lower functional domain (FP). Naturally, the typing of the clause is tied to the CP and hence the [Q]/[wh] feature is rather passed onto the F head from the C head, establishing some kind of agreement between the two. One might wonder whether the FP is not rather a lower CP, resembling the analysis of Rizzi (1997, 2004) in that topics can appear between two CPs. However, there are various problems with such a stance and it cannot be maintained. First, as was pointed out in connection with Rizzi (1997, 2004), configurations containing topics between two genuine complementisers
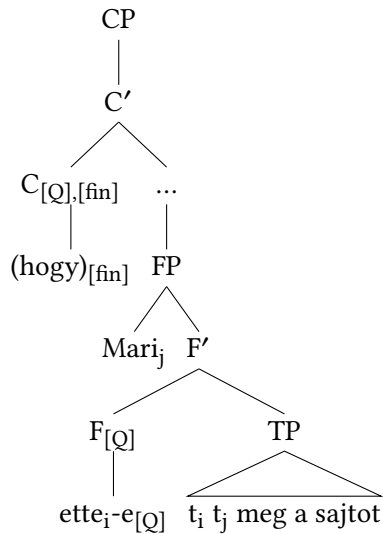
Figure 2.11: The CP and the FP in polar questions

are generally not attested in the form predicted by the cartographic template (cf. also the observations of Benincà 2001). Second, the higher functional head containing *hogy* is related to finiteness and the overt marking of the clause type is tied to the lower functional head, which again would not conform to the Force–Fin distinction. Third, historical data from Middle Hungarian indicate that the marking of [Q] could be split between the CP and the FP: in this period, the interrogative C head in polar questions was still *ha* 'if' (inherited from Old Hungarian, where the pattern was similar to English), and the F head contained *-e*.[22] This is a doubling pattern that is actually incompatible with the cartographic template, as it is indeed counter-intuitive that the same property, [Q], would be marked twice on the same periphery (see Bacskai-Atkari & Dékány 2014 for details).

In sum, Hungarian polar questions seem to demonstrate a pattern where clause typing is distributed among two distinct peripheries: in the CP and in a lower functional domain immediately above TP. This is reminiscent rather of

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[22]This is shown by the following example (Bacskai-Atkari 2022b: 121, ex. 15a):

(i) kérdette tülle   **ha** nyughatik**e**
     asked.3SG (s)he.ABL if   rest.POSSIB.3SG.Q
     '(s)he asked him/her whether (s)he could rest' (Witch Trial 13; from 1724)

   The interrogative complementiser is *ha* 'if' and the question particle *-e* appears cliticised onto the finite verb in the lower periphery.

the lower periphery proposed by Poletto (2006), even though the FP is not equivalent to a functional vP. Nevertheless, the stress pattern of the Hungarian clause, as demonstrated by Szendrői (2001), suggests that the FP constitutes an Intonational Phrase that is sent to the interfaces as a unit, and in this sense it is probable that the phase boundary is the FP, whereas topics are extrametrical. The point is that the word order seen in (40), which is the opposite of the Germanic word order, is simply the result of there being two distinct functional layers, and there is no reason to assume a cartographic template.

I will return to the left periphery of embedded interrogatives in Chapter 3; what matters at this point is that the marking of finiteness and [wh]/[Q] does not require multiple CPs with designated functions. In Germanic, a single CP suffices for overtly marking both, and the co-occurrence of a *wh*-element and a finite complementiser constitutes a classical example of Doubly Filled COMP.

2.5 Relative clauses

In relative clauses, the relative nature of the clause has to be encoded: this is treated as a clause type by Rizzi (1997), and I will simply refer to this property as [rel] for the time being. Overt marking can happen either by a complementiser or by an operator, though in languages like English overt marking is not necessary in all cases.

I will restrict myself to the discussion of finite relative clauses, though it is worth mentioning that in several languages there also non-finite relative clauses (see e.g. Ackerman & Nikolaeva 2013 for a typological perspective). To a limited degree, this is true for English as well, as pointed out already by Chomsky (1977).[23] Consider the following sentences (see also the examples of Law 2000: 161–162, Aarts 2011: 199):

(42)   a. A desk is a dangerous place [**from which** to view the world].
            (John le Carré, *Tinker Tailor Soldier Spy*)

        b. London is becoming a cheaper place [**in which** to live and work],
            according to a new survey.
            (Radford 2019: 13, ex. 18a)

Regarding the [rel] feature on lexical elements, it is important to stress that [rel] apparently comes with an [edge] feature and triggers the movement of

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[23]This is altogether a very restricted option and it seems to be confined to complements of prepositions: Radford (2019: 13) reports that this pattern did not prove to be productive in his corpus data.

the given operator: there is no "relative in situ" (at least in the languages un-
der scrutiny, cf. the discussion in Bacskai-Atkari 2014c: 122). For this reason, the
relative operator moves to the left periphery even if a complementiser with an
interpretable [rel] feature is inserted as the [edge] feature has to be satisfied by
merging a further element. This suggests that the doubling of two overt relative
elements is possible, contrasting with Doubly Filled COMP patterns in embedded
interrogatives in the sense that doubling in interrogatives regularly involves the
combination of an operator specified as [wh] and a complementiser specified as
[fin].

Consider the following examples from English:

(43)   a. This is the book **that** explains the difference between cats and tigers.
       b. This is the book **which** explains the difference between cats and
           tigers.

English has two possibilities for the overt marking of relative clauses in the
standard variety: either by lexicalising the operator, as in (43a), or by inserting
the complementiser *that*, as in (43b). The canonical analysis of the position of
these elements is given in Figure 2.12 for relative complementisers and in Fig-
ure 2.13 for relative pronouns (again, only overt elements are indicated).

CP
└ C′
  ├ C$_{[rel],[fin]}$ TP
  └ that$_{[rel],[fin]}$
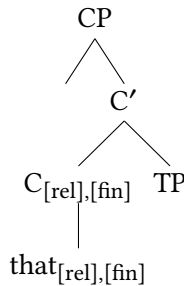
Figure 2.12: Relative complementisers

As can be seen, there is no need to generate a further layer for marking finite-
ness and hence a single CP suffices. In Figure 2.12, a covert operator moves to
[Spec,CP] as there is no relative in situ, and in Figure 2.13, a zero finite comple-
mentiser is located in C, but these elements do not play a role in overt marking.

The structures in Figures 2.12 and 2.13 suggest that the doubling of the oper-
ator and the complementiser may be possible. In English, Doubly Filled COMP
patterns are attested in relative clauses as well, though apparently less frequently
than in embedded questions (this issue will be discussed in Chapter 4 in detail).
Consider (van Gelderen 2013: 59, ex. 85):

CP

which[rel]   C′

C[rel],[fin]   TP
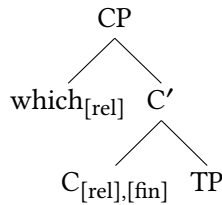
Figure 2.13: Relative operators

(44)   a. This program **in which that** I am involved is designed to help
           low-income first generation attend a four year university and many
           of the resources they...
       b. It's down to the community **in which that** the people live.

Doubling patterns are assigned the structure given in Figure 2.14 in the current
model.

CP

in which[rel]   C'

C[rel],[fin]   TP

that[rel],[fin]
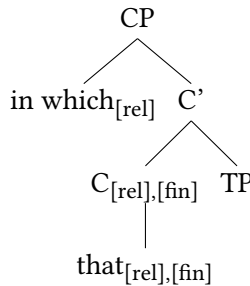
Figure 2.14: Doubling in relative clauses

As indicated, the inserted complementiser is also specified as [rel] and does
not only mark finiteness, unlike what was seen in interrogatives. As was men-
tioned above in connection with the obligatory leftward movement of relative
operators, this is expected. In principle, *that* could also be merely a finiteness
marker: English *that* is ambiguous between the relative complementiser and the
general finite subordinator.

However, this ambiguity does not necessarily arise in other languages. In Ger-
man, the general finite subordinator is *dass* 'that'. Standard German uses the rel-
ative pronoun strategy in relative clauses and not the complementiser strategy.
However, South German dialects regularly form relative clauses (with a nom-
inal head) using the complementiser *wo*, see Brandner (2008) and Brandner &
Bräuning (2013), among others. This is illustrated for Alemannic in (45) below
(Brandner & Bräuning 2013: 140, ex. 23):

(45) 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.'

Relative operators (*d*-pronouns) are essentially borrowings from Standard German, and they either trigger V2 or they can co-occur with *wo* in the CP (cf. Weise 1917). In any case, the relative head is filled by an overt element; further, *wo* is specified as [rel] and cannot be treated as a mere finiteness marker, as that particular element would be *dass* even in these dialects. An example from Hessian illustrating doubling is given in (46) below (Fleischer 2016: ex. 3d):

(46) 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.'

The importance of this is that doubling in South German relative clauses does not conform to a Force–Finiteness distinction, since the element to the right cannot be identified as a designated finiteness marker: it is a relative complementiser. Given that the relative operator marks the same property, [rel], a double CP in this case would involve two designated relative CPs in a cartographic approach, which contradicts the very idea of the cartographic template consisting of distinct functions distributed over distinct projections.

What Germanic relative clauses with doubling patterns demonstrate is rather the consequence of the given dialects having no genuine relative operators by default, as these varieties regularly employ an overt complementiser. This not only applies to German but also to English: in Middle English, *wh*-based relative operators were an innovation alongside the already existing *that* head, see van Gelderen 2004, 2009. There are also other languages that regularly use relative complementisers: this is true for Mainland Scandinavian languages using *som* and Modern Icelandic using *sem* and *er* (see Thráinsson 2007 on the loss of relative operators in Icelandic).

I will return to the left periphery of relative clauses in Chapter 4; what matters at this point is that the marking of finiteness and [rel] does not require multiple CPs with designated functions, just like what was established for embedded interrogatives. In Germanic, a single CP suffices for overtly marking both, and the co-occurrence of a relative operator and a finite relative complementiser is not compatible with cartographic templates; rather, it constitutes a regular example of Doubly Filled COMP.

2.6 Embedded degree clauses

In the constructions examined thus far (embedded interrogatives and relative clauses), there was no evidence for the necessity of a double CP layer, as a single CP can accommodate both the operator and the complementiser, accounting also for the order (operator + complementiser). This indicates that a minimal, feature-based analysis is tenable and in fact preferable to a pre-defined cartographic template. However, the question arises whether CP-doubling is possible and if so, how the proposed model can accommodate it. In this section, I am going to argue that a double CP is necessary in comparative subclauses (see also the discussion in Section 2.3), which follows from semantic reasons.

Embedded degree clauses fall into two major types: degree equatives (expressing the equality of two degrees) and comparatives (expressing the inequality of two degrees), as illustrated in (47):

(47) a. Ralph is as tall **as** Mary is.
      b. Ralph is taller **than** Mary is.

In (47a), the subclause introduced by *as* expresses that the degree to which Mary is tall is the same as to which Ralph is tall, while in (47b) the subclause introduced by *than* expresses that the degree to which Mary is tall is lower than the degree to which Ralph is tall. In line with my previous approach (see Bacskai-Atkari 2014c), I assume that *as* and *than* are complementisers. They are selected by the matrix degree elements (*as* in equatives and *-er* in comparatives; see Lechner 2004: 22–23 and Bacskai-Atkari 2014c: 45–53 on selectional restrictions).

In addition to the equative and the comparative complementiser, non-standard English varieties may allow an overt degree operator (appearing together with a gradable predicate). Consider the examples in (48) below (see Bacskai-Atkari 2018c: 91–92 for discussion):

(48) a. % Ralph is as tall **as how tall** Mary is.
      b. % Ralph is taller **than how tall** Mary is.

In these cases, the comparative operator is overt in the form of *how*. Note that the comparative operator is a relative operator (see Bacskai-Atkari 2014c for details on this; the original insight goes back to Chomsky 1977, who detected the availability of *wh*-operators in comparatives) and hence its movement is triggered by a [rel] feature, in line with what was said about relative clauses in Section 2.5.

The phenomenon is not restricted to English but it can be observed in languages/dialects generally that permit overt comparative operators (Bacskai-Atkari 2014c: 98–129). Consider the following examples from Dutch[24]:

(49)   a.   Mary is even   oud **als** Peter vorig jaar was.
             Mary is just.as old as Peter last   year was
             'Mary is as old as Peter was last year.'

       b.   Mary is ouder **dan** Peter vorig jaar was.
             Mary is older than Peter last   year was
             'Mary is older than Peter was last year.'

       c. % Mary is even   oud **als hoe** **oud** Peter vorig jaar was.
             Mary is just.as old as how old Peter last   year was
             'Mary is as old as Peter was last year.'

       d. % Mary is ouder **dan hoe oud** Peter vorig jaar was.
             Mary is older than hoe old Peter last   year was
             'Mary is older than Peter was last year.'

In this way, it appears that embedded degree clauses demonstrate a "complementiser + operator" order that is exactly the reverse of what was seen in doubling patterns in embedded interrogatives and in relative clauses. Evidently, doubling in these cases cannot be simply represented as a result of the "specifier + head" order, given that in the languages under scrutiny upward movement of elements results in merging them to the left of other (higher) elements. This suggests that there is a double CP in these configurations.

Accordingly, the structure of the left periphery of clauses such as (48) is represented in Figure 2.15.

As indicated, the comparative nature of the clause, [compr], is marked both by the overt operator and by the overt complementiser; in line with Rizzi (1997), comparative can be treated as a clause type (Force in Rizzi's analysis). The lower head is specified as [rel], and this property induces the leftward movement of the operator. The properties [rel] and [compr] are not tied together: there are naturally ordinary relative clauses without a comparative feature, and comparative complements are not necessarily clauses – Italian, for instance, has PP-complements headed by the preposition *di* 'of'.

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[24]The Dutch data stem from the cross-Germanic survey of Bacskai-Atkari & Baudisch (2018: 51–52, 61–62). The informants show differing judgements regarding (49c) and (49d). The interspeaker variation with respect to comparatives involving an overt operator was also pointed out in a previous questionnaire, see Bacskai-Atkari (2014c: 115).
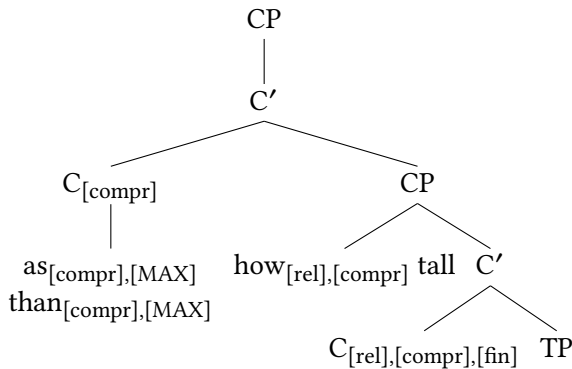
Figure 2.15: Doubling in comparative clauses

The question arises why a second C head is inserted. This has to do with comparative semantics. As shown by Hohaus & Zimmermann (2021), comparative constructions involve a maximality operator (given as [MAX] in Figure 2.15 above) and a comparative operator in the semantics; importantly, the maximality operator is not tied to a particular syntactic projection (or to the notion of degree) but in English it is expressed by the complementisers *as* and *than*. Since it is not a clause type, the representation in Figure 2.15 does not mark it on "C", indicating that this is not a syntactic feature to be checked off. The presence of the maximality operator is necessary semantically, and the comparative operator is in the scope of the maximality operator.

The presence of the maximality operator can be detected in comparatives because comparatives are downward entailing environments. Such environments in turn license negative polarity items, as pointed out already by Seuren (1973); see Ladusaw (1979) on the relation between downward entailment and negative polarity contexts. Consider the following examples:

(50) a. He would rather continue complaining than **lift a finger** to improve his life.
      b. Ralph has spent more time travelling than **any** other member of the family (has).

Taking the example in (50b), the sentence entails that Ralph has spent a certain amount of time travelling, call it d, and for all the other members of the family it is true that the amount they travelled is lower, call it d', hence d' is always lower on a scale than d is, while the exact value of d is not necessarily known in the context. These issues will be discussed in Chapter 5 in detail.

Regarding the lower CP, a complementiser is in a feature-checking relationship with the operator, in essentially the same way as what was established for relative clauses. The Minimal Link Condition is satisfied in that the operator moves to the closest possible projection. By contrast, there is no feature-checking mechanism taking place in the higher CP in the same way and the inserted element is a head (see a cross-linguistic overview in Bacskai-Atkari 2016).

While the comparative operator always moves from within the clause, it is not always overt, as is evident from Standard English, see (47) above (see also the discussion in Bacskai-Atkari 2014c: 98–129). Nevertheless, even if the lower CP contains covert elements only, its presence is justified by the semantics, without thus resorting to a predefined template. Note that it is also possible to have an overt lower complementiser in certain languages, as in non-standard German, see (5a)/(30), repeated here as (51):

(51) % Ralf   ist größer **als**   **wie** Maria.
      Ralph is taller   than as   Mary
      'Ralph is taller than Mary.'

As pointed out at the end of Section 2.5, this involves two CPs with two overt C heads. Since the element *wie* 'how' in interrogatives corresponds to English *how* and is a regular degree operator, it cannot be treated as the comparative operator in comparative subclauses (see the discussion in Bacskai-Atkari 2014a: 497–499 and Bacskai-Atkari 2014c: 117–118, 223–226). One of the main arguments is that patterns like (48) are not allowed with *wie*:

(52) a. * Ralf   ist größer **als**   **wie groß** Maria ist.
           Ralph is taller   than as   tall   Mary is
           'Ralph is taller than Mary.'
      b. % Ralf   ist größer **als**   **wie** Maria **groß** ist.
           Ralph is taller   than as   Mary tall   is
           'Ralph is taller than Mary.'

As can be seen, the construction in (52a) is not acceptable even for speakers who otherwise allow the combination *als wie*; on the other hand, (52b) clearly demonstrates that the overtness of the adjective in itself is not problematic.

Taking this into consideration, the structure of *als wie* involving features is given in Figure 2.16.

Since the operator moves to the lower specifier and checks off the relative feature there, the two complementisers are not merged directly together. Just as in
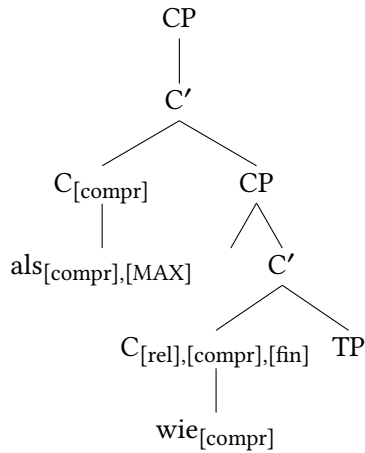
Figure 2.16: Features in comparatives

Figure 2.15, a double CP is needed, which it ultimately follows from comparative semantics.

The question arises whether a single CP is possible in comparative constructions at all. In order to do that, the maximality operator would have to be located outside the subordinate clause, and the comparative head should be a relative head, so that the comparative operator can move. As I will show in Chapter 5 in detail, the maximality operator can be lexicalised by the matrix degree element as well under certain conditions (in line with the assumption of Hohaus & Zimmermann 2021 that the maximality operator is not tied to a particular syntactic category). This is in principle available in non-degree equatives (similatives) and in degree equatives, but not in comparatives proper.

There is direct evidence from Old High German that at least in non-degree equatives a single CP was sufficient. The element *wie* appears in Early New High German in equatives (first in non-degree equatives, then in degree equatives, see Jäger 2010, 2018), and it goes back to Middle High German *swie*, which in turn stems from Old High German *so wie so*, see Jäger 2010: 488. This is illustrated in (53) below (Jäger 2010: 488, ex. 46, quoting Schrodt 2004):

(53) er bi unsih tod   thulti,   **so wio so** er selbo wolti
     he by us   death suffered as how as he self   wanted
     'he suffered death by us, as he himself wished' (*Otfrid* V, 1, 7)

The combination *so wie so* appears in free relatives, just as *so wer so* or *so waz so* in non-comparative free relatives, where the *so*+WH combination is in

[Spec,CP] and *so* is in C, see Jäger (2010: 488), cf. Behaghel (1928) and Paul (1920a). In addition, *so* was used as a C head in *as*-clauses in Old and Middle High German, see Jäger (2010: 470–472), as demonstrated by (54) below (Jäger 2010: 472, ex. 14):

(54) ir   scult   wesen fruot. **so** die   natrun.
      you.PL should.2PL be   cunning as the.PL snakes
      'you should be cunning as snakes' (*Physiologus* 142v, 6)

Moreover, *so* was available as a relative complementiser on its own in Middle High German (and beyond, see Brandner & Bräuning 2013), see Paul (2011: 405), Ferraresi & Weiß (2011: 98). Consider (Ferraresi & Weiß 2011: 98, ex. 30, quoting Paul 2007: 414):

(55) ich hete   ir   doch vil lihte ein   teil geseit, der
      I   have.COND.1SG she.DAT PRT perhaps a.M.ACC part say.PTCP the.F.GEN
      vil   grossen   liebe **so** min   herze an si   hat
      much great.F.GEN love as my.N heart at she has
      'perhaps I should have expressed to her a part of the great love that my
      heart has towards her' (*Rudolf von Rotenburg* VII, 2,1–2)

The examples in (54) and (55) illustrate that there is independent evidence for the availability of *so* as a similative complementiser and as a relative complementiser. Regarding (53), then, it is justified to assume that *so* is equipped with both a [rel] and a [compr] feature. The relevant structure is shown in Figure 2.17 below.
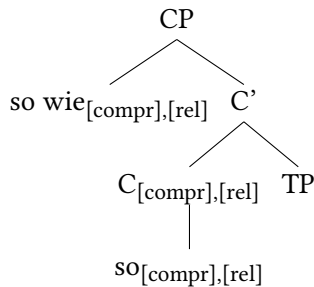
Figure 2.17: Doubling in similatives

In this case, there is only one CP, and it is an instance of a Doubly Filled COMP pattern, just like what was attested in ordinary relative clauses. Importantly, this construction is available in non-degree equatives (similatives): note that there is no matrix degree element, and there is no maximality operator needed at all,

since the construction expresses similarity but not (degree) equality. I will argue in Chapter 5 that degree equatives can also have a single CP, whereas this pattern is not attested in comparatives proper. At this point, what matters for us is that doubling patterns can arise in comparative constructions as well, and while they sometimes do indeed require a double CP, this is not necessarily the case. In other words, while comparative constructions provide evidence for a complex left periphery, they do not support the existence of a cartographic template.

2.7 Summary

This chapter presented the basic assumptions concerning a minimal, feature-based approach to the syntax of functional left peripheries, showing that the proposed analysis applies to various clause types, in each case correctly predicting the surface order of clause-typing elements appearing in combinations. This approach contrast with the cartographic approach, which postulated designated functional projections in narrow syntax, both in the CP-periphery and in a lower functional vP-periphery. While there have been calls for a more minimal CP in the literature (see Sobin 2002, building on Pesetsky 1982 and Sobin 1987), the present proposal aims at providing a unified framework applicable across clause types and languages. In particular, it has been shown that a single CP is satisfactory for doubling phenomena in embedded interrogatives and in relative clauses, while doubling in embedded degree clauses normally requires a double CP (without, however, requiring a pre-defined cartographic template). So far, only the basic outline of the model has been presented; further investigation of the data reveals that there are various asymmetries that should also be accounted for. In this vein, Chapter 3 will have a more thorough look at embedded interrogatives and Chapter 4 offers a detailed investigation of relative clauses. Chapter 5 discusses embedded degree clauses, also pointing out differences between equatives and comparatives proper, while Chapter 6 addresses questions related to information structure and ellipsis, extending the model to domains that go beyond clause typing in a narrow sense.

3 Doubly Filled COMP in interrogatives and the role of finiteness in V2

3.1 Introduction

Using the framework established in Chapter 2, this chapter is devoted to the left periphery of interrogative clauses, especially embedded interrogative clauses. In particular, I will examine various combinations of operators and complementisers in the left periphery that are allowed in certain dialects but not in others. The impossibility of the relevant combinations in standard West Germanic languages has been referred to as the "Doubly Filled COMP Filter" in the literature, suggesting some inherent syntactic ban on the configurations; however, the generalisation is not compatible with empirical data from non-standard dialects and from other languages that allow the combinations in question. I will argue that the existence of such combinations does not require or justify postulating designated projections, as in cartographic approaches. Instead, I propose that doubling patterns are compatible with a minimal CP. Further, I argue that the insertion of a finite complementiser is not an indication of a separate projection for finiteness but merely the consequence of the regular Germanic pattern of lexicalising a finite C overtly, as can be seen in V2 patterns as well. In order to understand the novelty of the proposed analysis better, I will first review some previous works addressing the same question.

This chapter is structured as follows. Section 3.2 reviews some previous accounts, notably the fundamental article by Chomsky & Lasnik (1977), which introduced the notion of Doubly Filled COMP, as well as the paper by Bayer & Brandner (2008), which made important steps towards a feature-based accounts regarding German dialect data. Section 3.3 discusses two major approaches to Doubly Filled COMP that will be central to the discussions in this chapter. Section 3.4 examines variation in Doubly Filled COMP in embedded constituent questions. Section 3.5 shows that similar variation can be found also in embedded polar questions, so that the conclusions regarding the classical Doubly Filled COMP setup have relevance beyond the particular construction. Section 3.6 presents the core part of the analysis, establishing a connection between Doubly Filled

COMP and V2. Section 3.7 shows that the predictions made by the model hold in long movement constructions as well.

3.2 Previous accounts

3.2.1 The problems to be discussed

In Standard English, Standard German and Standard Dutch, there is no overt complementiser with an overt interrogative operator. This is illustrated in (1) for English embedded interrogatives:

(1) I don't know **who (*that)** has arrived.

As can be seen, the complementiser *that* is not permitted in Standard English in embedded constituent clauses. However, there are languages and also many West Germanic varieties that allow such patterns, as in the following examples from non-standard English (Baltin 2010: 331, ex. 1) and from non-standard Dutch:[1]

(2) a. % They discussed a certain model, but they didn't know **which model that** they discussed.

   b. % Peter vroeg   **wie dat** er   boeken leuk   vindt.
      Peter asked.3sg who that of.them books   likeable finds
      'Peter asked who liked books.'

On the other hand, the specifier of the CP and the C head can be both lexicalised overtly in main clauses, as in T-to-C movement in English interrogatives, and in V2 clauses in German and Dutch main clauses. Consider the examples for main clause interrogatives in Standard English:

(3) a. **Who saw** Ralph?
   b. **Who did** Ralph see?

In this case, doubling in the CP involves a *wh*-operator in [Spec,CP] and a verb in C. T-to-C movement is visible by way of *do*-insertion in (3b), though not in (3a): in principle, one might analyse (3a) as not involving the movement of the verb to C, but the CP is clearly doubly filled in (3b).

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[1]The Dutch data stem from the cross-Germanic survey of Bacskai-Atkari & Baudisch (2018: 32). The informant who provided the example sentence marked it as grammatical but quite informal (this informant grew up predominantly in Amersfoort/Nijkerk and stated that she did not consider (2b) to be part of her own variety).

Similarly, in German (and Dutch) V2 declarative clauses a verb moves to C, while another constituent moves to [Spec,CP] due to an [edge] feature (see Thiersch 1978, den Besten 1989, Fanselow 2002, 2004a,b, Frey 2005). Consider:

(4)   a.   **Ralf hat** morgen   Geburtstag.
           Ralph has tomorrow birthday
           'Ralph has his birthday tomorrow.'

       b.   **Morgen hat** Ralf   Geburtstag.
           tomorrow has Ralph birthday
           'Ralph has his birthday tomorrow.'

As can be seen, the fronted finite verb is preceded by a single constituent in each sentence, and since the first constituent is not a clause-typing operator in either case, it is evident that doubling in the CP in V2 clauses is independent of the interrogative property.

It is therefore clear that the Doubly Filled COMP Filter should be more restricted in its application domain. In principle, one could say that an operator and a complementiser with largely overlapping functions are not permitted to co-occur in standard West Germanic languages, or that the Doubly Filled COMP Filter should be seen as some kind of an economy principle. Still, the problem remains that the notion of the Doubly Filled COMP Filter implies that the C head and [Spec,CP] would be filled without the Filter and that the Filter is responsible for "deleting" the content of C.

Regarding this, at least two major questions arise. First, it should be clarified what requirement is responsible for filling C even in the presence of an overt operator in [Spec,CP], as in (2). Second, the question is what kinds of elements may appear in C: in particular, if elements other than complementisers can satisfy the requirement of filling C, then the deletion approach is probably mistaken.

In addition, there is a theoretical problem with the notion of the Filter, which arises from a merge-based, minimalist perspective, while it is less problematic in X-bar theoretic terms. X-bar theoretic notions can at best be taken as descriptive designators that are derived from more elementary principles, along the lines of Kayne (1994) and Chomsky (1995). Under this view, the position of an element (specifier, head, complement) is the result of its relative position when it is merged with another element, and which element is selected as the label. By contrast, the notion of the Doubly Filled COMP Filter, as applied to a CP (as in Baltin 2010), implies that a phrase is generated with designated, pre-given head and specifier positions, and that there are additional rules on whether and to what extent they can be actually "filled" by overt elements. In a merge-based

account, there are no literally empty positions, as no positions are created independent of merge: zero heads and specifiers reflect elements that are either lexically zero or have been eliminated by some deletion process (e.g. as lower copies of a movement chain or via ellipsis). In other words, Doubly Filled COMP effects should be accounted for in a way other than by referring to a pre-given XP.

3.2.2 Surface filters – Chomsky & Lasnik (1977)

In order to see the problem in the relevant context, I will first review the article by Chomsky & Lasnik (1977), which introduced the notion and the phenomenon of Doubly Filled COMP into the literature.

The key observation made by Chomsky & Lasnik (1977: 425) is that "it is necessary to develop some notion of well-formedness for surface structure": they refer to this condition as a "(surface) filter", following previous investigations of Chomsky (1965, 1973) and Perlmutter (1971). Rules operating on the surface structure are not necessarily formulated as filters, though (Chomsky & Lasnik 1977: 426).

One important area of filters is the complementiser domain; following Bresnan (1971, 1972), Chomsky & Lasnik (1977: 426) assume that the basic structure of sentences is "COMP + S". Consider (Chomsky & Lasnik 1977: 426, ex. 4):

(5)   a. $[_{S'} \, [_{COMP} \, \textbf{for}][_S \, \text{John to leave}]]$ _____ would be a mistake
      b. $[_{S'} \, [_{COMP} \, \textbf{that}][_S \, \text{John has left}]]$ _____ is obvious
      c. $[_{S'} \, [_{COMP} \, \textbf{whether}][_S \, \text{John left}]]$ _____ is unclear

According to this, all the three boldfaced elements – *for*, *that* and *whether* – fall under the category COMP.

In order to provide a sufficiently restrictive theory of grammar, with the ultimate aim of reaching explanatory adequacy, Chomsky & Lasnik (1977: 428), referring to Jackendoff (1972) and Chomsky (1972), "assume the general framework of the extended standard theory (EST)", and "that the grammar consists of a base with a categorial component and a lexicon, a transformational component, and two systems of interpretive rules, a phonological and a semantic component". The categorial component generates abstract phrase markers, and by way of inserting lexical items in these abstract phrase markers, base phrase markers are derived, whereby rules associated with the transformational component serve to yield surface structures (Chomsky & Lasnik 1977: 428). Surface structures must be well-formed: this can be achieved via surface filters and by

the interpretive rules (Chomsky & Lasnik 1977: 428). There are also base phrase markers that map directly into well-formed surface structures: these are referred to as "deep structures" (Chomsky & Lasnik 1977: 428). Regarding the base component of core grammar, Chomsky & Lasnik (1977: 430–431) assume the rules of X-bar theory to be operative. Base structures are transferred to the semantic component and to the phonological component independently: deletion, filters, rules of phonology and stylistic rules apply in the phonological component (Chomsky & Lasnik 1977: 431). Filters apply after deletion has taken place, and phonological rules then assign a phonological representation, which may further be subject to stylistic rules (Chomsky & Lasnik 1977: 433).

Regarding complementisers, Chomsky & Lasnik (1977: 434) mention that apart from *that* in tensed and *for* in infinitival clauses, see (5), the COMP position may be empty: the assumption is that there is a rule for free deletion applying to complementisers. Consider (Chomsky & Lasnik 1977: 434, ex. 13):

(6)   I think [John left]

On the other hand, *wh*-movement also targets the COMP position: the *wh*-element is placed to the left of the complementiser (Chomsky & Lasnik 1977: 434). Consider now the following examples (taken from Chomsky & Lasnik 1977: 435, ex. 17):

(7)   a. the man **who that** I saw
      b. the man **that** I saw
      c. the man **who** I saw
      d. the man I saw

The pattern in (7a) represents the underlying structure (and as such it contains no grammaticality markers). Assuming that elements in COMP can be deleted freely, the derivation of (7b–7d) is straightforward from an underlying (7a): however, while (7a) is possible in other languages and in earlier stages of English, it has to be excluded from Modern English (Chomsky & Lasnik 1977: 434–435, 446). This is done in terms of a surface filter (Chomsky & Lasnik 1977: 435, ex. 18, cf. Keyser 1975):

(8)   * [$_{\text{COMP}}$ *wh*-phrase complementiser]

This is a filter "blocking doubly-filled COMP" (Chomsky & Lasnik 1977: 461). The filter in (8) applies not only in finite clauses but also in infinitival clauses, and

together with various other surface filters certain ungrammatical configurations can be ruled out (see Chomsky & Lasnik 1977: 450–470).

Note that the clauses in (7) are object relative clauses; the paradigm is different in subject relative clauses (Chomsky & Lasnik 1977: 435, ex. 19):

(9)   a.   * the man **who that** met you _____ is my friend
       b.   the man **that** met you _____ is my friend
       c.   the man **who** met you _____ is my friend
       d.   * the man met you _____ is my friend

The configuration in (9a) is excluded by the rule in (8) but (9d), contrasting with (7d), must be excluded by an additional rule. Chomsky & Lasnik (1977: 435, ex. 20) formulate this as a filter:

(10)   * [$_{NP}$ NP tense VP]

The same rule is supposed to be operative in cases where a *that*-clause is fronted and the complementiser cannot be deleted (Chomsky & Lasnik 1977: 436, ex. 21):

(11)   a.   I think that he left.
       b.   I think he left.
       c.   That he left is a surprise.
       d.   * He left is a surprise.

In essence, the rule under (10) is taken to be perceptual in nature: the linear sequence can be parsed as a main clause as well, which clashes with fact that they are actually embedded clauses (Chomsky & Lasnik 1977: 436). The perceptual nature of the rule in (10) is supported by garden-path sentences (Chomsky & Lasnik 1977: 438, ex. 25 and 26):

(12)   a.   The horse raced past the barn fell.
       b.   The ball thrown past the barn fell.

In (12a), the verb *raced* is ambiguous between the past tense form and the participle, and is naturally interpreted as a tensed verb preceded by the subject: this interpretation breaks down when the tensed verb *fell* is reached in parsing. The sentence is therefore generally taken to be ungrammatical by speakers (Chomsky & Lasnik 1977: 438). The same problem does not arise with (12b), where *thrown* is unambiguously a participle and hence (10) does not apply.

As noted by Chomsky & Lasnik (1977: 438), the rule under (10) is not universal: even English has dialects that allow the subject *wh*-element to be deleted in (9d). Further, there are certain configurations where *that* must be overt, yet (10) would not be violated even if *that* were covert. Consider the following example taken from Chomsky & Lasnik (1977: 484, ex. 174a–d):

(13) a. the fact [**that** John was here] surprised me

  b. it came as a surprise to me [**that** John was here]

  c. it is unlikely [**that** John is here]

  d. [**that** John is here], I have no reason to think

As Chomsky & Lasnik (1977: 484) observe, the distribution of finite clauses is similar to that of infinitives. Therefore, there is a more general filter prohibiting the relevant sequence, as indicated in (14) below (Chomsky & Lasnik 1977: 485, ex. 178), where F is a subfeature of +V:

(14) *$[_\alpha$ NP tense VP], unless $\alpha \neq$ NP and is adjacent to and in the domain of [+F], *that*, or NP

In addition, there is a separate filter ruling out the appearance of an overt element in COMP in root clauses (Chomsky & Lasnik 1977: 485).

Regarding COMP, Chomsky & Lasnik (1977: 444–445) assume that ±WH must be indicated: a clause must be identified either as declarative (which encompasses relative clauses besides declaratives) or as interrogative (which encompasses both direct and indirect questions). The idea is that *for* and *that*, both –WH, can be deleted freely, since –WH is not a lexical category: accordingly, these elements "are not lexical items but rather semantically null feature sets generated by the categorial component of the base" (Chomsky & Lasnik 1977: 447). Apart from the complementiser, the *wh*-element can be deleted in relative clauses: however, this does not apply for interrogative clauses (Chomsky & Lasnik 1977: 447). Chomsky & Lasnik (1977: 447) propose that this is so because the *wh*-word has semantic content in interrogatives (it is a quantifier) but not in relative clauses.

The study by Chomsky & Lasnik (1977) is important for various reasons. On the one hand, it offers an overview of phenomena that had not been substantially discussed previously in the literature. On the other hand, it indicates clearly that the requirements behind them are not necessarily strictly derivational in nature but are rather related to surface restrictions.

Nevertheless, there are certain problems that arise as well, both in terms of theory and empirical data. Regarding the overtness of *that*, it was pointed out

in the literature later that there are additional factors (such as the presence of adverbs) to consider and judgements are not necessarily clear; see the discussion in connection with Rizzi (1997) and especially the response of Sobin (2002), as was discussed in Chapter 2. But even if one restricts oneself to the particular case of Doubly Filled COMP, certain questions arise, especially from a minimalist perspective.

First, the model used by Chomsky & Lasnik (1977) is essentially X-bar theory, yet the complementiser layer is still referred to as merely COMP. This leaves only one option for *wh*-movement, which is to adjoin the *wh*-phrase to COMP itself. While this is indeed possible with a head-sized *wh*-element like *who*, as is indeed the case in all the examples given by Chomsky & Lasnik (1977), the adjunction of a complex phrase (such as *whose books*) to a head element in COMP is problematic. This dilemma can be overcome by adopting the X-bar schema for COMP, that is, by treating it as CP, whereby the complementiser is the head of the CP and the *wh*-element can move to the specifier, irrespective of whether the *wh*-element is head-sized or phrase-sized. The same applies to a merge-based account, where the particular position COMP does not have to be assumed either.

However, there is a second problem that arises either way and that applies to the filter itself. The Doubly Filled COMP Filter may effectively describe the ban on doubling in Standard English, yet the question remains why this should be so. More precisely, if one assumes the element *that* to be an abstract feature set, it is not clear why it is assumed to be deleted rather than zero in the first place, given that zero elements are in principle possible in generative grammar. The deletion mechanism responsible for the elimination of certain elements is likewise not clear: it is assumed to take place in the phonological component, yet the filter rules are in part syntactic. Moreover, as can be seen especially in the case of (14), the filter rules are very specific and do not follow from independently motivated factors (either in syntax or in the interfaces).[2] In other words, the Doubly Filled COMP Filter does not explain either the insertion or the deletion of an overt *that*.

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[2]This is in fact also related to the next point of criticism, namely that the filter is not categorical. Fanselow & Ćavar (2001: 109–118) argue that true partial *wh*-movement in Bahasa Indonesia can be analysed as the result of surface filters in an optimality theoretic fashion, at least in a framework making use of cyclic optimisation, as proposed by Müller (2000, 2002). In this language, the *meng-* prefix can appear on a verb if the *wh*-element is postverbal, but if the *wh*-element moves across the verb, landing either in the same clause or in a higher clause, *meng-* has to be deleted. They attribute this to the *wh*-phrase moving into the specifier of the phrase headed by *meng-* (Agr-O), whereby either element has to be deleted: if *meng-* is deleted, the higher copy of the *wh*-element is realised, and if the higher copy of the *wh*-element is deleted, *meng* remains overt. This is ultimately carried out by some surface filter resembling the Doubly Filled COMP Filter (Fanselow & Ćavar 2001: 115–116), not specified further; this raises the same concerns as expressed here regarding the Doubly Filled COMP Filter. More importantly, however, while the ban on the specific doubling in Bahasa Indonesia is apparently categorical,

Third, the way the filter is supposed to work is not entirely compatible with the empirical data. As Chomsky & Lasnik (1977) also note, the Doubly Filled COMP Filter was not always operative in the history of English; similarly, subject relative clauses with no visible COMP are also attested in certain varieties. In fact, variation is attested both synchronically and diachronically in both cases. One may suppose that variation can be accounted for by assuming that the filter is operative in certain dialects (and languages) but not in others. However, the problem is that there is intra-speaker variation as well, and as will be discussed in the Section 3.2.3 in connection with the analysis of Bayer & Brandner (2008), there are speakers of Bavarian and Alemannic who make a fairly clear difference between head-sized and phrase-sized *wh*-expressions with respect to the overtness of the complementiser. This sort of difference is not predicted by the filter, which is assumed to operate automatically; alternatively, one may try to apply more specific restrictions, but this would only make the surface filters even more descriptive in nature.

Fourth, related to this, while the doubling in COMP in English may involve the combination of a *wh*-phrase (either interrogative or relative) and *that* in many non-standard varieties, other combinations do not prevail; specifically, the combination with *if* is not regularly attested.[3] While it seems plausible that a *wh*-

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the same is not true for West Germanic doubly filled COMP patterns: these show not only dialectal but also intra-speaker variation and are also sensitive to the specific properties of the *wh*-elements, leading to gradient variation and optionality in many cases (without triggering interpretive differences). This seriously questions the applicability of filters for these cases, since relevant data would automatically be filtered out. The same considerations of course also apply to the proposal made by Pesetsky (1998), who assumes that complementisers are subject to constraints requiring them to be spelt out at the left edge of the CP, leading to the deletion of a non-initial complementiser or to the deletion of a fronted *wh*-element in relative clauses. The non-doubling options in Pesetsky's system may all survive EVAL due to a "constraint tie", leading to optionality in effect, but in case one were to loosen the remaining constraint for non-standard varieties allowing doubling, this would amount to there being no constraints in this respect, leaving also no explanation for observable preferences.

[3]An example for the combination *whether if* is provided by van Gelderen (2004: 96, ex. 82):

(i) The local authority will know **whether if** they let the council house to the tenant.
   (BNC-FC3-80)

In this case, *whether* and *if* are in the same left periphery; a more detailed discussion will follow in Section 3.5. I have not found evidence for similar combinations in constituent questions, and the co-occurrence of *wh*-elements and *if* is banned in Standard English:

(ii) *We were asked **who if** should be responsible for cleaning the kitchen.

Note that the restriction obviously does not extend to cases like the following:

element does not combine with a COMP already specified as interrogative, Dutch dialectal data, as will be discussed later in Section 3.5.4, indicate that this is possible in constituent questions. In addition, while in English the COMP element occurring in doubling patterns in relative clauses is *that*, just like in embedded questions, this is not necessarily the case in other languages: in German dialects, relative pronouns may co-occur with the regular dialectal relative complementiser *wo*, while in embedded questions the COMP involved is the finite subordinator *dass* 'that'. Given this difference, *wo* can hardly be taken to be merely the overt realisation of the finite –WH COMP. Note also that treating relative operators as *wh*-elements cannot be adopted universally: in German, relative pronouns in headed relative clauses (*der*/*die*/*das*) are not identical to *wh*-pronouns, as they in fact derive from demonstrative pronouns. These issues will be discussed in Chapter 4 in detail. What matters for us here is that the actual distribution of Doubly Filled COMP patterns differs from what the theory of Chomsky & Lasnik (1977) predicts, and therefore an alternative account is desirable.

3.2.3 Variation in the CP – Bayer & Brandner (2008)

In this section, I will review the analysis of Bayer & Brandner (2008), which discusses some important empirical issues concerning Doubly Filled COMP patterns in embedded interrogatives in German dialects. This proposal is particularly important because it adopts a flexible approach to the CP that can avoid certain problems associated with the model used by Chomsky & Lasnik (1977).

As Bayer & Brandner (2008: 87) note, while the Doubly Filled COMP Filter is operative in Standard English and Standard German, as well as other standard Germanic languages, earlier stages of these languages and dialects do not necessarily observe this rule (see Bayer 1984 for Bavarian, Haegeman 1992 for West Flemish, Penner & Bader 1995 and Schönenberger 2006 for Swiss German). The traditional assumption is that the insertion of the complementiser is optional and redundant but as descriptive works on Alemannic and Bavarian (such as Noth 1993, Schiepek 1899, Steininger 1994) indicated earlier, there seem to be certain restrictions.[4]

(iii)   We were asked **who**, if anyone, should be responsible for cleaning the kitchen.

In this case, *who* and *if* do not occur in the same left periphery since *if* introduces a parenthetical clause that is simply string-adjacent to the *wh*-operator in the host clause.

[4]As shown by Schallert & Bidese (2021), Doubly Filled COMP patterns in interrogatives are not restricted to Germanic but they can be found in various Romance and even Slavic varieties in the Alpine region, constituting an areal ("Sprachbund") phenomenon. They also show that Germanic and Romance varieties are structurally similar in embedded clauses and differ espe-

Bayer & Brandner (2008: 88–89) conducted a questionnaire study on Bavarian and Alemannic; the judgements are not absolutely clear-cut but the relative differences can definitely be observed, on the basis of which a hierarchy can be established. The best results for Doubly Filled COMP patterns are achieved with "genuine" *wh*-phrases that contain a DP or a PP in addition to the *wh*-word, as illustrated by the following example from Bavarian (Bayer & Brandner 2008: 88, ex. 3a):[5]

(15) 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.'

The lowest ratings for Doubly Filled COMP patterns are achieved with the word-sized *wh*-elements *wer* 'who.NOM', *wen* 'who.ACC', *was* 'what', *wie* 'how', and *wo* 'where', as illustrated by the following example from Alemannic (Bayer & Brandner 2008: 88, ex. 5b):

(16) *I wett   gern wisse, **wa dass** i do   uusfülle muss.
       I would gladly know what that I there out-fill   must
       'I'd like to know what I have to fill out there.'

In addition, there are complex word-sized *wh*-elements that have an intermediate status with respect to judgements: these are *warum* 'why', *wieviel* 'how much', *wem* 'who.DAT' (Bayer & Brandner 2008: 89). According to Bayer & Brandner (2008: 89), the intermediate status of these elements (that is, that they are more similar to complex *wh*-phrases regarding the acceptability of *dass*) is due to their complex internal structure: *wieviel* is evidently composed of *wie* 'how' and *viel*

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cially in root clauses. As will be discussed later, the asymmetries and restrictions observed in connection with Doubly Filled COMP show differences even across Germanic and the same applies to differences from other language groups. See also Poletto (2000) and Poletto & Vanelli (1997) on Northern Italian varieties.

[5]Note that the same differences do not hold in all varieties: as will be discussed later, "symmetric" varieties tend not to make a distinction between kinds of *wh*-elements in terms of Doubly Filled COMP. The Northern Italian data presented by Poletto & Vanelli (1997) suggest that the preferences in Romance may in fact be the other way round; that is, doubling patterns may well rather occur with subjects. This is not unexpected because the rules underlying such patterns in Germanic (which will be shown to be related to a lexicalisation requirement on C) do not straightforwardly carry over to Romance. Schallert & Bidese (2021) suggest that doubling patterns in non-Germanic languages in the Alpine region may well be due to contact effects: if so, it seems that Romance varieties have adopted the surface syntactic pattern in the less marked functions (such as subjects) and have not necessarily extended it to the more marked functions (cf. the Noun Phrase Accessibility Hierarchy of Keenan & Comrie 1977).

'much', *warum* is underlyingly the combination of the preposition *um* and *was* 'what', and *wem* is similar to a PP in that it is internally complex, the dative acting as an adpositional head (cf. Bayer et al. 2001).

The conclusion is that word-sized *wh*-elements are in complementary distribution with the complementiser *dass*, and are thus located in C rather than in the specifier (Bayer & Brandner 2008: 89). The assumption is that "embedded questions must be syntactically typed" for interrogativity, and this is possible either by the insertion of a Q-particle or by the movement of a *wh*-element (Bayer & Brandner 2008: 89, citing also the "Clausal Typing Hypothesis" of Cheng 1991). Moreover, Bayer & Brandner (2008: 89) propose that *wh*-words like *wer* are not only lexically specified for [wh] but they also have a latent C-feature, which can (but does not have to) be activated in the derivation. The *wh*-element then undergoes head movement. Regarding head movement, Bayer & Brandner (2008: 89) follow Koeneman (2000, 2002), Bury (2002), Fanselow (2002) and Brandner (2004) in assuming that head movement can be treated "as self-attachment of a head to the highest maximal projection iff the head in question contains a (so-far unactivated) categorial feature by which this head is able to induce its own X-bar projection".

According to Bayer & Brandner (2008: 90), a *wh*-word is a "typing particle" and simultaneously a complementiser, similarly to *ob* 'if' in polar questions; however, a *wh*-word also expresses a semantic restriction and binds a variable in the VP. In complex *wh*-phrases, however, the C-feature cannot be activated as the *wh*-word merges with another element in its base position, and hence these complex phrases move to a maximal projection, making the insertion of *dass* possible or even necessary, depending on the exact dialect (see Bayer & Brandner 2008: 90). Similarly, the C-feature remains un-activated in *wh*-in situ constructions and in multiple *wh*-questions (Bayer & Brandner 2008: 90).

The question arises how the proposal relates to Chain Uniformity, since the base position seems to be a phrase-sized (maximal) projection, while the landing site (the C head) is a head-sized, minimal projection. The phrase-sized nature of the base-generation site is indicated by extraction patterns involving adjuncts, as in the following example (Bayer & Brandner 2008: 90, ex. 9):

(17) Ich will   wissen,   **wen**   sie [~~wen~~   aus Paris] gesehen hat.
     I   want.1SG know.INF who.ACC she   who.ACC from Paris seen   has
     'I want to know who she saw from Paris.'

In (17), the *wh*-element *wen* is extracted from a complex phrase that includes the adjunct *aus Paris* 'from Paris': extraction would not be permitted from a head

position. Bayer & Brandner (2008: 90–91) argue that *wh*-elements like *wen* can have a dual interpretation, that is, they are both minimal and maximal without there being any morphological difference between the two, thus satisfying a "morphological condition of chain uniformity".

Bayer & Brandner (2008: 91) argue that the proposal is also in line with economy principles, such as the Head Preference (or Spec-to-Head) Principle of van Gelderen (2004: 10): this essentially says that by merging an element as a head instead of as a specifier to a head, the configuration is more economical as it involves the merger of fewer elements. This is a standard way of operators moving to [Spec,CP] grammaticalising into complementisers. Bayer & Brandner (2008: 91) suggest that the introduction of a latent [C] feature is the first step in such grammaticalisation processes.

Importantly, the proposal "entails that a single lexical head may host several functional features that are projected to the maximal projection" (Bayer & Brandner 2008: 91), in line with the proposal of Sobin (2002) for a very minimal CP (cf. also Bobaljik & Thráinsson 1998 for similar views in terms of the IP), and feature checking does not necessarily involve specifier–head agreement either (Sobin 2002: 91).

In addition to the syntactic behaviour, there is phonological evidence for the head status of the head-sized *wh*-elements in question, such as *n*-intrusion in Alemannic and *r*-intrusion in Bavarian. Consider the following examples from Alemannic (Bayer & Brandner 2008: 92, ex. 13a, 14 and 16a):

(18) a. … wa-**n**-er   tuet
            what-N-he does
          'what he does'

    b. * Wa-**n**-isch denn do   passiert?
            what-N-is PRT there happened
          'What has happened here?'

    c. * … [wege   wa]-**n**-er   sich so uffregt
              because what-N-he REFL so excites
          'because of what he gets so upset'

As discussed by Bayer & Brandner (2008: 92), citing Ortmann (1998), "*n*-intrusion is only possible if the clitic pronoun is right-adjacent to a functional head". Regarding *wh*-elements, then, *n*-intrusion is possible only if the element is in C (the same holds for *r*-intrusion in Bavarian). As shown by (18), this is indeed the case: in main clause questions, such as (18b), the *wh*-element cannot be in

C (that being the position where the finite verb moves), and hence *n*-intrusion is not licensed. The same applies to complex *wh*-phrases, such as *wegen was* in (18c). However, the *wh*-element *was* in an embedded clause like (18a) does allow *n*-intrusion: obviously, the syntactic status of *was* in this case must be different from that in (18b).

Naturally, the availability of these *wh*-elements in C does not exclude them as proper operators in certain cases even in the dialects that otherwise treat them as elements inserted into C. One such case is when the *wh*-element is contrastively focussed, as in (19) below (Bayer & Brandner 2008: 93, ex. 18, quoting Noth 1993: 424):

(19) Ich woass **WO**   **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.'

In this case, Bayer & Brandner (2008: 93) argue, following Cardinaletti & Starke (1999), that "focal stress requires strong pronouns and that strong pronouns have a richer syntactic structure than weak or clitic pronouns", resulting in the same ban on merging them into C as with complex *wh*-phrases.

There are some important cross-linguistic differences regarding these issues. Citing Westergaard & Vangsnes (2005) and Vangsnes (2005), Bayer & Brandner (2008: 93–94) point out that in North Norwegian dialects, simplex *wh*-elements may be inserted into C even in main clauses.[6] Consider the following example from Bayer & Brandner (2008: 93, ex. 19 and 20):

(20) a. % **Ka** **sa** han Ola?
          what said the Ola
          'What did Ola say?'

      b. **Ka**   han Ola **sa**?
          what the Ola said
          'What did Ola say?'

      c. [**Ka**   **slags bil**] **har** han Jens kjøpt   sæ?
          what kind car   has the Jens bought.PTCP himself
          'What kind of car has Jens bought for himself?'

      d. * [**Ka**   **slags bil**] han Jens **har** kjøpt   sæ?
          what kind car the Jens has bought.PTCP himself
          'What kind of car has Jens bought for himself?'

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[6]See Taraldsen 1986: 21–22 for the original observation.

As can be seen, the simplex *wh*-element *ka* can occur in main clause questions without verb fronting, see (20b), suggesting that it occupies the C position. Depending on the speaker, the proper operator used with verb fronting, see (20a), is not even acceptable in these dialects. The pattern is altogether different when a complex *wh*-phrase such as *ka slags bil* is inserted: verb fronting in this case is obligatory, as demonstrated by the grammaticality of (20c) and the ungrammaticality of (20d). If, however, the *wh*-element is focussed, the *wh*-element cannot be inserted into C and verb fronting must occur (Bayer & Brandner 2008: 93–94). Consider (Bayer & Brandner 2008: 94, ex. 22):

(21) a. **KA sa** han Ola?
          what said the Ola
          'What did Ola say?'

      b. * **KA** han Ola **sa**?
          what the Ola said
          'What did Ola say?'

North Norwegian dialects are similar in this respect to Alemannic and Bavarian.

In all the three groups, an asymmetric pattern can be observed: single *wh*-words behave differently from complex *wh*-phrases. This difference can be observed in Alemannic and Bavarian in embedded clauses only, while the asymmetry holds also in main clauses in North Norwegian dialects. Nevertheless, it is possible to have symmetric patterns as well. As noted by Bayer & Brandner (2008: 94), the standard varieties, including Standard German, generally do not use doubling. On the other hand, certain other dialects (including some varieties of Alemannic) seem to require the insertion of the complementiser with all *wh*-elements, as is the case in West Flemish (Bayer & Brandner 2008: 94, citing Haegeman 1992).

Regarding variation, Bayer & Brandner (2008: 94) propose that symmetric varieties have no latent C-feature at all and *wh*-elements are thus never inserted into C. In varieties like West Flemish, which always insert the complementiser, an element in C must be overt because this is the only way it can serve as a host to clitics: these varieties are similar to Alemannic and Bavarian in that they have a clitic system (Bayer & Brandner 2008: 94). In dialects like Standard German, however, which do not have a genuine clitic system (cf. Cardinaletti 1999), the overtness of C does not make a difference: in these dialects, the insertion of an overt complementiser is ruled out due to economy considerations (Bayer &

Brandner 2008: 94). Ultimately, the analysis assumes that syntactic variation is the result of lexical variation, in line with Borer (1984).

In sum, Bayer & Brandner (2008) make an important contribution to the study of Doubly Filled COMP patterns in embedded questions, both from a theoretical and from an empirical perspective. The most significant empirical aspect is the existence of asymmetric patterns alongside symmetric patterns, which challenges not only cartographic approaches but also traditional X-bar theoretic terms. The proposal that head-sized *wh*-elements in asymmetric patterns move to the C head instead of the specifier is convincing on empirical grounds, as these elements are in complementary distribution with the finite complementiser *dass*, and the same can be observed with verb movement in North Norwegian dialects, suggesting that the generalisation genuinely holds for the C position and not just for the given complementiser.

However, the proposal also raises some questions that need to be addressed. In particular, the very notion of the C-feature is problematic, especially because its occurrence is restricted to head-sized *wh*-elements in asymmetric patterns, that is, precisely the pattern for which it served to account, rendering the argumentation circular. In addition, it should be clarified what the C-feature actually is: apparently, this feature is present on the given element and it can be activated or it can remain latent, but when it is activated, the *wh*-element acts like a complementiser, even though it is not a grammaticalised complementiser proper. A major problem in this respect is how the C-feature is related to finiteness, which is encoded by a finite complementiser (e.g. *dass*) but not by a *wh*-operator: the moment a *wh*-operator is equipped with a finiteness feature it is no longer an operator but a grammaticalised finite complementiser. It follows that if the head-sized *wh*-element moves to C, finiteness is apparently not encoded. Finally, the availability of a latent C-feature seems to be tied to the particular dialect: asymmetric dialects have it, while others do not. This predicts that there is no optionality regarding non-focussed head-sized *wh*-elements, which is, however, not the case (cf. the examples and discussion of Weiß 2013: 778).[7]

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[7]For instance, the following example from Bavarian is marked as grammatical (Weiß 2013: 778, ex. 15a):

(i) I woaß   aa   ned, **wer dass** do   gwen is.
     I know.1sg also not who that there been is
     'I do not know either who was there.'

    Weiß (2013: 778) mentions that such patterns are subject to microvariation: one-syllable *wh*-phrases such as *wer* in (i) are less likely to occur with *dass* than larger *wh*-phrases. This is, however, subject to individual preferences and is not to be taken a strict grammatical constraint. Similar observations were also made by Roedder (1936: 265) on South Franconian.

A further problem concerns the role of cliticisation. Bayer & Brandner (2008) claim that C has to be overt in dialects that use Doubly Filled COMP (either symmetrically or asymmetrically) because in these dialects clitic pronouns need to cliticise onto an overt C head. The problem is that while this certainly applies in cases where there is a clitic pronoun in the relevant position, as in (15) and (16), it is not a convincing argument in cases where there is no such clitic pronoun (as is also the case in the North Norwegian examples, and see also the Dutch example in (2b) above). In other words, if the insertion of *dass* were primarily a phonological matter, one would expect either (i) *dass* to be absent in cases where no clitic is present altogether, or (ii) at least a significant improvement for *dass*-less clauses (with complex *wh*-phrases) in the absence of clitics. Regarding (i), Bayer (2014: 41) remarks that a phonological motivation for a dialect retaining doubly filled COMP patterns "must be seen as affecting the grammar as a whole and not individual constructions". This does not address (ii), though. Further, this explanation still leads to a second problem, which is that doubly filled COMP patterns in embedded interrogatives occur across West Germanic, also in dialects that are not known to use (subject) clitics in the Bavarian way. Specifically, the spoken (and dialectal, historical) English data mentioned in Section 3.2.1 above do not indicate that cliticisation would play any role. In sum, while cliticisation as a factor may indeed be decisive in the (diachronic) emergence of the given system, it is not sufficient as an explanation for the entire (synchronic) system and it does not carry over to other varieties.

Finally, while the proposal made by Bayer & Brandner (2008) breaks away from a strict X-bar theoretic framework and is hence more flexible, the mechanisms underlying *wh*-elements landing in C are not without problems from a merge-based minimalist point of view. In particular, cliticisation cannot be built into the syntactic component directly, and, as mentioned above, the notion of the C-feature is problematic. Note that the same problem arises with verb fronting in V2 clauses in German (and across Germanic), as well as with T-to-C movement in English interrogatives, see (3) and (4). That is, the verb apparently takes the position of C, even though it is not categorised as a complementiser: in addition, it is highly unlikely that lexical verbs are equipped with a C-feature. Note that since V2 constructions appear in standard Germanic languages as well, they cannot be attributed to the availability of some dialect-specific feature either. Just as with embedded interrogatives, the role of finiteness should be clarified in these cases, too. This parallelism is not discussed by Bayer & Brandner (2008), and hence it is not clear how far the proposal extends regarding the Germanic left periphery.

3.3 Approaches to Doubly Filled COMP

In principle, there are three possible scenarios regarding the Doubly Filled COMP Filter. One possibility is to say that the filter is subject to parametric variation: some dialects (such as standard West Germanic languages) have it, while others (such as Alemannic and Bavarian) do not. This is essentially in line with the original proposal of Chomsky & Lasnik (1977), who suggest that the filter holds in present-day Standard English but not in non-standard and historical varieties. However, as was also pointed out at the end of Section 3.2.2, this is problematic for various reasons, notably because it allows no intra-dialect variation, which, however, exists, as pointed out by Bayer & Brandner (2008) among others. Moreover, the specifier and the head of the CP are, strictly speaking, both overtly filled in standard West Germanic languages in V2 clauses and in T-to-C movement constituent questions in English. In addition to the notion of the filter being problematic from a minimalist perspective, its application domain should be clarified, and specific as it seems to be, it should not be treated as a parameter.

Another possibility is to say that the filter is universal and apparent violations actually involve multiple CP projections, as proposed by Baltin (2010), using the cartographic framework established by Rizzi (1997).

A third possibility is that there is no such filter at all and dialects differ in whether they allow null complementisers or whether they require filling C with overt material: this approach would reduce the observed differences to lexical differences (in line with the proposal made by Borer 1984).

Let us consider doubling in embedded interrogatives; more specifically, in constituent questions, as illustrated in (2), repeated here as (22):[8]

(22) a. % They discussed a certain model, but they didn't know **which model that** they discussed.

   b. % Peter vroeg   **wie dat** er   boeken leuk   vindt.
        Peter asked.3sg who that of.them books   likeable finds
        'Peter asked who liked books.'

Essentially, as was discussed already in Chapter 2, there are two possible structures. In the first scenario, there is a single CP hosting both the *wh*-element and the finite complementiser. This is what was ultimately proposed in Chapter 2 as well: this is in essence a true Doubly Filled COMP pattern since, once the

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[8]Note that the finite verb in the subclause in (22b) could also be in the past tense (*vond* instead of *vindt*. The informant providing the example generally found the present tense more natural (see Bacskai-Atkari & Baudisch 2018: 30).

COMP position of Chomsky & Lasnik (1977) is translated into X-bar representations, both the specifier and the head of the CP are filled by overt elements, as proposed also by Bayer (1984).[9] Another option is to adopt a cartographic approach, supposing that there are two separate CPs with two distinct functions, as proposed by Koopman (2000) and more recently by Baltin (2010), following Rizzi (1997). The Doubly Filled COMP pattern involving a single CP is shown in Figure 3.1.[10] The split CP pattern is shown in Figure 3.2.
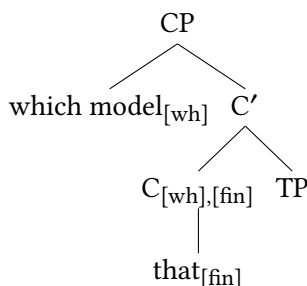
Figure 3.1: The single CP analysis

The features given here are interrogative, [wh], and finiteness, [fin], standing for the properties that have to be encoded in the CP-domain as determined by the matrix predicate (see also the discussion in Chapter 2). Note that the representation in Figure 3.2 is compatible not only with a classical cartographic analysis but also with the kind of CP-recursion proposed by Vikner (1995) and Vikner et al.

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[9]As pointed out by Bayer (2015: 26), *wh*-elements and complementisers were always taken to be in complementary distribution in the topological fields model (see Höhle 1986). Bayer (2015: 26) also points out that this kind of approach was taken up by Kathol (2000) in the HPSG-framework, but while this line of argumentation makes good predictions for certain data, it fails to account for the doubling patterns attested in Bavarian, cf. Section 3.2.3. Data like (22) also indicate that complementary distribution cannot be a satisfactory explanation; note that while Chomsky & Lasnik (1977) assumed that both elements should be located in COMP, they explicitly did not use complementary distribution as an argument for the lack of doubling patterns but relied on complementiser deletion; see Section 3.2.2.

[10]Note that the opposition between a single CP and a double CP here is meant for the specific kind of construction. Specifically, the arguments presented here for a single CP analysis do not automatically carry over to all other constructions: as will be shown in Chapter 5, double CPs are attested (and in fact necessary) in certain constructions even in Germanic (and recall also that languages like Welsh can also have two complementisers, see Chapter 2). Crucially, no elements can intervene between the *wh*-element and the complementiser in Doubly Filled COMP patterns (the same apparently holds for Romance, cf., for instance, the data provided by Poletto & Vanelli 1997 for Northern Italian varieties), which would be expected in a Force–Fin distinction in the sense of Rizzi (1997) and which would naturally imply the presence of multiple projections.
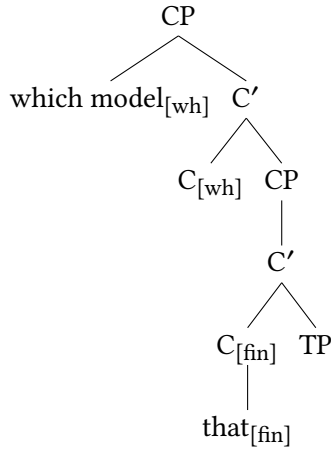
Figure 3.2: The double CP analysis

(2017); however, it is worth mentioning that CP-recursion was proposed primarily in order to account for embedded V2 and it is by no means necessary that the same kind of recursion applies in Doubly Filled COMP structures. In Chapter 2, I proposed the structure in Figure 3.1, as it is more minimal and more congruent with a merge-based approach; let us now see more arguments in favour of Figure 3.1 and against Figure 3.2.

There are several problems with Figure 3.2 and the analysis of Baltin (2010); see also the discussion of Bayer (2015). First, the rigid split of functions between the two projections is highly questionable. Note that Baltin (2010) uses designated labels for these projections, but the differences are expressed here by features, as this is more compatible with the approach pursued in the present book and it allows for a more straightforward comparison of the two approaches. The rigid separation of Force and Fin essentially follows the cartographic approach (cf. Rizzi 1997), yet the analysis given by Baltin (2010) is fundamentally intended to be a minimalist one. In a merge-based account, the element *that* should be directly merged with the *wh*-phrase (here: *which model*), which does not allow for Figure 3.2, where an empty lower specifier and an empty higher C head are postulated: Figure 3.2 would be valid if there were evidence for empty elements in these positions. Note also that while Baltin (2010) refers to Rizzi (1997) regarding the Force–Fin distinction, his analysis places *that* in Fin, contrary to what Rizzi (1997: 312–314) claimed, since he placed *that* in Force (see the discussion in Chapter 2).

In addition, *wh*-operators are located in FocP (between Force and Fin) in Rizzi (1997), unlike relative operators (see also in Chapter 2). In other words, the treatment of the cartographic left periphery by Baltin (2010) is not straightforward. One way to overcome this conflict would be to say that there are two lexical elements, *that*-Force (the declarative complementiser of Rizzi 1997) and *that*-Fin (the finite complementiser of Baltin 2010), but, there being no independent motivation,[11] this would be a fairly stipulative and circular argumentation. Moreover, as was discussed in Chapter 2, it is crucial for Rizzi (1997) that there should be no complementiser *that* located in Fin when the CP is split, since the account for the *that*-trace effect is contingent on the assumption that only the zero counterpart can be located in Fin. The fact that word order patterns like (22) contradict this assumption again indicates that the analysis of Rizzi (1997) is empirically problematic.

A rigid separation of the two CPs would indeed be needed for Figure 3.2 to work in order to avoid the violation of the Minimal Link Condition (see Fanselow 1990, 1991, Chomsky 1995): the operator in Figure 3.2 does not move to the closest possible [Spec,CP]. Similar considerations regarding *wh*-movement are expressed by van Craenenbroeck (2010: 241–243): while he assumes more or less designated CP projections for clause-typing and operator movement, movement is supposed to target the lower CP projection, the higher CP being potentially available for the direct merger of elements.

The problem may in principle be avoided by saying that the lower C head cannot attract the operator, and an additional complementiser has to be inserted. However, a rigid separation is not tenable for relative clauses, as was shown in Chapter 2 (see also Chapter 4), and relative clauses showing Doubly Filled COMP effects would therefore violate the Minimal Link Condition. Finally, if Figure 3.2 is possible for non-standard varieties, it remains to be explained why it cannot appear in standard varieties, as finite subordinators are also available in these dialects.

In addition to the problems indicated above, it should be mentioned that the structure adopted by Baltin (2010) serves to avoid a potential problem regard-

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[11]In this respect, English (and Germanic in general) differs from Romance varieties that actually allow the co-occurrence of two such complementisers, as shown by Paoli (2009) for *che* in North-Western Italian varieties. There is no comparable empirical evidence for a Force-Fin split for *that*; recomplementation occurs only with phonologically heavy, complex phrases, most probably due to processing reasons, and it is compatible with the collapsing mechanism affecting the CP described by Sobin (2002), see Chapter 2 (thus, contrary to Villa-García 2019, no cartographic template is necessary, given the ungrammaticality of recomplementation with single XPs).

ing sluicing. The assumption, going back to Merchant (2001), is that sluicing results from an ellipsis feature, [E], located on a functional head: this [E] feature instructs PF to eliminate the complement. Under this view, sluicing leaves the head itself intact. As also observed by Baltin (2010), the complementiser head in Doubly Filled COMP patterns cannot be overt; taking the sluiced counterpart of (22a), the pattern is as follows:

(23)   They discussed a certain model, but they didn't know **which model (*that)**.

Assuming that the complementiser *that* is located in a lower CP projection and the [E] feature is located on a higher C head, Baltin (2010) claims that the obligatory elimination of *that* follows naturally from a double CP, as in Figure 3.2. The argumentation is contingent upon the assumption that sluicing does not affect the element in C. However, as pointed out by Bayer (2015: 30–32), for instance, this is not necessarily true: one may equally assume that the head is affected by sluicing, except when the deletion of the head element would result in the loss of non-recoverable material. In addition, one may also argue that the non-elimination of the complementiser in cases like (23) is prosodically ill-formed: the [E] feature also instructs PF to assign main stress to the element in the specifier (that is, the element preceding the [E] feature in the linear structure), which is to be followed immediately by the elided part: the overt complementiser violates this split pattern as it is neither silent nor stressed. Moreover, the complementiser normally forms one phonological unit with the following TP, which is again violated if it is overt when the TP is sluiced. Finally, this requirement may well be independent of the status of the element in the functional head as a complementiser: as shown by Bacskai-Atkari (2018c: 173–193) for elliptical comparative clauses, the locus of the ellipsis feature and the projection to which a lexical verb moves show a correlation such that the [E] feature and an overt lexical verb seem to be in complementary distribution. Taking up this line of argumentation, it may be the case that in sluicing patterns like (23) the presence of the [E] feature on C automatically implies the impossibility of an overt *that* in the same head, making the insertion of a zero complementiser necessary. If so, one may even retain the idea that sluicing does not per se eliminate the head: it is rather that the head has to be empty in the first place (see Chapter 6 for discussion).

In sum, a "Doubly Filled COMP" analysis involving a single CP (and hence the direct merger of the *wh*-element to the complementiser) is favourable and this is the analysis I pursue in the rest of this chapter.

3.4 Embedded constituent questions

Recall that there are essentially three possible scenarios regarding the Doubly Filled COMP Filter. First, much in the vein of Chomsky & Lasnik (1977), the Doubly Filled COMP Filter may be subject to parametric variation: under this view, some dialects (such as standard West Germanic languages) have it, while others do not. This is problematic, as the operation domain of the Doubly Filled COMP Filter should be more refined (see Sections 3.2.2 and 3.3); moreover, the Doubly Filled COMP Filter should not be a parameter in itself. Second, the Doubly Filled COMP Filter may be universal: accordingly, apparent violations of the Filter actually involve multiple CP projections (see, for instance, Baltin 2010 discussed above). This is again problematic, as already pointed out in Section 3.3 in detail. Third, there may be no Doubly Filled COMP Filter at all, which is of course favourable in minimalist terms since it does not rely on filters in the syntactic derivation: in this approach, the economy of derivation versus the requirement to fill the head may be thought of as competing requirements, and Doubly Filled COMP patterns may be handled similarly to T-to-C or V2 patterns. In the present section, I argue in favour of this approach.

If one were to assume that a separate [wh] CP and a separate [fin] CP are available (and both are designated projections in a cartographic sense, as established by Rizzi 1997; see Grewendorf 2002, 2008, Frey 2004, 2005, Bayer 2004, 2006, among others), as shown in Figure 3.2, one would expect that doubling is available with all *wh*-elements. However, as shown by Bayer & Brandner (2008), this is not universally the case as many Alemannic and Bavarian speakers show an asymmetric pattern, see the discussion in Section 3.2.3. Consider the following examples (Bayer & Brandner 2008: 88, ex. 3a, 4a, 5a and 5b):

(24) a. 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.'

  b. I hob koa Ahnung, **mid wos fia-ra Farb dass**-a zfrien
      I have no   idea   with what for-a colour that-he content
      waar.
      would.be
      'I have no idea with what colour he would be happy.'

  c. *I woass aa ned, **wer dass** allas am Sunndoch in da Kiach gwen
      I know too not who that all   at Sunday   in the church been
      is.
      is
      'I don't know either who all has been to church on Sunday.'

d. *I wett   gern wisse, **wa   dass** i do   uusfülle muss.
    I would gladly know what that I there out-fill   must
    'I'd like to know what I have to fill out there.'

There is a difference between *wh*-elements for the speakers in question: phrase-sized *wh*-elements, see (24a) and (24b), occur with *dass* 'that', while word-sized *wh*-elements like *wer* and *was*, see (24c) and (24d), do not. As discussed in Section 3.2.3, Bayer & Brandner (2008) argue that the asymmetry arises because *wer*/*was* and *dass* are in complementary distribution since these head-sized *wh*-elements target the C head position instead of the specifier. Adopting this view, embedded interrogatives with a single *wer* should be assigned the structure given in Figure 3.3.

CP
|
C′
C$_{[wh],[fin]}$ TP
|
wer$_{[wh]}$
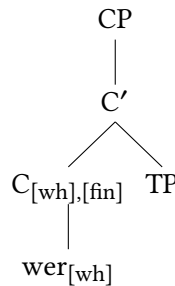
Figure 3.3: The position of word-sized *wh*-elements

As already pointed out in Section 3.2.3, two potential problems seem to arise from a minimalist perspective. First, Figure 3.3 represents a problem in terms of Bare Phrase Structure as *wer* is not of the category C, and hence there seems to be a discrepancy between the lexical element and the descriptive label. In other words, if merging *wer* with the TP results in a projection labelled as *wer*, then it is not the same category as when the C head is filled by a complementiser proper. Matrix predicates like *fragen* 'ask' may take interrogative clauses with or without *dass* and select for a CP-complement, but the relevant category cannot come from *wer*. Second, Figure 3.3 represents a problem for Chain Uniformity: apparently, *wer* originates as a phrase and moves to a head position.

Regarding Chain Uniformity, as was discussed in Section 3.2.3, Bayer & Brandner (2008) propose that there is a morphological condition on Chain Uniformity: the phrase-sized (XP) *wer* is morphologically identical to the word-sized (X) *wer*.

Regarding Bare Phrase Structure, the proposal of Bayer & Brandner (2008) is that *wh*-elements can be equipped with a latent C-feature in dialects that show asymmetrical patterns (see Section 3.2.3). However, as was pointed out in the relevant discussion above, this assumption faces several problems. Among others,

in order to define what a C-feature is, one should also have a clear definition for what belongs to the category C. Canonical complementisers (such as *that* and *if*) impose restrictions on whether the clause is finite or not (which is not the case with *wh*-elements). They usually carry some clause-typing feature (such as interrogative), though specifically finite complementisers like *that* or *dass* which appear in Doubly Filled COMP patterns in embedded interrogatives seem to be underspecified in this respect: while they can undoubtedly appear in declarative clauses otherwise, it would be difficult to argue that in cases like (24a) they type an interrogative clause as declarative. On the other hand, elements moving to the CP are known to be potential candidates for reanalysis into a complementiser (as discussed e.g. by van Gelderen 2009), blurring the boundary between complementisers and other elements related to clause typing.

Note that the same problem arises in the case of V2 in German main clauses by V moving to C, see Fanselow (2004b: 10–32). I will return to this issue later in this chapter and will provide a more refined analysis there.

At this point, I propose that the phenomenon in Figure 3.3 is related to the general ability of C to host elements other than complementisers in the language. This is related to the V2 property of German and indeed most Germanic languages, including English historically; note that while Modern English is not V2, T-to-C movement in main clause interrogatives works exactly the same way in this respect. In other words, non-standard dialects with Doubly Filled COMP effects extend the ban on a phonologically empty C to embedded interrogatives.

3.5 Embedded polar questions

3.5.1 Basic properties

Before turning to the actual analysis, let us consider polar questions as well. Doubly Filled COMP effects are usually attested in constituent questions as *wh*-operators are necessarily overt since they express non-recoverable information; they also correspond to the focussed constituent in question–answer sequences (Krifka 2008: 250, citing Paul 1880). However, polar interrogatives also contain an operator: this polar operator may be overt or covert, and it is inserted directly into the specifier of the CP (Bianchi & Cruschina 2016); therefore, no movement is required from within the clause. According to Larson (1985), following Rooth & Partee (1982), this operator essentially corresponds to *whether* and has the properties of a scope-bearing element. Consider the following examples (Larson 1985: 218, ex. 1, citing Rooth & Partee 1982):

(25) Mary is looking for a maid or a cook.

The sentence in (25) demonstrates multiple ambiguity: apart from the de re reading (Mary is looking for a specific person), there are two de dicto readings that are relevant here:

(26)   a. Mary is looking for [[a maid] or [a cook]].
            'Mary is looking for a servant, who should be either a maid or a cook.'
      b. Mary is looking for [a maid] or Mary is looking for [a cook].
            'Mary is looking for a maid or she is looking for a cook.'

Ambiguity arises because the scope of *or* is not overtly marked: as Larson (1985) argues, elements like *either* or *whether* may overtly mark scope. In polar questions, the element *or* is mostly not overt:

(27)   I don't know if/whether Mary has already arrived (or not).

Disjunction comprises a proposition and its negation here (Larson 1985: 225–227).

In principle, an interrogative feature on C may be checked off by inserting an element equipped with the relevant feature either into the head itself or into the specifier, in line with the Clausal Typing Hypothesis of Cheng (1991), see also Bayer & Brandner (2008: 89) and Zimmermann (2013: 86) for German. As mentioned above, *wh*-elements carrying the [wh] feature in constituent questions are necessarily overt since they carry new information. This is not the case in matrix polar questions, where word order and intonation are indicative of clause type.[12]

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[12]In most dialects of German, the [Q] feature must be encoded morphologically in embedded questions, though: since German has no overt polar operator (see the discussion in Section 3.5.3 below), the interrogative/disjunctive complementiser *ob* is inserted. In principle, however, the matrix predicate is indicative of the embedded clause type, which predicts that there can be varieties without an overt polar marker. This seems to be the case in Thuringian, as shown by the following example (Schallert et al. 2018: 24, ex. 34, quoting Läsch et al. 1990; the translation is mine):

(i) ich soll   frägn, **daß** sie heint zu uns kommen
    I   should ask   that they today to us come
    'I should ask if they are coming to our house today.'

The feature [Q] is not overtly marked in this case, yet the insertion of *dass* is necessary to lexicalise [fin] regularly. Schallert et al. (2018: 24) do not provide further insights regarding the distribution of patterns like (i), but they take it as evidence for the underspecified nature of *dass*. Further empirical investigations would be necessary to examine how robust this pattern is, especially because *fragen* 'ask' can take a *dass*-clause as a complement even in Standard

In English embedded polar interrogatives, either the complementiser *if* or the operator *whether* is overt; the configuration for *whether* is represented in Figure 3.4. The configuration for *if* is represented in Figure 3.5.
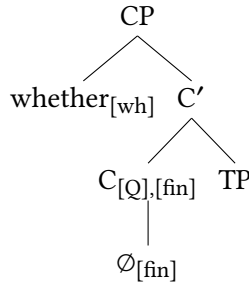
Figure 3.4: The position of *whether*
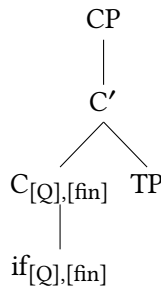
Figure 3.5: The position of *if*

Unlike in constituent questions, where the feature involved is [wh], I assume that the clause-typing feature required by the head is [Q], a disjunction feature; see Bayer (2004) on the separation of the two features. Crucially, [wh] implies disjunction, [Q], and hence inserting an operator equipped with [wh] also checks

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German as long as the embedded clause is interpreted a request and not as a question:

(ii) Wenn dich   irgendjemand fragt, dass du für etwas   bezahlen sollt,
      if   you.ACC someone   asks that you for something pay.INF   should.2SG
      mach   das   nicht.
      do.IMP.2SG that.N not
      'If anyone asks you to pay for something in advance, do not do that.'

According to Hans-Martin Gärtner (p.c.), examples such as (i) should also be interpreted as requests for this reason. Since the sentence in (i) appears without context, the actual meaning cannot be identified.

off [Q], at least in languages like English and German; other languages like Korean and Japanese consistently split the two features on two distinct elements in constituent questions (see Bayer 2004), a strategy also available in certain Dutch dialects (see Section 3.5.4 below). I will return to the difference later in this section. Importantly, the [Q] feature also appears in conditional clauses (see Bhatt & Pancheva 2006, Arsenijević 2009, Danckaert & Haegeman 2012 on the relatedness of polar questions and conditionals), and the chief difference between embedded polar questions and conditionals lies not so much in the clause-typing feature of the embedded clause but in the matrix element selecting the embedded clause. On the other hand, the element *whether* is restricted to polar interrogatives and cannot appear in conditionals: it is reasonable to assume that this element is specified as interrogative proper, [wh], which is also morphophonologically transparent in English.[13]

In Figure 3.4, the two properties, [fin] and [Q]/[wh], are carried by two separate elements, while in Figure 3.5 both are marked by the interrogative complementiser *if*. In the latter case, no additional operator is necessary. I assume that semantic operators may or may not show operator properties like phrase movement in terms of their syntax; specifically, they may appear as complementisers or grammaticalise into ones, which may in certain cases lead to the reinforcement of the given semantic property by an additional element.[14]

Given the structure in Figure 3.5, it is not difficult to see why a combination like *if that is not possible in English: both elements are complementisers, and inserting *if* satisfies the lexicalisation requirement on [fin] in C.[15] The differ-

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[13]The word *whether* itself clearly contains a *wh*-base and it is a reflex of Proto-Germanic *hwaþeraz/*hweþeraz, for which Walkden (2014: 154) reconstructs a 'which of two' reading, since this reading is present in all early Germanic languages and is in fact the only reading which is attested in Gothic (see Walkden 2014: 146–154 for details). The cognates of *whether* in other modern Germanic languages have different uses; for instance, German *weder* 'neither' is not used is interrogatives. The forms *either* (and *neither*) are also related to *whether*, and all of these elements ultimately express disjunction.

[14]A well-known case showing similarities is negatives: referred to as the Jespersen cycle, a negative head may be reinforced by an additional negative operator, which may ultimately take over the function of marking negation altogether (see, for instance, Wallage 2008, van der Auwera 2009, Hoeksema 2009).

[15]Note that this restriction on the impossibility of *if that* only applies to configurations in which the two complementisers are on the same left periphery. Consider the following examples:

(i) We believe **that** [all will change [**if** we have continued efforts]].

(ii) We believe [**that** [**if** we have continued efforts], all will change].

In (ii), *that* and *if* are string-adjacent; however, *if* belongs to a different clause, as shown in (i), where the conditional clause is not inverted with its matrix clause. Therefore, cases like (ii) do not constitute a counterexample.

ent syntactic positions of *if* and *whether* are also indicated by the fact that the combination *whether if* is possible, even though it rarely occurs. Consider (van Gelderen 2004: 96, ex. 82):

(28)   The local authority will know **whether if** they let the council house to
        the tenant.
        (BNC-FC3-80)

That such combinations are not typical is due to economy constraints: both overt elements essentially mark an embedded polar question and doubling is therefore redundant.[16]

In German, the combination **ob dass* is ruled out for the same reason as in English: the two elements are in complementary distribution. Such a combination is indeed not possible in the Southern dialects discussed in the previous section: it is not available in Alemannic (Ellen Brandner, p.c.), and the SyHD-atlas for Hessian does not mention such instances either. The same applies to the detailed study of Bayer (1984) on Bavarian, which mentions several combinations with *dass* but not *ob dass*. According to Meinunger (2011: 226), doubling patterns with *dass*, including *ob dass*, are sporadic and in these cases the two elements actually constitute a single word (essentially a complex complementiser), as in the case of *sodass* 'so that' (and hence *ob dass* would technically be *obdass*). Gillmann (2018) argues that while combinations of the form "connector + *dass*" were possible in the 17th century, they gradually diminished till the end of the 18th century and have since then been restricted to a few grammaticalised cases.

As pointed out by Weiß (2013: 778–779), most German dialects apply *ob* in embedded polar questions, but in some dialects *was* 'what' can appear instead of *ob*, see Zimmermann (2011) for Low German and Lühr (1989) for Upper Bavarian. However, as Schallert et al. (2018: 24) argue, no doubling is attested with *was*.

The importance of this is primarily the following: an analysis with a separate designated interrogative CP and a finite CP, such as Figure 3.2, as in Baltin (2010), would predict that this is possible. Note also that there is no ban on multiple complementisers in Alemannic either, as the doubling pattern *als wie* 'than as' is possible in comparatives (as will be discussed in Chapter 5; see also Jäger 2010, 2018, Bacskai-Atkari 2014c); hence, the reason for the non-existence of **ob dass* is not a ban on double complementisers.

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[16]Unlike negation, however, where both elements (e.g. *ne* and *not* in Middle English, *ne* and *pas* in Modern French) are specified as [neg] only, the elements *whether* and *if* differ crucially in terms of the [fin] feature; in other words, doubling is not perfect as the head element still encodes a property that cannot be lexicalised by the specifier element.

In principle, one might say that, in line with Rizzi (1997, 2004), constituent questions and polar interrogatives differ because [Q] and [wh] are associated with distinct projections: [wh] is associated with FocP and [Q] with IntP (see the discussion in Chapter 2), and while [Spec,FocP] can be filled when Fin is overt, this is apparently not the case with the IntP (disregarding now the problem whether placing *that* in FinP is compatible with Rizzi 1997 at all). In order for this to work, however, doubling in polar interrogatives should be uniformly impossible; as will be shown in this section, this is not the case. What appears to be decisive is not whether the feature is [Q] or [wh] but whether the interrogative element is a complementiser or not.

3.5.2 English

Regarding polar questions in English, while the status of *if* as a complementiser is quite straightforward throughout its history, the status of *whether* can be disputed: it evidently differs from the complementiser *if* in its distribution, yet it also does not fully pattern with proper *wh*-elements (which occur in constituent questions). In this section, I am going to consider some (mainly historical) data that may shed light on the syntactic status of this element.

The combination *whether that* (which essentially corresponds to a Doubly Filled COMP pattern) is attested historically and in modern non-standard varieties (see van Gelderen 2009). Consider the following Middle English examples from the *Cursor Mundi* (based on van Gelderen 2009: 155, ex. 61 and 62):

(29) a. O þis watur he gert ilkan Drinc, **quer**   he wald   or nan
          of this water he gives each drink whether he wanted or not
          'Of this water he gives each to drink whether he wanted it or not.'
          (*Cursor Mundi* 5517–6618)

    b. 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)

As can be seen, the element *whether* appears on its own in (29a), while it is combined with *that* in (29b). The proposed structure for the doubling pattern is given in Figure 3.6.

The doubling pattern is essentially the same as the one in Figure 3.1 for constituent questions. Given that ordinary *wh*-elements may be merged with the TP directly (occupying the C position), as in Figure 3.3, this should intuitively

CP

whether[wh]   C′

C[Q],[fin]   TP

that[fin]
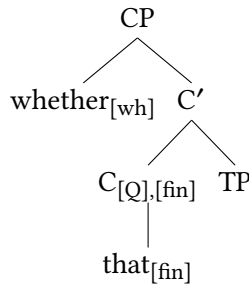
Figure 3.6: The structure of *whether that*

be available for *whether* as well, since it is also head-sized and is even directly inserted into the CP-domain anyway. This appears to be the case indeed. As van Gelderen (2009) points out, Doubly Filled COMP patterns with *whether* are quite rare in modern dialects in comparison to Doubly Filled COMP patterns with ordinary *wh*-elements (whereby complex *wh*-elements are more likely to occur in Doubly Filled COMP constructions). This suggests a similar asymmetry as in Alemannic constituent questions, namely that *whether* is preferably inserted under the C node in polar questions in the given dialects.

Regarding the relative position of *whether*, there is another issue that needs to be addressed. In Modern English, *whether* is restricted to embedded clauses, unlike ordinary *wh*-elements, which are permitted in main clauses as well. However, *whether* was used in main clauses even until Early Modern English (*do*-insertion was reanalysed as a polarity marker in this period, see Wallage 2015).[17] Consider the following examples from Old English (van Gelderen 2009: 141, ex. 15–16, quoting Allen 1980):

(30) a. **Hwæðer wæs** iohannes fulluht þe   of heofonum þe of mannum
         whether was John's   baptism that of heavens   or of man
         'Was the baptism of John done by heaven or by man?'
         (*West Saxon Gospel*)

     b. **Hwæðer** ic mote lybban oðdæt ic hine geseo
         whether I might live   until I him see
         'Might I live until I see him?' (Aelfric *Homilies*)

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[17]In this respect, *whether* differs from German *ob*, which can only appear in main clauses if the clause expresses wondering on the part of the speaker rather than a genuine question (see Gutzmann 2011 and Zimmermann 2013). As will be shown in this section, English main clause *whether* had a wider distribution (see also Bacskai-Atkari 2019a for discussion).

As can be seen, verb fronting (involving verb movement to C) may co-occur with *whether*, but it is not obligatory (see Fischer 1992, van Gelderen 2009).

Regarding *whether* in Old English, van Gelderen (2009) treats it as a grammaticalised complementiser when it appears on its own, but not otherwise. In other words, *whether* is supposed to be a complementiser in (30b) but not in (30a), where it moves to [Spec,CP] as an operator. However, one major problem with such a view is that the non-complementiser patterns survive into Middle English and beyond, which is not what one would expect if the element in question had undergone grammaticalisation in Old English. Grammaticalisation follows from economy principles (feature economy), also in the framework of van Gelderen (2009). If an element grammaticalises into a complementiser, it is unlikely to be preserved as an operator with exactly the same functions throughout the history of English (as doubling patterns are attested later as well, either with *that* or with verb movement). This is true even when taking into account that language change (and variation) is gradient in nature (Traugott & Trousdale 2010): similar reanalysis processes in the CP-domain took place in a much shorter time span during Old and Middle English (see, for instance, van Gelderen 2009 for *that* in relative clauses). In addition, the problem is that van Gelderen (2009: 156) explicitly states that *whether* is an operator in Modern English and cannot be analysed as a complementiser.

However, variation like (30) is attested in Middle English as well. Consider:

(31) a. Loke well aboute & take consyderasion, /   As I   haue
          look well about & take consideration   as I   have declared
          declaryd, **whether** hit so be.
          whether   it   so be
          'Look about and taken consideration, as I have declared whether it is
          so.'
          (John Lydgate, *The assembly of gods*, stanza 267)

      b. **Whether art** thow double, or elles the same man / That thow were
          whether are thou double or else the same man   that thou were
          furst?
          first
          'Are you doubled or the same man that you were first?'
          (John Lydgate, *The assembly of gods*, stanza 200)

To gain a better insight into the Middle English data, I conducted a corpus study (see Bacskai-Atkari 2019a) on the two versions of the Wycliffe Bible (using the "Michigan Corpus of Middle English Prose and Verse"). Out of all Middle

English texts in the corpus, this one contained the highest number of hits for
whether; also, the availability of the two versions allows a direct investigation
of (potential) variation in the same contexts.[18] Regarding the two versions of the
Wycliff Bible, it should be noted that the later version is the revision of the earlier
version; in general, the earlier version is closer to the Latin original and the later
version represents more idiomatic English (Bruce 1984), though the particular
phenomenon investigated here does not seem to have been influenced by Latin
(see below).

Consider first the minimal pair in (32) below:

(32)   a. And the Lord seide to Caym, Where is Abel thi brother? The which
      and the Lord said to Cain   where is Abel thy brother the which
      answeryde, I wote neuere; **whether am** I the keper   of my brother?
      answered   I know never   whether am I the keeper of my brother
      'And the Lord said unto Cain, Where is Abel thy brother? And he
      said, I know not: Am I my brother's keeper?' (Wycliffe Bible older
      version, Genesis 4.9)

      b. And the Lord seide to Cayn, Where is Abel thi brother? Which
      and the Lord said   to Cain   where is Abel thy brother   which
      an|swerde, Y woot not; **whether** Y am the kepere of my brothir?
      answered I know not whether I am the keeper of my brother
      'And the Lord said unto Cain, Where is Abel thy brother? And he
      said, I know not: Am I my brother's keeper?' (Wycliffe Bible newer
      version, Genesis 4.9)

      c. Et ait   Dominus ad Cain: Ubi   est Abel frater   tuus? Qui
      and said.3SG God   to Cain where is   Abel brother your who
      respondit: Nescio: num   custos fratris   mei   sum
      answered.3SG not.know.1SG whether keeper brother.GEN my.GEN am
      ego?
      I
      'And the Lord said unto Cain, Where is Abel thy brother? And he
      said, I know not: Am I my brother's keeper?'

---

[18]In this respect, some notes are in order. One major problem concerns the limitations of a historical investigation in general: the investigation has to rely on actually produced data and cannot test non-attested configurations, and hence negative evidence is impossible or at least scarce. The comparison of the two versions of the translation in this respect may at least shed some light on variation in the very same contexts but the differences observed in preferences cannot be translated into grammaticality judgements.

The availability of both options (*whether* with or without verb fronting) in the very same context shows that the two options are essentially equivalent regarding their function.[19] The Latin original clearly indicates that verb movement cannot be attributed to Latin influence, as there is no verb fronting in Latin.

According to Fischer (1992: 279), verb fronting patterns with *whether* are far more frequent than non-fronting patterns in Middle English. This is, however, not borne out for the Wycliff Bible, as shown by the data in Table 3.1.[20] Apart from patterns involving *whether*, there are some examples with *if* in embedded clauses and verb fronting in main clauses; the "other" option refers to cases where one of the translations uses a construction other than interrogatives.

Table 3.1: Corpus results from the Wycliff Bible

Question type	Element(s) in CP	Earlier version		Later version		Total
polar	*whether*	677	(81.57%)	804	(96.87%)	1481
(830 items)	*whether* + V	92	(11.08%)	7	(0.84%)	99
	whether that	2	(0.24%)	2	(0.24%)	4
	whether if	1	(0.12%)	1	(0.12%)	2
	if	28		1		29
	V	13		7		20
	other	17		8		25
alternative	*whether*	33	(50.77%)	59	(90.77%)	92
(65 items)	*whether* + V	16	(24.62%)	4	(6.15%)	20
	if	1		0		1
	V	1		0		1
	other	14		2		16

As can be seen, polar questions are considerably more frequent than alternative questions. Importantly, single *whether* and *whether* with fronting are possible in both types, and hence variation cannot be attributed to a polar/alternative difference either. In this respect, the findings for Middle English indicate that the polar/alternative dichotomy shown to be operative in Old English by Walkden

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[19]In patterns involving verb fronting, the verb is in C and *whether* is in the specifier position. In patterns without verb fronting, *whether* is either a specifier merged to a zero complementiser or it is merged directly with the TP and thus functions as C, in the way shown by Bayer & Brandner (2008) for head-sized *wh*-elements in constituent questions.

[20]The data set presented in Table 3.1 contains the entire text for both versions, which is considerably larger than in Bacskai-Atkari (2019a: 142) and it shows the differences between the two versions more clearly. In addition, it contains the data for the combination *whether if*.

(2014: 149–150) cannot be carried over to Middle English. Walkden (2014: 149–150) assumes that *whether* did not grammaticalise into a complementiser, but it was instead always an operator in [Spec,CP]. However, he assumes that polar and alternative questions differed regarding the base-generation site of *whether*. In polar questions, *whether* was a base-generated yes-no operator inserted directly into the [Spec,CP] position, triggering no verb movement (unlike ordinary *wh*-elements). In alternative questions, it was an operator with a 'which of two' meaning: it was base-generated clause-internally and moved to [Spec,CP] like ordinary *wh*-operators, triggering verb movement (just like ordinary *wh*-elements). This analysis presupposes a difference between polar and alternative questions, which is not borne out by the Middle English data, as shown by Table 3.1. Examples are given in (33) below (see also (32) above):

(33) a. And Rachel and Lya   answeryden, **Whe|ther han** we eny thing of
          and Rachel and Leah answered   whether   have we any thing of
          residewe in faculteis and erytage of the hows of oure fader?
          residue   in faculties and heritage of the house of our   father
          'Then Rachel and Leah answered and said to him, "Is there still any portion or inheritance for us in our father's house?"'
          (Wycliffe Bible older version, Genesis 31.14)

      b. And Rachel and Lya   answeriden, **Wher**   we han   ony thing
          and Rachel and Leah answered   whether we have any thing
          residue in the catels, and eritage   of oure fadir?
          residue in the cattles and heritage of our   father
          'Then Rachel and Leah answered and said to him, "Is there still any portion or inheritance for us in our father's house?"'
          (Wycliffe Bible newer version, Genesis 31.14)

      c. sendith of ʒou oon, and bringe he him, ʒe   forsothe shulen ben in
          send   of you one and bring   he him you forsooth shall   be   in
          boondis, to the tyme that the thingis that ʒe   han   seide ben proued,
          bonds   to the time that the things that you have said   be   proved
          whether fals or soth thei ben; ellis bi the helth of Pha|rao aspies
          whether   false or true they are   else by the health of Pharaoh spy
          ʒe   ben.
          you are
          'Send one of you, and let him bring your brother; and you shall be kept in prison, that your words may be tested to see whether they are false or true; or else, by the life of Pharaoh, surely you are spies!"'
          (Wycliffe Bible older version, Genesis 42.16)

    d.   sende ȝe   oon of ȝou, that he brynge hym, forsothe ȝe   schulen be
        send   you one of you that he bring   him   forsooth you shall   be
        in boondis, til tho   thingis that ȝe   seiden. ben preued, **whe|ther**.
        in bonds   till those things that you said   be   proved whether
        tho.   ben false ether. trewe; ellis, bi the helthe of Farao,   ȝe   ben
        thou be   false or   true   else by the health of Pharaoh you are
        aspieris.
        spy
        'Send one of you, and let him bring your brother; and you shall be
        kept in prison, that your words may be tested to see whether they are
        false or true; or else, by the life of Pharaoh, surely you are spies!"'
        (Wycliffe Bible newer version, Genesis 42.16)

It appears that verb fronting in these cases is essentially optional; at the same time, it seems to be dependent on personal preferences, as indicated by the differences in the frequency of the fronting option between the earlier and the later versions (see Table 3.1 above). Note that *whether* was available in main clause questions until Early Modern English, when it was eventually superseded by *do*-insertion; the co-occurrence of *whether* and *do*-insertion is attested in this period:

(34)   **Whether did** he open the Basket?
       (*The Tryal of Thomas Earl of Macclesfield*)
       (source: Salmon, Thomas and Sollom Emlyn (1730) A complete collection
       of state-trials, and proceedings for high-treason, and other crimes and
       misdemeanours: 1715–1725)

The optionality of verb movement in polar questions in Early English is reminiscent of the South German dialectal patterns discussed in connection with polar questions in the previous section. Accordingly, I propose that *whether* is a *wh*-operator in all cases,[21] and that it is either merged as a specifier to a C head lexicalised by another element (*that* in embedded questions and a finite

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[21]The relatively high number of patterns in which the C position is filled by a fronted verb, the complementiser *that* (and even the complementiser *if*) indicates that *whether* cannot be treated as a complementiser. In this respect, it differs from *if* and its cognates in Old High German (see Section 3.5.3 below). Crucially, it also differs from the Old High German question particles *eno* and *inu*: while these particles can co-occur with fronted verbs, they are not attested on their own in the CP (that is, when the verb is not in C) and they can also co-occur with *wh*-elements in constituent questions (see Axel 2007: 42–44). The only similarity to these Old High German particles is the fact that there is no complementary distribution between verb fronting and the use of interrogative markers (see Axel 2007: 46 for Old High German).

verb in main clause questions), or it is merged with the TP directly (occupying the C position), as in Figure 3.6 above. Notice that this flexibility is necessary not only to account for the observed optionality but also because treating *whether* as a grammaticalised complementiser would not be compatible with the verb fronting (and doubling) patterns, the number of which is considerable in Middle English, so that the clear patterning of *whether* with ordinary *wh*-elements cannot be treated as exceptional. In other words, while the present analysis assumes, in line with van Gelderen (2009), that *whether* can merge directly with TP and thus be located in C, it crucially differs from van Gelderen (2009) in that it does not assume that *whether* was a grammaticalised complementiser in any stage.

3.5.3 Old Saxon and Old High German

The behaviour of *whether* thus contrasts with *if*, which is a complementiser in all periods in polar questions. Since most of the doubling patterns attested with *whether* are historical, one might wonder whether similar patterns can be detected in other West Germanic languages historically. Both Old English and Old Saxon belonged to the Ingvaeonic dialects (also called North Sea Germanic) of West Germanic (together with Old Frisian, see Lass 1994: 14), while Old High German was non-Ingvaeonic.[22] It is therefore to be expected that Old Saxon should be more similar to English than to Old High German.

In Old Saxon, both the operator *(h)wedar* 'whether' and the complementiser *ef* 'if' are attested (cf. Axel 2007, who categorises all these elements as complementisers, contrary to the assumption here). I carried out a corpus analysis, using the DDD Referenzkorpus Altdeutsch (Old German Reference Corpus). The results (comprising all hits from the corpus) are given in Table 3.2 (both texts are from the 9th century).

Table 3.2: Corpus results for Old Saxon

	ef	*(h)wedar*	*(h)wedar* + V
Genesis	1	1	
Heliand	5	2	1

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[22]The traditional distinction between Ingvaeonic, Istvaeonic (associated with Old Low Franconian) and Erminonic (associated with Old High German) goes back to Tacitus; see Lass (1994: 14–15) for discussion. The point here is simply that differences between the old languages most probably have their origins in dialectal differences within West Germanic, rather than being coincidental.

An example for *ef* is given in (35):

(35) endi frâgodun, **ef** he uuâri   that barn godes
      and asked.3PL if he was.3SG the son   God's
      'and they asked whether he was the son of God' (*Heliand* 11)

Examples for *(h)wedar* are given in (36):

(36) a. ne rôkead,   **huueðar** gi   is ênigan thanc antfâhan
          not worry.IMP.2PL whether you it some   thank receive.2PL
          'do not worry whether you get some reward' (*Heliand* 18)

      b. endi he frâgoda sân,   huilic sie   ârundi ûta gibrâhti,
          and he asked.3SG instantly, which they.ACC business out brought.3SG
          uueros an thana   uuracsîð **huueðer lêdiad** gi uundan gold
          man   in this.ACC foreign.land whether bring.2PL you wrought gold
          te geƀu   huilicun gumuno?
          to gift.DAT some   men.GEN
          'and he instantly asked, what business had brought them out from
          their land into this foreign land and whether you are bringing
          wrought gold as a gift to someone?' (*Heliand* 7)

Not surprisingly, the Old Saxon pattern is similar to the English one in that
the distribution of *whether* and *if* shows the relevant difference: *ef* is a finite
complementiser that cannot co-occur with a fronted verb in C, while *(h)wedar*
is an operator that may occur with or without verb movement, just like in the
case of *whether*, see the Middle English data above. Naturally, as the number of
all occurrences is very low (there are altogether ten examples), the results are
not fully conclusive in terms of the exact behaviour of the respective elements.
Nevertheless, it seems appropriate to conclude that Old Saxon shows essentially
the same pattern as English.[23]

In Old High German, the cognates of *if* are attested (*ibu* and *ob*). Again, I used
the DDD Referenzkorpus Altdeutsch (Old German Reference Corpus); the results
(comprising all hits from the corpus) are given in Table 3.3.[24]

Examples are given in (37a–39a) below; for each Old High German example,
the Latin original follows: both texts rely heavily on the Latin original.

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[23]The six examples from *Heliand* containing *whether* are also reported by Walkden (2014: 150–
151), who likewise concludes that Old Saxon essentially patterns with the Old English data.

[24]As discussed by Walkden (2014: 151–152, 155), the element *whether* had a 'which of two' inter-
pretation in Old High German, contrasting with Old English and Old Saxon.

Table 3.3: Corpus results for Old High German

	ibu + V	*ob*	*ob* + V
Benediktiner Regel (9th c.)	1		
Otfrid (9th c.)		11	
Tatian (9th c.)		8	1
Ludwigslied (9th c.)		2	
Psalm 138 (9–10th c.)		1	
St. Galler Schularbeit (11th c.)		1	
Benediktbeurer Glaube und Beichte III (12–13th c.)		1	

(37) a. fona himile simblum sihit ubar parn   manno, daz sehe,
          from heaven always   sees onto children.ᴘʟ men's, that see.sʙᴊᴠ.3sɢ
          ibu ist farstantanti edo suahhanti   cotan
          if   is understood or   sought.ᴀᴄᴄ God.ᴀᴄᴄ
          'from Heaven, he always sees onto men's children, to see if God is
          understood or sought' (*Benediktiner Regel* 7)

   b. de caelo   semper respicit super filios   hominum, ut
       of heaven.ᴀʙʟ always sees   onto sons.ᴀᴄᴄ men.ɢᴇɴ   that
       videat,   si est intellegens   aut requirens deum
       seessʙᴠᴊ if is   understanding or   requiring God.ᴀᴄᴄ
       'from Heaven, he always sees onto men's children, to see if God is
       understood or sought'

(38) a. láz   nu, gisehemes **oba come** Helias losenti   inan
          let.ɪᴍᴘ.2sɢ now see.1ᴘʟ   if   comes Elias   save.ɪɴꜰ he.ᴀᴄᴄ
          'let us see if Elias will come to save him' (*Tatian* 208)

   b. sine,   videamus an   veniat   Helias liberans eum
       let.ɪᴍᴘ.2sɢ see.sʙᴊʙ.1ᴘʟ whether comes.sʙᴊᴠ Elias   freeing he.ᴀᴄᴄ
       'let us see if Elias will come to save him'

(39) a. Pilatus uuntrota,   **oba** her iu   entoti
          Pilate wondered.3sɢ if   he already died.3sɢ
          'Pilate wondered if he was already dead.' (*Tatian* 212)

   b. Pilatus autem   mirabatur,   si iam   obisset
       Pilate   however wondered.3sɢ if already died.sʙᴊᴠ.3sɢ
       'Pilate wondered if he was already dead.'

The question arises whether there was verb movement to C with *ibu*/*ob*. While this cannot be excluded, there are several factors that should prevent us from reaching the conclusion that verb movement in such cases constituted a productive pattern. First, this option was available in the earliest texts, and this pattern is altogether very rare indeed. Note also that no clear dialect differences can be established: both the *Benediktiner Regel* and *Tatian* come from the Upper German dialect area, like most of the texts in the table above (only the *Ludwigslied* is Central German): the *Benediktiner Regel* is Alemannic, *Tatian* is East Franconian, and *Otfrid* is South Rhine Franconian.

Second, while the clauses in (37a) and (38a) may involve verb movement to C, whereby *ibu*/*ob* is an operator in [Spec,CP], it is also possible that there is no verb movement to C at all and the surface word order is a result of other factors, given that Old High German word order was considerably less fixed in this respect than Modern German (see, for instance, Hinterhölzl & Petrova 2010b and Coniglio et al. 2017 on variation in verb position). Third, apart from internal reasons, the Old High German examples are translations from Latin: as can be seen by comparing these clauses to the Latin originals, the Old High German word order mirrors the Latin word order, so the observed patterns may be the result of (almost verbatim) translation.

That is, the low number of examples from Old High German is not conclusive with respect to whether *ibu*/*ob* was available as an operator; in fact, the factors mentioned above seriously undermine such a possibility (though it cannot be completely excluded either). What is also evident is that even if it was an existing pattern, it was restricted to only a few early examples and it grammaticalised very early as a complementiser. This contrasts with the behaviour of English *whether* and Old Saxon *(h)wedar*, and based on the Old High German distribution, it should not be surprising that present-day *ob* is not available as an operator in dialects either.

3.5.4 Dutch

As Lass (1994: 14) remarks, Dutch seems to be a bit of a hybrid in terms of Ingvaeonic and non-Ingvaeonic patterns; the question arises what the status of *of* 'if' in Dutch is. In Standard Dutch, there is no doubling, similar to the case of English *if* (see Bayer 2004, following Hoekstra 1993). However, the combination *of dat* is possible in non-standard dialects (see, for instance, Bayer 2004: 65, ex. 14, quoting Hoekstra 1993). Consider (Bacskai-Atkari & Baudisch 2018: 27–28):

(40)   Peter vroeg   **of dat** Mary houdt van boeken.
       Peter asked.3sg if that Mary holds of   books
       'Peter asked if Mary liked books.'

As can be seen, non-standard dialects of Dutch treat *of* on a par with *wh*-operators with respect to the availability of an overt finite complementiser: note that non-standard dialects allow Doubly Filled COMP with ordinary *wh*-elements in Dutch (with considerable differences in the actual patterns, see Barbiers 2009: 1612–1613, van Craenenbroeck 2010; see also Bayer 2004, quoting Hoekstra 1993). In line with Boef (2013: 141–142), I assume that *of* in these cases is the question operator: technically, this means that it is a specifier merged to a complementiser but not the complementiser itself.

In other words, *of* may or may not be equipped with a [fin] feature. In Standard Dutch, as well as in varieties that do not have the combination *of dat*, *of* is specified as [fin] and is incompatible with another finite complementiser (*dat*). In those varieties however, which treat *of* on a par with other interrogative operators, *of* is not specified as [fin] and hence may co-occur with *dat*. Co-occurrence with *dat* seems to be largely optional (Barbiers 2009: 1612); this is expected if a head-sized element may either appear as a specifier or in the C head. Barbiers (2009: 1612–1613) reports that there is considerable – inter-speaker and intra-speaker – variation regarding the preferences in the relevant patterns: this is again expected in the present approach since elements like *of* are not tied to a pre-given position in a syntactic template. Just like with head-sized *wh*-elements in German dialects, the preference for the head position may be very strong or rather weak, resulting in different grammatical outputs.

This implies that the status of Dutch *of* differs crucially from that of German *ob*. Apart from the fact that German does not show constructions like (40), there are further differences justifying this distinction. First, as described by Boef (2013), *of* is a general disjunctive element in Dutch (in the sense of 'or'). Second, *of* may co-occur with ordinary *wh*-operators in constituent questions. Consider (Bayer 2004: 66, ex. 17, citing Hoekstra 1993):

(41)   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.'

I will turn to the analysis of (41) in the next section; the point here is merely that there are various indicators in favour of treating dialectal Dutch *of* differently from German *ob*.

Importantly, Doubly Filled COMP patterns may arise in polar questions as well, since the requirement to lexicalise [fin] on C applies here just like it does in constituent questions. Naturally, doubling only arises when the polar interrogative marker can be merged as an operator; if it is a grammaticalised complementiser, it is sufficient to mark [fin] itself. In addition, the availability of verb movement to C with a polar operator in [Spec,CP] shows that Doubly Filled COMP patterns are not directly related to the clause-typing status of the finite complementiser corresponding to *that* but the property is rather related to the requirement to merge a phonologically non-null element with the TP.

3.6 Doubly Filled COMP and V2

3.6.1 Declarative clauses

As pointed out previously in this chapter, the main idea underlying the proposed analysis is that Doubly Filled COMP effects stem from the necessity of filling the C head with an overt element (cf. also the descriptive observation made by Lenerz 1984: 85–86 and the condition of "C-visibility" by Pittner 1995). The lexicalisation of the operator follows from independent reasons: clause-typing operators have to move to the left. Moreover, as Fanselow (2009) argues, the filling of [Spec,CP] is not directly related to the notion of V2. This assumption will be slightly modified in the present section.[25]

Let us start with German V2 clauses as exemplified in (4), repeated here as (42):

(42) a. **Ralf hat** morgen   Geburtstag.
          Ralph has tomorrow birthday
          'Ralph has his birthday tomorrow.'

      b. **Morgen   hat** Ralf   Geburtstag.
          tomorrow has Ralph birthday
          'Ralph has his birthday tomorrow.'

As indicated, the first constituent can be of various categories: it is the subject DP in (42a) and an adverb in (42b), but it is at any rate a phrase-sized constituent (XP). In line with the literature on V2 (see Thiersch 1978, den Besten 1989, Fanselow 2002, 2004a,b, Frey 2005; see also Westergaard 2007, 2008, 2009,

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[25]The analysis follows the argumentation put forward in Bacskai-Atkari (2020c).

Kroch & Taylor 1997 and Lightfoot 1999, 2006), I assume that the verb moves to C,[26] while the XP moves to [Spec,CP] due to an [edge] feature. The representation in Figure 3.7 shows the structure in X-bar theoretic terms.[27]
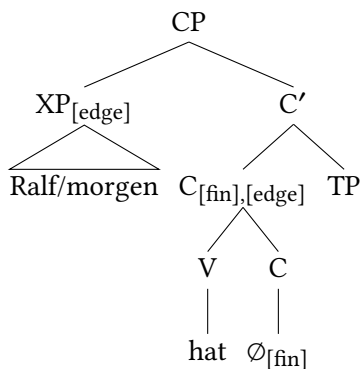
Figure 3.7: The structure of German V2

The representation shows a head adjunction analysis,[28] which is almost the only way of representing a verb in C, other than simply labelling the verb as C, which is clearly not the right category label. Assigning the category V to the verb and not using a separate C head would either violate endocentricity (V being the head of CP) or would force us to assume that the entire clause is a VP regarding its category. The problem with this in representational terms is that the distribution and syntactic behaviour of finite, declarative main clauses pattern with other finite clauses rather than with mere verb phrases. In other words, while the X-bar schema is indeed useful for representation purposes (which is precisely the reason why I adopt it in this book), it should not be taken at face value.[29]

The [u:fin] feature must be checked off on TP, and this is carried out by the finite verb (following Fanselow 2004b: 309). There is no overt finite complemen-

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[26]The movement of the verb is related to clause typing, see also Truckenbrodt (2006).

[27]In line with the model put forward in this book, the reflex of finiteness in the CP is taken to be a [fin] feature; in this respect, the model is similar to the approach articulated by Rizzi (1997). As pointed out by Chomsky (2001, 2008), finiteness is probably a composite of features, including phi features (see also Cowper 2016 for discussion). Since phi features are checked off in the TP, what remains relevant for the CP is the syntactic information that the clause is finite, as this affects the combinability of the clause as an embedded clause and/or as a main clause. I refer to this property as [fin].

[28]The head adjunction analysis of head movement is controversial, as already pointed out by Fanselow (2004b); see also Dékány (2018) for a recent discussion.

[29]The following representation shows the Bare Phrase Structure representation, using only the example in (42b) above:

tiser available for main clause declaratives in German (as is regularly the case in Germanic languages), resulting in a surface V2 pattern. In the particular implementation assumed here, a [fin] feature of TP has to be checked off: while TP was in fact projected from the verb, the strong feature cannot be checked automatically. The only possibility is to re-merge (move) the verb possessing the [fin] feature: this ultimately produces a finite clause (as the satisfied finiteness feature projects as a label), which is, without the addition of clause-type markers proper (e.g. interrogative elements) is declarative. In other words, there is no separate element or designated layer necessary for encoding clause type as long as it is the unmarked declarative. The representation in (25) above indicates that the verb is not a complementiser itself, yet it occupies the relevant position, and by virtue of the [fin] feature it makes the clause finite just as a finite complementiser would do.

English crucially differs here: one may either assume that no further layer above the TP is generated in main clause declaratives at all, or that a zero finite complementiser is available in the lexicon; at any rate, English does not show V2 patterns in simple declarative clauses.[30]

While the role of verb movement is thus straightforward, the movement of the XP to the specifier requires some explanation. At the point of re-merging the verb with TP, the [fin] feature is active on the head. Müller (2011: 171) provides a modified definition of the Edge Feature Condition of Chomsky (2000: 109), claiming that edge features "can only be inserted as long as the phase head is active", and a phase head "is active as long as it has (structure-building or probe) features

(i)

hat
├── morgen[edge]
└── hat
    ├── hat[fin],[u:edge]
    └── TP[u:fin]
        ├── Ralf
        └── Geburtstag
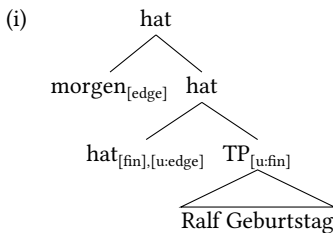
In line with the general assumptions regarding minimal and maximal projections in Base Phrase Structure, the maximal (phrasal) status of the first constituent (here: *morgen*) arises from the fact that it does not project further; minimal and maximal projections do not have to be structurally distinguished for head/sized phrases. The label of the phrase is provided by the element that projects further (see Chomsky 1995, 2013); in other words, no external labels (e.g. CP) are used: Bare Phrase Structure is endocentric in this respect.

[30]Obviously, the interrogative patterns to be discussed below in this section are a residue of a former V2 grammar, just as other inversion structures (negative inversion, quotative inversion), as pointed out by Rizzi (1996) and Roberts (2010). These V2 patterns do not involve lexical verbs and they are triggered by very specific elements; see also Sailor (2020) for discussion.

to discharge", but "otherwise it counts as inactive". In (i), the active phase head with a yet unchecked feature triggers the insertion of the [edge] feature, which in turn triggers the movement of an XP to the specifier. In this sense, the fact that a finite verb is re-merged and that a specifier in the same projection (traditionally referred to as CP) emerges are related: note that this does not mean any surface V2 requirement (see also Fanselow 2009), as the XP may in principle be covert (as will be discussed for certain clause-typing operators, but the same holds in topic drop constructions, see Trutkowski 2016).

In English, since the [fin] feature is interpretable on the zero declarative complementiser, there is no unchecked [fin] feature on C, and the C is not active: consequently, the [edge] feature is not inserted either. In other words, there is no verb movement to C and XP-movement to the specifier in English declaratives, resulting in the lack of V2, as opposed to other Germanic languages.

Let us now turn to embedded finite declarative clauses. An example for German is given in (43):

(43) Ich weiß,   **dass** Ralf den   Salat gemacht   hat.
      I   know.1sg that Ralph the.m.acc salad made.ptcp has
      'I know that Ralph has prepared the salad.'

The structure is given in Figure 3.8 (page 116).

In this case, the complementiser *dass* is inserted, which is equipped with an interpretable [fin] feature. Given this, the feature [fin] on *dass* does not make the C head active and thus no [edge] feature is inserted. The same applies to English *that*-clauses as well. The clause is typed as finite by the complementiser: this information is necessary for the matrix predicate.[31]

The difference between English and German lies in the availability of a zero declarative complementiser. The [fin] feature, just like in matrix clauses, is interpretable on the English zero complementiser. Descriptively, this results in the optionality of *that* in non-fronted clauses:

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[31]The diagram in Figure 3.8 uses traditional X-bar labels for ease of representation; the Bare Phrase Structure is largely identical:

(i)   dass
            ╱ ╲
    $dass_{[fin]}$ $TP_{[u:fin]}$
                      △
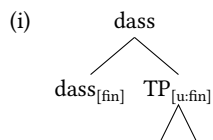
This is because the X-bar representation does not have to resort to head adjunction in this case.

(44) I think **(that)** Ralph likes turtles.
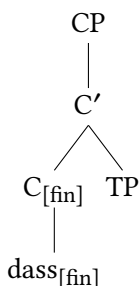
Figure 3.8: Embedded declaratives

Note that English *that* is not always interchangeable with the zero complementiser (for instance, it is not permitted in subject clauses), and authors such as Kayne (1984), Stowell (1981) and Pesetsky (1995) have argued that the zero finite complementiser has the same distribution as traces or can even be treated as a trace (see also the discussion in Chapter 2 in connection with Rizzi 1997). Nevertheless, the point is that the absence of an overt *that* does not necessarily lead to ungrammaticality and it does not trigger verb movement either, as demonstrated by (44).

German crucially differs here. Observe:

(45) a. Ich denke,   ***(dass)** Ralf   Schildkröten mag.
        I   think.1SG that   Ralph turtles   likes
        'I think that Ralph likes turtles.'

    b. Ich denke,   Ralf   **mag** Schildkröten.
        I   think.1SG Ralph likes turtles
        'I think Ralph likes turtles.'

As indicated, in German either *dass* is used, as in (45a), or verb movement occurs, as in (45b): a silent complementiser without verb movement is not possible. It should be mentioned that verbs differ with respect to whether they allow embedded V2 or not: for instance, the verb *bezweifeln* 'doubt' allows only a *dass*-clause but not verb fronting. There exist various hypotheses on how the two groups can be separated on formal grounds: a traditional idea is that embedded V2 is allowed by "bridge verbs" (Vikner 1995; see also Green 1976).[32]

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[32]This distinction is problematic on empirical grounds, as pointed out by Featherston (2004) and Meklenborg Salvesen & Walkden (2017): notably, the "bridge feature" should be understood as a continuum and not as a categorial distinction (Featherston 2004: 205). See also Hooper & Thompson (1973) for discussion.

If embedded V2 is possible, it is derived in the same way as Figure 3.7. Note that there are also different analyses of embedded V2. For instance, den Besten (1983) treats these clauses as main clauses (V2 being a "Main Clause Phenomenon" in asymmetric V2 languages like German and Dutch); there are various problems with this analysis, see also Heycock (2006). On the other hand, there are analyses treating embedded V2 clauses as proper complement clauses (see Weerman 1989, Hooper & Thompson 1973). Reis (1997) takes a middle path in that she treats embedded V2 clauses as syntactically relatively unintegrated subclauses (essentially argument clauses that are not located in the complement position of the verb but adjoined to the VP). This is slightly problematic for a merge-based account, and the differences concern primarily the final syntactic position of the subclause and they do not undermine the fact that the matrix verb imposes restrictions on the left periphery of the subclause. For these reasons, I assume that embedded V2 clauses are selected by a matrix verb. Under this view, certain verbs select a complement headed by *dass*, while others select a finite CP complement and do not impose further restrictions on the head.

3.6.2 Interrogative clauses

Let us turn to matrix interrogatives. Constituent and polar questions are illustrated for German in (46) below:

(46) a. **Wer hat** den   Salat gemacht?
        who has the.M.ACC salad made.PTCP
        'Who prepared the salad?'

     b. **Hat** Ralf   den   Salat gemacht?
        has Ralph the.M.ACC salad made.PTCP
        'Did Ralph prepare the salad?'

The X-bar structure of (46a) is shown in Figure 3.9. The X-bar structure of (46b) is shown in Figure 3.10.

Again, just as with main clause declaratives, verb movement is represented as head adjunction in X-bar terms.[33]

The [fin] feature is lexicalised by verb movement just like in German V2 declaratives, see Figure 3.7 above. Again, the C head is active, yet the [edge] feature is not inserted, since the operator feature – [Q] or [wh] – triggers movement anyway. The interrogative element is necessarily overt in constituent questions

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[33]The Bare Phrase Structures of (46a) is given in (i) and the Bare Phrase Structure of (46b) in (ii):
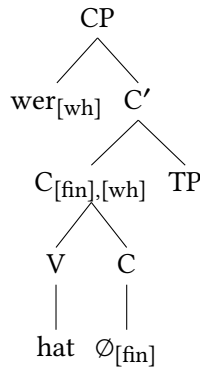
Figure 3.9: Main clause constituent questions
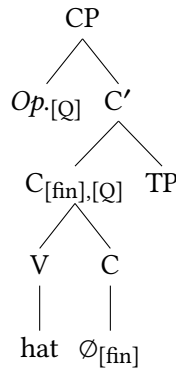
Figure 3.10: Main clause polar questions

but not in polar questions (see the discussion in Section 3.5 above, especially regarding overt interrogative markers in matrix questions historically). In the case of Figure 3.10, inserting a covert operator results in a surface V1 order in German, as opposed to V2 in constituent questions and in declaratives.

(i) hat

(ii) hat
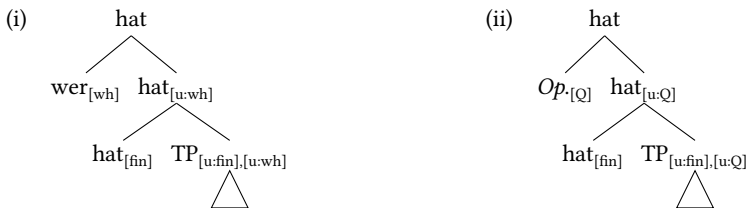
Just as with V2 declaratives, the label is given provided by the verb.

Regarding English, verb movement to C from T is triggered in main clause interrogatives as well, unlike in declaratives. This indicates that the lexicalisation requirement is dependent on the exact features involved. While a zero declarative complementiser with a [fin] feature is available in English, it cannot type the clause as [wh]/[Q]. Assuming that an abstract feature bundle is added in the syntax (see Chomsky & Lasnik 1977) and lexicalised by a matching lexical element, if and to the extent that there is one, in the present case there would be simply no complementiser element in the English lexicon to satisfy these requirements. The resulting property of English interrogatives (traditionally referred to as T-to-C movement) is most probably a remnant of the original V2 property of the language; the point is that the lexicalisation of the finite C head may vary across clause types (not just across languages and dialects).

In embedded polar questions, German uses an overt complementiser:

(47) Ich weiß   nicht, **ob** Ralf den   Salat gemacht   hat.
      I   know.1SG not   if Ralph the.M.ACC salad made.PTCP has
      'I don't know if Ralph has prepared the salad.'

The X-bar structure is shown in Figure 3.11.[34]

$$
\begin{array}{c}
\text{CP} \\
\diagup\diagdown \\
\textit{Op}_{.[Q]}\quad \text{C}' \\
\diagup\diagdown \\
\text{C}_{[\text{fin}],[Q]}\quad \text{TP} \\
| \\
\text{ob}_{[\text{fin}],[Q]}
\end{array}
$$
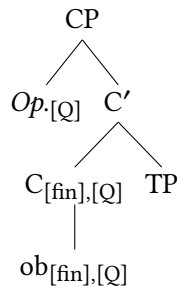
Figure 3.11: Embedded polar questions

In this case, the C head is lexicalised by an overt complementiser specified as [Q] and [fin]. The same configuration applies in *if*-interrogatives in English.

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[34]As with embedded declaratives, the representation in Bare Phrase Structure is similar:

(i)   ob
            $\diagup\diagdown$
   ob$_{[\text{fin}],[Q]}$ TP$_{[\text{u:fin}],[\text{u:Q}]}$
                  $\triangle$
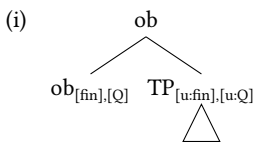
The label is the complementiser *ob*.

In German, this configuration matches the full syntactic paradigm that we have discussed in connection with main clauses and embedded clauses. In English embedded polar interrogatives containing *if*, the same configuration matches the embedded paradigm and main clause interrogatives.

Regarding embedded constituent questions, Standard German differs from dialectal patterns that allow or even require *dass* in C (the same difference holds in English and in Dutch). The phenomenon is illustrated in (48) below:

(48) Ich weiß   nicht, **wer (%dass)** den   Salat gemacht   hat.
      I   know.1sg not   who   that the.m.acc salad made.ptcp has
      'I don't know who has prepared the salad.'

The X-bar structure of the (non-standard) version containing *dass* is given in Figure 3.12. The X-bar structure of the *dass*-less (standard) version is given in Figure 3.13.
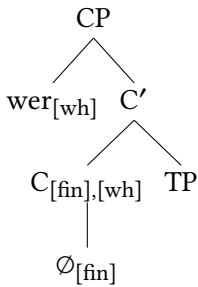
Figure 3.12: Embedded constituent questions in Standard German
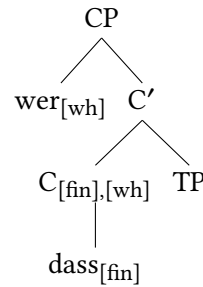
Figure 3.13: Doubling in embedded constituent questions

The representation in Figure 3.12 is the standard pattern, while the representation in Figure 3.13 is the dialectal pattern.[35] In Figure 3.12, unlike in all the other

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[35]The Bare Phrase Structure representations are given in (i) below:

The ultimate difference lies in whether the complementiser is overt or not.

cases above, see Figures 3.7, 3.8, 3.9 and 3.11, the [fin] feature is encoded by a zero complementiser. The assumption is that in Standard German, a zero complementiser with a [wh] and [fin] specification is part of the lexicon and is interpretable if it is licensed by a matrix predicate (in other words, such a complementiser is excluded from main clauses). At any rate, this feature specification makes sure that 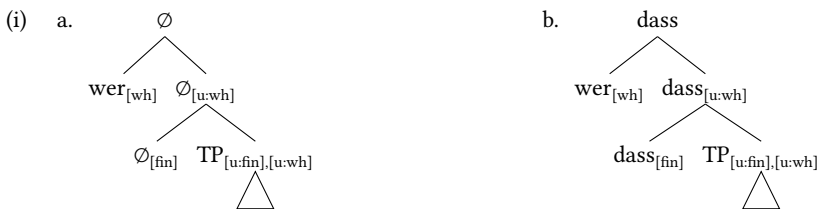while the element in C (that is, the element directly merged with the TP) is not overt, at least the element merged as a specifier is (given that *wh*-elements are necessarily overt, as discussed earlier): this prevents the generation of phonologically empty projections.

The English paradigm is different inasmuch as the availability of a zero complementiser depends primarily on clause type (e.g. declarative versus interrogative) and not so much on whether the clause is embedded or not, whereas this is crucial in German. The configuration in Figure 3.12 is in both languages exceptional with respect to the interrogative paradigm (in English, the same applies to interrogatives with *whether*). Note also that relative clauses are also exceptional, especially in (Standard) German; these questions will be addressed in Chapter 4.

The structure in Figure 3.13 is essentially the same as the one in Figure 3.12, with the important difference that the complementiser is overt in Figure 3.13 but not in Figure 3.12. That is, the difference is not so much in the syntax but rather in the lexical elements. There is an underlying lexical difference between the standard language and dialects: in standard German, the [fin] feature on an embedded [wh] zero complementiser is interpretable, but not in dialects applying the strategy shown in Figure 3.13.

I assume that an abstract feature bundle is inserted in syntax (cf. Chomsky & Lasnik 1977), which is then replaced by a matching lexical item: this lexical item may fully match the features in question, as in Figure 3.11, or it may provide a partial match, as in Figure 3.12 and (3.13), in which case the remaining feature is uninterpretable on the inserted lexical item. While *dass* is incompatible with the [wh] feature in Standard German and is therefore categorically excluded from interrogatives, it is not sensitive to this feature in dialects that allow its insertion in the relevant clauses. In either case, since the [wh] feature is uninterpretable on the complementiser, the movement of the *wh*-element is triggered. Following the distinctions made by Bayer & Brandner (2008), as discussed in Section 3.2.3, the analysis thus far covers symmetric dialects that uniformly allow or prohibit Doubly Filled COMP in embedded interrogatives.

As described by Bayer & Brandner (2008), there are also asymmetric dialects that require the insertion of *dass* with phrase-sized *wh*-elements but not with head-sized ones. In Section 3.2.3, I discussed their proposal regarding locating

such *wh*-elements in C and evaluated its advantages and disadvantages. In particular, I argue that while the *wh*-element is indeed in C in these cases, it is not the complementiser itself, as the notion of the (latent) C-feature is problematic. Instead, I propose that the *wh*-element in these cases should be treated in the same way as verbs moving to C. In an X-bar representation, as illustrated in Figure 3.14, this would translate as head adjunction:[36]
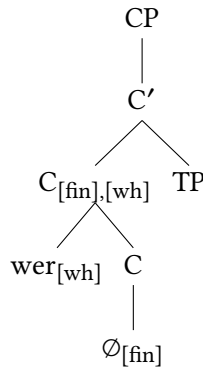
Figure 3.14: *Wh*-elements in C

Just as in the case of Figure 3.13, the abstract feature bundle is lexicalised by a partially matching element, but instead of the finite complementiser, it is the fronted *wh*-element: this element is crucially underspecified for the [fin] feature. Unlike the [wh] feature, which at any rate requires the fronting of the element it is located on, the same is not true for [fin], as in all cases where a complementiser is inserted, the fronting of the verb is not triggered in West Germanic. Configurations like in Figure 3.14 are licensed only in embedded clauses since the non-lexicalised [fin] feature has to be licensed; main clauses are obligatorily finite and cannot depend on a licensing element from a higher clause. The relevant features matter in terms of clause typing, and additional labels such as C or V do not play a role in Bare Phrase Structure.

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[36]The Bare Phrase Structure representation is given in (i) below:

(i)
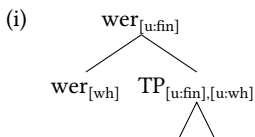
In this case, *wer* projects as a label.

The features (such as the interrogative feature or the finiteness feature) can be carried by other elements as well, as long as there is no categorial restriction from the matrix predicate. The configuration in Figure 3.14 is compatible with a matrix predicate requiring a [wh] complement, while it would not be possible with a matrix predicate requiring a [wh] complement headed by a C element specifically.

The same variation applies in polar questions in English with *whether*, with the important difference that the feature involved is [Q] and not [wh]. Consider the cases where *whether* is merged as a specifier, using X-bar representations:[37]
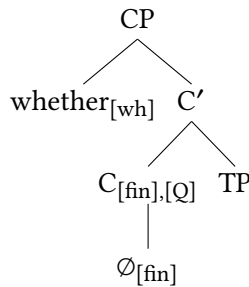
Figure 3.15: The standard position of *whether*

The structure in Figure 3.15 represents the standard pattern, where a zero complementiser encodes [fin] feature. The non-standard pattern in Figure 3.17 differs only in the lexical element inserted as a complementiser: it is an overt *that*, in line with the rest of the English interrogative paradigm. As was mentioned in Section 3.5, even non-standard dialects seem to prefer single *whether*, even if they otherwise show Doubly Filled COMP patterns in embedded constituent ques-

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[37]The Bare Phrase Structure representations are given in (i) below:

(i) a.

b.
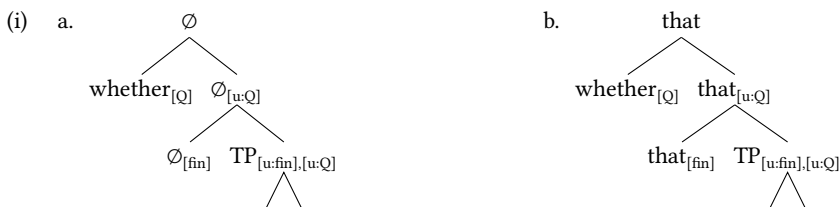
The structures are altogether similar to the ones established for embedded constituent questions.

tions. As I argued, such cases are instances of *whether* inserted into C; in the X-bar structure, this is represented as in Figure 3.16.[38]
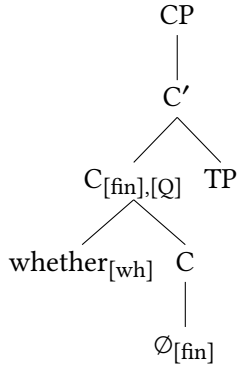
Figure 3.16: The operator *whether* in C
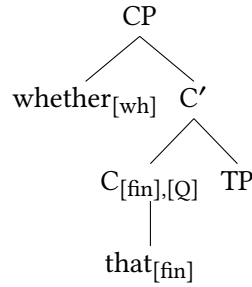
Figure 3.17: Doubling with *whether*

As mentioned in Section 3.5, the difference between constituent questions and polar questions is expected since they differ in their feature specification, [wh] versus [Q].

Let us now turn to the triple combination attested in Dutch dialects that was mentioned in Section 3.5.4, as exemplified in (41), repeated here as (49):

(49)   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.'

I propose the construction in Figure 3.18 for the combination *wie of dat*.[39]

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[38]The Bare Phrase Structure representation is as in (i).

(i)
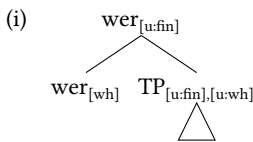
   Again, the label is the *wh*-element *wer*.

[39]The structure relies on the idea that in minimalist syntax, multiple specifiers are possible; this can be extended to V3 orders in main clauses, see Bacskai-Atkari (2020c: 148–149). Lahne (2009) also proposes multiple specifiers instead of separate left-peripheral projections, as an attractive alternative for the cartographic approach. Note, however, that her system generally relies on multiple specifiers so that apparent left peripheral heads are generally assumed to be affixes on displaced constituents. This differs crucially from the system proposed here, as I do not exclude the possibility of multiple projections (see Chapter 5).
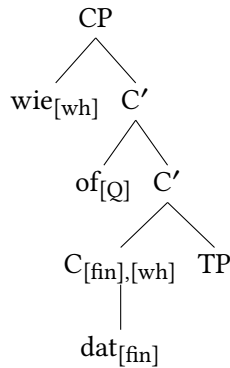
Figure 3.18: Triple combinations in Dutch

The structure in Figure 3.18 differs from that of Bayer (2004: 75), who considers *of* to be the head of a separate Disjunction Phrase. As I argued in Section 3.5.4, there are reasons to believe that *of*, at least dialectally, is the disjunctive operator itself, see also Boef (2013). By merging the Q-element with the finite complementiser, the [wh] feature is not checked off and hence the phrase remains active, allowing a second merger operation that involves the movement of the *wh*-element. Essentially, both operators are specifiers regarding their relative positions to the head (neither of them is adjoined via head adjunction). This is naturally possible in a merge-based model, while it would be ruled out by strict X-bar rules. Note that the relative position of the *wh*-element with respect to the disjunctive operator does not violate the Minimal Link Condition: the *wh*-element moves to the closest specifier available, as there is no skipped position since *of* and *dat* are not heads of separate projections.

Structures like in Figure 3.18 are of relevance here since the proposed account can accommodate more complex combinations as well, without resorting to a rigid cartographic distinction between designated phrases. Indeed, in none of the cases showing double or triple combinations is a cartographic template necessary; moreover, as was argued in detail, the nature of the combinations seriously challenges the possibility of a pre-defined template and of the notion of separate designated projections.

The final question to be discussed here concerns the (non-)availability of verb movement to C in embedded interrogatives. As was discussed in connection with embedded declaratives, this option is not entirely ruled out in Modern Standard German, and examples from Old German also suggest that this may have been an option in embedded polar interrogatives as well (see Section 3.5). As mentioned there, the key factor is the matrix verb, which may impose selectional restrictions

on its complement clause: it may require a CP headed by *dass* (as is the case with *bezweifeln* 'doubt'), but it may simply require a finite CP, which allows V2 patterns as well (as is the case with *denken* 'think').

Restrictions from the matrix clause can be observed in other dependent clause types that are not taken by a matrix predicate. Consider the following examples for German hypothetical comparatives:

(50) a. Anna verhält sich   (so), **als wäre**   sie im   Kindergarten.
          Anna behaves herself so   as be.COND.3SG she in.the nursery.school
          'Anna behaves as if she were at nursery school.'

      b. Anna verhält sich   (so), **als ob** sie im   Kindergarten
          Anna behaves herself so   as if   she in.the nursery.school
          wäre.
          be.COND.3SG
          'Anna behaves as if she were at nursery school.'

In this case, as far as lexicalisation of [fin] in C is concerned, verb movement in (50a) and the insertion of the complementiser *ob* are equivalent options. As indicated, an optional degree-like element *so* 'so' can be inserted in the matrix clause, but this does not serve as a predicate in the way lexical verbs taking finite clauses do.

The optionality between complementiser-insertion and verb movement applies to conditionals as well, illustrated for English in (51):

(51) a. **If** water should leak out, check the tube connections.
      b. **Should** water leak out, check the tube connections.

Again, both strategies lexicalise C and check off the [fin] feature and in this sense they are equivalent. In other words, verb movement is not excluded from embedded clauses per se, but it is rather restricted by certain elements appearing or not appearing in the matrix clause. The ban on verb movement in embedded interrogatives can ultimately be related to selectional restrictions.

To conclude this section, it can be established that Doubly Filled COMP effects arise due to a lexicalisation requirement on C, which follows from the general syntactic paradigm in West Germanic. Essentially, the differences observed between standard varieties of West Germanic and dialects can be drawn back to lexical differences, in line with Borer (1984). Importantly, Doubly Filled COMP patterns are not seen as exceptional in the proposed model but they are in fact consistent with the more general syntactic properties of the respective languages.

3.7 Long movement

The last issue that I would like to examine briefly concerns long movement, since doubling is also relevant for this phenomenon. Consider first the following example:

(52)   You said [**that** they saw the new students].

    In (52), the embedded clause (bracketed) is a declarative clause (as selected by the matrix verb) and the matrix clause is also declarative. In canonical matrix questions, we have the configuration given in (53):

(53)   **Who** said [**that** they saw the new students]?

    In this case, the *wh*-element originates in the (interrogative) matrix clause: the embedded clause is not affected. The relevant derivation process (disregarding issues not relevant for our purposes here) is given in (54) below:

(54)   a.   [$_{vP}$ who said [$_{CP}$ that *opaque*]]
       b.   [$_{TP}$ who [$_{vP}$ who said [$_{CP}$ that *opaque*]]]
       c.   [$_{CP}$ who [$_{TP}$ who [$_{vP}$ who said [$_{CP}$ that *opaque*]]]]
       d.   [$_{CP}$ who [$_{TP}$ ~~who~~ [$_{vP}$ ~~who~~ said [$_{CP}$ that *opaque*]]]]

    As indicated, the subject *who* originates in the VP and moves (via TP) to the specifier of the CP. The lower copies are regularly eliminated at PF, as shown in (54d). The embedded clause plays no role in these cases, as no operation targets the edge of this clause. In line with the Phase Impenetrability Condition (Chomsky 2000), I assume that only the head (here: *that*) and the specifier of the clause remain active after the clause has been spelt out, the rest of the clause being opaque.
    Likewise, if the *wh*-element originates in the embedded (interrogative) clause and moves to the left periphery of the same clause, this does not affect the matrix clause:

(55)   You asked [**who** they saw].

    In (55), the *wh*-element originates as an object and undergoes regular operator movement; this does not affect the declarative main clause. The derivation is as follows:

(56)   a.   [$_{TP}$ they saw who]

b. [$_{CP}$ who [$_{TP}$ they saw who]]

c. [$_{CP}$ who [$_{TP}$ they saw ~~who~~]]

The movement of the *wh*-element in this case is triggered by a [wh] feature on the C head, which is checked off.

In long movement, the *wh*-element originates in the embedded clause and ends up in a higher clause:[40]

(57)   **Who** did you say [**that** they saw]?

According to the standard view (Chomsky 1981, see also the discussion in Fanselow 2017), *wh*-elements move in a cyclic fashion in long-distance dependencies, so that the *wh*-element moves first to the specifier of the embedded clause and subsequently to the specifier of the higher clause. The derivation for (57) is shown in (58) below:

(58)   a. [$_{TP}$ they saw who]

b. [$_{CP}$ who that [$_{TP}$ they saw who]]

c. [$_{CP}$ who that *opaque*]

d. [$_{vP}$ you said [$_{CP}$ who that *opaque*]]

e. [$_{TP}$ you [$_{vP}$ you say [$_{CP}$ who that *opaque*]]]

f. [$_{CP}$ who did [$_{TP}$ you [$_{vP}$ you say [$_{CP}$ who that *opaque*]]]]

g. [$_{CP}$ who did [$_{TP}$ you [$_{vP}$ say [$_{CP}$ ~~who~~ that *opaque*]]]]

In essence, the derivation is largely a logical combination of the derivations given in (54) and (56) above, though some remarks are in order here, especially regarding the intermediate landing site. First, note that long movement can occur in multiply embedded environments, as illustrated in (59) below:

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[40]As discussed in Chapter 2, such extractions are subject to various constraints in English: the extraction of a subject *wh*-element triggers the so-called Comp-trace or *that*-trace effect, while the extraction of an object *wh*-element is unproblematic. The following examples are two test sentences from Sobin (2002: 557, ex. 1a and 3a) that were used in a grammaticality judgement experiment:

(i)   Who did you say that Mary saw last week?

(ii)   Who did you say that saw Elvis last week?

For the sentence in (ii) reports that 64% or the participants marked it as 'good', 27% as 'maybe', and 9% as 'impossible'; this contrasts with 100% 'good' for the sentence in (i). This subject-object asymmetry is due to independent constraints, presumably related to processing, and is not directly relevant to the discussion on long movement here.

(59)   **Who** do you think [**that** Peter said [**that** they saw]]?

Second, the intermediate landing site does not constitute an interrogative clause. On the one hand, this is unproblematic since the *wh*-element does not undergo feature-checking regarding [wh] in a lower clause so it can do so in the highest clause. On the other hand, the question arises what triggers the movement of the *wh*-element to the intermediate landing site, if there is no triggering [wh] feature.

Third, related to this, notice the presence of *that* in the embedded clause. This is not obligatory, so that the zero complementiser counterpart of (57) is also possible, as illustrated in (60):[41]

(60)   **Who** did you say [they saw]?

As discussed in this chapter, the complementiser *that* is not allowed in embedded interrogatives in English in the standard variety, so that its presence in sentences like (57), which is undoubtedly part of the standard, indicates yet more clearly that the embedded clause cannot be interrogative. Note also that the matrix verb is *say*, which selects declarative, not interrogative complements. Given the absence of a specific clause-typing feature normally triggering the movement of an operator, it seems reasonable to assume that the movement of the *wh*-element to the intermediate landing site is most probably triggered by an [edge] feature (cf. Georgi 2013 on [edge] features as trigger sin intermediate [Spec,TP] landing sites). Note that, except for echo questions (which I take to be instances of focus, in line with Bošković 2002 and Artstein 2002), *wh*-elements need to be fronted in Germanic; in other words, the [wh] feature, as an interrogative clause-typing feature, normally requires the *wh*-element to move to a relevant [Spec,CP] position or to be preceded by such a *wh*-element in the same clause. Note that the same cannot happen in embedded declaratives, as that would cause clashes at LF: the *wh*-element takes scope over the clause, yet a declarative clause is assumed to be a complete proposition. Since the *wh*-element is available for further operations in the [Spec,CP] position, its movement triggered by the [wh] feature on the highest C head is regularly triggered. Failing to insert the [edge] feature on the intermediate C head causes problem for the interfaces, as the *wh*-element would fail to move up to the highest clause, leaving the [u-wh] feature unchecked.

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[41]Note again that overt *that* and the zero complementiser are not always interchangeable: in cases like (57) and (60), the extracted *wh*-element is an object. If the extracted *wh*-element is a subject, this leads to the so-called Comp-trace effect or *that*-trace effect, as discussed in Chapter 2.

It is evident that there is an intermediate step in the derivation, see (58b), which constitutes a Doubly Filled COMP pattern in the sense that both the specifier and the head of the same CP are filled by overt (clause-typing) material. However, note that in this case the clause is not typed as interrogative: consequently, it does not require the complementiser to be underspecified for [wh] and thus crucially differs from canonical Doubly Filled COMP patterns.

Let us now turn to German. German also allows long-distance *wh*-movement, as illustrated in (61) below:

(61) **Wen**   denkst   du, [**dass** sie liebt]?
     who.ACC think.2SG you   that she loves
     'Who do you think that she loves?'

Just like in English, it is possible to extract across multiple embedded clauses, as in (62) below (Fanselow 2017: 25):[42]

(62) **Wen**   denkst   du [**dass** sie glaubt   [**dass** Fritz meint [**dass** sie
     who.ACC think.2SG you   that she believes that Fritz means that   she
     liebt]]]?
     loves
     'Who do you think she believes that Fritz means that she loves?'

While such constructions are possible across German, Fanselow & Weskott (2010) observed not only that these constructions seem to be more acceptable in dialects than in the standard but also that there seems to be a North-South divide (when examining regional standards), such that the construction is more widespread in Southern areas, especially in Bavarian. The acceptance of such extraction patterns is confirmed to be high (around 74%, with 45% mentioning other options as possible alternatives) in Alemannic by Brandner & Bucheli Berger (2018: 34), it appears to be less widespread in Hessian, as it is not the preferred option (it amounts to only 33% for objects, Weiß 2016b). Note that while the Bavarian and Alemannic areas strongly employ Doubly Filled COMP in embedded interrogatives (see Bayer & Brandner 2008, among others), the same doubling patterns constitute a minority option in Hessian (Weiß 2016a).

This seems to suggest that there is at least some correlation between Doubly Filled COMP patterns and long movement, though this is not categorical, as the

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[42]In German, long extraction is not banned for subjects, see Fanselow (2017), Brandner & Bucheli Berger (2018), Weiß (2016b), though Weiß (2016b) notes that the acceptance of long extraction seems to be considerably higher for objects than for subjects in Hessian, and similar differences are also detected by Brandner & Bucheli Berger (2018: 36) for Alemannic.

possibility of long movement does not imply the availability of Doubly Filled COMP patterns (or vice versa). It is, however, possible that in dialects that allow *dass* to be underspecified for [wh], combining [edge] with *dass* is in fact more readily an option, since the filling of the specifier position together with *dass* is in fact a regular pattern in these varieties, so that the intermediate structure containing the sequence *wen dass* conforms to a more generally available syntactic configuration. Since this configuration does not ultimately surface, due to the elimination of lower copies, this apparent correlation again suggests that constraints related to the presence or absence of Doubly Filled COMP patterns are not governed by surface filters but rather follow from the underlying syntactic features of the respective elements.

3.8 Summary

Using the framework established in Chapter 2, this chapter analysed the left periphery of interrogative clauses, especially embedded interrogatives clauses. In particular, doubling effects that go against the so-called "Doubly Filled COMP Filter" were discussed in detail. It was shown that variation in Germanic cannot be successfully described (and especially explained) by a surface filter. It was shown that the properties underlying such combinations stem from the necessity of overtly realising the operator in constituent questions and from the preference of lexicalising a finite C in Germanic. In polar questions, doubling effects are also attested, yet they are far less common, which is expected since the polar operator is recoverable. In some varieties, as is the case in certain Dutch dialects, triple combinations are also possible: these also do not necessarily require multiple CP projections, as the minimalist model allows multiple specifiers. The availability of such patterns is constrained by semantics. Finally, it was also shown that the proposed account is compatible with basic observations concerning long-distance *wh*-movement. Since the present chapter was restricted to embedded interrogatives, the question that arises at this point is whether the analysis can be carried over to other clause types. In Chapter 4, I will turn to the analysis of relative clauses, which, as was pointed out in connection with the Doubly Filled COMP Filter, have often been treated in a parallel fashion, and Chapter 5 will address embedded degree clauses, which differ in terms of doubling. I will return to basic questions concerning clausal ellipsis in embedded interrogatives and the relevance of information structure in Chapter 6.

4 The left periphery of relative clauses

4.1 Introduction

This chapter is dedicated to the analysis of relative clauses, applying the framework established in Chapter 2 and refined for interrogative clauses in Chapter 3. As discussed in Chapter 3, the notion of the "Doubly Filled COMP Filter" emerged in the literature primarily in connection with relative clauses in English. One of the most important questions to be dealt with in this chapter is therefore whether and to what extent the conclusions drawn in Chapter 3 for embedded interrogatives hold for relative clauses in West Germanic. On the one hand, combinations of operators and complementisers will be examined; as was pointed out in Chapter 2 already, such combinations are particularly important as they are not compatible with traditional cartographic approaches. On the other hand, the question will be addressed why and to what extent there seems to be a preference for relative complementisers over relative pronouns in Germanic.[1] As will be discussed, this preference also makes doubling patterns less likely to appear in relative clauses than in embedded constituent questions in dialects that allow the relevant patterns. Since the data from South German dialects are of especial relevance in this respect, I am first going to summarise the most important findings of Brandner & Bräuning (2013), who discuss the syntactic status of the most widespread complementiser in South German, namely *wo*. Following this, I will discuss other elements (complementisers and operators, as well as the combination of the two).

This chapter is structured as follows. Section 4.2 discusses the findings of Brandner & Bräuning (2013). Section 4.3 examines the differences between relative pronouns and relative complementisers in the framework put forward in this book. Section 4.4 offers further insights in this respect, by looking at changes and

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[1]Unlike in the case of embedded interrogatives and, as will be shown in Chapter 5, hypothetical comparatives, verb movement will not be discussed in connection with relative clauses. The reason is that verb movement to C does not occur in genuine relative clauses in West Germanic. There are so-called V2 relative clauses in German, yet these are syntactically paratactic configurations, as shown by Gärtner (1998, 2001), Endriss & Gärtner (2005), Ebert et al. (2007); see also Coniglio (2019: 144–150).

variation in English. The interaction between pronouns and complementisers is also examined in terms of combinations in German: Section 4.5 discusses doubling in ordinary relative clauses, Section 4.6 discusses doubling in free relatives, and Section 4.7 discusses triple combinations. Section 4.8 examines equative relative clauses, a construction that highly resembles comparison and is therefore also relevant for the further discussion in this book.

4.2 Complementisers – Brandner & Bräuning (2013)

In South German dialects, relative clauses are generally introduced by the element *wo*,[2] while Standard German uses demonstrative pronouns; depending on the dialect and the exact syntactic configuration (cf. Bayer 1984, Salzmann 2006, 2009), the demonstrative pronoun can occur additionally in the dialectal patterns as well (Brandner & Bräuning 2013: 131–132). The difference is illustrated in (1) below (Brandner & Bräuning 2013: 132, ex. 1 and 2):

(1) a. … der Mann **der**   seine Schuhe verloren hat
         the man   that.M his   shoes   lost   has
       'the man who has lost his shoes'

    b. … dea Mo **(dea)**   wo seine Schu verlora hot
         the man that.M PRT his   shoes lost   has
       'the man who has lost his shoes'

The main question posed by Brandner & Bräuning (2013) is what the historical development behind the particle *wo* is, which they synchronically treat as a complementiser specific to relative clauses. This strategy is common across languages, and it can be detected historically in German with the equative particle *so*, as demonstrated in (2) below (Brandner & Bräuning 2013: 132, ex. 3 and 4, citing Paul 1920a):

(2) a. dër Sache **sô** ir   meinent
        the thing so you mean
       'the thing that you mean'
       (*Reinfried von Braunschweig*, 14th century)

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[2]As will be discussed in Section 4.3, there is some variation in this respect (see Fleischer 2004a, 2016, Weiß 2013); nevertheless, *wo* is by far the most frequent complementiser and its status as well as its historical development should be discussed in more detail, since it raises some questions especially due to the fact that it is phonologically identical to the adverbial *wo*, which is attested as a relative pronoun in locative relative clauses across varieties of German (including the standard variety).

b. hier das Geld   **so** ich neulich nicht habe mitschicken können
here the money so I   recently not   have with.send   can
'here the money that I recently could not send'
(Schiller to Goethe 127)

South German dialects like Alemannic would use *wo* in these cases (Brandner
& Bräuning 2013: 132–133). In line with this, Brandner & Bräuning (2013: 133)
propose that the change from *so* into *wo* in the relevant dialects involves no re-
analysis but simply a change from the *d*-series of pronouns (*so* being a deictic ele-
ment originally) to the *w*-series, whereby *so/wo* is an equative particle. Brandner
& Bräuning (2013: 133) mention three empirical facts supporting this approach.
First, as described by Paul (1920a: 238), *so*-relatives were most widespread pre-
cisely in the areas that nowadays use *wo*-relatives (Upper German areas). Second,
wo-relatives appeared at the same time when the particle in equatives changed
from *als* (derived from *also*) to *wie*, which belongs to the *w*-series, see Jäger (2010).
Third, equative particles are used in other Germanic languages in relative clauses
as well, notably in Scandinavian languages (*som*-relatives). According to Brand-
ner & Bräuning (2013: 133), *wo* is a complementiser, which also allows for the
Doubly Filled COMP patterns described by Bayer (1984).

The use of *d*-pronouns as relative pronouns can be observed in all Germanic
languages, at least historically, illustrated for Old High German and Old English
in (3) below (Brandner & Bräuning 2013: 134, ex. 7a and 7b):

(3) a. See miin sunu, **den**   ich gechos…
see my   son   that.ACC I   chose
'See my son, who I have chosen…"
(Monseer, Math.12.18)

b. gelaðede Cenred þone cyning **þam**   he Myrcna rice   sealde
invited   Cenred the   king   that.DAT he Myrcna kingdom gave
'Cenred invited the king whom he had given the kingdom of Mercia.'
(Bede, Hist.Ecc. 464/7)

German still preserves the pattern given in (3a), while English is exceptional
among Germanic languages in later using *w*-pronouns in relative clauses (Brand-
ner & Bräuning 2013: 134–135). Apart from *d*-pronouns, the particle strategy is
attested from the earliest records as well: this was *the* in Old High German and
ðe in Old English, and in Middle High German *und* 'and' was possible (Brandner
& Bräuning 2013: 135–136, citing Ferraresi & Weiß 2011). Middle High German
also allowed the particle *als* 'as', illustrated in (4) below (Brandner & Bräuning
2013: 136, ex. 13, citing Ebert et al. 1993):

(4) … und begerten   solichen schaden **als** sie   deshalben   gelitten
      and demanded   such   damage   as they because.of.that suffered
      'And they demanded such damage that they had suffered because of that.'
      (Chr. V. Mainz 220)

The elements *so* and *als* (a shortened form of *al-so*) occur in equatives as well (Brandner & Bräuning 2013: 136, quoting Jäger 2010). The use of this particle was common in Early New High German and was possible with all types of head nouns (Brandner & Bräuning 2013: 137, contrary to Paul 1920a). In addition, it could appear even in appositives (Brandner & Bräuning 2013: 137, ex. 19):

(5) … das land Moesia **so** iezo Bulgarei heist…
      the land Moesia so now Bulgarei is.named
      'the land Moesia which is now called Bulgarei…'
      (*Deutsches Wörterbuch* vol. 16, col. 1381–1388)

According to Brandner & Bräuning (2013: 137), *so*-relatives occur scarcely in the older texts, especially when compared to Early New High German, which may be due to the particle strategy being rather a spoken and less formal phenomenon in Germanic languages than the pronoun strategy typical of written and more formal contexts (cf. Fiorentino 2007 on Germanic and Romance). Note that *so*-relatives were possible very early on, as shown by the Old Saxon example taken from the *Heliand* (about 830) in (6) below (Brandner & Bräuning 2013: 138, ex. 20):

(6) sulike gesidos   **so** he im   selbo gecos
      such   companions so he him self   chose
      'such companions that he chose himself'
      (*Heliand* 16.1280)

Brandner & Bräuning (2013: 138–146) discuss three proposals from the previous literature for the origin of *wo*-relatives, all of which are, however, empirically not tenable.

In the first scenario, relative *wo* has its origin in the locative adverb *wo* 'where', as taken by Bidese et al. (2012) and by the cross-linguistic study of Fiorentino (2007). As Brandner & Bräuning (2013) point out, the exact mechanisms behind this idea have not been spelt out precisely, and while the transfer of locational expressions to certain other domains like temporal expressions is plausible (Hopper & Traugott 1993), the extension to all types of domains is not straightforward.

In principle, one may suppose that every DP has a silent "location argument",[3] which is why *wo* may relativise DPs, but the location argument is unlikely to be present in expressions like *somebody* (Brandner & Bräuning 2013: 139–140). In addition, Brandner & Bräuning (2013: 140–141) point out that no other *w*-pronoun grammaticalised into a complementiser in relative clauses in German, so that the loss of the location argument and the shift from *so* to *wo* should have occurred at the same time, for which there is no evidence. In essence, Brandner & Bräuning (2013: 141) do not dismiss this kind of proposal as entirely impossible but they stress that there is no positive evidence supporting it either.[4]

In the second scenario, relative *wo* has its origin in the so-called split R-pronoun construction, which is attested during the history of German, as shown by Fleischer (2008). This idea was suggested by Staedele (1927) and Paul (1920a). In R-pronouns, "the argument of a preposition occurs as an invariable particle *da*- resp. *wo*- linearly before the preposition by which they are selected" (Brandner & Bräuning 2013: 141). For instance, *damit* is composed of *da* 'there' and *mit* 'with', and *woran* is composed of *wo* 'where' and *an* 'at', whereby the -R- "is inserted to

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[3]See Kayne (2005: 65–79) in this respect, who shows that locatives like *there* can also have demonstrative uses (as is evident from non-standard examples such as *that there book*). On a different note, Landau (2010) argues that experiencer arguments are related to locatives, as experiencers are 'mental locations'. Brody (2013) and Sluckin & Kastner (2022) also argue that locatives can introduce a person element. Against this background, the objections raised by Brandner & Bräuning (2013) against this first scenario may turn out to be weaker.

[4]In this respect, it should be mentioned that while the conclusion of Brandner & Bräuning (2013) regarding the change from *so* to *wo* is convincing, it is still possible that South German *wo* had multiple sources. Original locative relative markers can be extended to a more general grounding function, as illustrated in (i) below:

(i) Der Eisladen   hat ganz schräge Sorten, wo   ich sage, das kann doch keiner
     the ice-cream.shop has very weird   sorts   where I   say   that can but nobody
     mögen.
     like

     'The ice-cream shop has very weird flavours, where I say, nobody can possibly like that.'

In (i), the nominal head is *ganz schräge Sorten* 'very weird flavours': it expresses no location meaning and not even a semantically related type (e.g. temporal). This grammaticalisation path, as suggested by Ballarè & Inglese (2022), operates independently of the so-called Noun Phrase Accessibility Hierarchy (see the discussion in Section 4.4.2), also given that it targets adverbial (and not nominal) elements. In other words, the development of the relative complementiser *wo* in South German may well be the result of a conspiracy of two processes: as both of these were available in South German, the complementiser arose there, while the absence of one of them (namely the paradigmatic effect regarding the change from *so* to *wo*) in North German varieties results in the predictable absence of the same complementiser.

avoid hiatus" (Brandner & Bräuning 2013: 141), giving the name of R-pronouns (going back to van Riemsdijk 1978). Split R-pronouns are illustrated in (7) below (Brandner & Bräuning 2013: 141, ex. 25):

(7) a. **Da** weiss ich nichts **von**.
         there know I   nothing of
         'I know nothing of this.'

     b. **Wo** hast du nichts **von** gehört?
         where have you nothing of   heard
         'What did you hear nothing about?'

     c. Ich weiss nicht **wo**   er das **mit** bezahlen will.
         I   know not   where he that with pay   wants
         'I don't know with what he wants to pay this.'

The split R-pronoun construction is also attested in relative clauses (Brandner & Bräuning 2013: 142, ex. 26, citing Staedele 1927):

(8) des isch s'   messer **wo**-n i Brot mit abe koue ha
     this is   the knife   wo-N I bread with PRT cut   have
     'This is the knife with which I cut off (some) bread.'

However, while there is evidence, for instance from Behaghel (1928), for the split R-pronoun construction to have been relatively frequent in Old High German and Middle High German (with *da* belonging to the *d*-series), it was restricted to certain head nouns only and, as shown by Fleischer (2008), it disappeared after Early New High German (Brandner & Bräuning 2013: 142–143). In addition, split R-pronouns are restricted to certain dialect areas only (Fleischer 2002, 2008), and Alemannic (a dialect using *wo*-relatives) is not one of these areas, and it is unlikely that the source construction should be altogether absent (Brandner & Bräuning 2013: 143).

In the third scenario, relative *wo* has its origin in free relatives, and hence crucially involves no change from the *d*-series to the *w*-series. The construction is illustrated for Middle High German in (9) below (Brandner & Bräuning 2013: 144, ex. 30, citing Lühr 1998):

(9) **So ware   so** (se) ich cherte minen zoum...
     so where so   se I   guided my   rein
     'Wherever I guided my rein'
     (*Bairischer Psalm* 138)

Eventually both *so* elements were dropped and/or incorporated, so that single *wo* emerged by the 14th century in free relatives, yet there is no evidence for the same element appearing in relatives with proper nominal heads, apart from some (scarce) examples where the head noun is locative (Brandner & Bräuning 2013: 144–146). On the other hand, the change from headless relatives to headed relatives is problematic, as the two clause types are in fact quite different both syntactically and semantically (Brandner & Bräuning 2013: 144–146, citing Caponigro 2003).

Brandner & Bräuning (2013: 147–150) argue that the use of *so* and *wo* in relative clauses is possible because of an inherent similarity between equative clauses and relative clauses: both clauses are embedded and contain a "gap" that is connected via an equation relation to another element in the matrix clause (cf. the characterisation of relative clauses by De Vries 2006). Note that the gap can be present without there being movement to the left periphery (Brandner & Bräuning 2013: 150–151).

In equative constructions, both the comparee and the standard (Haspelmath & Buchholz 1998) are marked by special particles, as illustrated in (10) below (Brandner & Bräuning 2013: 150, ex. 42):

(10)   Hans ist **so** groß **wie** Maria.
       Hans is so tall as   Maria
       'Hans is as tall as Maria.'

In (10), *so* is the parameter marker (or degree marker) and *wie* is the standard marker; in Old High German, both markers surfaced as *so* (Brandner & Bräuning 2013: 150, ex. 43, citing Schlosser 1998):

(11)   Sie   sind **so** sáma chuani sélb **so** thie Romani
       they are   so same keen   self so the Romans
       'They are as keen as the Romans themselves.'

Importantly, the parameter marker can be dropped and the standard can also be omitted if the parameter marker is used purely deictically; otherwise the parameter marker is a phoric element that builds a correlative construction with the standard (Brandner & Bräuning 2013: 150–151).

Regarding the difference between *wo* and *wie*, Brandner & Bräuning (2013: 152) assume that both express equation and there is dialectal variation regarding their distribution, such that *wie* is not restricted to equative clauses and *wo* is not restricted to relative clauses. In certain Bavarian dialects, *wie* can introduce relative clauses (Brandner & Bräuning 2013: 153, ex. 50, quoting Eroms 2005):

(12)   So   dass ma do   ned iba   de norm koma san, de   **wia** se
       such that we there not above the norm come be   which as   they
       aufgschaid ham.
       up.set   have
       'Such that we did not exceed the norm that had been set up.'

On the other hand, in certain Swiss German dialects *wo* can introduce equative clauses (Brandner & Bräuning 2013: 153, ex. 51):

(13)   der isch so gross **wo**-n-i
       he is   so big   as-N-I
       'He is as big as I.'

In addition, dialects differ in the element appearing in temporal clauses expressing simultaneity: Alemannic uses *wo*, while Bavarian uses *wie*, as shown in (14) below (Brandner & Bräuning 2013: 153, ex. 52).

(14)   a. **Wo**   er hom gloffe   isch het 's grenglet.
          when he home walked is   has it rained
          'It was raining when he was going home.'

       b. **Wia**   ar heim glauffen is hot 's gregnet.
          when he home walked is has it rained
          'It was raining when he was going home.'

In essence, Brandner & Bräuning (2013: 153) assume that the equative element *so* has a *w*-variant that is spelt out as *wo* in certain dialects, while in others it is spelt out as *wie*, whereby the equative/relative differentiation is a matter of surface phonology. The change from *so* to *wo* is thus merely a change from the *d*-series to the *w*-series, which is a recurring phenomenon (attested also in non-Germanic languages, see Diessel 2003) and can also be observed in the case of *wenn* 'when' and *denn* 'then',[5] and, as described by Jäger (2010), in ordinary equatives from *als* (*al-so*) to *wie* (Brandner & Bräuning 2013: 154–156). Note that both

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[5]Brandner & Bräuning (2013: 155, ex. 54) provide the following example for an earlier use of *denn* from Old High German:

   (i)   Pidiu ist dem   manne   so guot, **denn** er zu demo   mahale quimit
         by.this is the.DAT man.DAT so good then he to the.DAT court   goes
         'Because of this it is good for the man if he goes to the court.'
         (*Mûspilli* 63,64; from 870)

   The element *denn* 'then' is used here in the sense of 'if': in Present-Day German, the *wh*-counterpart *wenn* would be used.

the change from *so* to *wo* and the change from *als* to *wie* were completed after the Early New High German period (Brandner & Bräuning 2013: 154, citing Jäger 2010 and Behaghel 1928). The change from *so* to *wo* is also shown by the fact that in different manuscripts of the Nibelung legend, the earlier *so* forms were replaced by *wo* (Brandner & Bräuning 2013: 155–156). Interestingly, the earlier *so* in relative clauses survives apparently till the present, as evidenced by Alemannic dialect data (Brandner & Bräuning 2013: 154, ex. 53a):[6]

(15) Dem   Maedle **so** ses   Fahrrad gstohle hen…
     the.DAT girl   so they.the bicycle   stolen   have
     'The girl whose bicycle was stolen…'

As noted by Brandner & Bräuning (2013: 158), the availability of the *so*-element both in equative and in relative clauses is not unique to German: this is in fact standard in Scandinavian languages, and goes back to Old Norse. Consider (Brandner & Bräuning 2013: 158, ex. 63 and 64, citing Faarlund 2004):

(16) a. Allum guðs   vinum   ok sinum   þeim **sem** þetta bref
         all   god.GEN friends.DAT and his.REFL those so   this   letter
         sjá   eðr heyra
         see.3PL or   hear.3PL
         'to all God's friends and those of his own who see or hear this letter'

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[6]In principle, one might wonder whether *so* in (15) is not a resumptive element: Meklenborg Salvesen (2020) shows that *så* is a possible adverbial resumptive particle in Mainland Scandinavian. However, (15) is a possessive relative clause and not an adverbial clause; in addition, German *so* generally does not seem to be available as a resumptive (unlike *dann* 'then' and *da* 'there', as also shown by Meklenborg Salvesen 2020). Apart from possessive relatives, *so* seems to be possible to a limited degree in subject and object relatives as well. In the project SynAlm ("Syntax des Alemannischen"), the following examples were used in an acceptability judgement task (FB2/B2-1-7, Question ID: FB2-24, Column: X → Q_B2-1-7 and FB2/B2-1-8, Question ID: FB2-25, Column: X → Q_B2-1-8):

  (i) Das   Mädchen, so in Deggingen wohnt…
       the.DAT girl,   so in Deggingen lives
       'the girl who lives in Deggingen'

  (ii) Das   Haus, so man jetzt kaufen kann
       the.DAT house, so one   now buy.INF can.3SG
       'the house which one can now buy'

   On a scale from 1 to 3 (where 1 is the best), the sentence in (i) was rated as 1 by 0.53% of all informants, while the sentence in (ii) was rated as 1 by 2.13% of all participants. The distribution shows regional differences as well: in Baden-Württemberg, the 1-ratings were somewhat more frequent, 0.9% for (i) and 3.15% for (ii). Neither of these contexts is adverbial.

b. svá þróttaust folk **sem** þetta er
   so powerless people so   this.N is
   'powerless as this people is'

Importantly, however, the present-day *som*-particle in Scandinavian differs from what can be observed in German dialectally and historically: *som* can appear in embedded questions (together with a *wh*-element), and in relative clauses, it can be omitted, it can co-occur with another finite complementiser (*at* 'that'), and it allows preposition stranding (Brandner & Bräuning 2013: 158–162). Apart from these differences, however, the Scandinavian patterns are similar in their syntax to the Upper German *wo*-relatives, and therefore it seems reasonable to assume that the latter also contain *wo* as a complementiser, which is the continuation of the previous pattern involving *so* (Brandner & Bräuning 2013: 163–165).

4.3 Relative pronouns versus complementisers

As should be obvious from the analysis of Brandner & Bräuning (2013), West Germanic languages show considerable variation in terms of elements introducing relative clauses. In this section, I am going to review the various patterns in English and German briefly, concentrating on the differences between relative pronouns and complementisers, indicating the questions to be discussed later in this chapter.

The first strategy to be mentioned here is relative pronouns. In present-day Standard English, they show partial case distinction and distinction with respect to whether the referent is human or non-human. Observe:

(17) a. I saw the woman **who** lives next door in the park.
     b. The woman **who/whom** I saw in the park lives next door.
     c. I saw the cat **which** lives next door in the park.
     d. The cat **which** I saw in the park lives next door.

As can be seen, *who/whom* is used with human antecedents, as with *the woman* in (17a) and (17b); the form *who* can appear both as nominative and as accusative, while the form *whom* used for the accusative is restricted in its actual appearance (formal/marked). With non-human antecedents, such as *the cat* in (17c) and (17d), the pronoun *which* is used, which shows no case distinction. Note that apart from human referents, *who(m)* is possible with certain animals: these are the "sanctioned borderline cases" (see Herrmann 2005: 41, quoting Quirk et al. 1985).

On the other hand, non-standard dialects allow *which* with human referents: five of the six dialect areas show this, while the proportion of *which* is very low in Northern Ireland (see Herrmann 2005: 41). The construction is illustrated in (18) below (Herrmann 2005: 42, ex. 4a):

(18)   [...] And the boy **which** I was at school with [...]
        (*Freiburg English Dialect Corpus* Wes_019)

At any rate, English relative pronouns are formed on the *wh*-base and no longer on the demonstrative base: note that this is historically not so, and the present-day complementiser *that* was reanalysed from a pronoun, while the *wh*-based relative operators appeared only in Middle English (van Gelderen 2009).

In Standard German, relative clauses are introduced by demonstrative-based relative pronouns (*d*-pronouns) or, less typically, by *wh*-based relative pronouns (*w*-pronouns);[7] the variation between *d*-pronouns and *w*-pronouns is expected on the basis of Brandner & Bräuning (2013). Consider:

(19)   a. Das   ist die Frau, **die**   das   Buch geschrieben hat.
            that.N is the.F woman that.F the.N book written   has
            'That is the woman who built the house.'

        b. Das   ist die Frau, **welche** das   Buch geschrieben hat.
            that.N is the.F woman which.F the.N book written   has
            'That is the woman who built the house.'

The examples in (19) above contain human referents. Unlike in English, German relative pronouns are not sensitive to a human versus non-human distinction. Consider:

(20)   a. Das   war die Idee, **die** der   Lösung zugrunde lag.
            that.N was the.F idea that.F the.F.DAT solution beneath   lay.3SG
            'That was the idea behind the solution.'

        b. Das   war die Idee, **welche** der   Lösung zugrunde lag.
            that.N was the.F idea which.F the.F.DAT solution beneath   lay.3SG
            'That was the idea behind the solution.'

---

[7]As noted by Coniglio (2019: 140), the *wh*-based pronouns constitute a later development: they are first attested in Early New High German (cf. Behaghel 1928: 717ff), while *d*-pronouns in relative clauses are attested much earlier (cf. Fleischmann 1973: 114ff).

Note that, as discussed by van Gelderen (2004, 2009) and Roberts & Roussou (2003), while relative pronouns may stem from interrogative pronouns or from demonstrative pronouns cross-linguistically (and that thus German represents both patterns), it appears that the use of relative pronouns is a typically European strategy and is otherwise rare cross-linguistically (see Comrie 2002; see also van Gelderen 2009 for discussion in a minimalist framework).[8]

The standard assumption in generative grammar is that the relative pronoun occupies a specifier position in the CP, as shown in Figure 4.1 for English.
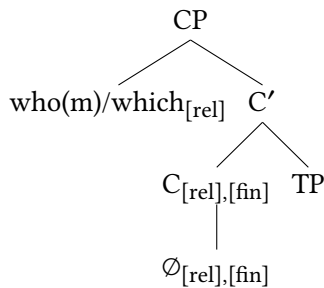
Figure 4.1: English relative pronouns

Essentially the same holds for German, as given in Figure 4.2.

Using the syntactic model proposed in Chapter 2 and the findings about embedded interrogatives in Chapter 3, the C position contains a phonologically empty complementiser, while the phonologically visible relative pronoun moves to the specifier, checking off the [rel] feature (taking relative to be a clause type, see Rizzi 1997); the relative operator has to move up since there is no relative-in-situ in the respective languages (see the discussion in Bacskai-Atkari 2018c: 100). This contrasts with *wh*-elements, which may remain in situ (which of course results in a focus interpretation rather than a true interrogative one, see Bošković 2002).

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[8]This only applies to relative pronouns proper (that is, operators that are base-generated within the clause and move to the CP) and not to strategies such as pronoun retention (see Comrie & Kuteva 2013c). Similarly, complementisers that originally derive from pronouns by definition do not count as instances of the pronoun strategy (these are generally subsumed under relative particles in typological work). Regarding the relative pronoun strategy, Comrie & Kuteva (2013b) identify it for 12 languages in subject relatives (of a sample of 166 languages) and Comrie & Kuteva (2013a) identify it for 13 languages in oblique relatives (of a sample of 112 languages). Out of these 12/13 languages, only 2 are non-European: Acome (spoken in North America) and Georgian (which counts as non-European in the sense that it does not belong to the Sprachbund "Standard Average European", as defined by Haspelmath 2001).
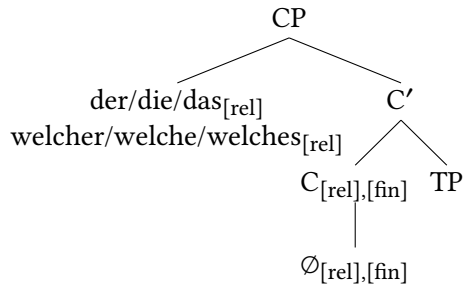
Figure 4.2: German relative pronouns

The second strategy involves the use of a relative complementiser. In Standard English, this is possible with the complementiser *that*:

(21) a. I saw the woman **that** lives next door in the park.

  b. The woman **that** I saw in the park lives next door.

  c. I saw the cat **that** lives next door in the park.

  d. The cat **that** I saw in the park lives next door.

The complementiser *that* is not sensitive to case and to the human/non-human distinction, which follows from its status as a C head. As discussed in section (4.2), Standard German does not allow such patterns but in Southern (High German) dialects the complementiser *wo* is the usual strategy (see also Weiß 2013).[9] This is illustrated for Alemannic in (22a), taken from Brandner & Bräuning (2013: 140, ex. 23) and in (22b) for Zurich German, taken from Salzmann (2017: 337, ex. 1):

(22) a. 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.'

  b. Das isch s   Buech, **won** i geschter poschtet   ha.
    this is   the.N book   REL   I yesterday bought.PTCP have.1SG
    'This is the book I bought yesterday.'

Apart from its uniform availability, the status of *wo* as a complementiser is evident from the fact that, unlike relative pronouns, it cannot co-occur with a preposition. Consider (Salzmann 2017: 337, ex. 2):

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[9]Apart from present-day dialects, the complementiser strategy is also prevalent in the history of German, also beyond *so/wo*, see Coniglio (2019).

(23)   * de   Maa, mit   **won** i gredt   ha
          the man   with REL   I spoken have.1SG
          'the man I talked to'

In North Bavarian dialects, as shown by Weiß (2013), the complementiser may also be realised as *was*; I will return to this question later.

Since both *that* and *wo* are complementisers, they appear in C with respect to their relative position, as shown in Figure 4.3 and Figure 4.4.

CP
∅[rel]   C′
C[rel],[fin]   TP
that[rel],[fin]
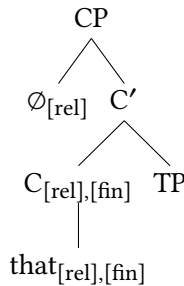
Figure 4.3: The relative complementiser *that*

CP
∅[rel]   C′
C[rel],[fin]   TP
wo[rel],[fin]
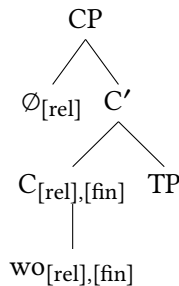
Figure 4.4: The relative complementiser *wo*

In line with the findings in Chapter 3, these patterns lexicalise the C head and thus correspond to the regular West Germanic pattern. The operator corresponds to the gap in the relative clause and is semantically dependent on the head noun in the matrix clause: as it is recoverable precisely on the basis of the head noun, it does not have to be overt. In principle, however, it can be realised overtly, resulting in Doubly Filled COMP patterns, as was pointed out already in Chapter 3. I will return to the discussion of relative complementisers and doubling patterns later in this chapter.

It is worth mentioning that, in Standard English (but not in German, see also Section 4.2), zero relatives are possible with object relative clauses:

(24)　　a.　*I saw the woman lives next door in the park.

　　　　b.　　The woman I saw in the park lives next door.

　　　　c.　*I saw the cat lives next door in the park.

　　　　d.　　The cat I saw in the park lives next door.

Zero subject relative clauses are not allowed in Standard English. They are, however, possible in certain dialects (see Herrmann 2005: 55–56). This strategy is traditionally considered as not regionally restricted, though, as Herrmann (2005: 26–27) shows, there are considerable regional differences, such that zero relatives are the most frequent in the Northern areas of Britain (see also the discussion of Kortmann & Wagner 2007 of this data set). Consider the example in (25) below (Herrmann 2005: 64, ex. 25b):

(25)　　[…] It was my grandmother owned this bit of land […]
　　　　(*Northern Ireland Transcribed Corpus of Speech* A13.3)

Naturally, in zero relatives, the CP-periphery contains a zero complementiser and a zero operator, as shown in Figure 4.5.
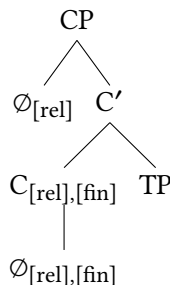
Figure 4.5: Zero relatives

Given the availability of zero subject relatives like (25), as well as language acquisition data of the same type, I follow Sobin (2002: 537) in assuming that the apparent ban on *that*-trace effects is a soft constraint and it is rather perceptional in nature, as pointed out by Chomsky & Lasnik (1977) already (see the relevant discussions in Chapter 2 and Chapter 3). As it is, the distribution of zero relatives is not of immediate relevance to the discussion in the present chapter and I will therefore not examine zero relatives any further.

The last pattern to be discussed here is that of relative complementisers that are surface-identical to equative complementisers (see also Brandner & Bräuning 2013). Such complementisers include historical German *so* and English *as*, which

can introduce relative clauses in dialects, especially in the more Southern dialects in Britain (Herrmann 2005, Kortmann & Wagner 2007).[10] An example is given in (26) below (Herrmann 2005: 64, ex. 26d):

(26)   [...] so all **as** he had to do were go round in a circle all the time [...]
        (*Freiburg English Dialect Corpus* Som_001)

König (2015) identifies manner deictic elements like *so* as a potential source of various grammatical markers across Indo-European languages; in this sense, the West-Germanic patterns are not unique. Further, regarding the relatedness of relative and equative clauses, Brandner & Bräuning (2013) suggest that there is a common underlying semantics: this assumption is altogether questionable (as König 2015: 54 puts it, there is "hardly any semantic similarity" between the uses in relative clauses and in comparison clauses). Another option would be to assume that equative markers may grammaticalise into relative markers. If so, equative-based relative complementisers behave exactly like other relative complementisers (such as English *that* and German *wo*) and can thus be attributed a structure analogous to Figures 4.3 and 4.4. It follows that they also regularly lexicalise [fin] on C and are in line with the general West Germanic pattern. In other cases, as an immediate stage in the grammaticalisation of equative complementisers into proper relative complementisers, we find relative clauses that are tied to the presence of an equative marker in the matrix clause: I will refer to these as equative relative clauses and will discuss them separately in Section 4.8.

4.4 Variation and change in English

4.4.1 Background and methodology

As established in Section 4.3, English allows both the relative pronoun and the relative complementiser strategy. However, there are important differences between the standard variety and non-standard dialects in this respect. According to van Gelderen (2009: 163), *wh*-pronouns are promoted by prescriptive rules but English speakers prefer *that* over a *wh*-pronoun "by at least a 4:1 ratio" (see also Romaine 1982, Montgomery & Bailey 1991, van Gelderen 2004, Tagliamonte et al.

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[10]For her study, Herrmann (2005) examined six dialect areas (Central Southwest, East Anglia, Central Midlands, Central North, Scotland). Out of these, only three had examples for *as*-relatives, with different proportions (in relation to all relative clauses): Northern Ireland (0.5%), Central North (1.4%) and Central Midlands (2.4%). Wagner (2008) reports *as*-relatives as a traditional feature in the Southwest of England and Anderwald (2008) reports them for the Southeast of England.

2005). In line with this, the study of Herrmann (2005) shows that the use of the relative pronouns *who* and *which* is not very frequent in the regional dialects of Britain. In essence, non-standard varieties show a wider distribution of *that*, which is interchangeable even with PPs involving a *wh*-element, such as *from which* in (27) below (van Gelderen 2009: 161, ex. 8, citing Miller 1993: 112):

(27)   I haven't been to a party yet **that** I haven't got home the same night.

As described by Kortmann & Wagner (2007) and Herrmann (2005), the dialectal patterns discussed above (*which*-relatives with human referents, *as*-relatives, zero subject relatives, and a higher frequency of *that*-relatives) are attested historically (unlike *what*-relatives with nominal heads, which count as an innovation). It appears that the present-day standard pattern shows the effect of conscious standardisation (beyond mere diachronic change attested across dialects), since non-standard varieties are not necessarily affected by the same constraints. As such, the changes responsible for the present-day pattern are at least in part due to changes in Late Modern English.

In order to gain a better idea of the relevant changes, I conducted a corpus study (see Bacskai-Atkari 2020a) comparing the King James Bible (1611/1769)[11] and the New King James version (1989). The new version essentially adheres to the original version, as far as the original construction is grammatical in present-day Standard English. The comparison between the Early Modern English text and modernised version offers a good comparison between the two language stages, even though some caveats must be taken into account (see also the remarks in Chapter 3).

In particular, it is difficult to compare data for various reasons. First, the issue of optionality cannot be neglected: namely, the choice of one strategy does not imply the impossibility of other strategies. Second, the context or the particular construction may influence the choice: comparing highly different sentences, even in a large corpus, is not conclusive. Third, register has an influence as well: it is evidently difficult to compare texts from Early Modern English and ones from Late Modern English due to varying degrees of standardisation and/or the differences in the influence of prescriptive rules, not to mention the different requirements of diverse genres.

Against this background, the advantages of comparing the two versions of the King James Bible are quite straightforward. First, the same loci are compared, and hence the differences in relative markers cannot be due to the sentences

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[11]The original version dates from 1611, and the standardised spelling by Benjamin Blayney dates from 1769.

or the context being different; this ultimately allows some quantitative comparison. Second, the same register is used in both texts: the new version is not an instance of radical modernisation, and forms that are partly archaic are not necessarily ruled out. What matters is not so much the distribution of the individual markers in the new version in itself but rather the difference between the original and the modernised version, which reflects conscious deviations from the previous pattern in line with prescriptive rules and language change. Note also that the original version may also be more archaic in general than other texts from the period (as, for instance, in using *-th* instead of *-s* for 3Sg on verbs, see van Gelderen 2014: 173); what matters for us is rather the fact that it can be dated back to a period when the prescriptive pressure disfavouring *that* was not yet active.

Regarding the present study, the following methodology was applied. The hits for the forms "who", "whom", "which" and "that" in the New King James version were taken as the basis of the corpus. In each case, the corresponding element in the original version was examined. Given that there is a preference for the relative pronoun strategy with *who(m)* with human referents in present-day Standard English, it is expected that many of these occurrences have different equivalents in the original, and that there are unlikely to be many changes the other way round. It should be noted that the New King James version is strongly norm-oriented: *who* is consistently used for subjects, while objects (and complements of prepositions) invariably appear in the form *whom*. This strict split does not truly reflect the actual present-day standard language (see the discussion in Section 4.3), but it certainly facilitates the corpus study.

4.4.2 The results

There are altogether 5606 hits for *who* and 761 hits for *whom*. The hits were manually checked, so the figures above include relative clauses only and do not include interrogative uses but they include loci where the original King James version uses constructions other than relative clauses. Subject relatives are clearly more frequent than object relatives, in line with the Noun Phrase Accessibility Hierarchy of Keenan & Comrie (1977: 66–67).[12] Before turning to the detailed frequency data, let us first consider some examples that show the relevant parallels.

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[12]The original observation of Keenan & Comrie (1977) pertained to the occurrence of resumptive pronouns: these are more likely to appear lower in the hierarchy, such that if resumptive pronouns are obligatory at a given point, then they will be obligatory for all lower functions (as far as they are available in the given language), but they may be optional or even prohibited in higher functions. Conversely, if resumptive pronouns are prohibited at a given point, then they will be prohibited in all higher functions as well, but they may be optional or obligatory

First, *who* can have the equivalent *who* in the original version, and *whom* can have the equivalent *whom* in the original version:

(28) a. And it was found written, that Mordecai had told of Bigthana and Teresh, two of the king's chamberlains, the keepers of the door, **who** sought to lay hand on the king Ahasuerus.
(King James Bible; Esther 6:2)

  b. And it was found written that Mordecai had told of Bigthana and Teresh, two of the king's eunuchs, the doorkeepers **who** had sought to lay hands on King Ahasuerus.
(New King James version; Esther 6:2)

  c. Why is light given to a man whose way is hid, and **whom** God hath hedged in?
(King James Bible; Job 3:23)

  d. Why is light given to a man whose way is hidden, And **whom** God has hedged in?
(New King James version; Job 3:23)

Second, *who*/*whom* can have the equivalent *which* in the original version:

(29) a. And it came to pass, that when the Jews **which** dwelt by them came, they said unto us ten times, From all places whence ye shall return unto us they will be upon you.
(King James Bible; Nehemiah 4:12)

  b. So it was, when the Jews **who** dwelt near them came, that they told us ten times, "From whatever place you turn, they will be upon us."
(New King James version; Nehemiah 4:12)

  c. Have the gods of the nations delivered them **which** my fathers have destroyed, as Gozan, and Haran, and Rezeph, and the children of Eden which were in Telassar?
(King James Bible; Isaiah 37:12)

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in lower functions. Resumptive pronouns are rare in the subject function, which is the highest-ranked function. A further implication concerns the occurrence of relative clauses in a given language: the subject function can always be relativised, while lower functions can only be relativised if all the functions ranked higher are. To provide a simple example: if a language relativises obliques, we can be sure that it also relativises subjects, direct objects and indirect objects. See the discussion in Bacskai-Atkari (2020b: 105–107).

d. Have the gods of the nations delivered those **whom** my fathers have destroyed, Gozan and Haran and Rezeph, and the people of Eden who were in Telassar?
(New King James version; Isaiah 37:12)

Third, *who*/*whom* can have the equivalent *that* in the original version:

(30) a. And all they **that** were about them strengthened their hands with vessels of silver, with gold, with goods, and with beasts, and with precious things, beside all that was willingly offered.
(King James Bible; Ezra 1:6)

b. And all those **who** were around them encouraged them with articles of silver and gold, with goods and livestock, and with precious things, besides all that was willingly offered.
(New King James version; Ezra 1:6)

c. So all the people **that** Ishmael had carried away captive from Mizpah cast about and returned, and went unto Johanan the son of Kareah.
(King James Bible; Jeremiah 41:14)

d. Then all the people **whom** Ishmael had carried away captive from Mizpah turned around and came back, and went to Johanan the son of Kareah.
(New King James version; Jeremiah 41:14)

Fourth, *who* can have the equivalent *as* in the original version:

(31) a. And the king said unto Ziba, What meanest thou by these? And Ziba said, The asses be for the king's household to ride on; and the bread and summer fruit for the young men to eat; and the wine, that such **as** be faint in the wilderness may drink.
(King James Bible; 2 Samuel 16:2)

b. And the king said to Ziba, "What do you mean to do with these?" So Ziba said, "The donkeys are for the king's household to ride on, the bread and summer fruit for the young men to eat, and the wine for those **who** are faint in the wilderness to drink."
(New King James version; 2 Samuel 16:2)

Note that only one such example was found for object relatives, the rest are subject relatives; this may well be due to the fact that there are far more examples for subject relatives than for object relatives (see above and also the discussion below).

Fifth, *who* can have a zero relative equivalent in the original version:

(32) a. Moreover the soul that shall touch any unclean thing, as the
          uncleanness of man, or any unclean beast, or any abominable unclean
          thing, and eat of the flesh of the sacrifice of peace offerings, which
          pertain unto the LORD, even that soul shall be cut off from his people.
          (King James Bible; Leviticus 7:21)

      b. Moreover the person who touches any unclean thing, such as human
          uncleanness, an unclean animal, or any abominable unclean thing,
          and **who** eats the flesh of the sacrifice of the peace offering that
          belongs to the Lord, that person shall be cut off from his people.
          (New King James version; Leviticus 7:21)

Such examples were again found only for subject relatives but not for object
relatives (with *whom*). In addition, it should be noted that these instances of zero
occur (with one questionable exception) in coordinate constructions, as can also
be seen in (32). These instances do not provide good evidence for the availability
of true zero relatives, as the omission of an overt element (either the operator or
the complementiser) in coordinated constructions can be licensed by an appro-
priate antecedent in the preceding relative clause (compare the true zero subject
relative in (25) in Section 4.3 above). This is also possible in modern Standard
English:

(33) These are the students *(who) study linguistics and **(who)** play
      basketball.

As indicated, in the first subject relative clause in (33) above, the relative pro-
noun *who* cannot be left out, while in the second subject relative clause its pres-
ence is optional. Since the behaviour of present-day Standard English does not
differ from what can be observed in the King James Bible, zero relatives will not
be discussed here any further, especially as they are not immediately relevant to
the present investigation anyway (see Section 4.3).

Apart from the patterns of major interest concerning historical change and
dialectal variation presented above, *who* in the new version may correspond to
whoso and *whosoever* in the original version, both appearing in free relatives (the
new version in these cases has a head noun or a pronoun).[13] Since the differences

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[13]These are illustrated in (i–iv) below:

(i)   And I find more bitter than death the woman, whose heart is snares and nets, and her
      hands as bands: **whoso** pleaseth God shall escape from her; but the sinner shall be taken
      by her.   (King James Bible; Ecclesiastes 7:26)

here are rather due to whether headed or headless relatives are used, these patterns will not be discussed any further here; they are altogether not very frequent in the corpus results (see Table 4.1) and appear only in subject relatives.

Let us now turn to the distribution of the various patterns. Table 4.1 shows the distribution of the elements corresponding to *who*.[14] The cases subsumed under "other" refer to instances where either the role of the relative pronoun is not a subject in the original or the original text contains no relative clause in the given locus. The instances of "zero" occur in coordinated constructions.

Table 4.1: The elements corresponding to *who* in the KJB

Role in KJB	Element in KJB	Occurrences
subject (5405)	*who*	478 (8.84%)
	which	1194 (22.09%)
	that	3667 (67.84%)
	as	26 (0.48%)
	zero	23 (0.43%)
	whoso	10 (0.19%)
	whosoever	7 (0.13%)
other	–	202
Total		5607

(ii)　And I find more bitter than death The woman whose heart is snares and nets, Whose hands are fetters. He **who** pleases God shall escape from her, But the sinner shall be trapped by her.　(New King James version; Ecclesiastes 7:26)

(iii)　All the king's servants, and the people of the king's provinces, do know, that **whosoever**, whether man or woman, shall come unto the king into the inner court, who is not called, there is one law of his to put him to death, except such to whom the king shall hold out the golden sceptre, that he may live: but I have not been called to come in unto the king these thirty days.　(King James Bible; Esther 4:11)

(iv)　"All the king's servants and the people of the king's provinces know that any man or woman **who** goes into the inner court to the king, who has not been called, he has but one law: put all to death, except the one to whom the king holds out the golden scepter, that he may live. Yet I myself have not been called to go in to the king these thirty days."　(New King James version; Esther 4:11)

[14]The original study presented in Bacskai-Atkari (2020a: 100) contains only the data from the Old Testament for the elements corresponding to "who". The data from the entire text confirm the previously reported results.

Table 4.2 shows the distribution of the elements corresponding to *whom* in the original King James Bible. The cases subsumed under "other" refer to instances where either the role of the relative pronoun in the original does not match the one in the new version or the original text contains no relative clause in the given position.

Table 4.2: The elements corresponding to *whom* in the KJB

Role in KJB	Element in KJB	Occurrences
direct object (398)	*whom*	312 (78.39%)
	which	76 (19.10%)
	that	10 (2.51%)
indirect object (2)	*whom*	2 (100%)
PP complement (265)	P + *whom*	256 (96.60%)
	P + *which*	7 (2.64%)
	that	2 (0.75%)
other	–	39
Total		704

The data indicate clearly that the present-day dialectal patterns discussed in Section 4.3 are attested and in fact quite substantial in the King James Bible.[15] This applies especially to the case of *that*, while the pattern with *as* is clearly a minority pattern. The proportion of *that* is especially high in the case of subject relatives (67.84%), while it is considerably lower in the case of object relatives (2.51%). Note that the total number of indirect object relative clauses is very low: the Noun Phrase Accessibility Hierarchy (Keenan & Comrie 1977) would predict that they are between direct objects and prepositional complements. The low number of indirect object relative clauses is not a peculiar property of the King James Bible: as Fleischer (2004b) points out, relative clauses with indirect object relatives are generally very rare in corpora. The proportion of *which* is about the same in both (22.09% in subject relatives and 19.10% in object relatives).

Table 4.3 shows the distribution of the elements corresponding to *which* in the original King James Bible. The cases subsumed under "other" refer to instances where either the role of the relative pronoun in the original does not match the

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[15]This applies to the use of *as*-relatives, and also to the fact that *that*-relatives represent a dominant strategy

one in the new version or the original text contains no relative clause in the given position.

Table 4.3: The elements corresponding to *which* in the KJB

Role in KJB	Element in KJB	Occurrences
subject (925)	*who*	2 (0.22%)
	which	833 (90.05%)
	that	89 (9.62%)
	whether	1 (0.11%)
direct object (1222)	*whom*	8 (0.65%)
	which	1135 (92.88%)
	that	78 (6.38%)
	whatsoever	1 (0.08%)
PP complement (116)	P + *whom*	3 (2.59%)
	P + *which*	99 (85.34%)
	that	13 (11.21%)
	P + *whatsoever*	1 (0.86%)
other	–	606
Total		2869

As can be seen, the overall distribution of relative clauses with non-human antecedents is very similar to that of relative clauses with human antecedents. The predominant pattern is *which* in the original version, with some examples of *that*-relatives in subject relatives and with complements of prepositions, there being only a single example for a direct object relative with *that*. The data also suggest that as far as the subject/object asymmetry is concerned, the human/non-human distinction may play a role in that the proportion of *that*-relatives with human referents is predictably lower in the new version than with non-human referents: in other words, more changes are expected in the direction of *who/whom*. In order to test this, it is also necessary to take *that*-relatives in the new version into account.

Table 4.4 shows the distribution of the elements corresponding to *that* in the original King James Bible. As in Table 4.3, the cases subsumed under "other" are those where either the role of the relative pronoun in the original does not match the one in the new version or the original text contains no relative clause in the given position.

There are very few exceptions where an original *wh*-element was changed into *that* in the new version. The few instances of PP-relatives with *that* in the new version may seem surprising at first since this pattern (unless with preposition stranding) is not normally attested in Standard English (see the discussion at the beginning of this section). However, all the occurrences are either instances of preposition stranding or appear with set phrases involving either *the day that* or *the time that*, where the *that*-relative is a lexicalised part of the set phrase. By looking at Table 4.4, there seems to be no particular asymmetry regarding subjects and objects regarding the frequency of *that*-relatives: *that*-relatives occur in the new version almost exclusively in cases where the original version also contained *that*-relatives. Note that Table 4.4 includes relative clauses with both human and non-human referents, but as we saw above, the human/non-human distinction does not seem to be relevant regarding the subject/object asymmetry.

In order to present a more direct comparison between the two versions, Table 4.5 summarises the distribution of the relative markers *who*, *whom*, *which* and *that* across subtypes in the original version.[16]

The data indicate a clear preference for *that*-relatives in subject relative clauses, while *wh*-relatives are preferred in direct object relative clauses and in relative clauses where the relative pronoun corresponds to the complement of a preposition. I carried out a chi-square test on the distribution of *who(m)/which/that* in the three types of relative clause: this test reveals that the differences are significant at $p < 0.05$, namely $\chi^2(4, N = 9903) = 1786.8714$, $p < 0.00001$, meaning that the choice of relative marker is dependent on the relativised function. This is in line with the prediction made by the Noun Phrase Accessibility Hierarchy.[17] The same holds for the fact that *as*-relatives are at-

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[16]I have disregarded cases marked as "other", as well as some minor options including *as* and the zero strategy, for this table, so that a more direct comparison with the new version can be applied regarding the major options under scrutiny.

[17]As relative pronouns lexicalise the gap, they may be similar to resumptive pronouns in that they can ease processing for less accessible gaps (see also Romaine 1984: 440, Fleischer 2004a: 230). This was formulated by Hawkins (1999: 252–258) as the Filler-Gap-Complexity Hypothesis: according to this, [−case] elements are expected to occur in functions that are higher in the Accessibility Hierarchy, while [+case] elements are expected especially in lower functions. Under this view, we are expected to find cut-off points analogous to the ones with resumptive pronouns. Indeed, there are some remarkable similarities that arise, while there are obvious differences as well. For one thing, the occurrence of resumptive pronouns is compared to the non-occurrence of the same element (pronoun vs. zero); clause typing is independently carried out by a complementiser in the left periphery (so that no choice in the form "pronoun vs. complementiser" arises). Relative pronouns, however, primarily compete with overt complementisers (that is, the relative clause is either introduced by an overt relative pronoun or by an overt relative complementiser), so that the question "pronoun vs. complementiser" is more

tested only in subject relative clauses (where they also form a minority pattern; see Section 4.8 for further discussion). As mentioned above, indirect object relative clauses are rare in corpora.

Table 4.6 summarises the distribution of the relative markers *who*, *whom*, *which* and *that* across subtypes in the Five Books of Moses and in the Historical Books in the new version.

Table 4.6 includes the same set of data as Table 4.5 (that is, the mismatches subsumed under "other" in Tables 4.1–4.4 are disregarded, as well as the cases in which the original version contains an element other than *who(m)/which/that*). As can be seen, no changes occur in the case of PP complements, but there are considerable changes affecting subject and direct object relative clauses (indirect relative clauses cannot be measured). The proportion of *that*-relatives remains the same in object relatives; however, *which*-relatives decrease in favour of *whom*-relatives, which can be attributed to the fact that *which* is no longer possible with human referents in the standard language. In subject relatives, there are two major changes, both resulting in an increase in the proportion of *who*-relatives. On the one hand, the proportion of *that*-relatives decreases in favour of *wh*-relatives, though it remains slightly higher than in object relatives, in line with the prediction made by the Noun Phrase Accessibility Hierarchy. On the other hand, just as in object relatives, original *which*-relatives with a human referent were changed to *who*-relatives: still, due to the general decrease in the use of *that*-relatives, the proportion of *which*-relatives in subject relatives is actually higher than in the original version. Despite these crucial differences, the asymmetry between the functions remains. Again, I carried out a chi-square test on the distribution of *who(m)/which/that* in the three types of relative clauses: this test reveals that the differences are significant: $\chi^2(4, N = 9903) = 2400.8996$, $p < 0.00001$, meaning that the choice of relative marker is dependent on the relativised function. This indicates that the subject/object asymmetry is quite robust in the language.[18]

4.4.3 Discussion

Let us start with the discussion of the corpus data with respect to the variation between *who(m)* and *which*. Note that in the case of *which*-relatives with human referents, all cases had to be altered in the new version since *which* is not possible

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sensible to ask. See Bacskai-Atkari (2020b: 107) for more discussion.

[18]This provides additional support for the hypothesis expressed by Bacskai-Atkari (2020b), according to which the English case system (contrasting nominative with oblique) is ultimately responsible for the observed differences: the case system is ultimately unchanged in the two periods under scrutiny.

Table 4.4: The elements corresponding to *that* in the KJB

Role in KJB	Element in KJB	Occurrences
subject (970)	*who*	2 (0.21%)
	which	46 (4.74%)
	that	921 (94.95%)
	zero	1 (0.10%)
direct object (552)	*whom*	3 (0.54%)
	which	10 (1.81%)
	that	536 (97.10%)
	as	1 (0.18%)
	whatsoever	2 (0.36%)
PP complement (123)	*that*	123 (100%)
other	–	75
Total		1720

Table 4.5: The distribution of relative markers in the KJB

Role	*who*	*whom*	*which*	*that*
subject (7232)	482 (6.66%)	–	2073 (28.66%)	4677 (64.67%)
direct object (2168)	–	323 (14.90%)	1221 (56.32%)	624 (28.78%)
indirect object (2)	–	2 (100%)	–	–
PP complement (503)	–	259 (51.49%)	106 (21.07%)	138 (27.44%)

Table 4.6: The distribution of relative markers in the new version

Role	*who*	*whom*	*which*	*that*
subject (7232)	5339 (73.82%)	–	924 (12.78%)	969 (13.40%)
direct object (2168)	–	398 (18.36%)	1221 (56.32%)	549 (25.32%)
indirect object (1)	–	2 (100%)	–	–
PP complement (503)	–	265 (52.68%)	115 (22.86%)	123 (24.45%)

in these cases in modern Standard English. The fact that the proportion of *which* is about the same in subject and object relatives indicates that this element was probably not sensitive to a subject/object asymmetry.

As pointed out earlier in this section, the distinction is quite clear in Standard English: *who* is used with human referents (including the "sanctioned borderline cases"), while *which* is used with non-human referents. The situation is somewhat different in regional dialects. Herrmann (2005: 41–42) reports that while *who* is restricted to human referents just like in Standard English, *which* is preferably but not exclusively used with non-human referents: *which* with human (personal) referents occurs in five of the six dialect areas she examined (Central Southwest, East Anglia, Central Midlands, Central North, Scotland). In the sixth dialect area, Northern Ireland, there were only very few instances of *which* occurring with non-human referents, but these dialects hardly use *wh*-pronouns in relative clauses (Herrmann 2005: 41). It appears that the occurrence of *which* with human referents in dialects is not regionally bound, but altogether not very frequent. The data given by Herrmann (2005: 41, Table 3) show that out of all occurrences of *who* as a relative pronoun, the referent is human in 96.4% of the cases and non-human in 3.6% of the cases (all "sanctioned borderline cases"), while in the case of *which* as a relative pronoun, the referent is human in 4.2% of the cases and non-human in 95.8% of the cases.

It should be clear that the use of *which* with human referents is in fact very restricted in dialects and altogether much less attested than in the King James Bible. I assume that the results in the King James Bible are indicative of a previous stage in the grammaticalisation of *which* as [−human], and that significant changes took place in Late Modern English afterwards, leading to the present-day distribution. The relevant change has its roots earlier in the history of English. As Herrmann (2005: 41) points out, *which* was possible with human referents in Middle English (cf. Mossé 1991) and the grammaticalisation of *which* as [−human] started in the 16th century (cf. Nevalainen & Raumolin-Brunberg 2002). It appears that while the grammaticalisation process is evidently completed in the standard variety, there are still exceptions in regional dialects; at the same time, the dialectal pattern suggests that *which* strongly tends towards [−human] and hence the grammaticalisation process has affected regional dialects as well, albeit not to the same degree as the standard variety. Naturally, the gradual change that can be observed in dialects is in line with the assumption that language change (and variation) is gradual (see Traugott & Trousdale 2010).

Regarding the distribution of *that*, it should be kept in mind that the use of *that* in relative clauses is part of the standard variety, though its distribution is somewhat different from non-standard varieties. In subject and object relative clauses, such as the ones examined in the corpus study presented above, the

use of *that* is in line with the standard pattern (as opposed to cases where the standard variety would use PPs), and hence the restrictedness of *that* in the new version can be attributed to a strongly norm-oriented use that goes beyond mere standardisation. This is naturally an important factor that must be considered when evaluating the data from the new version.

Importantly, the results show a strong subject/object asymmetry: the question is whether this difference should necessarily be attributed to the King James Bible or whether it may also be due to the new translation. Herrmann (2005: 48–59) shows that the Noun Phrase Accessibility Hierarchy of Keenan & Comrie (1977: 66–67) is relevant in the spread of the relative particles *that* and *as*: subjects are more accessible than objects, which predicts not only that subject relative clauses are more frequent but also that relative complementisers are more frequent in subject relative clauses than in object relative clauses (which is ultimately related to processing reasons). This may be a reason behind *that*-relatives being more frequent in subject relatives in the King James Bible than in object relatives, and *as*-relatives being attested in subject relatives but not in object relatives.

In the case of *that*-relatives, however, it is perfectly possible that not all instances were changed to *who/whom* in the new version, and as *that*-relatives were not included in the search results for the new version, the proportion of *that*-relatives may eventually be different when considering all relative clauses. Observe the following examples:

(34)   a.   And Abram took Sarai his wife, and Lot his brother's son, and all their substance that they had gathered, and the souls **that** they had gotten in Haran; and they went forth to go into the land of Canaan; and into the land of Canaan they came.
(King James Bible; Genesis 12:5)

   b.   Then Abram took Sarai his wife and Lot his brother's son, and all their possessions that they had gathered, and the people **whom** they had acquired in Haran, and they departed to go to the land of Canaan. So they came to the land of Canaan.
(New King James version; Genesis 12:5)

   c.   Then Jacob was greatly afraid and distressed: and he divided the people **that** was with him, and the flocks, and herds, and the camels, into two bands;
(King James Bible; Genesis 32:7)

   d.   So Jacob was greatly afraid and distressed; and he divided the people **that** were with him, and the flocks and herds and camels, into two companies.
(New King James version; Genesis 32:7)

In both of the loci given in (34), the head noun is *people* (or its synonym *souls*): the relative clause is introduced by *that* in the original version both in (34a) and in (34c). The new version, however, uses a *wh*-pronoun only in the case of the object relative, see (34b), but not in the case of the subject relative, see (34d), which contains the complementiser *that*. The asymmetry attested in (34) is due to the newer version and not to the original. Hence, in order to achieve reliable conclusions regarding the new version, all the occurrences of *that* should be considered as well. Since the examination of the asymmetry is not immediately relevant to the present study, I will not investigate this question any further.

Considering subject relatives, however, it is evident that the frequency of *that*-relatives is quite high and in fact higher than could be expected based on the present-day dialectal data. Herrmann (2005: 24) argues that this is overall the most typical strategy in dialects. At the same time, it is much more dominant in the North: its share is 50.1% in Northern Ireland, 46.2% in Scotland, 43.5% in the Central North, and 40.3% in the Central Midlands, while it is less frequent in the South (below 30% in the areas of East Anglia and Central Southwest), see Herrmann (2005: 27, Table 1). This is in line with the assumption that traditional forms in relative clauses seem to be on the retreat (see Kortmann & Wagner 2007: 291–292), as opposed to the spread of innovative *what* in dialects, which is more dominant in the South than in the North and correlates with the frequency of *that*-relatives (see Herrmann 2005: 27, Table 1). The results of the present corpus study indicate that the proportion of *that* was apparently indeed higher in Early Modern English subject relative clauses. Note, however, that the innovative pattern *what* also involves a uniform relative particle (syntactically a grammaticalised complementiser) and as far as the syntax of relative clauses is concerned, the lexicalisation of C is still fulfilled.

I will return to the issue of *as*-relatives later in this chapter. What matters for us at this point is that the preference for the complementiser strategy in English is not only attested in dialects but also historically, including data from Early Modern English, contrasting with the norm-oriented standard language. On the other hand, it is worth noting that not all non-standard patterns are attested: there were no true subject zero relatives in the King James Bible, and Doubly Filled COMP patterns do not occur in relative clauses in the corpus either. This is in line with the claim made in Section 4.3 that West Germanic languages (and apparently Germanic languages more generally) tend to lexicalise the C head in relative clauses, and this requirement is already met by inserting the complementiser, while the insertion of an overt relative pronoun is redundant in these cases. This is important especially because in the literature on Doubly Filled COMP patterns going back to Chomsky & Lasnik (1977), embedded interrogatives and

relative clauses are often treated on a par with each other, yet there seems to be an important asymmetry between the two constructions regarding doubling, which clearly indicates that doubling is the result of other processes and requirements, and not simply the elimination of one element due to some surface filter.

4.5 Doubling in relative clauses

As pointed out in Section 4.3 already, once it is assumed that relative pronouns are in [Spec,CP] and relative complementisers are in C, it is expected that the two should be able to co-occur. In Chapter 2, I briefly discussed the issue of doubling in English and German. Consider again the English examples (van Gelderen 2013: 59, ex. 85):

(35) a. This program **in which that** I am involved is designed to help
          low-income first generation attend a four year university and many
          of the resources they...
      b. It's down to the community **in which that** the people live.

As van Gelderen (2013) notes, while such examples are attested, they are altogether not very frequent (contrasting with Doubly Filled COMP patterns in embedded interrogatives); see also the discussion of the Early Modern English data in Section 4.4. In Chapter 2, I argued that patterns like (35) represent true Doubly Filled COMP rather than the combination of a projection hosting the relative operator and another one encoding merely finiteness (contrary to Baltin 2010). The structure is shown in Figure 4.6.
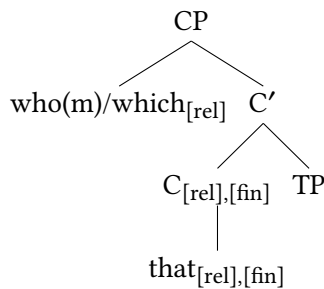

Figure 4.6: Doubling in relative clauses

One piece of evidence for the implausibility of two designated projections comes from German dialects involving *wo*: as *wo* is clearly the canonical relative complementiser in these dialects (see Brandner & Bräuning 2013 and the

discussion in Section 4.2 above) and not a general finite complementiser, it is unlikely that it would merely mark finiteness. The canonical pattern with *wo* was illustrated in (22a), repeated here as (36) below (Brandner & Bräuning 2013: 140, ex. 23):

(36) 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.'

Such patterns are attested in Alemannic (Brandner & Bräuning 2013, Weiß 2013), in Hessian (Fleischer 2004a, 2016) and in Bavarian (Weiß 2013). In addition, in Northern Bavarian the complementiser *was* is used (Weiß 2013). This is illustrated in (37) below (Weiß 2013: 780, ex. 19c):

(37) Röslen (…), **was** oben am   hohlen Wege stehn
     roses   REL above at.the empty road stand.3PL
     'roses, which are above by the empty road'

Note that while Hessian also uses *was* in relative clauses, it is a very limited pattern and in many dialects it is restricted to neuter antecedents (Fleischer 2004a, 2016, Weiß 2013); therefore, contrary to Northern Bavarian, *was* is rather an operator in Hessian.

Doubling in Alemannic and Hessian involves *wo* and a *d*-pronoun (Brandner & Bräuning 2013, Fleischer 2016), as shown for Hessian in (38) below (Fleischer 2016):

(38) 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.'

In Bavarian, the combination of *was* and a *d*-pronoun is possible, as in (39) below (Weiß 2013: 780, ex. 19d):

(39) Mei Häusl   (…), **dös**   **wos** dorten unten (…) steht
     my house.DIM   that.N REL there below   stands
     'My little house, which stands down there'

As described by Fleischer (2016), the same is not possible in Hessian; the complementary distribution of *was* and the *d*-pronoun in Hessian again indicates that *was* is a relative operator and not a grammaticalised complementiser, unlike in Bavarian.

The appearance of the pronouns in relative clauses with nominal heads in-dicates that they cannot be treated as matrix elements; they belong to the left periphery of the relative clause. In Chapter 2, I argued that such patterns are in-compatible with a Force–Fin distinction in cartographic approaches, due to the complementiser (*wo*/*was*) being the canonical relative complementiser and not a finiteness marker (unlike *dass* in embedded interrogatives). Instead, they are instances of Doubly Filled COMP involving the direct merge of the pronoun to the clause headed by the complementiser, as in Figure 4.7.

CP
der/die/das$_{[rel]}$ C′
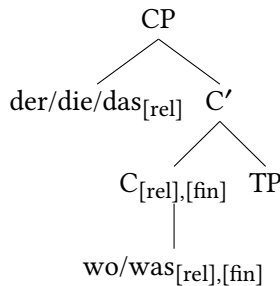C$_{[rel],[fin]}$ TP
wo/was$_{[rel],[fin]}$

Figure 4.7: Doubling in German relative clauses

As far as the connection between the relative clause and the matrix clause is concerned, I adopt a matching analysis rather than a head raising analysis. Under this view, the DP headed by the relative pronoun contains a phonologically invisible NP that matches (is identical to) the head noun NP; that is, the two NPs are not connected via movement but are both base-generated (see Salzmann 2017: 55–179 and Pankau 2018 on arguments in favour of the matching analysis, and see also Lees 1960, 1961, Chomsky 1965, Sauerland 1998, 2003 for similar views, as well as Bhatt 2005 for a comparative summary).[19] However, instead of deleting the NP in the subclause, I will assume it to be zero, though nothing crucial hinges on this.

Consider the following example from Standard German:

(40) Der   Mann, der   Kartoffeln schält, ist mein   Bruder.
      the.M.NOM man   who.M.NOM potatoes   peels is my.M.NOM brother
      'The man who is peeling potatoes is my brother.'

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[19]One serious advantage of the matching analysis over the head-raising analysis is that "it ad-heres to the more traditional constituency and does not involve raising of the head" (Salzmann 2017: 174). In other words, by adopting this kind of analysis, the relative operator undergoes regular operator movement in the embedded CP just like in embedded constituent questions, and there is no further raising operation to the matrix clause. The similarities between the two clause types, especially with respect to doubling, are thus expected to arise.

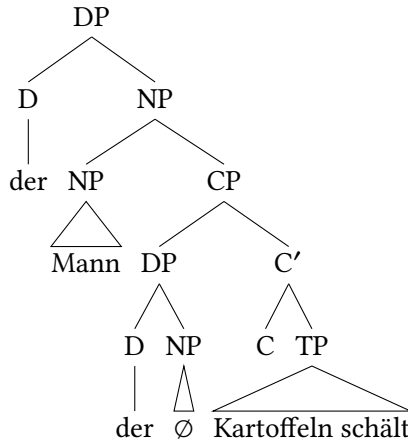The structure for the relative clause in (40) is shown in Figure 4.8.[20]

Figure 4.8: The structure of headed relative clauses

As can be seen, the relative pronoun *der* is a D head and takes an empty NP as its complement; the NP takes its reference from the NP in the matrix clause. (Coindexing is not used in the tree diagram as it might create the impression that movement is involved.) The C head is an empty complementiser.

Essentially, dialectal patterns are very similar in their syntax. The representation in Figure 4.9 below shows ordinary *wo*-relatives (the same applies to Bavarian *was*-relatives).

The representation in Figure 4.10 shows the doubling of a *d*-pronoun and *wo* (the same applies to doubling involving *was* in Bavarian).

In Figure 4.9, the complementiser is overt but the relative pronoun is not; however, the relative pronoun contains no information that could not be recovered, and the type of the clause is also overtly marked by the complementiser. In Figure 4.10, both the complementiser and the relative pronoun are overt. In either case, the empty NP takes its reference from the matrix NP, just like in Figure 4.8.

The difference between Figure 4.9 and Figure 4.10 lies in whether the relative pronoun is overt or not. The assumption is that the lexicalisation of the pronoun is essentially possible in dialects that have relative pronouns in the first place;

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[20]As should be obvious, the complex DP shown in Figure 4.8 functions as the subject of the matrix clause in (40); it undergoes movement from the vP to the [Spec,CP] position, as is regularly the case in main clause German declaratives. Since the position of the head noun DP within the matrix clause is not relevant for the discussion here, Figure 4.8 shows only the structure of the relative clause. The same applies to all other representations in this section.
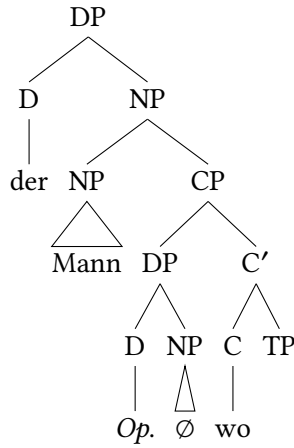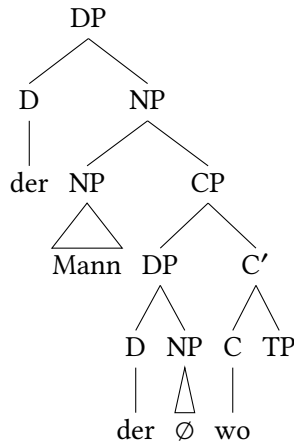
Figure 4.9: Headed relatives clauses with *wo*

Figure 4.10: Doubling in headed relatives

note that in the South German dialects under scrutiny, the insertion of the overt complementiser is the default option, unlike in Standard English, where relative pronouns in themselves constitute a canonical option.[21]

Interestingly, the insertion of relative pronouns is possible even in languages that otherwise use, or at least strongly prefer, complementisers. Consider the following examples from Norwegian (Bacskai-Atkari & Baudisch 2018: 185–187):

(41)   a.   Dette er studenten **som** inviterte   Mary.
            this   is the.student that invited.PST Mary
            'This is the student who invited Mary.'

       b.   Dette er byen   **der**   **som** eg vart fødd.
            this   is the.city which that I   was born
            'This is the city where I was born.'

The option in (41a) is the ordinary option showing the relative complementiser *som*; the doubling option in (41b) including a *d*-pronoun *der* was indicated as possible by the informant from Rogaland county but not by the one from Vest-Agder county in the study quoted above. The difference lies in whether the *d*-pronoun is acceptable as a relative pronoun or not. The same applies to Swedish (Bacskai-Atkari & Baudisch 2018: 246–247):

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[21]Whether constructions with zero operators are actually available depends on various factors; the absence of an overt relative pronoun leads either to zero relatives or to relative clauses introduced by an overt complementiser. Zero relatives constitute a restricted option (see Section 4.2 and Section 4.3). The complementiser strategy is clearly not an option in varieties that do not permit relative complementisers in the first place (e.g. Standard German and Standard Dutch). But restrictions arise even in varieties that have both the pronoun and the complementiser strategy. As discussed in Section 4.4, the syntactic function of the gap makes an important difference here: the complementiser strategy (as a single option) tends to be more available in certain functions than in others. The case of the head noun may also be decisive. Bayer (1984: 215–217, 221–222) reports for Bavarian that the presence or absence of the relative pronoun alongside the relative complementiser *wo* depends on the morphological case of the relative operator and the head noun: if the cases match, the definite article and the relative pronoun are phonologically identical and the relative pronoun is optional. The picture is more interesting with case mismatches: relative pronouns in the dative are obligatory with nominative head nouns; in these cases, there is no form identity for any of the genders (or for the plural). This is not true vice versa: nominative relative pronouns are merely optional with dative head nouns (suggesting that the unmarked form is always fully recoverable). Accusative relative pronouns show mixed behaviour with case mismatches: a masculine accusative relative pronoun (*den*) is obligatory with nominative head nouns (marked by the article *der*) but the same does not hold for feminine (*die*) and neuter (*das*) ones, where nominative and accusative forms are phonologically identical.

(42) a. Detta är studenten **som** bjöd   in Mary.
           this   is the.student who invites in Mary
           'This is the student who invites Mary.'
      b. Detta är studenten **vilken som** bjöd   in Mary.
           this   is the.student which that invites in Mary
           'This is the student who invites Mary.'

Again, the option in (42a) is the ordinary option showing the relative complementiser *som*. The doubling option in (42b) including the *wh*-based pronoun *vilken* shows variation between the two informants involved in the questionnaire: it was indicated as possible by the informant from the Färgelanda municipality but not by the one from Göteborg in the study quoted above. The difference lies in whether the *wh*-pronoun is acceptable as a relative pronoun.

While Norwegian and Swedish show variation concerning doubling patterns, the situation appears to be different in Danish. In Danish, the complementiser *som* occurs on its own in relative clauses as in (43) but not in combination with other elements (Bacskai-Atkari & Baudisch 2018: 89–91):

(43) Dette er bogen   **som** Mary købte.
       this   is the.book that Mary bought.PST
       'This is the book which Mary bought.'

There is thus a strong tendency in Mainland Scandinavian languages for the complementiser strategy, which is also the standard option (unlike what can be generally observed in West Germanic, see above), yet the relative pronoun may also be lexicalised in some cases. The observed variation and the lack of clearly defined syntactic rules in terms of when the pronoun appears are in line with the assumption that the insertion of the relative pronoun does not generate a new projection in the syntax but it merely lexicalises a position that is covertly present anyway but is essentially redundant.

This leads to the last question to be addressed in this section, which concerns the differences between embedded interrogative clauses and relative clauses in terms of doubling patterns. As discussed in Chapter 3 already, the two constructions show a remarkable surface similarity in this respect, especially in English, where the specific elements involved are also surface-identical. Indeed, the two clause types have also been treated analogously in the literature (see, for instance, Chomsky & Lasnik 1977 and Chomsky 1977). However, there are some important asymmetries to be observed here. First, as discussed in the present section and in

Section 4.3, it seems that Germanic languages generally favour the complementiser strategy over the pronoun strategy (which can, depending on the language and the variety, show considerable differences). In embedded interrogatives, the complementiser strategy is favoured in polar interrogatives but it is impossible in constituent questions. Second, while doubling is widespread in embedded constituent questions across Germanic, it seems to be altogether less frequent in relative clauses (and, as we saw, it is also a marginal option in embedded polar questions). Given the rather unified syntactic template (namely, a single CP for all of these constructions), the asymmetries may seem somewhat surprising at first.

I suggest that the reason for these differences lies in the information structural properties of the operators.[22] The relevant distinction can best be formulated as discourse-new vs. discourse-old. In interrogatives, the operator is associated with discourse-new information;[23] in the classical scenario, the *wh*-part of a constituent question corresponds to a focused element in the answer (see Krifka 2008: 250, citing Paul 1880). The *wh*-phrase is associated with the presence of alternatives and it regularly bears main stress.[24] Ordinary (headed) relative clauses differ in that the relative operator expresses discourse-old information: it is co-referent with the head noun and is hence recoverable. The polar operator is also recoverable and does not need to be overt.

It follows that doubling in embedded constituent questions results from the interplay of two independent factors: first, the operator must be overt due to its discourse function; second, the C head is preferably lexicalised by an overt element in the languages under scrutiny. In relative clauses, however, the first requirement does not hold (due to the information structural properties of relative operators) and the second requirement is satisfied by inserting a relative

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[22]I will discuss the relevance of information structure for left peripheries in Chapter 6 in more detail.

[23]Note that discourse-new does not equal new information. In fact, it is possible that *wh*-phrases represent old information (both in terms of the speaker and in terms of the reader), yet it is not necessarily the case that the relevant information is present in the preceding discourse. In addition, newness cannot be equalled with focusing either, as discussed by Krifka (2008: 255–257), so that focus-like properties are not even necessarily expected to be related to newness (contrary to the "information focus" proposed by Halliday 1967).

[24]There is a strong correlation between discourse-new and stress, yet no one-to-one correspondence, as discussed by Büring (2013: 874–876). One reason behind this is that the relevant properties represent non-prosodic information that is mapped onto the prosodic component from syntax rather than being prosodic properties (see Büring 2013: 860–861). Krifka (2008: 248) suggests that a focus property indicates the presence of alternatives (this idea in turn goes back to von Stechow 1981 and to Rooth 1985, and it was adopted by later analyses, see Büring 2013). See also Bacskai-Atkari (2022a: 197–198) for more discussion.

complementiser. We can thus establish that there is no doubling requirement per se in either of these constructions, and the observed differences between the two clause types can be answered by considering the information structural properties of the respective elements (see Bacskai-Atkari 2022a for more details).

4.6 Doubling in free relatives

So far I have chiefly concentrated on relative clauses with nominal heads. Interestingly, doubling patterns are also possible in free relatives. In West Germanic languages, free relatives are introduced by *wh*-pronouns, as illustrated in (44) below for English, German and Dutch, respectively (all examples from the standard varieties):[25]

(44)   a. You should finish **what** you have begun.

      b. Ich nehme   **was**   du   nimmst.
          I   take.1sg what you take.2sg
          'I'll take what you take.'

      c. **Wie** zoiets doet, is gek.
          who such   does is crazy
          'Whoever does such a thing is crazy.'

In theses cases, there is no lexical head; the matrix clause contains an empty DP (see van Riemsdijk 2006). In German, the finite complementiser *dass* 'that' can be

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[25]Given the similarity between interrogative and free relative clauses, the two have been claimed to have similar syntactic and semantic properties (see Caponigro 2003, Poletto & Sanfelici 2019). What seems to be somewhat surprising is therefore not that *wh*-elements appear in free relatives but rather that they appear in headed relative clauses. Watanabe (2009) argues that the indefinite *wh*-base in Old English was also quantificational, making the clause into a complete proposition, which was incompatible with headed relatives. Once this property was lost, the *wh*-base became available for relative clauses. (The relationship between the indefinite *wh*-bases and the interrogative *wh*-pronouns constitutes a long-standing debate that cannot be discussed here; see Brugmann 1911: 348 and Gonda 1954.) Note that *wh*-pronouns are more related to the indefinite use (Paul 1920b, Gonda 1954, Gisborne & Truswell 2017) than to the definite use, unlike demonstrative-based pronouns, which stem from (definite) demonstrative pronouns. Bacskai-Atkari to appear hypothesises that the original definite/indefinite distinction has a reflex in terms of the interpretability of the [rel] feature: demonstrative-based relative markers are regularly equipped with an [i-rel] feature, while *wh*-based relative markers are regularly equipped with an [u-rel] feature; this arrangement restricts the possible combinations as well, so that doubling patterns regularly show asymmetric patterns (that is, *wh+d* or *d+wh*). This is in line with the assumption that the feature properties of ordinary relative clauses and free relatives differ.

inserted dialectally, as in the following example from Bavarian (Weiß 2013: 781, ex. 21c):

(45) **wem**   **dass** des   zvei   is, kann   aa   wenger zoin
      who.DAT that that.N too.much is can.3SG also less   pay.INF
      'Whoever finds it too much can pay less as well.'

Importantly, *dass* is not a relative marker otherwise in these dialects (that being *wo*, see Section 4.5); the insertion of *dass* takes place to satisfy the lexicalisation requirement on [fin] in C and happens exactly the same way as in embedded constituent questions (see Chapter 3).

A similar doubling pattern can also be observed in Flemish, as illustrated in the following example (Zwart 2000: 358, citing Vanacker 1948: 143):

(46) **Wie dat** er   nou trouwt zijn stommerike.
      who that there now marries are stupid.ones
      'Whoever gets married nowadays is stupid.'

The example is from South Brabant (the relevant territory is today Vlaams-Brabant, Flemish Brabant). According to Zwart (2000: 357), Dutch dialects do not have *dat*-relatives; however, Boef (2013: 141) reports, on the basis of the SAND1 data, that relative clauses with the complementiser *dat* but without a visible relative pronoun are actually possible in this territory. The appearance of *dat* in headless relative clauses, however, is rather due to *dat* being a finite complementiser in these cases. In English, *that* is universally acceptable as a relative complementiser, yet it does not introduce free relatives. Essentially the same applies to Mainland Scandinavian *som*-relatives.

Doubling patterns like (45) in German have the same structure as embedded constituent questions showing Doubly Filled COMP effects: the complementiser is inserted regularly as the [fin] marker, and the [wh] feature is checked off by the operator. The structure for (45) is shown in Figure 4.11.

I assume that in free relatives, a [wh] feature and not a [rel] feature is involved (see Groos & van Riemsdijk 1981). This predicts that relative complementisers and relative pronouns equipped with a [rel] feature cannot appear in free relatives: this is indeed borne out, as the German complementisers *wo* and *was* do not occur in free relatives, and *d*-pronouns are not attested either.[26]

The more detailed structure is given in Figure 4.12.

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[26]As discussed by Fuß & Grewendorf (2014), on the surface German has free relatives with *d*-pronouns; however, they show that these constructions differ from free relatives with *w-*
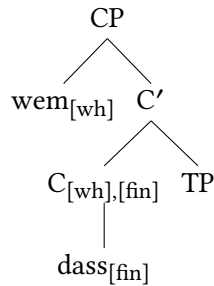
CP
wem[wh] C′
C[wh],[fin] TP
dass[fin]

Figure 4.11: Doubling in headless relatives
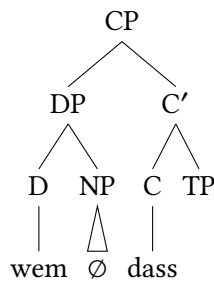
CP
DP C′
D NP C TP
wem ∅ dass

Figure 4.12: The detailed structure of headless relatives

The zero NP complement, just like in interrogative clauses, requires no overt antecedent. This construction is, however, not available with all *wh*-elements. For instance, *which* in English takes an overt NP complement in interrogatives like (47a) and is not licensed in free relatives in the way shown in (47b):

(47) a. **Which book** should I read next?
       b. *You should finish **which** you have begun.
       c. This is the book **which** I should read next.

As indicated by (47c), *which* is perfectly possible as a relative pronoun if there is an overt antecedent (*book*) in the matrix clause that licenses the covert NP complement, but not otherwise.

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pronouns in terms of their syntactic and semantic properties and that they are in fact headed relative clauses: in this sense, there are no free relatives involving *d*-pronouns in German. Note that the above generalisation holds for *d*-pronouns and does not include the particle *da*: as noted by Weiß (2013: 782), this occurs in the dialect of Leipzig in addition to the *w*-pronoun in free relatives (constituting a Doubly Filled COMP effect) and it is also attested in the same doubling patterns in embedded interrogatives. This again underlines the parallelism between free relatives and embedded constituent questions; the particle *da* in this respect shows similar behaviour to the complementiser *dass*.

Again, just as in the case of ordinary relative clauses and interrogative clauses (see Chapter 3), there is no need for a cartographic split of the CP to accommodate the various overt elements in the structure.

4.7 Triple combinations

Against this background, the question of triple combinations is especially interesting: while double combinations are, as was shown in this chapter, compatible with a single canonical CP, the insertion of any further element into the CP-periphery requires further explanation. According to Weiß (2013) and Grewendorf & Poletto (2015), Bavarian allows combinations of the form "*d*-pronoun + *wo* + *dass*". The example in (48) shows the combination in a relative clause with a lexical NP (Weiß 2013: 781):

(48) dea Mã, **dea wo dass** des gsogd hod
the.M man that.M REL that that.N said.PTCP has
'the man who said it'

The example in (49) shows the combination in free relatives (Weiß 2013: 781, ex. 21e):

(49) **dem wo dass** des zvei is, kann aa wenger zoin
that.M.DAT REL that that.N too.much is can.3SG also less pay.INF
'Whoever finds it too much can pay less as well.'

Such constructions do not appear to be predominant, though. In the literature, they are only mentioned for Bavarian. Regarding Alemannic, in the project SynAlm ("Syntax des Alemannischen"), the combination was tested only for long movement (e.g. *solche Blumen wüsste ich niemanden, der bei uns verkauft* 'such flowers I do not know anyone who here sells', FB2/15; see FB2-251, Column: IT → Q_15-4 and FB2-258, Column: IX → Q_16-4 of the database). Salzmann (2017: 336–343) provides a detailed overview of relative clauses in Swiss German but mentions no constructions like (48) and (49): the combination of *wo* and *dass* is generally not possible in relative clauses (unlike in interrogatives), which indicates that *wo* in Swiss German is clearly a complementiser.

In addition, the combination is apparently not frequent. Regarding the combination of the *d*-pronoun and *wo* and (49), Weiß (2013: 781) reports that for some speakers of Bavarian (referring to H. Altmann, personal communication), this combination is possible and even *dass* can be added, which is generally possible

in Bavarian, see (48). Grewendorf & Poletto (2015), who also mention the combination in (48), cite the same example as given in (48) and another one with complementiser agreement. At any rate, it should be kept in mind that Bavarian relative clauses can be headed not only by *wo* but also by *was*. Based on all this, it is quite probable that *wo* has a different status in dialects that allow (48) and (49) from what we can observe in Alemannic and in Hessian.

The cited sources also agree in locating the *d*-pronoun in the relative clause and not in the matrix clause, which can be verified, for instance, by intonation. In addition, in (48) there is already a lexical head in the matrix clause (the DP *der Mann* 'the man'), and hence the *d*-pronoun *der* cannot be regarded as the matrix head. In (49), the case of the pronoun (dative) shows that it belongs to the relative clause and not to the matrix clause. Moreover, the combination *wo dass* in relative clauses is possible only if the *d*-pronoun is inserted as well (see the data of Weiß 2013: 781). In other words, the insertion of *dass* is allowed only if the status of *wo* is different from what can be observed in ordinary *wo*-relatives. This difference is at the same time responsible for the insertion of the *d*-pronoun.

The idea is that *wo* in these cases is not treated as a complementiser but as an operator; however, as an adverbial element it cannot have an NP complement and marks only clause type. The *d*-pronoun is an internal head, similarly to *that* in English free relatives. Consider:

(50)   a.   You should finish **what** you have begun.
          b.   You should finish **that which** you have begun.

In English, the *wh*-pronoun *what* can take an empty NP complement, as in (50a). This is not possible with *which* on its own, see (47b) above, but if there is an overt antecedent in the form of the demonstrative pronoun *that*, as in (50b), which functions as an internal head, the construction is grammatical. Since *that* in Modern English is not a relative pronoun, its status in examples like (50b) is clearly different from relative pronouns.

The constructions in (48) and (49) should have a similar structure. Importantly, *d*-pronouns in German can be both demonstrative pronouns and relative pronouns. In (48), the *d*-pronoun functions as a relative pronoun, but in (49) it is inserted as a demonstrative pronoun, since relative pronouns with the feature [rel] are not possible in free relatives, see Section 4.6. The element *wo* is specified as [wh] in constructions like (48) and (49): this allows it to appear in free relatives, but in ordinary relative clauses the insertion of a relative pronoun with a [rel] feature is necessary in addition. The structure for (48) is given in Figure 4.13.
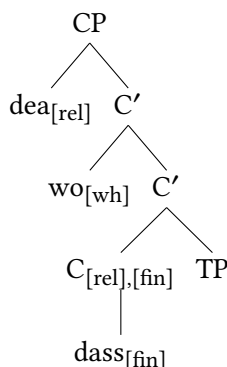
Figure 4.13: Triple combinations

Under this view, multiple specifiers are possible; the structure is in this respect similar to triple combinations in Dutch constituent questions and to V3 main clauses in German (see Chapter 3 and Bacskai-Atkari 2020c: 148). This is in line with the basic operation Merge, which does not make reference to traditional X-bar notions. The complementiser *dass* in Figure 4.13 marks only finiteness; the *wh*-operator *wo* can be inserted but it cannot check off the [rel] feature. Importantly, the insertion of the finite complementiser does not require a separate FinP: if that were possible, then the finite complementiser in Fin should be available regardless of whether there is a *d*-pronoun in a higher specifier (possibly in ForceP). In other words, a separate, designated FinP would be expected to occur in *wo*-relatives as well (*wo dass*) or in relative clauses with a single *d*-pronoun (*der dass*), but neither of these options is empirically justified. In this way, not even triple combinations provide support for a cartographic analysis. The structure for (49) is given in Figure 4.14.

Unlike in Figure 4.13, the clause type in this case is not [rel] but [wh]; hence, *wo* can mark clause type. The demonstrative pronoun is inserted so that the empty NP complement can be inserted, since *wo* in nominal relative clauses cannot function as an internal head. The *d*-pronoun is hence not a relative pronoun but it appears in the relative clause: its status is reminiscent of an intermediate stage in the reanalysis of demonstrative pronouns into relative pronouns, which can be detected in various languages (see van Gelderen 2004, 2009; see also Coniglio 2019, Axel 2009, Axel-Tober 2012).[27] In this respect, the structure given in Figure 4.14, just like the one in Figure 4.13, is not an idiosyncratic feature of German.

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[27]This reanalysis process is taken to be part of the so-called relative cycle by van Gelderen (2004: 77–99) and van Gelderen (2009: 161–168). The process is referred to as a cycle because relative pronouns may further be reanalysed into relative complementisers, leaving the [Spec,CP] position phonologically empty and thus available for novel relative pronouns.

CP
dem   C′
wo[wh]   C′
C[wh],[fin]   TP
dass[fin]
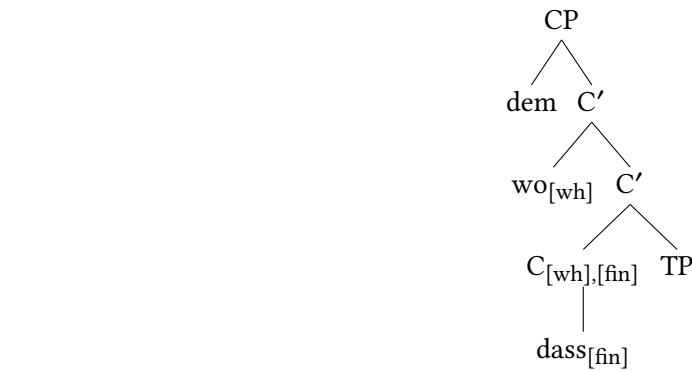
Figure 4.14: Triple combinations in free relatives

The detailed structure for (48) and (49) is given in Figure 4.15.

CP
DP   C′
D   NP   AdvP   C′
dea/dem   ∅   wo   C   TP
dass
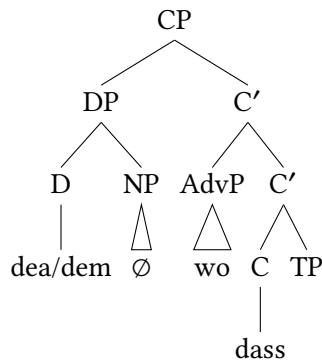
Figure 4.15: The detailed structure of triple combinations

As indicated, the relative position of the *d*-pronoun is the same in both relative clauses with a nominal head and in free relatives. The difference lies in whether the *d*-pronoun is specified as [rel] or not.

The question arises why such complex structures arise at all if double combinations are sufficient as well, see Sections 4.5 and 4.6. It appears that *wo* in dialects that otherwise use *was* rather than *wo* as a relative complementiser has not (or not completely) grammaticalised as a [rel] complementiser, and hence *wo* can be inserted as a *wh*-operator with a [wh] feature. Consequently, other elements like the finite complementiser *dass* and the *d*-pronoun must be inserted to check off all necessary features. The complex syntactic structure is thus related to the syntactic status of the element *wo*. However, since *wo* can generally appear as a

complementiser and there are other options for the formation of relative clauses, such complex constructions are expected to be rare since they are functionally equivalent to more economical configurations.

4.8 Equative relative clauses

As mentioned before (see Sections 4.3 and 4.4), in present-day English dialects, relative clauses with *as* are still possible. This was exemplified in (26), repeated here as (51) below (taken from Herrmann 2005: 64, ex. 26d):

(51) [...] so **all as** he had to do were go round in a circle all the time [...]
      (*Freiburg English Dialect Corpus* Som_001)

Similar patterns were found in the King James Bible as well, illustrated in (52):

(52) a. And **such as** do wickedly against the covenant shall he corrupt by
          flatteries: but the people that do know their God shall be strong, and
          do exploits.
          (King James Bible; Daniel 1:4)
      b. And his brother's name was Jubal: he was the father of **all such as**
          handle the harp and organ.
          (King James Bible; Genesis 4:21)

All the examples from the King James Bible (altogether 23 instances given in Table 4.1) contain the element *such* in the matrix clause. Out of these, 19 instances are similar to (52a) in that they do not contain an additional *all*, while in 4 examples *all* is also present (immediately preceding *such*), as demonstrated in (52b). In essence, the presence of *all* in these constructions appears to be optional in the King James Bible.

The studies on *as*-relatives in present-day dialects cite examples containing *all*, as in (51) above; another example is given in (53) below (Kjellmer 2008: 72, ex. 8):

(53) They come back from the football or wherever we've been on a Sunday
      afternoon bath the kids get the telly on the fire on and get them a bit of
      tea and try and sit and watch the telly and **all as** you hear is effing and
      blinding and screaming and shouting and threatening. He hates baths.
      (ukspok/04. Text: S9000001271)

As shown by Kjellmer (2008), the contracted form *alls* (deriving from the sequence *all as*) is also possible, both in American English and apparently also in British English. The phenomenon is illustrated in (54) below (Kjellmer 2008: 69, ex. 3):

(54)   **Alls** he needs is a bit of help and that you know.
       (ukspok/04. Text: S9000000507)

It is evident from the examples of Kjellmer (2008) that *alls* is used in free relatives (essentially in the sense of *all that*) and not in ordinary relative clauses. At any rate, the availability of the contracted form strongly suggests that *all* came to be a grammaticalised marker, which is in this respect similar to *such* in the King James Bible. The point is that unlike other relative complementisers (such as English *that* and German *wo*), English relative *as* is in many (but not all) cases contingent upon the presence of a particular equative-like element in the matrix clause.[28] Note also that the very form *as* derived from *eallswa*, the combination of *all* and *so*, whereby historically the *so*-forms (*swelce*, *swilce*, *such* and *so*, *swa*) are also attested in *as*-constructions (see Kortmann 1997: 315–317, López-Couso & Méndez-Naya 2014: 312–314 and references there). Similarly, German *als* derives from Old High German *also* (*all* + *so*), whereby various forms of *so* are possible historically in *as*-constructions (Jäger 2010).

Turning now to German, recall from Section 4.2 that *so*-comparatives are attested in German historically, as discussed in the study of Brandner & Bräuning (2013). This is illustrated in (6), repeated here as (55), for Old Saxon (Brandner & Bräuning 2013: 138, ex. 20):

(55)   **sulike** gesidos   **so** he im   selbo gecos
       such   companions so he him self   chose
       'such companions that he chose for himself'
       (*Heliand* 1280)

As can be seen, the matrix clause contains a *so*-element and the relative clause is introduced by *so*. Similar patterns are also found with relative *als*; an example for Middle High German is given in (4), repeated here as (56) below (Brandner & Bräuning 2013: 136, ex. 13, citing Ebert et al. 1993):

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[28]Note that equative relative clauses in this respect constitute a bridging context between ordinary equative clauses and ordinary relative clauses. This contradicts the assumption of König (2015: 54) that there are no plausible bridging contexts between equatives/comparatives and relative clauses, making his criticism of Brandner & Bräuning (2013) considerably weaker.

(56) … und begerten **solichen** schaden **als** sie deshalben   gelitten
      and demanded such   damage as they because.of.that suffered
    'And they demanded such damage that they had suffered because of that.'
    (Chr. V. Mainz 220)

However, as is also obvious from Brandner & Bräuning (2013), *so* eventually grammaticalised as a relative complementiser; an example for this from Middle High German was given in (2a), repeated as (57) below (Brandner & Bräuning 2013: 132, citing Paul 1920a):

(57) dër Sache **sô** ir meinent
      the thing so you mean
    'the thing that you mean'
    (*Reinfried von Braunschweig*)

Constructions like (57) do not represent a problem for any analysis accommodating relative complementisers; I adopt the view of Brandner & Bräuning (2013) that *so* is a regular relative complementiser in these cases, and this results in a structure analogous to Figure 4.9, as shown in Figure 4.16.
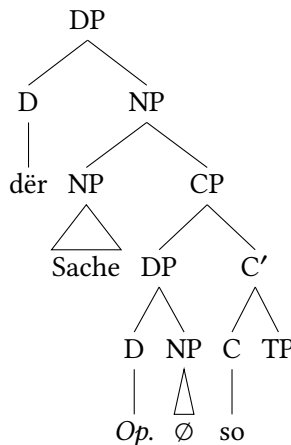
Figure 4.16: Relatives clauses containing *so*

However, the structure in Figure 4.16 cannot straightforwardly accommodate the matrix equative element. In the German examples in (55) and (56), there is a matrix nominal head following the element *so*, but in the English example in (52a), there is no lexical noun, yet *such* can still take an *as*-clause. This suggests that relative clauses with a matrix equative element are essentially equative clauses and have a syntax different from ordinary relative clauses.

Regarding the structure of equatives, I start from the proposal made by Bacskai-Atkari (2014c, 2018c) and Lechner (2004) for comparatives expressing inequality. A comparative construction is given in (58) below:

(58)   Ralph is **more intelligent than** Peter is.

The proposed structure is shown in Figure 4.17.
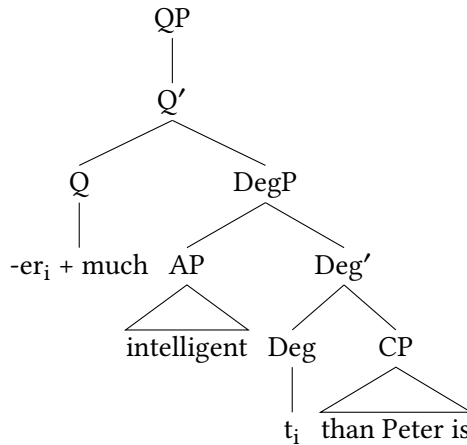
Figure 4.17: The QP-analysis for comparatives

As can be seen, the comparative subclause (headed by *than*)[29] is the complement of the matrix degree element *-er*; this is in line with the fact that the degree element imposes selectional restrictions on the subclause (for instance, *-er* can take only a *than*-clause but not an *as*-clause). The gradable adjective (*intelligent*) is in the specifier of the DegP. There is an additional layer, QP, on top of the DegP; this is not immediately relevant for our purposes here.[30] At any rate, the movement of the degree head to Q results in the correct surface word order (the dummy element *much* is inserted to host *-er*).

Degree comparison may, however, not only express inequality but also equality, as in (59) below:

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[29]The comparative subclause contains a degree expression (here: *x-intelligent*, where *x* refers to the degree to which Peter is intelligent). This degree expression is regularly deleted in Standard English if the lexical phrase in the degree expression (here: *intelligent*) is not contrastive. The phenomenon is traditionally referred to as "Comparative Deletion" (see Bacskai-Atkari 2018c: 57–106 for discussion).

[30]The Q head determines whether comparison is to a higher or to a lower degree (*more* versus *less*); the specifier of the QP can host modifiers such as *very* and *far* that show agreement with the degree element (see Bacskai-Atkari 2018c: 42).

(59)   Ralph is **as intelligent as** Peter is.

Based on Figure 4.17, it seems logical to suppose a structure like in Figure 4.18 for (59).
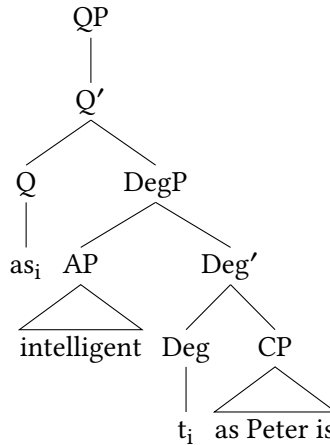
Figure 4.18: The QP-analysis for equatives

Unlike *-er*, the degree element *as* is not a clitic and no *much* is inserted; otherwise, Figure 4.18 is essentially the same as Figure 4.17, in line with much of the literature going back to Bresnan (1973) that treats comparatives and equatives in an analogous way.

However, it is difficult to see how a structure like Figure 4.18 could stand for patterns like (52), which do contain an *as*-clause taken by a matrix equative element (*such*) but are not associated with degree and do not contain a gradable AP either. In fact, even canonical similative or non-degree equative constructions (cf. Haspelmath & Buchholz 1998) have this property. Consider the example in (60):

(60)   Es ist **so wie** es ist.
       it is so as   it is
       'It is what it is.'

As discussed by Bacskai-Atkari (2019b), the major difference between similatives like (60) and degree equatives like (59) lies in the fact that the gradable AP argument is present in the latter but not in the former construction. Obviously, the label of the relevant projection headed by *so* in these cases could hardly be

taken to be a DegP, since no degree is involved, merely comparison. The structure can thus be represented as in Figure 4.19 (see Bacskai-Atkari 2019b: 102).

In degree equatives, the comparative functional head takes another argument, namely the AP in its specifier. Such Compr heads are equipped with a degree feature [deg], which can be checked off by upward movement, creating the Deg position and ultimately projecting DegP (Bacskai-Atkari 2019b: 103–104, building on the Münchhausen-style verb movement to C proposed by Fanselow 2004b). The structure in Figure 4.18 is modified to Figure 4.20.

Figure 4.19: The ComprP-analysis
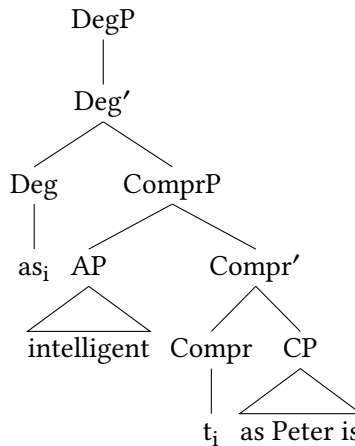
Figure 4.20: The combination of ComprP and DegP
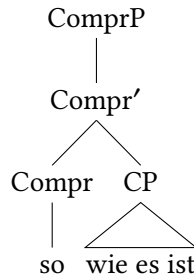
What matters for us here is that elements like *as* and *so* can take also a complement clause argument in non-degree constructions. Observe again the equative relative clause given in (52a), repeated here as (61):

(61)   And **such as** do wickedly against the covenant shall he corrupt by
        flatteries: but the people that do know their God shall be strong, and do
        exploits.
        (King James Bible; Daniel 1:4)

Just like in ordinary non-degree equatives, comparison here identifies a given property rather than relating degrees to one another. The structure can be therefore represented as in Figure 4.21.
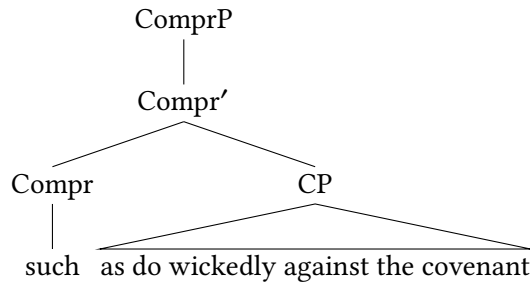
Figure 4.21: Equative relatives

Unlike ordinary relative clauses, which are adjoined to a matrix nominal expression, equative relative clauses occur as complements of a matrix degree-like element. Given the syntactic distinction between the two, it follows naturally that the *as*-relatives attested in the King James Bible have a markedly different distribution from that of ordinary relative clauses. Namely, the equative relative head is not a grammaticalised relative complementiser in Early Modern English but it is contingent upon the matrix equative element. The fact that the possibilities of occurrence of *as*-relatives are restricted anyway, together with the observation that in the given corpus they appear to be restricted to subject relatives (the most unmarked type), means that they essentially cannot compete with ordinary relatives that have a far wider distribution. This also has a consequence for the distribution of *as*-relatives in Present-day English: the standard variety has eradicated this construction completely, while regional dialects only have it to a limited degree.

4.9 Summary

This chapter was dedicated to the analysis of relative clauses, applying the framework established in Chapter 2 and refined for interrogative clauses in Chapter 3.

It was shown that Germanic relative clauses tend to apply the relative complementiser strategy, in line with the preference for lexicalising a finite C head. Regarding this issue, we find considerable differences between varieties, not only geographically but also related to register. Relative pronouns may not only occur as the sole overt markers of clause type but they may also co-occur with overt relative complementisers, resulting in the doubling effects familiar from embedded interrogatives. However, doubling is apparently less common than in interrogatives; this, together with the overall preference for complementisers, can be attributed to the fact that the relative operator is essentially recoverable. Triple combinations are also attested in some South German varieties; in these cases, a single CP is sufficient under the minimalist assumption that multiple specifiers are allowed. Given the findings so far, it appears that a single CP is appropriate even for cases that are complex on the surface; this raises the question whether the left periphery can be complex (in the sense of containing multiple projections) at all. In Chapter 5, I will turn to the analysis of embedded degree clauses in this respect, which, despite many similarities with relative clauses, show different behaviour, and Chapter 6 will show how multiple CPs are relevant not only in terms of information structure but also in terms of ellipsis.

5 Equatives, comparatives and the marking of polarity

5.1 Introduction

Building on the feature-based theory put forward in this book so far, this chapter examines comparison constructions, including non-degree equatives (similatives), degree equatives, and comparatives expressing inequality. While these constructions are similar in several respects, they show differences in ways that are slightly unexpected for analyses developed primarily for comparatives expressing inequality. The differences become evident especially when looking at the possible combinations of complementisers and operators at the left periphery of the subordinate clause. The various combinations are naturally relevant for the theory of functional left peripheries because they provide an ideal testing ground for whether designated projections are necessary, as in cartographic approaches, or whether a more minimal CP is favourable. Comparison constructions indeed provide evidence for the existence of multiple CP projections, yet the availability of overt combinations is subject to constraints that cartographic approaches cannot handle in an adequate way. Instead, I will propose that the restrictions and requirements on multiple marking are not tied to designated projections, but follow from the semantic properties of the individual constructions, and are also in interaction with properties of the matrix element.

This chapter is structured as follows. Section 5.2 discusses basic notions concerning comparison and degree. Section 5.3 examines the role of polarity regarding the differences between comparatives expressing equality and ones expressing inequality. Section 5.4 is dedicated to the grammaticalisation processes in German in this respect and how the relevant constructions can be integrated into the proposed model. Section 5.5 extends the conclusions to other languages, also beyond Germanic, showing that the asymmetries are not language-specific but stem from differences in the underlying comparative semantics. Section 5.6 applies the analysis to hypothetical comparatives.

5.2 Comparison and degree

Embedded degree clauses fall into two major types: degree equatives, also called comparatives expressing equality, as given in (1a), and comparatives expressing inequality, as given in (1b):

(1) a. Ralph is as tall **as** Mary is.
    b. Ralph is taller **than** Mary is.

In (1a), the subclause introduced by *as* expresses that the degree to which Mary is tall is the same as to which Ralph is tall (or lower), while in (1b), the subclause introduced by *than* expresses that the degree to which Mary is tall is lower than the degree to which Ralph is tall. While the examples in (1) contain full subclauses, the subclause is often reduced to a single focused remnant, resulting in reduced clauses that can be derived by ellipsis (see Merchant 2009, Bhatt & Takahashi 2011, Bacskai-Atkari 2014b,c among others). The elliptical counterparts of the clauses in (1) are illustrated in (2) below:

(2) a. Ralph is as tall **as** Mary.
    b. Ralph is taller **than** Mary.

As far as English is concerned, the DPs in (2a) and (2b) are not directly selected by *as* and *than*, but are remnants of clauses that are present in the syntactic derivation. I will return to the issue of ellipsis in comparatives in Chapter 6; for the time being, suffice it to say that in the comparison constructions discussed in this chapter, the complement of *as* and *than* (and the relevant elements in other languages) is a clause, not simply a phrase.

The comparison constructions presented above are instances of degree comparison: there is one degree expressed in the matrix clause and another one expressed in the subclause. The matrix degree morpheme is *as* in degree equatives and it selects an *as*-clause, while the matrix degree morpheme in degree comparatives is *-er* (or *more*, which is actually a composite of *-er* and *much*; see Bresnan 1973, Bacskai-Atkari 2014c, 2018c). However, it is possible to have comparison without degree; consider the following examples:[1]

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[1]Regarding (3d), it is worth mentioning that the acceptability of *different than* shows some variation. As summarised by Hundt (2001: 747), while *different from* is accepted both in British English and in American English and constitutes the option usually recommended by grammars, *different than* is far more common in American English (see also Burchfield 1996: 213). Especially if followed by a clause (and not a single DP), however, as in (3d), it is more expected to occur in British English as well (Fowler & Gowers 1965: 621). Note that the availability of a

(3) a. Mary is tall, **as** is her mother.

  b. Mary is glamorous **like** a film-star.

  c. Farmers have other concerns **than** the farm bill.

  d. Life in Italy is different **than** I expected.

In these cases, there is obviously no matrix degree element. The sentences in (3a) and (3b) express merely similarity with respect to the property denoted by the adjective. In (3b), the subclause is introduced by *like* and not by *as*, a further difference from degree equatives. Given the availability of non-degree equatives, Jäger (2018: 35) suggests that comparison constructions can be grouped into three major categories: non-degree equatives, degree equatives, and comparatives. These constitute a markedness hierarchy in this order (non-degree equatives being the least marked). However, constructions like (3c) and (3d) indicate that there is in fact a fourth category as well: these are non-degree comparatives expressing difference.[2] This category seems not to be productive, as the availability of the *than*-clause is dependent on the presence of a particular element expressing difference in the matrix clause. The word *other* or, at least in American English, the adjective *different* are potential candidates.

Importantly, comparison and degree are not in a one-to-one relationship, and the two aspects rather produce a feature matrix allowing for various patterns. In addition to patterns like (3), the equative relative clauses discussed in Chapter 4 also indicate that comparison is possible without degree. Consider the following example from Old Saxon (Brandner & Bräuning 2013: 138):

(4) **sulike** gesidos   **so** he im selbo gecos
   such   companions so he him self   chose
   'such companions that he chose for himself'
   (*Heliand* 16.1280)

While the matrix clause contains the element *so* and takes a clause introduced by *so*, corresponding to the regular equative pattern in the language (cf. also Jäger 2010 for Old High German), the construction is evidently not a degree equative. However, as pointed out in Chapter 4, its structure bears some similarity to degree equatives as well.

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clause following *than* shows that *than* cannot be a preposition (contrary to the assumption of Hundt 2001: 747–749); the status of *than* as a complementiser will be discussed further in this chapter and in Chapter 6.

[2]This is mentioned by Jäger (2018: 35) as well, yet she does not pursue this distinction further, in line with previous analyses such as Thurmair (2001), Hahnemann (1999), Kennedy (1999), Zeilfelder (2001).

5.3 Polarity

As demonstrated already by Seuren (1973), comparatives are negative polarity environments, as shown by the availability of negative polarity items such as *any* and *ever* (see also Chapter 2). This is demonstrated by (5) below (Seuren 1973: 531, ex. 10):

(5)   He solves problems faster than **any** of my friends **ever** could.

Such elements are licensed in other negative polarity contexts (cf. Klima 1964) including interrogatives, clausal negation and conditionals, but not in affirmative clauses (Seuren 1973: 531, ex. 11):

(6)   a.   * **Any** of my friends could **ever** solve those problems.
       b.   Could **any** of my friends **ever** solve those problems?
       c.   At no time could **any** of my friends **ever** solve those problems.
       d.   If **any** of my friends **ever** solve those problems, I'll buy you a drink.

Note that the same applies in non-degree comparative clauses as well, as shown by the availability of *lift a finger* in (7) below:

(7)   She would rather leave the party than **lift a finger** to help us.

Comparative constructions are thus negative polarity environments. Interestingly, English shows a symmetrical pattern regarding degree equatives and comparatives, as demonstrated in (8):

(8)   a.   Sophia is as nice as **any** other teacher in the school.
       b.   Sophia is nicer than **any** other teacher in the school.
       c.   Museums are as popular as **ever** before.
       d.   Museums are more popular than **ever** before.

German, on the other hand, shows an asymmetry in this respect, as shown in (9) below (see also Hohaus & Zimmermann 2021):[3]

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[3]For the sake of consistency, I gloss *als* as 'as' and *wie* as 'how', reflecting their etymological counterparts in English. As will be shown later in Section 5.4, both of these elements have various functions synchronically and diachronically, so that semantically more accurate translations would not be uniform.

(9)   a.   * Museen   sind so beliebt wie **jemals** zuvor.
             museums are   so popular how ever   before
             'Museums are as popular as ever before.'

      b.   Museen   sind beliebter   als **jemals** zuvor.
             museums are   more.popular as ever   before
             'Museums are more popular than ever before.'

Seuren (1973: 531–532) proposes that comparatives have negative polarity because there is some covert negation in the clause, in the sense that a proposition of the form 'X is taller than Y' has the underlying semantics 'X is tall to an extent to which Y is not'. This is unlikely to be the case (see also the discussion by Jäger 2018); among other reasons, (8a) and (8c) are predicted to be impossible under this analysis, since degree equatives specifically express the equality of the two degrees and should therefore not contain an underlying negation. In other words, while the German pattern in (9) fares well with this analysis, the English pattern in (8) is highly problematic.

I assume that embedded degree clauses have negative polarity because they are downward entailing environments (see Ladusaw 1979, von Stechow 1984 and Heim 1985, 2000 on the connection). Taking the example in (8b), the sentence entails that Sophia is nice to a certain degree, call it d, and for all the other teachers it is true that the degree to which they are nice, call it d', is lower. In other words, d' is always lower on a scale than d is, while the exact value of d is not necessarily known in the context.

The downward entailing environment is due to the maximality operator. As Hohaus & Zimmermann (2021) argue, comparative constructions involve a maximality operator and, in its scope, a comparative operator in the semantics, whereby neither is tied to a particular syntactic projection or to the notion of degree (that is, they are also present in non-degree equatives). Note also that, according to standard (comparative) semantics, degree equatives and comparatives involve the same maximality operator (see, for instance, Beck 2011). This presupposes that both degree equatives and comparatives should be downward entailing environments, which would account for the grammaticality of both sentences in (8), while the asymmetry in (9) does not immediately follow.

In degree equatives, d is the same as or higher than d': in (1a), the degree to which Ralph is tall is the same as or higher than the degree to which Mary is tall. In comparatives, d is higher than d': in (1b), the degree to which Ralph is tall is higher than the degree to which Mary is tall. The degree d associated with the matrix degree element in degree equatives (*so/as* in German/English) is thus the

maximum for the value of d'. Given this relation, the matrix degree element can also lexicalise the maximality operator: alternatively, the maximality operator is lexicalised lower, that is, by the equative complementiser. Naturally, there can be only a single maximality operator in a single construction, and it depends on the specific language how this property is set. The variation regarding which element lexicalises the maximality operator gives us the difference between English and German, as demonstrated by (8c) and (9a). In English, the equative complementiser *as* lexicalises the maximality operator, and it licenses the negative polarity item in the same clause. In German, the matrix element *so* lexicalises the maximality operator and as such it cannot license the negative polarity item across the clausal boundary.

By contrast, the matrix degree element in comparatives (*-er* in German/English) expresses merely a higher degree than d' but does not set the maximal value of d'. This property has to be expressed by a lower syntactic projection, which is the comparative complementiser. Importantly, the maximum value of d' is itself not equal to d, and this property is reflected by the relevant element in the subclause. This suggests that the encoding of inequality is essentially compositional. Note that while the matrix degree determines the choice between equative *as*/*wie* and comparative *than*/*als*, there are no subtypes in comparative complements according to superiority/inferiority.

The German data in (9) indicate that the difference between comparatives and degree equatives has far-reaching syntactic consequences. I suggest that further differences can also be traced to the properties described above. The maximality operator can be expressed by the matrix element in degree equatives but not in comparatives. As a consequence, the CP in the degree equative clause is associated with equality by default, while in comparative clauses it is associated with inequality. The property of equality/inequality is inherited from the matrix degree element. Complementisers differ in terms of their feature specification: some of them are specified either as marking equality, [EQ], or as inequality, [INEQ], while others are unspecified.

This property of inequality is similar to negation and expletive negation in that it has to be lexicalised by a phonologically visible element (see Dryer 2013 on the necessity of lexicalising negation cross-linguistically). As there is no negative operator in the comparative subclause (there being no true negation involved when the inequality of the two degrees is expressed), this is carried out by the comparative complementiser. This kind of inequality marking (referred to as "degree negation" descriptively by Bacskai-Atkari 2016) encoded by the complementiser is reflected by the fact that many languages contain a negative-like element in the complementiser (see Bacskai-Atkari 2016). Complementisers that inherently

contain a negative-like element are specific for comparative clauses. However, it is also possible to have complementisers in the topmost C head that are lexically specified as comparative, [compr], but do not express inequality. These complementisers can be shared between degree equatives and comparatives, as is the case in the history of German *als* and *wie* (see Jäger 2018).

The differences in the properties to be encoded have consequences for the structure of the CP-periphery in the subclause, as already discussed in Chapter 2. In degree equatives, there is no degree inequality to be expressed, and as the matrix equative element can take up the function of lexicalising the maximality operator, it is possible to have a single CP in the subordinate clause. At the same time, a double CP is possible if the maximality operator is lexicalised by a complementiser above the CP containing the comparative operator. In comparatives, degree inequality has to be lexicalised and the matrix degree element cannot take up the function of lexicalising the maximality operator, meaning that a double CP is necessary in the subclause, whereby the higher CP is responsible for encoding inequality and the lower CP hosts the comparative operator (overt or covert). The head of this CP is either a comparative complementiser or a more general relative complementiser (see Bacskai-Atkari 2016). As also shown in Chapter 2, comparative constructions differ from embedded interrogatives and relative clauses regarding the nature of doubling patterns. While doubling in embedded interrogatives and in relative clauses follows a classical Doubly Filled COMP pattern and can be analysed as involving a single CP (see Chapter 3 and Chapter 4), doubling in comparatives always represents CP-doubling. Equatives may also show Doubly Filled COMP patterns but they may also involve doubling. All the differences ultimately follow from the semantic properties of the respective elements.

5.4 Grammaticalisation in German

5.4.1 Dialectal variation

The considerations presented in Section 5.3 can be successfully applied to the diachronic and dialectal variation observed in German (see also Bacskai-Atkari 2021). In the standard variety, degree equatives are introduced by *wie* and comparatives are introduced by *als*. Consider the examples in (10):

(10)   a.   Ralf   ist so groß **wie** Peter.
           Ralph is   so tall   how Peter
           'Ralph is as tall as Peter.'

b. Ralf   ist größer **als** Peter.
Ralph is taller   as Peter
'Ralph is taller than Peter.

By contrast, regional dialects show the availability of *als, wie* and the combination *als wie* in both constructions, as shown by Jäger (2018) in detail (see also Eggs 2006; Lipold 1983; Weise 1918). The examples in (11) show the dialectal options for degree equatives: (11a) is from Low German, and (11b) and (11c) are from Bavarian.

(11)   a. buten   so still   **as** binnen
outside so silent as inside
'outside as silent as inside'
(Jäger 2018: 327, ex. 530a, citing Weise 1918: 170)

b. Dei   Schweinsbraan schmeggd genau a   so fad **ais wia** dei
your roast.pork   tastes   exactly PRT so stale as how your
Schbinad
spinach
'Your roast pork tastes just as stale as your spinach.'
(Jäger 2018: 327, ex. 531a, citing Merkle 1975: 171)

c. A Flugzeig   is genauso deia   **wiar** a Loggomodiv.
an aeroplane is just.as   expensive how a locomotive
'An aeroplane is just as expensive as a locomotive.'
(Jäger 2018: 326, ex. 529a, citing Merkle 1975: 171)

As discussed by Jäger (2018), the pattern in (11a) has largely disappeared across dialects and it is attested only in traditional North German (Low German) dialects. The pattern given in (11b) is attested in dialects to the south of the Berlin–Braunschweig line, including southern dialect areas like Bavarian, Alemannic and Hessian, as well as mid-central varieties like Upper Saxon and Thuringian. The pattern in (11c) is attested in the same areas as (11b), as well as in northern varieties (essentially in all regional dialects), and it corresponds to the standard pattern.

The examples in (12) show the dialectal options for comparatives: (12a) is from Low German, (12b) is from Upper Saxon, and (12c) is from Thuringian.

(12)   a. De Buu   duur länger, **as** de Meister seggt   harr.
the construction lasts longer as the master   said.PTCP has
'The construction lasts longer than the master said.'
(Jäger 2018: 291, ex. 492b, citing Lindow et al. 1998: 300)

b. Ich bin gresser **als wie** du
   I   am taller   as how you
   'I am taller than you.'
   (Jäger 2018: 292, ex. 494b, citing Weise 1918: 174)

c. Da   kommt de Brihe teirer   **wie**'s   Flääsch
   there comes   the broth more.expensive hpw.the meat
   'The broth is more expensive than the meat', fig. 'it is not worth the effort'
   (Jäger 2018: 291, ex. 493; Rudolstadt, ThWB 973)

As discussed by Jäger (2018), the pattern in (12a) is identical to the standard pattern. It is the only pattern attested in the dialect areas north of the Berlin–Braunschweig line, but it also occurs in the rest of the regional dialects. The patterns given in (12b) and (12c) are both attested in dialects to the south of the Berlin–Braunschweig line, including southern dialect areas like Bavarian, Alemannic and Hessian, as well as mid-central varieties like Upper Saxon and Thuringian.

5.4.2 The data

The complementisers *als* and *wie* represent two options that differ diachronically, too: *als* is the older form and *wie* is more innovative (cf. Jäger 2010, 2018). Naturally, there are considerable overlaps (see Jäger 2018: 288–358), yet it seems clear that Southern dialects are more innovative in allowing *wie* in both constructions, while Northern dialects are more conservative and some of them still preserve the older equative pattern with *als*. On the other hand, degree equatives are more innovative than comparatives, given that the newer pattern (with *wie*) is well-established in most dialects and counts as the standard, while *wie* in comparatives is non-standard and does not appear in all dialects. This raises the question why degree equatives are more innovative than comparatives in German and, if applicable, in other languages.

The asymmetry between the two constructions can be detected in earlier periods of German as well. The canonical West Germanic pattern involved *so* in degree equatives and *than*[4] in comparatives. The complementiser *so* was reinforced by *all* into *als(o)* in all the three West Germanic languages discussed here. Consider the Dutch pattern in (13):

---

[4]English *than*/*then*, German *dann*/*denn* and Dutch *dan* are etymologically the same (see Rutten 2012 for West Germanic and Jacob and Wilhelm Grimm's *Deutsches Wörterbuch*).

(13)   a. Sanne is net zo groot **als** ik.
            Sanne is just so tall   as I
            'Sanne is as tall as I am.'

        b. Sanne is groter **dan** ik.
            Sanne is taller   than I
            'Sanne is taller than I am.'

Dutch *als* can be derived from *also* (*al* + *so*). Note that the matrix degree element *zo* in Dutch is not affected (of course, *even* 'just as' may also be used). In comparatives, (Standard) Dutch retains the original West Germanic pattern.

English *as* derives from *eallswa* (*all* + *so*). The forms *swelce* (*swilce*, *such*) and *so* (*swa*) are also possible equivalents historically in *as*-constructions (see Kortmann 1997: 315–317; see also López-Couso & Méndez-Naya 2014: 312–314 and references there). This reinforced element occurs both as the matrix degree element and as the degree equative complementiser:

(14)   a. Ralph is as smart **as** Peter.

        b. Ralph is smarter **than** Peter.

Just like Standard Dutch, English retains *than* in comparatives.

German *als* has an identical etymology. It derives from Old High German *also* (*all* + *so*), whereby various forms of *so* are possible historically in *as*-constructions (see Jäger 2010). Three examples are given from Old High German in (15a),[5] from Old Saxon in (15b),[6] and from Middle High German in (15c):

(15)   a. *et dabit illi //quot habet necessarios*
            inti gibit imo   // só manag **so** her bitharf.
            and give him.DAT   so much   so he needs
            'and give him as much as he needs' (*Tatian* 72, 28–29)

        b. sô hôho afhuoƀi, **so** duot himilrîki
            so high elevate   so does heaven
            'raise as high up as heaven does' (*Heliand* 32.2626)

---

[5]Notice that the Old High German sequence *só manag so* does not mirror the Latin original, which contains only *quot*.

[6]The example in (15a) is taken from Jäger (2018: 64, ex. 65) and the examples in (15c) is taken from Eggs (2006: 22, ex. 12). The Old Saxon data are taken from the *DDD Referenzkorpus Altdeutsch*, available at: https://korpling.german.hu-berlin.de/annis3/ddd/.

c. waer   er sô milt   **als** lanc, er hete   tugende
be.COND.3SG he so generous as tall   he have.COND.3SG virtues
vil   besezzen
many possess.INF
'If he were as generous as he is tall, he would have had many virtues.'
(Walther von der Vogelweide, *Werke* Bd. 1, 118f)

Just as with degree equatives, comparatives show the regular West Germanic configuration in earlier periods of German. The example in (16a) shows the relevant pattern for Old High German (Jäger 2018: 38, ex. 34),[7] and the one in (16b) for Old Saxon:

(16)   a. *Nonne vos magis plures estis illis?*
Eno ni birut ir   furirun **thanne** sie   sín?
well not are.2PL you.PL greater than   they are.3PL
'Are you not much better than they are?' (*Tatian* 70, 17)

   b. that he sî   betara **than** uui
that he is.SBVJ better than we
'that he is better than we are' (*Heliand* 3.212)

As described by Jäger (2010: 471–475), Middle High German was mostly like Old High German, and the changes affecting the complementisers can be observed from Early New High German onwards, especially from the second half of the 16th century. In degree equatives, *wie* came to replace *als*: in this process, the incentive factor is the availability of *wie* as a degree operator in another context (interrogatives) anyway.[8] In comparatives, *als* came to replace *denn*: in this process, analogy plays a crucial role, as *als* was introduced into comparatives by way of analogical extension from degree equatives. This latter process is also attested in Dutch (see Jäger 2018: 377). While Middle Dutch was much like Middle High German in not changing the original West Germanic pattern (cf. Postma 2006), *als* came to replace *dan* from especially the 16th century onwards (van der Horst 2008, Postma 2006). This development was largely reversed from the 18th century onwards, mostly due to prescriptive pressure (van der Horst 2008, Hubers & de Hoop 2013).

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[7]Notice also here that the Old High German comparative construction involving *thanne* (which introduces a finite clause) does not mirror the Latin original, which contains a phrasal comparative involving a DP in the ablative case (*illis*).

[8]Overt comparative operators tend to be surface-identical to their interrogative degree operator counterparts cross-linguistically (see Bacskai-Atkari 2018c: 90–100).

Modern German is innovative in at least two respects: it shows the original equative complementiser in comparatives, and the original operator *wie* in equatives, dialectally also in comparatives. The changes can be schematically represented as follows (see Jäger 2018: 364, ex. 596 for a detailed summary):

(17) a. als(/so) → wie
      b. dann/denn → als → wie

At any rate, the changes that ultimately affected comparatives in an analogical way started in degree equatives. These changes are referred to as the comparative cycle by Jäger (2018), referring to the observation that the particles introducing non-degree equatives can be extended to degree equatives and finally to comparatives, innovative patterns starting in non-degree equatives by default.[9] This pattern can be observed across languages (Jäger 2018: 370–397). According to Jäger (2018), this is related to the markedness hierarchy holding between the constructions in question: non-degree equatives are the least marked, while comparatives (expressing degree and inequality) are the most marked.

As discussed in Chapter 4, the element *so* in German was also extended to ordinary relative clauses, via the intermediate stage of equative relative clauses. The analogical extension of an original non-degree equative complementiser (similative marker) into other clause types can thus proceed in two directions, both exemplified by German *(al)so*:

(18) REL ← EQUAT-REL ← NON-DEG EQUAT → DEG-EQUAT → COMPR

The schema in (18) is in fact exemplified by the elements *wie/wo* as well, as shown by Brandner & Bräuning (2013) in detail (see the discussion in Chapter 4).

It is not difficult to see how both processes can be described along the lines of grammaticalisation, accompanied by the semantic bleaching of the original

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[9]Just as with any other cyclic change, the question arises of what ultimately motivates the observed processes. As pointed out by Jäger (2018: 398–400), there are various approaches in the literature: for instance, it is often assumed that the phonological reduction of one element ultimately fosters the appearance of novel elements that reinforce the same meaning (as is generally assumed for the Jespersen cycle). On the other hand, the semantic bleaching of one element in itself may also foster the introduction of novel markers (see Willis et al. 2013 and Chatzopoulou 2015 for such an analysis of the Jespersen cycle). In the case of comparatives, both are plausible explanations. The matrix equative marker is originally an element that reinforces similarity and is phonologically non-reduced. However, with its phonological reduction and semantic bleaching, it ceases to be a sufficient cue for the language learner to analyse it in its original function. Phonological and semantic reduction are paired with the loss of features, which is thought to be a general motivation behind grammaticalisation processes (see van Gelderen 2004, 2008, 2009, 2011, Jäger 2018: 428–441).

similative marker. In non-degree equatives, the complementiser still expresses similarity in a transparent way. This is illustrated for English and German in (19) below:

(19)   a. Peter is **like** Mary.

     b. Peter ist so **wie** Maria.
        Peter is so how Mary
        'Peter is like Mary.'

English uses *like* in these cases rather than *as*, though *as* can appear especially in cases that are termed as "comparison of factivity" (*Faktizitätsvergleich*) by Jäger (2010); see also Thurmair (2001: 165–182). Consider the examples in (20):

(20)   a. Peter is tall, **as** is Mary.

     b. Peter ist groß, **wie** (auch) Maria.
        Peter is tall   how too   Mary
        'Peter is tall, as is Mary.'

This type is similar to additive coordination in that two facts (i.e. that Peter is tall and that Mary is tall) are compared. The examples in (19) represent canonical similative constructions that express similarity along the lines of a given property, without specifying any degree.

Degree equatives are more grammaticalised in that similarity is reduced to the equality of two degrees on a scale. Finally, the complementiser in comparatives proper does not encode equality: on the contrary, it merely encodes comparison, which in this case is paired up with degree inequality.

In the same vein, the similarity component is partially retained in equative relative clauses but not in ordinary relatives (see Chapter 4). Similative markers may thus grammaticalise in two distinct directions. As discussed in Chapter 2 and in Chapter 4, a single CP can be sufficient in non-degree equatives, while the presence of the maximality operator always results in a double CP in comparatives proper and in most cases also in degree equatives. One piece of evidence was provided by doubling patterns involving the sequence *als wie*, illustrated in (21) below for Upper Saxonian (Jäger 2018: 292, ex. 494b, citing Weise 1918: 174) and Swiss German (Friedli 2012: 659), respectively:

(21)   a. Ich bin gresser **als wie** du.
        I   am taller   as how you.NOM
        'I am taller than you.'

b. S git   ekäi esoo vercheerti Lüüt   **as wi(e)** di   gleerte
it gives none so   crazy   people as how the.PL learned.PL
'There are no people as crazy as the learned.'

The configuration thus involves two functional heads. As discussed in Chapter 2, while it may at first be tempting to assume that *wie* is an operator moving to [Spec,CP], the behaviour of this element with overt adjectives suggests that this cannot be the case.[10] In addition, Jäger (2018: 467–470) shows that *wie* does not pattern with ordinary operator elements with respect to ellipsis and it occurs as a relative complementiser anyway dialectally (as also pointed out by Brandner & Bräuning 2013, see Chapter 4). Third, *wie* may be subject to complementiser inflection in Bavarian, as shown in (22) below for degree equatives (Jäger 2018: 328, ex. 537a, citing Helmut Weiß p.c.):

(22) D'Resl   is genau so groass **ois wiest**   du bisd.
the.Resel is just   so tall   as how.2SG you are.2SG
'Resel is just as tall as you are.'

In Bavarian, the same applies in comparatives, as shown in (23) below (Jäger 2018: 293, ex. 502a, citing Fuß 2014: 60):

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[10]Consider the following data in (i) and (ii):

(i)   ? Maria ist größer als (%   wie) Johann **groß** ist.
Mary is taller as   how John tall   is
'Mary is taller than John.'

(ii)   Der   Tisch ist länger als (%   wie) das   Büro **breit** ist.
the.M table is longer as   how the.N office wide is
'The table is longer than the office is wide.'

The data show that the gradable adjective can be realised overtly in German (the markedness of (i) is due to redundancy), at least as long as the AP remains in its base position. However, fronting the AP is not possible, as shown in (iii) and (iv):

(iii)   * Maria ist größer als   **wie groß** Johann ist.
Mary is taller than how tall   John   is
'Mary is taller than John.'

(iv)   * Der   Tisch ist länger als   **wie breit** das   Büro ist.
the.M table is longer than how wide the.N office is
'The table is longer than the office is wide.'

The data indicate that *wie* is not a comparative operator in German: if it were an operator, it would allow the pied-piping of the AP (just as its main clausal operator counterparts). See Bacskai-Atkari (2018c: 92–100) for more discussion on this cross-linguistic restriction.

(23) D'Resl   is gresser **ois wiest**   du bisd.
　　 the.Resel is taller   as   how.2sg you are.2sg
　　 'Resel is taller than you are.'

Such agreement morphemes are restricted to complementisers (they do not occur with *wh*-phrases in the specifier of the CP) and also to second person forms (Fuß 2004). At any rate, patterns like (22) and (23) clearly indicate that *wie* has head status.

5.4.3 Analysis

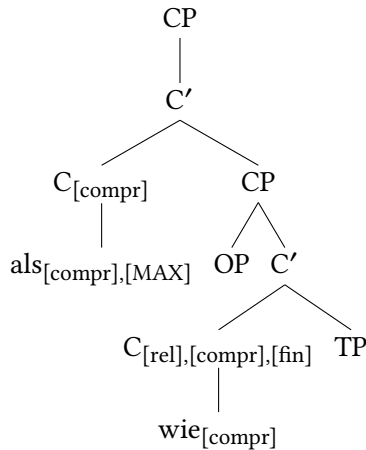In Chapter 2, I proposed the doubling structure shown in Figure 5.1.

Figure 5.1: The structure of *als wie*

In this configuration, the higher C head encodes the maximality operator, which has the comparative operator (indicated as OP, referring to a covert operator) in its scope. As discussed in Chapter 3, semantic operators may or may not show operator properties like phrase movement in terms of their syntax. In the particular case, one might wonder whether the complementiser *wie* would not be an optimal candidate for a semantic operator realised as a head in syntax, just like *als* is a semantic operator and at the same time a complementiser. However, there is ample evidence from the literature on comparatives that the comparative operator actually undergoes movement (as evidenced by island violations; see e.g. Kennedy 2002), and as this element cannot be *wie* (for the reasons mentioned above), assuming a covert operator is necessary. Note that the covert

operator and its (non-)extractability from the degree expression has a bearing on the realisation of other elements in the clause, especially in the phenomenon traditionally referred to as "Comparative Deletion" (see Bacskai-Atkari 2018c: 57–106).

As mentioned before, the maximality operator is always expressed by the (higher) C head in comparatives, necessarily leading to a double CP, while it may in principle be realised by the matrix degree element in equatives. The representation in Figure 5.1 shows a doubling configuration and does not explicitly indicate whether the clause is degree equative or comparative proper. In fact, the idea is that in dialects allowing *als wie* in both configurations (as is the case in Hessian; see Jäger 2018: 288–346 for a detailed discussion of the present-day dialect data), the complementisers are not specified either as [EQ] or as [INEQ], precisely because they can appear in either configuration. In these cases, then, there is nothing in the subclause itself that would determine which subtype of degree comparison is involved: it is only the matrix degree element (which takes the comparative CP as its complement, see Chapter 4) that disambiguates. Note that this is in fact expected in the present framework: not all properties related to clause typing are actually overtly encoded in a clause, as certain matrix elements can disambiguate as well. The same was seen in the case of embedded polar questions, which are formally specified as [Q] and may thus in principle be formally identical to conditional clauses (see Chapter 3).

In the earliest stage involving the complementiser *denn* (in its various forms) in comparatives and the complementiser *(al)so* (again attested in various forms) in equatives, we can assume specification for [EQ] and [INEQ]. The structure for comparatives is given in Figure 5.2.
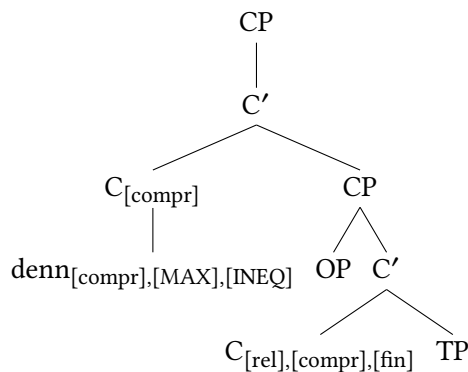

Figure 5.2: Comparatives in the earliest stage

What this says in addition to Figure 5.1 is that the complementiser encodes inequality (or difference) and is thus not compatible with a matrix degree element encoding equality (or similarity). The matrix head (identified as Compr in Chapter 4) imposes selectional restrictions on the head of its complement. Note, however, that the property [INEQ] is more than merely a reflex of the matrix degree element: such subclauses can also occur without a matrix degree element in non-degree comparatives, as demonstrated by the example in (24) below (Jäger 2018: 112, ex. 142):

(24)   ab' nach míner eigennen forme enbín ich níene   **denne** alhie
       but after my   own   form am I   nowhere than here
       'but, according to my form, I am nowhere else but here'
       (Nikolaus von Strassburg, *Predigten* 37vb, 12–14)

This indicates that [INEQ] is truly a lexical property of the complementiser. The structure of degree equatives in the same period is given in Figure 5.3.
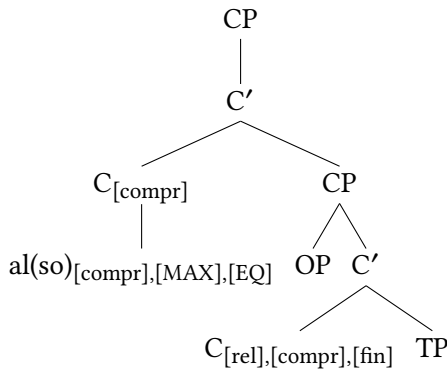
Figure 5.3: Degree equatives in the earliest stage

This construction does not differ significantly from Figure 5.2: the only crucial difference is that the complementiser is specified as [EQ]. The degree equative complementiser was *so* in Old High German and *als* in Middle High German and Early New High German (as shown by Jäger 2018, the element *al* was reanalysed as part of the complementiser from the original matrix degree element, not shown here), and partly also in New High German (17th and 18th centuries). In these periods, there is no doubling of the form *als wie* (see Jäger 2018: 360–361) or an overt comparative operator following *al(so)*: in principle, it is perfectly possible that the maximality operator was encoded by the matrix degree element,

leading to a single CP in the subclause in the way attested in non-degree equatives in Old High German (see Chapter 2). This would give us the structure in Figure 5.4.

Figure 5.4: The single CP in similatives

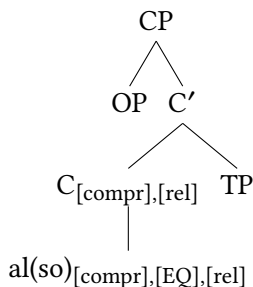While the split between the comparative and the degree equative complementiser held for Old High German and continued to be the case in Middle High German and in Early New High German as well, the main pattern in comparatives came to be *als* in New High German, leading to a unified complementiser *als* in both kinds of degree clauses in the 17th and 18th centuries. The complementiser *als* started to appear in comparatives from the second half of the 16th century onwards and continued to be a slowly increasing minority pattern in Early New High German (Jäger 2018: 153–167). Given that a single CP is not available in comparatives, we can suppose that a construction like Figure 5.3 was valid in equatives by the time it started to be analogically extended to comparatives. In other words, while a construction like Figure 5.4 is not to be excluded for Old High German and Middle High German, the one in Figure 5.3 is exclusively used from Early New High German onwards. This coincides with the proposal of Jäger (2018: 448–467), who argues for *als* occupying a higher position from the second half of the 16th century onwards on independent grounds. Her arguments include the availability of lower elements such as *was* 'what' and *dass* 'that' in the lower position (I will return to this issue later in Section 5.5) as well as its relative position in hypothetical comparatives (as I will show later, this assumption is partly problematic, though).

In the 17th and 18th centuries, then, *als* was used as a unified complementiser for both kinds of degree clauses, without being specified as [EQ] any longer. This gives us the representation in Figure 5.5.

In this case, *als* lexicalises the maximality operator, and the interpretation of the clause as degree equative or comparative is contingent upon the matrix degree element.

CP
|
C′
C[compr]   CP
|
al(so)[compr],[MAX]   OP   C′
C[rel],[compr],[fin]   TP
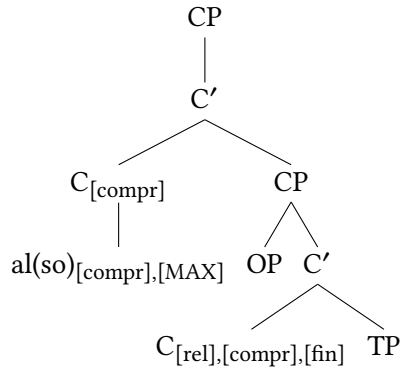
Figure 5.5: The position of *als* as a unified complementiser

As a minority pattern, the use of *wie* in degree equatives is attested already in the 17th and 18th centuries, as extended from non-degree equatives, where it constituted the majority pattern (Jäger 2018: 243–254), and this came to be the predominant pattern in the 19th century. This leads to a split between degree equatives using *wie* and comparatives using *als*, again leading to the specification of these elements as [EQ] and [INEQ], respectively. This is the pattern attested in the standard language, as in (10) above.

Thus, comparatives in Standard German have the representation given in Figure 5.6.

CP
|
C′
C[compr]   CP
|
als[compr],[MAX],[INEQ]   OP   C′
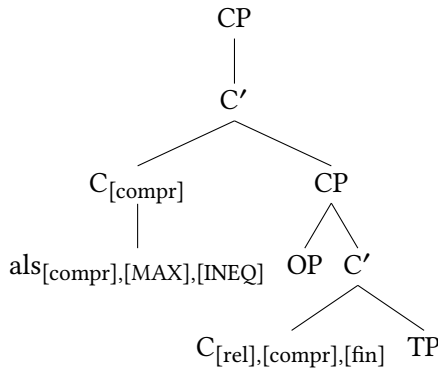C[rel],[compr],[fin]   TP

Figure 5.6: Comparatives in Standard German

The pattern is thus identical to the one reconstructed for earlier stages of German in Figure 5.2 in that there is an [INEQ] specification, unlike in Figure 5.5. The changes in the feature specification of *als* can be conceived of in the following way:

(25)   als$_{[compr],[EQ]}$ → als$_{[compr]}$ → als$_{[compr],[INEQ]}$

As indicated, the analogical extension of the original equative complementiser is subject to the loss of the lexical feature [EQ], which is not compatible with comparatives expressing degree inequality. If a new equative complementiser successfully wins the competition against the uniform complementiser, the uniform complementiser is reinterpreted as specified for [INEQ]. This featural enrichment follows from changes in the paradigm, i.e. it follows from the introduction of a new complementiser into the system and not from any syntactic change internal to degree comparatives.

Let us now turn to degree equatives in Modern Standard German. These involve the complementiser *wie*, for which I assume the structure given in Figure 5.7.
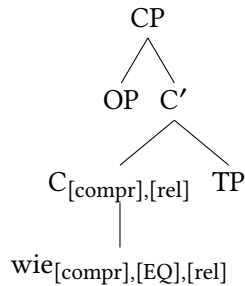
Figure 5.7: Degree equatives in Standard German

As indicated, there is only a single CP headed by *wie*, specified for [EQ]; this projection also hosts the comparative operator. Crucially, the maximality operator is lexicalised by another element (that is, by the matrix degree element). This makes two predictions. On the one hand, *wie* can appear as a second element in doubling patterns if there is an appropriate higher complementiser. This prediction is borne out since, as we have seen, the combination *als wie* is attested in dialects of German, whereby *als* was introduced later in addition to the already established complementiser *wie* (Jäger 2018). On the other hand, since the maximality operator is not present in the subclause itself, the clause is not a downward entailing environment and negative polarity items should not be available. This prediction is again borne out, as was discussed in Section 5.3 above, leading to the asymmetry between degree equatives and comparatives observed in (9).

Table 5.1 summarises the feature specifications of degree equatives and comparatives from Old High German to Modern Standard German. As can be seen, the features of comparatives are less flexible than of equatives, which show more variation over time.

Table 5.1: The feature specification of complementisers

Period	Degree equatives	Degree comparatives
OHG – ENHG	*al(so)*[compr],[MAX],[EQ] + $\emptyset$[rel],[compr],[fin]	*denn*[compr],[MAX],[INEQ] + $\emptyset$[rel],[compr],[fin]
17th and 18th centuries	*al(so)*[compr],[MAX] + $\emptyset$[rel],[compr],[fin]	
Mod. Standard German	*wie*[compr],[EQ],[rel]	*als*[compr],[MAX],[INEQ] + $\emptyset$[rel],[compr],[fin]

5.4.4 Discussion and predictions

In this respect, it is worth pointing out that the proposal differs from that of Jäger (2018) crucially. Jäger (2018: 448–482), just like previously Jäger (2010), assumes a categorial difference between two functional projections: a lower CP and a higher ConjP (Conjunction Phrase). This not only serves to avoid a double CP (which in itself has no theoretical or empirical advantage) but also aims to account for certain properties of the comparative subclause, notably ellipsis patterns, that are similar to coordination (Jäger 2018: 491–517). However, these properties are actually predicted also under an analysis in which the lower CP is missing and hence neither finiteness nor the [rel] feature are present, making comparatives dissimilar to relative clauses (see the discussion below and in Chapter 6). In other words, there is no need to postulate a categorial difference between various kinds of comparative markers: their differences arise from mere featural differences.

A second problem concerns the relative positions of *als* and *wie* in Standard German. Since both can be followed by *wenn* in hypothetical comparatives, and since they never co-occur in this variety anyway, Jäger (2018: 467, ex. 725c and 482, ex. 755d) assumes a uniform representation for both, as shown in Figure 5.8.[11]

The following problem arises. Since *als* in comparative clauses lexicalises the maximality operator (see the discussion in Section 5.3 above), it is evident that the relevant projection, here ConjP, is able to encode this function. It is expected

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[11]As indicated, Jäger (2018) assumes that the complement of C is a VP, not TP, unlike in the representations above. Nothing hinges on this difference, though.

```
                          ConjP
                            |
                          Conj′
                         ╱      ╲
                      Conj       CP
                        |       ╱  ╲
                    als/wie   OP   C′
                                  ╱  ╲
                                 C   VP
```
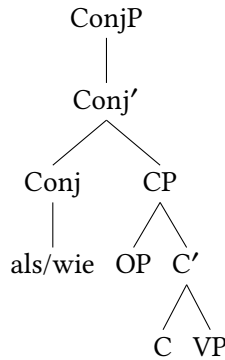
Figure 5.8: The ConjP-analysis

that any other element located in this position, including *wie*, should be able to lexicalise the maximality operator as well. If so, one would expect *als* and *wie* to behave in a uniform fashion regarding the licensing of negative polarity items. This is, however, not the case, as shown in Section 5.3. In other words, the observed asymmetry between *als* and *wie* is not borne out from the representation in Figure 5.8.

As discussed in Section 5.3, it follows from comparative semantics that the matrix degree element cannot lexicalise the maximality operator in comparatives, while it can do so in degree equatives. If *wie* occupies the same position as *als*, one would expect it to be able to function in the same way: that is, to lexicalise the maximality operator. Note that this also follows from the assumption underlying Figure 5.8 that the comparative operator is realised lower by a separate comparative operator. In other words, if one were to assume that the maximality operator is lexicalised by the matrix degree element (in the way proposed above), it would remain mysterious why the *wie*-XP is generated at all, given that it would be associated with neither of the functions present in comparative subclauses otherwise. Marking the type of the clause (as comparative) is not a solid argument in the configuration in Figure 5.8 either: as this projection is factually above the CP, it is not expected to mark clause type proper at all.

The representations in Figures 5.6 and 5.7 predict the asymmetry in question and are therefore preferable as far as Standard German is concerned. This analysis also predicts that combinations like *als wie* can occur, which is what we can observe dialectally. The question is rather how the proposed analysis can account for the way this combination arose and whether it carries over to dialects using *wie* as a uniform comparative complementiser.

Let us start with the combination *als wie*. For this, Jäger (2018: 366) is forced to assume that the two elements in fact form a complex head, but this is not simply assumed to maintain Figure 5.8. The corpus study of Jäger (2018) clearly shows that *als wie* first appeared in the 17th century and spread from non-degree equatives to degree equatives to comparatives, in line with the comparative cycle mentioned above. Further, Jäger (2018: 255–259) argues that the combination is not an intermediate stage between *als*-comparatives and *wie*-comparatives, contrary to widespread assumptions in the previous literature (Jäger 2010, Feldmann 1901, Dückert 1961, also Grimm's *Deutsches Wörterbuch*). The same applies to the assumption that *als wie* would be a mixed dialect form between Northern dialects using *als* and Southern dialects using *wie* (Jäger 2018: 298, contrary to Lipold 1983). Jäger (2018) proposes that *als* was reanalysed from a matrix correlative element as part of the comparative standard marker *wie* at a time when *wie* was already established as the standard marker in the relevant construction (that is, in non-degree equatives). The reanalysis of the matrix correlative element into the comparative subclause is in fact attested throughout the history of German: among other combinations, the combination *also* (leading to present-day *als*) arose this way in Old High German (Jäger 2018: 71–75). Such processes start in non-degree equatives since the two elements (the matrix degree marker and the complementiser) are adjacent to each other, there being no gradable predicate in the matrix clause.

This does not automatically presuppose that the matrix element should always be reanalysed as part of the original complementiser, though. Unlike the combination of *all* and *so*, where *all* was otherwise not attested as a complementiser of its own and could hence only be interpreted as part of another (now complex) complementiser, the combination *als wie* contains two elements that are transparently available as complementisers in their own right in the system otherwise. The difference between the two cases is in fact supported by the overall diachronic data presented by Jäger (2018: 360–361). These data show that the comparative cycle from non-degree equatives to degree equatives to comparatives had clearly distinguishable starting and culmination points across the three constructions in the case of *al(so)*: *al(so)* appeared in non-degree equatives about 300 years earlier than in degree equatives, where in turn it appeared another 300 years earlier than in comparatives, the actual culmination into dominant patterns showing about the same differences in time. This clearly indicates that the complementiser had to undergo the reinterpretation (in features) discussed above. This contrasts with the behaviour of *als wie*, where the data suggest that while the attestations of this combination indeed follow the comparative cycle, the actual spread of the combination occurred almost simultaneously in the three environ-

ments. The combination also occurred in a system (considering the period and the dialects involved) in which *als* was otherwise already predominantly used as an [INEQ] complementiser and *wie* was still predominantly used as an [EQ] complementiser, though the distinction was not as sharp as the present-day standard pattern would suggest. In any case, the appearance of *als* in this configuration also presupposed that this element was underspecified for the [EQ]/[INEQ] distinction, and as such could be extended to other constructions. The same applies to *wie*, which dialectally came to be underspecified for this property anyway.

Following the analysis for comparison constructions discussed in connection with equative relative clauses in Chapter 4, the two relevant structures for non-degree equatives can be schematically represented as follows. The diagram in Figure 5.9 shows the configuration in which *als* is a matrix correlative element.
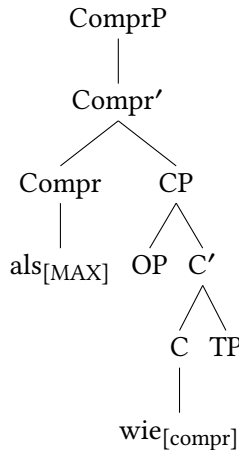
Figure 5.9: Doubling involving ComprP

The diagram in Figure 5.10 shows the configuration in which *als* is a functional head in the subordinate clause.

The representations only include the property [MAX], indicating which element lexicalises the maximality operator, and [compr], indicating an element expressing comparison in the projection hosting the comparative operator. The structure in Figure 5.9 represents a stage in which *wie* is already a complementiser, and *als* is a matrix equative marker; the structure is the same as in Modern Standard German, involving the combination of the matrix equative marker *so* and the complementiser *wie*. The change from Figure 5.9 to Figure 5.10 involves a change in the label but not the reanalysis to a pre-existing lower position, which is not contrary to the grammaticalisation scheme of Roberts & Roussou (2003),

Figure 5.10: Doubling involving two CPs

as it involves relabelling rather than a change from a less functional into a more functional element.

The change is possible also because certain projections are not obligatory in non-degree equatives. The higher CP is generally not obligatory in equatives, as the maximality operator can also be realised by the matrix correlative element. On the other hand, non-degree equatives do not necessarily c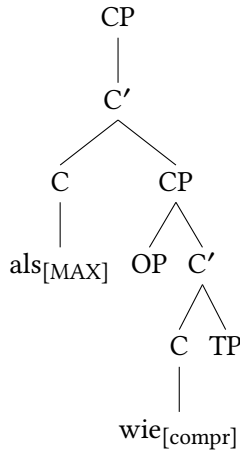ontain a matrix equative element (see also Jäger 2018): the double CP in Figure 5.10 is not embedded under a Compr head but is interpreted as a construction where *als* is part of the subclause. The potential availability of both structures can be captured by the feature-based model proposed here, as the various functions are not tied to designated projections per se.

The structure in Figure 5.10 above was extended both to degree equatives and to comparatives proper. As there is no syntactic difference in terms of which element lexicalises the maximality operator, the expectation is that both configurations should license negative polarity items. To my knowledge, this question has not been consistently investigated in the literature so far; in particular, it was not part of the large-scale dialect studies that otherwise provide reliable data on comparative constructions. Nevertheless, one can find relevant examples from the 19th century.[12] This indicates that the presence of *als* in the subclause can license negative polarity items. The results are thus compatible with the proposed

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[12]Two examples are given in (i) and (ii) below:

    (i)   So völlig nichtig, gar   nicht als wie **jemals** gewesen werden   sie da   sein,
         so fully void,   really not as how ever   been   become.3PL they there be,

structure in Figure 5.10. As discussed by Jäger (2018), the use of the combination *als wie* and of the complementiser *wie* in comparatives proper are attested in 19th-century texts, yet they were subject to prescriptive pressure already. Bearing this in mind, it is not surprising that the available written-language data are scarce.

Let us now turn to the status of *wie* in dialects that use this element as a unified comparative complementiser, that is, both in equatives and in comparatives proper (see the examples in (11c) and (12c) in Section 5.4.2 above). Since this element can occur in comparatives proper, the analysis proposed here predicts that this should be an element located in a higher C position, that is, above the CP hosting the comparative operator. The structure should therefore be identical to the one proposed for 17th- and 18th-century *als* given in Figure 5.5. Consider the representation in Figure 5.11.

In this case, *wie* is not specified for [EQ] or [INEQ], which is what we see in its dialectal distribution, and it lexicalises the maximality operator. The structure in Figure 5.11 is in a way similar to the one proposed by Jäger (2018), inasmuch as *wie* occupies a higher position (setting the difference between CP and ConjP aside now). Note, however, that I assume this to be true only for the dialects that have apparently reanalysed *wie* as a higher complementiser, and not for Standard German, where this assumption does not hold.

---

jene Schaaren, die Furcht vor ihnen eine ebenso effektlose, leere,
those crowds the.F fear before them.DAT a.F likewise inconsequential empty
nichtige, wie das Essen, Trinken im Traume.
void how the.N eating drinking in.the dream

'They, those crowds, will become so fully void, not what they once were, and the fear from them will be likewise inconsequential, empty, void, like eating and drinking in a dream.'
(*Der Prophet Jesaia, übersetzt und erklärt von D. Moritz Drechsler, Zweiter Theil, erste Hälfte*, Stuttgart, Verlag von Samuel Gottlieb Liesching, 1849, p. 50–51)

(ii)   […] und es ergab sich das überraschende Resultat, daß die Wochenmärkte
         and it gave itself the.N surprising result that the.PL weekly.markets
der Städte ungleich besuchter waren, als wie **jemals** zuvor.
the.PL.GEN towns unequal more.frequented were.3PL as how ever before

'and the surprising results emerged that the weekly markets of the towns were remarkably more frequented than ever before.'
(Heinrich Bodemer, *Zehn Artikel zu Gunsten der Gewerbe*, Stuttgart, Beck & Fränke, 1848, p. 16)

The example in (i) illustrates the use of *jemals* in an equative clause (I have not yet found an example for a degree equative but degree does not seem to differentiate with respect to the licensing of negative polarity items in general), while (ii) illustrates the use of *jemals* in (degree) comparatives.
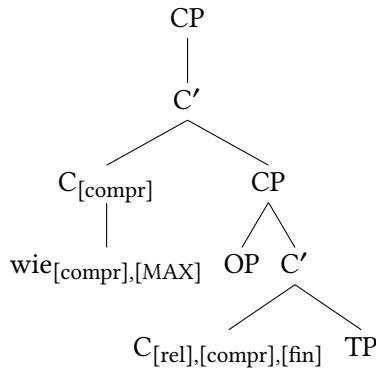
Figure 5.11: The position of *wie* in comparatives proper

The question again arises whether negative polarity items are licensed in these contexts: this is expected to be possible under the present analysis. Again, just as with *als wie*, this question has not been consistently investigated in the literature so far, and no proper dialect atlas data are available at the moment. Still, some examples from the 19th century can be found.[13] Such configurations are excluded from present-day Standard German, but can be found in earlier examples and in non-standard language use. This indicates that *wie* indeed has a different syntactic status in these varieties from the one attested in the standard variety. The proposed analysis can account for these differences.

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[13]Two examples are given in (i) and (ii) below:

   (i)   Oder bin ich noch immer so ungeschickt und unvorbereitet darin, wie **jemals**!
         or   am I   still always so clumsy   and unprepared   in.that how ever

       'Or am I still as clumsy and unprepared in that as ever?'
       (Matthew Henry, *Des Communicanten Gefährte, oder, Anweisungen und Hülfsmittel zum würdigen Genuss des Heiligen Abendmahls*, Schippensburg: James Galbraith, 1847, p. 65)

   (ii) [...] der   Zulauf zum Theater, zu Konzerten, Bällen, Maskeraden war   größer
             the.m throng to.the theatre to concerts   balls   masquerades was.3sg greater
        wie **jemals**
        how ever

       'the popularity of theatres, of concerts, balls, masquerades was greater than ever.'
       (*Zeitung für die elegante Welt. Beilagen: Intelligenzblatt der Zeitung für die elegante Welt, Band 3*, 1803, p. 533)

    The example in (i) shows *jemals* used in a degree equative clause introduced by *wie*, while (ii) shows *jemals* in a degree comparative introduced by the same complementiser.

5.5 Polarity marking cross-linguistically

Having discussed the patterns in German historically and synchronically, let us briefly turn to the asymmetries between (degree) equatives and comparatives cross-linguistically. As discussed above, comparatives are always negative polarity contexts, as the matrix degree element cannot lexicalise the maximality operator. In addition, comparatives proper express inequality: this property is indirectly related to negation, as the non-equality of two degrees is expressed. Recall from Section 5.3 that Seuren (1973: 531–532) assumed some covert negation in the clause, which is, however, unlikely to be the case. Still, the question arises whether and how negation is related to comparatives in the left periphery.

Indeed, a negative head can occur within the comparative clause. The phenomenon can be observed in Italian (see also the discussion in Seuren 1973: 535), as shown by the example in (26) below (Grimaldi 2009: 46, ex. 2–82):

(26) Egli sapeva   molto più   che **non** dicesse.
      he   knew.3sg much more that not said.sbjv.3sg
      'He knew much more than he said.' (Carlo Levi, *Cristo si è fermato a Eboli*)

As can be seen, the negative element *non* 'not' appears with a finite verb in the subjunctive in (26), which is associated with literary and/or formal style (Grimaldi 2009: 46, Seuren 1973: 535).[14]

A similar phenomenon can be detected in French, where *ne* appears with finite verbs (Seuren 1973: 535, ex. 44):

(27) Jean est plus grand que je **ne** pensais.
      John is   more tall.m that I   not thought.1sg
      'John is taller than I thought.'

---

[14]It is worth mentioning that the acceptability of such sentences is subject to much debate in the literature on Italian, though the fact that such examples are actually attested clearly shows that they are not unacceptable across speakers. As shown by Grimaldi (2009: 45–48), this is altogether a restricted option (speakers preferring *di quello che* 'of that.dem that' or *di quanto* 'of how.much' for clausal comparatives), whereby most examples occur with epistemic verbs. Belletti (1991: 848) claims that such sentences are altogether ungrammatical, while Schwarze (1995: 683–689), Donati (2000: 205) and Wandruszka (1991: 459) express more nuanced opinions; Serianni (1988: 519) and Price (1990: 150–159) even treat it as a regular pattern. As pointed out by Grimaldi (2009: 46), *che*-comparatives were regular in Old Italian, suggesting that the occurrence of such examples especially in literary texts may well be due to the more conservative nature of this register. The element *non* thus occurs in a largely fossilised (and for many speakers apparently ungrammatical or at least archaic) construction; this is certainly compatible with the fact that it does not encode clausal negation.

The French example in (27) clearly shows that the overt marking of degree negation is not the same as clausal negation: in French, the polarity marker is *ne*, while negation is carried rather by a negative particle such as *pas* otherwise. Consider the example in (28):

(28) Je **(ne)** sais   ***(pas)**.
      I   not know.1SG   no
      'I don't know.'

As can be seen, the element *pas* must be overt, indicating that *ne* cannot express negation on its own. By contrast, colloquial French allows *ne* to be absent altogether, which shows that *pas* is able to express negation by itself.

While both Italian and French show that the negative head does not express clausal negation, the position of this functional head is relatively low in the clause: as can be seen in (27), the subject precedes the negative element. This kind of negation is essentially an instance of what is traditionally referred to as expletive negation, whereby a negative marker is present in the structure without actually expressing true clausal negation. The phenomenon can be observed in constructions other than comparatives as well; for instance, in French it can occur in complement clauses of the verbs *craindre* 'fear' and *douter* 'doubt', as well as in clauses introduced by *avant que* 'before' and *à moins que* 'unless'. Consider:

(29) Je doute   qu'il **(ne)** vienne   ce   soir.
      I   doubt.1SG that.he   not comes.SBJV this.M evening
      'I doubt that he will come tonight.'

As indicated, the presence of the expletive *ne* is not compulsory (it is more likely to appear in formal register), given that it does not express clausal negation. Similar patterns can be observed across Romance (see, for instance, Espinal 2000 on Spanish). A common property of expletive negation structures is that the negative element is required by an element in the high CP-periphery of the clause. As Abels (2005) argues, there is some sort of negation involved in expletive negation, but it is unusually high in the clause. In our case, the licenser of the negative element is the higher C head lexicalising the maximality operator. There are also languages where the polarity head is high in the clause: Old Hungarian is such an example, where the original comparative C head *hogy* 'that, how' was immediately followed by the polarity marker *nem* 'not' in comparatives expressing inequality (see Bacskai-Atkari 2014a,c, 2016).

In Italian and French, the comparative complementiser is surface-identical to the general subordinator 'that'. This differs from the German case, where we

have seen that the complementisers are more specific (even though they are not necessarily restricted to a specific type). There are quite a few languages where the inequality comparative marker is negative-like also in the sense that it is transparently related to some negative/adversative element (or incorporates such an element). As described by the typological study of Stolz (2013: 47–121), the adversative/contrastive source for comparative particles (complementisers, P heads) is quite common in European languages: it can be observed in Germanic languages, in the case of dialectal English *nor*, Swiss German *weder* 'neither; than', historical (and Swiss) German *wan* (see also Jäger 2018) and in North Germanic (Swedish *än*, Norwegian *enn*, Danish *end*, Icelandic *en*). This pattern is also common in Slavic (e.g. Czech *než*, Polish *niż*, Serbo-Croatian *nego*/*no*). The relatedness of negative/adversative elements and comparative markers was observed already in the 19th century, for instance by Ziemer (1884). An example is given from Swedish in (30) below (based on Bacskai-Atkari & Baudisch 2018: 268):

(30) Astrid är äldre **än** Peter.
Astrid is older than Peter
'Astrid is older than Peter.'

This property is not the least surprising and congruent with the assumption made here that equative and comparative complementisers may contain lexical features such as [EQ] and [INEQ] beyond clause-typing features proper. Degree equatives tend to be reanalysed from similarity markers (see also Jäger 2018), which also predictably leads to the presence of such a lexical feature.

As discussed in the previous section in connection with German, while comparatives always exhibit a double CP structure, equatives may also involve only a single CP. This leads to the prediction that there should be asymmetries in doubling effects, as far as they can be detected. Once doubling effect concerns the co-occurrence of the higher complementiser with an overt comparative operator in the lower CP; this can be detected in non-standard English as well, as shown in (31) below (Bacskai-Atkari 2018c):

(31) a. % Mary is as old **as how old** Susan is.
b. % Mary is older **than how old** Susan is.

In English, the pattern is symmetrical: speakers find the two examples equally good or equally ungrammatical, depending on their dialect. This is, however, not necessarily the case. Bacskai-Atkari & Baudisch (2018: 199, 205–206, 209–210, 216) present data from Norwegian that suggest an asymmetrical pattern. The data are summarised in (32) below:

(32)   a. Maria er så gammel **som** (??/* **hvor gammel**) Peter var i fjor.
            Mary is so old   as   how old   Peter was last.year
            'Mary is as old as Peter was last year.'

        b. Katten er så feit **som** (% **hvor vid**) kattedøra   er.
            the.cat is so fat as   how wide the.cat.flap is
            'The cat is as fat as the cat flap is wide.'

        c. Maria er eldr   **enn** (% **hvor gammel**) Peter var i fjor.
            Mary is older than   how old   Peter was last.year
            'Mary is older than Peter was last year.'

        d. Katten er feitere **enn hvor vid**   kattedøra   er.
            the.cat is fatter than how wide the.cat.flap is
            'The cat is fatter than the cat flap is wide.'

As indicated, speakers have different judgements concerning the data.[15] How-
ever, what matters for us here is not so much the absolute grammaticality of
the sentences but rather their relative differences and the observed asymmetries.
Most importantly, while (32a) is ungrammatical or only marginally acceptable,
(32d) is fully grammatical. There are two differences between these constructions:
first, the adjective taken by the operator *hvor* is non-contrastive in (32a) and con-
trastive in (32d); second, (32a) is a degree equative and (32d) is a comparative.
Both of these factors apparently matter. Regarding the information structural
status of the lexical AP, non-contrastive APs are redundant and speakers tend
to prefer elliptical constructions: this is not specific to Norwegian but it can be
observed cross-linguistically (see Bacskai-Atkari 2018c). The phenomenon can
be observed also by comparing (32a) to (32b) and (32c) to (32d): both kinds of
comparatives are more acceptable if the AP is contrastive.

Regarding the second difference, it should be clear that there is an asymmetry
not attested in English (compare (31) above). The Norwegian data suggest that
the lower CP is preferably not generated in equatives: in cases where the AP
is contrastive and therefore cannot be left out, there may be a double CP struc-
ture, though not for all speakers. In comparatives, however, the lower CP seems
to be generated easily: naturally, in cases where the AP is non-contrastive, the
structure is not fully acceptable for all speakers due to redundancy.

The idea that the difference primarily lies in the availability of a lower CP is
reinforced by the data in (33), which contain a lower complementiser (the data
are written in Nynorsk; based on Bacskai-Atkari & Baudisch 2018: 197–198, 208–
209).

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[15]One informant is from Rogaland and the other is from Vest-Agder. The data are uniformly
given in Bokmål here. The informant from Rogaland accepts the operator in (32b), and the
informant from Vest-Agder accepts the operator in (32c).

(33) a. * Maria er så gammel **som kva** Peter (er).
          Mary is so old   as   what Peter is
          'Mary is as old as Peter.'

      b. Maria er eldr **enn kva** Peter er.
          Mary is older than what Peter is
          'Mary is older than Peter.'

As can be seen, the lower complementiser *kva* 'what' (*hva* in Bokmål) is permitted in comparatives like (33b) but not in degree equatives, as shown in (33a). This contrasts with English, where various dialects allow *what* both in equatives and in comparatives (see Bacskai-Atkari 2018c: 91 for arguments in favour of the complementiser status of *what* in these cases; cf. also the data of Izvorski 1995). The ungrammaticality of (33a) suggests that *som* and *kva* (*hva*) are in complementary distribution. Given that the lower C was identified as associated with the relative property, [rel], this implies that not only *kva* (*hva*) but also *som* (unlike *enn*) should be readily associated with [rel]. This expectation is borne out as the regular relative complementiser in Norwegian is in fact *som*. Consider the following example (based on Bacskai-Atkari & Baudisch 2018: 185):

(34) Dette er studenten   **som** inviterte   Maria.
      this   is the.student that invited.PST Mary
      'This is the student who invited Mary.'

Norwegian *som* is thus reminiscent of German *wie* in many respects. Note that English *what* is also available as a regular relative complementiser in dialects that allow the same element in comparatives, as illustrated in (35) below (Kortmann & Wagner 2007: 291):

(35) % See he was the man **what** brought in decasualization during the war.
      (BNC H5H)

The example in (35) contains a headed relative clause (the head noun is *the man*); unlike in Standard English, *what* is possible in many regional dialects.

In sum, Germanic data show that degree equatives may lack a higher CP (for the maximality operator) and that the lower CP is associated with a [rel] feature. Neither of these properties are restricted to Germanic (see Bacskai-Atkari 2016 for a detailed analysis). The following data in (36) are from Serbo-Croatian:

(36) a. Pavao je visok **kao što**   je visok Petar.
          Paul   is tall as   what is tall   Peter
          'Paul is as tall as Peter is.'

b. Pavao je viši **nego što** je visok Petar.
Paul   is taller than what is tall   Peter
'Paul is taller than Peter is.'

In both cases, the higher complementiser is specified for [EQ]/[INEQ] and the lower complementiser is *što* 'what', similarly to the English cases given in (31) above. Consider the example in (37) below (Gračanin-Yuksek 2013: 27, ex. 2):

(37) čovjek **što** puši
man   that smokes
'a/the man that smokes/is smoking'

Doubling may also involve the combination of a higher complementiser and a lower overt operator. This can be observed in Czech comparative clauses, as shown in (38):

(38) a. ? Ten stůl je delší, **než jak široká** je ta kancelář.
the table is longer than how wide   is the office
'The table is longer than the office is wide.'

b. Ten stůl je delší, **než jak** je ta kancelář **široká**.
the table is longer than how is the office   wide
'The table is longer than the office is wide.'

As can be seen, the contrastive adjective is preferably stranded so that it occupies a position where it can receive main stress, as in (38b); nevertheless, the grammaticality of (38a) indicates that *jak* is a regular comparative operator (unlike German *wie*, see above) that can take a lexical AP (see Bacskai-Atkari 2015, Bacskai-Atkari 2018c: 93–94 for more discussion). These configurations are possible only if the higher complementiser *než* is present. This differs significantly from the pattern attested in equatives, as shown in (39):

(39) a. Ten stůl   je stejně dlouhý, **jak   siroká** je ta kancelář.
the table is same long   how wide   is the office
'The table is as long as the office is wide.'

b. Ten stůl   je stejně dlouhý, **jak** je ta kancelář **siroká**.
the table is same long   how is the office   wide
'The table is as long as the office is wide.'

In this case, there is no higher complementiser present at all: the operator suffices as far as the marking of the clause type is concerned. The maximality operator is lexicalised by the matrix degree element, which thus takes scope over the comparative operator. The asymmetry between degree equatives and comparatives in Czech thus clearly indicates that the two constructions differ in their left peripheries: this difference is predicted under the analysis proposed here.

In principle, one may suppose that the problem in Czech is simply that the higher complementiser is not compatible with degree equatives, which is why the operator is licensed on its own. Interestingly, Hungarian shows a similar case, also indicating that this alternative explanation does not suffice. Consider the examples in (40) for degree equatives:

(40) a. Mari olyan magas, **mint amilyen (magas)** Péter.
          Mary so   tall   as   how.REL tall   Peter
          'Mary is as tall as Peter.'

      b. Mari olyan magas, **mint** Péter.
          Mary so   tall   as   Peter
          'Mary is as tall as Peter.'

      c. Mari olyan magas, **amilyen (magas)** Péter.
          Mary so   tall   how.REL tall   Peter
          'Mary is as tall as Peter.'

As shown by (40a), Hungarian allows the co-presence of the overt complementiser *mint* 'as' and an overt operator such as *amilyen* 'how', whereby the latter may also occur together with a lexical adjective (note that the data were tested on several speakers, and the judgements were uniform and clear). It is also possible that only *mint* is overt but not the operator, as in (40b): in this case, the finite verb is also elided (see Bacskai-Atkari 2018c: 173–196). Finally, it is also possible that *mint* is absent and the [compr] property is marked only by the operator, as in (40c). Hence, [compr] has to be encoded by at least one element, and doubling is also possible.

The picture is slightly different in comparative clauses, where *mint* cannot be absent, as shown by (41):

(41) a. Mari magasabb, **mint amilyen (magas)** Péter.
          Mary taller   as   how.REL tall   Peter
          'Mary is taller than Peter.'

b. Mari magasabb, **mint** Péter.
    Mary taller   as   Peter
    'Mary is taller than Peter.'

c. * Mari magasabb, **amilyen (magas)** Péter.
    Mary taller   how.REL tall   Peter
    'Mary is taller than Peter.'

Just like in degree equative clauses, Hungarian allows the co-presence of the overt complementiser *mint* and an overt operator in comparative clauses, as shown by (41a). Further, it is again possible that only *mint* is present, as in (41b), where the finite verb is again deleted. However, the configuration where only the operator is overt but the complementiser is absent is ungrammatical, as shown by (41c).

Since the complementiser is the same in both kinds of constructions, this element is unspecified for [EQ]/[INEQ] and thus the observed asymmetry cannot be attributed to any difference in these lexical features. The full constructions in (40a) and (41a) also indicate that the complementiser *mint* occupies the same position (relative to the operator) in the CP, and thus no asymmetry like the one in Norwegian is observed. Still, it is clear that the complementiser must at all events be present in comparatives, since this encodes the maximality operator, whereas this function can be carried by the matrix degree element in equatives, allowing a single CP.

In sum, the data from various other languages discussed above indicate that the differences between degree equatives and comparatives observed in German hold cross-linguistically, having very similar effects on the complexity of the clausal left periphery.

5.6 Hypothetical comparatives

5.6.1 The data

Let us now turn to another construction which involves multiple CPs. Hypothetical comparatives (briefly discussed already in Chapter 2) constitute a mixed clause type, as they share properties of ordinary conditional clauses and of comparative (more precisely similative) clauses. An example is given in (42) below:

(42)   She behaves **as if** she were mad.

Here the hypothetical comparative clause is introduced by the combination *as if*. The first complementiser, *as*, is used regularly in degree and non-degree equatives, while the complementiser *if* is used in conditionals, as in (43) below:

(43)   Mary would go mad **if** her daughter joined the army.

Hypothetical comparatives are often referred to as "conditional comparatives" or "unreal comparatives" in the literature. I refer to the constructions as "hypothetical comparatives", for the following reasons. First, as opposed to the notion unreal comparatives, this term suggests that the clause type is a complex one involving a conditional/hypothetical and a comparative specification. Second, while the notion conditional comparative may seem even better in this respect, it has unfortunately been used in the literature for comparative correlatives that have a conditional meaning component, also called comparative conditionals or proportional correlatives (e.g. *the richer you are, the more you can travel*).

Hence, at first sight, it appears that the combination *as if* in (42) is compositional: it involves the mere combination of the regular equative complementiser expressing similarity and the regular conditional complementiser. One might wonder whether this is always the case. Regarding the various types of hypothetical comparatives attested in English and cross-linguistically, there are three major aspects that have to be taken into consideration: first, the transparency of the combination (if there is any combination at all); second, the reconstructability of the comparative clause; third, whether the conditional clause has realis or irrealis mood. English has two more variants regarding clause-typing elements alongside (42) above (see also the data in Pfeffer 1985):

(44)   a.   She behaves **as though** she were mad.
       b.   % She behaves **like** she were mad.
       c.   She behaves **like** she's mad.

As can be seen, the pattern in (44a) also involves a combination (*as though*); the non-standard pattern with *like* in (44b)/(44c) involves only a single element (and it preferably contains a reduced copula, as indicated). A full clause can be reconstructed if there is a combination that is transparent: this is possible in the case of *as if* but not in the case of *as though* (see Chapter 2). Consider the examples in (45):

(45)   a.   She behaves **as** she behaved **if** she were mad.
       b.   * She behaves **as** she behaved **though** she were mad.

As described by Rudolph (1996: 388) and Chen (2000: 104), in line with Quirk (1954) and contrary to König (1985), the element *though* most probably started as a general concessive marker, appearing in both factual and hypothetical concessions: based on data from the OED, Chen (2000: 104) claims that the concessive use is attested in Old English already (around 888), while the conditional use in the combination *as though* 'as if' appears only around 1200. In this way, the combination *as though* was never a transparent combination of a comparative complementiser and a conditional complementiser.

The difference between realis versus irrealis mood is illustrated in (46):

(46)   a. She behaves **as if** she were afraid.
       b. She behaves **as if** she is afraid.

As can be seen, the verb in the subclause has irrealis mood in (46a) and realis mood in (46b); there is no difference in the meaning. English is not exceptional in this respect: there are several languages where both the indicative and the subjunctive are licensed, without there being any difference in the meaning (see Jensen 1990: 393–394 for Old French clauses introduced by the combination *com se* 'as if').

The possible German patterns were discussed in Chapter 2 (cf. Jäger 2010, Eggs 2006). Consider the examples in (47):

(47)   a. Sie schreit (so), **als wäre**   sie beim Zahnarzt.
           she shouts so   as be.SBJV.3SG she at.the dentist
           'She is shouting as if she were at the dentist's.'
       b. Sie schreit (so), **als ob** sie beim Zahnarzt wäre.
           she shouts so   as if she at.the dentist   be.SBJV.3SG
           'She is shouting as if she were at the dentist's.'
       c. Sie schreit (so), **als wenn** sie beim Zahnarzt wäre.
           she shouts so   as if   she at.the dentist   be.SBJV.3SG
           'She is shouting as if she were at the dentist's.'
       d. Sie schreit (so), **wie wenn** sie beim Zahnarzt wäre.
           she shouts so   how if   she at.the dentist   be.SBJV.3SG
           'She is shouting as if she were at the dentist's.'

As indicated, the matrix correlative element *so* is optional in all these cases (cf. the data in Jäger 2018: 17). This contrasts with degree equatives, where matrix *so* is obligatory, appearing together with a gradable argument (see the discussion in Section 5.4.4). In (47), there is no gradable predicate in the matrix clause and

so is optional: this indicates that hypothetical comparatives are closer to non-degree equatives (similative constructions). Further, note also that all of these clauses contain a verb in irrealis mood (subjunctive): realis mood (indicative) is restricted in Standard German and rarely shows up in the written language in hypothetical comparatives.[16]

Importantly, all of the patterns in (47) involve some combination: (47a) is different in that the complementiser *als* is followed by a fronted verb, while (47b–47d) all include the combination of two complementisers.

As discussed in Section 5.4 in detail, the equative complementiser in present-day (Standard) German is *wie*, not *als*: given this, it is obvious that only the combination *wie wenn* in (47d) is transparent in the same was as English *as if*. However, since *als* used to be the equative complementiser, the combination *als wenn* in (47c) is also at least historically compositional. The conditional complementiser is *wenn*; *ob* is not available in this function:

(48) Ich würde   mich   freuen,   **wenn/*ob** du kommen würdest.
      I   would.1SG myself.ACC rejoice.INF if   you come.INF would.2SG
      'I would be glad if you came.'

The complementiser *ob* as a conditional complementiser is attested in Old High German (see the data of Schrodt 2004: 157–158), and it continued to be the dominant pattern until Middle High German, when it started to be replaced by *wenn*, see Rudolph (1996: 388), citing Paul (1920a). As described by Ferrell (1968: 109), citing the data of Behaghel (1928: 347–348), there are instances of *ob* as a conditional complementiser even in Early New High German, but the number of examples diminishes drastically in this period.[17] At any rate, this suggests that the combination *als ob* was historically also compositional.

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[16]This obviously does not apply to so-called complex comparatives (see also Eggs 2006: 167–168), which are surface-similar to proper hypothetical comparatives, yet do not constitute a single clause type. See Bacskai-Atkari (2018b) for further discussion.

[17]Interestingly, as pointed out by Lea Schäfer (p.c.), *ob* as a conditional complementiser seems to have been preserved in Modern Eastern Yiddish to a certain degree, as shown in (i) and (ii) below (Birnbaum 1979: 305):

(i)   ex volt   ys im   gyzugt, **oib** ex volt   ym   gytrofn
      I   would it he.DAT tell.PTCP if   I   would he.ACC meet.PTCP
      'I would tell him if I were to meet him.'

(ii) **Oib** er vet   dir   niśt véln   zugn, darfstjym   niśt fréign kain sax.
      if   he want you.DAT not want.INF say.INF may.2SG.him not ask.INF no thing
      'If he should not want to tell you, you need not ask him many questions.'

As Lea Schäfer (p.c.) mentions, similar examples occur also in the corpus *Language and Culture Archive of Ashkenazic Jewry* (LCAAJ).

Still, synchronically only the combination *wie wenn* allows for the reconstruction of a higher comparative clause, as shown in (49) below (see Chapter 2 for the ungrammatical configurations):

(49) Sie schreit (so), **wie** sie schreien würde,   **wenn** sie beim Zahnarzt
      she shouts so   how she shout.ɪɴꜰ would.3sɢ if   she at.the dentist
      wäre.
      be.sʙᴊᴠ.3sɢ
      'She is shouting as she would be shouting if she were at the dentist's.'

As can be seen, both *wie* and *wenn* take a finite clause of their own. This suggests that there can be two independent subordinate clauses in (47d) as well underlyingly. The reconstruction of the equative clause is not possible for (47a–47c). In these cases, the lack of transparency and the impossibility of reconstruction suggest that the hypothetical comparatives in these cases represent a complex clause type involving multiple CPs in the same clausal periphery, just like the case of English *as though*.

5.6.2 The analysis

In Chapter 2, I proposed the representation in Figure 5.12 for combinations like *als ob* and *als wenn*.

```
              CP
              |
              C′
             /\
            C  CP
            |   |
           als  C′
               /\
              C  TP
              |
              ob
             wenn
```
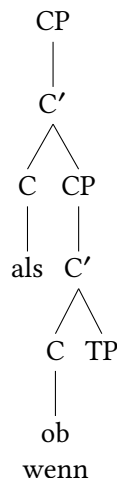
Figure 5.12: Hypothetical comparatives

This arrangement clearly does not hold for (49), though, since there is no way to locate a full finite clause in the left periphery. The biclausal configuration for

wie wenn can be represented as given in Figure 5.13.[18] The same configuration applies to English *as if*, as demonstrated for (45a) in Figure 5.14.
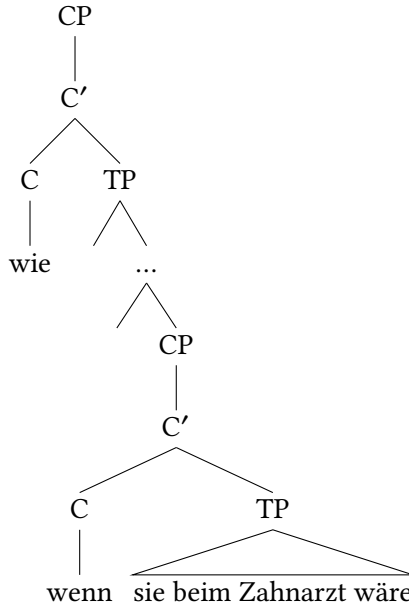

Figure 5.13: The biclausal structure

It is evident that combinations in hypothetical comparatives may either involve two clauses (biclausal structure), as in Figure 5.13, or a single clause with a double CP (monoclausal structure), as in Figure 5.12. Importantly, while there are two CPs in both Figure 5.13 and Figure 5.12, they are located in two different clauses in Figure 5.13 but not in Figure 5.12, where they constitute a complex left periphery of a single clause. Note that the higher clause indicated in Figure 5.13 is typically elliptical (as it is redundant) and hence the element corresponding to *as* is immediately followed by the element corresponding to *if* in the linear string, as in (47d). Nevertheless, in underlyingly biclausal structures a full first clause is always an option.

Conditional clauses are known to be negative polarity environments, as pointed out already in Section 5.3. Consider the example in (50):

(50) If you **ever** dreamed of travelling in space then this film is something for you.

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[18]If the higher TP is elliptical, the result is the string in (47d); the overt realisation of the underlying TP results in the configuration in (49).
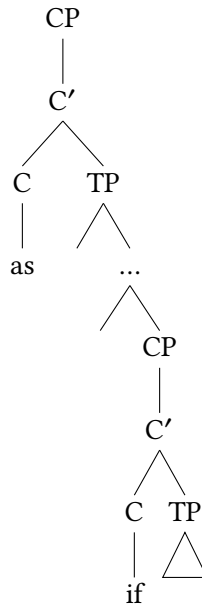
```
                        CP
                        |
                        C′
                       /  \
                      C    TP
                      |    /\
                      as  /  \
                         /  ...
                        /    /\
                       /    /  \
                      /    /   CP
                           |    |
                           |    C′
                                /\
                               /  \
                              C    TP
                              |    /\
                              if  /__\
```

Figure 5.14: The monoclausal structure

As can be seen, the negative polarity item *ever* is licensed in the conditional clause. The same applies to German:

(51) Wenn du **jemals** ganz alleine bist, denke   an mich.
      if   you ever   total alone   are.2SG think.IMP.2SG at me.ACC
      'If you are ever completely alone, think of me.'

Conditional clauses are also downward entailing environments, as demonstrated by the following examples (Panizza et al. 2009: 504, ex. 6):

(52)   a. If I eat pizza, I'll get sick.
       b. If I eat pizza with anchovies, I'll get sick.

In this case, (52a) entails (52b): whenever it is true that eating pizza makes me sick, eating pizza with anchovies will also make me sick. As *pizza* is the superset of *pizza with anchovies*, the superset entails the subset in this case. The entailment does not work the other way round.

Note that exactly the reverse holds in upward entailing environments, such as the consequence of a conditional, that is, the main clause (Panizza et al. 2009: 504, ex. 4).

(53)   a. If I go home, I'll eat pizza with anchovies.
       b. If I go home, I'll eat pizza.

In this case, the subset entails the superset: whenever it is true that I eat pizza with anchovies, it is also true that I eat pizza. The entailment does not hold the other way round: eating pizza does not entail eating pizza with anchovies.

Conditional clauses are embedded clauses that need to be licensed by a matrix clause, to which they are adjoined. Depending on the relative position of the conditional clause with respect to the matrix clause, the matrix clause may contain an anaphor such as German *dann* 'then', as shown in (54) below (see Bacskai-Atkari 2018a for a detailed analysis):

(54)   a. Ich rufe   dich   an, wenn ich die   Lösung finde.
          I   call.1SG you.ACC to if   I   the.F solution find.1SG
          'I will call you if I find the solution.'
       b. Wenn ich die   Lösung finde, (dann) rufe   ich dich   an.
          if   I   the.F solution find.1SG then   call.1SG I   you.ACC to
          'If I find the solution, I will call you.'

In hypothetical comparatives with the structure given in Figure 5.13, the matrix clause of the conditional clause is the comparative subclause, which is mostly elliptical. Still, it can license the conditional clause in either case. The conditional clause is in many respects similar to the embedded polar interrogatives discussed in Chapter 3: most importantly, they are disjunctive and as such contain a disjunctive operator specified as [Q].

More problematic are the cases that have the structure in Figure 5.12, since there is factually no comparative subclause. The matrix clause (*sie schreit so* in all the examples in (47) above) clearly cannot license the conditional clause in itself. Observe the example in (55):

(55)   * Sie schreit (so), **ob** sie beim Zahnarzt wäre.
         she shouts   so   if she at.the dentist   be.SBJV.3SG
         'She is shouting as if she were at the dentist's.'

The construction is ungrammatical and it does not improve by using the subjunctive mood in the matrix clause either:

(56)   * Sie würde   (so) schreien, **ob** sie beim Zahnarzt wäre.
         she would.3SG so   shout.INF if she at.the dentist   be.SBJV.3SG
         'She would be shouting if she were at the dentist's.'

Note that the two readings given for (55) and (56) differ, but this has no significance, as both constructions are unacceptable with either reading. Indeed, it is difficult to assign any meaning to (55) and (56) at all as they are ill-formed. The same considerations apply to the cases where a verb is fronted. In the case of *wenn*, the construction in (55) is likewise unavailable; the configuration in (56) renders a regular conditional clause as *wenn* is the regular conditional complementiser. This is expected as *wenn* can appear in a biclausal structure anyway.

It follows that in monoclausal hypothetical comparatives, the highest clause cannot license the conditional clause and the presence of the equative complementiser is necessary: this indicates that the element actually licensing the conditional clause is the equative complementiser itself. It is precisely this element that licenses the disjunctive C head specified as [Q]. The [Q] element is lexicalised either by a complementiser (*ob* or *wenn*) or by a covert operator that is merged to a projection containing the verb, in exactly the same way as was established for polar questions in Chapter 3. Hypothetical comparatives differ from ordinary conditional clauses regarding the element licensing [Q].

On the other hand, there is a difference between hypothetical comparatives and ordinary comparison clauses. As discussed above, ordinary comparatives involve two important components: an element lexicalising the maximality operator, and a comparative operator. Naturally, the comparative operator is present in fully-fledged comparative clauses as in biclausal hypothetical comparatives, but it is expected to be absent from monoclausal structures (see Bacskai-Atkari 2018b). Given that there is no gradable predicate in the matrix clause, there is no semantic necessity of there being a comparative operator specifying degree either. In other words, monoclausal hypothetical comparatives do not require a doubling configuration in the way it is attested in ordinary comparison constructions.

As discussed above, the comparative complementiser in comparatives expressing inequality is essentially responsible for licensing a negative polarity context, since matrix comparative degree heads (e.g. *-er*) cannot take over this function. Degree (and non-degree) equatives differ inasmuch as the matrix correlative element can lexicalise the maximality operator; otherwise it is perfectly possible that the equative complementiser takes over this function, which results in the equative clause being a negative polarity environment. We have also seen that in English, both *as* and *than* license negative polarity, whereas Standard German shows an asymmetry between *als* and *wie*.

Let us start with English *as*. This element can introduce a negative polarity clause in comparatives in general and as such it is not surprising that it can do the same in hypothetical comparatives. The combination *as though*, demonstrated in

(44a), requires exactly this configuration as no full clause between *as* and *though* can be reconstructed, as shown in (45b): the licensing of the conditional clause cannot be done by an intermediate clause.

In Standard German, the complementiser *als* in hypothetical comparatives is essentially a fossil from a previous stage of the language, when *als* regularly introduced equative subclauses (see also Jäger 2010, 2018). As discussed in Section 5.4 above, *als* takes a position above the projection hosting the comparative operator, as evidenced by the fact that it is available as a complementiser in comparatives expressing inequality and in doubling constructions of the form *als wie*. Negative polarity elements are also attested in the scope of this element. It is therefore expected, just like in the case of English *as*, that this element should be available in monoclausal hypothetical comparatives. This prediction is borne out as *als* occurs in configurations that cannot be assigned a biclausal structure and thus no intermediate clause could license the conditional clause (see the discussion above concerning the combinations *als ob*, *als wenn* and *als* + fronted verb).

The question arises why reanalysis from a biclausal to a monoclausal structure takes place. On the one hand, as discussed by Bacskai-Atkari (2018b), this has to do with structural economy: the comparative clause is generally elliptical in hypothetical comparatives (since, as mentioned above, it expresses redundant information that can be recovered from the conditional clause, too), hence the only remnant is the comparative C head itself, which cliticises onto the embedded (conditional) C head. The structure is more transparent if the higher C takes the lower CP as a complement and no ellipsis is needed, and it also involves generation of less structure.

On the other hand, transparency affects recoverability. With complementisers that are no longer available as equative complementisers in the language (as is the case with German *als* but not with English *as*), the configuration involving two phonologically adjacent complementisers can only be interpreted as a configuration involving a single left periphery, as there is no well-formed non-elliptical equivalent.[19] In this way, the comparative C head in hypothetical comparatives may fossilise a complementiser that is no longer used in equatives.

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[19]Transparency plays a role in reanalysis in that this principle is relevant for the language learner (cf. the Transparency Principle of Lightfoot 1979). For the biclausal configuration, while non-elliptical hypothetical comparatives are expected to be rare in the input (if present at all), there is substantial evidence from other constructions (e.g. ordinary equative clauses) that serves as a cue for the learner to assume a biclausal configuration. However, once this independent evidence is no longer present in the input, there are no relevant cues for the learner to assume a biclausal construction. The monoclausal configuration is more economical and closer to the surface input, and in this sense more transparent.

In this respect, the case of *as if* in English is particularly interesting. Based on the observation that *as* can license negative polarity environments and it can occur in an unambiguously monoclausal construction involving *as though*, we can suppose that a monoclausal structure for *as if* should be possible. At the same time, along with the fact that with the combination *as if*, an intermediate clause can be reconstructed, we can suppose that in elliptical cases a biclausal structure is likewise possible. In other words, the sequence *as if* is ambiguous between a monoclausal and a biclausal structure. This kind of structural ambiguity is in fact expected in a reanalysis scenario, since the syntactic reanalysis of an unchanged phonological sequence naturally arises from there being two possible underlying structures. Given that language change is gradual (see Traugott & Trousdale 2010), the co-existence of two possibilities in one grammar is also expected.

This leads us to the last configuration involving *wie*, with which only the conditional complementiser *wenn* is licensed in the standard language: neither *ob* nor verb movement constitutes an option. The former can be explained away easily as *ob* was no longer available as a conditional complementiser when *wie* started to appear in equatives and in hypothetical comparatives (see Jäger 2018). Regarding verb movement, Jäger (2010: 487) shows that a fronted verb in the subjunctive (but not in the indicative) is possible only if the comparative clause is not elliptical: the ban on indicative forms is possibly due to a surface condition ruling out the configuration that has the same linear form as interrogatives. The same argumentation can be carried over to the sequence *wie* + fronted verb as well, since that would likewise be surface-identical to an interrogative clause.

However, other factors may also play a role. Namely, *wie* + fronted verb is possible dialectally, as shown in (57) for Rhine Franconian (Jäger 2018: 348, ex. 576, citing Steitz 1981: 331):

(57) De Vader dirmeld (so) **wie häd**   er gesuf
      the father tumbles so   how have.COND he drunk
      'The father is tumbling as if he had drunk.' (Saarbrücken)

The dialect in question belongs to the High German dialects, which, as we saw above, use *wie* as a regular comparative complementiser. There is no principled reason why the possible interference with interrogative clauses mentioned above would not hold here while it does in Standard German. I therefore suggest that such a condition may indeed hold for elliptical cases, since ellipsis, being a PF mechanism, can be curbed by surface constraints. The construction in (57) is, however, not an elliptical version of a biclausal structure but a monoclausal one, where the higher complementiser licenses a fronted finite verb as the head of its complement, just like *als* does in Standard German.

The difference between the two varieties goes back to a more general difference concerning the status of *wie*, as discussed in Section 5.4 above: *wie* is located in the same CP projection as the comparative operator in Standard German and it cannot lexicalise the maximality operator, resulting in the lack of negative polarity in *wie*-clauses (equative clauses). By contrast, Southern dialects regularly use *wie* as a comparative complementiser as well, allowing also for negative polarity. In other words, in dialects that allow constructions like (57), *wie* is predictably able to license a complement with negative polarity, making it available for monoclausal hypothetical comparatives. Jäger (2018: 473–482) uses (57) as an argument for treating *wie* as a Conj head above the CP, just like *als*, more generally: according to her, the reanalysis of *wie* from C to Conj made the lower position available for verb movement. I have discussed the potential problems with ConjP in Section 5.4 already; another problematic point that can be identified here is that this does not carry over to ordinary comparatives at all, which never show the fronting of the verb. In other words, while the status of the higher complementiser matters for both kinds of constructions, the properties of the lower projection differ: in ordinary comparatives, the lower projection hosts the comparative operator and possibly comparative (or relative) heads, while in hypothetical comparatives, the lower CP projection is conditional and hosts the appropriate operator and/or complementiser.

In dialects that allow (57), it is also plausible that in hypothetical comparatives introduced by the sequence *wie wenn*, the two complementisers are located in the same left periphery, that is, such constructions are monoclausal. This naturally does not exclude the possibility of the co-existence of non-elliptical biclausal structures, which may undergo ellipsis as well. In this way, hypothetical comparatives involving *wie wenn* in the relevant dialects are ambiguous between a monoclausal and a biclausal structure, as originally proposed by Bacskai-Atkari (2018b) for Standard German. Contrary to that analysis, however, I assume that comparatives formed with *wie wenn* in Standard German are actually biclausal and undergo ellipsis. This follows from the general properties of *wie* in related constructions. These properties predict that *wie* cannot license a complement with negative polarity, as it cannot do so in unambiguously monoclausal constructions (equative clauses) either. It follows that the combination *wie wenn* should be assigned the structure given in Figure 5.13, where the elided comparative subclause can function as a matrix clause for the conditional clause.

In sum, hypothetical comparatives provide an interesting testing ground for the relationship between clause typing and polarity. In many cases, a complex CP-periphery arises, encoding a mixed clause type: this is one of the configurations where a double CP is fully justified. In other cases, however, the properties of the

individual elements prohibit such an analysis and suggest a biclausal structure that involves ellipsis as well. The differences between the given combinations, also within the same language, are in line with the polarity-marking properties of the individual elements observed in other clauses as well, and with the feature-based analysis proposed here in general.

5.7 Summary

Building on the theory put forward in the previous chapters, this chapter examined comparison constructions, including non-degree equatives (similatives), degree equatives, and comparatives expressing inequality. It was shown that while comparative semantics requires at least two projections, this does not necessarily result in a complex left periphery: specifically, equatives may also rely on lexicalising the maximality operator in the matrix clause, while it was shown to be impossible in comparatives proper, due to constraints related to polarity. These constructions thus provide evidence for complex left peripheries; at the same time, no cartographic template is required – in fact, such a template would be also problematic in accounting for the observed flexibility in grammaticalisation processes. The differences between equatives and comparative proper were also shown to exist cross-linguistically, providing further evidence for the differences being grounded in semantics. The presence of multiple projections in the left periphery also has a bearing on ellipsis phenomena and related information structural properties, as will be discussed in Chapter 6.

6 Ellipsis and the role of information structure in left peripheries

6.1 Introduction

So far I have mostly examined finite, non-elliptical clauses in this book, concentrating on clause-typing elements in the CP-periphery. As was discussed in Chapter 2, functional left peripheries may host elements associated with special information-structural roles (topics, foci), and functional left peripheries are not restricted to the high CP-periphery but may appear clause-internally as well. In addition, certain ellipsis processes, such as sluicing, are known to be associated with functional projections located at the left periphery. Naturally, the discussion of either issue (information structure and clausal ellipsis) would require more investigation than can possible be carried out within a single chapter, and therefore I will restrict myself to the discussion of some selected issues that bear immediate relevance to the general theory put forward in this book. I will chiefly consider reduced comparative constructions but elliptical interrogatives will also be discussed. The ultimate aim is to show that the proposed model can cast light upon interesting phenomena involving focalisation and clausal ellipsis.

This chapter is structured as follows. Starting with the theoretical foundations, Section 6.2 examines the interaction between information structure and leftward movement, while Section 6.3 examines the relationship between leftward movement and ellipsis. Section 6.4 discusses both of these issues in the context of lower peripheries. Section 6.5 extends the insights from lower peripheries to sluicing patterns and argues that the presence or absence of tense has a crucial effect on the reconstructed clause. This line of thinking is applied to a study on ellipsis in comparatives, presented in Section 6.6.

6.2 Information structure and leftward movement

As was discussed in Chapter 2 in detail in connection with the account of Rizzi (1997), certain constituents may undergo topicalisation or focalisation involving

movement to the left periphery of the clause. Recall the following examples taken from Rizzi (1997: 285, ex. 1 and 2):

(1)   a.   [Your book]$_i$, you should give t_i to Paul (not to Bill).
      b.   [YOUR BOOK]$_i$ you should give t_i to Paul (not mine).

The construction in (1a) illustrates topicalisation, and the one in (1b) focalisation. Apart from interpretive differences, they crucially differ in their intonation patterns: a topic is separated by a so-called "comma intonation" from the remaining part of the clause (the comment), while a focus bears focal stress and is thus prominent with respect to presupposed information (see Rizzi 1997: 258).

The cartographic model proposed by Rizzi (1997), adopted by others such as Poletto (2006), proposes that leftward movement in these cases targets designated left-peripheral positions: TopP and FocP. Movement is driven by specific features making reference to information-structural properties: this operator-like feature agrees with the functional head (Top or Foc). In essence, this kind of movement is supposed to be similar to ordinary operator movement involving *wh*-operators or relative operators. As pointed out already in Chapter 2, such an assumption is problematic because while [wh] and [rel] features are lexically determined, [topic] and [focus] features obviously are not. Taking the examples in (1) above, in both cases the entire phrase *your book* is topicalised or focussed, and the phrase as such, being compositional, is not part of the lexicon. This indicates that features like [topic] and [focus] would have to be added during the derivation (cf. Selkirk 1984 in focus features); this is certainly possible in principle, yet the addition of discourse-relevant features (relevant primarily for the interfaces) in the core syntactic component requires additional assumptions.[1] On the other hand, if one were to assume that a lexical element like *Mary* can be equipped with information-structural features in the lexicon (contrary to generally accepted views about the lexicon and lexical features, cf. Neeleman & Szendrői 2004 and den Dikken 2006), this would leave us with various lexical entries for *Mary*: a neutral entry (not specified for any information-structural category), a focussed

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[1]To avoid this problem, one could locate such features in the postsyntactic component (notice that the addition of such features has no bearing on truth conditions, though they certainly affect interpretation, as, for instance, in terms of exhaustivity). Yet by doing so, the motivation for designated syntactic projections (in narrow syntax) disappears. Regarding postsyntactic operations related to information structure, future research will have to clarify to what extent the syntactic structure generated by core syntax is relevant and to what extent purely prosodic features matter. In the present investigation, I will restrict myself to issues immediately relevant to the model proposed here on clause typing.

one, a topicalised one, not to mention possible fine-grained categories such as contrastive topic or aboutness topic.

As pointed out by Fanselow & Lenertová (2011), the cartographic approach is problematic from a theoretical perspective as well. In merge-based minimalist approaches, as spelt out by Chomsky (2008), syntax should not make direct reference to information-structural notions;[2] including [topic] and [focus] features in the derivation violates the inclusiveness condition (Chomsky 1995). According to Fanselow & Lenertová (2011), movement to the left periphery is generally triggered by an unspecified [edge] feature (in the sense of Chomsky 2008); whether an element receives some accent depends on other factors, including linearisation, but syntax does not include accentuation features directly. The proposed model can account for the movement of pragmatically unmarked constituents to the left periphery, essentially in the way the "formal fronting" of Frey (2004) works.[3] In this way, the following two structures are similar in their syntax in that the left periphery involves a simple CP rather than specific projections:

(2)   a. **Wen   hat** deine Mutter eingeladen?
          who.ACC has your.F mother invited.PTCP
          'Who has your mother invited?'

      b. **Den   Schuldirektor** hat meine Mutter eingeladen.
          the.M.ACC schoolmaster   has your.F mother invited.PTCP
          'My mother has invited the schoolmaster.'

The example in (2a) shows canonical *wh*-movement, involving a [wh] feature in syntax: *wh*-movement is linked to the [wh] criterion (Fanselow & Lenertová 2011: 172, citing Rizzi 1991). By contrast, (2b) involves no specific feature to trigger the movement of the fronted DP, especially as constituents appearing in

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[2]The problem is obvious in the case of cartographic approaches, where such features are assumed to project a matching phrase on the left periphery. Somewhat less problematic are approaches such as that of Miyagawa (2017: 163–176), in which a [focus] feature is assumed to be available on C, without resorting to an additional projection. Another interesting alternative is employed by Biberauer & van Kemenade (2011: 40–45), who posit an extra [Person] feature for discourse-old subjects in Old English: this effectively evades the problem of introducing additional features, but it raises the question whether such features are independently motivated.

[3]Note that in the system of Frey (2004, 2005, 2010), formal movement has no semantic or pragmatic effect, while other leftward movement operations targeting designated topic (TopP) and contrast (ContrP/KontrP) projections do. In this respect, this system takes over some properties of the cartographic model, leading to the problems mentioned in connection with the cartographic approach in general. A detailed discussion of these issues would fall outside the scope of the present investigation; see e.g. Wierzba (2017) for discussion.

the first position cannot be associated with a uniform information-structural notion and there is no agreement between the specifier and the head in terms of some information-structural feature (Fanselow & Lenertová 2011: 172, contrary to Grewendorf 1980 and Rizzi 1997). In (2a), the *wh*-element moves to the specifier of the CP, while C is filled by the verb (see also the discussion in Chapter 3); verb movement takes place in (2b) as well, whereby the fronted XP is located in the specifier (an assumption going back to Thiersch 1978). German is not unique in this respect: Fanselow & Lenertová (2011) argue that Czech has the same structure in these cases (following the observations made by Toman 1999, Lenertová 2004, and Meyer 2004). Fronted elements like *den Schuldirektor* in (2b) can be associated with various information-structural notions such as topic and focus; in turn, topics and foci can occur in non-fronted positions. This is illustrated by the following examples taken from Fanselow & Lenertová (2011: 172, ex. 6c and 6d), both answering the question *What happened?*:

(3)   a.   **Eine**   **LAWINE** haben   wir gesehen!
           a.F.ACC avalanche have.1PL we   seen
           'We saw an AVALANCHE!'

       b.   Wir haben   **eine**   **LAWINE** gesehen!
           we   have.1PL a.F.ACC avalanche seen
           'We saw an AVALANCHE!'

This kind of optionality obviously contrasts with the behaviour of ordinary *wh*-movement (and relative operator movement) in German, which always targets the CP-domain. Note also that this is true the other way round as well: a *wh*-element moving to [Spec,CP] is interpreted as interrogative. Consider the following examples from German:

(4)   a.   **Was** hast   du gefunden?
           what have.2SG you found.PTCP
           'What have you found?'

       b.   Schau,   ich habe   **was** gefunden.
           look.IMP.2SG I   have.1SG what found.PTCP
           'Look, I have found something.'

Certain *wh*-words like *was* in German can be interpreted as indefinite pronouns if they feature in their base positions, as in (4b), where *was* has the interpretation 'something'. This interpretation is not available if the *wh*-element is fronted, as in (4a).

Finally, as pointed out by Fanselow & Lenertová (2011: 173), there are certain fronted elements in the German CP (occupying the "first position") that clearly do not correspond to information-structural categories such as topic and focus. Consider (Fanselow & Lenertová 2011: 173, ex. 7a):

(5) **Wahrscheinlich** hat ein Kind einen Hasen gefangen.
probably has a.N.NOM child a.M.ACC rabbit caught.PTCP
'A child has probably caught a rabbit.'

In this case, the adverb *wahrscheinlich* 'probably' is a sentential adverb that evidently lacks a discourse function such as topic or focus.

Partial fronting, discussed extensively by Wierzba (2017), constitutes another problem. The phenomenon is illustrated by the following examples, both answering a question like *What did Maria do in the afternoon?* (Wierzba 2017: 1, ex. 1):

(6) a. **Ein** **Buch** hat sie [~~ein~~ ~~Buch~~ gelesen].
a.N.ACC book has she aN.ACC book read.PTCP
'She read a book.'

b. **Ein** **Buch** hat sie jedenfalls nicht [~~ein~~ ~~Buch~~ gelesen].
a.N.ACC book has she anyway not aN.ACC book read.PTCP
'As for reading a book, that's not what she did.'

In both cases, only a direct object is fronted to the left periphery. Nevertheless, as pointed out by Wierzba (2017: 1), the whole VP is interpreted as the focus in (6a) above (also observed already by e.g. Höhle 1982 and Krifka 1998, tested empirically by e.g. Féry & Drenhaus 2008) and as a contrastive topic in (6b) above (also observed already by Büring 1997 and Jacobs 1997, tested empirically by Wierzba 2011). This indicates that the landing site of the constituent as such does not define its information-structural status. Rather, the particular elements have specific prosodic properties.

In this vein, I follow Fanselow & Lenertová (2011) in assuming that information-structural properties are primarily related to prosody and that the syntax–prosody mapping does not need to make reference to syntactic features present in designated left-peripheral projections.[4] This is also in line with the general approach put forward in the present thesis, namely that left-peripheral projections

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[4]In languages like English or German, the prosodic properties of contrastive topics and foci are evidently marked by the specific stress and intonation patterns associated with these elements. In other languages, such properties are associated more clearly with specific syntactic positions (e.g. relative to the verb) and/or to the presence of specific morphemes (as the "focus markers" in Chadic, Kwa and Gur languages, see Féry 2013: 687). Regarding focus in particular,

do not conform to a cartographic template – which does not in any way mean that there would be no ordering restrictions, as semantic and prosodic constraints still apply. Regarding information-structure related left-peripheral movement, I will henceforth assume that it is triggered by an unspecific [edge] feature in the syntactic component (in the way discussed for V2 clauses in German in Chapter 3). The relevant configuration is schematically represented in Figure 6.1 (YP representing the complement of F, e.g. TP).
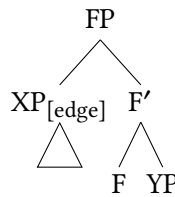
Figure 6.1: Movement to FP

In this configuration, FP stands for functional projection (comprising, for instance, the CP): the relevant head does not trigger the movement of an argument and there is no specific information-structural feature involved either. In certain configurations, such as German V2 clauses, the movement of some XP is necessary for independent reasons in the syntax (see Chapter 3): this, however, does not impose any information-structural constraints. In other cases, such as in the English in (1) above, there are no such independent reasons in the syntactic component: that is, the FP would not be generated otherwise (unlike the German CP layer to encode finiteness); still, there are no information-structural features present either as the precise interpretation is defined by phonological constraints. The specific constraints related to prosody will not be discussed here, as there is ample literature on this topic and it is not the main point to be examined in this book.[5]

Féry (2013) argues that it can be best understood as alignment, in that the focused element is prosodically aligned with the right or left edge of a prosodic domain. Languages have various means to achieve this: alignment can be marked by, for instance, pitch accent, morpheme insertion, or syntactic movement. In this sense, the prosodic approach put forward by Fanselow & Lenertová (2011) is not specific to Germanic (and Slavic). In what follows I will concentrate on West Germanic only, since the discussion of different marking strategies would go beyond the scope of the present investigation.

[5]See, for instance, Féry & Drenhaus (2008), Fanselow & Lenertová (2011) Wierzba (2017) for prosodic accounts; see also Fanselow (2016) and Wierzba & Fanselow (2020) for an overview.

6.3 Ellipsis and leftward movement

As mentioned at the beginning of this chapter, clausal ellipsis is also relevant for functional left peripheries. The prototypical case for this is sluicing, demonstrated in (7) below:

(7)   Someone phoned grandma but I don't remember **WHO** ~~phoned grandma~~.

In this case, the elliptical clause is embedded in a clause conjoined with another main clause: this first main clause (*someone phoned grandma*) contains the antecedents for the elided elements in the elliptical clause. The elliptical clause contains only a single remnant, the subject *who*, which bears main stress as it contains non-given information (see Chapter 3 and Chapter 4). Ellipsis is licensed because all elided information is recoverable. Recoverability is more than merely GIVENness; consider the following example:

(8)   * Someone phoned grandma; it was a sunny afternoon and Peter fed the cat but I don't remember who ~~phoned grandma~~.

In this case, the elided part is actually GIVEN in the discourse; nevertheless, it is not recoverable and as such it does not constitute an appropriate antecedent for the elided string. The reason is that there are two intervening clauses containing new information and the original information is not salient enough to serve as an antecedent.

For reasons of this kind, Merchant (2001: 25–36) proposes that elided elements should be e-GIVEN (ellipsis-GIVEN). Apart from the salience condition, this also implies mutual entailment between the elided part and its antecedent (Merchant 2001: 26, ex. 42):

(9)   e-GIVENness
      An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo ∃-type shifting,
      (i)   A entails F-clo(E), and
      (ii) E entails F-clo(A).

Regarding the actual implementation of ellipsis in grammar, Merchant (2001: 55–61) and Merchant (2004: 670–673) argue that there is an [E] feature responsible for ellipsis. This feature is assumed to be merged with a particular functional head (such as C) and the complement of this head is elided. Since this feature contains information not only relevant in narrow syntax but also for both interfaces,

it has not only syntactic but also phonological and semantic properties (Merchant 2004: 670–673). The semantics is essentially the same as the e-GIVENness condition mentioned above, see (9). The phonological condition amounts to saying that the complement of the functional head will be realised as phonologically zero if it follows the [E] feature. Finally, the syntactic condition is that the [E] feature is specified as having either an uninterpretable [wh] or an uninterpretable [Q] feature, thus [u:wh] or [u:Q], ensuring that it occurs only in (embedded) questions. As shown by van Craenenbroeck & Lipták (2006) for Hungarian and Hoyt & Teodorescu (2012) for Romanian, this particular syntactic condition is highly unsatisfactory as many languages allow canonical ellipsis processes such as sluicing also from non-interrogative projections, including relative clauses and projections hosting foci. In fact, the analysis proposed by Merchant (2004) for fragments also suggests that this feature specification does not always hold.

Namely, clausal ellipsis can not only take the form of sluicing, as in (7), but it can also be observed in fragments. Consider the following example:

(10)   A: Who phoned grandma?
       B: **Liz** ~~phoned grandma~~.

In this case, the remnant (*Liz*) is the subject and the rest of the clause is elided. Since in English the subject DP in declarative clauses is located in [Spec,TP] and not in [Spec,CP], the ellipsis mechanism established for sluicing does not automatically carry over. While it may at first be tempting to assume that T can also host the [E] feature, just like C can, examples like (11) clearly show that this is not a viable option:

(11)   A: Who did Liz phone?
       B: ~~Liz phoned~~ **grandma**.

In this case, the underlying structure of the clause does not match the direction of sluicing: the remnant is located on the right, while the ellipsis site seems to be on the left.

Merchant (2004) proposes that fragments involve a functional projection, FP, which hosts the [E] feature in its head: the remnant moves up to the specifier of this projection and the complement is elided.[6] This analysis is able to unify the

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[6]Note that this also implies that the particular leftward movement of the remnant is triggered in elliptical environments (in the presence of the [E] feature) but not otherwise: English is a language that does not have focus fronting otherwise. Taking the example in (11), this leads to the following contrast:

template for sluicing and fragments (and VP-ellipsis). The structure is given in Figure 6.2 below (following Merchant 2004: 675; YP simply represents the complement of F, which is TP in Merchant 2004).
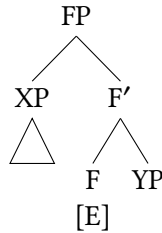

Figure 6.2: Ellipsis and the FP

Comparing now this structure to the one in Figure 6.1, a striking similarity arises. In both cases, leftward movement targets an unspecific left-peripheral position (FP), whose primary role is to establish a configuration that is congruent with the requirements of the interfaces, specifically with those of PF. There is no specific clause-typing feature involved in the leftward movement of the element landing in the specifier in either case; still, movement takes place in narrow syntax as it has effects on PF. In both cases, the FP is generated in such a way that its head requires the movement of a constituent into the specifier; this follows from minimalist assumptions inasmuch as extra projections are not generated per se but they host phonologically visible material and/or are semantically motivated.[7]

The issue of the [edge] feature was addressed in Chapter 3 already: the [edge] feature can be inserted into the derivation relatively freely (see the Edge Feature Condition of Chomsky 2000: 109). The [E] feature seems to be similar in the sense that it is not a lexically specified feature and it is inserted on top of the basic

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(i)   * Grandma$_i$ Liz phoned t$_i$.

(ii)   Grandma$_i$ ~~Liz phoned t$_i$~~.

As indicated, (i), involving overt focus movement, is ungrammatical, while the elliptical version in (ii) is well-formed. This suggests that grammatical elliptical constructions are not isomorphic to their grammatical non-elided counterparts. I will return to this question in Section 6.5.

[7]In addition, it appears that the unspecific projection has no label, which differs from the setup of ordinary projections, in which a head projects into a phrase. I will further elaborate in this chapter on the nature of heads containing an [E] feature, suggesting that the FP is by no means headless. Emonds (2004, 2007, 2012) proposes that certain discourse-related projections, which he calls "Discourse Shells", may be without a label; in his system, this is related to Main Clause Phenomena. Crucially, the FPs related to ellipsis are available also in embedded clauses.

syntactic derivation. One question regarding this is how it potentially interacts with other elements: while the [edge] feature is assumed to be checked off by moving a relevant phrase to the specifier and being thus not further relevant for the derivation, the [E] feature cannot be eliminated by the movement of the XP in the specifier, as the [E] feature carries information relevant for PF. Still, the movement of the specifier element is obviously triggered.

One way to look at this is to say that the [E] feature is a phonologically zero element that is lexically specified as [edge]; in this sense, the [E] feature is strictly speaking not a (syntactic) feature attached to other lexical items (for instance, in the way the [edge] feature can appear on any fronted phrase) but a lexical item. This would automatically give us the observed distribution, namely that whenever the [E] feature is inserted, there is movement to the specifier. Treating the [E] feature as a lexical item (rather than a syntactic feature) has the advantage that all the phonological and semantic information associated with the presence of this feature can be specified as lexical information. An obvious point of objection is that the [E] feature in itself does not carry lexical information but it merely makes reference to that of others. This kind of property is, however, familiar from placeholder elements:[8]

(12) a. **There** is a box on the table.
      b. **There** are boxes on the table.

The element *there* is inserted into the [Spec,TP] position and as such it holds the place of the canonical subject; the logical subject itself comes after the copula in both cases. As can be seen, *there* does not show agreement with the verb: agreement is governed by the logical subject (at least as far as the standard variety is concerned; in many non-standard varieties, *there* is not treated as a dummy element proper).

In essence, treating the [E] feature as a lexical item projecting a phrase of its own has the obvious consequence that the entire phrase inherits the properties of the head: phrases are endocentric in Bare Phrase Structure. In other words, what is referred to as FP is in fact an ellipsis phrase, meaning that the phrase is not merely some unspecific FP hosting [E] but a phrase generated by [E].[9]

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[8]In addition, it should be noted that the notion of lexical information as a criterion is not without problems either. Functional elements (such as complementisers, determiners, negation heads) can be treated as the realisations of feature bundles (and in some cases single features, for instance with negation heads projecting a NegP), as is also proposed in the present book.

[9]For the purposes of the present investigation, I will continue using the FP label in the tree diagrams, in line with the original proposal of Merchant (2001). Note that the notion "ellipsis

The question arises what eventually constrains the insertion of such an element. I assume that it lies primarily in information structure. The complement of the F head is eliminated: as such, it must be recoverable (e-GIVEN) and it cannot contain any contrastive elements. On the other hand, the [E] feature requires the element in the specifier to bear stress; the resulting configuration is well-formed and discourse-congruent only if main stress on the given element is justified by its information-structural status. Consider:

(13)   Mary painted the picture.

Uttered out of the blue (as an all-new sentence), this sentence has the main stress on the object (*the picture*). Now suppose there is a question asking about the agent:

(14)   Who painted the picture?

Obviously, (13) would be a congruent answer, with the modification that the stress should be shifted to the subject (*Mary*), as this is the element that provides new information; the rest of the clause can be destressed. It is, however, also possibly to give an elliptical answer, as shown in (15) below:

(15)   A: Who painted the picture?
       B: [~~FP~~ Mary [~~TP~~ ~~*t* painted the picture~~]].

In this case, *Mary* is located in [Spec,FP] and the rest of the clause is eliminated. The complement TP is e-GIVEN and non-contrastive; *Mary* is supposed to bear main stress anyway, as discussed above in connection with the full structure. In other words, (15) is congruent because it satisfies basic requirements concerning information structure.

The state of affairs is very different if another DP is fronted in the same context:

(16)   A: Who painted the picture?
       B: * [~~FP~~ The picture [~~TP~~ ~~Mary painted *t*~~]].

Strictly speaking, the answer is not syntactically ill-formed: the object may as well be attracted to [Spec,FP], as neither the [edge] feature nor the [E] feature imposes any restriction on this. However, (16) is not congruent: the elided

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phrase" is sometimes used in the literature for the elided string (see, for instance, Hardt & Romero 2004): this differs from the proposal here, as the ellipsis phrase equivalent to the FP contains not only the elided string but also the remnant.

TP contains non-recoverable information and the element in [Spec,FP] is non-contrastive and not supposed to bear main stress. The only congruent interpretation of the utterance in B reconstructs a different sentence, which is nonsensical:

(17)   # The picture painted the picture.

   In a different context, the utterance in B is obviously congruent:

(18)   A: What did Mary paint?
         B: [~FP~ The picture [~TP~ ~~Mary painted t~~]].

   In other words, what actually constrains the insertion of the [E] feature is not a rule in narrow syntax but a requirement set by the interfaces: the results must be prosodically well-formed and congruent with the information-structural properties of the utterance, as set by the discourse. This is similar to what can be said about the prosodic marking of elements in general (see Section 6.2) and it thus does not require additional assumptions in the grammar.

6.4 Lower peripheries

As mentioned in Chapter 2, there are languages that have functional left peripheries lower than the CP-domain proper, as shown by Poletto (2006) for Old Italian. The existence of this lower functional periphery (the vP-periphery) is closely tied to the notion of focus. As discussed briefly in Chapter 2, Hungarian is similar in this respect: the canonical focus position is lower then the CP-domain. This lower functional domain may host clause-type markers as well, such as the interrogative marker *-e* that appears in polar questions. Moreover, as shown by Lipták & Zimmermann (2007), a Hungarian clause may host a *wh*-element clause-internally (in the FP) and a relative operator in the CP, and the *wh*-operator can be extracted without triggering an island violation effect, indicating that the CP is not a landing site for the *wh*-element. All this provides additional support for the idea that left peripheries proper are not tied to the CP-domain per se.

   The idea that the FP is a focus projection (see van Craenenbroeck & Lipták 2008) goes back to the observation that focussed elements normally occupy a preverbal position in the language as well (see, for instance, É. Kiss 2002). There are two problematic points here, however. First, there are instances of polar interrogatives where there is evidently no focussed XP undergoing leftward movement. Second, there are certain non-standard patterns that indicate that the FP is iterable (see Bacskai-Atkari 2018e for a detailed analysis, using the original data of Kenesei 1994): designated focus phrases do not seem to be iterable otherwise (see also Rizzi 1997). The basic patterns are illustrated in (19) below:

(19) a. Azt   kérdeztem, **(hogy)** (tegnap) **ki** hívta   fel Marit.
          that.ACC asked.1SG   that   yesterday who called.3SG up Mary.ACC
          'I asked who called Mary yesterday'

    b. Azt   kérdeztem, **(hogy)** (tegnap) Péter felhívta-**e**
        that.ACC asked.1SG   that   yesterday Peter up.called.3SG-Q
        Marit.
        Mary.ACC
        'I asked if Peter called Mary yesterday.'

    c. Azt   kérdeztem, **(hogy)** (tegnap) Péter hívta-**e**   fel
        that.ACC asked.1SG   that   yesterday Peter called.3SG-Q up
        Marit.
        Mary.ACC
        'I asked if it was Peter who called Mary yesterday.'

In (19c), the verb is adjoined to the interrogative head *-e* and the specifier of the FP hosts a focussed subject (the DP *Péter*); adjunction happens from the left, resulting in an inverted word order (see the Linear Correspondence Axiom of Kayne 1994 and the Mirror Principle of Baker 1985, 1988). As indicated by (19a), *wh*-operators occupy the same preverbal positions; this is not surprising, as the *wh*-element corresponds to the focussed element in question–answer sequences. In (19b), however, there is no focussed element proper, yet it is evident that the verb left-adjoins to *-e* just as in (19c). In this case, the element in [Spec,FP] is the verbal particle *fel* 'up'. One might wonder why the verbal particle moves up at all. It seems that this element is relevant in terms of polarity marking in yes-no questions, as evidenced by the fact that it can appear instead of *igen* 'yes' as a positive counterpart to the negative *nem* 'not' in an answer to yes-no questions:

(20) A: Elment   már   Mari?
          off.went.3SG already Mary
          'Has Mary already left?'

    B: El. / Nem.
        off   not
        'Yes./No.'

Whatever is located in the [Spec,FP] position bears main stress and the movement of such elements can thus be captured by general rules of information-structurally determined movement (see Section 6.2; see É. Kiss 2002, 2008a and Szendrői 2001 for analyses of Hungarian). The question that arises in connection

with (19) is why the verb moves up to the F head in the first place. According to É. Kiss (2008a), the constituent in [Spec,FP] (her FocP) moves from within the VP to [Spec,PredP], then to [Spec,TP] and subsequently to [Spec,FP]: the verb moves along into the respective heads. Verb movement occurs generally in finite clauses, not just in interrogatives (see also Brody 1990, 1995), so the trigger cannot be specific to interrogatives.

I suggest that the triggering feature is [fin], similarly to what we observed in Germanic (see Chapter 3). The features [wh]/[Q] and [fin] are passed on from C to F (Bacskai-Atkari 2018e). Evidence for verb movement being related to finiteness comes from the fact that verb movement to F is obligatory in finite clauses but not in infinitival clauses (which also allow focussing). Consider the following examples for finite clauses containing focussed elements with *csak* 'only':

(21) a. * Csak MARIT   fel**hívtam**.
          only Mary.ACC up.called.1SG
          'I called up ONLY MARY.'

     b. Csak MARIT   **hívtam**   fel.
          only Mary.ACC called.1SG up
          'I called up ONLY MARY.'

As can be seen, (21a) is ungrammatical, as the verb does not move up to be adjacent to the focussed element, while (21b), where this movement has taken place, is well-formed. The same asymmetry does not hold for infinitival clauses (É. Kiss 2008a: 448, ex. 20):

(22) a. Szeretném   **csak MARIT**   fel**hívni**.
          like.COND.1SG only Mary.ACC up.call.INF
          'I would like to call up ONLY MARY.'

     b. Szeretném   **csak MARIT**   **hívni**   fel.
          like.COND.1SG only Mary.ACC call.INF up
          'I would like to call up ONLY MARY.'

The requirement to fill the F head by overt material is similar to the requirement of filling a C specified as [fin] in German and a C specified as [fin] and [wh] in English. This gives further support to the idea that lower peripheries can be fully-fledged and not reduced to hosting elements moving due to their special information-structural status. In addition, it shows that the lexicalisation requirement on [fin] is more general than merely applying to the Germanic CP-domain.

The element -*e* is a clitic that requires a host; this is satisfied by verb movement, which occurs also in cases where no element moves to [Spec,FP], that is, when there is no focussed element or polarity marker (such as the verbal particle). This can be observed with embedded non-negated questions that contain a lexical verb without a particle:

(23) Azt   kérdeztem, **(hogy)** láttad-**e**   Marit.
      that.ACC asked.1SG that saw.2SG-Q Mary.ACC
      'I asked if you have seen Mary.'

The structure for the subclause in (19c) is shown in Figure 6.3. The structure for the subclause in (23) can be represented as in Figure 6.4.
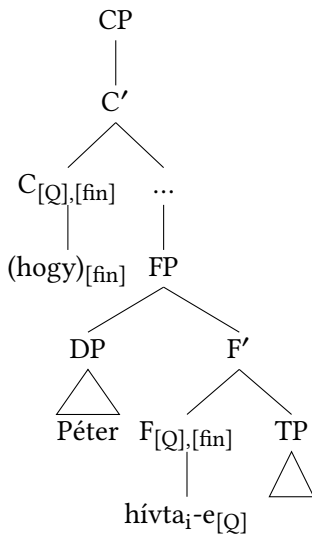
Figure 6.3: Verbs with a particle
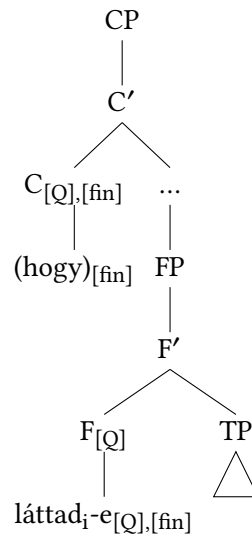
Figure 6.4: Verbs without a particle

In cases where the clause is elliptical, we can observe that -*e* attaches to the focussed remnant:

(24) Tudom,   hogy valaki   látta   Marit,   de nem tudom,   hogy
      know.1SG that someone saw.3SG Mary.ACC but not know.1SG that
      Péter-e.
      Peter-Q
      'I know that someone saw Mary but I don't know if it was Peter.'

In this case, the DP *Péter* is in [Spec,FP] and *-e* is in F. This follows automatically from the general properties of focussing and the element *-e*, as discussed above. What seems to be somewhat peculiar is the fact that there is no verb located in F: if the finite verb were in F, then it would escape deletion, just as *-e* does. The state of affairs is schematised in Figure 6.5.
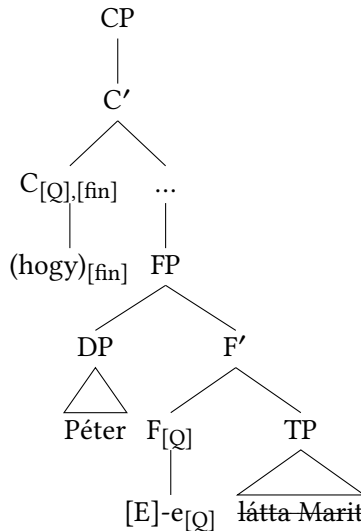
Figure 6.5: Attachment to a remnant

The non-elliptical counterpart (with the same word order) would be ungrammatical, as the movement of the verb is otherwise triggered. The difference, then, lies solely in the presence of the [E] feature, which suggests that what blocks the movement of the verb is this feature itself. Note that this does not equal saying that whenever [E] is present on a functional head, there can be no element in that functional head: in this particular case, the element *-e* is base-generated in this position. The movement of the verb, normally triggered by the [fin] feature on F, seems not to be allowed.

This constraint is apparently not a unique property of embedded polar questions but it can be observed in comparative clauses as well. As discussed by Bacskai-Atkari (2018c: 174–175), Hungarian allows comparative subclauses to contain both an overt quantified expression (or a DP containing a quantified expression) and an overt lexical verb, even if both elements are non-contrastive:

(25) Mari több macskát vett,   mint **ahány**   **macskát** Péter
      Mary more cat.ACC bought.3SG than how.many cat.ACC   Peter
      vett.
      bought.3SG
      'Mary bought more cats than Peter did.'

In this case, both the DP containing the quantified expression *ahány macskát* 'how many cats' and the lexical verb *vett* 'bought' are overt. There is evidence that the remnant (e.g. *Péter* in (26) above) moves to [Spec,FP], as it bears main stress and its movement in constructions with a verbal particle triggers the inversion of the verbal particle and the verb. The structure of cases like (25) can be schematised as in Figure 6.6 (cf. Bacskai-Atkari 2018c: 185–192).
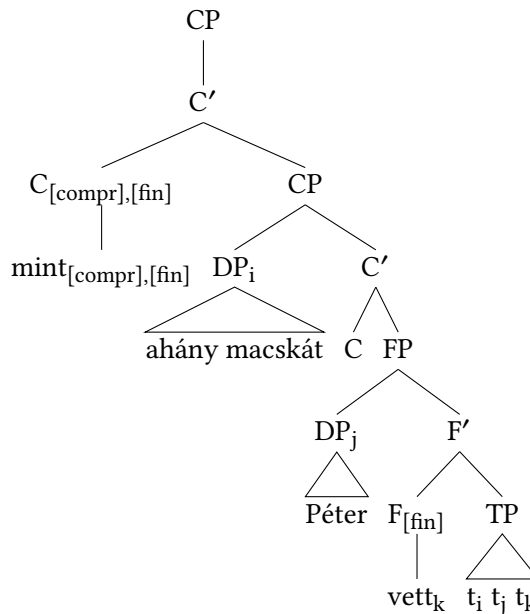
Figure 6.6: Comparative subclauses

Since both the element containing the quantified expression and the lexical verb are non-contrastive and redundant in these cases, they can also be eliminated:

(26) Mari több macskát vett,   mint Péter.
      Mary more cat.ACC bought.3SG than Peter
      'Mary bought more cats than Peter did.'

This results in the structure shown in Figure 6.7 (see Bacskai-Atkari 2018c: 179).
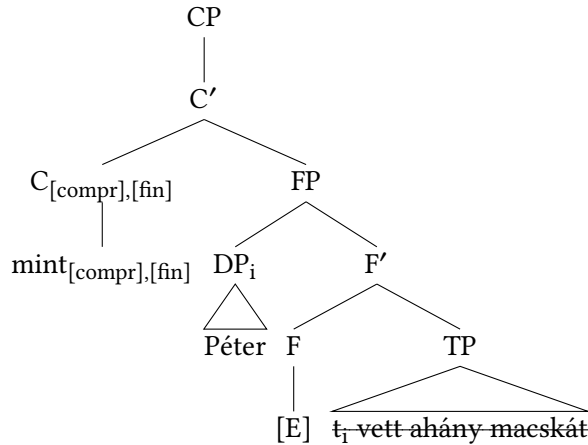
Figure 6.7: Elliptical comparatives

As the [E] feature is again located on F, the complement is eliminated, resulting in the deletion of the DP containing the quantified expression and of the lexical verb (see Bacskai-Atkari 2016 for a cross-linguistic investigation of why the lower CP is not generated in this case, resulting in the absence of movement for the phrase containing the comparative operator). The representation in (6.7) suggests that the verb does not move up to F in this case; this is descriptively adequate, as the lexical verb should escape deletion otherwise, which is not what we see in (26). Indeed, deleting the DP containing the quantified expression but not the lexical verb is ungrammatical:

(27)   * Mari több macskát vett,   mint Péter **vett**.
       Mary more cat.ACC   bought.3SG than Peter bought.3SG
       'Mary bought more cats than Peter did.'

In this configuration, the verb escapes deletion, which suggests that the verb should be in F, as [E] is regularly in F; however, this is apparently illicit. In this case, there is no overt element in F at all, unlike in embedded polar questions, so the only reason for the ungrammaticality of the relevant elliptical constructions is that the verb cannot move to F because the [E] feature is already there.

This raises the question why the movement of the verb is blocked, though the [E] feature itself is compatible with an overt element in F. Recall that the movement of the verb in F is triggered by the [fin] feature and as such it is obligatory

in finite clauses (while it may optionally occur in non-finite clauses). It follows that if we assume that the F head contains both a [fin] feature and the [E] feature, there should be contradictory requirements on verb movement: the [fin] feature would require verb movement to F, while the [E] feature would ban this movement. In other words, not only (27) is expected to be ungrammatical, since verb movement goes against the requirement set by the [E] feature, but also (26), where the lack of verb movement would leave the [fin] feature unchecked. However, (26) is grammatical: this in fact suggests that in this case, there is no [fin] feature on the F head that would trigger verb movement.

In this way, the [E] feature is not only specified as [edge] but it is incompatible with [fin]. This is not even surprising, as clausal ellipsis regularly eliminates the finite verb, so that there is ultimately nothing in the clause that would suggest that it would be finite in any way. If this view is correct, we expect these properties of the [E] feature to be constant also in other languages and in other constructions, specifically in other functional left peripheries. In the remainder of this chapter, I will show that this is indeed the case and the analysis proposed here can be carried over to Germanic languages.

6.5 Sluicing

In Chapter 3, I briefly discussed the issue of complementiser deletion in sluicing patterns in dialects that otherwise allow Doubly Filled COMP. This is illustrated in (28) below:

(28)   They discussed a certain model, but they didn't know **which model (*that)**.

I suggested in Chapter 3 that the ungrammaticality of (28) may also have to do with the prosodic properties of the complementiser, that is, with the fact that it normally cliticises onto the following complement TP, which is evidently violated in (28); in addition, however, it seems that the [E] feature responsible for sluicing is simply incompatible with the feature specification of *that*.

Recall that the regular Doubly Filled COMP pattern involves the co-occurrence of an overt complementiser, specified as [fin], in C, and an operator element in the specifier, checking off the [wh] feature on the C head, as shown in Figure 6.8.

Once sluicing occurs, the [E] feature must be located on the C head that projects the CP hosting the *wh*-element in its specifier. Since this C head is equipped with a [wh] feature triggering movement, the [edge] feature requirement of the [E] feature is immediately satisfied. As the [E] feature is incompatible

with [fin], the complementiser *that* cannot occur in these constructions. The relevant structure is illustrated in Figure 6.9.
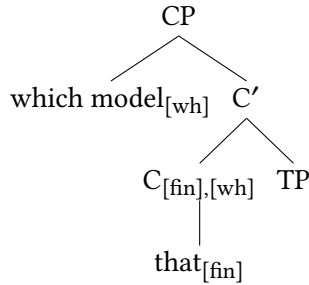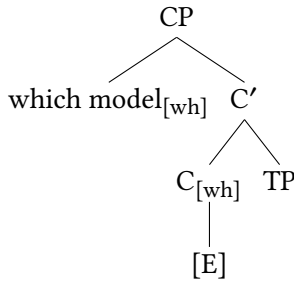

Figure 6.8: Doubly Filled COMP

Figure 6.9: The [E] feature blocking *that*

One might wonder whether the complement of C is factually TP in this case, as a subordinate clause without a [fin] specification is by default not finite. The full variant is of course finite:

(29)   They discussed a certain model, but they didn't know **which model (that)** they discussed.

However, the restrictions holding on the full variant and the elliptical variant are not necessarily the same. For one thing, as has been discussed in this section, the specification of C is different in each case. Moreover, it seems that sluicing is not necessarily isomorphic anyway in general, as discussed by Vicente (2018: 484–486).[10] This is evident from certain constructions that are assumed to

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[10]As mentioned already in Section 6.3, this is not surprising inasmuch as leftward movement targeting the FP also involves an underlying structure that is necessarily different from the antecedent clause and, as far as the surface string is concerned, it can also be markedly different from non-elliptical clauses.

suggest that sluicing can repair island violations (Merchant 2001). Observe the following asymmetry:

(30) a. [How diligent a worker]$_i$ did they hire [$_{DP}$ t$_i$]?
      b. * [How diligent]$_i$ did they hire [$_{DP}$ t$_i$ a worker]?

The construction in (30b) is ungrammatical as it involves the extraction of a degree expression out of a DP-island; the configuration in (30a) is grammatical, since the entire DP moves to the front of the clause (see Kennedy & Merchant 2000 and Bacskai-Atkari 2018c: 132–139 on inversion within the DP).

Consider now the following examples (based on Vicente 2018: 484, ex. 11):

(31) a. * They hired a diligent worker, but I don't know [how diligent]$_i$ they hired [$_{DP}$ t$_i$ a worker].
      b. They hired a diligent worker, but I don't know how diligent [ ].

Just like in (30b), the construction in (31a) is not licit as it involves an island violation. Its elliptical counterpart in (31b), however, can apparently violate the constraint on extraction as long as ellipsis takes place. Under this view (see Merchant 2001), the underlying structure of (31b) is the same as in (31a). An alternative approach is proposed by Barros et al. (2014) and Vicente (2018), who assume that the underlying clause is actually predicative: the phrase *how diligent* originates as the predicate of the clause. This represents an evasive analysis: rather than saying that an ungrammatical syntactic configuration is repaired by ellipsis, the authors argue that the underlying structure is also grammatical in the first place. Consider (based on Vicente 2018: 485, ex. 14):

(32) They hired a diligent worker, but I don't know [how diligent]$_i$ [$_{IP}$ that worker is t$_i$].

In this case, no repair is needed since the extraction of the *wh*-expression from the predicative position constitutes no island violation. This analysis has thus the advantage of not resorting to repair but the predictable isomorphic structure is also lost. The question arises how we can decide between (31b) and (32).

As pointed out by Vicente (2018: 484–485), the desired repair effect does not seem to be borne out in certain cases. The following example shows that adjectives with non-intersective readings do not lead to a repair effect (Vicente 2018: 485, ex. 12a):

(33) * They hired a hard worker, but I don't know how hard [ ].

According to the repair analysis, the underlying structure should be parallel to (31a):

(34)   * They hired a hard worker, but I don't know [how hard]$_i$ they hired [$_{DP}$ t$_i$ a worker].

Just as (31a), (34) is predictably ungrammatical due to an island violation. But if (31b) is grammatical simply because deletion has taken place, we expect (33) to be grammatical for the same reason, which is evidently not the case. Assuming the evasive analysis, however, what we have to consider is whether the underlying predicative structure is licit or not. The following minimal pair clearly shows that there is a relevant difference in this respect (Vicente 2018: 485, ex. 13):

(35)   a.   The worker is diligent.
        b.   * The worker is hard.

Under this analysis, we expect (33) to be ungrammatical because *hard* cannot be used as a predicate in this construction, as shown by (35b). This indicates that the non-isomorphic approach is favourable not merely on theoretical grounds but also because it makes empirically more adequate predictions.

The same conclusion can be drawn from adjectives that have both an intersective and a non-intersective interpretation, such as *old* (Vicente 2018: 485, ex. 12b):

(36)   Jack is visiting an old friend, but I don't know how old [ ].
        [= I don't know the age of Jack's friend.]
        [≠ I don't know how long this friendship has been going on.]

In this case, only the intersective reading is available.

In principle, one might wonder whether the ungrammaticality of (33) is due to *hard worker* being a compound instead, as members of a compound cannot be extracted. This is, however, not a satisfactory explanation. In languages like Serbo-Croatian, which generally allow Left Branch Extractions, the relevant construction is possible (based on Vicente 2018: 486, ex. 16):

(37)   Jovan je   zaposlio tvrdog   radnika   ali ne znam   koliko
        Jovan AUX hired   hard.ACC worker.ACC but not know.1SG how
        tvrdog
        hard.ACC
        'Jovan hired a hard worker but I don't know to what extent he is hard-working.'

This suggests that the difference between English and Serbo-Croatian can be drawn back to a more general property of the respective languages, namely whether Left Branch Extractions are allowed. If sluicing could repair island violations, the asymmetry should not arise (Vicente 2018: 486).

In other words, there is independent evidence supporting the assumption that the complement of a C head containing an [E] feature can be different from a TP identical to the one in a preceding clause: more precisely, under certain circumstances it can also be an underlying predicative structure. As also shown by Vicente (2018), this possibility does not arise at random; considering the relevant examples above, it should be obvious that in all these cases, there is an attributive adjective in the antecedent clause, which can then be reconstructed as a predicative adjective in the elided clause. This apparently violates isomorphism but it does not violate recoverability: a predicative construction is recoverable from an attributive construction (but not vice versa).

The last question to be addressed in this respect concerns tense. In cases like (32), the antecedent clause is marked for the past tense, but the reconstructed elided clause appears to be in the present tense; note that a past tense reconstruction is also possible, but not obligatory. The optionality is illustrated in (38) below:

(38) They hired a diligent worker, but I don't know how diligent.
Reading A: 'They hired a diligent worker, but I don't know how diligent that worker is.'
Reading B: 'They hired a diligent worker, but I don't know how diligent that worker was.'

While Reading B is unproblematic as the antecedent clause is also in the past tense, Reading A seems to be problematic inasmuch as present tense is not recoverable on the basis of past tense.

Consider now the following examples:

(39)　a. I know Peter. And Agnes, too.
　　　b. I knew Peter. And Agnes, too.

In both cases, the second clause is elliptical; the tense that is reconstructed in each case matches the one in the first clause:

(40)　a. I know Peter. And I know Agnes, too.
　　　b. I knew Peter. And I knew Agnes, too.

In cases like (32) there seems to be an optionality that does not necessarily arise, at least not in clauses where the predicative/attributive effect mentioned above does not hold. If so, however, the present vs. past interpretation in clauses like (32) may be context-dependent and pragmatic in nature, in the sense that it is not syntactically encoded. In other words, it seems that the complement of C in such cases is not necessarily a TP but rather a tenseless projection encoding predication, call it PredP (in effect, this is much in the sense of Bowers 1993, 2010 and den Dikken 2006, in that predication is not tied to tense). This gives us a modified reconstruction for the elliptical clause:

(41)   They hired a diligent worker, but I don't know [how diligent]$_i$ [$_{PredP}$ that worker BE t$_i$].

The reconstruction of a tenseless PredP instead of a tensed TP arises in cases like (41) as the antecedent predicative relation is tenseless as well, since the adjective (*diligent*) is an attribute to the noun (*worker*). Note that such tenseless PredPs are contingent upon the FP projected by [E]: the non-elliptical version of (41) is ill-formed. In other words, the final string is licit precisely because the remnant has undergone leftward movement and landed above the PredP, which must be elided in such cases. This is in line with the general idea that elliptical clauses differ in their derivation from non-elliptical ones.

The difference between (41) and (32) lies solely in tense and the resulting difference in the projection that serves as a complement to C. The point is that the ellipsis feature [E], located on C, can in this way have a syntactic effect since it can in principle change the label of the complement to C. This again reinforces the assumption that the [E] feature is more than a mere additional feature of syntax but it behaves in fact like a proper syntactic head that has an effect beyond ellipsis proper. Its incompatibility with the [fin] feature also results in the fact that the complement of C in these cases is not necessarily TP: this is borne out only if the [E] feature can impose a ban on [fin], as [fin] would otherwise be expected to be carried over due to reconstruction effects from the antecedent clause.

6.6 Ellipsis in comparatives

6.6.1 The basic data

As mentioned in Chapter 5, embedded degree clauses are often elliptical. This is illustrated in (42) below for German comparatives expressing inequality (the same conclusions apply to equatives, not discussed here separately):

(42) Ralf   ist größer als Paul.
Ralph is taller   as Paul
'Ralph is taller than Paul.'

In (42), the complementiser *als* is followed by a single remnant (the DP *Paul*). It is evident that *als* can take a full TP complement, as illustrated in (43) below (see also Chapter 5):

(43) Der   Tisch ist länger als das   Büro breit ist.
the.M.NOM table is longer as the.N.NOM office wide is
'The table is longer than the office is wide.'

While the case of the remnant is not visible on the proper name remnant in (42), a pronominal remnant is indicative of case:

(44)   a.   Ralf   ist größer als **ich**.
Ralph is taller   as I
'Ralph is taller than I am.'

   b.   * Ralf ist größer als **mich**.
Ralph is taller as me
'Ralph is taller than I am.'

As indicated, the nominative remnant in (44a) is grammatical, while the accusative remnant in (44b) is not. This is expected as the complementiser *als* does not assign accusative case to the DP subject remnant, which bears nominative case regularly as the subject of a tensed clause (TP). In other words, the underlying clause is a full, tensed clause:

(45) Ralf   ist größer als **ich** x-groß bin.
Ralph is taller   as I   x-tall   am
'Ralph is taller than I am.'

Assuming that the remnant moves to FP, in line with Merchant (2001), the structure is schematically represented as in Figure 6.10 (see also the discussion in Section 6.4 above).

The movement of the remnant DP to [Spec,FP] is triggered by way of the [edge] feature, which is an inherent property of the [E] feature heading its own projection.

English differs from German regarding the case of the remnant. In non-elliptical comparative clauses, the subject is in the nominative case:

```
                         CP
                          |
                          C′
                    ┌─────┴─────┐
                    C           FP
                    |       ┌────┴────┐
                   als    DPᵢ         F′
                         ╱  ╲     ┌────┴────┐
                       ich   F   TP
                             |
                            [E]   t̶ᵢ̶ x̶-̶g̶r̶o̶ß̶ ̶b̶i̶n̶
```
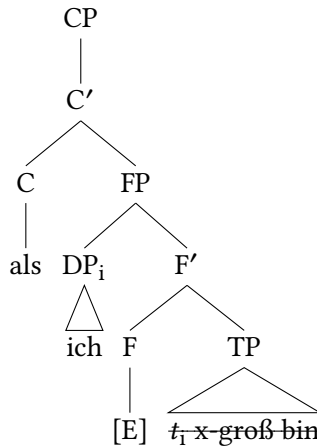
Figure 6.10: A predicative underlying clause

(46)   Ralph is taller than I am.

In elliptical clauses, both a nominative and an accusative remnant is possible:

(47)   a.   ? Ralph is taller than **I**.
       b.   Ralph is taller than **me**.

As can be seen, the remnant is preferably in the accusative case, possibly also due to phonological reasons: the remnant bears extra (focal) stress. Note also that in English, the default case is the accusative (Schütze 2001). At the same time, as pointed out by Bhatt & Takahashi (2011: 618), the nominative remnant is not excluded either (contrary to Pancheva 2006), indicating that *than* is not a preposition assigning accusative case to the pronoun (contrary to Hankamer 1973). The appearance of the accusative case on the remnant is rather due to the absence of the TP projection in the subclause (see also Bacskai-Atkari 2014b, 2018c); in such cases, English allows the default accusative case on DPs. This property of English is not directly related to comparative constructions and will not be discussed further here.

What is of interest to us is a peculiar constellation in German attributive comparatives that is not expected on the basis of (44). Consider first the following example from English:

(48)   I saw a taller woman than my mother.
       External reading: 'I saw a taller woman than my mother saw.'
       Internal reading: 'I saw a taller woman than my mother is.'

As indicated, the sentence in (48) has two readings, which Lerner & Pinkal (1995) refer to as DP-external and DP-internal readings (abbreviated here as external and internal). In the DP-external reading, the reconstructed comparative clause parallels the matrix clause, in that a lexical verb (here: *see*) is reconstructed and the gradable adjective is reconstructed as an attribute to a noun (see Kennedy & Merchant 2000 and Bacskai-Atkari 2018c: 125–139 on the inversion involving *x-tall*):

(49)   I saw a taller woman than [$_{FP}$ my mother [$_{\overline{TP}}$ $\overline{t}$ $\overline{saw}$ $\overline{x\text{-}tall}$ $\overline{a}$ $\overline{woman}$]].

By contrast, the DP-internal reading involves the reconstruction of a predicative construction, where the gradable adjective is a predicate and tense is not encoded (see Bacskai-Atkari 2017a):

(50)   I saw a taller woman than [$_{FP}$ my mother [$_{\overline{PredP}}$ $\overline{t}$ $\overline{BE}$ $\overline{x\text{-}tall}$]].

The German equivalent of (48) is likewise ambiguous (see also Bacskai-Atkari 2017b):

(51)   Ich habe   eine   größere   Frau   **als** meine   Mutter
       I   have.1SG a.F.ACC taller.F.ACC woman than my.F.NOM/my.F.ACC mother
       gesehen.
       seen
       External reading: 'I saw a taller woman than my mother saw.'
       Internal reading: 'I saw a taller woman than my mother is.'

Note that the remnant DP *meine Mutter*, as indicated in (51) above, is case-ambiguous between the nominative and the accusative (just like in English, but English is much less reliable regarding morphological case, as discussed above). With overt case distinction between the nominative and the accusative, the ambiguity disappears (Bacskai-Atkari 2017b):

(52)   a. Ich habe   einen   größeren   Mann **als** mein   Vater
           I   have.1SG a.M.ACC taller.M.ACC man than my.M.NOM father
           gesehen.
           seen
           External reading: 'I saw a taller man than my father saw.'
       b. Ich habe   einen   größeren   Mann **als** meinen   Vater
           I   have.1SG a.M.ACC taller.M.ACC man than my.M.ACC father
           gesehen.
           seen
           Internal reading: 'I saw a taller man than my father is.'

While (52a) is expected on the basis of (44), (52b) is not: it seems that while German generally does not allow subject remnants in the accusative case, in the particular configuration in (52b) this is possible.

6.6.2 Experimental methodology

In order to gain more insight into this matter, I carried out an acceptability rating experiment at the University of Potsdam in 2020.[11] The aim of this experiment was to examine the acceptability of elliptical comparatives with a single remnant across three major conditions: (i) case-ambiguous (feminine) remnants, (ii) nominative (masculine) remnants, and (iii) accusative (masculine) remnants, similarly to (51) and (52) above. Importantly, the individual target sentences were presented in a context that allowed only a DP-external or a DP-internal reading: in other words, ambiguity was not tested explicitly, unlike in the study mentioned above, which measured the ambiguity of sentences out of context. Since this experimental study is to be discussed in a designated paper in detail, in what follows I am going to concentrate on the aspects that are immediately relevant to the purposes of the present thesis.

Altogether 48 informants took part in the study, which was designed and made available via L-Rex (Starschenko & Wierzba 2021). The items were distributed over 12 questionnaires via a Latin Square design; each participant had to rate 64 items. The items were randomised. The experiment contained altogether 720 different stimuli and 48 fillers (the fillers contained target sentences with a gender mismatch in contexts where only an internal reading was available), so that each item was evaluated by 4 informants. The participants had to rate the target sentences on a scale from 5 (fully acceptable) to 1 (fully unacceptable). The informants were all born between 1979 and 2002.

6.6.3 The results for the basic condition

Let us consider the basic contrast illustrated by the following items:

(53) Kontext: Ich habe mit [meiner Schwester / meinem Bruder] beschlossen, unseren Eltern dieses Jahr selbstgemalte Bilder zu schenken.
‘Context: I have decided with [my sister / my brother] to give self-painted pictures to our parents this year.’

---

[11]I owe many thanks to Marta Wierzba for her help with setting up the experiment and recruiting the informants, as well as for her suggestions regarding the items and her indispensable help with the platform L-Rex.

a. Ich male   ein schöneres Bild   als meine   Schwester.
   I   paint.1sɢ a.ɴ nicer.ɴ   picture as my.ꜰ.ɴᴏᴍ/ᴀᴄᴄ sister
   'I am painting a nicer picture than my sister.'

b. Ich male   ein schöneres Bild   als mein   Bruder.
   I   paint.1sɢ a.ɴ nicer.ɴ   picture as my.ᴍ.ɴᴏᴍ brother
   'I am painting a nicer picture than my brother.'

c. Ich male   ein schöneres Bild   als meinen   Bruder.
   I   paint.1sɢ a.ɴ nicer.ɴ   picture as my.ᴍ.ᴀᴄᴄ brother
   'I am painting a nicer picture than my brother.'

In the example above, (53a) represents the case-ambiguous configuration, while in (53b) the remnant is overtly marked as nominative and in (53c) as accusative. In all these cases, the remnant is a full DP, and the reduced *als*-clause immediately follows the direct object of the matrix clause (the lexical verb moves up to the C position). The results for the items of the type in (53) are shown in Table 6.1.

Table 6.1: External reading, full DP remnants, basic condition

	Case-ambiguous	Nominative	Accusative
Mean	4.58	4.60	1.88
Median	5	5	1
Variance	0.70	0.36	2.15
Standard deviation	0.85	0.61	1.48

As can be seen, the results are expected on the basis of what was said about (51) and (52) above, in that the unambiguously accusative remnant has a low average rating compared to the cases that can be interpreted as nominative. The difference between the nominative and accusative masculine remnants is significant at $p < 0.05$: I carried out a simple comparison of means calculation and this gives $p < 0.0001$ (the 95% confidence interval is -3.1788 to -2.2612). This also follows from German not allowing accusative case remnants in the English way, as discussed above.

The basic condition was tested for pronominal remnants as well, illustrated in (54) below:

(54)   Kontext: Ich habe mit [meiner Schwester / meinem Bruder] beschlossen,
unseren Eltern dieses Jahr selbstgemalte Bilder zu schenken.
'Context: I have decided with [my sister / my brother] to give self-painted
pictures to our parents this year.'

    a. Ich male   ein schöneres Bild   als sie.
        I   paint.1SG a.N nicer.N   picture as she.NOM/ACC
        'I am painting a nicer picture than her.'

    b. Ich male   ein schöneres Bild   als er.
        I   paint.1SG a.N nicer.N   picture as he.NOM
        'I am painting a nicer picture than him.'

    c. Ich male   ein schöneres Bild   als ihn.
        I   paint.1SG a.N nicer.N   picture as him.ACC
        'I am painting a nicer picture than him.'

The results for the items of the type in (54) are shown in Table 6.2. The picture is altogether similar to what we found for full DP remnants; again, the difference between the nominative and accusative masculine remnants is significant: $p < 0.0001$ (the 95% confidence interval is -3.5437 to -2.9763). In this case, the unambiguously accusative condition was judged even worse than for full DP remnants: this difference is statistically significant ($p = 0.0006$; 95% confidence interval -1.2134 to -0.3466), while there is no significant difference between the nominative remnants. The difference between full DPs and pronouns in the accusative is not a genuine grammatical contrast but it is can be explained by assuming that the full DP remnant was processed as a nominative by some of the informants (but not the others, hence the relatively high variance), while such a misinterpretation is not possible with the pronouns. This would indicate that the way morphological marking (suffixation versus suppletion) affects perception is also relevant.

Table 6.2: External reading, pronominal remnants, basic condition

	Case-ambiguous	Nominative	Accusative
Mean	4.60	4.36	1.10
Median	5	5	1
Variance	0.61	0.86	0.93
Standard deviation	0.79	0.94	0.31

Consider the basic condition with an internal reading (full DP remnants):

(55) Kontext: [Deine Schwester / Dein Bruder] ist ganz schön groß, jedoch
nicht [die größte Frau / der größte Mann] der Welt.
'Context: [Your sister / Your brother] is fairly tall but not [the tallest
woman / the tallest man] in the world.'

  a. Ich kenne   eine größere Frau   als deine   Schwester.
     I   know.1sg a.f   taller.f woman as your.f.nom/acc sister
     'I know a taller woman than your sister.'

  b. Ich kenne   einen größeren Mann als dein   Bruder.
     I   know.1sg a.m   taller.m   man as your.m.nom brother
     'I know a taller man than your brother.'

  c. Ich kenne   einen größeren Mann als deinen   Bruder.
     I   know.1sg a.m   taller.m   man as your.m.acc brother
     'I know a taller man than your brother.'

The results for the items of the type in (55) are shown in Table 6.3. As can
be seen, in this case the nominative remnant is judged to be worse than the ac-
cusative one. Just as with the external reading, the difference between the nom-
inative and accusative masculine remnants is significant ($p < 0.0001$; 95% con-
fidence interval 1.1713 to 2.2487). At the same time, it is also judged to be better
than accusative remnants (full DPs) in the external reading context.

Table 6.3: Internal reading, full DP remnants, basic condition

	Case-ambiguous	Nominative	Accusative
Mean	4.23	2.56	4.27
Median	5	2	5
Variance	1.38	2.00	1.45
Standard deviation	1.19	1.43	1.22

The following items illustrate the basic condition with an internal reading,
involving pronominal remnants:

(56) Kontext: [Deine Schwester / Dein Bruder] ist ganz schön groß, jedoch
nicht [die größte Frau / der größte Mann] der Welt.
'Context: [Your sister / Your brother] is fairly tall but not [the tallest
woman / the tallest man] in the world.'

    a. Ich kenne   eine größere Frau   als sie.
       I   know.1SG a.F   taller.F   woman as she.NOM/ACC
       'I know a taller woman than her.'

    b. Ich kenne   einen größeren Mann als er.
       I   know.1SG a.M   taller.M   man as he.NOM
       'I know a taller man than him.'

    c. Ich kenne   einen größeren Mann als ihn.
       I   know.1SG a.M   taller.M   man as him.ACC
       'I know a taller man than him.'

The results for the items of the type in (56) are shown in Table 6.4. Just as with full DP remnants, the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval 2.3032 to 3.1568). Again, just as in the external reading conditions, the pronominal remnant is more explicit than the full DP variant: while there is no significant difference between the full DP and the pronominal remnants in the preferred accusative version, the difference between the two is significant ($p = 0.0255$; 95% confidence interval 0.0803 to 1.1997) in the nominative. This again points to a role of morphological marking in processing.

Table 6.4: Internal reading, pronominal remnants, basic condition

	Case-ambiguous	Nominative	Accusative
Mean	4.35	1.92	4.65
Median	5	1	5
Variance	0.98	1.74	0.44
Standard deviation	1.00	1.33	0.67

6.6.4 The results for the perfective condition

Apart from the basic condition illustrated above, the experiment also examined the same phenomena (external vs. internal, full DP vs. pronoun) with perfective verbs (where the lexical verb is in the base position). This is illustrated in (57) below for full DP remnants:

(57)   Kontext: [Deine Mutter / Dein Vater] hat schon ein Buch geschrieben, jedoch nie veröffentlicht, weil es nicht so gut gelungen ist. Du wirst aber eine Veröffentlichung schaffen.

'Context: [Your mother / Your father] has already written a book but has never published it as it is not so good. You will make it to a publication, though.'

a. Du hast ein besseres Buch als deine Mutter
   you have.2SG a.N better.N book as your.NOM/ACC mother
   geschrieben.
   written
   'You have written a better book than your mother.'

b. Du hast ein besseres Buch als dein Vater geschrieben.
   you have.2SG a.N better.N book as your.NOM father written
   'You have written a better book than your father.'

c. Du hast ein besseres Buch als deinen Vater geschrieben.
   you have.2SG a.N better.N book as your.ACC father written
   'You have written a better book than your father.'

The results for the items of the type in (57) are shown in Table 6.5. As can be seen, the results are quite similar to the ones reported for the corresponding basic condition in Table 6.1; the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval -2.9993 to -2.0407). That is, whether the lexical verb stays in its base position or moves to C seems to make no major difference. The same applies to pronouns; the patterns are illustrated in (58) below.

Table 6.5: External reading, full DP remnants, perfective condition

	Case-ambiguous	Nominative	Accusative
Mean	4.41	4.54	2.02
Median	5	5	1
Variance	0.74	0.54	2.19
Standard deviation	0.87	0.74	1.50

(58) Kontext: [Deine Mutter / Dein Vater] hat schon ein Buch geschrieben, jedoch nie veröffentlicht, weil es nicht so gut gelungen ist. Du wirst aber eine Veröffentlichung schaffen.
   'Context: [Your mother / Your father] has already written a book but has never published it as it is not so good. You will make it to a publication, though.'

a. Du hast   ein besseres Buch als sie   geschrieben.
   you have.2SG a.N better.N book as she.NOM/ACC written
   'You have written a better book than her.'

b. Du hast   ein besseres Buch als er   geschrieben.
   you have.2SG a.N better.N book as he.NOM written
   'You have written a better book than him.'

c. Du hast   ein besseres Buch als ihn   geschrieben.
   you have.2SG a.N better.N book as him.ACC written
   'You have written a better book than him.'

The results for the items of the type in (58) are shown in Table 6.6. Again, the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval -3.4313 to -2.7087). Just like in the base condition, the results for the pronominal remnants are again clearer and show less variation: there is no significant difference between the full DP and the pronominal remnants in the preferred nominative version, while the difference between the two is significant ($p = 0.0001$; 95% confidence interval -1.3705 to -0.4695) in the accusative. This is possibly due to the repair effect in processing mentioned above. The results are thus also quite similar to the ones for the corresponding basic condition in Table 6.2.

Table 6.6: External reading, pronominal remnants, perfective condition

	Case-ambiguous	Nominative	Accusative
Mean	4.42	4.17	1.10
Median	5	5	1
Variance	0.78	1.35	0.22
Standard deviation	0.90	1.17	0.47

Consider now the following items for the perfective condition with an internal reading, involving full DP remnants:

(59)   Kontext: [Deine Schwester / Dein Bruder] ist ganz schön groß, jedoch
       nicht [die größte Frau / der größte Mann] der Welt.
       'Context: [Your sister / Your brother] is fairly tall but not [the tallest
       woman / the tallest man] in the world.'

    a. Ich habe   eine größere Frau   als deine   Schwester
       I   have.1SG a.F   taller.F   woman as your.F.NOM/ACC sister
       gesehen.
       seen
       'I have seen a taller woman than your sister.'

    b. Ich habe   einen größeren Mann als dein   Bruder gesehen.
       I   have.1SG a.M   taller.M man as your.M.NOM brother seen
       'I have seen a taller man than your brother.'

    c. Ich habe   einen größeren Mann als deinen   Bruder gesehen.
       I   have.1SG a.M   taller.M man as your.M.ACC brother seen
       'I have seen a taller man than your brother.'

The results for the items of the type in (59) are shown in Table 6.7. Again, the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval 1.3278 to 2.2922). Just like in the case of the basic condition with internal readings (and full DP remnants), see Table 6.3, the differences are less clear-cut than for the external readings. Nevertheless, the preference for the accusative remnant in this position is evidently there.

Table 6.7: Internal reading, full DP remnants, perfective condition

	Case-ambiguous	Nominative	Accusative
Mean	3.92	2.63	4.44
Median	4	3	5
Variance	1.41	2.03	0.77
Standard deviation	1.20	1.44	0.87

Consider now the following items for the perfective condition with an internal reading, involving full DP remnants:

(60)   Kontext: [Deine Schwester / Dein Bruder] ist ganz schön groß, jedoch nicht [die größte Frau / der größte Mann] der Welt.
      'Context: [Your sister / Your brother] is fairly tall but not [the tallest woman / the tallest man] in the world.'

    a. Ich habe   eine größere Frau   als sie   gesehen.
       I   have.1SG a.F   taller.F   woman as she.NOM/ACC seen
       'I have seen a taller woman than her.'

b. Ich habe   einen größeren Mann als er   gesehen.
   I   have.1SG a.M   taller.M   man as he.NOM seen
   'I have seen a taller man than him.'

c. Ich habe   einen größeren Mann als ihn   gesehen.
   I   have.1SG a.M   taller.M   man as him.ACC seen
   'I have seen a taller man than him.'

The results for the items of the type in (60) are shown in Table 6.8. Again, the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval 2.0157 to 2.9443). Just as with the basic condition, the pronominal remnants deliver clearer result, whereby the unambiguously nominative remnant is judged to be worse than with full DPs: there is no significant difference between the full DP and the pronominal remnants in the preferred accusative version, while the difference between the two is significant ($p = 0.0001$; 95% confidence interval 0.5489 to 1.5911) in the nominative, but at the same time the judgements are better than for accusative remnants in the external reading contexts.

Table 6.8: Internal reading, pronominal remnants, perfective condition

	Case-ambiguous	Nominative	Accusative
Mean	4.54	1.56	4.04
Median	5	1	4
Variance	0.62	1.20	1.37
Standard deviation	0.80	1.11	1.18

The same conclusions apply to cases where the *als* + DP sequence follows the lexical verb. A set of examples for the external reading with full DP remnants is shown in (61) below:

(61)   Kontext: [Deine Mutter / Dein Vater] hat schon ein Buch geschrieben, jedoch nie veröffentlicht, weil es nicht so gut gelungen ist. Du wirst aber eine Veröffentlichung schaffen.
       'Context: [Your mother / Your father] has already written a book but has never published it as it is not so good. You will make it to a publication, though.'

a. Du hast   ein besseres Buch geschrieben als deine
   you have.2SG a.N better.N book written   as your.NOM/ACC
   Mutter.
   mother
   'You have written a better book than your mother.'

b. Du hast   ein besseres Buch geschrieben als dein   Vater.
   you have.2SG a.N better.N book written   as your.NOM father
   'You have written a better book than your father.'

c. Du hast   ein besseres Buch geschrieben als deinen   Vater.
   you have.2SG a.N better.N book written   as your.ACC father
   'You have written a better book than your father.'

The results for the items of the type in (61) are shown in Table 6.9. Again, the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval −2.3388 to −1.3212).

Table 6.9: External reading, full DP remnants, perfective condition, extraposed

	Case-ambiguous	Nominative	Accusative
Mean	4.52	4.46	1.92
Median	5	5	1
Variance	0.87	1.00	2.08
Standard deviation	0.94	1.01	1.46

A set of examples for the external reading with pronominal remnants is shown in (62) below:

(62) Kontext: [Deine Mutter / Dein Vater] hat schon ein Buch geschrieben, jedoch nie veröffentlicht, weil es nicht so gut gelungen ist. Du wirst aber eine Veröffentlichung schaffen.
      'Context: [Your mother / Your father] has already written a book but has never published it as it is not so good. You will make it to a publication, though.'

a. Du hast   ein besseres Buch geschrieben als sie.
   you have.2SG a.N better.N book written   as she.NOM/ACC
   'You have written a better book than her.'

    b. Du hast   ein besseres Buch geschrieben als er.
       you have.2SG a.N better.N book written   as he.NOM
       'You have written a better book than him.'

    c. Du hast   ein besseres Buch geschrieben als ihn.
       you have.2SG a.N better.N book written   as he.ACC
       'You have written a better book than him.'

The results for the items of the type in (62) are shown in Table 6.10. Again, the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval -3.7511 to -3.2889). Just like in the non-extraposed conditions, the difference between the full DP versus pronominal remnants is not significant in the preferred nominative case, while there is a significant difference ($p = 0.0001$; 95% confidence interval -1.2840 to -0.4360) in the accusative case, the more explicit pronominal remnant being less acceptable.

Table 6.10: External reading, pronominal remnants, perfective condition, extraposed

	Case-ambiguous	Nominative	Accusative
Mean	4.58	4.58	1.06
Median	5	5	1
Variance	0.45	0.58	0.06
Standard deviation	0.68	0.77	0.24

Consider now the following items for the perfective condition with an internal reading, involving extraposed full DP remnants:

(63)   Kontext: [Deine Schwester / Dein Bruder] ist ganz schön groß, jedoch nicht [die größte Frau / der größte Mann] der Welt.
        'Context: [Your sister / Your brother] is fairly tall but not [the tallest woman / the tallest man] in the world.'

    a. Ich habe   eine größere Frau   gesehen als deine
       I   have.1SG a.F taller.F woman seen   as your.F.NOM/ACC
       Schwester.
       sister
       'I have seen a taller woman than your sister.'

    b. Ich habe   einen größeren Mann gesehen als dein   Bruder.
       I   have.1sg a.m   taller.m man seen   as your.m.nom brother
       'I have seen a taller man than your brother.'

    c. Ich habe   einen größeren Mann gesehen als deinen   Bruder.
       I   have.1sg a.m   taller.m man seen   as your.m.acc brother
       'I have seen a taller man than your brother.'

The results for the items of the type in (63) are shown in Table 6.11. Again, the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval 0.9526 to 2.0474).

Table 6.11: Internal reading, full DP remnants, perfective condition, extraposed

	Case-ambiguous	Nominative	Accusative
Mean	4.02	2.63	4.13
Median	5	2	5
Variance	1.69	1.90	1.69
Standard deviation	1.31	1.39	1.31

Consider now the following items for the perfective condition with an internal reading, involving extraposed pronominal remnants:

(64)   Kontext: [Deine Schwester / Dein Bruder] ist ganz schön groß, jedoch nicht [die größte Frau / der größte Mann] der Welt.
     'Context: [Your sister / Your brother] is fairly tall but not [the tallest woman / the tallest man] in the world.'

    a. Ich habe   eine größere Frau   gesehen als sie.
       I   have.1sg a.f   taller.f woman seen   as she.nom/acc
       'I have seen a taller woman than her.'

    b. Ich habe   einen größeren Mann gesehen als er.
       I   have.1sg a.m   taller.m man seen   as he.nom
       'I have seen a taller man than him.'

    c. Ich habe   einen größeren Mann gesehen als deinen Bruder.
       I   have.1sg a.m   taller.m man seen   as he.acc
       'I have seen a taller man than him.'

The results for the items of the type in (64) are shown in Table 6.12. Again, the difference between the nominative and accusative masculine remnants is significant ($p < 0.0001$; 95% confidence interval 2.2557 to 3.0443). Just like in the non-extraposed conditions, the difference between the full DP versus pronominal remnants is significant in the nominative case ($p = 0.0023$; 95% confidence interval 0.3012 to 1.3388), the more explicit pronominal remnant being less acceptable, while there is no significant difference in the preferred accusative case.

Table 6.12: Internal reading, pronominal remnants, perfective condition, extraposed

	Case-ambiguous	Nominative	Accusative
Mean	3.88	1.81	4.46
Median	4	1	5
Variance	1.44	1.32	0.54
Standard deviation	1.21	1.16	0.74

In addition, I examined patterns with particle verbs (where the particle remains in the base position; the *als* + DP sequence can either precede or follow the particle). The conclusions pointed out above, however, remain across these conditions. As eventual further differences are not relevant for the purposes of the present discussion, I will not evaluate the results for these conditions here.

6.6.5 Discussion

When interpreting the acceptability ratings reported above, it should be clear that they do not straightforwardly translate into grammaticality judgements. Moreover, the ratings for the case-unambiguous items indicate that the same kind of sentence can be acceptable in one condition and not acceptable in another, just as discussed for (52) already. In other words, the constructions under scrutiny are in fact all grammatical in isolation and their acceptability in a given context depends on whether they are compatible with that context.

That being said, the following can be established regarding the case-distinction patterns (the conclusions regarding the underlying syntax carry over to case-ambiguous patterns as well): (i) the clear case distinction established based on simple grammaticality judgements (see the discussion regarding (52) at the beginning of this section) is confirmed, and (ii) there are significant differences between full DP and pronominal remnants (which are not readily determined

without experimental investigation). The fact that accusative remnants receive very low ratings with the DP-external reading is expected on the basis of the baseline (predicative) pattern in German, given in (44), since the accusative case is not available as a default case (that is, in the absence of an overt case marker). This suggests that, just like in (49) for English above, the DP-external reading involves an underlying TP. Taking the sentence in (53b), this is illustrated as follows:

(65) Ich male   ein schöneres Bild   als [$_{FP}$ mein   Bruder [$_{TP}$ t ein
      I   paint.1SG a.N nicer.N   picture as   my.M.NOM brother   a.N
      x-schönes Bild   malt]].
      x-nice.N   picture paints
      'I am painting a nicer picture than my brother.'

An underlying PredP would be problematic for semantic reasons, as that configuration would reconstruct a completely different meaning ('I am painting a nicer picture than my brother is x-nice'), which is infelicitous.

On the other hand, accusative remnants are judged to be better than nominative remnants in the DP-internal reading, though nominative remnants are slightly better in this condition than accusative remnants in the DP-external reading. The high acceptability and the preference for accusative remnants are not expected on the basis of the baseline (predicative) pattern in (44), since German predicative comparatives appear to either involve a full tensed TP underlyingly or to use the default nominative case in the absence of a case assigner, both possibilities resulting in a surface nominative remnant. Nevertheless, the accusative remnant in the DP-internal condition can be modelled in a way similar to (50) above for English, namely that the subclause involves a tenseless PredP rather than a TP. Taking the sentence in (55c), this is illustrated as follows:

(66) Ich kenne   einen größeren Mann als [$_{FP}$ deinen   Bruder [$_{PredP}$ t
      I   know.1SG a.M taller.M   man as   your.M.ACC brother
      x-groß BE]].
      x-tall   BE
      'I know a taller man than your brother.'

As discussed above, the PredP is headed by a tenseless abstract element (in line with what den Dikken 2006 refers to as relators); I take PredP to be head-final in German (cf. Salzmann & Schaden 2019). By way of looking at (66), it is evident that there is no nominative case assigner in the subordinate clause; in other words, when examining the comparative subclause here, it is reasonable to claim

that the remnant DP can be viewed as caseless. If so, however, we would actually expect the nominative case to appear, as this is the default case in German.

This strongly suggests that the accusative case comes from somewhere else, namely from outside the clause: were the accusative available as a default or were the complementiser *als* a potential case assigner, (44b) should be possible.

I assume, in line with Bacskai-Atkari (2017b), that the accusative case is ultimately governed by the matrix verb (*kenne* in (66) above) and the caseless remnant receives the same morphological case as the matrix direct object (*einen größeren Mann* in (66) above). Indeed, the remnant is taken to be part of the direct object DP inasmuch as it is extraposed to the edge of the DP but not (necessarily) beyond that: recall that in (51) and (52) above, the *als* + DP sequence precedes the lexical verb.

As discussed in Chapter 5, the comparative subclause (of the category CP) is base-generated as a complement of the comparative (Compr) head (taken to be Deg in various earlier analyses). In predicative comparatives, the underlying structure is reflected by the surface word order:

(67) Ralf   ist [größer als ich].
      Ralph is   taller   as I
      'Ralph is taller than me.'

In this case, the Compr head is lexicalised by *-er* and the comparative subclause *als ich* follows the matrix degree expression immediately. The entire degree expression forms a constituent; this can also be seen in patterns where it is fronted to [Spec,CP] as a whole:

(68) [Viel   größer als ich] war   sie nicht.
       much taller as I   was.3SG she not
      'She was not much taller than me.'

In other cases, however, the subclause has to be extraposed; note that this is not a specific property of German attributive comparatives but can be observed more generally and it is apparently related to how phases are spelt out (see the discussion in Bacskai-Atkari 2018c: 53–56 and references there). The underlying order given in (67) is not possible in German attributive comparatives (irrespective of the reading):

(69) * Ich kenne   eine [größere als meine Mutter] Frau.
        I   know.1SG a.F   taller.F as my.F   mother woman
       'I know a taller woman than my mother.'

As can be seen, the degree expression containing the comparative subclause is not licensed in this case. The comparative subclause must be extraposed:

(70) Ich kenne   [eine größere *t* Frau   [als meine Mutter]].
      I   know.1SG a.F taller.F   woman as my.F mother
      'I know a taller woman than my mother.'

Still, the DP containing the degree expression forms a constituent with the comparative subclause, as also indicated by examples like the following, where the entire constituent is fronted to the [Spec,CP] position:

(71) [Eine klügere Frau   als sie] wäre   vorsichtiger   gewesen.
       a.F   smarter.F woman than she] be.COND.3SG more.cautious been
      'A smarter woman than her would have been more cautious.'

This is possible only if the extraposed subclause can be attached to the DP. Since the DP is assumed to be a phase (see Chomsky 2008, citing Svenonius 2004 and Hiraiwa 2005), it is not surprising that extraposition can target the DP-edge.

In cases like (66), what happens is that the remnant of the comparative subclause containing a PredP as the complement of F (instead of a TP) is caseless in the given position; it is part of the matrix DP as it is extraposed onto the DP edge. This DP receives accusative case as it is the direct object of the matrix verb: the accusative case is extended onto the caseless remnant. Note that this is strictly subject to both conditions, i.e. (i) that it is caseless in the syntactic derivation and (ii) that it forms a constituent with an accusative-marked DP. In all other configurations, it should appear as nominative, either because it receives nominative case in a TP or because it is assigned the default nominative case: otherwise, predicative comparatives like (44b) should be licensed.

This suggests a late insertion approach to the insertion of lexical items in the derivation, as in Distributed Morphology. In Distributive Morphology, it is assumed that terminal nodes in all components of grammar except for phonology consist only of morphosyntactic/semantic features: in other words, they lack phonological features (Halle & Marantz 1993, Embick & Noyer 2007). The terminal nodes used to build the underlying structure (in traditional notions: D-structure) come from the component called the Lexicon: lexical items are essentially viewed as feature bundles. A functional morpheme is a feature bundle consisting of syntactic/semantic features, and a content morpheme is a category-neutral lexical root. Phonological content is added only after Spell-Out, in the

Morphological Structure (MS) from the component termed Vocabulary. The inserted vocabulary items need not match the original terminal nodes in a one-to-one fashion: terminal nodes may undergo various operations (such as morphological merger and fusion) that result in cumulative expression. Further, while inherent inflection is added into the syntax, contextual inflection (such as agreement) is added also in the Morphological Structure only (referred to as "ornamental" by Embick & Noyer 2007 precisely because such inflection does not affect the semantics).

For our purposes, what matters is that since case assignment is contextual inflection, it does not affect the semantics either and can therefore be added late. Note that this of course presupposes a certain syntactic configuration licensing the individual case values. Crucially, however, while the syntactic configuration is such that the direct object DP can only receive accusative case, the caseless remnant could in principle be assigned the default nominative if it were not part of the larger DP containing both the direct object DP and the remnant. Indeed, as the ratings for the nominative remnants with the DP-internal reading indicate, which are higher than the ratings for the accusative remnants with the DP-external reading, this scenario is not altogether excluded. In other words, while an underlying nominative subject cannot be "re-assigned" accusative case, an underlying caseless subject can be assigned accusative case if it falls into the accusative domain of the direct object.

It appears that ellipsis, as defined by the [E] feature on F, precedes case assignment: this is straightforward in a late insertion approach, as the point is precisely that the string generated by the syntactic component lacks phonological features: the part marked to be elided already receives no phonological realisation. In the complex DP containing the direct object and the remnant, then, no predicate is present any more.

What matters for the present discussion is not so much the morphology–syntax interface, though, but rather what implications these findings have for the FP. Just as with the sluicing patterns discussed in Section 6.5, it is evident that the FP allows an underlying syntactic configuration that does not match the overt configuration and does not parallel the antecedent clause syntactically. The key assumption is that these underlying configurations are fully recoverable; in addition, they involve less structure than the overt counterparts. This suggests that recoverability and the economy of derivation interact in a way that actually favours the emergence of more condensed syntactic patterns in elliptical clauses. In this way, the FP has an important impact on the syntax since it has an immediate effect on the projections involved in the structure of the elliptical clause, which goes well beyond the addition of the FP projection itself.

Regarding German comparatives, the presence of the FP licenses a tenseless PredP as a complement in certain attributive configurations; this projection would not be possible with the same properties overtly. As a consequence, the subject remnant can be accusative in these instances even though subject accusative remnants are otherwise not possible. In fact, this is not limited to German but it can be observed in Icelandic as well. Icelandic is a language that has a nominative/accusative system (see Hróarsdóttir 2000: 115–116), contrary to the Mainland Scandinavian nominative/oblique system. Just like in German, the subject remnant of a predicative comparative is in the nominative:[12]

(72) a.   Egill er hærri en   þú.
           Egill is taller than you.NOM
           'Egill is taller than you.'

     b.   *Egill er hærri en   þig
           Egill is taller than you.ACC
           'Egill is taller than you.'

Just like in German, the potentially ambiguous attributive cases are disambiguated by the nominative/accusative distinction on the remnant:

(73) a.   Ég sá   hærri konu   en   móðir   mín.
           I   saw.1SG taller woman than mother.NOM my.NOM
           External reading: 'I saw a taller woman than my mother saw.'

     b.   Ég sá   hærri konu   en   móður   mína.
           I   saw.1SG taller woman than mother.ACC my.ACC
           Internal reading: 'I saw a taller woman than my mother is.'

As indicated, the DP-external reading is associated with the nominative remnant, as in (73a), while the DP-internal reading is associated with the accusative remnant, as in (73b). The latter would not be expected on the basis of (72) but it is expected based on the German experiment data discussed in Section 6.6.3 and Section 6.6.4.

In languages like English, accusative remnants are available in basic predicative structures. Recall the basic pattern from (47), repeated here as (74):

(74) a.   ? Ralph is taller than **I**.
     b.   Ralph is taller than **me**.

---

[12]I owe many thanks to Jóhannes Gísli Jónsson for his help with the Icelandic data.

Cases like (74a) work in the same was as ordinary tensed comparatives like (49) and can be modelled as follows:

(75)   Ralph is taller than [$_{FP}$ I [$_{TP}$ ~~t am x-tall~~]].

This is the same kind of construction as for German predicative comparatives; note, however, that a German predicative comparative without an overt case assigner would mark the remnant as nominative since the default case in German is the nominative. In English, a non-tensed clause gives an accusative remnant per default case:

(76)   Ralph is taller than [$_{FP}$ me [$_{PredP}$ ~~t BE x-tall~~]].

The difference from the German cases like (66) lies in the context-independent nature of the accusative case in English: there needs to be no accusative case licensor since the accusative appears per default. This is contingent upon the assumption that the complement clause is a PredP and not a TP, in line with the suggestion of Pancheva (2006), who also assumed that reduced clausal comparatives can be smaller (in her analysis, small clauses). Unlike Pancheva (2006), however, the present analysis assumes that the PredP-structure is not unprecedented in elliptical configurations and is not an idiosyncratic property of comparatives.

In English, however, the availability of such caseless remnants does not appear to be contingent upon the presence of a genuine PredP. Consider the following example for a non-elliptical nominal comparative:

(77)   Peter has more cats than Mary has dogs.

In this case, only the degree marker (*x-many*) is covert but since it it zero anyway (Bacskai-Atkari 2018c: 78–80), there is no reason to assume any designated ellipsis process. The structure can therefore be modelled as follows:

(78)   Peter has more cats than [$_{TP}$ Mary has (x-many) dogs].

Once the direct object is not contrastive, the comparative subclause can be elliptical in nominal comparatives as well, producing (79):

(79)   Peter has more cats than Mary (has).

With an underlying TP, there is a straightforward ellipsis process involving the FP:

(80)   Peter has more cats than [$_{FP}$ Mary [$_{TP}$ ~~t has (x-many) dogs~~]].

If this were the only possible derivation, then we might in principle expect the remnant DP to be in the nominative, since as a subject of a TP it receives nominative case. This is, however, not always the case:

(81)   Peter has more cats than her.

Taking the analysis for predicative constructions above, one might be tempted to carry over the conclusions and suggest that there is a PredP instead of a TP in such cases:

(82)   # Peter has more cats than [$_{FP}$ her [$_{\overline{PredP}}$ ~~*t* BE x-many cats~~]].

As indicated, however, this is infelicitous and does not match the purported output in (81). As there is no attributive adjective in the matrix clause in the way it was attested in the attributive comparative structures, it is evident that no predicative subclause can be reconstructed in an analogous way. In other words, PredP is not an available option (either in the sense taken above or in the sense of Pancheva 2006).

I follow Pancheva (2006) in assuming that English *than*-comparatives are underlyingly clausal in all cases, since they semantically pattern with ordinary clausal comparatives and not with genuine phrasal comparatives; this is also evidenced by the fact that in the attributive constructions discussed in Section 6.6.3 above for German, they allow the external reading, which is banned in genuine phrasal comparatives involving PPs or inherently case-marked DPs (Bacskai-Atkari 2017a,b). In other words, the *than*-XP is not a PP and *than* is not a case assigner.

If so, however, the question arises what sort of projection we have in the *than*-clause below the FP. One way to think of it is that there is, in fact, none: the FP hosts the remnant in its specifier and the complement, consisting of a quantified DP, is elided since the F head contains the [E] feature. The structure is represented in Figure 6.11.

This, of course, involves a reinterpretation of the original FP, as the properties of the original FP and the PredP are conflated: the remnant does not undergo movement but is merged directly as a specifier in the FP, and the quantified DP is merged as a complement. The F head is more abstract than the Pred head, since it does not actually introduce a predicative relation between the two; this goes beyond the small clause analysis of Pancheva (2006) as well, which includes predicative comparatives only.

In cases like (81) the complement of F is expected to be zero, since it is logically identical to its antecedent in the matrix clause (Bacskai-Atkari 2018c: 78–80). The
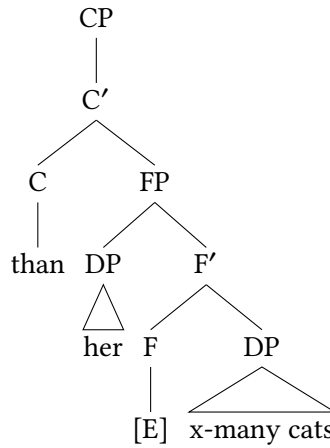
Figure 6.11: Deriving the accusative remnant in English

point is, however, that the configuration is not available in a non-elliptical version in cases where the complement would have to be overt either:

(83)   * Peter has bought more cats than her dogs.

The complement of F cannot be contrastive as it could not be elided in that case.

The role of the FP is altogether similar to the FP in Hungarian, as discussed in Section 6.4, in that the projection is not restricted to ellipsis: indeed, the specifier serves to host a constituent that bears main stress in both cases and the presence of the [E] feature on F is incompatible with the marking of finiteness – which, however, has different conclusions for the two language types, as the English (and more generally, Germanic) FP is restricted to elliptical and non-finite contexts and is not associated with focus-marking in any other contexts. It is very likely, though, that elliptical patterns have a considerable impact on the establishment of the FP as a lower functional periphery (cf. Bacskai-Atkari & Dékány 2014) and it remains to be investigated whether comparable processes can be detected in English (and across Germanic). What matters for us here is that the FP, taken as a functional projection that can host constituents not specified for clause-typing in its specifier and containing the [E] feature as a head, can have an impact on the syntactic architecture of (embedded) clauses in a way that goes beyond its originally assumed functions.

6.7 Summary

While most of this book examined finite, non-elliptical clauses, concentrating on clause-typing elements in the CP-periphery, this chapter investigated information-structural movement to the left periphery, as well as clausal ellipsis. Regarding this, it was shown that information-structural notions are not directly built into the narrow syntax in terms of designated projections and distinguishing information-structurally marked constituents is primarily a prosodic matter in the languages under scrutiny. Regarding ellipsis, it was shown that information-structural notions are crucial and that not only the high CP-periphery but also lower functional projections are relevant. The feature-based model proposed here can successfully integrate these questions as well, making also interesting predictions in terms of the realisation of remnants.

7 Conclusion

The aim of this book was to examine the syntax of functional left peripheries in West Germanic, with a particular focus on how sentence types are marked at the leftmost edge of the clause and how the presence of multiple visible markers can be accounted for. Naturally, the analysis given here was restricted to a few selected issues and could not cover all questions in equal depth; still, the selected issues provide a sound basis for the theory developed in this work and can serve as a foundation for the proposed model. In addition to the specific constructions, a major interest of my research was to account for the observed cross-linguistic and dialectal variation in a formal way, with the aim of identifying both common West Germanic properties as well as language-specific constraints that may be responsible for the attested constraints. Ultimately, the goal was to tie the construction-specific constraints to more general properties of the languages under scrutiny, allowing for a grammar with as few construction-specific rules as possible.

Chapter 2 presented the basic assumptions concerning a minimal, feature-based approach to the syntax of functional left peripheries, showing that the proposed analysis applies to various clause types, in each case correctly predicting the surface order of clause-typing elements appearing in combinations. Since the relevant combinations are restricted to embedded clauses in Germanic languages, this chapter focussed on subordinate clauses, while maintaining the assumption that the analysis is applicable to main clauses as well. In particular, I argued against cartographic approaches (in particular Rizzi 1997, 2004), showing that clause-typing elements appearing on functional left peripheries are not in a one-to-one relationship with syntactic features, and the assumption that there are designated projections for the various semantic properties is fundamentally flawed. Instead, I proposed that functional left peripheries are as minimal as possible, and multiple projections are generated when the relevant semantic properties cannot be marked in a single projection; whether this is the case is ultimately dependent on the lexical properties of the individual clause-typing elements.

In current minimalist theory, the Complementiser Phrase (CP) is responsible for typing clauses and for encoding finiteness in finite clauses. Apart from complementisers, various operators can appear in this domain. Consider:

(1)   a.   I wonder **if** Ralph has arrived.

         b.   I wonder **whether** Ralph has arrived.

The standard assumption is that complementisers are by definition C heads, while operators move to the [Spec,CP] position. In (1a), the element *if* is a complementiser and it types the subordinate clause as interrogative. In (1b), there is no overt complementiser but the operator *whether* is present. In (1b), assuming that the operator is in the specifier, the clause is typed by a zero complementiser. Nevertheless, both kinds of elements (complementisers and operators) can overtly encode clause type; this was assumed to be the reason for the ban on the co-occurrence of the two in dialects like Standard English:

(2)   * I wonder **whether if** Ralph has arrived.

In other cases, however, we can observe a clear split in the function of two elements. In West Germanic, the CP is not restricted to hosting a single overt element: depending on the particular construction and the dialect, multiple elements may appear in the CP-domain. This is illustrated by (3a) for non-standard English and by (3b) for Norwegian (Bacskai-Atkari & Baudisch 2018: 175):

(3)   a.   % I wonder **which book that** Ralph is reading.

         b.   Peter spurte   **hvem som** likte bøker.
             Peter asked.3sg who   that liked books
             'Peter asked who liked books.'

Such combinations raise the question whether the postulation of multiple CP projections is necessary in such cases. Chapter 2 argued that while the generation of multiple functional layers is in principle possible, it should be appropriately restricted to exclude the generation of superfluous layers that are empirically not motivated. This question is likewise relevant in cases involving a single overt C-element, since then the question arises whether and to what extent covert elements and phonologically not visible projections are present. Adopting a minimal CP approach, in part following Sobin (2002), I argued in Chapter 2 that while the operator and the complementiser in cases like (3) are associated with distinct functions, namely the overt marking of clause type and finiteness, respectively, they can still be located in a single CP, schematically represented in Figure 7.1.

In an embedded constituent question, two properties must be encoded by the CP: the interrogative clause-typing feature [wh] and the finiteness feature [fin], since both of these properties are required by the matrix predicate. The properties can be split between two elements, one merged as a specifier and one being
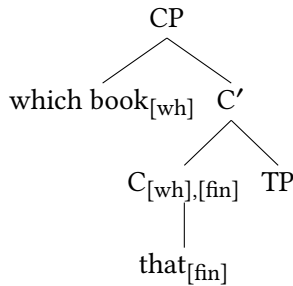
Figure 7.1: Doubly Filled COMP

the head, so that the features are stacked in a single projection. This is a more economical way than postulating two separate projections for encoding each property, as that would also presuppose the existence of additional empty elements, which are not motivated otherwise, and also a separate mechanism for the upward percolation of [fin], so that it remains visible for the matrix predicate. The ordering restrictions on the combination of a finite complementiser and an interrogative operator follow straightforwardly from the way specifiers are merged in the syntactic component. Note that ordering restrictions may differ if lower peripheries (following Poletto 2006) are involved, since in that case the separation of projections is additionally motivated by separate functional peripheries.

On the other hand, interrogative complementisers regularly mark finiteness as well. Consider:

(4)   a.   I don't know **if** I should call Ralph.

      b.   I don't know **whether** I should call Ralph.

      c.   *I don't know **if** to call Ralph.

      d.   I don't know **whether** to call Ralph.

In (4a), the complementiser *if* introduces a finite embedded interrogative clause, and as the ungrammaticality of (4c) shows, it is incompatible with a non-finite clause, suggesting that it encodes finiteness in addition to the interrogative property. By contrast, the operator *whether* is compatible both with a finite clause, see (4b), and with a non-finite clause, see (4d), indicating that the overt marking of interrogativity is not incompatible with a non-finite clause in English. In this case, too, a single CP projection is sufficient for encoding the interrogative property (argued to be [Q] in polar questions) and [fin], as both are lexical properties of the same complementiser. In the case of *whether*, just like with

ordinary *wh*-operators in dialects like Standard English, a phonologically empty complementiser is assumed for encoding finiteness: such complementisers are semantically motivated and, since they are attested in other constructions as well, independently motivated.

Finally, Chapter 2 investigated the issue of certain non-trivial combinations in which elements seem to be largely similar, as in the non-standard German example in (5a):

(5)   a.   % Ralf   ist größer **als**   **wie** Maria.
           Ralph is taller   than as   Mary
           'Ralph is taller than Mary.'

      b.   Ralf   ist größer **als**   Maria.
           Ralph is taller   than Mary
           'Ralph is taller than Mary.'

      c.   % Ralf   ist größer **wie** Maria.
           Ralph is taller   as   Mary
           'Ralph is taller than Mary.'

      d.   Ralf   ist so groß **wie** Maria.
           Ralph is so tall   as   Mary
           'Ralph is as tall as Mary.'

In (5a), the elements *als* and *wie* both seem to mark the comparative nature of the clause, whereby single *als* is the comparative particle in Standard German comparatives, see (5b). Single *wie* is the comparative particle in equatives, see (5d), and in certain dialects also in comparatives, see (5c). Since there is independent evidence for both elements being complementisers and for there being a separate comparative operator in the lower CP, Chapter 2 argued that configurations like (5a) differ from the kind of doubling represented by (3) in that two separate CPs are involved in the left periphery of the clause, whereby doubling is ultimately motivated by comparative semantics. The point is that while the model put forward in Chapter 2 explicitly involves less structure in most of the examined patterns than would be postulated by cartographic approaches, there is no assumed commitment to there being always a single CP only. If motivated by the co-presence of overt elements and/or by independently established semantic properties, the CP-periphery can indeed be larger than a single CP. This assumption makes the proposed model not only restrictive in terms of the number of projections but also flexible enough to account for a number of phenomena.

Using the framework established in Chapter 2, Chapter 3 was devoted to the left periphery of interrogative clauses, especially embedded ones. In particular,

I examined various combinations of operators and complementisers in the left periphery that are allowed in certain dialects but not in others. The impossibility of the relevant combinations in standard West Germanic languages has been referred to as the "Doubly Filled COMP Filter" in the literature, suggesting some inherent syntactic ban on the configurations; however, the generalisation is not compatible with empirical data from non-standard dialects and from other languages allowing the combinations in question. I argued that the existence of such combinations does not require or justify the postulation of designated projections, as in cartographic approaches. Instead, I proposed that doubling patterns are compatible with a minimal CP and the insertion of a finite complementiser is not an indication of a separate projection for finiteness but merely the consequence of the regular Germanic pattern of lexicalising a finite C overtly, as can also be seen in V2 patterns.

In Standard English, Standard German and Standard Dutch, there is no overt complementiser with an overt interrogative operator. This is illustrated in (6) for English embedded interrogatives:

(6)   I don't know **who (*that)** has arrived.

As can be seen, the complementiser *that* is not permitted in Standard English in embedded constituent clauses. This restriction was captured by the notion of the Doubly Filled COMP Filter going back to Chomsky & Lasnik (1977), who assumed that one of the elements in COMP (which was analysed as CP in later approaches) must be deleted. However, as Chomsky & Lasnik (1977) also mention, there are languages and also many West Germanic varieties that allow such patterns, as in the following examples from non-standard English (Baltin 2010: 331, ex. 1) and from non-standard Dutch (Bacskai-Atkari & Baudisch 2018: 32):

(7)   a. % They discussed a certain model, but they didn't know **which model that** they discussed.
       b. % Peter vroeg   **wie dat** er   boeken leuk   vindt.
           Peter asked.3sG who that of.them books   likeable finds
           'Peter asked who liked books.'

Assuming the structure given in Figure 7.1, it is evident that the CP is doubly filled in these cases, both the specifier and the head containing overt elements. This, however, is by no means exceptional: as pointed out in Chapter 3, the specifier of the CP and the C head can be both lexicalised overtly in main clauses, as in T-to-C movement in English interrogatives, and in V2 clauses in German

and Dutch main clauses. Consider the examples for main clause interrogatives in Standard English:

(8) a. **Who saw** Ralph?
     b. **Who did** Ralph see?

In this case, doubling in the CP involves a *wh*-operator in [Spec,CP] and a verb in C. T-to-C movement is visible by way of *do*-insertion in (8b), though not in (8a): in principle, one might analyse (8a) as not involving the movement of the verb to C, but the CP is clearly doubly filled in (8b).

Similarly, in German (and Dutch) V2 declarative clauses, there is a verb moving to C, while another constituent moves to [Spec,CP] due to an [edge] feature (see Thiersch 1978, Fanselow 2002, 2004a,b, Frey 2005, den Besten 1989). Consider:

(9) a. **Ralf hat** morgen   Geburtstag.
        Ralph has tomorrow birthday
        'Ralph has his birthday tomorrow.'
     b. **Morgen   hat** Ralf   Geburtstag.
        tomorrow has Ralph birthday
        'Ralph has his birthday tomorrow.'

As can be seen, the fronted finite verb is preceded by a single constituent in each case, and since the first constituent is not a clause-typing operator in either case, it is evident that doubling in the CP in V2 clauses is independent of the interrogative property.

Chapter 3 therefore argued that any constraint underlying the Doubly Filled COMP Filter should be more restricted in its application domain. In principle, one could say that an operator and a complementiser with largely overlapping functions are not permitted to co-occur in standard West Germanic languages, or that there is some kind of an economy principle. On the other hand, the notion of the Doubly Filled COMP Filter implies that the C head and [Spec,CP] would be filled without the Filter, and the Filter is responsible for "deleting" the content of C: this approach was argued to be problematic in Chapter 3.

Instead, Chapter 3 proposed that the filling of C with overt material in Doubly Filled COMP patterns in Germanic, such as (7), is in line with the general syntactic paradigm, in which the C position is regularly lexicalised by an overt element, as in the patterns in (8) and (9) above. For a configuration like (9b), I assume the structure given in Figure 7.2.
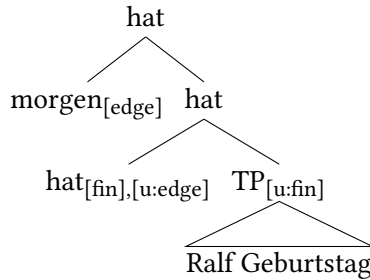
Figure 7.2: The structure of German V2

In Figure 7.2, the TP has an unchecked feature, [u:fin], which is ultimately projected by the verb but can only be checked by the fronting of the verb and re-merging it as a sister to the head, following Fanselow (2004b: 309). As there is no clause-typing feature that would trigger movement, an [edge] feature is responsible for the movement of the XP (here: *morgen*) to the first position, resulting in surface V2. Doubly Filled COMP patterns differ only in that the movement of the specifier element is triggered by the interrogative feature, [wh] or [Q], anyway, and the finiteness feature of TP is checked off by inserting a complementiser. In dialects showing Doubly Filled COMP, there is no phonologically zero complementiser in the lexicon that would be compatible with the required features, resulting in overt doubling. This also indicates that elements other than complementisers can satisfy the requirement of filling C, indicating that the deletion approach to the lack of Doubly Filled COMP patterns is not adequate, as there is no underlying complementiser.

In addition, there is a theoretical problem with the notion of the Filter, which arises from a merge-based, minimalist perspective, while it is less problematic in X-bar theoretic terms. X-bar theoretic notions can at best taken to be descriptive designators that are derived from more elementary principles, in the vein of Kayne (1994) and Chomsky (1995). Under this view, the position of an element (specifier, head, complement) is a result of its relative position when it is merged with another element, and which element is chosen to be the label. By contrast, the notion of the Doubly Filled COMP Filter, as applied to a CP (as in Baltin 2010), implies that a phrase is generated with designated, pre-given head and specifier positions, and that there are additional rules on whether and to what extent they can be actually "filled" by overt elements. In a merge-based account, there are no literally empty positions as no positions are created independent of merge: zero heads and specifiers reflect elements that are either lexically zero or have been eliminated by some deletion process (for instance, as lower copies of a movement

chain or via ellipsis). This requirement is met by structures like Figure 7.2 and the same applies to the analogous counterparts containing complementisers and clause-typing operators.

Chapter 4 was devoted to the analysis of relative clauses, applying the framework established in Chapter 2 and refined for interrogative clauses in Chapter 3. The notion of the "Doubly Filled COMP Filter" emerged in the literature primarily in connection with relative clauses in English. One of the most important questions addressed in Chapter 4 was therefore whether and to what extent the conclusions drawn in Chapter 3 for embedded interrogatives hold for relative clauses in West Germanic. On the one hand, combinations of operators and complementisers were examined; such combinations are particularly important as they are not compatible with traditional cartographic approaches. On the other hand, the question was addressed why and to what extent there seems to be a preference for relative complementisers over relative pronouns in Germanic. This preference was shown to make doubling patterns less likely to appear in relative clauses than in embedded constituent questions in dialects that allow the relevant patterns.

West Germanic languages show considerable variation in terms of elements introducing relative clauses. There are two major strategies: the relative pronoun strategy and the relative complementiser strategy. In present-day Standard English, both of these strategies are attested. Relative pronouns are illustrated in (10) below:

(10)   a. I saw the woman **who** lives next door in the park.

        b. The woman **who/whom** I saw in the park lives next door.

        c. I saw the cat **which** lives next door in the park.

        d. The cat **which** I saw in the park lives next door.

As can be seen, relative pronouns show partial case distinction and distinction with respect to whether the referent is human or non-human. In particular, *who*/*whom* is used with human antecedents, as with *the woman* in (10a) and (10b); the form *who* can appear both as nominative and as accusative, while the form *whom* used for the accusative is restricted in its actual appearance (formal/-marked). With non-human antecedents, such as *the cat* in (10c) and (10d), the pronoun *which* is used, which shows no case distinction. Note that apart from human referents, *who(m)* is possible with certain animals: these are the "sanctioned borderline cases" (see Herrmann 2005: 41, quoting Quirk et al. 1985). On the other hand, non-standard dialects allow *which* with human referents: five of the six dialect areas show this, while the proportion of *which* is very low in

Northern Ireland (see Herrmann 2005: 41). The construction is illustrated in (11) below (Herrmann 2005: 42, ex. 4a):

(11) […] And the boy **which** I was at school with […]
      (*Freiburg English Dialect Corpus* Wes_019)

At any rate, English relative pronouns are formed on the *wh*-base and no longer on the demonstrative base. Note that this is historically not so, and the present-day complementiser *that* was reanalysed from a pronoun, while the *wh*-based relative operators appeared only in Middle English (van Gelderen 2009).

Accordingly, the complementiser *that* constitutes the second major strategy:

(12) a. I saw the woman **that** lives next door in the park.
      b. The woman **that** I saw in the park lives next door.
      c. I saw the cat **that** lives next door in the park.
      d. The cat **that** I saw in the park lives next door.

The complementiser *that* is not sensitive to case and to the human/non-human distinction, which follows from its status as a C head.

Given the availability of two strategies, Chapter 4 examined the question to what extent the two can be combined and what implications such combinations have for the theory. It was shown that while combinations are perfectly possible, they are less likely to occur than surface-similar doubling in embedded interrogatives. I argued that this is because the complementiser strategy already satisfies the lexicalisation requirement on C, so varieties that have this strategy are likely to prefer it over the use of relative pronouns, especially in functions high on the Noun Phrase Accessibility Hierarchy of Keenan & Comrie (1977). Relative pronouns are recoverable (unlike interrogative pronouns), so they are not necessary overt: in functions lower on the Noun Phrase Accessibility Hierarchy, they are more likely to occur as they overtly identify the gap. Nevertheless, doubling is attested both in English and in German (in non-standard varieties); for such combinations, the structure given in Figure 7.3 was adopted.

In essence, Figure 7.3 parallels Figure 7.1 above. Notice, however, that there is no perfect split between the functions, as the complementiser not only encodes [fin] but it also carries a clause-typing feature, namely [rel]. This analysis gains support from German dialects, where the complementiser occurring in relative clauses is *wo*, which is not surface-identical to the regular finite complementiser *dass*, indicating that a split CP approach could not account for the combination. Regarding the combinability of the individual elements in West Germanic, a

```
                        CP
                      /    \
          who(m)/which[rel]  C′
                            /  \
                    C[rel],[fin]  TP
                          |
                    that[rel],[fin]
```
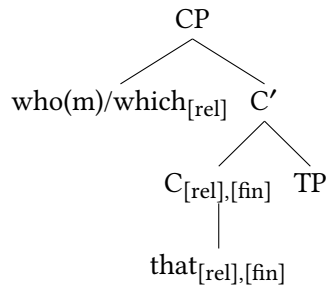
Figure 7.3: Doubling in relative clauses

clear tendency was observed regarding the etymology of the individual elements: genuine doubling involving a relative operator and a relative complementiser is found only in the forms where a demonstrative-based pronoun is combined with a *wh*-based complementiser (as in dialects of German), or where a *wh*-based pronoun is combined with a demonstrative-based complementiser (as in English). This follows most probably from the interpretability of the [rel] feature on the individual elements: namely, it is interpretable on demonstrative-based elements and must be checked off on *wh*-based elements.

Building on the theory put forward in the previous chapters, Chapter 5 examined comparison constructions, including non-degree equatives (similatives), degree equatives, and comparatives expressing inequality. It was shown that while these constructions are similar in several respects, they show differences in ways that are slightly unexpected for analyses developed primarily for comparatives expressing inequality. The differences become evident especially when looking at the possible combinations of complementisers and operators at the left periphery of the subordinate clause. The various combinations are naturally relevant for the theory of functional left peripheries because they provide an ideal testing ground for whether designated projections are necessary, as is done in cartographic approaches, or whether a more minimal CP is favourable. Comparison constructions indeed provide evidence for the existence of multiple CP projections, yet the availability of overt combinations is subject to constraints that cartographic approaches cannot handle in an adequate way. Instead, I proposed that the restrictions and requirements on multiple marking should not be tied to designated projections but they follow from the semantic properties of the individual constructions and are also in interaction with the properties of the matrix element.

Embedded degree clauses fall into two major types: degree equatives, also called comparatives expressing equality, as given in (13a), and comparatives expressing inequality, as given in (13b):

(13)   a. Ralph is as tall **as** Mary is.

       b. Ralph is taller **than** Mary is.

In (13a), the subclause introduced by *as* expresses that the degree to which Mary is tall is the same as to which Ralph is tall, while in (13b) the subclause introduced by *than* expresses that the degree to which Mary is tall is lower than the degree to which Ralph is tall.

The comparison constructions presented in (13) above are instances of degree comparison: there is one degree expressed in the matrix clause and another one expressed in the subclause. The matrix degree morpheme is *as* in degree equatives and it selects an *as*-clause, while the matrix degree morpheme in degree comparatives is *-er* (or *more*, which is actually a composite of *-er* and *much*, see Bresnan 1973, Bacskai-Atkari 2014c, 2018c). However, it is possible to have comparison without degree; consider the following examples:

(14)   a. Mary is tall, **as** is her mother.

       b. Mary is glamorous **like** a film-star.

       c. Farmers have other concerns **than** the farm bill.

       d. % Life in Italy is different **than** I expected.

In these cases, there is obviously no matrix degree element. The sentences in (14a) and (14b) express merely similarity with respect to the property denoted by the adjective; in (14b), the subclause is introduced by *like* and not by *as*, a further difference from degree equatives. Given the availability of non-degree equatives, Jäger (2018: 35) suggests that comparison constructions can be grouped into three major categories: non-degree equatives, degree equatives, and comparatives; these constitute a markedness hierarchy in this order (non-degree equatives being the least marked). However, constructions like (14c) and (14d) indicate that there is in fact a fourth category as well: these are non-degree comparatives expressing difference. This category seems not to be productive as the availability of the *than*-clause is dependent on the presence of a particular element expressing difference in the matrix clause: the word *other* or, at least in American English, the adjective *different* are potential candidates.

While the patterns in (13) suggest a relatively simple left periphery consisting of a single CP at first sight, further data indicate that comparatives regularly demonstrate doubling, similarly to the German pattern given in (5a) above, which seems to be present at least underlyingly in comparatives proper in all cases, while equatives may indeed have a single CP in the subclause. Chapter 5 argued that this is primarily related to comparative semantics: the maximality operator

can be lexicalised either by a matrix element or by a higher complementiser, and the comparative operator is realised in a lower CP. Depending on which element expresses the maximality operator, the CP is doubled or remains single. This also has implications for the grammaticalisation processes affecting comparative clauses historically: equatives are more flexible in that they may also recategorise the original matrix element (Jäger 2018).

Chapter 5 also argued that this structural asymmetry underlies differences in polarity. In English, both degree equatives and comparatives are negative polarity environments, as illustrated by the following examples containing the negative polarity items *any* and *ever*:

(15)   a.   Sophia is as nice as **any** other teacher in the school.

b.   Sophia is nicer than **any** other teacher in the school.

c.   Museums are as popular as **ever** before.

d.   Museums are more popular than **ever** before.

Negative polarity items are licensed in other negative polarity contexts (cf. Klima 1964) such as interrogatives, clausal negation and conditionals, but not in affirmative clauses (Seuren 1973: 531, ex. 11):

(16)   a.   * **Any** of my friends could **ever** solve those problems.

b.   Could **any** of my friends **ever** solve those problems?

c.   At no time could **any** of my friends **ever** solve those problems.

d.   If **any** of my friends **ever** solve those problems, I'll buy you a drink.

While the data in (15) indicate that English is symmetrical regarding negative polarity across the two major types of comparison clauses, German shows an asymmetric pattern: comparatives but not equatives have negative polarity:

(17)   a.   * Museen   sind so beliebt   wie **jemals** zuvor.
          museums are   so popular how ever   before
          'Museums are as popular as ever before.'

b.   Museen   sind beliebter   als **jemals** zuvor.
          museums are   more.popular as ever   before
          'Museums are more popular than ever before.'

As was shown, the data point to the conclusion that the role of the left periphery in comparatives extends to marking polarity, not in terms of designated projections but as part of the featural makeup of the individual projections that

are present in the derivation anyway due to independent clause-typing and semantic properties. In particular, the data indicate that comparative *als* and equative *wie* occupy different kinds of projections regarding their relative positions in the left periphery (contrary to Jäger 2018), which does not immediately correlate with their combinability in other constructions such as hypothetical comparatives. This again goes against a strict cartographic approach as the cross-constructional variation observed even in a single variety cannot be modelled by assuming designated projections.

After examining mostly finite, non-elliptical clauses in this book, concentrating on clause-typing elements in the CP-periphery, Chapter 6 examined the role of information structure and ellipsis in terms of functional left peripheries. Functional left peripheries, both in the CP and in lower domains, may host elements associated with special information-structural roles (topics, foci). In addition, certain ellipsis processes, such as sluicing, are known to be associated with functional projections located at the left periphery. Naturally, the discussion of either issue (information structure and clausal ellipsis) would require more investigation than could be carried out in this work, and therefore I restricted myself to the discussion of some selected issues that bear immediate relevance to the general theory put forward in this book. I concentrated on elliptical interrogatives and reduced comparative constructions, showing that the proposed model can cast light upon interesting phenomena involving focalisation and clausal ellipsis.

Certain constituents may undergo topicalisation or focalisation involving movement to the left periphery of the clause. Consider the following examples taken from Rizzi (1997: 285, ex. 1 and 2):

(18) a. [Your book]$_i$, you should give t_i to Paul (not to Bill).
      b. [YOUR BOOK]$_i$ you should give t_i to Paul (not mine).

The construction in (18a) illustrates topicalisation, and the one in (18b) focalisation. Apart from interpretive differences, they crucially differ in their intonation pattern: a topic is separated by a so-called "comma intonation" from the remaining part of the clause (the comment), while a focus bears focal stress and is thus prominent with respect to presupposed information (see Rizzi 1997: 258).

Such movement operations are clearly instances of A-bar movement, and since they are apparently not driven by clause-typing features either, they raise the question what triggers movement in the first place. The cartographic model proposed by Rizzi (1997), adopted by others such as Poletto (2006), proposes that leftward movement in these cases targets designated left-peripheral positions: TopP and FocP. Movement is driven by specific features making reference to

information-structural properties: this operator-like feature agrees with the functional head (Top or Foc). In essence, this kind of movement is supposed to be similar to ordinary operator movement involving *wh*-operators or relative operators. As discussed in Chapter 6, such an assumption is problematic because while [wh] and [rel] features are lexically determined, [topic] and [focus] features are obviously not. Taking the examples in (18) above, in both cases the entire phrase *your book* is topicalised or focussed, and the phrase as such, being compositional, is not part of the lexicon. This indicates that features like [topic] and [focus] would have to be added during the derivation. In addition, even if one were to assume that a lexical element like *Mary* can be equipped with information-structural features in the lexicon (contrary to generally accepted views about the lexicon and lexical features, cf. Neeleman & Szendrői 2004 and den Dikken 2006), this would leave us with various lexical entries for *Mary*: a neutral entry (not specified for any information-structural category), a focussed one, a topicalised one, not to mention possible fine-grained categories such as contrastive topic or aboutness topic.

Moreover, foci (and topics) can occur in non-fronted positions. This is illustrated by the following examples taken from Fanselow & Lenertová (2011: 172, ex. 6c and 6d), both answering the question *What happened?*:

(19) a. **Eine   LAWINE** haben   wir gesehen!
          a.F.ACC avalanche have.1PL we seen
          'We saw an AVALANCHE!'

      b. Wir haben   **eine   LAWINE** gesehen!
          we   have.1PL a.F.ACC avalanche seen
          'We saw an AVALANCHE!'

This kind of optionality obviously contrasts with the behaviour of ordinary *wh*-movement (and relative operator movement) in German, which always targets the CP-domain. Note also that, as pointed out by Fanselow & Lenertová (2011: 173), there are certain fronted elements in the German CP (occupying the "first position") that clearly do not correspond to information-structural categories such as topic and focus. Consider (Fanselow & Lenertová 2011: 173, ex. 7a):

(20) **Wahrscheinlich** hat ein   Kind einen   Hasen gefangen.
      probably   has a.N.NOM child a.M.ACC rabbit caught.PTCP
      'A child has probably caught a rabbit.'

In this case, the adverb *wahrscheinlich* 'probably' is a sentential adverb that evidently lacks a discourse function such as topic or focus.

These considerations indicate that movement is not always driven by lexical features. Following this line of argumentation, I adopted Chapter 6 the view of Fanselow & Lenertová (2011) in that movement is driven by an unspecified [edge] feature in these cases and that information-structural effects arise as defined by the interfaces. Movement can target the CP but it can also target a functional projection, FP.

The FP has a crucial role in elliptical structures as well. As mentioned above, clausal ellipsis is also closely connected to the issue of functional left peripheries. The prototypical case for this is sluicing, demonstrated in (21) below:

(21)   Someone phoned grandma but I don't know **WHO** ~~phoned grandma~~.

In this case, the elliptical clause is embedded in a clause conjoined with another main clause: this first main clause (*someone phoned grandma*) contains the antecedents for the elided elements in the elliptical clause. The elliptical clause contains only a single remnant, the subject *who*, which bears main stress as it contains non-given information. Ellipsis is licensed because all elided information is recoverable. The standard assumption regarding the actual implementation of ellipsis in grammar (Merchant 2001: 55–61 and Merchant 2004: 670–673) is that there is an [E] feature responsible for ellipsis. This feature is assumed to be merged with a particular functional head (such as C) and the complement of this head is elided. The [E] feature is specified as having either an uninterpretable [wh] or an uninterpretable [Q] feature, thus [u:wh] or [u:Q], ensuring that it occurs only in (embedded) questions. As shown by van Craenenbroeck & Lipták (2006) for Hungarian and Hoyt & Teodorescu (2012) for Romanian, this particular syntactic condition is highly unsatisfactory as many languages allow canonical ellipsis processes such as sluicing also from non-interrogative projections, including relative clauses and projections hosting foci.

If so, however, it seems that the [E] feature is not tied to a specific projection or features; indeed, Merchant (2004) also proposes that a functional projection, FP, can be headed by [E] in fragment answers, illustrated in (22) below:

(22)   A: Who phoned grandma?
       B: **Liz** ~~phoned grandma~~.

In this case, the remnant (*Liz*) is the subject and the rest of the clause is elided. Since the subject DP in declarative clauses is located in [Spec,TP] and not in [Spec,CP] in English, the ellipsis mechanism assumed for sluicing (the [E] feature located in C) does not automatically carry over. As Merchant (2004) assumes, there is an unspecified FP projection hosting the remnant in its specifier, landing

there by movement. In this vein, it seems that leftward movement can target functional projections due to reasons other than clause-typing. This of course also raises the question whether such functional projections may not ultimately have a more substantial role in the architecture of a clause than merely enabling ellipsis.

In Chapter 6, I argued that the availability of the [E] feature and the FP projection headed by [E] have consequences in terms of the organisation of left peripheries, especially regarding finiteness. In sluicing constructions like (21), the presence of the [E] feature is not compatible with finiteness, [fin], so that even varieties that have Doubly Filled COMP patterns otherwise do not insert a finite complementiser in sluicing patterns. This gives us the representation in Figure 7.4.

CP
which model[wh]   C′
C[wh]   TP
[E]
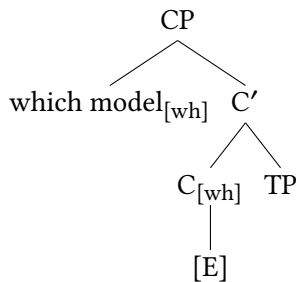
Figure 7.4: The [E] feature in sluicing

The structure differs from Figure 7.1 above precisely in that the C head contains an [E] feature and no [fin] feature, so that no finite complementiser is inserted. As seen in Chapter 6, the same restriction can be observed in lower peripheries in other languages, so the requirement is not even construction-specific. Ultimately, Chapter 6 argued that the [E] feature can be seen as a syntactic object that has its own featural restrictions: it is compatible with [wh] but not with [fin]. If so, the fact that sluicing patterns do not demonstrate Doubly Filled COMP effects follows naturally from the properties of the [E] feature and there is no need to assume designated CP projections, as in Baltin (2010).

On the other hand, Chapter 6 argued that FP projections headed by the [E] feature can affect the clausal spine in that a TP projection that would undoubtedly be present in the non-elliptical counterpart is not generated and the complement is instead a tenseless PredP, rendering a non-isomorphic but recoverable structure (Vicente 2018). This configuration is subject to certain conditions and it does not rule out the possibility of full TPs either, but the underlying structure of the clause constrains the available readings. Further, as was seen in connection with

German comparatives, a caseless subject remnant may not only appear in the default case but it may also get accusative case from the matrix predicate in the morphological component. This leads to surface patterns in languages like German that are unexpected based on the general distribution of accusative case, yet it can be fully explained by a model that treats FPs headed by an [E] feature an integer part of functional left peripheries.

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Name index

The syntax of functional left peripheries

This book provides a novel analysis for the syntax of the clausal left periphery, focusing on various finite clause types and especially on embedded clauses. It investigates how the appearance of multiple projections interacts with economy principles and with the need for marking syntactic information overtly. In particular, the proposed account shows that a flexible approach assuming only a minimal number of projections is altogether favourable to cartographic approaches. The main focus of the book is on West Germanic, in particular on English and German, yet other Germanic and non-Germanic languages are also discussed for comparative purposes.