Complementizer Agreement

Marjo van Koppen

Utrecht University, the Netherlands

1 Introduction

Complementizers show agreement for certain features in some languages: for phi-features (in particular in person and or number) with the embedded subject in dialects of German and Dutch (see among others Haegeman 1992), for tense with the embedded clause in Irish (see among others Cottell 1995), and for phi-features with the matrix subject in certain Bantu languages (see among others Diercks 2010; 2013). Consider the examples below:[1]

(1) West Flemish
    a. K peinzen **da** / *****dan** dienen student nen buot gekocht eet.
       I think that-3P.SG / *that-3P.PL that student a boat bought has
       'I think that that student has bought a boat.'
    b. K peinzen **dan** / *****da** die studenten nen buot gekocht
       I think that-3P.PL / *that-3P.SG those students a boat bought
       een.
       have
       'I think that those students have bought a boat.'

                                              (Haegeman 2000)

The complementizer in the West Flemish example in (1) has to carry an inflectional affix, *-n*, when the subject of the embedded clause is plural as in (1b), but not when it is singular as in (1a).

    The Lubukusu complementizer *li* is not sensitive to the properties of the embedded subject, but to those of the matrix subject:[2]

(2) Lubukusu
    a. baba-ndu ba-bol-el-a Alfredi **ba-li** a-kha-khil-e
       2-people 2 S-said-AP-FV 1Alfred 2-that 1 S-FUT-conquer
       'The people told Alfred that he will win.'
    b. Alfredi ka-bol-el-a baba-ndu **a-li** ba-kha-khil-e
       1Alfred 1 S-said-AP-FV 2-person 1-that 2 S-FUT-conquer
       'Alfred told the people that they will win.'

                                          (Diercks 2013, 358)

The matrix subject *babandu* 'the people' in example (2a) is of class 2 as is the class marker on the complementizer *ba-li*. The matrix subject *Alfredi* in (2b) is class 1 and the class marker on the complementizer *a-li* is also class 1.

    Finally, the Irish examples in (3a)–(3b) show sensitivity of the complementizer to the tense of the embedded clause: the past-tense form of the complementizer differs from the form used for all other tenses. So, if the embedded clause appears in the future tense, as in example (3a), the unmarked complementizer *go* is used, but when it appears in the past tense the complementizer has to carry a past-tense marker *-r* and *gur* is used, see (3b).[3,4]

(3) Irish
    a. Deir sé **go** dtógfaidh sé an peann.
       sayPRES he that takeFUT he the pen
       'He says that he will take the pen.'

b. Deir   sé **gur**   thóg   sé an   peann.
   say<small>PRES</small> he that-<small>PAST</small> take<small>PAST</small> he the   pen
   'He says that he took the pen.'

<div align="right">(Cottell 1995)</div>

This chapter discusses the theoretical and empirical aspects of complementizer agreement (henceforth CA), focusing on agreement for phi-features as illustrated in examples (1) and (2).

There are two additional phenomena that are related to CA but which will not be discussed in this chapter. First, CA has been argued to accompany subject extraction in some languages. Consider for instance the famous *que*/*qui*-alternation in French (see, e.g., Kayne 1975) illustrated in (4).

(4) French
   a. [Le paquet] **que/*qui** j'ai vu.
      'The package that I have seen.'
   b. [Le paquet] **qui/*qu**'est venu.
      'The package that came.'

<div align="right">(Rooryck 2000, ch. 8, p. 1)</div>

Extraction of the subject in French, see example (4b), leads to a special form of the complementizer, namely *qui*, whereas extraction of the object goes together with the regular complementizer *que*. Some scholars have argued that the special form of the complementizer in these subject extraction cases is a form of CA (e.g., Kayne 1975; Pesetsky 1982; Rizzi 1990), but several other analyses for this phenomenon that do not involve CA can also be found in the literature (see for instance Rooryck 2000 or Koopman and Sportiche 2014). This chapter does not go into CA with subject extraction, but see Complementizer Deletion for an exhaustive discussion of these and similar data.

Second, there are languages, like Irish (e.g., McCloskey 1979) and Chamorro (e.g., Chung 1998), where the complementizer reflects so-called *wh*-agreement. The form of the complementizer in these languages is dependent on whether or not *wh*-movement out of the embedded clause has taken place. Consider the examples below:

(5) Irish
   a. an   ghirseach **a**   ghoid   na   síogaí
      the girl   a<small>L</small> stole   the fairies
      'the girl that the fairies stole away'
   b. an   ghirseach **ar** ghoid   na   síogaí í
      the girl   a<small>N</small> stole   the fairies her
      'the girl that the fairies stole away'

<div align="right">(McCloskey 2001:67)</div>

Irish has a complementizer, *aL*, that reflects that there has been A'-movement out of the embedded clause, see (5a). Another complementizer, *aN*, is used if there is an A'-dependency that does not involve movement, as in (5b).[5] *Wh*-agreement is

discussed in depth in the chapter Overtly Marked *Wh*-Paths and hence will not be considered in this chapter any further.

Although the type of CA discussed in this chapter is typologically quite rare, it has proven to be an intriguing phenomenon for theoretical linguists. The analysis of the phenomenon itself raises several syntactic and morphological issues. It has, for instance, been analyzed as being part of different modules of the grammar: as the result of a syntactic operation (e.g., Zwart 1993; Carstens 2003; Van Koppen 2005) and as a post-syntactic (i.e., morphological) process (e.g., Ackema and Neeleman 2004; Fuß 2008). CA has furthermore been used as an argument in several theoretical debates, among which the structure of and feature distribution in the left periphery (CP), the syntactic implementation of agreement (e.g., Upward and Downward Agree and Spec–Head agreement), and the relation between T^0 and C^0 (e.g., feature inheritance, T^0-to-C^0 movement). This chapter is organized as follows: We will start at the basis, with an overview of the empirical properties of CA in Germanic in the next section. We will discuss the syntactic analyses of CA in section 3 and the PF analyses in section 4. Section 5 is devoted to the adjacency effects of CA. Section 6 concludes the chapter.

2   The basic properties of CA

As has become clear in the introduction to this chapter, complementizers can show agreement properties in certain languages. The literature on CA in Germanic is quite substantive and several intriguing aspects of this phenomenon have been uncovered. This first section discusses the most important empirical findings about CA in Germanic. CA in Bantu will be discussed as part of section 3.3 below.

2.1   The basic syntactic distribution of CA

CA is found in (dialects of) Frisian and in a subset of the Dutch and the German dialects. It is, as far as we know, not found in (dialects of) English or the Northern Germanic languages.[6] There is an extensive descriptive literature on CA in the continental West Germanic dialects. I refer the reader to Barbiers et al. (2005; 2006) and Weiß (2005) for an extensive list of these references. This subsection discusses the basic properties of the syntactic distribution of CA. It is important to note first, however, that CA does not have any effect on the meaning of a sentence. It is reported that there is a register effect, though: speakers experience CA as belonging to another (more archaic) register (see Hoekstra & Smits 1997, 12).

CA is, as the name already conveys, normally found on the complementizer. It is restricted to the complementizer of finite clauses and never found on infinitival complementizers. As already noted above, CA in continental West Germanic expresses agreement with the embedded subject. The category of the subject generally does not affect the possibility to have CA. Full NPs and pronouns can both trigger it in the dialects that have CA in the third person (see for instance De Vogelaer 2006, 32–33). Barbiers et al. (2005, 33) have investigated this in depth for the Dutch dialects and show that the Flemish dialects have CA both with pronominal and non-pronominal subjects, but that there are dialects in the Hollandic

area (i.e., the northwestern part of the area) in which CA exclusively occurs with pronominal subjects.[7]

CA is normally attached to the complementizer, but it can also be found on other elements in the CP-domain when the complementizer is absent. Consider for instance the data in (6) where the inflection surfaces on the *wh*-word *warum* 'why' or the data in (7) where the inflection is attached to a *wh*-phrase:[8]

(6) Bavarian
    … warum-sd   des   ned   mochsd.
       why-2P.SG   this   not   make-2P.SG
    '… why you do not make this.'

                                                         (Weiß 2005, 148)

(7) Bavarian
    Du   sollst   song [[an   wäichan   Schuah]$_i$ -st] du t$_i$ wui-st].
    you   should say   the   which-one shoe 2P.SG   you want-2.SG
    'You should say which one of the shoes you want.'

                                                         (Bayer 1984, 235)

Similar examples with CA on elements other than the complementizer can be found in many Dutch and German dialects (see for instance Zwart 1993, 171; Weiß 2005). One analysis that has been proposed for these cases is that the inflection is in C^0 and attaches to the element filling the SpecCP position (the *wh*-word or -phrase) phonologically (see for instance Zwart 1993; Weiß 2005) when the complementizer is absent.[9] These data are, however, also used as an indication that CA is a PF phenomenon. We will come back to this in section 3.2 below.

Finally, CA is also found on the complementizer in comparative clauses. Bayer (1984) and Fuß (2008) report that CA in Bavarian is only possible in clausal comparatives, but not in phrasal ones, see the data in (8).

(8) a. D'Resl   is gresser [als   wia-st   du   bist]
          The-Resl is taller   than as-2P.SG you are
          'Resl is taller than you are.'
  b. D'Resl   is gresser [als   wia(*-st) du]
          The-Resl is taller   than as-2P.SG you
          'Resl is taller than you.'

                                                         (Bayer 1984, 269)

A subset of the Dutch dialects with CA does allow CA with phrasal comparatives; see (9), see Cremers and Van Koppen (2008), and Barbiers et al. (2005, 36) for a map showing the exact distribution of this pattern.

(9) Nieuwenhagen Dutch
    Du geloofst   zeker niet dat er sterker   is   **wie-st-u**.
    you believe-2P.SG surely not that he stronger is than-2P.SG-you
    'You surely don't believe that he is stronger than you.'

                                                      (Barbiers et al. 2006)

We will come back to these data in section 4 below.

Movement out of the embedded clause (either by the subject or any other element) does not seem to affect the presence of CA in most dialects.[10] Boef (2013) and Mayr (2010) propose a close connection between CA and subject extraction in the Dutch dialects and in Bavarian respectively. They argue that CA makes subject extraction possible.[11] Mayr (2010) gives a particularly convincing argument for this, illustrated in (10).

(10) Bavarian
   a. [Es   Kinda]$_1$ hot da   Hauns gfrogt [t$_1$ ob-s t$_1$ hamkummts]
       you   children has the John   asked   if-2P.PL home_come
       'John asked if you children will come home.'
   b. *[Es   Kinda]$_1$ hot da   Hauns gfrogt [t$_1$ ob-Ø t$_1$ hamkummts]
       you   children has the John   asked   if-Ø   home_come
                                                    (Mayr 2010, 121)

Mayr shows that CA is optional for some speakers of Bavarian. However, when the subject is extracted, the only grammatical option is the one with CA (i.e., example (10a)) and not the one without CA (i.e., example (10b)). For reasons of space the reader is referred to the original works for an in-depth discussion and analysis of this correlation.

   A final point about the distribution of CA concerns the clauses it appears in. The dialects and languages that display CA are all asymmetric Verb Second (V2) languages, which means that the finite verb is in second position in main clauses and in final position in embedded clauses. There are several analyses of CA that make use of this observation (see for instance Zwart 1993; 1997; 2001). That the link between embedded V2 and the presence of CA is not coincidental can be seen in Frisian. This language (in contrast to most other Germanic languages and dialects) allows embedded V2. Interestingly, CA cannot appear in these clauses (see De Haan and Weerman 1986; Zwart 1993; De Haan 2001). Consider the sentences in (11).

(11) Frisian
   a. Heit   sei   **dat-st**   **do** soks   net   leauwe   **moa-st**.
       dad   said   that-2P.SG you   such   not   believe   most-2P.SG
   b. Heit   sei   **dat(*-st)**   **do** **moa-st**   soks   net   leauwe.
       dad   said   that(-2P.SG) you   must-2P.SG such   not   believe
       'Dad said that you should not believe such things.'
                                      (Van der Meer 1991, as cited in Zwart 1993, 198)

Example (11a) is a regular embedded clause with CA and the verb in final position. The embedded V2 clause in (11b) cannot have CA however. De Haan (2001) convincingly shows that these clauses with what seems to be embedded Verb Second are actually coordinated root clauses. The complementizer *dat* 'that' is not a subordinating conjunction in these clauses, but it is a coordinating conjunction. If these sentences are indeed root clauses, then we do not expect CA to occur, as it is restricted to embedded contexts (see Zwart 1993; 1997; 2001; Carstens 2003 for alternative accounts of these data).

2.2   The agreement properties of CA

Now that we have a general picture of the distributional properties of CA, let us zoom in on the agreement properties.

2.2.1   The CA paradigm

The affixes used on the complementizer are from the same paradigm as the verbal agreement affixes. The CA paradigm is usually defective, however, in the sense that not all person/number combinations of the subject lead to an overt agreement reflex on the complementizer. Frisian, the Eastern Dutch dialects, and the German dialects with CA typically show agreement with second-person singular subjects. Consider the examples in (12) from Frisian.

(12)   … dat-st   my   helpe   moat-st.
          that-2P.SG   me   help   must-2P.SG
       '… that you have to help me.'

<div align="right">(De Haan 1997, 51)</div>

There are also dialects with a more elaborate agreement system. Bayer (1984) shows that Bavarian has CA for the second person singular and plural. The same holds for several Eastern Dutch dialects (see Barbiers et al. 2005, 221). There are also dialects, like Lower Bavarian (see Bayer 1984), that additionally have CA in the first person plural and some German dialects even show CA in the third person plural. An example of such a dialect is Egerlandish (also a dialect of Bavarian):

(13)   a.   wal-st
            because-2P.SG
       b.   das-n   mer
            that-1P.PL   we
       c.   wenn-ts   diaz
            when-2P.PL   you
       d.   daa-n-s
            that-3P.PL-they

<div align="center">(Schiepek 1899/1908; Weise 1907, as cited in Weiß 2005, 151)</div>

Most western Dutch dialects agree for number:[12]

(14)   Katwijk Dutch
       a.   … **as**   **ik/jij/hij**   hoor(t) …
               when   I/you/he   hear(s)
            '…when   I/you/he   hear(s) …'
       b.   … **as-e**   **we/jollie/ze**   hore …
               when-PL   we/you/they   hear
            '…when   we/you/they   hear …'

<div align="right">(Barbiers et al. 2006)</div>

Haegeman (1992) argues that West Flemish has a full, that is non-defective, CA paradigm:[13]

(15) a. … **da-n-k**   (ik)   morgen   goa-n.
              that-1P.SG-1P.SG   (I)   tomorrow   go-1P.SG
      b. … **da-j**   (gie)   morgen   goa-t.
              that-2P.SG   (you)   tomorrow   go-2P.SG
      c. … **da-se**   (zie)   morgen   goa-t.
              that-3P.SG   (she)   tomorrow   go-3P.SG
      d. … **da-me**   (wunder)   morgen   goa-n
              that-1P.PL   (we)   tomorrow   go-1P.PL
      e. … **da-j**   (gunder)   morgen   goa-t.
              that-2P.PL   (you)   tomorrow   go-2P.PL
      f. … **da-n-ze**   (zunder)   morgen   goa-n
              that-3P.PL-3P.PL   (they)   tomorrow   go-3P.PL

(Haegeman 1992, 49)

The agreement morphology appearing on the complementizer in this dialect consists of two parts. The first part can be classified as inflectional morphology expressing at least agreement for number (i.e., the *-n* ending in the first person singular and third person plural). The second part can be interpreted as a clitic pronoun (i.e., the elements *k*, *j*, *se*, *me*, *j*, *ze* in the examples above), which conveys the person, number, and gender information of the subject (see Haegeman 1992, 68–69). We will come back to the relation between clitics and CA in section 2.3 below. Before we can go into the exact question as to why the CA paradigms are as they are and why some Dutch and German dialects do have CA whereas it is absent in others, we first have to discuss a related phenomenon, namely double agreement.

2.2.2   Double agreement

CA is closely related to another phenomenon involving the C-position, namely so-called double agreement. The term double agreement (henceforth DA) refers to the pattern of agreement in which the affix on the finite verb differs depending on its structural position (see also, among others, Van Haeringen 1958; Bayer 1984; Zwart 1993; 1997; 2001; Hoekstra & Smits 1997; Van Koppen 2005; Weiß 2005). This means that in DA dialects the finite verb in subject-initial main clauses and embedded clauses has a different ending than the finite verb in clauses with subject–verb inversion. The agreement on the complementizer always patterns with that on the finite verb in VS-clauses.[14] This is known in the literature as the inversion generalization (see Hoekstra & Smits 1997; Barbiers et al. 2005, 19–34).[15] The DA pattern is exemplified in (16)–(18) for the Dutch dialect of Hellendoorn.

(16) a. Wiej   **bin-t**   den   besten!
          we   are-AGR1   the   best
          'We are the best!'
      b. *Wiej   **binn-e**   den   besten!
          we   are-AGR2   the   best

(Van Koppen 2005, 125–126)

(17) a. *****Bin-t** wiej den besten?
 are-AGR1 we the best
 b. **Binn-e** wiej den besten?
 are-AGR2 we the best
 'Are we the best?'

(18) … **darr-e** / *****dat** wiej den besten **bin-t** / *****binn-e**!
 that-AGR2 / that we the best are-AGR1 / are-AGR2
 '… that we are the best!'

These examples show that there are two agreement affixes associated with first-person plural subjects; namely -*e* (AGR2) and -*t* (AGR1). The schwa ending can only appear on the complementizer and on the finite verb when it is inverted with the subject (VS clauses). The -*t* ending is restricted to contexts in which the finite verb is not inverted with the subject, that is in SV_2 and CSV_{fin} word orders.

Other instances of DA are found in Bavarian and Brabantic. Consider the examples in (19) and (20).[16]

(19) Brabantic
 a. … da-de gullie kom-t / *****kom-de.
 that-2P youPL come-2P.PL / come-2P
 '… that you will come.'
 b. Gullie kom-t / *****kom-de.
 youpl come-2P.PL / come-2P
 'You will come.'
 c. Wanneer kom-de / *****kom-t gullie.
 when come-2P / come-2P.PL youPL
 'When do you come?'

(20) Lower Bavarian
 a. … daß-ma mia noch Minga fahr-n / *****fahr-ma.
 that-1P.PL we to Munich go-1P.PL / go-1P.PL
 '… that we are going to Munich.'
 b. Mia fahr-ma / *****fahr-n noch Minga.
 we go-1P.PL / go-1P.PL to Munich
 'We are going to Munich.'
 c. Fahr-ma / *****fahr-n mia noch Minga?
 go-1P.PL / go-1P.PL we to Munich
 'Are we going to Munich?'

The Brabantic second-person singular and plural -*de* affix appears on the finite verb in inversion contexts and on the complementizer, but not on the finite verb in SV_2 and CSV_{fin} clauses, see example (19). The affix on the finite verb in Lower Bavarian is also dependent on the position of the finite verb. The complementizer and the

finite verb in inversion are inflected with the *-ma* affix if the subject is first person plural, as is the finite verb in the SV$_2$ order. The finite verb in the CSV$_{fin}$ order, on the other hand, cannot carry this affix, see example (20).

   De Haan (1997) shows that Frisian also has a DA pattern similar to Bavarian and Brabantic. He provides the examples in (21).

(21)   Frisian
   a.   …   dat-**st**   do   moarn   komme   soe-**ste**.
            that-2P.SG   you   tomorrow   come   would-2P.SG
            '… that you would come tomorrow.'
   b.   Do   soe-**ste**   moarn   komme.
            you   would-2P.SG   tomorrow   come
            'You would come tomorrow.'
   c.   *Moarn   soe-**ste**   **do**   komme.
            Tomorrow   would-2P.SG   you   come
   d.   *… dat-**ste**   **do**   moarn   komme   soe-**ste**.
            that-2P.SG   you   tomorrow   come   would-2P.SG

                                                                     (De Haan 1997, 65)

Frisian has two agreement affixes *-st* and *-ste*. De Haan (1997) shows that *-ste* displays DA behavior: it can only co-occur with the subject pronoun *do* if the word order is SV$_2$ or CSV$_{fin}$. If the *-ste* affix appears on an inverted finite verb, see (20c), or the complementizer, see (20d), *do* cannot appear. De Haan concludes from this that Frisian has two different *-ste* endings. One that cannot co-occur with an overt subject pronoun and one that can. He argues that the first one is comparable to the Brabantic *-de* ending and the Hellendoorn Dutch *-e* ending because it is also restricted to complementizers and verbs in V2 contexts.

   Zwart (1993; 1997; 2001) analyzes these DA patterns as follows. He argues that the verbal morphology in DA dialects is sensitive to the make-up of the complex head it spells out. The verb in SV$_2$ and CSV$_{fin}$ clauses has a different make-up than the verb in VS clauses and the complementizer. The latter two contain a C head, whereas the former two, according to Zwart's analysis of Dutch clause structure, do not. This results in a different spell-out: a complex head containing a C^0 head is realized differently (i.e., with a *-de* affix in Brabantic and an *-e* affix in Hellendoorn Dutch) than a complex head without a C^0 head (see also Postma 2011).[17] Bavarian, according to Zwart, has a slightly different DA system. The DA ending in this dialect is dependent on whether the T^0/AgrS^0 head is part of the complex head. If it is, that is on the verb in VS and SV$_2$ clauses, it is realized as *ma*; if it is not, that is on the verb in CSOV$_{fin}$ clauses, the verb does not get a special ending. The complementizer has the *-ma* ending, which according to Zwart results from T^0/AgrS^0 movement to C^0. Now that we have established the properties of the DA pattern, we can go back to the defectiveness of the CA paradigm.

2.2.3   *The defectiveness of the CA paradigm*
A lot of CA paradigms are defective; that is, it is not the case that every person/number combination leads to a CA ending. Hoekstra and Smits (1997; 1999) have proposed the so-called identity generalization that describes and predicts the

defectiveness of CA paradigms.[18] This generalization states that the CA paradigm uses the verbal affixes (of auxiliary verbs) that are identical in the present tense and the preterite. Put differently, CA affixes are those affixes of the verbal paradigm that do not express tense information. The discussion of DA makes clear that we should look at the verbal paradigm in inversion contexts, because the complementizer in DA dialects always has the same ending as the verb in VS clauses (i.e., the inversion generalization, see section 2.2.2 above).[19] The example below illustrates the identity generalization:

(22) Frisian
    a. Present tense: **Wol-st**   do   komme?
                                want-2P.SG you come
                                'Do you want to come?'
    b. Preterite: **Woe-st**   do   komme?
                                wanted-2P.SG you come
                                  'Did you want to come?'
    c. Complementizer: … **dat-st**   do   komme sil-st
                                … that-2P.SG you come will-2P.SG
                                '… that you will come'
                                (Van Craenenbroeck and Van Koppen 2002)

The *-st* affix appears in the present tense and the preterite, compare (22a) and (22b), and hence does not convey tense information. It can be used as CA, see (22c). Frisian does not have CA in the plural. This is also predicted by the identity generalization. Consider the examples in (23).

(23) a. Present tense: **moatt-e**   wy
                                  must-1P.PL we
                                  'must we'
    b. Preterite: **moast-en**   wy
                                  must-1P.PL we
                                  'must we'
    c. Complementizer: **dat-(*e/en)** wy moatt-e
                                that-1P.PL   we   must-1P.PL
                                  (Eric Hoekstra p.c.)

The first person plural does not have an ending in the verbal paradigm that is the same in the present tense and the preterite, compare (23a)and (23b), and hence Frisian does not have CA in the first person plural, see (23c). Therefore the identity generalization provides a potential tool to explain why some dialects have CA and others lack it. It also gives us a handle on the defectiveness of the CA paradigm.

   The question is of course how this generalization should be implemented in the analyses of CA. Van Koppen (2005) and Carstens (2003), who both provide an Agree-based analysis of CA (see section 3.2 below), propose that the phi-features of C^0 are pure phi-features and hence that an affix which also has a Tense component cannot spell out this feature complex.

2.3   pro-drop, clitics, and CA

A final issue that needs to be addressed in this section is the relation between CA, subject clitic pronouns, and pro-drop.

First of all, two types of CA affixes have to be distinguished. There are affixes that are pronominal in origin and affixes that have a verbal origin (see, among others, Weiß 2012). Dialects can have both types of CA affixes within one paradigm, as we will see below. There appears to be an especially close relation between clitic pronouns and CA in the second person. Weiß (2012), Fuß (2004), and Bayer (1984; 2014), for instance, argue that CA in the second person singular is the result of reanalysis of second-person subject clitics in VS clauses to inflectional markers. This leads to DA: the inflectional ending on the finite verb in the VS order is different from the endings on the finite verb in SV_2 clauses or CSV_{fin} clauses. The inflectional ending in the VS order is analogically extended to the complementizer, leading to CA. The origin of verbal CA affixes is much less clear (see Goeman 1997 for a detailed discussion of the attestations of verbal CA in older stages of Dutch).

One difference between pronominal and verbal CA affixes is that the former license pro-drop, but the latter do not (see, among many others, Bayer 1984; Hoekstra 1997; Fuß 2005; Weiß 2012).[20] Consider the examples in (24a) and (24b) respectively.

(24)   Bavarian
   a.   … wenn-sd   will-sd
          if-2P.SG   want-2P.SG
        '… if you want.'

                                                   (Weise 1907, as cited in Weiß 2005, 154)
   b.   … waal-n   *(mer)   graad   besamn   senn
          because-1P.PL   we   at_the_moment   together   are-1P.PL
        '… because we are together at the moment.'

                                                   (Weise, 1907, as cited in Weiß 2005, 154)

The -*d* affix in (24a) derives from a subject clitic, which has become part of the verbal inflection. In this example pro-drop can take place. The first-person plural agreement in (24b) does not contain such a pronominal part and pro-drop is not an option.[21] The same opposition is found in the Dutch dialects and Frisian:

(25)   Frisian
   a.   …   dat-st   (do)   jûn   kom-st.
             that-2P.SG   (you)   tonight   come-2P.SG
        '… that you will come tonight.'

                                                                           (Weiß 2005, 156)

      West Flemish
   b.   …   da-n   *(ze)   goan   werk   een.
             that-3P.PL   they   go3P.PL   work   have'
        '… that they have gone to work.

                                                                           (Weiß 2005, 156)

Hoekstra (1997) argues that the Frisian *-st* ending has a pronominal origin and licenses pro-drop. The West Flemish *-n* ending, which is not pronominal, does not. Hoekstra (1997) also addresses the question as to why pro-drop is found exclusively with first and second person in the West Germanic languages. He argues that first- and second-person subjects are necessarily pronominal in contrast to third-person subjects and that there is a strong tendency for cliticization to C^0 in these persons. This means that reanalysis of a first- and second-person pronoun into an inflectional affix is much more likely than of a third-person pronoun (see also Weiß 2012).[22]

2.4 Summary

This section has described the basic properties of CA: its basic syntactic distribution and its agreement properties. Now that we have established those, we will evaluate the two main analyses in the theoretical literature on CA. The first derives CA from a syntactic operation; the second states that CA is a PF phenomenon.[23] We discuss these analyses in sections 3 and 4 respectively. Section 5 is devoted to one of the main arguments in the debate on the component of the grammar that is responsible for CA, namely the issue of linear adjacency.

3 Syntactic accounts of CA

The syntactic analyses of CA have as their basic ingredient that there is an agreement relation between the complementizer, or more accurately C^0, and the subject. This main idea has been implemented in two ways. In the first the agreement features on the complementizer, which are checked against those on the subject, are dependent on those of the finite verb. In more technical terms, C^0 acquires its agreement features during the derivation by movement of T^0 to C^0. This will be discussed in section 3.1. In the second one the complementizer has its own set of agreement features. Or, more precisely, C^0 enters into the derivation with agreement features which are checked against the subject. This will be discussed in section 3.2. Section 3.3 goes into Bantu CA.
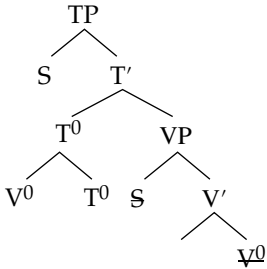
3.1 Movement from T^0 to C^0 [24]

Zwart (1993; 1997) is the most cited work of this type of analysis.[25] This chapter has already referred to this analysis a couple of times above (see section 2.2), but let us now look at it in some more detail. The basic idea is, as already mentioned above, that C^0 does not have agreement features of its own but acquires these features in the course of the derivation; more specifically via movement of T^0 to C^0.[26]
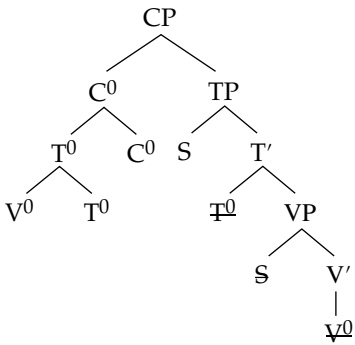
Zwart's (1993; 1997) main objective is to provide an analysis of West Germanic clause structure under the assumption that all languages are head initial (Kayne 1994). This leads him to assume that subject-initial main clauses (SV_2 clauses) are not CPs but TPs with the subject in SpecTP and the verb in T^0 (see also Travis 1984). CSV_{fin} clauses are CPs with a complementizer in C^0 and the verb in V^0. VS clauses are CPs where the verb has moved from V^0 via T^0 to C^0. Crucially in

CSV_{fin} clauses T^0 moves to C^0, pied-piping the features T^0 has checked against the subject to C^0. This latter movement can be spelled out as CA. This is schematically illustrated below:
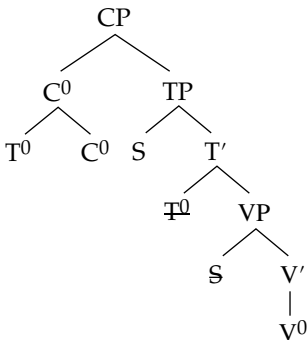
(26)   Subject-initial clauses SV_2

```
        TP
       /  \
      S    T'
          /  \
        T⁰     VP
       /  \   /  \
     V⁰   T⁰ S   V'
                   \
                    V⁰
```

(27)   Inverted clauses VS

```
              CP
            /    \
          C⁰      TP
         /  \    /  \
       T⁰   C⁰  S    T'
      /  \          /  \
    V⁰   T⁰        T⁰    VP
                       /  \
                      S    V'
                           |
                           V⁰
```

(28)   Embedded clauses CSV_{fin}

```
            CP
          /    \
        C⁰      TP
       /  \    /  \
     T⁰   C⁰  S    T'
                  /  \
                T⁰    VP
                     /  \
                    S    V'
                         |
                         V⁰
```

One of the major advantages of Zwart's analysis is that it is able to capture the generalization that CA is only attested in asymmetric V2-languages, that is in languages and dialects in which the verb in finite clauses is in sentence-final position. The movement of the finite verb to T^0 does not take place in these clauses according to Zwart and as a result T^0 moves to C^0, leading to CA. This analysis correctly predicts that in sentences (and dialects or languages) with embedded V2, like the ones discussed in (11b), repeated here as (29), CA does not occur.

(29) Frisian
Heit sei **dat(*-st)** **do** **moa-st** soks net leauwe.
dad said that(-2P.SG) you must-2P.SG such not believe
'Dad said that you should not believe such things.'
(Van der Meer 1991, as cited in Zwart 1993, 198)

Zwart argues that the verb moves to T^0 in this case. As a consequence T^0-to-C^0 movement does not have to take place so that the phi-features of T^0 do not get to the complementizer.[27]

There are a couple of problems with the T^0-to-C^0 movement analysis of CA. First of all, it is not immediately clear how and why the phi-features of T^0 are spelled out both on the complementizer and the finite verb simultaneously. The analysis predicts that the features are spelled out only once in embedded clauses, on the complementizer. There are also empirical problems with this analysis. The features expressed on the complementizer and those expressed on the finite verb have the same source in Zwart's analysis: a feature-checking relation between T^0 and the subject. This predicts that the agreement expressed on the complementizer should target the same feature bundle as that on the finite verb. Van Koppen (2005) and Haegeman and Van Koppen (2012) show, however, that the complementizer does not necessarily realize the same feature set as the finite verb. Consider the example in (30) from Tegelen Dutch.

(30) … de-s doow en ich ôs treff-e.
      that-2P.SG [youSG and I]1P.PL each.other1P.PL meet-1P.PL
      '… that you and I meet each other.'
(Van Koppen 2005, 174)

The agreement on the complementizer is different from that on the finite verb. The latter expresses the features of the coordinated subject, the former the features of the first conjunct of the coordinated subject. The same holds for the external possessor data in (31) that are discussed by Haegeman and Van Koppen (2012).

(31) Lapscheure Dutch
      … omda-n **die** **venten** toen juste **underen computer** kapot was.
      because-3P.PL those guys then just their computer broken was
   '… because those guys' computer broke just then.'
(Haegeman and Van Koppen 2012, 444)

The subject, *die venten underen computer* 'those guys' computer', is discontinuous: the possessor *die venten* 'those guys' and the possessee *underen computer* 'their computer' are interrupted by the adverb *toen juste* 'just then'. This example shows that the agreement on the complementizer is not necessarily the same as the agreement on the finite verb: the complementizer agrees with the possessor, the finite verb with the possessee.[28] These data are very problematic for the analysis discussed in this section where the agreement on the complementizer and that on the finite verb spell out the same feature-checking relation.

Chomsky (2005) suggested something similar. In particular, he argues that T^0 inherits its phi-features from C^0. This means that T^0 enters the derivation without phi-features, and acquires them from C^0 when the latter is merged (feature inheritance). Chomsky takes CA as empirical support for the idea that C^0 starts out with phi-features. However, as also pointed out by Haegeman and Van Koppen (2012), this argument faces the same problems as the T^0-to-C^0 movement analysis discussed above. If the phi-features of T^0 and C^0 form the same set we would expect the same agreement endings on C^0 and T^0, which is not necessarily the case, as is clear from the examples in (30) and (31). Hence, CA cannot be used as an argument in favor of the idea that T^0 inherits its features from C^0.[29]

## 3.2   Agree between C^0 and the subject

The second syntactic analysis of CA assumes that the agreement on the complementizer and that on the finite verb result from different feature-checking relations. C^0 enters the derivation with its own phi-features in this type of analysis and instigates its own feature-checking operation. The best-known analyses of these types are based on the operation *Agree* (cf. Chomsky 2000), see Van Craenenbroeck and Van Koppen (2002), Carstens (2003), and Van Koppen (2005).[30] Agree relates the unvalued features on a so-called *Probe*, for instance the phi-features of T^0, to their valued counterparts on a *Goal*, for instance the valued phi-features of the subject. Agree searches the c-command domain of the Probe and identifies an element as a suitable Goal when it meets certain requirements: it has to be local, it has to be active (i.e., it has to have unchecked unvalued features itself) and it has to have matching features[31] (see Chomsky 2000; 2001a; 2001b). Agree establishes a relation between the Probe and the Goal. This is illustrated in the structure in (32).

(32)
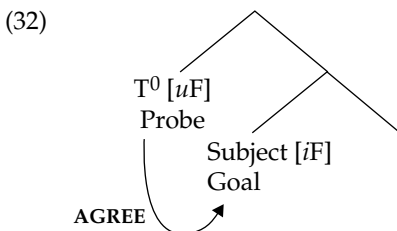
Van Craenenbroeck and Van Koppen (2002), Carstens (2003), and Van Koppen (2005) argue that the minimal assumption, given that the complementizer shows inflection, is that C^0 has phi-features (see also Bennis and Haegeman 1984; Haegeman 1992; Van Craenenbroeck and Van Koppen 2002). These features are assumed to be unvalued, which means that they are Probes that have to be linked a valued set of phi-features, that is the Goal, normally the valued phi-features of the subject. This leads to the following analysis of CA. Reconsider the example in (1b), repeated here as (33), and its derivation in (34).

(33) West Flemish
K peinzen **dan** / *da die studenten nen buot gekocht een.
I think that-3P.PL / *that-3P.SG those students a boat bought have
'I think that those students have bought a boat.'

(Haegeman 2000)

(34)
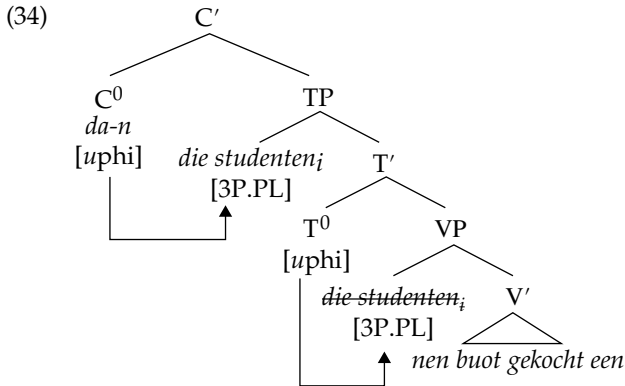
The derivation of the sentence runs as follows: T^0 with unvalued features is merged with VP.[32] T^0 is a Probe for phi-features and agrees with the interpretable features of the subject, that is the most local Goal with matching features. The subject has to move to SpecTP in order to fulfill T^0's EPP requirement. After this movement, C^0 is merged with TP. C^0 also has unvalued phi-features. This means that C^0, just like T^0, is a Probe for phi-features. C^0's unvalued features enter into an agreement relation with the subject in SpecTP, leading to CA.

To summarize, the present analysis argues for two different agreement relations: one between T^0 and the subject and one between C^0 and the subject. This means that the problematic cases that we discussed in examples (30) and (31) in the previous subsection are easily accounted for: C^0 can agree with a different Probe (the first conjunct or the possessor) than T^0 (the complete coordination or the possessee), leading to different feature specifications on the complementizer and the finite verb respectively (see Van Koppen 2005; Haegeman and Van Koppen 2012 for an in-depth [Agree-based] analysis of these constructions).

A potential problem for this analysis concerns topicalized objects. Consider the data in (35) from the dialect of Lapscheure Dutch.

(35) a. Kpeinzen **dat zelfs Valère** zukken boeken niet leest.
I.think that even Valère such books not reads

b. Kpeinzen *da-n / ??**dat** zukken boeken **zelfs Valère** niet leest.
I.think that-3P.PL / that such books even Valère not reads
'I think that even Valère would not read such books.'

(Haegeman and Van Koppen 2012, 446)

One might expect that if the direct object is hierarchically closer to C^0 than the subject, the valued phi-features of the object serve as the Goal for CA. However, as Carstens (2003, 400–401) points out, agreement with an object is not predicted

because the object is inactive at this stage of the derivation, since its case features have been deleted in the strong vP-phase. As such it is not a Goal and hence CA with objects is not predicted to occur. We will come back to these data in section 4.1 below.

3.3   Reverse Agree between C^0 and the subject

3.3.1   Reverse Agree and CA in West Germanic

The syntactic analyses of CA are strongly influenced by the more general syntactic analyses of agreement. The T^0-to-C^0 movement analysis of CA (see section 3.1) was formulated at a time when agreement was assumed to be the result of Spec–Head agreement. CA was problematic under such a view of agreement, since the subject is not (overtly) in the specifier of C^0. Hence Spec–Head agreement between C^0 and the subject could not have taken place. Movement of T^0, which agrees with the subject via Spec–Head agreement, solved this problem. When Chomsky (2000) dispensed with Spec–Head agreement and argued that phi-feature checking takes place via the operation Agree, CA was shown to be the perfect example of this operation (see section 3.2 above; Carstens 2003; Van Koppen 2005): the head with unvalued features, that is the complementizer, is c-commanding its Goal, the subject. This analysis has as an advantage that no additional unmotivated movements, like the head movement of T^0 to C^0, have to be stipulated.

Currently there is a debate in the literature on the directionality of Agree. Some scholars argue that Agree is not defined as an operation between a Probe c-commanding a Goal, but reversely, between a Goal c-commanding a Probe (see among others Wurmbrand 2011; Zeijlstra 2012): *Reverse Agree*.[33] Reverse Agree faces the same problems for the analysis of CA as Spec–Head agreement did: the subject does not overtly precede the complementizer.

Zeijlstra (2012) solves this problem by providing a slightly adjusted version of the T^0-to-C^0 movement analysis discussed above. He claims there is an additional projection between C^0 and T^0 with phi-features (comparable to the AgrCP proposed by Shlonsky 1994, see note 31). He assumes the subject first moves to SpecTP, where the features of T^0 are checked via Reverse Agree (the subject c-commands T^0) leading to verbal agreement. Then the subject moves to the specifier of this AgrCP, leading to valuation of $AgrC^0$ via Reverse Agree (the subject c-commands $AgrC^0$). $AgrC^0$ then moves to C^0 resulting in CA.

This assumption reconciles CA with Reverse Agree and at the same time circumvents the most important problem for the T^0-to-C^0 movement account discussed in section 3.1 above: the first conjunct agreement data (see example (30)) and the external possessor data (see example (31)). Recall that the T^0-to-C^0 analysis of CA predicts that T^0 and C^0 always spell out the same feature bundle since it only involves one feature-checking operation: the one between T^0 and the subject. CA with the first conjunct or with an external possessor leads to a different spell-out on C^0 than on T^0.

Zeijlstra's additional AgrCP makes it possible that verbal agreement, dependent on T^0, targets a different part of the subject than CA, which is dependent on $AgrC^0$.

Hence, the fact that they do not spell out the same feature-checking relation is potentially solved. Unfortunately, Zeijlstra does not provide a detailed discussion of how his analysis deals with the data in (30) and (31) above. It is not immediately clear how first conjunct agreement can ever arise in this analysis since the first conjunct never c-commands a head in the clausal spine. This means that the crucial configuration of the Goal (first conjunct) c-commanding the Probe (AgrC^0) will never arise.[34] As a consequence, CA with the first conjunct of a coordinated subject is never expected to arise. It is furthermore unclear in this analysis what the triggers are for subject movement to SpecAgrCP and head movement of AgrC^0 to C^0.

In sum, although CA can be accounted for under Reverse Agree, there are still some problems to be solved. The next section explores CA data from the Bantu language Lubukusu, as CA in this language at first sight shows a Reverse Agree pattern: the complementizer agrees with a c-commanding subject.

3.3.2 *Reverse Agree and CA in Bantu*

Several African languages show subject agreement on the complementizer, just like the West Germanic languages (see, among others, Baker 2008; Kawasha 2007; Idiatov 2009; Diercks 2010; 2013). CA in the Bantu language Lubukusu has been discussed in quite some detail in the theoretical linguistic literature and will be in the focus of this subsection for that reason.

Diercks (2010; 2013) shows that the Lubukusu agreeing complementizer has separate forms agreeing in person, number, and gender with the matrix subject as well as for noun class. CA in this language is also strictly subject oriented, just like CA in West Germanic. There is a crucial difference between Bantu and West Germanic, however. Where West Germanic complementizers agree with the embedded subject, Bantu complementizers agree with the matrix subject. Consider the examples in (2) from Lubukusu, repeated here as (36).

(36) a. **baba-ndu** ba-bol-el-a Alfredi **ba-li** a-kha-khil-e
   2-people 2 s-said-AP-FV 1Alfred 2-that 1 s-FUT-conquer
   'The people told Alfred that he will win.'
   b. **Alfredi** ka-bol-el-a baba-ndu **a-li** ba-kha-khil-e
   1Alfred 1 s-said-AP-FV 2-person 1-that s-FUT-conquer
   'Alfred told the people that they will win.'

   (Diercks 2013, 358)

The complementizer *li* agrees in second class with the matrix subject *baba-ndu* 'people' in (36a) and in first class with the matrix subject *Alfredi* 'Alfred' in (36b).

At first sight, these data seem to be predicted by Reverse Agree as proposed by Wurmbrand (2011) and Zeijlstra (2012): the complementizer Probe is c-commanded by the Goal, that is the matrix subject. As shown by Diercks (2010; 2013), the analysis of these data is not as straightforward as that, however. If the features of C^0 were indeed valued as a result of a direct relation between C^0 and the matrix subject, it would be expected that intervening arguments would count as closer Goals and hence that CA with matrix direct objects or causative arguments would be possible. This is not the case, however. Consider the data in (37a) and (37b).

(37) Lubukusu
    a. ewe w-abol-el-a   Nelsoni o-li   (*ali) ba-keni ba-rekukha
       you 2ND.SG.S-say-AP-FV 1Nelson 2.SG-that (1-that) 2-guests 2 S-left
       'You told Nelson that the guests left.'
    b. n-a-suubi-sya   Alfredi n-di   (*ali) ba-keni khe-b-eecha
       1ST.SG-PST-believe-CAUS 1Alfred 1ST.SG-that (1-that) 2-guests PRG-2 S-coming
       'I made Alfred believe that the guests are coming.'
<div align="right">(Diercks 2010, 302)</div>

The indirect object in (37a) and the causee in (37b) intervene both linearly and hierarchically between the matrix subject and the complementizer. However, as the examples show, only the matrix subject can control CA. This suggests that the complementizer agrees more locally than the surface structure seems to suggest at first sight.

Diercks (2010; 2013) compares Lubukusu CA to reflexive clitics in French and shows that they have the same properties. On this basis he suggests that CP in Lubukusu sentences with CA contains a covert anaphor. C^0 agrees with this covert anaphor which in turn is bound by the matrix subject. CA in Lubukusu is hence an indirect relationship according to Diercks. The analysis Diercks (2010; 2013) gives is compatible with Reverse Agree as discussed above: the complementizer Probe agrees with a covert anaphor in its specifier. We refer the reader to Diercks (2010; 2013 for more information). Although a Reverse Agree analysis of these data is feasible, there have also been two analyses of these data making use of the classical formulation of the Agree mechanism as a downward probing operation (see Diercks, Putnam, and Van Koppen 2012; Carstens 2016). We will not go into these analyses here for reasons of space and refer the reader to the original articles for detailed discussion.

3.4   Summary

To summarize, there are two major syntactic analyses of CA: the T^0-to-C^0 movement analysis and the Agree analysis. There are two further implementations of the Agree analysis, namely the classical Agree analysis in which a Probe c-commands the Goal and a Reverse Agree analysis in which the Goal c-commands the Probe. This section has discussed the pros and cons of each of these analyses of CA. The most important problem for the T^0-to-C^0 movement analysis is formed by the first conjunct agreement data and the external possessor agreement data which show that the agreement on the finite verb expresses a different relation than that on the complementizer. The most important problem for the Agree account of CA is formed by the linear adjacency data. We will return to this in section 5 below.

4   Post-syntactic accounts of CA

There have been several proposals in the literature that argue that (at least some instances of) agreement should be reduced to the PF component (see Ackema and Neeleman 2004; Bobaljik 2008; Miyagawa 2009, among others). This

section examines two such analyses of CA. First, Ackema and Neeleman's (2004) approach of PF feature checking will be discussed in subsection 4.1. Second, we go into Fuß' (2008) approach that makes use of the operation that inserts dissociated morphemes post-syntactically.[35]

4.1 Prosodic feature checking

Ackema and Neeleman (2004, henceforth A&N) propose that there are two ways of checking agreement features. The first one is to check features "in the regular way," that is during the syntactic derivation. As a second option, they propose that features can be checked at PF, via so-called *prosodic checking*. Prosodic checking can take place when two sets of features are in one prosodic domain at PF.[36] The general format of prosodic checking is provided in (38) (A&N, 235).[37]

(38) {[A (F1) (F2) (F3) …] [B (F1) (F2) (F3) …]} →
      {[A (F1$_i$) (F2$_j$) (F3$_k$) …] [B (F1$_i$) (F2$_j$) (F3$_k$) …]}

This diagram should be read as follows: if A and B are in one prosodic domain (indicated by the curly brackets), the uninterpretable features of A are related to the matching interpretable features of B and/or vice versa. A&N argue that CA is a typical example of prosodic checking. The complementizer and the subject are in one prosodic domain and the subject checks (or rather identifies) the uninterpretable features of the complementizer.

A&N present the data in (39) in support of their analysis.

(39) De Panne Dutch
      a. … **da** / **da-n**   **zunder** op den warmste dag van 't   jaar
              that / that-3P.PL they   on the hottest day of the year
              tegen   under wil   gewerkt en.
              against   their will   worked   have
      b. … **da** / ****da-n**   op den warmste dag van 't   jaar **zunder**
              that / that-3P.PL on the hottest   day of   the year they
              tegen   under wil   gewerkt en.
              against   their will   worked   have
          '… that they have worked against their will on the hottest day of the year.'
                                                                      (A&N, 240)

They argue on the basis of these (and similar data from Hellendoorn Dutch) that linear adjacency is a prerequisite for the appearance of CA. CA in De Panne Dutch is optional if the subject and the complementizer are adjacent (or more accurately form one prosodic domain), see (39a), but obligatorily absent when they are not in the same domain. We will return to the status of these data in section 5 below.

The notion of checking within a prosodic domain is faced with a serious problem when topicalized objects are taken into account (see A&N, 242; Van Koppen 2005, Haegeman and Van Koppen 2012). Reconsider the data in (35), repeated here as (40) (see also A&N, 242).

(40)   Lapscheure Dutch
  a. Kpeinzen {**dat zelfs Valère**} zukken boeken niet leest.
   I.think that even Valère such books not reads
  b. Kpeinzen {*****da-n** **/** ??**dat zukken boeken**} zelfs Valère niet leest.
   I.think that-3P.PL / that such books even Valère not reads
   'I think that even Valère would not read such books.'
                (Haegeman and Van Koppen 2012, 446)

Topicalized objects can be in the same prosodic domain as the complementizer, see
(40b). The analysis predicts that the complementizer agrees with the object in this
case, because they both have a set of phi-features and they are in the same prosodic
domain. This does not happen, however, as is evidenced by the ungrammaticality
of agreement on the complementizer in (40b). A&N suggest that the impossibility of
object agreement in this case has to do with the fact that the topicalized object is in
an A'-position. They assume that phi-features have to be checked against argu-
ments in an A-position. It is unclear, however, why a PF mechanism like prosodic
checking would be sensitive to A/A'-distinctions. Furthermore, this explanation
does not work for the problem exemplified in (41).

(41)   Lapscheure Dutch
  Kpeinzen da-n-t Valère n Pol goa-n kuopen.
  I.think that-3P.PL-it Valère and Pol go-PL buy
  'I think that Valère and Pol are going to buy it.'
                 (Haegeman 1992, 50)

In this example, a weak object pronoun intervenes between the subject *Valère en Pol*
and the complementizer. Haegeman (1992, 79–82) argues that this object pronoun
moves to its surface position at PF. Under the assumption that the A/A'-distinction
is only relevant at the level of syntax, the object pronoun is not in an A'-position in
this case. The complementizer should be able to agree with this object pronoun with
which it is in the same prosodic domain. The complementizer in Lapscheure Dutch
can never agree with the object pronoun, however (see Haegeman 1992).
 There are some additional problems with this account (see Van Koppen 2005;
Haegeman and Van Koppen 2012). For instance, prosodic phrasing does not always
seem to lead to the same result. Compare the examples in (42a) and (42b) below.

(42)   West Flemish
  a. … omda-n / *omdat **André en Valère** toen juste
   because-3P.PL / because André and Valère then just
   underen computer kapot was.
   their computer broken was
   '… because just then André and Valère's computer was broken.'
  b. … omdat / *omda-n **André en Valère underen computer**
   because / because-3P.PL André and Valère their computer
   kapot was.
   broken was
   ' … because André and Valère's computer was broken.'
             (Haegeman and Van Koppen 2012, 447)

The complementizer *omdat*/*omdan* 'because' and the possessor *André en Valère* 'André and Valère' are in the same prosodic domain. However, this leads to CA in the case with the discontinuous possessor pattern in (42a), but not when the possessor is part of the DP containing the possessee in (42b). It is unclear how these data should be accounted for in an analysis of prosodic phrasing.[38]

4.2 Insertion at PF

Fuß (2004; 2005; 2008) agrees with A&N that CA is a PF phenomenon. His main arguments for this assumption are the intervention data that A&N discuss, see the examples in (39) above. However, according to Fuß the CA affix is not the result of a checking relation between C^0 and the subject, but it is the result of post-syntactic insertion of an inflectional ending. More in particular, he argues that

> the dissociated morphemes 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.
>
> (Fuß 2008, 95)

He explains the obligatory adjacency between the complementizer and the subject by assuming that insertion of a dissociated morpheme in C^0 is local, requiring structural adjacency between C^0 and T^0. Scrambled material is not adjoined to TP but occupies the specifier of a functional projection and hence disrupts the required adjacency. As a result CA cannot appear in these types of examples. Fuß shows that CA is not necessarily blocked by an intervening element. If the complementizer and the subject are interrupted by an element that does not involve an additional functional projection, like object clitics, see (41), repeated here as (43a), or subject modifiers, see (43b), CA is not blocked.

(43) a. Lapscheure Dutch
          Kpeinzen da-n-t   Valère n   Pol goa-n kuopen.
          I.think   that-3P.PL-it Valère and Pol go-PL buy
          'I think that Valère and Pol are going to buy it.'

          (Haegeman 1992, 50)

      b. Bavarian
          dass-st   oaba du   ibaroi   dabei   bist.
          that-2P.SG PRT   you everywhere with-it are2P.SG
          'that you really are involved everywhere'

          (Altmann 1984, 205; as cited in Fuß 2005, 75)

The dependency of CA on verbal agreement (rather than on prosodic phrasing between the complementizer and the subject) follows from three pieces of data. The first concerns agreement on comparative conjunctions, see (8) repeated here as (44).

(44) Bavarian
      a. D'Resl   is gresser [als   wia-st   du   bist]
          The-Resl is taller   than as-2P.SG you are
          'Resl is taller than you are.'

    b.   D'Resl   is gresser [als   wia(*-st) du]
         The-Resl is taller   than as-2P.SG you
         'Resl is taller than you.'

                           (Bayer 1984, 269; Fuß 2008, 90)

These data show that the comparative complementizer can only show CA in clausal comparatives, but not in phrasal ones. Fuß takes this to mean that CA is directly dependent on the presence of verbal inflection: if there is no verbal inflection, it cannot be copied on to the complementizer. As already discussed in section 2.1 above, however, these data might hold for the dialect(s) discussed by Bayer (1984) and Fuß, but examples with CA in phrasal comparatives are found in (a subset of) the Dutch dialects (see the examples in (9) above). More research is necessary to establish the exact status of CA in comparative clauses.

    Another piece of evidence for the dependency of CA on verbal inflection that Fuß (2014) discusses pertains to Right Node Raising. Consider the data in (45).[39]

(45)   Bavarian
    a. $^{??}$[daß-sd   du   noch Minga] und [daß da   Hans noch
            that-2P.SG you to   Munich and   that the Hans to
            Truchtlaching   geht]
            Truchtlaching   go-3P.SG
    b.   [daß-Ø du   noch Minga] und [daß da   Hans noch
            that   you to   Munich and   that the Hans to
            Truchtlaching   geht]
            Truchtlaching   go-3P.SG
        '… that you go to Munich and Hans to Truchtlaching.'

               (Fuß 2014, from Josef Bayer, Günther Grewendorf, p.c.)

These examples show that CA is sensitive to the presence of an inflected verb in the same clause.

    CA with the first conjunct of a coordinated subject or with a dissociated possessor, discussed in section 3.1 above, constitutes a considerable problem for this account. Let us look at the coordination data in (30), repeated here as (46).

(46)   Tegelen Dutch
      …   de-s   doow en   ich   ôs   treff-e.
           that-2P.SG [youSG and I]1P.PL each.other1P.PL meet-1P.PL
    '… that you and I meet each other.'

                              (Van Koppen 2005, 174)

This example clearly shows that the agreement on the complementizer (i.e., on C^0) is not a copy of the agreement on the finite verb (i.e., on T^0). Fuß (2008) discusses these data and claims that in varieties that exhibit FCA, the feature content of the dissociated morpheme can be overwritten by the subject's phi-set under adjacency. The exact implementation of this overwriting mechanism is left undiscussed, although Fuß does claim that the rule is comparable to the PF rules proposed by A&N. Fuß (2014) provides a different analysis that makes use of impoverishment of one of

the feature bundles of the coordination. We will not go into this here for reasons of space.

4.3   Summary

To summarize, there are two PF analyses of CA. The first one argues that CA results from prosodic phrasing of the complementizer and the subject. An important argument in favor of this approach is the sensitivity of CA to linear adjacency. We will come back to this in section 5 below. The second one argues that CA results from PF insertion of verbal agreement at C^0.

5   The issue of linear adjacency

One of the most important arguments in the debate on whether CA should be analyzed as a syntactic or a PF phenomenon is whether or not it is sensitive to linear adjacency between the complementizer and the subject. The data are not straightforward, however. There are data in the literature that suggest that CA is dependent on linear adjacency between the complementizer and the subject (see, among others, A&N) and there are data showing that complementizer and subject do not have to be adjacent (see, among others, Haegeman and Van Koppen 2012). This section discusses the relevant data by first looking at the intervention of adverbs and scrambled objects and then at intervention of subject modifiers.

5.1   Intervention of an adverb or a scrambled object

The examples A&N provide are from the West Flemish dialect of De Panne Dutch. Consider the examples in (47).

(47)   a.   … **da** / **da-n**   **zunder** op den warmste dag van t   jaar
             that / that-3P.PL they   on the hottest   day of   the year
             tegen   under wil gewerkt en.
             against   their will worked have
        b.   … **da** / *ᵃ**da-n**   op den warmste dag van t   jaar **zunder**
             that / that-3P.PL on the hottest   day of   the year they
             tegen   under wil gewerkt en.
             against   their will worked have
             '… that they have worked against their will on the hottest day of the year.'
                                                                          (A&N, 240)

CA is optional in this dialect. However, when an adverb intervenes between the complementizer and the subject pronoun, it is obligatorily absent. This suggests that CA is sensitive to linear adjacency. Fuß (2008) provides similar examples from Bavarian:

(48)   a.   **Obwoi-st**   **du** ins   Kino   ganga bist …
             although-2P.SG   you   to-the movies gone   are2P.SG
             'Although you went to the movies …'

b. **Obwoi(*-st)**   woartscheints **du**   ins   Kino   ganga bist…
    although(-2P.SG) probably   you   to-the movies gone are2P.SG
    'Although you probably went to the movies …'

(Gunther Grewendorf p.c., as cited in Fuß 2008, 85)

There are also data from the same dialects that show that the subject and the CA do not have to be linearly adjacent. Gruber (2008), for instance, discusses an Upper Austrian dialect that also allows for an intervening adverb between the CA and the subject. This is also a Bavarian dialect, just like the dialect discussed in example (48).

(49)   Bavarian, Gmunden dialect
a. **Warum-st**   sein Freind uns **DU** net   vorgstöht   ho-st,
    Why-2P.SG   his friend   us   you not   introduced have-2P.SG
    vasteh   i   a   net.
    understand   I   too not
    'Why you didn't introduce his friend to us, I don't understand either.'
b. Wos   hot   da Hannes gsogt, **wo-st**   morgn   **DU**
    What has   the Hannes said,   that-2P.SG tomorrow you
    mitbringa   soid-st?
    with-bring   should-2P.SG
    'What did Hannes say that you should bring along tomorrow?'

(Gruber 2008, 54)

The example in (49a) shows the intervention of a scrambled direct and indirect object between the CA and the subject. Example (49b) illustrates intervention of an adverb.[40] Haegeman and Van Koppen (2012) discuss similar examples from Lapscheure Dutch, a West Flemish dialect just like De Panne Dutch discussed in (47). Lapscheure Dutch has CA when a direct object intervenes between the complementizer and the subject, see example (50), and also when an adverb intervenes, see example (51):[41]

(50)   Lapscheure Dutch
a. Kpeinzen **da-n**   / *dat zelfs men broers**   zuknen boek niet lezen.
    I.think   that-PL / *that even my brothers such.a book not read
b. Kpeinzen ??**da-n**   / *dat** zuknen boek **zelfs men broers**   niet lezen.
    I.think   that- PL /   such.a book even my   brothers not read
                      dat
    'I think that even my brothers do not read such a book.'

(Haegeman and Van Koppen 2012, 446)

(51) a. … **da-n**   / ?***dat** toen juste **men twee broers**   kwamen.
          that- PL / that then just my   two   brothers came
         '… that my two brothers came just then.'
      b. … **da-n**   / ?***dat** juste ip dienen moment **men twee broers**
          that- PL / that just at that   moment my   two   brothers
          kwamen.
          came
         '… that my two brothers came just at that moment.'

(Haegeman and Van Koppen 2012, 447)

Weiß (2005) provides an example from Zürich German where an indirect object intervenes between the subject and the CA (see Haeberli 1999 for similar data from this dialect):

(52) … **wie-t**   mer   **du(u)** gsäit häsch
        how-2P.SG to-me   you   said   have2P.SG
      '… what you have told me.'

$\qquad\qquad\qquad\qquad\qquad\qquad$ (Weber 1964, as cited in Weiß 2005, 157)

The intervention data in (47)–(48) support an analysis of CA that makes use of linear adjacency and hence can be accounted for easily by the account proposed by A&N and Fuß (2008) and are more problematic for a syntactic analysis of CA. The data in (49)–(52), on the other hand, are predicted from the point of view of a syntactic analysis of CA and problematic for analyses of CA making use of the notion of linear adjacency. The question is what these contradictory data tell us about the analysis of CA. One could argue that in the dialects in which intervention leads to blocking of CA a PF analysis is more feasible, whereas in the dialects in which this is not the case a syntactic analysis makes more sense. More fine-grained research is necessary to settle this issue.[42]

5.2 Intervention of subject modifiers

So far we have discussed intervention of scrambled adverbs or arguments. Intervention of subject modifiers does not lead to the absence of CA in most dialects (see among many others Fuß 2008; Van Koppen 2005).[43] Consider the data from various dialects in (53)–(55) with intervention of a subject modifier.

(53) Bavarian, Gmunden dialect
      Warum-st   grod **DU**   mein   Freind net   griasst   ho-st
      Why-2P.SG   PRT   you   my   friend   not   greeted   have-2P.SG
      vasteh   i   a   net.
      understand   I   too   not
      'Why you of all people didn't greet my friend, I don't understand either.'

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ (Gruber 2008, 53)

(54) Bavarian
      … **dass-st**   oaba **du** ibaroi   dabei   bist.
        that-2P.SG PRT   you   everywhere   with-it   are2P.SG
      '… that you really are involved everywhere'

$\qquad\qquad\qquad\qquad\qquad$ (Altmann 1984, 205; as cited in Fuß 2005, 75)

(55) Tegelen Dutch
      … *?**det** / **de-s**   auch **doow**   merge   kum-s.
        that / that-2P.SG   also   youSG   tomorrow   come-2P.SG
      '… that you too will come tomorrow.'

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ (Van Koppen 2012, 137)

Van Koppen (2005; 2012) shows that Hellendoorn Dutch, in contrast to most other dialects discussed in the literature, does not allow CA across a subject modifier/ with a subject modified by a focus particle. Consider the data in (56).[44]

(56)   Hellendoorn Dutch
       … dat   / *darr-e   zölfs wiej de   westrijd wint.
          that / that-1P.SG even   we   the   game   win
       '… that we even win the game.'

                                                        (Van Koppen 2012, 138)

Interestingly, there is another property that separates dialects like Hellendoorn Dutch from dialects like Tegelen Dutch. Consider the data in (57) and (58).[45]

(57)   Tegelen Dutch
       DOOW denk ik **de-s**   / ***det** de wedstrijd winnen zal-s.
       youSG   think I   that-2P.SG / that the game   win   will-2P.SG
       'YOU, I think will win the game.'

                                                        (Van Koppen 2012, 137)

(58)   Hellendoorn Dutch
       WIEJ denkt Jan **dat** / ***darr-e**   die   pries ewönnen hebt,
       we   think Jan that / that-1P.SG that prize won   have
       nie ZIEJ.
       not they
       'WE John thinks won that prize, not THEM.'

                                                        (Van Koppen 2012, 138)

These examples show that modification by a focus particle and extraction of the subject result in the obligatory absence of the agreement morphology on the complementizer in Hellendoorn Dutch, but not in Tegelen Dutch. Van Koppen argues on the basis of these data that there are two types of CA: type 1 CA is found in dialects like Tegelen Dutch which are not DA dialects (see section 2.2 above). The agreement affix on the complementizer is similar to the affix on the finite verb. Furthermore, this type of CA is not sensitive to movement of the subject or modification of the subject. Type 2 CA is found in DA dialects like Hellendoorn Dutch. This type of CA is sensitive to extraction and modification of the subject in the sense that it disappears under these conditions. She provides a syntactic Agree-based account for CA (see section 3.2 above) and for the differences between these two types of dialects. We refer the reader to the original work for more details.

5.3   Summary

This section has discussed one of the most important arguments in the debate on the exact location of CA in the grammar: Is it a syntactic or a PF phenomenon? The conclusion of this discussion is that linear adjacency seems to be condition on CA in some dialects but not in all. Clearly, more research is necessary in order to figure out what exactly the status of linear adjacency is by testing more speakers and more contexts. The only conclusion we can draw on the basis of the current state of the

debate and taking all data seriously is that there might be two different types of CA: one sensitive to CA (probably leading to a PF analysis) and one insensitive to it (probably leading to a syntactic analysis).

6 Conclusions

CA at first sight seems to be marginal phenomenon: it is typologically rare and syntactically insignificant at first sight. Deeper investigation into this phenomenon reveals however that it sparked a vivid debate on the exact analysis of this phenomenon and its relevance for theorizing on the exact analysis of agreement, the relation between T^0 and C^0, the interaction of syntax and PF and the architecture of the left periphery.

Section 2 discussed the most important empirical properties of the phenomenon: its basic distribution, its agreement properties, its relation with DA and its connection to C^0-related clitics. Sections 3 and 4 examined two major approaches to CA. The first takes CA to be the result of a syntactic operation; the second argues that CA is a PF phenomenon. The most important argument in this debate is constituted by the adjacency data. As shown in section 5, this argument goes in both directions and hence should be subject to more thorough investigation, potentially leading to the conclusion that there are several types of CA.

Further arguments that figure prominently in the debate concerning the nature and theoretical analysis of CA are: (i) absence of CA with adjacent direct objects (examples (40)–(41)), (ii) CA with external but not with internal possessors (example (42)), (iii) CA with the first conjunct of coordinated subjects (example (30)), (iv) the dependency of CA on verbal inflection (example (44)). Table 1 summarizes how well the various analyses are equipped to deal with them.

Table 1   Main arguments used in the CA debate

	Syntactic analyses of CA		PF analyses of CA	
	T^0-to-C^0 movement[a]	Agree	Prosodic phrasing	PF insertion
No CA with (clitic) direct objects	predicted	predicted	unpredicted	predicted
CA with external but not with internal possessors	unpredicted	predicted	unpredicted	unpredicted
CA with the first conjunct of a coordinated subject	unpredicted	predicted	unpredicted	unpredicted
Dependency of CA on verbal inflection[b]	predicted	unpredicted	unpredicted	predicted

[a]The first and the fourth argument have not actually been discussed for this analysis before. It is quite clear that this analysis does not predict agreement with the direct object, because CA is dependent on the agreement relation of T^0, and T^0 necessarily agrees with the subject. Dependency of CA on verbal agreement is also expected, because CA in this account is actually a copy of verbal agreement.
[b]It has to be noted here that CA does not seem to be dependent on verbal agreement in all dialects, see section 4.2 above.

SEE ALSO: Complementizer-Trace Effects; Overtly Marked *Wh*-Paths

Notes

1. I will use the following abbreviations for the Germanic examples in this chapter: 1/2/ 3P = first/second/third person; SG = singular; PL = plural. For the examples from non-Germanic languages I use the abbreviations used in the original examples.
2. I have used the abbreviations in the glosses of the Lubukusu examples provided by Diercks (2010): cardinals (1, 2, 3, …) = noun class features, ordinals (1ST, 2ND, 3RD) = person features, AP = applicative, FUT = future tense, FV = final vowel, s = subject marker.
3. PRES = present tense, PAST = past tense, FUT = future.
4. A comparable phenomenon has been reported for Polish where the past tense features of the finite verb can appear on a C-related item:

    (i) Polish
         a. Gdzie był-**em**?   b. Gdzi-**em**   był?
             where was-1P.SG   where-1P.SG   are
             'Where was I?'   'Where was I?'
                                                    (Richter 1979; as cited in Bayer 1984, 246)

5. The forms *aL* and *aN* are abbreviations of a cluster of complex phonological and morphological properties (see McCloskey 2001 for details).
6. Putnam and Van Koppen (2011) discuss a phenomenon in Mid-Western American English dubbed the *alls*-construction. The properties of this construction are quite similar to CA in West Germanic. They also provide an analysis that mirrors that of CA in West Germanic. An example of the *alls*-construction is provided below:

    (i)   **All-s Greg and Marsha** want to do is kiss each other when no one else is around.
    (ii) **All-s I** know about Cindy is that she likes to tattle on her siblings.

    The *s*-inflection appears on *all* in pseudocleft sentences and is sensitive to the φ-features of the subject: it cannot appear when the subject is second person. The reader is referred to the original paper for in-depth discussion of this construction.
7. Goeman (1980; 2000) argues that CA is sensitive to rhythm in the sense that a weak pronoun or an unstressed determiner following the complementizer trigger CA. Hoekstra and Smits (1997) confirm that there is a tendency on the basis of a West Frisian corpus (a Hollandic dialect spoken in the province of North Holland) to be more easily available with NPs if the NP is unstressed. Vanacker (1949, 38) discusses a Flemish dialect where CA is obligatory with pronominal subjects, but optional with full NPs. This observation has not been investigated systematically for more dialects.
8. Bayer (in press) questions whether the example in (7) is indeed grammatical.
9. An extreme example of this is discussed by Cremers and Van Koppen (2008): CA can surface on coordinating conjunctions like *of* 'or' or *en* 'and' in the Eastern Dutch dialect of Tegelen:

    (i) Tegelen Dutch
         Ich ving det   Marie of-s   toow d'n ierste môs   sien.
         I   find that Marie or-2P.SG you   the first   must   be
         'I think that Marie or you should be the first.'
                                                       (Cremers and Van Koppen 2008, 1065)

Cremers and Van Koppen argue that the agreement ending on the conjunction *of* 'or' in this example is actually present on an underlying C°-head introducing an embedded finite clause. It would lead too far afield to discuss their analysis in detail here. The reader is referred to the original paper for an in-depth analysis of these and similar data.

10. Van Koppen (2005) shows that movement of the subject out of the embedded clause in certain Dutch dialects, in particular the dialect of Hellendoorn, does lead to absence of CA. She also shows that CA with the first conjunct of a coordinated subject is sensitive to movement. This will be illustrated in more detail below in section 5.2.

11. Boef (2013) discusses sentences with long relativization. Some dialects show a subject/object asymmetry in the lower extraction site: *dat* is used for object extraction, see (ib), but *die* for subject extraction, see (ia).

    (i) Brugge Dutch
        a. Da   s   de   vent da   k peizen die da   grapje verteld eet.
           that is   the man   that I think   *die* that joke   told   has
           'That is the man who I think told that joke.'
        b. Da   s   de   vent da   k peizen da-n   ze   geroepen en.
           that is   the man   that I think   *that*-3P.PL they called   have
           'That is the man who I think they have called'.

                                                                        (Boef 2013, 213)

    Boef argues that the form *die* that occurs with subject extraction in the CP-domain of the most deeply embedded clause (usually analyzed as a relative pronoun, see for instance Bennis & Haegeman 1984) is actually an instance of an agreeing complementizer. The reader is referrred to Boef (2013) for the exact analysis of these data.

12. Some western Dutch dialects (in particular those of North Holland) also have CA in the second person singular (see Hoekstra and Smits 1997, 24). This seems to be a different type of second-person agreement than we see in the Eastern Dutch and German dialects in the sense that it does not have a pronominal source and it does not allow pro-drop.

13. See De Vogelaer (2006, 99–101) for some other dialects with non-defective CA paradigms.

14. As already noted above in section 2.1, the languages and dialects under consideration here are asymmetric V2 languages: the verb is in second position in main clauses and in final position in embedded clauses (see Den Besten 1989). I will refer to sentences with subject–verb inversion as VS clauses, to subject-initial main clauses as SV_2 clauses, and to embedded clauses as CSV_{fin} clauses.

15. It is not the case that all verbs in DA dialects necessarily pattern the same. There is for instance sometimes a difference between auxiliaries and main verbs or between monosyllabic and polysyllabic verbs. This has led to a debate in the literature on exactly which verbs are relevant for the inversion generalization. Goeman (1980; 2000) argues that the complementizer copies the agreement affix of monosyllabic verbs. De Vogelaer (2006) compares CA to the inflection on inverted monosyllabic and polysyllabic verbs to see which paradigm matches the CA paradigm best. He reaches the conclusion that the CA paradigm resembles the verbal paradigm of the verbs that have the same morpho-phonological shape as the complementizer: so polysyllabic complementizers match the inflection on polysyllabic verbs and monosyllabic complementizers that on monosyllabic verbs. Hoekstra and Smits (1997; 1999) argue that auxiliaries are the relevant group of verbs. Van Craenenbroeck and Van Koppen (2002) claim that CA resembles the inflection on the verb *to be* in inversion in the present tense.

16. As has been pointed out by Bayer (1984) and Weiß (1998; 2005), the DA ending /-*ma*/ replaces the regular verbal agreement ending for the first person plural, /-*a(n)*/, only with a couple of polysyllabic verbs (e.g., *laffa* 'to run', *gengan* 'to go', *soucha*(*n*) 'to seek', etc.).

17. Van Koppen (2005; 2012) provides a different analysis for the DA pattern of Hellendoorn Dutch. She shows that the -*e* ending on the inverted verb and complementizer is not agreement for first person plural, but agreement with the speaker features (i.e., first person singular). These features, she claims, are part of the internal structure of the subject pronoun. These pronoun-internal features are only accessible to the finite verb or complementizer when it precedes the subject, that is when it c-commands the subject, in CSOV and VSO clauses. In SV$_2$O and CSOV$_{fin}$ clauses, the verb does not c-command the speaker features, hence they cannot be "reached" and the -*e* affix cannot appear. The reader is referred to the original work for the exact technical implementation of this analysis. The analysis discussed in the main text and the one discussed in this note make one crucially different prediction concerning extraction. The analysis in the main text assumes that the DA agreement is related to the structural position of the complementizer. Van Koppen's (2005; 2012) analysis is that DA agreement is dependent on the position of the subject relative to the complementizer. This means that extraction of the subject should not affect CA according to the analysis in the main text (because the structural position of the complementizer is still the same), but it should according to the analysis given by Van Koppen (2005; 2012) (because the complementizer no longer c-commands the subject). The Hellendoorn data are in favor of Van Koppen's (2005) analysis: CA disappears in this particular dialect when the subject is extracted:

    (i) Hellendoorn Dutch
         WIEJ   denkt   Jan   *darr-e   /   dat   die   pries   ewönnen   hebt.
         we   thinks Jan   that-1P.SG   /   that that prize   won   have
         'WE John thinks won that prize.'

                                                                    (Van Koppen 2005, 185)

    Van Koppen (2005; 2012) does not give an analysis for the DA patterns of Brabantic or Bavarian.

18. Weiß (2012) and Fuß (2004; 2005) argue that there is a different reason for the defectiveness of the CA paradigm in Bavarian. They explain the restriction to second person singular in many dialects as an accidental reanalysis of the second-person (singular and often also plural) clitic pronoun to an agreement ending. This reanalysis did not take place in any other person/number combination, hence the defectiveness of the paradigm. This analysis only works for CA endings that are derived from clitic pronouns. For the CA endings in the Hollandic and Flemish Dutch dialects, this explanation does not work straightforwardly since these endings are not immediately retraceable to pronouns.

19. Hoekstra and Smits (1997; 1999) base their generalization on the agreement patterns in seven Dutch dialect areas. It is unclear if it works for the German CA dialects especially since, as an anonymous reviewer notes, most of these dialects lack a preterite. The generalization has also not been checked in more detail for the Dutch dialects (for instance within the SAND project, Barbiers et al. 2005). Some deviations from this generalization have been reported for the Dutch dialects. Hoekstra and Smits (1997) themselves, for instance, show that there are dialects in the Dutch province of Limburg that have a verbal agreement ending that is identical in the present tense and the preterite, but that do not have CA. So, at the very least, identity seems to be a necessary but

not a sufficient condition to get CA. Van Craenenbroeck and Van Koppen (2002) provide a counterexample against this generalization from Nieuwkerkenwaas Dutch, see (i) below:

(i) a. Present tense: **Will-e** zunder komm?
               want-PL they come
               'Do they want to come?'
     b. Preterit: **Wou-n** zunder komm?
               wanted-PL they come
               'Did they want to come?'
     c. Complementizer: **da-n** zunder zulle komm
               that-PL they will come
               'that they will come'
                              (Van Craenenbroeck and Van Koppen 2002, 5)

In this example the verbal agreement on the auxiliary *willen* 'want' is not the same in the present tense and the preterite, but CA is still an option. This shows that a more fine-grained investigation of this generalization is necessary.

20. Hoekstra and Marácz (1989) argue that pro-drop in the West Germanic dialects is always licensed by CA and vice versa. However, as is shown by Zwart (1993) and as can be derived from the examples in the main text, this generalization is not correct.

21. There appears to be an exception to this rule discussed by Zwart (1993, 167), namely Zurich German that allows pro-drop without a clear (pronominal) agreement affix:

(i) … öb (d/du) nach Züri chunnsch.
          whether you to Zürich come2P.SG.
     '… whether you come to Zürich.'

However, Weiß (2005) argues that there might be a pronominal zero affix in this example that licenses pro-drop.

22. The question arises how we can determine whether the element attached to the complementizer is a clitic or an inflectional ending. There are various tests proposed in the literature to distinguish between these two options. Zwicky (1977) and Zwicky and Pullum (1983) provide several tests. De Haan (1997) gives specific tests to distinguish between clitics and inflectional endings in Frisian. Fuß (2005) discusses several tests applied to Bavarian. Gruber (2008) also discusses the issue of the status of the CA endings in the Austrian Bavarian dialect of Gmunden. She provides several tests and reaches the conclusion that in her dialect the CA affix has both properties of an inflectional ending and of a clitic pronoun. She provides an analysis for the dual status of this type of ending. It would lead us too far afield to discuss these tests in detail here. The reader is referred to the literature discussed in this note and the references therein for the complete debate.

23. Hoekstra and Smits (1997) also discuss several implementations of the idea that CA is a form of proleptic agreement that occurs because the verb in dialects with CA is "far away," i.e. clause-final in embedded clauses (see, e.g., Van Ginneken 1939; Van Haeringen 1938; 1958). They convincingly show that this cannot be the correct way to interpret CA. One of the arguments they give is that CA appears even if the verb and the complementizer are not separated by intervening material other than the subject. It is also not immediately clear how this idea should be formalized. For instance, it is hard to define exactly what is meant by "far away."

24. The analyses of this type differ on which middle field head moves to C°, i.e. AgrS°, I°, or T°, depending on the assumptions about the structure of the middle field. Since nothing really hinges on this distinction, this chapter refers to this head as T°.

25. The analysis provided by Zwart (1993; 1997) is similar to several other analyses of CA, namely Bayer (1984), Bennis and Haegeman (1984), Haegeman (1992), Hoekstra and Marácz (1989), Law (1991), Sternefeld (2008), Watanabe (2000) and Zwart (2001). The difference with Hoekstra and Marácz (1989) is that Zwart (1993; 1997; 2001) assumes that T° to C°-movement takes place in *all* Germanic dialects, whereas Hoekstra and Marácz (1989) argue that it only takes place in dialects with CA. I refer the reader to Zwart (1997, 145–154) for extensive discussion of their analysis. Haegeman's (1992) account (but see also Bennis and Haegeman 1984 for a similar approach) is in a sense also similar to the one proposed by Zwart. She also argues that the [Agr]-features of the complementizer are similar to the [Agr]-features on the inflectional head. The difference between these two analyses is that Haegeman (1992) assumes that the features on C° are similar to those on the inflectional head because both agree with the subject. As these two feature bundles are co-indexed, they have to be identical. Watanabe (2000) only makes a minimal adjustment of Zwart's analysis by claiming that the interpretable φ-features of the subject are directly copied onto T° (rather than checked) and then moved to C° together with T°. Finally, Zwart (2001) suggests that V°, Infl° and C° are related via a chain of formal features. The formal features are spelled out on the highest link of the chain. This highest link either has lexical features of its own (for instance the complementizer in C°), or requires head movement of a lower set of lexical features (verb movement to either T° or C°).

26. The trigger for T°-to-C°-movement differs in the analyses discussed here. In Zwart (1993) it is argued that it makes a certain feature of T° accessible. In this analysis, movement of T° to C° hence takes place in order to satisfy a feature of T° itself. Zwart (1997) on the other hand proposes that this movement is necessary to check a feature of C°. C° has to be assigned a value for tense and hence attracts T°.

27. Recall from section 2.1 above, however, that it is not so clear if these examples should simply be analyzed as embedded clauses in which verb movement took place to T°. There are other analyses of these examples (e.g. De Haan 2001) that claim that we are dealing with coordination of main clauses rather than subordination in these sentences.

28. The reader is referred to Haegeman and Van Koppen (2012) for an in-depth discussion of this construction. They also provide an Agree-based analysis of it, see section 3.2 below.

29. Richards (2012) shows that the assumption that unvalued φ-features are present on C° might be problematic for feature inheritance. Richards (2012) provides an analysis that reconciles CA with feature inheritance. We will not go into this potential problem and analysis here, but refer the reader to the original work for discussion.

30. Shlonsky (1994) also assumes that CA results from a different feature-checking relation than verbal agreement. His analysis is based on Spec–Head agreement. Shlonsky argues that the features expressed on the complementizer are situated on the head of a designated projection in the C-domain, namely AgrCP. This projection is situated below CP. The subject (or the subject clitic in the case of subject doubling) occupies the specifier of this projection, checking the features of AgrC°. The features of AgrC° are then affixed onto the complementizer in C°. Zwart (1994) provides an in-depth discussion of this proposal and shows that there are several arguments against it, for instance it is not clear why CA is always subject agreement in this analysis. We will come back to the idea that there is an additional head with φ-features in between C° and T° leading to CA in section 3.3 below.

31. "Matching features" are features that are of the same type. They do not necessarily have to have the same values. So, for instance, a number feature with the value plural matches another number feature with the value plural, but it also matches a number feature without a value or with the value singular.

32. As this chapter is not concerned with the right periphery of the clause, the exact structure of this part is not represented in any detail.

33. We will not go into the pros and cons of this proposal here for reasons of space (but see Van Koppen 2011; Preminger 2013 for a critical evaluation of this idea).

34. Another way to deal with CA and also first conjunct agreement data is of course to assume that these forms of agreement take place in PF and not in syntax, as has been suggested to me by Susanne Wurmbrand (p.c.). PF accounts of CA will be discussed in section 4.

35. Goeman (2000), Kathol (2001), and Zwart (2006) argue that CA is the result of an analogical extension of the agreement endings found in subject–verb inversion contexts. The idea is that inflection in the C-domain is triggered by the linear sequence of a left peripheral position (filled by either the complementizer or the finite verb and a subject). This type of analogy can be further extended to *wh*-phrases or relative pronouns which also take up a left peripheral position and can be adjacent to the subject, leading to CA on other C-related material, see the data in (6) and (7). The data discussed below are highly problematic for an analogy account of CA, since the relevant triggering configuration can either be present without CA, as in (42b), or absent with CA (40b).

36. Miyagawa (2009) also argues that CA is a PF process. He says: "I will speculate that the complementizer portion of the agreement receives its valuation not in narrow syntax but in PF" (Miyagawa 2009, 68) and "It appears that in complementizer agreement, the Probe–Goal relation is established strictly through string adjacency, of the type familiar in phrasal phonology" (Miyagawa 2009, 124). The arguments provided below against a prosodic phrasing analysis of CA also carry over to the string adjacency account of Miyagawa.

37. A&N argue that the initial prosodic phrasing (in the languages and dialects discussed here) aligns the right edge of an XP with the right edge of a prosodic phrase. For more detailed discussion, I refer the reader to the original work.

38. Van Koppen (2005) discusses some comparable inconsistencies in A&N's account, which will not be discussed here for reasons of space. The reader is referred to the original work.

39. Helmut Weiß (p.c.) informs me that there are speakers of Bavarian like himself who judge examples like (45a) as totally unmarked, but examples like (45b) as ungrammatical.

40. Helmut Weiß (p.c.) informs me that his Bavarian dialect, which is a variant of Middle Bavarian spoken in Bavaria, has the same properties as the variant reported in Gruber (2008).

41. In previous work Haegeman did argue that the subject and the complementizer should be adjacent (see Haegeman 1992). Given the right context, intervention is possible in this dialect, however.

42. Gruber (2008) argues that the CA affix for the second person in the Gmunden dialect is pronominal in nature and actually part of the pronominal structure of the subject. She argues that the subject pronoun itself moves to the designated subject position, stranding the CA inflection. The inflectional clitic moves to the CP-domain independently. Given this analysis, intervention effects are not predicted to occur. Although this explanation might be correct for this particular dialect, it cannot be extended straightforwardly to other dialects that allow CA and intervention, like, for instance, West

Flemish. The CA affixes are clearly non-pronominal in this dialect and hence an analysis where the inflection is part of the pronominal subject is much less likely.

43. Frisian also does not allow intervention of subject modifiers with CA, see (i) (see also Hoekstra 1997):

(i) a. … **dat-sto**   Pyt   helpe   moat-st
            that-2P.SG   Pete   help   must-2P.SG
         '… that you must help Pete.'
     b. *… **dat-st**   sels   **do**   Pyt   helpe   moat-st
             that-2P.SG   even   you   Pyt   help   must-2P.SG

                                                              (De Haan 1997, 61)

Frisian is different from the dialects in the main text, however, in that intervention leads to ungrammaticality and not to the absence of CA:

(ii) a. *Hy   leaude   dat-st   moarn   do   komme   soest
          he   believes   that-2P.SG   tomorrow   you   come   should-2P.SG
      b. *Hy   leaude   dat   moarn   do   komme   soest
          he   believes   that   tomorrow   you   come   should-2P.SG

                                                    (Germen de Haan p.c.; Fuß 2008, 85)

This difference between Frisian and the other dialects with second-person singular agreement again makes clear that we still do not fully grasp the relation between intervention and CA.

44. These data form an additional problem for analyses of CA that make use of linear adjacency or prosodic phrasing, as discussed in section 3.2.1 above. The discrepancy between (55) and (56) cannot be accounted for straightforwardly within a prosodic phrasing account or a linear adjacency account. If a focus particle breaks up the prosodic domain or the linear adjacency, CA is not predicted to occur. If it does not, CA is predicted to occur. What is unpredicted is that one dialect has CA with this type of intervention and the other dialect does not, as that would imply that the properties of prosodic phrasing or linear adjacency have to be dialect specific.

45. Frisian is behaving differently here as well. It does not allow intervention of a subject modifier (see note 44 above), but it does have CA with subject extraction, see (i):

(i) Do,   tink   ik   dat-st   /   *dat   moarn   komme   sil-st
     you,   think   I   that-2P.SG   /   that   tomorrow   come   shall-2P.SG
     'I think YOU will come tomorrow.'

                                                              (De Haan 1997, 54)

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