Complementizer agreement (in Bavarian)

Feature inheritance or feature insertion?*

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In recent minimalist work, it has been argued that C-agreement provides conclusive support for the following theoretical hypotheses (cf. Carstens 2003; van Koppen 2005; Haegeman & van Koppen 2012): (i) C hosts a separate set of phi-features, a parametric choice possibly linked to the V2 property; (ii) feature checking/valuation is accomplished under (closest) c-command (i.e. by the operation Agree, cf. Chomsky 2000 and subsequent work). This paper reviews the significance of C-agreement for syntactic theory and argues that certain systematic asymmetries between regular verbal agreement and complementizer agreement suggest that the latter does not result from operations that are part of narrow syntax. The case is based on the observation that at least in some Germanic varieties (most notably Bavarian), the realization of inflectional features in the C-domain is sensitive to adjacency effects and deletion of the finite verb in right node raising and comparatives. The fact that C may not carry inflection when the finite verb has been elided is taken to suggest that complementizer agreement does not involve a dependency between C and the subject, but rather between C and the finite verb (i.e. T). More precisely, it is argued that inflectional features present in the C-domain are added post-syntactically via a process of feature insertion (cf. e.g. Embick 1997; Embick & Noyer 2001; Harbour 2003) that creates a copy of T's (valued) ϕ-set. It will then be shown that this account can also capture phenomena like first conjunct agreement (FCA) and external possessor agreement, which are often presented as crucial evidence of the syntactic nature of complementizer agreement (cf. van Koppen 2005; Haegeman & van Koppen 2012).

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1. Introduction

As is well-known, Bavarian (similar to many other continental West-Germanic dialects) exhibits the phenomenon of complementizer agreement (C-AGR): The subject's φ-features are reflected not only on the verb, but also on complementizers (and a set of other elements occurring in the left periphery of the clause, including wh- and relative pronouns):

(1) a. ob-st du noch Minga kumm-st
whether-2SG you to Munich come-2SG
'… whether you come to Munich' *Bavarian*

b. ob-ts ees/ihr noch Minga kumm-ts
whether-2PL you.PL to Munich come-2PL
'…whether you (PL) come to Munich'

The phenomenon has attracted considerable attention from generative linguists[1] and has played an important instrumental role in a number of theoretical debates, in particular concerning the relationship between C and what is nowadays called T, the functional head hosting verbal inflection features. In the eighties and early nineties, C-AGR has been presented as a major piece of evidence for the claim that the relevant inflectional node (INFL, or, AGR, according to contemporary taste) undergoes head movement to C in the Germanic V2 languages (cf. e.g. Hoekstra & Marácz 1989; Zwart 1993). More recently, C-AGR has been cited as empirical support for two central pillars of current minimalist theorizing: (i) The hypothesis that the structural relationship of spec-head agreement should be abandoned in favor of the operation Agree (i.e. feature checking/valuation is accomplished under (closest) c-command, cf. Chomsky 2000 and subsequent work) and (ii) the idea that the set of φ-features traditionally associated with T is actually a property of the phase head C, which passes down (a subset of) its uninterpretable features to T via a process of *feature inheritance* (cf. Chomsky 2004, 2008). C-AGR is then attributed to a separate Agree operation initiated by C itself (or, rather, its φ-set) that targets the subject (cf. e.g. Carstens 2003; van Koppen 2005, 2012; and Haegeman & van Koppen 2012).

Focusing on data from Bavarian, this paper reviews the significance of C-AGR for syntactic theory and presents arguments in favor of the view that C-AGR should be described in terms of operations that are part of the post-syntactic computation, elaborating on earlier work in Fuß (2005, 2008) (cf. e.g. Ackema & Neeleman 2004

1. Cf. e.g. Bennis & Haegeman (1984), Bayer (1984), Altmann (1984), de Haan & Weerman (1986), Hoekstra & Marácz (1989), Haegeman (1990, 1992), Zwart (1993, 1997, 2006), Roberts (1994), Shlonsky (1994), Weiß (1998, 2005), Hoekstra & Smits (1999), de Vogelaer et al. (2002), van Koppen (2005, 2006, 2012), Brandner (2011), and Haegeman & van Koppen (2012).

for related ideas). This reasoning is based on the observation that there are systematic asymmetries between C-AGR and regular verbal agreement. In particular, it is shown that the realization of inflectional features in the C-domain is sensitive to adjacency effects and other PF-related processes such as deletion of the finite verb in right node raising and comparative deletion. The fact that C may not carry inflection when the finite verb has been deleted is taken to suggest that C-AGR does not involve a dependency between C and the subject, but rather between C and the finite verb (i.e. T). More precisely, it is argued that inflectional features present in the C-domain are added post-syntactically via a process of *feature insertion* (cf. e.g. Embick 1997; Embick & Noyer 2001; Harbour 2003) that creates a copy of T's (valued) φ-set. Major properties of C-AGR (including a set of differences between Dutch and German varieties) are then analyzed in terms of (i) constraints on this insertion procedure and (ii) varying lexical specifications for the phonological exponents that are used to realize C-AGR. In addition, it is shown that this approach can also be used to describe phenomena such as first conjunct agreement (FCA), which have recently been cited as support for syntactic accounts of C-AGR in terms of the operation Agree (cf. e.g. Haegeman & van Koppen 2012).

2. In favor of a post-syntactic analysis

This section discusses a set of empirical facts and conceptual considerations that cast doubt on the notion that the phenomenon of C-AGR is established by the same mechanisms that are usually invoked to account for other agreement phenomena such as subject-verb agreement or DP-internal concord. It has long been observed that there are significant asymmetries between C-AGR and other types of agreement. First of all, C-AGR (of the West-Germanic type) seems to be a typologically rare phenomenon (cf. e.g. Zwart 2006). If correct, this observation conflicts with the assumption that C-AGR is the reflex of a universally present set of phi-features in C (which is passed down to T via a process of feature inheritance for the purposes of subject-verb agreement): If C contains phi-features in each and every language, then we would perhaps expect the overt morphological expression of these features to be more wide-spread cross-linguistically. Second, it has often been noted that the paradigm linked to C-AGR is deficient, that is, C-AGR typically signals less distinctions than regular verbal agreement (cf. e.g. Hoekstra & Smits 1999; but see e.g. Weiß 2005 for richer systems). Again, this difference between C-AGR and regular verbal agreement does not fall out directly from an Agree-based analysis – at least from a purely synchronic point of view, it is not clear why the paradigm linked to C's φ-set should be limited to a subset of the markers used to signal verbal agreement/T-AGR (e.g. prima facie, it is not clear why C should not be able to host tense features; see

van Koppen 2005, 2012 for some discussion; cf. Fuß 2005 for a historical explanation of the limited range of C-AGR).

In addition, and more importantly, various scholars have pointed out that C-AGR differs fundamentally from other agreement phenomena in that it can be dispensed with under certain conditions (cf. e.g. Ackema & Neeleman 2004; Fuß 2005, 2008; Brandner 2011; see below for examples). For example, we can observe that in some varieties C-AGR is subject to an adjacency requirement where C-AGR becomes optional, less acceptable, or right out impossible when the complementizer fails to be directly left-adjacent to the subject. In contrast, verbal agreement is not subject to such adjacency requirements, at least in the Germanic languages. Moreover, other types of agreement are typically obligatory, that is, failure to realize a certain inflection typically leads to ungrammaticality. In recent years, the observed asymmetries between C-AGR and verbal agreement have fostered a number of alternative approaches that treat C-AGR as a non-syntactic, "ornamental" phenomenon that is established by operations in other components of grammar (cf. e.g. Kathol 2001; Zwart 2006, 2012 for analyses that invoke some form of (morphological) analogy; Ackema & Neelema 2004 for feature checking/evaluation at PF, Fuß 2005, 2008 for a post-syntactic analysis in terms of feature copying/insertion; see Miyagawa 2009 for related ideas). In what follows, I will review (some of) the arguments against a purely syntactic, Agree-based approach to C-AGR, adding relevant evidence from Bavarian right node raising and comparative deletion constructions that suggests (i) that C-AGR is established by post-syntactic operations, and (ii) that C-AGR does not reflect a dependency between C and the subject, but rather between C and T.

2.1 Adjacency effects

As already mentioned above, in a number of C-AGR-varieties, the realization of agreement morphology on the complementizer is subject to an adjacency condition: When C^0 and the subject fail to be string-adjacent (e.g. due to the presence of an intervening scrambled XP), the complementizer must not carry inflection (cf. e.g. Ackema & Neeleman 2003, 2004 on the East Netherlandic variety Hellendoorn).

(2) dat/*darr-e [op den wärmsten dag van't joar]
that/that-1PL on the warmest day of-the year
wiej tegen oonze wil ewärkt hebt.
we against our will worked have
'that on the warmest day of the year we have worked against our will'

Similar effects can be observed in cases where the subject is modified by a focus marker or where the subject has undergone long extraction to clause-initial position:

(3) … dat/*darr-e [zölfs wiej] de wedstrijd wint
that/that-1PL even we the game win
'… that we even win the game'
(Hellendoorn Dutch, van Koppen 2012: 161)

(4) WIEJ denkt Jan dat/*darr-e t_{WIEJ} die pries ewönnen
we think Jan that/that-1PL that prize won
hebt, nie ZIEJ.
have not they
'WE John thinks won that prize, not THEY.'
(Hellendoorn Dutch, van Koppen 2012: 162)

Note, however, that the adjacency effect is typically confined to so-called 'double agreement' dialects where the formatives used to realize C-AGR differ from the relevant verbal inflections, cf. van Koppen (2005, 2012).[2] In single agreement dialects, where C-AGR and verbal agreement are identical, the availability of C-AGR is not affected by material intervening between C and the subject/T, or absence of the subject (examples from Tegelen Dutch, van Koppen 2012: 137):

(5) a. … de-s/ *det doow morge kum-s
that-2SG/that you-2SG tomorrow come-2SG
'… that you will come tomorrow'

b. … de-s/*?det [auch doow] merge kum-s
that-2SG/that also you.SG tomorrow come-2SG
'… that you too will come tomorrow'

(6) DOOW denk ik de-s/ *det de wedstrijd winnen zal-s.
you.SG think I that-2SG/that the game win will-2SG
'YOU, I think will win the game.'

In Bavarian, the situation seems to be more complicated. While some speakers report a weak preference for uninflected complementizers in the presence of intervening material, the vast majority do not seem to exhibit adjacency effects (even in

2. According to Haegeman and van Koppen (2012) no such adjacency effect can be observed in West Flemish. Other varieties such as Frisian always require strict adjacency between the (inflected) complementizer and the subject. That is, violations of the adjacency requirement lead to ungrammaticality and not to non-inflected complementizers (Germen de Haan, p.c.).

those Lower Bavarian dialects which show double agreement in the context of 1pl markers, Helmut Weiß, p.c.):[3, 4]

(7) dass-sd [bei dem Brachdwedda] seibsd du in
that(-2SG) in this splendid weather even you to
den Biargoadn geh-sd
the pub go-2SG
'that even you go to the pub in this splendid weather'

(8) dass-sd [seibsd du] in den Biargoadn geh-sd
that(-2SG) even you to the pub go-2SG
'that even you go to the pub in this splendid weather'

(9) a. Du_i moan=e ned dass-sd=n t_i gseng host.
you think=I not that-2SG=him seen have
'I don't think that you saw him.'

b. *Du_i moan=e ned dass=n t_i gseng host.
you think=I not that=him seen have
'I don't think that you saw him.'

(10) a. Mia_i moan=e ned dass-ma=n t_i gseng hom.
we think=I not that-1PL=him seen have
'I don't think that we saw him.'

b. *Mia moan=e ned dass=n gseng hom.
we think=I not that=him seen have
'I don't think that we saw him.'

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3. See also Gruber (2008) on Upper Austrian varieties:

(i) Waun-st [beim ärgsten Regen] du oiwei ausse gea mua-st
if-2SG at-the worst rain you always out go must
(local variety of Gmunden, Upper Austria; Gruber 2008)

4. However, the presence of material intervening between C and the subject pronoun leads to an increase in markedness, as has been pointed out by an anonymous reviewer. Interestingly, it seems that relevant examples improve when an object clitic is attached to the inflected complementizer:

(i) a. Wenn-sd=eam oba DU oane gib-sd…
if-2SG=him PRT you one give-2SG
'if you give him one…'

b. *Wenn'eam oba Du oane gibsd…

(ii) a. Wenn-sd=n oba da Mare Du seiba voschtein daadst
if-2SG-him PRT the Mary you self introduce would-2SG
'if you yourself would introduce Mary to him'
*Wenn'n oba da Mare Du seiba voschtein daadst

Still, the fact that at least in some varieties, C-AGR is sensitive to adjacency effects seems to present a problem for purely syntactic accounts (for fuller discussion see Ackema & Neeleman 2004; Fuß 2005, 2008). Assuming an Agree-based analysis of C-AGR, Carstens (2003) proposes that intervening adverbials bear a Case feature and therefore act as possible goals for C's φ-set, which prevents the realization of complementizer agreement:

(11) $[_{C'}\ C_{[\varphi]}\ [_{TP}\ adv_{[+Case]}\ [_{TP}$ subject …]]]

AGREE

However, this assumption seems to (wrongly) predict that adverbials that intervene between T^0 and the base position of the subject should block the realization of (regular) subject-verb agreement (cf. Fuß 2005, 2008):

(12) $[_{T'}\ T_{[\varphi]}\ [_{vP}$ adv $[_{vP}$ subject …]]]

AGREE

This analysis raises another question, namely why failure to value C's φ-set is apparently tolerated and does not lead to a crashing derivation (in contrast to standard assumptions). In other words, it seems that in contrast to regular agreement, a non-interpretable phi-set on C can be rescued by a null spell-out. Note that the possibility of 'repair-by-omission' relates to the fundamental difference between C-AGR and other types of agreement mentioned at the beginning of this section: If C-AGR results from the same set of (blindly applying) syntactic operations that serve to establish verbal agreement, then we should expect these phenomena to behave similarly. However, this expectation is not borne out by the facts (see Section 3.3 below for an alternative post-syntactic account of Bavarian data in (7)–(10) and the cross-linguistic variation found with respect to adjacency effects).

2.2 The rationale for feature inheritance

We already briefly mentioned that the overt expression of inflectional features on C (i.e. C-AGR) is sometimes considered as empirical support for the proposal that the host of φ-features is actually C (cf. e.g. Chomsky 2008). This raises the question of how C-AGR interacts with the process of feature inheritance, that is, the assumption that all verb-related φ-features are passed down from C to T in the course of the syntactic derivation. To account for C-AGR, Chomsky (2013), adopting proposals by Ouali (2006, 2008), assumes that C may keep a copy of the φ-set transferred to T, which then initiates a separate Agree operation targeting the subject's φ-set. However, Richards (2007) argues convincingly that the logic of phase-driven derivation requires that all uninterpretable features (uF) of C must be eliminated from the syntactic computation

(via feature inheritance and subsequent Transfer/Spell-out) as soon as they have been valued. In other words, feature inheritance is triggered by the need to eliminate uninterpretable features:

> "By the PIC [Phase Impenetrability Condition], phase heads are not spelled out at the same time as their complements, and therefore uF on the phase head is not transferred until the phase following the phase in which it is valued, denying Value-Transfer simultaneity […]. Consequently, the derivation is doomed if valued uF remains on the phase head. The only way to overcome this fatal flaw and ensure that uF on C/v*is indeed valued as part of Transfer is for C/v*'s uF to be transmitted onto the category that *is* transferred, namely, the complement (T/V)." (Richards 2007: 569)

Richards' argument that C must pass all its uFs down to T raises obvious questions about Agree-based approaches to C-AGR: If we accept Richards' conclusion that the elimination of uF is the rationale behind feature inheritance, then the question arises of how we can account for C-AGR, i.e. the apparent overt Spell-out of φ-features on C (but cf. Richards 2012 for discussion of potential ways to overcome this problem).

2.3 Right node raising

This and the next section present a set of empirical observations that bear on the question of how the inflectional features in C are licensed/evaluated. It is shown that for many speakers of Bavarian, the acceptability of C-AGR is sensitive to the presence of the finite verb. In cases where the finite verb is elided, C-AGR becomes less acceptable or even impossible. First, let's take a look at instances of right node raising (RNR) where the finite verb in the first of two conjoined embedded clauses is elided (originally labeled *backward gapping* by Ross 1970). Many speakers disprefer C-AGR under these circumstances, cf. (13a).[5] The examples are fine when the complementizer does not carry inflection.[6]

5. Note that in contrast to standard cases of RNR, the relevant constituents (i.e. the finite verbs) are not identical in (13). As has been pointed out to me by Katharina Hartmann (p.c.), non-identity of material subject to PF-deletion is actually more characteristic of gapping than of RNR. However, since (13a) and (13b) differ only in the presence/absence of C-AGR, it is clear that the contrast in acceptability cannot be attributed to the fact that the elided verb is not identical to the finite verb in the second conjunct.

6. It appears that these facts are subject to a considerable amount of speaker variation. Generally, however, it seems that the absence of the finite verb renders C-agr less acceptable. Of course, more research is needed to ascertain whether similar effects can be observed in other varieties as well. A point in case seems to be West Frisian (Siebren Dyk, p.c.):

(13) a. ??[dass-sd du noch Minga] und [dass da
that-2SG you to Munich and that the
Hans noch Truchtlaching geht]
Hans to Truchtlaching go-3SG

b. [dass-∅ du noch Minga] und [dass da Hans noch T. geht]

These facts are difficult to account for if it is assumed that complementizer agreement is established by a syntactic Agree mechanism that accesses the subject's φ-set: Although the complementizer is string-adjacent to the subject, overt inflection on C leads to a degraded result. Instead, (13) seems to show that the availability of C-AGR depends on the presence of an overt finite verb in the same minimal clause. Moreover, if we adopt the assumption that this type of right node raising is to be analyzed in terms of PF-deletion (cf. e.g. Hartmann 2000), the data in (13) suggest that the realization of C-AGR can be affected by post-syntactic operations such as ellipsis/right node raising. The interaction of PF-deletion and C-AGR might then be taken to indicate that C-AGR is accomplished during the post-syntactic computation, too. Next, we will see that these preliminary conclusions are corroborated by data from comparatives in Bavarian.

2.4 Comparative deletion

Similar to many other languages, Bavarian exhibits the phenomenon of comparative deletion, where the finite verb of a comparative clause may undergo elision. In this context, we encounter a pattern that is very similar to what we have found in the RNR examples above (this observation goes back to Bayer 1984: 269). As shown in (14a), the complex conjunction introducing a comparative clause may host C-AGR. However, speakers usually do not accept inflected complementizers when the finite verb is elided, cf. (14b). The sentence improves considerably when C bears no inflection, cf. (14c):[7]

(i) a. ??…datsto nei Ljouwert en dat Gurbe nei
that-2SG=you to Leeuwarden and that Gurbe to
Snits ta giet
Sneek to goes
'…that you are going to Leeuwarden and Gurbe to Sneek'

b. …dat do nei L. en dat Gurbe nei Snits ta giet
that you to L. and that Gurbe to Sneek to goes

7. Siebren Dyk (p.c.) has informed me that similar facts hold in West Frisian:

(i) a. Gurbe is grutter asto bist.
Gurbe is taller than-2SG=you are

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

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

c. D'Resl is gresser [als wia du]
the-Resl is taller than as you

Again, it appears that the presence/absence of the inflected verb is crucial for the availability of C-AGR. From the interaction of C-AGR with processes such as RNR and comparative deletion, we can draw the following conclusions: First of all, agreement between the complementizer and the subject cannot be implemented in terms of a checking/Agree relation between C^0 and the subject – neither in the syntax nor at PF.[8] Otherwise one would expect examples such as (13a) and (14b) to be fully grammatical (cf. Fuß 2008; Bayer 2013 for similar conclusions). Moreover, the observation that the acceptability of C-AGR declines significantly when the finite verb is elided supports the hypothesis that in some way, the inflection found in the C-domain is mediated by/parasitic on the presence of the finite verb (or, rather, the relevant inflectional head, i.e. T/INFL).[9] In addition, the interaction with phenomena such as RNR or comparative deletion suggests that the rule establishing C-AGR is ordered after the relevant rules/processes that lead to elision of the finite verb. If we assume that the latter rules are part of the post-syntactic computation (cf. e.g. Hartmann 2000 on RNR; Bresnan 1973; Lechner 1999, 2001 on comparative deletion), then it seems to be quite plausible that C-AGR also results from mechanisms that operate during the transition from syntax to PF (see also Ackema & Neeleman 2004; Fuß 2005, 2008): If C-AGR were to take place in the syntax, no interaction with post-syntactic deletion of the finite verb would be expected: the finite verb would be present throughout the whole syntactic derivation,

b. *Gurbe is grutter asto.
Gurbe is taller than-2SG=you

c. Gurbe is grutter as do.
Gurbe is taller than you

8. Cf. Ackema and Neeleman (2004) for an analysis of C-AGR in terms of a PF feature checking rule which applies if C and the subject are part of the same prosodic phrase.

9. This analysis is in line with the observation that across Germanic, there are no languages with C-AGR but without verbal agreement, while there are many languages that exhibit verbal agreement in the absence of C-AGR (Hoekstra & Smits 1999). Thus, it seems that cross-linguistically, the availability of C-AGR is dependent on the overt realization of verbal agreement morphology.

being subject to deletion only after the structure has been transmitted to the post-syntactic components of grammar.[10]

3. C-AGR as feature insertion

In the remainder of this paper, I will outline a post-syntactic approach of C-AGR. The analysis builds upon earlier work in Fuß (2005, 2008), adopting the following (basic) background assumptions. First, the morpho-phonological component (called *Morphological Structure*, henceforth MS) operates post-syntactically, that is, a realizational model of grammar (Distributed Morphology (DM), Halle & Marantz 1993) is assumed. This entails that the syntactic computation manipulates bundles of abstract morpho-syntactic features (such as [+pl] or [+past]), which are realized by the post-syntactic insertion of phonological exponents (also referred to as *Vocabulary Items*) in a process called *Vocabulary Insertion*. Second, the hierarchical structure assembled in the syntax can be modified by the post-syntactic insertion of inflectional heads/features (this mechanism is often used to account for case and agreement phenomena, cf. Marantz 1992; Halle & Marantz 1993; Embick 1997; Halle 1997; Noyer 1997; Harbour 2003; and Bobaljik 2008). The latter assumption is used to account for C-AGR. Note that the analysis of C-AGR proposed in Fuß (2005, 2008) presupposes a hybrid model of agreement where agreement phenomena can result from either syntactic or post-syntactic mechanisms. Thus, 'canonical' subject-verb agreement reflects a syntactic Agree operation that values T's set of uninterpretable/unvalued φ-features (a result of feature inheritance) by accessing the subject's set of interpretable φ-features (Chomsky 2000 et seq.):

(15) $[_{CP} \ldots [_{TP}\, \varphi T \ldots [_{vP}\, \text{subject} \ldots]]]$
AGREE

In contrast, other, 'ornamental', forms of (multiple) agreement such as C-AGR may be established by post-syntactic mechanisms. To account for the conclusions above

10. Note that the relative acceptability of C-AGR varies across different types of verbal ellipsis: While virtually all speakers reject C-AGR in the context of comparative deletion, the picture is less clear in RNR contexts. An anonymous reviewer raises the question of whether this difference can be linked to structural differences between the two constructions. More precisely, she/he suggests that RNR involves genuine deletion of material while comparatives are open to an alternative analysis in terms of base generation that does not require deletion of the finite verb (cf. e.g. Jäger 2010: footnote 15). However, note that these considerations do not affect the validity of the argument based on RNR/comparative deletion: Even if it is assumed that cases of comparative deletion do not involve a clausal structure, a phi-set on C should be able to probe the right-adjacent DP, giving rise to C-AGR.

(C-AGR does not involve a checking relation with the subject and depends on the presence of the inflected verb), I follow Fuß (2005, 2008) in assuming (i) that C-AGR results from the post-syntactic insertion of inflectional features and (ii) that feature matching between C and the subject does not take place directly, but is *mediated* by another φ-set that has been valued in the syntax (via Agree). In somewhat more formal terms, this can be phrased as follows:

(16) *C-AGR as feature insertion*
C-AGR is established during the post-syntactic computation by:
(i) a *copy* operation that targets T's φ-set (valued in the syntax);[11]
(ii) an operation of *feature insertion* that adds φ[T] to C's feature content.

It is standardly assumed that post-syntactic operations such morphological merger and feature insertion operate in a strictly local fashion, requiring *structural adjacency* (cf. the definition in (18)) between the heads involved (cf. e.g Halle & Marantz 1993 and Embick & Noyer 2001):

(17) *Locality of feature insertion*
The post-syntactic insertion of φ-features can target a functional head X only if X is *structurally adjacent* to a functional head Y hosting a (valued) φ-set.

(18) *Structural adjacency*
A head X is structurally adjacent to a head Y if
(i) X c-commands Y
(ii) There is no head Z that
(a) is c-commanded by X and
(b) c-commands Y.

According to (18), a head X is structurally adjacent to the head Y of its complement. Hence, C-AGR can be inserted as a copy of T's φ-set only if T is locally c-commanded by C (cf. Fuß 2005, 2008). Note that structure-modifying operations such as (16) apply prior to Vocabulary Insertion (cf. e.g. Embick & Noyer 2001). In other words, (16) serves to endow C with an abstract bundle of valued agreement features, which is then realized by the insertion of an appropriate phonological exponent.[12] In combination,

11. See Bayer (1984) for a related idea. In contrast to the present proposal, however, Bayer assumes that the relevant copy operation takes place in the syntax. See also Sternefeld (2008: 208f.) for an analysis based on the intuition that C-AGR involves a (syntactic) relation between C and the φ-set of the finite verb.

12. I assume that in C-Agr-varieties, feature insertion must generally apply in all cases where the relevant conditions are met, that is, where C is structurally adjacent to a set of valued phi-features that is visible to the workings of the post-syntactic computation.

these mechanisms ensure feature identity between the φ-sets in T and C, which both reflect the φ-feature content of the same argument. In standard cases of C-AGR, this leads to identical inflectional markers on C and the finite verb:

(19) ob-**st** du noch Minga kumm-**st** *Bavarian*
whether-2SG you to Munich come-2SG
'…whether you come to Munich'

Syntactic computation:

a. Agree identifies T's phi-set with the subject's phi-set;

Post-syntactic computation:

b. Copy targets T's phi-set ([+2, −pl]);

c. Feature insertion adds the relevant valued phi-set to C;

d. Vocabulary Insertion: C-AGR is realized by the same phonological exponent that realizes T-AGR, /-st/.

This analysis also captures the observation that in single agreement dialects, and double agreement varieties of Bavarian (cf. (7)–(10) above), C-AGR is typically not subject to an adjacency requirement: Under standard assumptions, post-syntactic feature insertion (copying T's phi-set onto C) should not be affected by material intervening between C and the subject/T, or absence of the subject (but see section 3.3 on adjacency effects in double agreement dialects). In the sections to come, it is shown how this approach can be used to account for a wider range of empirical facts, including apparently problematic cases where the inflections on C and the verb do not match (focusing on double agreement dialects, adjacency effects, and instances of so-called first conjunct agreement where the complementizer seems to agree with the first conjunct of a complex coordinated subject, cf. van Koppen 2005, 2012).

3.1 Lack of C-AGR in comparatives/right node raising

To account for the observation that C-AGR interacts with RNR and comparative deletion, cf. (20) and (21), respectively, one must make sure that the rule/mechanism that establishes C-AGR operates after (or, at least, in parallel) with the operations leading to elision of the finite verb, as schematically shown in (22):

(20) dass (??-st) du noch Minga ~~gehst~~ und dass
that 2SG you to Munich go-2SG and that
da Hans noch Truchtlaching geht
the Hans to Truchtlaching go-3SG

(21) D'Resl is gresser [als wia (*-st) du ~~bist~~]
the-Resl is taller than as-2SG you (are)

(22) Rule ordering: RNR/comparative deletion >>> Feature insertion leading to C-AGR

However, under standard DM assumptions, we seem to face a problem: While feature insertion must operate "early", i.e. prior to Vocabulary Insertion (the relevant features must be present before they can be realized by inserting a phonological exponent), it is commonly assumed that processes such as RNR or comparative deletion operate at a later stage of the post-syntactic derivation, either in terms of non-insertion of phonological exponents, or in terms of (prosodically determined) deletion of phonological material (cf. e.g. Hartmann 2000 on RNR). A possible way out of the dilemma is to appeal to the idea (cf. e.g. den Dikken 2013) that elided elements are marked for deletion in the course of the syntactic derivation or at the point where the structure assembled in the syntax is transferred to the post-syntactic components of grammar. In either case, this hypothesis guarantees that elements marked for deletion are invisible for all processes that apply at MS, including operations manipulating the hierarchical structure derived by the syntax (such as morphological merger, or, more importantly for our purposes, the insertion of inflectional features/dissociated morphemes), and Vocabulary Insertion:

(23) $[_{CP} \ldots [_{TP}$ ~~V+v+φT~~ $\ldots [_{vP} \ldots]]]$

marked for deletion, invisible for operations at MS.

3.2 Double agreement

It has repeatedly been pointed out in the literature that cases where the shape (and featural content) of C-AGR differs from verbal agreement are a general problem for all approaches that analyze C-AGR in terms of a dependency between C and T (cf. e.g. Haegeman & van Koppen 2012). More recently, phenomena such as so-called double agreement (different agreement formatives for C-AGR and verbal agreement), first conjunct agreement (FCA, the verb agrees with a whole coordinated subject, while C agrees with the first conjunct only) and external possessor agreement (C agrees with a raised/dislocated possessor of a complex subject) have been cited as crucial pieces of evidence that C-AGR results from an Agree-operation triggered by a separate set of inflectional features located in C (cf. e.g. van Koppen 2005; Haegeman & van Koppen 2012). In what follows, it is argued that a post-syntactic analysis of these phenomena is nevertheless feasible, and that they therefore do not constitute conclusive evidence for a syntactic treatment of C-AGR.

In so-called 'double agreement' dialects (Zwart 1993), the realization of C-AGR differs from the corresponding inflections found on the verb. In Bavarian, relevant examples come from varieties where the 1pl enclitic *ma* has been reanalyzed as an inflectional marker that attaches to elements occupying C (cf. e.g. Bayer 1984; Weiß

1998, 2005; Fuß 2005).[13] As a result, the marker signaling 1pl agreement on complementizers (*-ma*) differs from the respective verbal inflection (1pl *-an*). In embedded clauses, this leads to double agreement, that is, the inflectional markers carried by C and the finite verb are not identical, cf. (24a). In main clauses, where the finite verb moves to C, the regular verbal agreement marker is replaced by C-AGR in both inverted and non-inverted environments (in contrast to Dutch varieties, where the C-related allomorph is typically confined to complementizers and inversion contexts, see below):[14]

(24) a. wem-**ma** mia noch Minga kumm-**an**
when-1PL we to Munich come-1PL
'…when we come to Munich'

b. Gem-**ma** mia noch Minga?
go-1PL we to Munich
'Are we going to Munich?'

c. Mia gem-**ma** noch Minga.
we go-1PL to Munich
'We are going to Munich.'

It is sometimes argued that the phenomenon of double agreement challenges (post-syntactic/morphological) analyses that treat C-AGR as a copy of the verbal inflection (cf. e.g. Gruber 2008: 26). However, note that complete identity of C-AGR and verbal agreement is only expected if the copy operation is taken to operate on phonological exponents (e.g. as some form of surface-oriented analogy). No such expectation holds if a proper distinction is made between (sets of) abstract inflectional features and the phonological realization of these features; more precisely, if we assume that the operations leading to C-AGR merely affect the distribution of abstract inflectional features prior to Vocabulary Insertion (cf. Fuß 2005, 2008, and section 3 above), then cases of double agreement involving the use of different agreement formatives in C and T can be captured as an instance of contextual allomorphy: It is commonly assumed that the insertion procedure may be sensitive to the insertion context. As a result, the same set of inflectional features may receive a different spell-out dependent on other features present at the insertion site (cf. the realization of strong/weak adjectival inflection in German). Double agreement can then be accounted for by assuming that the relevant phonological exponents are

13. C-AGR with 1PL (and double agreement) seems to be most wide-spread in Lower Bavarian and Carinthian dialects (cf. e.g. Bayer 1984; Kollmer 1987; Wiesinger 1989; Weiß 1998, 2005).

14. With bisyllabic verbs such as *laffa* 'to run', *gengan* 'to go', *soucha(n)* 'to seek' etc., cf. Bayer 1984; Weiß (1998, 2005).

specified for additional features that relate to the insertion context (e.g. T and C's categorial features). This is illustrated in (25) for the relevant portion of the agreement paradigm of those Lower Bavarian varieties which have grammaticalized a new 1pl marker:

(25) a. [+T, +PL] ↔ /-an/ verbal agreement (1pl and 3pl fall together)
b. [+C, +1, +PL] ↔ /-ma/ C-AGR

The C-related marker /-ma/ not only attaches to complementizers, but also to the finite verb in V2 clauses (cf. Carstens 2003; Fuß 2005 for solutions which ensure that in a complex head adjunction structure, only the hierarchically highest AGR-node is targeted by Vocabulary Insertion). Weiß (2005) and Fuß (2005) show that diachronically, double agreement is often an intermediate stage in the development of new verbal agreement markers in V2 languages. New inflectional formatives typically arise via a reanalysis of subject clitics in inversion contexts, giving rise to double agreement phenomena. Subsequently, the agreement allomorph originally linked to C may gain a wider distribution, eventually replacing the corresponding original verbal agreement formative in all contexts. This grammaticalization process often takes place repeatedly, affecting different cells of the paradigm at different historical stages (cf. Fuß 2005). Note that the exponent of C-AGR cannot be used to realize regular verbal agreement as long as it carries an additional specification related to C (this follows from the Subset Principle, Halle 1997). Thus, the extension to V-AGR contexts implies the loss of the C-specification.

3.3 Adjacency effects

In Section 2, we have observed that in contrast to Bavarian, the realization of C-AGR is subject to a number of adjacency effects in Dutch double agreement dialects. Another, possibly related difference consists in the fact that in main clauses, C-AGR is confined to inversion contexts in Dutch dialects such as Hellendoorn (recall that in Lower Bavarian, verbal agreement is replaced by C-AGR in all main clause contexts, cf. (24) above):

(26) a. Wiej bin-t/*binn-e den besten!
we are-AGR_T/are-AGR_C the best
'We are the best!'

b. Binn-e/*binn-t wiej den besten?
are-AGR_C/are-AGR_T we the best
'Are we the best?'

(Hellendoorn Dutch, van Koppen 2012: 138)

The situation can be schematically summarized as in (27) (for Hellendoorn Dutch):[15]

(27) *Adjacency effects in Hellendoorn Dutch*

a.	*dat/*dar-re*	XP subject…
b.	*dat/*dar-re*	[focus particle subject]…
c.	[$_{CP2}$ subject	… [$_{CP1}$ *dat/*dar-re* t$_{subject}$ …]]
d.	*subject V+C-AGR…	
e.	XP V+C-AGR subject…	

An explanatory account of these observations must address two basic questions:

i. How can adjacency effect be theoretically modeled?
ii. How can we explain the asymmetries between Dutch and Bavarian double agreement varieties?

Fuß (2005, 2008) suggests an answer to (i) which is based on the idea that the process of feature insertion is blocked by the presence of scrambled material. This analysis makes use of the assumption that scrambled XPs occupy the specifier of a functional projection FP above TP (which is only projected if it serves to implement certain information-structural distinctions), the head of which disrupts structural adjacency between C^0 and T^0. However, this proposal fails to provide an explanation for the observation that C-AGR is also sensitive to subject extraction in (Dutch) double agreement dialects. Moreover, it does not seem to be capable of capturing the observed cross-linguistic variation in a straightforward way (e.g. without stipulating major syntactic differences between Dutch and Bavarian varieties).

In what follows, I explore an alternative approach that attributes adjacency effects (and the observed cross-linguistic asymmetries) to (varying) lexical specifications of the relevant inflectional markers. More precisely, I assume that in Dutch double agreement dialects (but crucially not in Bavarian), the phonological exponent of C-AGR is sensitive to the presence of an identical phi-set in the minimal

15. Note that similar adjacency effects restrict the realization of C-AGR in main clauses (Ackema & Neeleman 2004):

(i) Volgens miej loop-t/*lop-e [op den
according-to me walk-1PL/walk-1PL on the
wärmsten dag van't joar] ook wiej noar't park.
warmest day of-the year also we to-the park
'According to me we are also walking to the park on the warmest day of the year.'

prosodic domain (marked by braces in (28)).[16] This contextual restriction can be captured by the following realization rule:

(28) [+C, +1, +PL] ↔ /-ə/ /{ __ [+1, +PL]} (Hellendoorn Dutch)

Due to the additional contextual specification, the phonological exponent in (28) can only be used to realize C's φ-set when the subject immediately follows C. In the contexts listed in (27), however, this is not the case: The presence of scrambled XPs and focus particles has an effect on prosodic phrasing; as a result, C and the subject are not in the same minimal prosodic domain, and the contextual restriction expressed in (28) cannot be met. In cases where the subject has undergone movement (either clause-internally, (27d), or across clause-boundaries, (27c)), the copy left behind to the right of C is marked for deletion and thus not visible to the workings of Vocabulary Insertion. Consequently, its phi-set cannot be detected, which again blocks insertion of the phonological exponent in (28).[17]

Note that this approach not only provides a novel account of adjacency effects and the observed differences between Dutch and Bavarian varieties (in terms of varying specifications of the relevant phonological exponents); in addition it offers a straightforward explanation for a crucial asymmetry between C-AGR and verbal agreement, namely the observation that only the former can be dispensed with under certain conditions (what we have labeled 'repair by omission'): Under standard assumptions, verbal agreement is licensed by syntactic operations; failure to value the relevant agreement features results in a phi-set that cannot be interpreted at the interfaces, leading to a crashing derivation. However, no such problems are expected in connection with agreement phenomena that are established by post-syntactic operations that manipulate a phi-set that has already been valued in the course of the syntactic derivation. In the case of C-AGR, this gives rise to the impression of 'repair-by-omission' when post-syntactic feature insertion cannot apply (RNR, comparative deletion), or when the insertion context does not match the specifications/contextual restrictions of the phonological exponents linked to C-AGR (adjacency effects).[18]

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16. A related idea is put forward in Ackema and Neeleman (2004). Note that the proposal in (28) (which goes back to Richards 2012) differs from the approach taken by Ackema and Neeleman (2004), in that it concerns the realization (via Vocabulary Insertion) and not the checking/valuation of C's φ-set.

17. The exponent for regular verbal agreement lacks this additional contextual restriction. However, it cannot be used to realize C-AGR since it is specified for categorial features of T.

18. Note that an account of adjacency effects in terms of contextual restrictions on the insertion of phonological exponents is in principle also compatible with the assumption that C's phi-set is valued by a syntactic Agree operation.

3.4 First conjunct agreement

Some C-AGR-varieties exhibit another instance of double agreement where the complementizer agrees with the first conjunct of a complex coordinated subject, while the verb agrees with the coordinated subject as a whole (cf. van Koppen 2005, 2006, 2012; Haegeman & van Koppen 2012). Relevant examples come from varieties such as Tegelen Dutch, where the complementizer (obligatorily) inflects for 2sg when the relevant agreement controlling pronoun *doow* is the first conjunct of a complex coordinated subject. In contrast, the finite verb carries plural agreement, which is the result of *resolution* (cf. e.g. Corbett 1983), that is, an operation combining the φ-sets of the two conjuncts:[19]

(29) a. Ich dink de-s doow morge kum-s.
I think that-2SG you tomorrow come-2SG
'I think that you will come tomorrow.'

b. Ich dink de-s [doow en ich] ôs treff-e.
I think that-2SG you and I each.other.1PL meet-PL
'I think that you and I will meet.' (van Koppen 2005: 40)

In recent work, FCA is often presented as crucial evidence for an Agree-based approach to C-AGR and against analyses that posit a (post-syntactic) dependency between C and T (cf. van Koppen 2005; Gruber 2008 and most recently Haegeman & van Koppen 2012). In this section, I will take a closer look at FCA in Bavarian,[20] arguing that the empirical facts can also be captured by an analysis making use of post-syntactic feature insertion. In addition, it will become clear that the Bavarian data exhibits properties that do not fall out directly from an Agree-type analysis.

In Bavarian, FCA is typically found in connection with 2sg subjects (while the verb exhibits 2pl agreement). In contrast to e.g. Tegelen Dutch, FCA is not obligatory, that is, the complementizer may optionally agree with the whole coordinated subject (resolution), cf. Bayer (2013):

(30) a. dass-**sd** [du und da Hans] **FCA**
that-2SG you.SG and the Hans
noch Minga geh-**ts**
to Munich go-2PL
'that you and Hans are going to Munich'

19. In many languages, agreement with coordinated subjects is subject to language-specific rules that govern the choice between agreement with one of the two conjuncts and resolution (cf. Corbett 1983, 2000). Resolution typically leads to plural agreement and favors agreement with 1st/2nd person (although there are some exceptions; see below).

20. I am indebted to Josef Bayer, Günther Grewendorf and Helmut Weiß for sharing their intuitions on FCA in Bavarian.

b. dass-**ts** [du und da Hans] **resolution**
that-2PL you.SG and the Hans
noch Minga geh-**ts**
to Munich go-2PL
'that you and Hans are going to Munich'

Thus, it appears that FCA is subject to some variation, both across different varieties and across speakers of the same variety.[21] However, it seems that in all varieties, FCA is subject to an adjacency requirement: Second conjuncts may not trigger C-AGR. If there is a marker available to express the relevant agreement relation, the complementizer must agree with the whole coordinated subject (Bayer 2013):

(31) dass-**ts**/*-**st** [da Hans und du] noch Minga geht-**ts**
that-2PL/-2SG the Hans and you.SG to Munich go-2PL
'that Hans and you are going to Munich'

A related adjacency effect can be observed in matrix/inversion contexts: While FCA is generally impossible in subject-initial clauses, the verb preferably agrees with the first conjunct of an inverted subject (cf. Fuß 2008):[22]

(32) a. [Du und da Hans] hoab-**ts**/*hoa-**st** an Hauptpreis gwunna.
you and the Hans have-2PL/have-2SG the first.prize won
'You and Hans won the first prize.'

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21. Note that there are also varieties such as Tielt Dutch where FCA is impossible, that is, both the complementizer and the verb have to agree with the whole coordinated subject (cf. van Koppen 2005).

22. In Bavarian, we can observe another curious restriction on FCA: By and large, it seems that FCA is most readily available with 2sg subjects, while examples with 2pl subjects give rise to ineffability effects: For certain combinations of subjects, there do not seem to exist fully well-formed candidates. For example, coordination of 2pl+1sg subjects leads to more 'mixed' results; at least for some speakers, neither (ia) nor (ib) is fully acceptable.

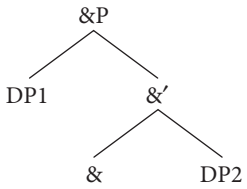
(i) a. %dass-ts [ihr/ees und I] noch Minga miaß-n
that-2PL you.PL and I to Munich must-PL
b. */??dass-ts [ihr/ees und I] noch Minga miaß-ts
that-2PL you.PL and I to Munich must-PL

The marginal status of FCA with 2pl subjects constitutes a problem for both syntactic and post-syntactic accounts of C-AGR. For example, under the assumption that C-AGR reflects a syntactic Agree relation that targets the first conjunct of a complex coordinated subject, we would expect 2pl subjects to behave on a par with 2sg subject. Likewise, a post-syntactic account in terms of feature insertion does not predict any major difference between 2sg and 2pl features. In any case, it is obvious that more empirical research is necessary to ascertain the status of such effects in Bavarian, and to what extent related phenomena can be found in other varieties. I leave this problem for future research.

b. Gesdan hoa-**st**/?hoab-**ts** [du und da
yesterday have-2SG/have-2PL you and the
Hans] an Hauptpreis gwunna.
Hans the first.prize won
'Yesterday, you and Hans won the first prize.'

In what follows, I will argue that core results of Agree-based analyses of FCA can be replicated by a post-syntactic approach to C-AGR, claims in the literature to the contrary notwithstanding. Before we can turn to the specifics of this proposal, more must be said about the nature and analysis of resolution effects. I follow van Koppen (2005) and adopt the proposal (Munn 1993; Kayne 1994) that coordination involves an asymmetric structure where the first and second conjunct occupy specifier and complement position of a coordinating functional head (represented by the ampersand in (33)):

(33)



To account for FCA effects in connection with C-AGR, van Koppen (2005) assumes that there are two separate AGREE relations that involve (i) C and the first conjunct (DP1 in (33)), and (ii) C and the combined features of DP1 and DP2 (resulting from resolution), which are represented in &, the head of the coordination phrase. Which of these relations is overtly realized on the complementizer is then determined in the morphological component: By assumption, more specified exponents (e.g. forms marked for person/number) take precedence over less specified exponents (e.g. elsewhere forms), that is, van Koppen assumes that if multiple Agree leads to the presence of two valued two φ-sets in C, only the agreement relation that leads to more specific agreement morphology is phonologically realized. Note that under an Agree-based analysis, resolution must be part of the syntactic computation, prior to the Agree operation leading to verbal agreement.

However, there are reasons to believe that resolution does not take place in the syntax, but rather in the morphological component as part of (or prior to) the procedure inserting phonological exponents. First of all, it is difficult to pin down what kind of syntactic operation can be invoked to bring about resolution (at least at first sight, neither Merge nor Agree seem to be capable of the kind of feature unification and modification typical of resolution effects). In particular, as pointed out by van Koppen and Rooryck (2008), it is not clear how [+pl] can be computed from two [–pl] conjuncts: [+pl] is not part of any element in the numeration and cannot be added in the course of the syntactic derivation without violating the Inclusiveness Condition. Simply assuming that [+pl] is inherently part of the feature content of $\&^0$ does

not solve the problem either, for there are cases where coordinated complex subjects trigger singular agreement on the verb (e.g. with abstract nouns), compare the following German example (see also Duden 2009: 1007):

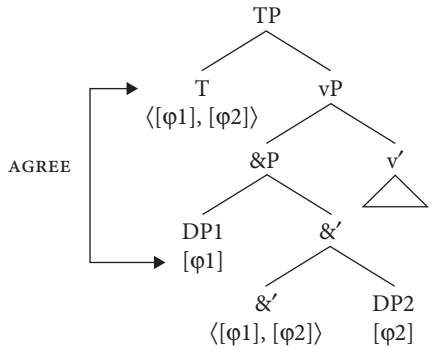
(34) [Hass und Gewalt] regiert die Welt.
hatred and violence rule-3SG the world
'Hatred and violence rule the world.'

The idea that resolution rules apply post-syntactically receives further support from the observation that resolution of person features is subject to cross-linguistic and even dialect-internal variation, which is typical of *morphological* differences between languages. In Bavarian, for example, coordination of a 2sg and a 3sg subject usually triggers 2pl agreement on the verb. However, there are some speakers who prefer 3pl agreement in this context (similar facts hold for Standard German):

(35) dass-**st** [du und da Hans] noch Minga geh-**ts**/%geng-**an**.
that-2SG you.SG and the Hans to Munich go-2PL/go-3PL
'that you and Hans are going to Munich'

However, if resolution does not take place in the syntax, then the question arises what features are present in &^{0}, the head of the coordination structure. What I would like to propose is that the φ-sets of both conjuncts are part of the feature content of &^{0}. More precisely, suppose that &^{0} contains an ordered pair of φ-sets corresponding to the feature content of the two conjuncts DP1, DP2. This combined φ-set is then accessed by an Agree operation initiated by the unvalued φ-set of T:

(36)



As a result of this Agree operation, T's phi-set is identified with the content of &^{0}, that is, T contains an ordered pair of φ-sets as well:[23]

23. Here and below I assume that "3rd person" is actually not a separate person feature, but results from the absence of person features (Benveniste 1966, and many others).

(37) a. <[+2, –pl],[–pl]> (2sg + 3sg subject)
b. <[+2, +pl], [+pl]> (2pl + 3pl subject)
c. <[+1, –pl], [+2, –pl]> (1sg + 2sg subject)
etc.

In C-AGR varieties, the ordered pair of phi-sets located in T is then copied onto C by the post-syntactic operation of feature insertion (i.e. the mechanism outlined in (16) above). How does this relate to the asymmetries between C-AGR and verbal agreement with respect to the choice between FCA and resolution? I submit that the key to understanding FCA effects and feature resolution lies in recognizing that ordered pairs of inflectional features cannot be directly realized by the workings of Vocabulary Insertion, as Vocabulary Items are usually not specified for ordered pairs of features. Moreover, the sets in (37) typically contain conflicting/contradictory feature values. What I want to propose is that this calls for post-syntactic repairs that patch up the problematic feature structures created by Agree (in T) and feature insertion (in C). The problem can be overcome in either of two ways: First, ordered pairs of phi-features may be removed by resolution rules, which create a single phi-set from the feature values of the sets that are part of the ordered pair (cf. e.g. Corbett 1983; Sag et al. 1985; Dalrymple & Kaplan 1997). An alternative repair strategy consists of deleting one phi-set of an ordered pair by the application of impoverishment rules. As will be shown immediately, the latter option can be used to account for FCA effects in C-AGR varieties.

From this point of view, both FCA and resolution are morphological last resorts that repair feature sets which otherwise could not be pronounced.[24] In what follows, I will work out the specifics of this proposal, turning first to resolution. (38) gives an overview of the relevant resolution rules required for Bavarian.[25]

(38) *Resolution rules (Bavarian)*:
a. Unification of feature sets, i.e. $\langle [A], [B] \rangle \rightarrow [A] \cup [B]$
b. $<[+1], [+2]> \rightarrow [+1]$
c. $<[\alpha pl], [\alpha/-\alpha pl]> \rightarrow [+pl]$

24. Cf. Bhatt and Walkow (2011) for the claim (in relation to Hindi) that agreement with only a single conjunct (i.e. absence of resolution) is a characteristic of post-syntactic/"phonological" agreement.

25. According to Corbett (1983:176), the resolution rules in (38) are universal. Recall, however, that in Bavarian (and other German varieties including Standard German) agreement with coordinated subjects is subject to some amount of speaker variation. In particular, it seems that 2nd person features are not necessarily preserved under resolution (in 2nd+3rd person contexts, see (35)).

Resolution rules typically involve (i) the unification of the involved feature sets (cf. Sag et al. 1985; Dalrymple & Kaplan 1997) and (ii) operations that resolve conflicting feature values. For Bavarian, the latter comprise (at least) the following rules: (38b) ensures that in cases where one conjunct is 1st person and the other 2nd person, the person value of the former wins out over the person value of the latter.[26] Making use of alpha-notation (Chomsky & Halle 1968), (38c) guarantees that the number value of the resolved feature set is always plural, independent of the number values of the conjoined subjects. The surface effects of (38) are illustrated by the examples in (39).[27]

(39) a. *…du und da Hans … geh-ts* ⇒ <[+2, –pl], [–pl]> → [+2, +pl]
b. *…I und du … geng-an* ⇒ <[+1, –pl], [+2, –pl]> → [+1, +pl]
c. *…I und ihr/ees … geng-an* ⇒ <[+1, –pl], [+2, +pl]> → [+1, +pl]
d. *…da Hans und da Peter… geng-an* ⇒ <[–pl], [–pl]> → [+pl]
etc.

As shown in (39), resolution is typically used to repair problematic feature structures in T, giving rise to 'combined' verbal agreement. However, this strategy does not seem to be readily available in the context of C-AGR, where we often find FCA. To account for this observation, I assume that FCA results from another instance of post-syntactic repair, namely an impoverishment rule that deletes the second member of the ordered pair of phi-sets if the minimal prosodic domain contains a phi-set identical to the first member of the ordered pair:

(40) <[φ1], [φ2]> → [φ1]/{__ [φ1]}

Empirical support for this proposal comes from the observation that in Bavarian, the choice between FCA and resolution (i.e. C-AGR with the whole coordinated subject) is dependent on prosodic phrasing (Bayer 2013; "#" marks a prosodic boundary):

(41) a. dass-**st** [du # und d'Maria] # an
that-2SG you and the Mary the
Hauptpreis gwunna hoab-**ts**
first.prize won have-2PL

---

26. Note that under the assumption that "3rd person" results from the absence of person features (cf. Footnote 23), there is no need to specify additional rules that ensure that 1st and 2nd person win out over 3rd person: Since there are no special person features for 3rd person, no feature conflict arises and 1st and 2nd person values "automatically" determine the feature set resulting from resolution.

27. For those speakers who prefer (3)pl over 2pl morphology in examples like (34)/(39a), one might assume that there is another impoverishment rule that deletes person features in resolution contexts. As a result, only the underspecified general plural inflection /-an/ can be inserted.

b. dass-**ts** #[du und d'Maria] #
that-2PL you and the Mary
an Hauptpreis gwunna hoab-**ts**
the first.prize won have-2PL

In cases like (41a), where C and the first conjunct *du* form a prosodic unit, the contextual restriction of the impoverishment rule in (40) is met, giving rise to FCA. However, if the coordinated subject forms a separate prosodic unit, as in (41b), impoverishment cannot apply. Accordingly, the problematic feature bundle can only be repaired by resolution, leading to identical markers on C and the finite verb.

Since the structural description of (40) is arguably more specific than resolution rules (which typically lack a contextual restriction), impoverishment bleeds resolution (due to the workings of the Elsewhere Condition, Kiparsky 1973, 1982) in cases where its contextual restriction is met.

This analysis of FCA provides a new explanation for another curious property of FCA, namely the fact that FCA is subject to stronger adjacency effects than 'regular' instances of C-AGR, even in languages which otherwise do not exhibit such restrictions (cf. van Koppen 2005, 2012). For example, only resolution is possible on the embedded complementizer when the coordinated subject undergoes long topicalization in Bavarian (Helmut Weiß, p.c.):

(42) a. *[Du und da Hans]$_i$ moan=e ned
you and the Hans think=I not
dass-**sd**=n t_i gseng hoab-ts.
that-**2SG**=him seen have-2PL
'I don't think that you and Hans saw him.'

b. [Du und da Hans]$_i$ moan=e ned
you and the Hans think=I not
dass-**ts**=n t_i gseng hoabts.
that-**2PL**=him seen have-2PL
'I don't think that you and Hans saw him.'

More generally, it appears that FCA on the finite verb is restricted to inversion contexts where the coordinated subject is right-adjacent to the verb (see also (32) above, repeated here for convenience). As shown in (44), FCA is generally impossible with clause-final verbs.

(43) a. Gesdan hoa-**st**/?hoab-**ts** [du und
yesterday have-2SG/have-2PL you and
da Hans] an Hauptpreis gwunna.
the Hans the first.prize won
'Yesterday, you and Hans won the first prize.'

b. [Du und da Hans] hoab-**ts**/*hoa-**st**
you and the Hans have-2PL/have-2SG
an Hauptpreis gwunna.
the first.prize won
'You and Hans won the first prize.'

(44) dass-**st** [du und da Hans] an Hauptpreis
that-2SG you and the Hans the first.prize
gwunna hoab-**ts**/*hoa-**st**
won have-2PL/have-2SG
'that you and Hans won the first prize'

The limited scope of FCA falls out directly from the proposed analysis in terms of impoverishment: Since the structural description of (40) can only be met in inversion contexts (where the coordinated subject is right-adjacent to the finite verb), FCA is not available with verbs in clause-final position and in subject-initial clauses. The observation (cf. (42)) that the complementizer may not carry FCA in cases where the subject has undergone long extraction can be subsumed under the very same explanation. Furthermore, note that this analysis also captures the observation that FCA-effects are not confined to C-AGR varieties, but also also occur in (standardized) Germanic varieties (cf. e.g. Duden 2009: 1007f. on German, Munn 1993, 1999 on English):

(45) a. There is [a man and a woman] in the room.
b. *[A man and a woman] is in the room. (Munn 1999: 654)

(46) a. Da ist [ein Mann und eine Frau] im Zimmer.
b. *[Ein Mann und eine Frau] ist im Zimmer

This suggests that FCA is actually not a peculiar property linked to the "exotic" trait of C-AGR, but rather a more general phenomenon, which can be attributed to agreement problems created by complex coordinated subjects.

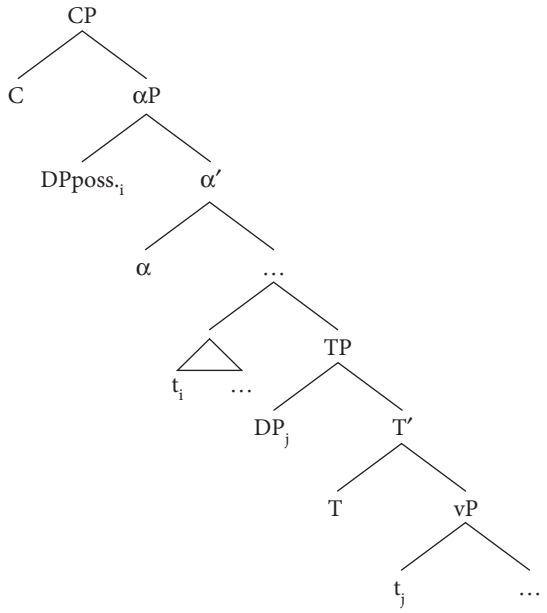
3.5 External possessor agreement (in West Flemish)

Haegeman and van Koppen (2012) describe another instance of double agreement which can be observed in West Flemish varieties. In this particular construction, the complementizer agrees with a dislocated possessor (*die venten* in (47)), while the verb agrees with the possessee (*underen computer* in (47)):

(47) … omda-n die venten toen juste
because-PL those guys then just
underen computer kapot was.
their computer broken was
'…because those guys' computer broke just then.'

Again, the fact that C-AGR and T-AGR reflect different feature values in examples like (47) (plural vs. singular) is taken by the authors as another piece of evidence suggesting that C-AGR results from a separate agreement operation and cannot be reduced to a dependency between C and T. Even though external possessor agreement does not exist in Bavarian, I mention it here nonetheless since it can also be shown to be compatible with a post-syntactic treatment. According to Haegeman and Koppen (2012), the raised possessor occupies an A-position above TP, which they label SpecαP:

(48)



Under a purely syntactic account, C-AGR in (47)–(48) is established by an Agree operation between C and the possessor's φ-set (in SpecαP), while regular verb agreement results from an Agree operation between T and the whole subject (headed by the possessee) in SpecvP. But note that this structure can also feed the post-syntactic insertion of inflectional features along the lines proposed above. We only need to assume that the relevant copy operation does not target T's φ-set, but rather the φ-set of α, which enters into an agreement relation with the possessor in the syntactic computation and is structurally adjacent to C at MS, therefore meeting all requirements for the morphological operation in (16).[28]

28. See Bayer (2013) for an alternative explanation of FCA and external possessor agreement based on the assumption that relevant examples are actually instances of anacoluthon.

4. Conclusions

In recent years, research on complementizer agreement has provided us with a wealth of new data, enlarging not only the number of varieties covered, but also deepening our understanding of the conditions that (may) govern the realization of C-AGR (cf. e.g. van Koppen 2005). However, as is often the case, the growth of the empirical basis has also been accompanied by the discovery of conflicting or even contradictory empirical facts, which casts into doubt whether all relevant phenomena can be subsumed under a single, unified theoretical analysis. More precisely, it has become clear that if a wider range of facts and conditions on C-AGR is taken into account, we seem to face a paradox. On the one hand, data from first conjunct agreement and external possessor agreement seem to support a syntactic analysis of C-AGR. In particular, cases where C-AGR differs from the inflection carried by the finite are commonly taken to imply that C-AGR does not involve a dependency between C and T, but rather results from a separate Agree relation where C itself probes the subject's φ-set (cf. van Koppen 2005; Haegeman & van Koppen 2012). On the other hand, the fact that at least in Bavarian, C-AGR is affected by (post-syntactic) processes such as RNR or comparative deletion suggests that C-AGR is established in the post-syntactic components of grammar. Moreover, these data clearly show that C-AGR does not involve a (checking/matching) relation between C and the subject. Rather, the availability of C-AGR seems to depend on the presence of the finite verb at MS/PF, which suggests that there does exist a C–T dependency at this stage of the computation, see Section 2. This paper has aimed to show that a unified post-syntactic account of the conflicting data can be given. Building on proposals in Fuß (2005, 2008), we have analyzed C-AGR as a morphological ornament that results from the post-syntactic insertion of φ-features (a copy of T's φ-set) under structural adjacency with T. It has been argued that within this approach, double agreement phenomena such as FCA can be described in terms of contextual restrictions on the processes that govern the phonological realization of C-AGR; hence these facts do not provide conclusive evidence for a syntactic treatment of C-AGR, in contrast to claims in the literature. Note that this line of thinking is compatible with Richards (2007) theory of obligatory feature inheritance. We can thus maintain the hypothesis that C must transfer its complete φ-set to T in the course of the syntactic derivation (but note that according to the present account, C can regain its φ-feature content via feature insertion (a copy of T's φ-set) at MS/PF). Still, we should be aware of the possibility that attempts aiming at a uniform theoretical analysis of all cases of C-AGR might turn out to be too ambitious. In my mind, it is entirely possible that the data conflict mentioned above might actually

reflect the existence of different ("syntactic" vs. "post-syntactic") types of C-AGR that call for different modes of analysis.[29]

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29. For example, Marjo van Koppen (personal communication) pointed out to me that in many Dutch varieties, C-AGR is not affected by the absence of the finite verb in comparative deletion. This may be taken to suggest that these varieties exhibit a "more grammaticalized" version of C-AGR, where the inflection found on C results from syntactic operations.

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