## Syntax

# Multiple Agreement and the Representation of Inflection in the C-Domain* 

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#### Abstract

This paper argues for a post-syntactic analysis of complementizer agreement in Germanic. It is shown that the realization of inflectional features in the C-domain is subject to a set of restrictions that exhibit a decidedly phonological character including adjacency effects, sensitivity to sluicing and deletion of the finite verb in comparatives. This is taken to indicate that complementizer agreement is established by post-syntactic operations. Moreover, the fact that C may not carry inflection if the finite verb has been deleted suggests that complementizer agreement does not involve a dependency between C and the subject, but rather between C and the finite verb. Based on these observations, it is argued that inflectional features present in the Cdomain are added post-syntactically via the insertion of an agreement morpheme which adjoins to C at the level of Morphological Structure. The observed restrictions on complementizer agreement are then analyzed in terms of constraints on this insertion procedure.


## 1 Introduction

In many non-standard varieties of Germanic, complementizers inflect for person and number of the subject, cf. the examples in (1) from West Flemish taken from Shlonsky (1994: 353):1

[^0]| a. | da-n $*(=\mathrm{k})$ <br> that-1SG=CLIT.1SG | ik werk-en |
| :--- | :--- | :--- | :--- |
| 'that I work' |  |  |

In (1), we can see that the complementizer carries an inflectional ending the shape of which varies dependent on the choice of subject. In $1 \mathrm{sg}, 1 \mathrm{pl}$, and 3 pl contexts, the suffix $/-\mathrm{n} /$ shows up on the complementizer, while $2 \mathrm{sg}, 3 \mathrm{sg}$, and 2 pl subjects trigger the ending $/-\mathrm{t} / .^{2}$ That is, West Flemish exhibits a full paradigm, where in each person/number combination a corresponding inflectional affix is added to the complementizer. The fact that a subject clitic can (and often must) co-occur with these endings shows quite conclusively that $/-\mathrm{n} /$ and $/-\mathrm{t} /$ cannot be analyzed as pronominal elements. ${ }^{3}$ Rather, they are reflexes of a special kind of agreement which seems to be associated with the C-domain and is commonly referred to as complementizer agreement. Thus, it appears that in addition to features such as clause-type, subordination, modality etc., the Cdomain may also host inflectional features, giving rise to instances of multiple agreement where the subject's $\varphi$-features are reflected not only on the verb, but also on $\mathrm{C}^{0}$ (or some other head of a split-C structure). This phenomenon has attracted quite some attention in the theoretical literature, inspiring a number of

[^1]predominantly syntactic analyses of complementizer agreement. ${ }^{4}$ Relevant approaches include movement of an inflectional head to $\mathrm{C}^{0}$ (Hoekstra and Marácz 1989, Zwart 1993, 1997), the presence of a separate projecting Agr-head in the C-domain, the content of which is licensed via spec-head agreement (Shlonsky 1994), or the presence of a separate set of inflectional features on $\mathrm{C}^{0}$ which initiate an AGREE operation accessing the subject in SpecTP (Carstens 2003, van Koppen 2005).

In this paper, it is argued that certain distributional facts about complementizer agreement (adjacency effects and sensitivity to PF-deletion processes) suggest that this form of multiple agreement is established in the post-syntactic components of grammar, in contrast to beliefs widely held in the literature (but in line with proposals by e.g. Ackema and Neeleman 2004). More specifically, it is claimed that complementizer agreement results from the post-syntactic insertion of a so-called dissociated agreement morpheme, the licensing of which is parasitic on the presence of a syntactic agreement morpheme that has been evaluated during the syntactic derivation.

The paper is organized as follows. Section 2 illustrates the basic descriptive facts of complementizer agreement in Germanic. Section 3 discusses another set of data which indicates that complementizer agreement cannot be accounted for in purely syntactic terms. Section 4 develops an alternative approach to the phenomenon under investigation which is based on the assumption that the operations which give rise to complementizer agreement are part of the postsyntactic component(s) of grammar. A brief concluding summary is given in section 5.

## 2 Complementizer agreement in Germanic

This section reviews the properties of complementizer agreement in some more detail, adding data from other varieties of Germanic to the discussion. In section 1, the subject matter of this paper has already been illustrated with examples from West Flemish. However, it should be mentioned that West Flemish differs in two important ways from most other Germanic dialects which exhibit inflected complementizers. First, as already noted, West Flemish has a complete paradigm of complementizer agreement for all persons and numbers. In other German and Dutch dialects, complementizer agreement is generally restricted to certain person/number combinations. ${ }^{5}$ In most varieties of Bavarian, for exam-

[^2]ple, complementizer agreement is found only in 2nd person contexts, in dialects of the Eastern Netherlands, it is restricted to 1 pl , in the south to 1 pl and 3 pl , and in Frisian to 2 sg (plus 2 pl in some varieties, similar to the Brabants dialect of Dutch). ${ }^{6}$ The following examples from Bavarian show that complementizer agreement is obligatorily present in 2nd person contexts, while it is absent in other person/number combinations, as illustrated for 1 sg in (3): ${ }^{7}$

$\begin{array}{lllll}\text { a. } & \text { ob *(-st) } & \text { du noch } & \text { Minga } & \text { kumm-st } \\ & \text { whether- } 2 \text { SG } & \text { you to } & \text { Munich } & \text { come-2SG }\end{array}$
b. ob*(-ts) ihr noch Minga kumm-ts whether-2PL you to Munich come-2PL '...whether you (pl) come to Munich'
ob i noch Minga kumm
whether I to Munich come-1SG
'whether I come to Munich'
Second, only in West Flemish a clitic and a full subject pronoun can co-occur in addition to complementizer agreement, as shown by the examples in (1). The examples in (4) demonstrate that this form of clitic doubling is impossible with full (referential) subject DPs and that the clitic is obligatory if no other subject is present (examples taken from Shlonsky 1994: 354). In other words, West Flemish does not license referential pro-drop.

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a. *da-t=ze Marie werk-t
    that-3sg=clit.3sg.fem Marie work-3sg
    'that Marie works'
b. da-t *(=ze) werk-t
    that-3sg=clit.3sg.fem work-3sg
    'that she works'
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In contrast, the presence of agreement in C seems to license referential pro-drop in other varieties of Germanic. This is true of Frisian (2sg), as shown in (5), and Bavarian (2sg, 2pl), for example:

[^3]
## Frisian

(5) dat-st (do) jûn kom-st
that-2SG you tonight come-2SG
'that you come tonight'
(Zwart 1993: 256)
Bavarian
(6) a. ob-st pro noch Minga kumm-st whether-2SG to Munich come-2SG '...whether you come to Munich'
b. ob-ts pro noch Minga kumm-ts whether-2PL to Munich come-2PL '...whether you (pl) come to Munich' (Bayer 1984: 240)

Hence, Frisian and Bavarian differ from West Flemish, which requires the presence of a subject clitic in the absence of a full pronoun/DP subject, as shown in (4b) above. Dialects spoken in the east and south of the Netherlands behave similar to West Flemish - the presence of complementizer agreement does not license pro-drop (examples taken from Zwart 1993: 257):

## Southern varieties

(7) a. Komm-e $\quad *(z e)$ ? come-PL they 'Do they come?'
b. ovv-e $\quad *(z e)$ komm-e whether-PL they come-PL 'whether they come'

Eastern varieties
(8)
a. Speul-e *(we)? play-1PL we 'Do we play?'
b. datt-e *(wij) speul-t that-1PL we play-1PL 'that we play'

Another kind of typological variation concerns the shape of the agreement affixes found on C. In the majority of varieties, these are identical with the verbal agreement endings (cf. the West Flemish data in (1)). However, in a set of dialects spoken in the Eastern Netherlands and Brabants, the shape of complementizer agreement differs from verbal agreement (Zwart 1993; similar facts can be observed with 1 pl forms in some Lower Bavarian dialects, see fn. 9). This is illustrated in (8b) above, where the 1 pl ending on the complementizer is $-e$,
while it is $-t$ on the verb (in clause-final position). ${ }^{8}$ In those varieties where complementizer agreement differs from verbal agreement, the former replaces the latter in inversion contexts (cf. e.g. Zwart 1993: 254). Again, relevant examples come from the Eastern Netherlands (similar examples are found in Brabants), as shown in (8) and the examples in (9). ${ }^{9}$
a. Wij speul-t/*-e.
we play-1PL
'We play.'
b. Waar speul-e/*-t wij?
where play-1pL we
'Where do we play?'
(Zwart 1993: 254)
The examples in (9) show that the finite verb must carry regular verbal agreement (found e.g. on verbs in clause-final position) if it appears in a subjectinitial main clause, as in (9a), whereas in inversion contexts, it displays the agreement ending normally found on complementizers, as illustrated by (9b). Note that C-related agreement marking cannot be realized in addition to regular verbal agreement in contexts where the verb has undergone movement to C , that is, forms with double agreement such as *speul-t-e 'play-1pl-1pl' are ruled out. The descriptive findings reached so far are summarized in Table $1.1^{10}$

[^4]|  | Paradigm | AgrC iden- <br> tical with <br> AgrS | AgrC replaces <br> AgrS (inversion <br> contexts) | Additional clitic <br> doubling | AgrC <br> licenses <br> pro-drop |
| :--- | :--- | :--- | :--- | :--- | :--- |
| West Flemish | complete | yes | No | yes | no |
| Frisian | defective <br> (2sg; plus <br> 2 pl in <br> some <br> varieties) | yes | No | no | yes |
| Eastern NL <br> dialects <br> (Hellendoorn) | defective <br> (1pl) | no | Yes | no | no |
| Southern NL <br> dialects | defective <br> (1pl, 3pl) | yes | No | no | no |
| Bavarian | defective <br> (2sg, 2pl; <br> plus 1pl <br> in some <br> varieties) | yes (apart <br> from 1pl) | no (apart from <br> 1pl) | no | yes |

Table 1: Properties of complementizer agreement in Germanic

## 3 Previous accounts

In this section, it is shown that complementizer agreement is sensitive to a set of factors which exhibit an unmistakable PF-flavor such as adjacency effects and elision of the finite verb. It is then argued that these observations cannot be satisfactorily captured by purely syntactic approaches (cf. Ackema and Neeleman 2004 for related conclusions). The discussion focuses on the most prominent syntactic analyses, that is, (i) movement of an inflectional head to $\mathrm{C}^{0}$ (Hoekstra and Marácz 1989, Zwart 1993, 1997), (ii) the presence of a separate projecting Agr-head in the C-domain which is licensed under spec-head agreement with the subject (Shlonsky 1994), and (iii) the assumption that $\mathrm{C}^{0}$ hosts a separate set of inflectional features which initiate an AGREE operation accessing the subject in SpecTP (Carstens 2003, van Koppen 2005). ${ }^{11}$ In addition, I discuss a recent proposal by Ackema and Neeleman (2004) according to which complementizer agreement results from a checking rule which applies at PF.
$\begin{aligned} & \text { (iii) } * \text { Hy leaude datsto } \\ & \text { he believed } \text { soest moarn } \\ & \text { that-2SG=you } \\ & \text { should-2SG tomorrow }\end{aligned}$
'He believed that you should come tomorrow.' (Germen de Haan, personal communication)
${ }^{11}$ See den Besten (1982) for an early account of complementizer agreement in terms of a rule Move Tense and Bennis and Haegeman (1984) on West Flemish data. In an early analysis of complementizer agreement in Bavarian, Bayer (1984) develops an account that is based on the idea that in V2 languages, there is an abstract agreement relation between Comp, V/InFL and the subject leading to co-indexation of all three elements. In the case of 2nd person subjects in Bavarian, this form of agreement is overtly realized due to a linking rule that copies the $\varphi$-features located in INFL to Comp. This overt manifestation of agreement serves to identify the referential content of the subject DP , thereby licensing an empty pronominal pro in the subject position.

In the previous section, we have already noted that there are dialects where the inflectional suffix used to mark agreement on the complementizer differs from the corresponding verbal agreement ending. One such dialect is Hellendoorn, spoken in the Eastern Netherlands (Ackema and Neeleman 2003, 2004). As is typical of this group of dialects, complementizer agreement replaces the regular verbal agreement formative in inversion contexts:
datt-e wiej noar't park loop-t
that-1PL we to-the park walk-1PL
'that we are walking to the park'
a. Wiej loop-t noar't park.
we walk-1PL to-the park
'We are walking to the park.'
b. Volgens miej lop-e wiej noar't park. according-to me walk-1PL we to-the park 'According to me we are walking to the park.'

Interestingly, however, the realization of complementizer agreement is subject to an adjacency requirement: the presence of a (scrambled) XP which intervenes between $\mathrm{C}^{0}$ and the subject blocks the availability of complementizer agreement in these dialects. This restriction holds for both main and embedded clauses:

> a. dat/*datt-e $\begin{aligned} & \text { [pp op den wärmsten dag van't joar] } \\ & \text { that/that-1pl } \\ & \text { on the warmest day of-the year }\end{aligned}$ wiej tegen oonze wil ewärkt hebt. we against our will worked have 'that on the warmest day of the year we have worked against our will' b. Volgens miejloop-t/*lop-e $\quad$ [Pp op den wärmsten dag according-to me walk-1pl/walk-lpl on the warmest day van't joar] ook wiej noar't park. of-the year also we to-the park 'According to me we are also walking to the park on the warmest day of the year.'
(12a) shows that the complementizer must appear without an inflectional ending if a (scrambled) PP intervenes between $\mathrm{C}^{0}$ and the subject. As illustrated by (12b), a similar adjacency effect can be observed in main clauses where the presence of an intervening XP blocks replacement of the regular verbal agreement ending /-t/ with the inflectional formative associated with complementizer agreement $(/-2 /$ ).

Similar phenomena can be observed in other Germanic varieties which exhibit complementizer agreement, compare the following examples from Bavarian:
a. obwoi-st du ins Kino ganga bist although-2SG you to-the movies gone are 'although you went to the movies'
b. *obwoi-st [woartscheints] du ins Kino ganga bist although-2SG probably you to-the movies gone are 'although you probably went to the movies'
c. obwoi [woartscheints] du ins Kino ganga bist although probably you to-the movies gone are 'although you probably went to the movies' (Günther Grewendorf, personal communication)
Again, the presence of an XP (here a sentential adverb) which intervenes between $\mathrm{C}^{0}$ and the subject requires the complementizer to appear in its uninflected form.

West Flemish and Frisian behave somewhat differently in that they always require strict adjacency between the (inflected) complementizer and the subject. That is, violations of the adjacency requirement lead to ungrammaticality and not to uninflected complementizers (Liliane Haegeman, Germen de Haan, personal communication; cf. Haeberli 2002 for a syntactic analysis of the strict adjacency requirement): ${ }^{12}$

## West Flemish

(14) a. *da-n [morgen ] Pol en Valère werk-en that-3PL tomorrow Pol and Valerie work-3PL
b. *da [morgen ] Pol en Valère werk-en that tomorrow Pol and Valerie work-3PL 'that Pol and Valerie are working tomorrow'

## Frisian

(15) a. *Hy leaude dat-st [moarn] do komme soest. he believed that-2SG tomorrow you come should-2SG
b. *Hy leaude dat [moarn] do komme soest. he believed that tomorrow you come should-2SG 'He believed that you should come tomorrow.'

Let's now turn to the issue of whether these adjacency effects can be accounted for by purely syntactic approaches to the phenomenon of complementizer agreement.

First, it is immediately clear that this kind of adjacency effect is completely unexpected in approaches that are based on the assumption that complementizer agreement results from an inflectional head moving into the C -domain

[^5](Hoekstra and Marácz 1989: Infl-to-C movement, Zwart 1993, 1997: AgrS-toC movement). In general, the presence of an intervening XP should not block $\mathrm{X}^{0}$-movement. Even more problematic, complementizer agreement is not available in examples such as (12b) in which the finite verb has undergone V-to-Infl-to-C movement: if complementizer agreement results from INFL moving to C , it comes as a surprise that the complementizer must appear in its uninflected form in contexts where exactly this operation has taken place. ${ }^{13}$

According to Shlonsky (1994), the inflection found in the C-domain is licensed in a specifier-head relation between a separate AgrC-head and the subject which moves to SpecAgrCP (by assumption, the subject clitics of WestFlemish are base generated in this position). Subsequently, $\mathrm{AgrC}^{0}$ moves to $\mathrm{C}^{0}$, leading to inflected complementizers: ${ }^{14}$

Under this analysis, strict adjacency between $\mathrm{C}^{0}$ and the subject (in SpecAgrCP) can be ensured by stipulating that adjunction to AgrCP is prohibited (cf. Shlonsky 1994: 360 who takes "adverbial adjunction to be IP-bound"). Examples with an intervening PP (and without complementizer agreement) are attributed to the following structure (without AgrCP), in which the subject remains in SpecIP and the $\mathrm{PP} /$ adverbial is adjoined to IP:
(17) [ ${ }_{\mathrm{C}}$, Comp [IP PP [iP subject ... ]] $]$

Thus, it appears that an analysis in terms of spec-head agreement can account for the adjacency effect by ruling out the problematic cases by a stipulation. However, it is fairly obvious that this account lacks explanatory force.

Carstens (2003) proposes an alternative analysis of complementizer agreement (and the adjacency effect) which is based on the probe/goal mechanism developed in Chomsky (2000, 2001). According to Carstens, C hosts its own set of uninterpretable $\varphi$-features which acts as a probe (in the sense of Chomsky 2000), accessing the interpretable $\varphi$-set of the subject in SpecTP under closest ccommand (as an instance of the operation AGREE). As a result, C's $\varphi$-set is identified with the relevant values of the subject's $\varphi$-features:
(18) [ [C C [TP subject ... ]]


Agree

[^6]Carstens then analyzes the adjacency effects observed in (12)-(15) above as intervention effects in the sense of Chomsky (2000, 2001). By assumption, the intervening adverbial bears an abstract Case feature that identifies the adverbial as a possible goal for the $\varphi$-set in $\mathrm{C}^{0}$. As a consequence, the adverbial "disrupts closest c-command of the subject by $\mathrm{C}^{0 \prime \prime}$ (p.398), thereby blocking the evaluation and realization of complementizer agreement:


However, note that this account of the adjacency effect is based on the nonstandard assumption that PP adverbials carry a Case feature. In addition, the analysis can be shown to lead to wrong predictions. More specifically, adverbials that intervene between $\mathrm{T}^{0}$ and the base position of the subject should give rise to similar intervention effects with respect to the realization of verbal agreement. Recall that Carstens assumes that the $\varphi$-set of T initiates an Agree relation targeting the subject in SpecvP. Now, under her analysis, we should expect adverbials that intervene between T and the base position of the subject (Spec $\vee \mathrm{P}$ ) to give rise to the same kind of intervention effect that is taken to block Agree between C and the subject in SpecTP, as illustrated in (20). Of course, this is not the case. Therefore, we can conclude that the analysis of Carstens (2003) does not provide an adequate account of the adjacency effect either.


Summing up, it has been shown that the observed adjacency effects represent a problem for purely syntactic approaches to the phenomenon of complementizer agreement. Let us now take a look at data from Bavarian which suggest that complementizer agreement is not established by syntactic processes but results from operations that belong to the post-syntactic components of grammar. The relevant piece of evidence comes from the observation that complementizer agreement is blocked in sluicing constructions, that is, configurations where an IP within a wh-CP is elided (cf. Lobeck 1995: 59):

b. I woass dass-ts ihr a Madl gseng hoab-ts,

I know that-2PL you a girl seen has-2PL
owa I woass net wo (*-ts) ibr a Madl gseng hoab-ts.
but I know not where-2PL (you a girl seen have-2PL) 'I know that you've seen a girl, but I don't know where (you've seen a girl).'
(Günther Grewendorf, personal communication)
In examples such as (21b), we can observe that complementizer agreement is not available after the lowest IP has been deleted in the mapping to PF (cf. e.g. Ross 1969, Lasnik 2001, Merchant 2001 for an analysis of sluicing in terms of PF-deletion). ${ }^{15}$ As is obvious, this sensitivity to post-syntactic operations cannot be accounted for if it is assumed that complementizer agreement is established by syntactic mechanisms. ${ }^{16}$ In other words, these facts can be taken to indicate that the licensing of inflectional features in the C-domain takes place in the postsyntactic components of grammar. A similar conclusion is reached by Ackema and Neeleman (2004: ch. 7), who develop an account of complementizer agree-

15 Note that in (2lb), as is characteristic of sluicing constructions, the complementizer may not be overtly realized (the so-called Sluicing-CoMP Generalization, Merchant 2001: 62):
(i) * I woass dass-ts ihr a Madl gseng hoab-ts, I know that-2PL you a girl seen has-2PL owa I woass net wo dass (-ts). but I know not where that-2PL
'I know that you've seen a girl, but I don't know where (you've seen a girl).'
Furthermore, note that in (21a), the inflection associated with $\mathrm{C}^{0}$ attaches to the wh-phrase occupying SpecCP. At least in Bavarian, complementizer agreement exhibits this clitic-like behavior in all instances in which there is no overt complementizer present. The following examples illustrate that in the absence of a filled C-head, the inflection can attach to any element that occurs in the left periphery of the clause such as DPs (iia), adjectives (iib), or adverbs (iic) (examples taken from Bayer 1984: 235):
(ii) a. Du soll-st song [CP[ an wäichan Schuah]-st [ ${ }_{[\mathrm{IP}}$ du wui-st] $]$ ].
you should-2SG say which shoe-2SG you want-2SG
'You should say which shoe you want.'
b. [ ${ }_{\mathrm{CP}}$ [ Wia oit]-ts [ ${ }_{\mathrm{IP}}$ ihr/es sei-ts] $]$ is mir wurscht. how old-2PL you are-2PL is me.DAT not-important
'How old you are makes no difference to me.'
c. [ ${ }_{C P}[$ Wia schnäi]-ts [IP ihr/es fahr-ts $\left.]\right]$ ! how fast-2PL you.pl drive-2PL
'How fast you drive!'
${ }^{16}$ Note that this argument is based on the standard assumption that sluicing is the result of postsyntactic deletion (cf. e.g. Ross 1969, Lasnik 2001, Merchant 2001). However, as pointed out to me by Petr Biskup, data like (21) cannot be used as an argument against syntactic accounts of complementizer agreement if sluicing is analyzed in terms of a covert syntactic process which replaces a null category representing the "elided" IP with a phrase marker copied from the relevant matrix antecedent (cf. Lobeck 1995, Chung, Ladusaw, and McCloskey 1995). Recently, van Craenenbroeck and den Dikken (2006) have argued that the absence of complementizer agreement in sluicing constructions is to be attributed to the fact that the subject does not move up to the structural subject position (SpecIP/TP) in the elided constituent. As a result, the subject is "too far away" to enter into an AGREE relation with C's $\varphi$-set and the complementizer must appear in its uninflected form. However, see below for data suggesting that complementizer agreement does not involve a checking/AGREE relation between C and the subject.
ment which is based on the assumption that feature checking may also be accomplished in the phonological component of grammar (i.e., at PF). More precisely, they propose the following PF feature checking rule which applies if C and the subject occur in the same prosodic phrase (marked by braces):
(22) Germanic complementizer agreement
$\{[\mathrm{C}$ (Prt) (Add) (Plr)] [D (Prt) (Add) (Plr) $]\} \rightarrow$
$\left\{\left[\mathrm{C}\left(\mathrm{Prt}_{\mathrm{i}}\right)\left(\mathrm{Add}_{\mathrm{j}}\right)\left(\mathrm{Prr}_{\mathrm{k}}\right)\right]\left[\mathrm{D}\left(\mathrm{Prt}_{\mathrm{i}}\right)\left(\mathrm{Add}_{\mathrm{j}}\right)\left(\mathrm{Prr}_{\mathrm{k}}\right)\right]\right\}$
(Ackema and Neeleman 2004: 241)
The rule in (22) serves to identify the set of $\varphi$-features associated with C ( $\mathrm{Prt}=$ Participant, Add = Addressee, $\mathrm{Plr}=$ Plural) with the relevant (interpretable) $\varphi$ features of the subject. The adjacency effect illustrated in (12)-(15) is then explained as follows: due to the presence of an intervening XP between C and the subject, rule (22) cannot apply since the complementizer and the subject are located in two different prosodic domains (again marked by braces):

> a. [ ${ }_{\text {cP }} \mathrm{C}$ [IP XP [IP subject $\ldots$ [vp $\ldots$ V ... ] $]$ ]
> b. $\{\mathrm{C} \mathrm{XP}\}\{$ subject $\}\{\ldots\}\{\ldots \mathrm{V} . .$.

Similarly, the Bavarian sluicing data can then be attributed to the fact that the subject has been deleted at/prior to PF and therefore cannot participate in PF checking processes. Thus, an account in terms of PF feature checking appears to be superior to syntactic analyses since it can capture the major empirical facts pertaining to the phenomenon under consideration. However, the analysis proposed by Ackema and Neeleman requires PF to be endowed with powerful syn-tax-like properties like identifying, checking and manipulating $\varphi$-features (note that the rule in (22) in fact boils down to a form of AGREE which is sensitive to prosodic domains). This becomes particularly clear when we take a closer look at Ackema and Neeleman's explanation of the fact that complementizer agreement is always with the subject and never with the object. Even in contexts where C forms a prosodic phrase with a scrambled object (excluding the subject), the complementizer cannot agree with the object and must appear in its non-agreeing form:

$$
\begin{array}{llllll}
\text { a. } \quad \begin{array}{l}
\text { dat }[\text { zulke boeken }]_{i} \\
\text { that selfs } \\
\text { such books }
\end{array} & \begin{array}{l}
\text { Jan } \\
\text { even Jan }
\end{array} & \text { niet leest }  \tag{24}\\
\text { not }
\end{array} \text { reads }, ~ \begin{aligned}
& \text { 'that even John does not read such books' }
\end{aligned}
$$

To prevent the feature content of C from being identified with the object's $\varphi$ features, Ackema and Neeleman (p. 242) assume that PF feature checking can only access elements in A-positions. As a result, the scrambled object in (24) is not visible for the relevant PF rule since it occupies an A'-position. However, this not only requires PF to be capable of identifying, checking and manipulating $\varphi$-features. In addition, PF must be sensitive to the $\mathrm{A} / \mathrm{A}^{\prime}$-distinction. In other
words, Ackema and Neeleman claim that information which is only legible in the syntactic module (types of syntactic positions) must also play a crucial role in PF-operations, contra standard assumptions. This establishes a syntax after the syntax proper, which is a rather dubious theoretical move.

Ackema and Neeleman's account also faces a serious empirical problem: it can be shown that the evaluation of agreement features in the C-system does not involve a dependency between C and the subject's $\varphi$-features. ${ }^{17}$ Instead, the relevant empirical facts suggest that the possibility of complementizer agreement depends on the presence of an inflected verb within the same clause.

The assumption that C carries its own set of non-interpretable $\varphi$-features which initiates a checking relation with the subject (either in the syntax or at PF) predicts that the establishment of complementizer agreement is independent of the realization of verbal agreement. At least in Bavarian, however, this expectation is not borne out by the facts. Consider the comparative clauses in (25) (Bayer 1984: 269): ${ }^{18}$

|  | D'Resl is gresser [als the-Resl is taller than | wia-st du bist]. <br> as-2SG you are |
| :---: | :---: | :---: |
|  | 'Resl is taller than you are.' |  |
| b. | *D'Resl is gresser [als | wia-st du]. |
|  | e-Resl is taller than | as-2SG you |
| c. | sl is gresser [ | du]. |
|  | the-Resl is taller than | as you |

(25b) shows that in comparatives, overt agreement on C leads to ungrammaticality if the finite verb is absent from the structure. The sentence becomes acceptable if the complementizer bears no inflection, as illustrated in (25c). This suggests that the inflection found in the C-domain is mediated by the finite verb. In other words, it seems that complementizer agreement is parasitic on the presence of a set of agreement features which has been evaluated during the syntactic derivation. Crucially, these examples show that agreement between the complementizer and the subject cannot be implemented in terms of a checking relation between a set of $\varphi$-features in C and the subject in SpecTP. Otherwise one

[^7]would expect examples such as (25b) to be grammatical (the $\varphi$-set of C should be able to enter into a checking relation with the subject's $\varphi$-set). This conclusion holds for a syntactic analysis in terms of Agree (Carstens 2003, van Koppen 2005) as well as for an account involving PF checking rules as proposed by Ackema and Neeleman (2004).

Still, comparatives such as (25) provide further evidence for the suggestion that complementizer agreement must operate post-syntactically. It is standardly assumed that comparatives are to be analyzed as the result of post-syntactic PFoperations that delete the inflected verb in the second clause, as shown in (26) (cf. Bresnan 1973, Lechner 2001).
(26) D'Resl is gresser [als wia (*-st) du bist]. the-Resl is taller than as- 2SG you (are)
'Resl is taller than you are.'
Note that we would not expect any interaction with complementizer agreement if the licensing of the relevant inflectional features were to take place in the syntax since the finite verb would be present throughout the whole syntactic derivation, being subject to deletion only after the structure has been transmitted to the post-syntactic components of grammar (i.e., the morphological and phonological components). In other words, it would remain a mystery why postsyntactic deletion of the finite verb affects the realization of complementizer agreement in these contexts in the way it does. In contrast, this interaction comes out much more naturally in a model in which the post-syntactic operations that bring about complementizer agreement may be sensitive to other postsyntactic operations such as deletion of the finite verb in examples like (25).

## 4 Toward a post-syntactic account of complementizer agreement

This section develops an analysis of complementizer agreement that is framed in a realizational model of grammar where word building operations are distributed over several components of grammar (Distributed Morphology, Halle and Marantz 1993). It is assumed that the morphological component (called Morphological Structure, henceforth MS) operates post-syntactically, interpreting the output of the syntactic derivation. Accordingly, the structural design of the grammar looks like (27).


In this model of grammar, the syntactic operations Merge and Move operate on bundles of morpho-syntactic features that constitute syntactic terminal nodes (i.e., heads). The syntactic terminal nodes are commonly referred to as morphemes. At MS, the terminal nodes are realized by phonological exponents in a process called Vocabulary Insertion. The idea that phonological content is added after syntax is also known as Late Insertion. The information that links phonological exponents with morphosyntactic features (i.e., insertion contexts) is stored in individual Vocabulary items. For example, the English verbal inflection 3sg.pres.indic. /-z/ is associated with the following Vocabulary item (which can be read as an insertion rule):
(28) [3, sg, present tense, indicative] $\leftrightarrow \quad /-z /$

The insertion procedure requires that the feature specification of the Vocabulary item is nondistinct from the features of the insertion site (i.e., a certain morpheme). Usually, this requirement is met by several items, which then enter into a competition. The item that realizes the largest subset of features is chosen for insertion. In the example at hand, the availability of the Vocabulary item in (28) blocks the insertion of the less specified exponent $/-\varnothing /$, which is found in all other person/number combinations and represents the 'elsewhere' case.

Another key property of Distributed Morphology is that the output of the syntactic derivation can be modified by a set of morphological operations which modify the feature content of terminal nodes (e.g., via Impoverishment rules which delete morphosyntactic features) or change the constituent structure derived in the syntax (e.g., via Morphological Merger which combines adjacent syntactic heads and may give rise to the impression of syntactic lowering). Importantly for our purposes, the structures generated by the syntactic component may also be affected by the post-syntactic insertion of functional morphemes (or features) which attach to syntactic terminal nodes. In Distributed Morphology, this mechanism is often used to account for case and agreement phenomena (cf. e.g. Marantz 1992, Halle and Marantz 1993, Embick 1997, Halle 1997, Noyer

1997, Harbour 2003). Following Embick (1997), I call these post-syntactically inserted heads dissociated morphemes since they are not present in the syntactic derivation and merely reflect (relational) properties expressed by structural configurations in the syntax.

The basic claim put forward in this paper is that this operation also serves to supply the C-domain with inflectional features. More specifically, I assume that complementizer agreement results from the post-syntactic insertion of a dissociated agreement morpheme which adjoins to $\mathrm{C}^{0}$. However, in contrast to Marantz (1992), Halle and Marantz (1993), Halle (1997), among others, I hesitate to adopt this mechanism for canonical instances of (subject-verb) agreement. First, an analysis in which agreement is generally attributed to the insertion of dissociated morphemes requires that MS has powerful syntax-like mechanisms at its disposal, which are necessary for detecting the correct agreement controller, to value Agr-morphemes via copy operations etc. That is, such an analysis seems to establish a syntax after the real syntax, which is conceptually unattractive (cf. the above discussion of Ackema and Neeleman 2004). Second, it is rather doubtful that the complex locality restrictions which govern the realization of phenomena such as long-distance agreement (cf. e.g. Sigurðsson 1996 on Icelandic, Polinsky and Potsdam 2001 on Tsez, Bruening 2001 on Pasamaquoddy) can be handled by morphological mechanisms alone in a satisfactory way.

Accordingly, I propose a hybrid model of agreement phenomena in which canonical instances of subject-verb agreement are attributed to the presence of agreement features on T which are evaluated in the syntax by the operation AGREE accessing the (interpretable) $\varphi$-set of the subject in SpecvP (Chomsky 2000):19

$$
\left.\left[\begin{array}{lll}
\text { CP } & \ldots . & {[\text { TPP }}  \tag{29}\\
\mathrm{T}+\mathrm{Agr} \ldots\left[{ }_{\mathrm{vP}} \text { subject } . . .\right]
\end{array}\right]\right]
$$

By assumption, the set of agreement features which are part of $\mathrm{T}^{0}$ are structurally represented as an agreement morpheme which is part of the Numeration and adjoins to T prior to Merge of T with $\nu \mathrm{P}$. In other words, canonical subject-verb agreement is the result of an agreement morpheme attached to T (Agr-on-T):20

[^8]

In contrast, complementizer agreement is analyzed as resulting from a morphological operation, the post-syntactic insertion of a dissociated Agr-morpheme at the level of MS. The insertion process is illustrated by the following pair of phrase markers. In (31b), an agreement morpheme has been added to C at the level of Morphological Structure (henceforth Agr-on-C).





This mechanism captures the idea that complementizer agreement operates postsyntactically (see above). However, before we can ascertain whether this approach fares better than purely syntactic analyses in accounting for the set of problematic facts observed above (i.e., adjacency effects, sensitivity to elision of the finite verb), more has to be said about the technical details of the proposal. First of all, we must ensure that the feature content of the post-syntactically inserted agreement morpheme on C matches the $\varphi$-features of the subject.

In connection with the data from Bavarian comparatives, I already speculated above that feature matching between Agr-on-C and the subject does not take place directly, but is mediated by another Agr-morpheme that has been valued by a syntactic AGREE relation. This idea is expressed by the following generalization (to be sharpened below):21

[^9]
## Licensing of dissociated agreement morphemes

A post-syntactically inserted Agr-morpheme is parasitic on the presence of an Agr-morpheme that has been valued in the syntax.
(32) can be derived from the specific properties of the insertion procedure giving rise to dissociated Agr-morphemes if it is assumed that the latter are inserted by a morphological operation which first creates a copy of an existing agreement morpheme (valued in the syntax) and then adjoins this copy to a higher functional head. In the case at hand, Agr-on-C is thus a copy of Agr-on-T (note that only the latter has been valued by a syntactic AGREE relation). The mechanism ensures feature identity between the two Agr-morphemes, which both reflect the $\varphi$-feature content of the same argument. ${ }^{22}$ This account explains the restriction on complementizer agreement observed in Bavarian comparatives (and sluicing constructions) if we assume that at MS, the insertion of dissociated Agr-morphemes applies after the deletion of the syntactic terminal node which corresponds to the inflected verb (cf. e.g. Embick and Noyer 2001 for the ordering relations between different types of MS/PF operations). Next, I address the question of how the present approach accounts for the adjacency effects observed above.

### 4.1 Adjacency effects

This section offers a new explanation for the observation that complementizer agreement is subject to an adjacency requirement. The proposed analysis is based on two central assumptions. First, the insertion procedure giving rise to a
tizer agreement results from a dependency between C and the $\varphi$-features of the finite verb also lies behind the syntactic analysis proposed in Sternefeld (2007: 208 f.). According to Sternefeld, complementizer agreement is established via a checking relation between a $\varphi$-set in C and the inflectional features of the finite verb which project to the VP level (Sternefeld assumes that German lacks a separate IP projection and that VP is the complement of C). Note that this analysis faces similar problems as the other syntactic approaches discussed above. That is, it cannot account for the observation that the availability of complementizer agreement appears to depend on post-syntactic operations such as sluicing or comparative deletion.
${ }^{22}$ Above we have already noted that C-related agreement marking cannot be realized in addition to canonical verbal agreement in contexts where the verb has undergone movement to C . In other words, Agr-on-C cannot be realized in addition to Agr-on-T. Why is this form of 'double agreement' (i.e., *V+AgrT+AgrC) ruled out? Note that this question relates to all Germanic varieties with complementizer agreement. Following Carstens (2003), I assume that the impossibility of doubly inflected finite verbs results from a morphological condition ensuring that only the hierarchically highest Agr-morpheme is spelled out in a given head complex. Based on proposals of Kinyalolo (1991), Carstens (2003: 407) phrases the relevant condition as follows (where 'inert' means that the relevant Agr-morpheme is not pronounced):
(i) Morphological Economy

In an adjoined structure, Agr on a lower head is inert iff its features are predictable from Agr on a higher head.
If it is assumed that complex heads are processed in a bottom-up fashion during Vocabulary Insertion (see Fuß 2005: 90ff.), (i) can be implemented by a late MS-process which deletes the lower Agr-morpheme in a head complex.
dissociated Agr-morpheme on $\mathrm{C}^{0}$ operates in a local fashion, requiring structural adjacency between $\mathrm{C}^{0}$ and $\mathrm{T}^{0}$. Second, scrambled material intervening between $\mathrm{C}^{0}$ and the subject is not adjoined to TP, but occupies the specifier of a functional projection which is only projected if necessary and otherwise absent from the structure.

In Distributed Morphology, morphological rules are usually subject to strict locality constraints. For example, an operation such as Morphological Merger which creates a dependency between two syntactic terminal nodes at MS may target only structurally adjacent morphemes (cf. e.g. Halle and Marantz 1993). To account for the adjacency effects observed above, the relevant condition governing the insertion of dissociated Agr-morphemes must ensure that the relation between the syntactically evaluated Agr-morpheme and its late-inserted copy is sufficiently local. More specifically, I assume that the copy operation which creates a dissociated Agr-morpheme may target only a syntactically valued Agr-morpheme which is locally c-commanded by the insertion site. This is expressed by the following condition on the insertion of dissociated Agrmorphemes (and the definition of structural adjacency in (34)).

## Insertion of dissociated Agr-morphemes

A dissociated Agr-morpheme can attach to a functional head X only if X is structurally adjacent to another functional head Y hosting an Agrmorpheme that has been valued in the syntax.
(34) Structural adjacency

A head X is structurally adjacent to a head Y iff
(i) X c-commands Y
(ii) There is no projecting syntactic head Z that
(a) is c-commanded by X and
(b) c-commands Y. 23

According to (34), a head X is structurally adjacent to the head Y of its complement. Hence, Agr-on-C can only be inserted as a copy of Agr-on-T if $\mathrm{C}^{0}$ is structurally adjacent to $\mathrm{T}^{0}$, the latter hosting a valued Agr-morpheme. In the following, it is argued that this adjacency requirement is not met if a scrambled XP intervenes between $\mathrm{C}^{0}$ and the subject. As a result, the insertion of a dissociated Agr-morpheme is not licensed and complementizer agreement is blocked in these contexts.

As already noted above, the analysis of the adjacency effect proposed in this paper is based on the assumption (cf. e.g. Haeberli 2002, Frey 2004, Grewendorf 2005) that scrambled XPs are not adjoined to IP/TP, but occupy the specifier of a functional projection which is located above TP. Following proposals by Rizzi (1997) and Branigan (2005) concerning the presence of TopP/FocP in
${ }^{23}$ If clitics (and, possibly, proper names) are to be analyzed as D-heads, the restriction to "projecting syntactic heads" is necessary to warrant that a clitic in SpecTP (in the configuration [CP C [TP $\mathrm{D}[\mathrm{T}, \mathrm{T}]]$ ) does not interrupt the structural adjacency between C and T (Ian Roberts, personal communication).
the left periphery, I assume that this projection is present only if it serves to implement certain information-structural distinctions such as the distinction between old and new information. Otherwise it is absent from the structure. In sentences like (35), then, the PP op den wärmsten dag van't joar is located in the specifier of a functional projection (simply labeled FP here, but presumably corresponding to TopP/FocP, see Grewendorf 2005) the head of which disrupts structural adjacency between $\mathrm{C}^{0}$ and $\mathrm{T}^{0}$. In this way, the presence of scrambled elements blocks the insertion of a dissociated Agr-morpheme on C in examples such as (35).

$$
\begin{align*}
& \text { *[CP datt-e }{ }_{[\mathrm{FPP}}\left[\mathrm{PP} \text { op den wärmsten dag van't joar] [F}{ }_{\mathrm{F}}, \mathrm{~F}^{0}\right.  \tag{35}\\
& \text { that-1PL on the warmest day of-the year } \\
& \text { [TP wiej tegen oonze wil ewärkt hebt ]]] } \\
& \text { we against our will worked have } \\
& \text { 'that on the warmest day of the year we have worked against our will' }
\end{align*}
$$

How does this analysis account for the fact that in a certain set of dialects, we can observe a similar adjacency effect in matrix clauses? Recall that the presence of a scrambled XP prevents the exponent of Agr-on-C from replacing the verbal agreement ending in examples like (12b), repeated here as (36).

$$
\begin{align*}
& \text { Volgens miej loop-t/*lop-e } \quad \text { [ } \mathrm{FP}[\mathrm{Pp} \text { op den wärmsten dag }  \tag{36}\\
& \text { according-to me walk-1PL/walk-1PL } \begin{array}{l}
\text { on the }
\end{array} \text { warmest day } \\
& \text { van't joar }]\left[{ }_{\mathrm{F}} \mathrm{~F} \mathrm{~F}^{0}[\mathrm{TP} \text { ook wiej noar't park]]]. }\right. \\
& \text { of-the year also we to-the park } \\
& \text { 'According to me we are also walking to the park on the warmest day } \\
& \text { of the year.' }
\end{align*}
$$

In examples like (36), the syntactically evaluated Agr-morpheme adjoined to T is part of the complex C-head, due to V-to-T-to-C movement. So the question arises of whether the $\mathrm{T}+\mathrm{Agr}$ complex is structurally adjacent to C in the relevant adjunction structure (37). This would generally license the insertion of a dissociated Agr-morpheme in V2 contexts, predicting that adjacency effects are absent in matrix clauses, contrary to the facts.


However, note that on standard assumptions, a category does not c-command material adjoined to it (Kayne 1994, Chomsky 1995: 339f.). ${ }^{24}$ As a consequence, $\mathrm{C}_{1}$ does not c-command T in (37) and the Agr-morpheme adjoined to T is invisible to the operation inserting dissociated Agr-morphemes. It follows that in inversion contexts, the insertion of Agr-on-C can only be licensed by structural adjacency (i.e., c-command) between the two-segment category $\left[\mathrm{C}_{2}, \mathrm{C}_{1}\right]$ and the (non-pronounced) lower copy of the T+Agr complex. Accordingly, similar to example (35) (which involves an embedded clause), structural adjacency is disrupted by the presence of an FP hosting the scrambled XP in (36). ${ }^{25}$

Interestingly, not all elements that intervene between C and an additional subject (or, rather, $\mathrm{T}^{0}$ ) block the realization of complementizer agreement. In Bavarian, for example, modal particles such as aber, halt, ja and clitic object pronouns may intervene between an inflected complementizer and TP/the subject (cf. e.g. Altmann 1984, Nübling 1992):

[^10]dass-st oaba du ibaroi dabei bist
that-2SG PRT you everywhere with-it are
'that you really are involved everywhere'
(Altmann 1984: 205)

| wia- $\mathrm{sd}=\underline{n}$ | du | gseng | hoast |
| :--- | :--- | :--- | :--- |
| when-2SG=CLIT.3SG | you | seen | have |
| 'when you saw him' |  |  |  |
| (Pfalz 1918: 231) |  |  |  |

Similarly, object clitics may intervene between the subject and the inflected complementizer in West Flemish, which otherwise requires strict adjacency between $\mathrm{C}^{0}$ and the subject (Liliane Haegeman, personal communication):26

| da-n | $\frac{\text { ze }}{}$ | Valère en Marie | nie | gezien | een |
| :--- | :--- | :--- | :--- | :--- | :--- |
| that-3pL | her | Valère and Marie | niet | seen | have-3pL |
| 'that Valerie and Marie have not seen her' |  |  |  |  |  |

The fact that object clitics and modal particles do not give rise to adjacency effects suggests that the structural position of these elements differs from the position of scrambled XPs. That is, if the above reasoning is correct, only scrambled elements move into a specifier position of a FP (i.e., TopP/FocP) intervening between $\mathrm{C}^{0}$ and TP , whereas object clitics and modal particles occupy other positions. Which? Concerning the position of modal particles, I assume that they are base-generated as adjuncts to TP (cf. e.g. Abraham 1995). Accordingly, they do not require the projection of a separate TopP or FocP and do not disrupt the structural adjacency between $\mathrm{C}^{0}$ and TP. As regards the placement of object clitics, I assume that their ultimate surface position is determined by late MS-processes such as Prosodic Inversion that apply at the mapping to PF (cf. Bonet 1991, Halpern 1992, Schütze 1994). Therefore, they reach their position between $\mathrm{C}^{0}$ and TP after the insertion and valuation of dissociated Agr-morphemes has been completed. Again, no interaction between these two processes is expected.

Summing up, the correct generalization seems to be that only scrambled XPs which undergo syntactic movement to a topic or focus position between C and TP block the realization of complementizer agreement, whereas base-generated adjuncts (i.e., modal particles) and object clitics, which undergo late repositioning in the mapping to PF do not disrupt structural adjacency between C and T . This difference is expected under the analysis of complementizer agreement presented here, but difficult to account for in a purely syntactic approach to the phenomenon in question.

[^11]
### 4.2 First Conjunct Agreement (FCA)

This section discusses an apparent problem for the present analysis that is raised by the observation (van Koppen 2005) that there are varieties in which complementizers may agree with the first conjunct of a complex subject consisting of two conjoined DPs (so-called First Conjunct Agreement, FCA). Consider the following examples from Tegelen Dutch:
a. Ich dink de-s doow morge kum-s. I think that-2SG you tomorrow come-2sg 'I think that you will come tomorrow.'
b. Ich dink de-s [doow en ich] ôs treff-e. I think that-2SG you and I each.other.1PL meet-PL 'I think that you and I will meet.' (van Koppen 2005: 40)

```
*... de [doow en ich] ôs treff-e.
    that you and I each.other.1PL meet-PL
    'I think that you and I will meet.'
    (van Koppen 2005: 42)
```

In Tegelen Dutch, complementizer agreement is confined to 2 sg contexts. Interestingly, the complementizer still inflects for 2 sg in cases where the relevant agreement controlling pronoun doow is the first conjunct of a coordinated subject as illustrated by (41b). (42) shows that FCA is obligatory in Tegelen Dutch: the absence of the 2 sg agreement ending on the complementizer leads to ungrammaticality. In other words, the complementizer may not agree with the coordinated subject as a whole (leading to a zero agreement ending since complementizer agreement occurs only in 2 sg contexts). ${ }^{27}$ According to van Koppen

[^12](2005: 43ff.), similar phenomena can be observed in Bavarian. However, in contrast to Tegelen Dutch, the complementizer may choose to agree either with the first conjunct, cf. (43a), or with the whole coordinated subject as in (43b). ${ }^{28}$


If the 2 nd person pronoun is the second conjunct of a complex subject, the complementizer must appear in its uninflected form (Günther Grewendorf, p.c.; van Koppen 2005: 47 claims that 2 pl inflection is marginally acceptable here):

| dass $\left({ }^{*}\right.$-st) $\quad$ [d'Hans und du] noch Minga | kumm-ts |
| :--- | :--- | :--- | :--- |
| that 2 SG the-Hans and you.SG to Munich | come-2PL |
| 'that Hans and you come to Munich' |  |

The data in (41) and (43)-(44) raise a problem for the assumption (cf. section 4.1) that complementizer agreement results from copying Agr-on-T (valued during the syntactic derivation) onto C at the level of Morphological Structure. More precisely, it seems that the copy approach should lead us to expect that the $\varphi$-features of Agr-on-T and Agr-on-C must always be identical. At this point, we apparently face a dilemma: on the one hand, the data from Bavarian comparatives suggest that the availability of complementizer agreement is dependent on the accessibility of verbal agreement at MS. On the other hand, the phenomenon of FCA seems to indicate that the feature content of the agreement morpheme on C is identified with the $\varphi$-set of the first conjunct of a coordinated subject. ${ }^{29}$

What would an analysis look like that pays attention to both of these facts? In what follows, I give an outline of such an approach which is based on the assumption that in all relevant varieties, the operation copying Agr-on-T to C is
shows that also in Bavarian, complementizer agreement (in the case at hand, FCA) replaces the regular verbal agreement ending in inversion contexts (cf. section 2 and fn. 22).
${ }^{28}$ Günther Grewendorf informed me that in his dialect, FCA is obligatory, similar to Tegelen Dutch (i.e., examples like (43b) are not well-formed in this variety of Bavarian). Furthermore, note that Bavarian differs from Standard German with respect to the agreement features marked on the verb: in Standard German, a coordinated subject such as du und die Maria requires 3pl agreement on the verb, while in Bavarian, the finite verb has to carry 2 pl agreement in the very same environment, cf. (43).
${ }^{29}$ See van Koppen (2005) for a comprehensive discussion of FCA and an analysis based on the idea that FCA results from an AGREE relation between C and the first conjunct. More precisely, van Koppen assumes that there are two separate AGREE relations that involve (i) C and the first conjunct, and (ii) C and the whole coordinated subject. The decision which of these relations is overtly realized on the complementizer is relegated to the morphological component (i.e., the Subset Principle, Halle 1997). As already noted above, this analysis cannot account for the absence of complementizer agreement in Bavarian comparatives. The same problem holds for a potential post-syntactic approach to FCA in terms of a copy operation that may optionally target the $\varphi$-set of the first conjunct (instead of Agr-on-T).
a necessary component of complementizer agreement (which accounts for the requirement that Agr-on-T must be accessible at MS). However, let us suppose that the individual grammars may vary with respect to the way the feature content of Agr-on-C is determined. First, in varieties that exhibit obligatory FCA, the feature content of Agr-on-T copied to C is overwritten with the relevant $\varphi$ feature values of the first conjunct under adjacency, presumably due to a lan-guage-specific PF feature copying rule along the lines proposed by Ackema and Neeleman (2004). ${ }^{30}$ If the conditions of this rule are not met, the complementizer must appear without inflection, as in (44). Second, the content of Agr-on-T may be preserved, giving rise to varieties that lack FCA. ${ }^{31}$ Third, dialects that exhibit both options, FCA as well as agreement with the full coordinated subject, have access to both of the above strategies. Of course, this raises a number of further questions, for example concerning the analysis of adjacency effects, which can now be attributed either (i) to a restriction on the copy operation that gives rise to an agreement morpheme in C or (ii) to a restriction on PF feature checking/copying that identifies the value of Agr-on-C with the $\varphi$-set of the first conjunct. However, for reasons of time and space, I cannot go into a detailed discussion of these and related matters, which I leave for future research. ${ }^{32}$

[^13]
## 5 Conclusion

In this paper, I have argued that certain facts about complementizer agreement in Germanic cannot be satisfactorily captured by purely syntactic approaches and call for an account in terms of operations which are part of the postsyntactic components of grammar. More specifically, I have shown that in the relevant varieties of Germanic, complementizer agreement is blocked if a scrambled XP intervenes between $\mathrm{C}^{0}$ and the subject. In addition to this adjacency effect, it has been demonstrated that in Bavarian, complementizer agreement is sensitive to elision of the inflected verb in comparatives and sluicing constructions. To account for these facts, I have proposed an alternative account in which inflectional features present in the C-domain are added postsyntactically via the insertion of a dissociated Agr-morpheme which adjoins to C at the level of Morphological Structure. The observation that complementizer agreement seems to be parasitic on the presence of the finite verb has been taken to suggest that the feature content of Agr-on-C is identified under structural adjacency with another Agr-morpheme that has been valued in the syntactic derivation. More precisely, Agr-on-C has been analyzed as a copy of Agr-on-T. In section 4, this approach has been slightly reshaped in light of the phenomenon of First Conjunct Agreement. To capture the effects of FCA, it has been argued that in some varieties, the content of the Agr-morpheme copied onto C may (or must) be identified with the $\varphi$-set of the first conjunct of a coordinated subject.

We thus have to recognize the existence of a morphological mechanism giving rise to agreement phenomena in addition to the purely syntactic licensing of Agr-morphemes. In other words, we arrive at a hybrid theory of ("syntactic") agreement where feature matching between an agreement controller and an agreement target may result from two different underlying mechanisms: first, the surface realization of argument-predicate agreement may result from agreement morphemes that are added to other functional heads before the resulting complex head enters the syntactic derivation. The feature content of these syntactic agreement morphemes is then identified via an Agree operation, which leads to feature matching with an appropriate set of interpretable $\varphi$-features under closest c-command. In addition, agreement morphemes may be added after the syntax as copies of syntactically evaluated Agr-morphemes. The insertion of these dissociated Agr-morphemes typically leads to instances of multiple agreement where agreement with a certain argument is realized in several places in a sentence. Under these assumptions, inflectional features are absent from the C-domain during the core syntactic computation. This enables us to maintain a strict division of labor between the individual parts of clause structure in which the C-domain hosts features related to clause type or subordination, while inflectional features are confined to the IP/TP domain, at least in the syntax proper.

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    ${ }^{1}$ Here and throughout this paper, an affix boundary is marked by a hyphen while "=" signals a clitic boundary.

[^1]:    2 The distribution of $/-n /$ and $/-\mathrm{t} /$ suggests that both formatives are underspecified for number. Furthermore, if person features are decomposed into a binary feature system making use of the distinctions [ $\pm$ speaker] and [ $\pm$ hearer] / n / can be characterized as being specified for [-hearer] (which is characteristic of 1 st and 3rd person) while $/-t /$ can be taken to realize the feature [-speaker] (which is characteristic of 2 nd and 3rd person). However, as pointed out to me by Liliane Haegeman, the fact that $/-\mathrm{n} /$ is also used with 1 pl subjects raises a problem for that analysis, since 1 pl may also include the hearer(s). This suggests that $/-n /$ in fact signals even less distinctions, being the completely underspecified elsewhere case.
    ${ }^{3}$ Liliane Haegeman informed me that there is a preference to have clitic doubling in all person/number combinations (if the full subject is a pronoun; otherwise no clitics are found). Still, the clitic can be dropped somewhat more easily in 3 sg.fem $/$ neut, 1 pl and 3 pl contexts.

[^2]:    ${ }^{4}$ Cf. Bayer (1984), Altmann (1984), Weiß $(1998,2005)$ on Bavarian; Bennis and Haegeman (1984), Haegeman (1990, 1992), Shlonsky (1994), de Vogelaer et al. (2002) on (West) Flemish; de Haan and Weerman (1986), Hoekstra and Marácz (1989) on Frisian; Zwart $(1993,1997)$ on dialects of the Eastern and Southern Netherlands; Hoekstra and Smits (1999) and in particular van Koppen (2005) for an overview.
    ${ }^{5}$ However, Weiß (2005) observes that varieties of Upper Saxon, Thuringian, East Franconian, and North Bavarian exhibit paradigms of complementizer agreement which are as rich as the system found in West Flemish (or even richer, in that they involve less syncretisms).

[^3]:    ${ }^{6}$ To the best of my knowledge, these restrictions to certain person/number combinations are still left unexplained. Hoekstra and Smits (1999) claim that the distribution of complementizer agreement is governed by the following generalization:
    (i) The Identity Generalization

    Complementizer agreement only occurs when the agreement ending of the inverted auxiliary in the present tense is identical to the agreement ending of the inverted auxiliary in the preterite.
    Note, however, that even if (i) turns out to be correct, it is only a description of the distributional facts, and not an explanation. See Fuß $(2004,2005)$ for a diachronic explanation of the person/number restrictions observed in Bavarian.
    ${ }^{7}$ In a number of Lower Bavarian dialects, the 1 pl clitic /-ma/ exhibits similar properties as the 2nd person forms. Accordingly, it is commonly assumed that/-ma/ has developed into an additional inflectional formative in these dialects (Bayer 1984, Wiesinger 1989, Weiß 1998, 2005).

[^4]:    ${ }^{8}$ Zwart (1993) claims that a similar difference can be observed for West Flemish. However, Liliane Haegeman has pointed out to me that the endings are in fact morphologically identical and that the differences in question are most likely the result of phonological rules.
    ${ }^{9}$ Some Lower Bavarian dialects exhibit a similar phenomenon in the context of 1 pl , where the inflectional formative $/-\mathrm{ma} /$ (which developed from a former subject clitic) replaces the regular verbal agreement ending $1 \mathrm{pl} /-\mathrm{a}(\mathrm{n})$ / in main clauses (only with bisyllabic verbs such as laffa 'to run', gengan 'to go', soucha(n) 'to seek' etc., cf. Bayer 1984, Kollmer 1987, Weiß 1998, 2005):
    (i) a. Mia laff-ma/*laff-a hoam. we ran-1pl/ran-1pl home
    'We are running home.'
    b. Mia gem-ma/*geng-an hoam. we go-1pl/go-1pl home
    'We are going home.'
    The finite verb appears with its regular agreement ending if it occupies the sentence-final position:
    (ii) wa-ma hoam laff-a/*laff-ma.
    because-1pl home go-1pl
    'because we are going home'
    ${ }^{10}$ Frisian shows another restriction on complementizer agreement when the subordinate clause is embedded under a verb that optionally selects a V2 complement (sometimes referred to as a 'bridge verb'). Note that similar to the Scandinavian languages (but unlike German or Dutch), the sentential complements - including V2 clauses - of this set of verbs are always headed by a complementizer in Frisian. In these contexts, complementizer agreement is obligatory when the verb stays behind in final position, but excluded when the V2 option is chosen (de Haan and Weerman 1986, Zwart 1993), compare examples (i)-(iii).

    | (i) | Hy leaude datsto | moarn | komme | soest. |  |  |
    | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
    |  | he | believed | that-2 $\mathrm{SG}=$ you | tomorrow | come | should-2SG |
    | (ii) | Hy leaude | dat | do | soest | moarn | komme. |
    |  | he believed that you should-2SG | tomorrow | come |  |  |  |

[^5]:    12 However, recall that Frisian exhibits non-inflected complementizers in cases of embedded V 2 , cf. footnote 10 above.

[^6]:    ${ }^{13}$ The adjacency effect is also unexpected under the analysis proposed by Watanabe (2000) who assumes that complementizer agreement results from a two-step operation in which the subject's $\varphi$ features are first copied onto T (as a result of AGREE) and then carried along with head movement of the $\mathrm{T}^{0}$-complex to C. Again, this analysis should lead us to expect that the verb always carries complementizer agreement in V2 clauses, contrary to the facts.
    ${ }^{14}$ Shlonsky's assumption that SpecAgrCP is an A-position raises a number of conceptual issues (see Fuß 2005 for detailed discussion). First, there is no independent motivation for moving the full subject to this position apart from the licensing needs of AgrC (i.e., the realization of agreement on the complementizer). Second, this operation conflicts with the generalization that a Case-marked NP cannot undergo further A-movement (see e.g. Chomsky 1981, 2000).

[^7]:    ${ }^{17}$ Furthermore, the fact that there are varieties such as Bavarian and Frisian which exhibit both complementizer agreement and pro-drop creates another serious problem for Ackema and Neeleman's approach. More specifically, Ackema and Neeleman would have to assume that the phonetically empty subject, which is otherwise invisible at PF , is visible for the purposes of PF feature checking, giving rise to complementizer agreement.
    ${ }^{18}$ Note that similar facts hold for 1 pl in the set of Lower Bavarian dialects which developed a new agreement formative /-ma/ in this context (Bayer 1984: 271):
    (i) De san g'scheider [(als) wia-ma mir san]. they are more-intelligent than as-1pL we are 'They are more intelligent than we are.'
    (ii) * De san g'scheider [(als) wia-ma mir]. they are more-intelligent than as-1pL we
    (iii) De san g'scheider [(als) wia mir].
    they are more-intelligent than as we

[^8]:    19 That is, I assume that agreement features/morphemes do not head their own projection in the syntax. Instead, they are parasitic on other functional heads (Iatridou 1990, Speas 1991, van Gelderen 1993, Mitchell 1994, Chomsky 1995, 2000, Julien 2002). Following Chomsky (2000, 2001), an agreement morpheme with non-interpretable $\varphi$-features acts as a probe, initiating an AGREE operation in which it looks for a goal with matching interpretable $\varphi$-features. The search space of the AGREE operation is confined to elements dominated by the sister node of the probe, with locality reduced to closest c-command.
    ${ }^{20}$ The gist of this analysis is reminiscent of the interarboreal head movement proposed in Bobaljik (1995), Bobaljik and Brown (1997), in which a lower head adjoins to a higher head before the latter is merged with its phrasal complement. However, note that in the case of agreement morphemes, the complex head structures which enter the ongoing syntactic derivation are created by the operation Merge instead of Move. In both instances, the creation of complex heads proceeds in line with the Extension Condition (Chomsky 1995).

[^9]:    ${ }^{21}$ This generalization is in line with the observation that across Germanic, there appear to be no languages with complementizer agreement but without verbal agreement, while there are many languages that exhibit verbal agreement in the absence of complementizer agreement (Hoekstra and Smits 1999). Thus, it seems that cross-linguistically, the availability of complementizer agreement is dependent on the overt realization of verbal agreement morphology. The intuition that complemen-

[^10]:    ${ }^{24} \mathrm{Cf}$. the following definition of c-command given in Chomsky (1995: 339). X and Y are taken to be "disconnected" if no segment of X contains Y:
    (i) C-command

    X c-commands Y if
    (a) every Z that dominates X dominates Y and
    (b) X and Y are disconnected.
    ${ }^{25}$ A similar adjacency effect can be observed in connection with so-called agreement weakening in Standard Dutch (cf. e.g. Ackema and Neeleman 2003, 2004). Normally, the 2sg agreement ending $/-\mathrm{t} /$ is dropped (i.e., replaced by $/-\varnothing /$ ) in inversion contexts, resulting in a form homophonous to the 1 st person singular:
    (i) a. Jij loop-t dagelijks met een hondje over straat. you walk-2SG daily with a doggy over street
    b. Dagelijks loop- $\varnothing$ jij met een hondje over straat.
    daily walk you with a doggy over street (Ackema and Neeleman 2004: 193)
    However, similar to complementizer agreement, agreement weakening is blocked when a scrambled XP intervenes between the verb in C and the subject pronoun:
    (ii) * Volgens mij ga- $\varnothing$ [ op de heetste dag van't jaar] according-to me go on the hottest day of-the year zelfs jij naar het park. even you to the park (Ackema and Neeleman 2004: 196)
    This phenomenon can also be captured by the present analysis if we adopt the following assumptions. First, Standard Dutch exhibits a form of complementizer agreement as well, that is, a dissociated Agr-morpheme is added to C in 2 sg contexts. However, in contrast to varieties with overtly inflected complementizers, the exponent of Agr-on-C is phonetically empty (i.e., $/-\varnothing /$ ). As a result, the presence of Agr -on-C cannot be detected in embedded clauses of Standard Dutch. Still, its insertion does give rise to observable effects, namely the absence of an agreement ending in contexts where the exponent of Agr-on-C, /-Ø/, replaces the regular verbal agreement ending $2 \mathrm{sg} /-\mathrm{t} /$ (socalled 'agreement weakening'). Similar to other instances of complementizer agreement, the adjacency effect illustrated in (ii) can then be attributed to the fact that the scrambled XP disrupts structural adjacency between C and T , which prevents Agr-on-C from being licensed. To account for the fact that the regular verbal agreement ending is maintained in subject-initial clauses, I follow Travis (1984) and Zwart (1997) and assume that in these contexts, the finite verb is located in $\mathrm{T}^{0}$ (or a lower head of a split-C structure, cf. van Craenenbroeck and Haegeman 2005).

[^11]:    ${ }^{26}$ This parallel between West Flemish and Bavarian suggests that the strict adjacency effect exhibited by West Flemish (see above) might possibly be attributed to the existence of a full paradigm of complementizer agreement. As a result, C and T must be structurally adjacent in all contexts.

[^12]:    27 Van Koppen (2005) notes that FCA is restricted to complementizer agreement. That is, even in languages that exhibit FCA with complementizers, verbs agree with the whole complex subject, cf. the following example from Tegelen Dutch (van Koppen 2005: 80):
    (i) Doow en Marie *ontmoet-s / ontmoet-e uch.
    you and Marie meet-2SG meet-PL each.other.2PL
    'You and Marie will meet each other.'
    This can be taken as another indication that complementizer agreement and verbal agreement are established by different mechanisms. However, it seems that things are slightly different in (some varieties of) Bavarian, where FCA is apparently also available in inversion contexts. That is, while FCA is impossible in subject-initial clauses, the verb preferably agrees with the first conjunct of an inverted subject (Günther Grewendorf and Helmut Weiß, personal communication):
    (ii) [Du und d'Hans] hoab-ts/*hoa-st an Hauptpreis gwunna.

    You and the-Hans have-2PL/have-2SG the first.prize won 'Hans and you have won the first prize.'
    (iii) Gesdan hoa-st/??hoab-ts [du und d'Hans] an Hauptpreis gwunna. yesterday have-2SG/have-2PL you and the-Hans the first.prize won 'Yesterday, Hans and you won the first prize.'
    Again, it seems that FCA requires the first conjunct of a coordinated subject to be adjacent to the agreement target (i.e., C). Furthermore, example (iii) is of particular interest, since it clearly

[^13]:    ${ }^{30}$ The idea that FCA results from a language-specific rule is further supported by the fact that there is a huge amount of cross-linguistic variation concerning the realization of verbal agreement in cases where the subject consists of two conjoined nominals (cf. e.g. Moravcsik 1978, Corbett 1991, ch. 9). In particular, if a conjoined subject consists of elements that differ with respect to their person, number, or gender specifications, we can observe quite a number of different strategies how this conflict is resolved. For example, the verb may choose to agree only with a single noun (as in the case of FCA), or the language may resort to special 'resolution rules' that determine the form of the agreeing element. The application of resolution rules is influenced by factors such as person (agreement is more likely with 1 st and 2 nd person than with 3 rd person), animacy, or position, with some languages preferring the first conjunct, while in others, the verb agrees with the closest conjunct, as in the following example from Swahili (Corbett 1991: 265):
    (i) ki-ti na m-guu wa meza u-mevunjika.

    7-chair and 3-leg of table 3-broken
    'The chair and the leg of the table are broken.'
    In (i), the predicate agrees with the second conjunct 'leg' in noun class; if the order of the conjuncts is reversed, the verb will agree with 'chair' (class 7 agreement).

    In brief, the amount of language-specific variation which characterizes the phenomenon of resolution suggests that we should not strive for a purely syntactic analysis, in particular if it is assumed that the syntactic component of grammar is largely invariant across languages (cf. e.g. Chomsky 1995). The relevant phenomena (including FCA) are presumably more adequately accounted for by attributing them to the workings of a module of grammar such as morphology, where we typically expect a huge amount of (idiosyncratic) differences between individual languages.
    ${ }^{31}$ Alternatively, we may assume that the content of Agr-on-C is obligatorily identified with the $\varphi$-set of the whole coordinated subject in these dialects.
    ${ }^{32}$ Another open question concerns the relationship between complementizer agreement and prodrop (see above). Fuß (to appear) links the availability of referential null subjects to the way the historical development of complementizer agreement affected the inventory of subject clitics. More precisely, it is argued that null subjects evolved in those varieties where the reanalysis of subject clitics as C -agreement led to gaps in the clitic paradigm. The emergence of pro-drop is then analyzed as an instance of deblocking, where an unmarked (and by assumption universally available) null realization of weak pronominal forms (terminal nodes in the syntactic structure) became available due the loss of a more specific spell-out (the former clitic forms).

