Finnish first conjunct agreement & the direction of Agree*

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Colloquial Finnish displays a pattern of first conjunct agreement (FCA) that is strikingly similar to patterns attested in other languages. I consider the possibility that existing analyses of FCA proposed for other languages may account for the Finnish data. Ultimately, I conclude that none of the previous analyses considered here are able to adequately explain Finnish FCA. A new analysis of FCA is proposed in order to account for the Finnish data that relies on a bidirectional version of the operation Agree. Thus, the Finnish FCA data both expand our understanding of how FCA is manifested cross-linguistically and provide new evidence bearing on recent debates about the directionality and timing of agreement.

Keywords: *Finnish, first conjunct agreement, bidirectional Agree*

1 Introduction

First conjunct agreement (FCA) is a phenomenon in which some agreement-bearing element realizes agreement with the first conjunct of a coordinated DP, rather than with the full, coordinated DP. FCA is widely attested cross-linguistically (Walkow 2014); the following examples show instances of FCA from Lebanese Arabic (1a), Modern Irish (1b), and Polish (1c).[1]

(1) a. ***Raaḥo*** ***Kariim*** ***w*** ***Marwaan.*** (Lebanese Arabic)
leave.PST.3MSG **Kareem** **and** **Marwan**
'Kareem and Marwan left.' (Aoun et al. 1994)

b. ***Bhíos*** ***pro-féin*** ***agus*** ***Tomás*** *ag* *caint* (Modern Irish)
be.PST.1SG ***pro*-EMPH** **and** **Thomas** talk PROG
le *chéile.*
with each other
'Thomas and I were talking to one another.' (McCloskey 1986)

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[1] In all examples of agreement with conjoined subjects, the conjoined subject DP and agreement morphology appear in bold. Abbreviations used in glosses are as follows: 1, 2, 3 = first-, second-, and third-person, respectively; ACC = accusative; ADE = adessive; COND = conditional; EMPH = emphatic; F = feminine; INE = inessive; INF = infinitive; M = masculine; PART = partitive; PL = plural; POSS = possessive; PROG = progressive; PST = past; PTC = participle; Q = question; SG = singular; SUP = superlative; TRANS = translative.

c. *Do pokoju* ***weszła*** ***młoda*** ***kobieta*** ***i*** (Polish)
to room **enter.PST.3FSG** **young** **woman** **and**
chłopiec.
boy.
'Into the room walked a young woman and boy.' (Citko 2004)

In each of the above examples, a verb realizes agreement with the first conjunct of a coordinated DP, rather than with the full, coordinated DP. Below, I show that Colloquial Finnish also displays patterns of FCA that are strikingly similar to patterns attested in the languages shown in (1). Due to similarities between Finnish FCA and FCA phenomena in other languages, I consider whether existing analyses of FCA may be extended to account for the Finnish data, ultimately demonstrating that existing analyses are unable to adequately account for the Finnish data. To the extent that a unified, cross-linguistic account of similar FCA phenomena is desired, the Finnish data play a crucial role in revealing the shortcomings of previous proposals.

The final analysis developed here relies on the notion that the operation Agree operates bidirectionally, both "downward", as traditionally assumed, and "upward". That is, a ϕ-probe may Agree with a goal with valued ϕ-features if either the probe c-commands the goal or the goal c-commands the probe. This differs from the standard assumption that Agree operates unidirectionally (Chomsky 2000, 2001), a view that has been defended in recent work such as Zeijlstra (2012), Preminger (2013), and Preminger & Polinsky (2015). However, other authors have argued for the bidirectionality of Agree in the sense proposed here (Adger 2003, Baker 2008, Bjorkman & Zeijlstra 2014, Carstens 2016, Merchant 2006, Puškar & Murphy 2015); the present analysis of Finnish FCA provides additional evidence that Agree operates bidirectionally.

The remainder of this paper is organized as follows. In §2, I lay out the Finnish FCA data that is to be explained. In §3, I present a set of assumptions about the clause structure of Finnish that will underlie each of the analyses of FCA that I consider. In §4, I consider several candidate proposals for analyzing the Finnish FCA data. I begin by considering existing proposals developed to account for FCA in Polish, Arabic dialects, Biblical Hebrew, and Dutch dialects. These candidate proposals each fail to fully account for the Finnish data, leading me to offer a novel analysis of FCA using a bidirectional version of Agree that overcomes the shortcomings of previous propsals. In §5, I conclude with final thoughts regarding the bidirectionality of Agree and the question of how to distinguish languages that allow FCA from those that do not.

2 First Conjunct Agreement in Finnish

FCA in Finnish has received little attention and appears to be restricted to non-standard dialects of Finnish; the phenomenon is not discussed in descriptive grammars, such as Karlsson (2008) and Hakulinen et al. (2004). However, van Koppen (2005) does provide a brief discussion of FCA in Finnish, giving the following example:[2]

[2] Note that van Koppen's example in (2) contains *two* exponents of agreement with the subject DP: the auxiliary *olen* and the participle *käyneet*. While the auxiliary realizes FCA, the participle realizes full agreement. I return to this issue in §2.2.

(2) *Sitä* *ole-**n*** ***minä*** ***ja*** ***sinä-kin*** *käy-**neet*** *Pariisi-ssa.*
EXPL be-**1SG** **I** **and** **you-too** visit-**PTC.PL** Paris-INE
'You and I have visited Paris.'

In (2), the auxiliary *olen* realizes FCA, i.e. it realizes first-person singular agreement morphology, rather than first-person plural morphology. According to van Koppen, (2) was not found acceptable by all her consultants. I have similarly found that not all speakers accept sentences including FCA, although many speakers find them extremely natural. I have conducted no systematic investigation into dialect differences with respect to the acceptability of FCA. For the majority of this paper, I will be concerned with those dialects of Finnish that do allow FCA.

A possibly related phenomenon regarding adjectival concord is discussed in Dalrymple & Nikolaeva (2006), although these data will not be a focus of the present paper. Consider the following examples:

(3) a. *Hän* *ost-i* *vanha-**n*** ***pöydä-n*** ***ja*** ***tuoli-t.***
He buy-PST.3SG old-**ACC.SG** **table-ACC.SG** **and** **chair-ACC.PL**
'He bought the old table and chairs.'

b. **Hän* *ost-i* *vanha-**t*** ***pöydä-n*** ***ja***
He buy-PST.3SG old-**ACC.PL** **table-ACC.SG** **and**
tuoli-t.
chair-ACC.PL
'He bought the old table and chairs.'

(4) a. **Hän* *ost-i* *vanha-**n*** ***tuoli-t*** ***ja***
He buy-PST.3SG old-**ACC.SG** **chair-ACC.PL** **and**
pöydä-n.
table-ACC.SG
'He bought the old chairs and table.'

b. *Hän* *ost-i* *vanha-**t*** ***tuoli-t*** ***ja*** ***pöydä-n.***
He buy-PST.3SG old-**ACC.PL** **chair-ACC.PL** **and** **table-ACC.SG**
'He bought the old chairs and table.'

According to Dalrymple and Nikolaeva, all Finnish speakers agree with the judgments shown in (3) and (4), but speakers disagree about the possible interpretations of (3a) and (4b). For all speakers, *vanhan/vanhat* may modify only the first conjunct of the coordinate NP structure. That is, (3a) may be interpreted such that the table is old and the chairs are not, while (4b) may be interpreted such that the chairs are old and the table is not. For some speakers, *vanhan/vanhat* may also take scope over both NPs such that in either (3a) or (4b), both the chairs and the table are old. Dalrymple and Nikolaeva take these speakers to allow for an analogue of FCA in the domain of adjectival concord, since a single adjective modifies both NPs but only "agrees" with one. FCA is not a major concern of Dalrymple's and Nikolaeva's, and they do not offer a full analysis of the data. Likewise, I will not focus on phenomena of adjectival concord, leaving this issue for future work.[3]

[3] See Harizanov & Gribanova (2013) for a discussion of a similar phenomenon in Bulgarian.

To build upon van Koppen's original observations regarding FCA Colloquial Finnish, I collected attested examples of FCA in Colloquial Finnish from the web. These examples were gathered via web searches using Google and using the Finnish version of the Korp corpus (Borin et al. 2012). Examples from Korp originated from the internet chat website Suomi24. As I will show, the acceptability of FCA depends upon the position of the subject with respect to the inflection-bearing element in linear order. To test acceptability patterns of FCA with different word orders, attested sentences were altered to yield new word order patterns. Judgments were then collected from native speakers regarding these altered examples. In the following sections, original, attested examples are indicated with their source, either web search or Korp.

Note that Colloquial Finnish exhibits morphological levelling between verbal agreement morphology for third-person singular and third-person plural subjects. The syncretic form is identical to Standard Finnish's third-person singular agreement morphology.

(5) a. *Hän* *tule-e.* (Standard Finnish)
He/she come-3SG
'He/she comes.'

b. *He* *tule-vat.* (Standard Finnish)
They come-3PL
'They come.'

(6) a. *Se* *tule-e.* (Colloquial Finnish)
He/she come-3
'He/she comes.'

b. *Ne* *tule-e.* (Colloquial Finnish)
They come-3
'They come.'

For this reason, it is impossible to determine whether a verb whose subject is a conjunction of third-person DPs and that realizes third-person singular agreement truly exhibits FCA or not. Thus, all examples in the following sections involve conjoined subjects in which the first conjunct is either a first- or second-person pronoun.

A somewhat different problem arises for clauses in which the first conjunct is a first-person pronoun. The standard agreement morphology associated with first-person plural subjects in Standard Finnish (7a) generally does not appear in Colloquial Finnish. Rather, the verb appears in the passive and does not agree with the subject (7b). In clases containing auxiliaries and participles, it is possible for both elements to appear in the passive (7c).[4]

(7) a. *Me* *ole-mme* *käy-neet* *Pariisi-ssa.* (Standard Finnish)
we be-1PL visit-PTC.PL Paris-INE
'We have visited Paris.'

[4] My thanks to an anonymous reviewer for drawing my attention to this data point.

b. *Me* *on* *käy-ty* *Pariisi-ssa.* (Colloquial Finnish)
we be.3SG visit-PST.PTC Paris-INE
'We have visited Paris.'

c. *Me* *ol-laan* *käy-ty* *Pariisi-ssa.* (Colloquial Finnish)
we be-PASS visit-PST.PTC Paris-INE
'We have visited Paris.'

However, non-conjoined first-person plural subjects never trigger first-person singular agreement in either Standard or Colloquial Finnish (8).

(8) **Me* *ole-n* *käy-neet* *Pariisi-ssa.*
we be-1SG visit-PTC.PL Paris-INE
'We have visited Paris.'

Since non-conjoined first-person plural subjects cannot trigger first-person singular agreement, any instance of first-person singular agreement with a subject whose first conjunct is a first-person singular pronoun are true examples of FCA. Thus, the data in (7) are not directly relevant for examples of FCA reported below. However, these data are relevant for contrasting FCA with full agreement. In examples below, I have indicated what attested examples of FCA would look like with full agreement in Standard Finnish. For some consultants, the appearance of standard first-person plural agreement in these examples was odd, given that the sentences contained other characteristics of Colloquial Finnish. For this reason, in addition to the constructed examples I have provided attested examples in which first-person conjoined subjects trigger standard, first-person plural agreement.

2.1 Clauses with a single exponent of agreement

I first consider clauses in which there is only a single exponent of agreement. In such clauses, subjects may either appear pre- or post-verbally. When a conjoined subject appears pre-verbally, full agreement is obligatory, as shown in (9) and (10).

(9) S V_{PL}

a. ***Minä*** ***ja*** ***rumpali-mme*** *Hietalan* *Antti* *tul-i-**mme***
I **and** **drummer-POSS.1PL** Hietalan Antti come-PST-**1PL**
mukaan *silloin.*
along then
'Then our drummer Hietalan Antti and I came along.'

b. *Ja* ***mä*** ***ja*** ***kaksi*** ***muu-ta*** ***tyttö-ä*** *ole-**mme***
And **I** **and** **two** **other-PART** **girl-PART** be-**1PL**
suomalai-sia.
Finnish-PART.PL
'And two other girls and I are Finns.'[5]

[5] This example is based on (12b), but a direct analogue of (12b) with a pre-verbal subject would not be acceptable. This is because (12b) is a presentational construction in which new information must be sentence-

(10) *S V_{FCA}

a. ***Minä ja rumpali-mme** *Hietalan Antti*
I and drummer-POSS.1PL Hietalan Antti
*tul-i-**n** mukaan silloin.*
come-PST-**1SG** along then
'Then our drummer Hietalan Antti and I came along.'

b. **Ja **mä ja kaksi muu-ta tyttö-ä** *ole-**n***
And **I and two other-PART girl-PART** be-**1SG**
suomalai-sia.
Finnish-PART.PL
'And two other girls and I are Finns.'

Although FCA is not acceptable with pre-verbal conjoined subjects, it is possible when conjoined subjects follow the verb in linear order. Post-verbal subjects may trigger either full agreement (11) or FCA (12).

(11) V_{PL} S

a. *Silloin mukaan tul-i-**mme** **minä ja rumpali-mme***
then along come-PST-**1PL** **I and drummer-POSS.1PL**
Hietalan Antti.
Hietalan Antti
'Then our drummer Hietalan Antti and I came along.'

b. *Ja sitten ole-**mme** **mä ja kaksi muu-ta tyttö-ä.***
And then be-**1PL** **I and two other-PART girl-PART**
'And then there is me and two other girls.'

(12) V_{FCA} S

a. *Silloin mukaan tul-i-**n** **minä ja rumpali-mme***
then along come-PST-**1SG** **I and drummer-POSS.1PL**
Hietalan Antti.
Hietalan Antti
'Then our drummer Hietalan Antti and I came along.' (Web search)

b. *Ja sitten **oon** **mä ja kaksi muu-ta tyttö-ä.***
And then **be.1SG** **I and two other-PART girl-PART**
'And then there is me and two other girls.' (Korp)

The examples in (9) and (11) were constructed on the basis of the examples in (12) and showcase the standard first-person plural agreement morphology that is rare in Colloquial Finnish. Yet it is also possible to find analogous attested examples in which standard first-person agreement appears on the verb:

final. Arto Anttila (p.c.) suggested the alternative (9b), which shows the possibility of full agreement with a pre-verbal conjoined subject.

(13) a. ***Minä ja aviomie-heni*** *ole-**mme** häämatka-lla.*
I and husband-POSS.1SG be-**1PL** honeymoon-ADE
'My husband and I are on our honeymoon.' (Web search)

b. *Toi-seksi tul-i-**mme** **minä ja Nasu.***
second-INE come-PST-**1PL** **I and Nasu**
'Nasu and I came in second.' (Web search)[6]

The following generalization accounts for clauses containing a single exponent of agreement: Full agreement is always acceptable, and FCA is only acceptable if the subject follows the exponent of agreement in linear order. The generalization is summarized in Table 1.

Word Order	Full Agreement	FCA
S V	✔	✗
V S	✔	✔

Table 1: *Agreement patterns in single-verb clauses.*

Note that last conjunct agreement (LCA), i.e. agreement with the last conjunct of a conjoined subject DP, is disallowed regardless of the position of the subject.

(14) a. * *Sitä ole-**t** **minä ja sinä-kin** käy-**neet** Pariisi-ssa.*
EXPL be-**2SG** **I and you-too** visit-**PTC.PL** Paris-INE
'You and I have visited Paris.'

b. * ***Minä ja sinä-kin** ole-**t** käy-**neet** Pariisi-ssa.*
I and you-too be-**2SG** visit-**PTC.PL** Paris-INE
'You and I have visited Paris.'

Thus, Colloquial Finnish exhibits true *first* conjunct agreement, rather than *closest* conjunct agreement (CCA), in which either FCA or LCA is realized, depending on the linear order of the subject and the verb. This distinguishes Colloquial Finnish from languages that exhibit CCA such as Hindi-Urdu (Bhatt & Walkow 2013), Serbo-Croatian (Bošković 2009, Puškar & Murphy 2015), and Slovenian (Marušič et al. 2007).

2.2 Clauses with multiple exponents of agreement

Next, I consider clauses containing multiple exponents of agreement. In particular, I focus on clauses in which both an auxiliary and participle realize agreement with the subject DP. In such clauses, the subject DP may appear in one of three positions relative to the auxiliary and participle:

(i) Preceding the auxiliary and participle

(ii) Medially between the auxiliary and participle

[6] This example was provided by an anonymous reviewer.

(iii) Following the auxiliary and participle

I examine each case in turn, considering whether FCA may be realized on either the auxiliary or participle.

A complicating factor is that in Colloquial Finnish, participles may fail to realize plural agreement morphology, even if the subject is plural and the auxiliary realizes plural agreement. This occurs independently of whether the subject is coordinated or not. Consider the following example provided by an anonymous reviewer:

(15) ***Te*** *ole-**tte*** *käy-**ny/-neet*** *Pariisi-ssa.*
You.PL be-**2PL** visit-**PTC.SG/-PTC.PL** Paris-INE
'You have visited Paris.'

In (15), the participle may realize either singular or plural agreement despite the fact that the subject is plural and the auxiliary realizes second-person plural agreement. Regardless of the form of the participle, the auxiliary cannot realize singular agreement:

(16) * ***Te*** *ole-**t*** *käy-**ny/-neet*** *Pariisi-ssa.*
You.PL be-**2SG** visit-**PTC.SG/-PTC.PL** Paris-INE
'You have visited Paris.'

I assume that the singular form of the participle seen in clauses like (15) is a non-agreeing default form. Thus, the appearance of the singular form of the participle in a clause with a conjoined subject does not necessarily indicate that FCA has occurred with a singular first conjunct. On the other hand, the appearance of the plural form of the participle can only be accounted for via agreement with a plural DP.

In case (i), the subject DP precedes both the auxiliary and participle. Full agreement must be realized on the auxiliary, as shown in (17); FCA on the auxiliary is not possible (18). The participle may realize either singular or plural agreement.[7]

(17) S Aux_{PL} $\text{Ptc}_{\text{SG/PL}}$

a. ***Minä*** ***ja*** ***ystävä-ni*** *ole-**mme*** *odotta-**nut/neet*** *tätä*
I **and** **friends-POSS.1SG** be-**1PL** wait-**PTC.SG/PTC.PL** this
jo *kauan.*
already long
'My friends and I have already waited for this for a long time.'

[7] A reviewer raises the possibility that the sentence-initial DP may be a hanging topic, with the true subject being a null *pro*. If this were the case in (17), then the agreement realized on the auxiliary and participle would not, strictly speaking, be full agreement with the conjoined subject DP. However, the following example, provided by the reviewer, is not compatible with the sentence having a null *pro* subject and shows the same agreement pattern as the sentences in (17):

(i) *Tätä* ***minä*** ***ja*** ***ystävä-ni*** *ole-**mme*** *odotta-**nut/neet*** *jo* *kauan.*
this **I** **and** **friends-POSS.1SG** be-**1PL** wait-**PTC.SG/PTC.PL** already long
'My friends and I have already waited for this for a long time.'

b. ***Sinä ja Kristi R.*** *ole-**tte*** *anta-**nut/neet***
You and Kristi R. be-**2PL** give-**PTC.SG/PTC.PL**
vahvo-j-a ja erittäin varma-ksi väit-etty-jä
strong-PL-PART and very certain-TRANS allege-PTC-PART.PL
ennakkopäätö-ksiä.
precedent-PART.PL
'You and Kristi R. have given strong and allegedly very certain precedents.'

(18) *S Aux_{FCA} $Ptc_{SG/PL}$

a. ****Minä ja ystävä-ni*** *ole-**n*** *odotta-**nut/neet*** *tätä*
I and friends-POSS.1SG be-**1SG** wait-**PTC.SG/PTC.PL** this
jo kauan.
already long
'My friends and I have already waited for this for a long time.'

b. ****Sinä ja Kristi R.*** *ole-**t*** *anta-**nut/neet***
You and Kristi R. be-**2SG** give-**PTC.SG/PTC.PL**
vahvo-j-a ja erittäin varma-ksi väit-etty-jä
strong-PL-PART and very certain-TRANS allege-PTC-PART.PL
ennakkopäätö-ksiä.
precedent-PART.PL
'You and Kristi R. have given strong and allegedly very certain precedents.'

Although the examples in (17) were constructed on the basis of attested examples below, it is possible to find attested examples illustrating this same pattern:

(19) ***Minä ja Fredrik*** *ole-**mme*** *viettä-**neet*** *suuri-mma-n* *osa-n*
I and Fredrik be-**1PL** spend-**PTC.PL** big-SUP-ACC part-ACC
aikuisiästä-mme ulkoma-illa.
adult lives-POSS.1PL abroad-INE
'Fredrik and I have spent most of our adult lives' abroad.' (Web search)

The observation regarding the unavailability of FCA on the auxiliary in (18) is not entirely novel. A similar point is made by van Koppen (2005) using the following examples:

(20) a. ***Minä ja sinä-kin*** *sitä* *ole-**mme*** *käy-**neet*** *Pariisi-ssa.*
I and you-too EXPL be-**1PL** visit-**PTC.PL** Paris-INE
'You and I have visited Paris.'

b. ****Minä ja sinä-kin*** *sitä* *ole-**n*** *käy-**neet*** *Pariisi-ssa.*
I and you-too EXPL be-**1SG** visit-**PTC.PL** Paris-INE
'You and I have visited Paris.'

In case (ii), the subject DP appears between the auxiliary and participle in linear order. In this configuration, full agreement (21) or FCA (22) may be realized on the auxiliary. Again, either singular or plural agreement may be realized on the participle.

(21) Aux_{PL} S $Ptc_{SG/PL}$

a. *Tätä ole-**mme** **minä** **ja** **ystävä-ni** odotta-**nut/neet***
This be-**1PL** **I** **and** **friends-POSS.1SG** wait-**PTC.SG/PTC.PL**
jo kauan.
already long
'My friends and I have already waited for this for a long time.'

b. *Vahvo-j-a ja erittäin varma-ksi väit-etty-jä*
strong-PL-PART and very certain-TRANS allege-PTC-PART.PL
*ennakkopäätö-ksiä ole-**tte** **sinä** **ja** **Kristi R.***
precedent-PART.PL be-**2PL** **you** **and** **Kristi R.**
*anta-**nut/neet**.*
give-**PTC.SG/PTC.PL**
'You and Kristi R. have given strong and allegedly very certain precedents.'

(22) Aux_{FCA} S $Ptc_{SG/PL}$

a. *Tätä ole-**n** **minä** **ja** **ystävä-ni** odotta-**nut/neet***
This be-**1SG** **I** **and** **friends-POSS.1SG** wait-**PTC.SG/PTC.PL**
jo kauan.
already long
'My friends and I have already waited for this for a long time.' (Web search)

b. *Vahvo-j-a ja erittäin varma-ksi väit-etty-jä*
strong-PL-PART and very certain-TRANS allege-PTC-PART.PL
*ennakkopäätö-ksiä ole-**t** **sinä** **ja** **Kristi R.***
precedent-PART.PL be-**2SG** **you** **and** **Kristi R.**
*anta-**nut/neet**.*
give-**PTC.SG/PTC.PL**
'You and Kristi R. have given strong and allegedly very certain precedents.'

Attested examples showing the same pattern of agreement as shown in (21) include the following:

(23) *Pellavantori-lla ole-**mme** **minä** **ja** **turistit** ihaill-**eet***
Pellavantori-ADE be-**1PL** **I** **and** **tourists** admire-**PTC.PL**
kaupunki-mme uusinta kaivuripatsasta.
town-POSS.1PL newest digger statue.PAR
'Tourists and I have admired our town's newest digger statue at Pellavantori.'

Note that in (22), the auxiliary and participle may mismatch in agreement, since the auxiliary may realize FCA, while the participle may realize full agreement. Following Munn (1999), I refer to this pattern as "mixed agreement".[8]

[8] Marušič et al. (2007) report a similar phenomenon in Slovenian in which FCA is realized on a verbal element that precedes the subject in linear order, while LCA is realized on a verbal element that follows the subject in linear order. Marušič et al. (2015) refer to this phenomenon as "sandwiched agreement".

Finally, in case (iii) the subject DP follows both the auxiliary and participle. Not all speakers accept pronominal subjects in this position, at least without the subject being contrasted.[9] For those speakers who do accept this word order without contrasting the subject argument, either full agreement or FCA may be realized on the auxiliary. The participle may realize singular agreement regardless of the form of the auxiliary (24). However, if the participle realizes plural agreement, the auxiliary must as well (25). Plural agreement on the participle and singular agreement on the auxiliary is unacceptable (26).

(24) $Aux_{FCA/PL}$ Ptc_{SG} S

a. *% Tätä ole-**n/-mme** odotta-**nut** **minä** **ja***
This be-**1SG/-1PL** wait-**PTC.SG** **I** **and**
***ystävä-ni** jo kauan.*
friends-POSS.1SG already long
'My friends and I have already waited for this for a long time.'

b. *% vahvo-j-a ja erittäin varma-ksi*
strong-PL-PART and very certain-TRANS
*väit-etty-jä ennakkopäätö-ksiä ole-**t-/tte** anta-**nut***
allege-PTC-PART.PL precedent-PART.PL be-**2SG/-2PL** give-**PTC.SG**
sinä** **ja** **Kristi R.
you **and** **Kristi R.**
'You and Kristi R. have given strong and allegedly very certain precedents.' (Korp)

(25) Aux_{PL} Ptc_{PL} S

a. *% Tätä ole-**mme** odotta-**neet** **minä** **ja** **ystävä-ni***
This be-**1PL** wait-**PTC.PL** **I** **and** **friends-POSS.1SG**
jo kauan.
already long
'My friends and I have already waited for this for a long time.'

b. *% vahvo-j-a ja erittäin varma-ksi*
strong-PL-PART and very certain-TRANS
*väit-etty-jä ennakkopäätö-ksiä ole-**tte** anta-**neet***
allege-PTC-PART.PL precedent-PART.PL be-**2PL** give-**PTC.PL**
sinä** **ja** **Kristi R.
you **and** **Kristi R.**
'You and Kristi R. have given strong and allegedly very certain precedents.'

(26) *Aux_{FCA} Ptc_{PL} S

[9] One anonymous review rejects all examples in (24) and (25) due to the word order. Another consultant judged these examples acceptable. The divergence in opinion is indicated by the % symbol.

a. * *Tätä* *ole-**n*** *odotta-**neet*** ***minä*** ***ja*** ***ystävä-ni*** *jo*
This be-**1SG** wait-**PTC.PL** **I** **and** **friends-POSS.1SG** already
kauan.
long
'My friends and I have already waited for this for a long time.'

b. * *vahvo-j-a* *ja* *erittäin* *varma-ksi*
strong-PL-PART and very certain-TRANS
väit-etty-jä *ennakkopäätö-ksiä* *ole-**t*** *anta-**neet*** ***sinä***
allege-PTC-PART.PL precedent-PART.PL be-**2SG** give-**PTC.PL** **you**
ja ***Kristi R.***
and **Kristi R.**
'You and Kristi R. have given strong and allegedly very certain precedents.'

For those speakers reject the word order in (24) and (25), the same basic patterns can be shown to hold if the subject argument is contrasted. An anonymous reviewer who does not accept (24) and (25) offers the following examples and judgments:

(27) $Aux_{FCA/PL}$ Ptc_{SG} S
Sinne *oo-**t**/-**tte*** *lähte-**ny*** ***sinä*** ***ja*** ***Kristi,*** *ei-kä*
There be-**2SG**/-**2PL** go-**PTC.SG** **you** **and** **Kristi**, not-and
kukaan *muu.*
anyone else.
'You and Kristi have gone there, and no one else.'

(28) Aux_{PL} Ptc_{PL} S
Sinne *ole-**tte*** *lähte-**neet*** ***sinä*** ***ja*** ***Kristi,*** *ei-kä* *kukaan*
There be-**2PL** go-**PTC.PL** **you** **and** **Kristi**, not-and anyone
muu.
else.
'You and Kristi have gone there, and no one else.'

(29) * Aux_{SG} Ptc_{PL} S
* *Sinne* *ole-**t*** *lähte-**neet*** ***sinä*** ***ja*** ***Kristi,*** *ei-kä* *kukaan*
There be-**2PL** go-**PTC.PL** **you** **and** **Kristi**, not-and anyone
muu.
else.
'You and Kristi have gone there, and no one else.'

The possible patterns in clauses containing both auxiliaries and participles are summarized in Table 2 below.

Word Order	Aux_{PL} & Ptc_{PL}	Aux_{FCA} & Ptc_{PL}	Aux_{PL} & Ptc_{SG}	Aux_{FCA} & Ptc_{SG}
S Aux Ptc	✔	✗	✔	✗
Aux S Ptc	✔	✔	✔	✔
Aux Ptc S	✔	✗	✔	✔

Table 2: *Agreement patterns in clauses containing auxiliaries and participles.*

2.3 Cross-Linguistic Comparison

As noted earlier, patterns of FCA in Finnish are strikingly similar to patterns attested in other languages. Comparison of (1) and (11a) reveals that Colloquial Finnish, Lebanese Arabic, Modern Irish, and Polish all allow FCA if the subject DP follows the agreement-bearing element in linear order. Various Dutch dialects exhibit similar patterns of FCA in complementizer agreement (van Koppen 2005, 2012), and Doron (2000) shows that these pattern are also attested in Biblical Hebrew, Spanish, and Modern Greek.

Finnish also patterns with other languages in allowing full agreement when the subject follows an agreement-bearing element. This is not the case in Modern Irish, due to factors regarding the distribution of agreement morphology and *pro* subjects.[10] However, in Lebanese Arabic, Biblical Hebrew, and Polish, full agreement can be realized when a conjoined subject DP follows an exponent of agreement.

(30) a. *Raaḥ-**o*** ***Kariim*** ***w*** ***Marwaan.*** (Lebanese Arabic)
leave-**PST.3PL** **Kareem** **and** **Marwan**
'Kareem and Marwan left.' (Aoun et al. 1994)

b. *wᵊ-ḥannoo*ṭ*ɛrɛ*ṭ *mimmɛnnaa* ***yooḳluu*** (Biblical Hebrew)
and-the remainder from it will eat.**3MPL**
ʔaḥᵃroon ***u-ḇaanaaw***
Aaron **and-sons.POSS.3MSG**
'And the remainder thereof shall Aaron and his sons eat.' (Doron 2000)

c. *Do pokoju* ***wsezli*** ***kobierta*** ***i*** ***chłopiec.*** (Polish)
to room enter.**PST.PL** **woman** **and** **boy**
'Into the room walked a woman and boy.' (Citko 2004)

In Lebanese Arabic and Polish, FCA is impossible if the conjoined subject DP precedes the agreement-bearing element.

(31) a. * ***Kariim*** ***w*** ***Marwaan*** ***raaḥ.*** (Lebanese Arabic)
Kareem **and** **Marwan** leave.**PST.3MS**
'Kareem and Marwan left.' (Aoun et al. 1994)

[10] See McCloskey (1986) for details.

b. **Młoda kobieta i mały chłopiec weszła* (Polish)
young woman and small boy enter.**PST.3FSG**
do pokoju
to room
'A young woman and a small boy entered the room.' (Citko 2004)

In both of the above cases, the corresponding example with full agreement realized on the relevant agreement-bearing element is acceptable. Although acceptability judgments are not available for Biblical Hebrew, according to Doron (2000), only full agreement is attested with pre-verbal conjoined subjects.

(32) a. ***Kariim w Marwaan raaħ-o.*** (Lebanese Arabic)
Kareem and Marwan leave-**PST.3PL**
'Kareem and Marwan left.' (Aoun et al. 1994)

b. ***Młoda kobieta i mały chłopiec weszli*** (Polish)
young woman and small boy enter.**PST.3PL**
do pokoju
to room
'A young woman and a small boy entered the room.' (Citko 2004)

c. *U-**mooššɛɛ** **ʔahᵃroon** **w-ħuur** **ʔaaluu*** (Biblical Hebrew)
and-**Moses** **Aaron** **and-Hur** climbed.**3MPL**
rooš haggiḇʕaa.
head the hill
'And Moses, Aaron, and Hur went up to the top of the hill.'
(Doron 2000)

Finnish also patterns similarly to other languages with respect to clauses containing multiple exponents of agreement. Consider the case of Lebanese Arabic:

(33) a. ***Keen Kariim w Marwaan*** *ʕam* (Lebanese Arabic)
be.**3MSG** **Kareem and Marwan** PROG
yilʕabo.
play.**PL**
'Kareem and Marwan were playing.' (Aoun et al. 1994)

b. ***Keeno Kariim w Marwaan*** *ʕam* (Lebanese Arabic)
be.**3PL** **Kareem and Marwan** PROG
yilʕabo.
play.**PL**
'Kareem and Marwan were playing.' (Aoun et al. 1994)

c. ***Kariim w Marwaan keeno*** *ʕam* (Lebanese Arabic)
Kareem and Marwan be.**3PL** PROG
yilʕabo.
play.**PL**
'Kareem and Marwan were playing.' (Aoun et al. 1994)

Sentences corresponding to either (33a) or (33b) with FCA realized on the verb *yilʃabo* are unacceptable, as are sentences corresponding to (33c) with FCA realized on either the auxiliary or *yilʃabo*. This exactly matches the patterns seen in Colloquial Finnish, with the exception that the participle in Colloquial Finnish may appear in the default singular form regardless of the position of the subject.

In Modern Irish, it is not possible to observe the full agreement paradigm exhibited by Colloquial Finnish, again due to restrictions on the distribution of verbal agreement morphology and null *pro* subjects. However, Modern Irish does show a mixed agreement pattern analogous the pattern in (22) and (33a):

(34) ***Bhínn*** ***pro-féin*** ***agus*** ***an*** ***seanduine*** (Modern Irish)
be.**PST.HAB.1SG** ***pro*-EMPH** **and** **the** **old fellow**
ʼnár *suí.*
1PL sit.PTC
'The old fellow and I used to be sitting.' (McCloskey 1986)

In (34), the auxiliary *bhínn* realizes FCA, while the agreement particle *ʼnár* realizes agreement with the full, conjoined subject. Thus, the core part of the generalization about Finnish FCA is borne out in the other languages considered here: FCA is optional with an agreement-bearing element only if the subject DP follows this element in linear order. Otherwise, full agreement is obligatory.[11]

3 Finnish Clause Structure

My ultimate goal is to provide a theoretical explanation for the generalization regarding agreement and word order given in §2. In order to develop such an account, it is necessary to make certain assumptions about the clause structure of Finnish. In this section, I lay out these assumptions, which are drawn from Holmberg et al. (1993) and Holmberg & Nikanne (2002), and which consistently assume that asymmetric c-command corresponds to linear precedence (Kayne 1994). I modify the proposals of Holmberg et al. (1993) and Holmberg & Nikanne (2002) only in assuming the existence of a functional head *v* between the Ptc and V heads, following Kratzer (1996) and much subsequent work.

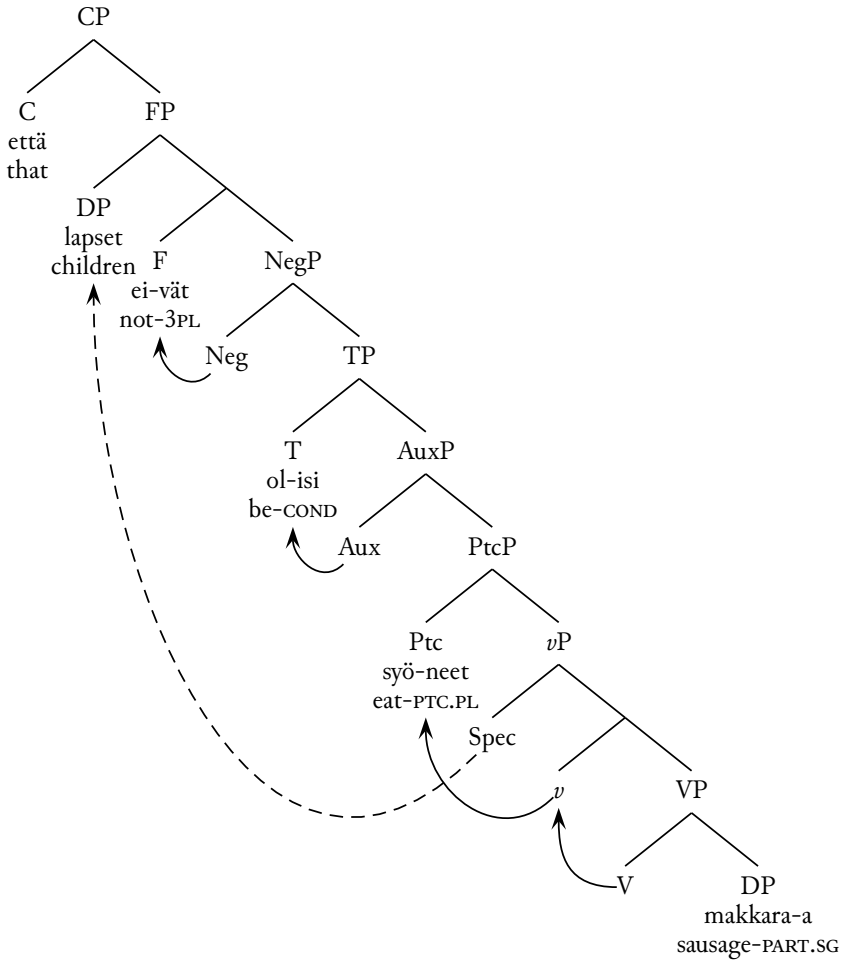
To illustrate the full finite clause structure in Finnish, consider the following clause:

(35) *…että* *lapset* *ei-vät* *ol-isi* *syö-neet* *makkara-a.*
…that children not-3PL be-COND eat-PTC.PL sausage-PART.SG
'…that the children wouldn't have eaten the sausage.'

The structure of the clause in (35) is given in (36).

[11] One pattern not regularly observed in the cross-linguistic data is the case in which a subject DP follows two exponents of agreement in linear order. Such word orders are not discussed in McCloskey (1986), Aoun et al. (1994), or van Koppen (2012). My own fieldwork suggests that the word order Aux V S is highly dispreferred in Lebanese Arabic, although Tucker (2011) suggests it may be acceptable if the auxiliary and verb receive a contrastive focus interpretation.

(36)



The F head between T and C is a finiteness head and hosts the highest element in the clause realizing agreement with the subject DP. Ptc is a participle head that is selected by Aux.

The heads Neg, Aux, and Ptc are not present in all clauses. Main verbs are base generated in V. If the clause does not contain Aux and Ptc heads, verbs successive-cyclically raise at least to T. If Aux and Ptc heads are present, main verbs raise to Ptc, and auxiliaries raise from Aux to T. If the clause does not contain a Neg head, whatever occupies T (either an auxiliary or main verb) raises to F. If a Neg head is present, the negation particle raises to F. Agreement is realized on the element appearing in F and, at least sometimes, that in Ptc. As shown above, in Colloquial Finnish, a default, non-agreeing form may appear in Ptc. For this reason, I take F to always be a ϕ-probe that must locate a node with valued ϕ-features with which to agree. In contrast, I assume there are two forms of Ptc, one of which is a ϕ-probe, and one of which is not.[12]

[12] A full definition of the operation Agree appears in the following section. Note that an alternative analysis would assume that only one functional head in the clause enters an agreement relationship and that the agreement morphology on the other functional head is parasitic on this first relationship. Such an analysis is proposed in accounting for FCA and LCA in Hindi-Urdu in Bhatt & Walkow (2013). I reject this analysis due to the possibility of mixed agreement in Finnish (22). Since the agreement morphology realized on an auxiliary and participle may mismatch, this suggests that the relevant functional heads enter into independent agreement relationships.

The most important aspect of this clause structure for the analyses of FCA discussed below will be the position of the subject DP with respect to the functional heads F and Ptc. In (36), the subject DP is base generated in the specifier of *v*P and raises to the specifier of FP. Although subject DPs are always base generated in Spec, *v*P, they do not always raise to occupy Spec, FP. Rather, Spec, FP must be occupied by some phrase that is "referential in a broad sense", including direct object DPs and locative and temporal adverbs (Holmberg & Nikanne 2002). If Spec, FP is not occupied by the subject DP, the subject may occupy some lower position in the clause. The following examples from Holmberg & Nikanne (2002) illustrate a case in which the subject DP occupies Spec, FP (37a), as well as a case in which it does not (37b):

(37) a. [$_{FP}$ [$_{Spec,FP}$ *Graham Greene*] *on* [$_{PtcP}$ *kirjoitta-nut*
Graham Greene be.3SG write-PTC.SG
[$_{VP}$ *tämä-n kirja-n*]]].
this-ACC book-ACC
'Graham Greene has written this book.'

b. [$_{FP}$ [$_{Spec,FP}$ *Tämä-n kirja-n*] *on* [$_{PtcP}$ *kirjoitta-nut*
This-ACC book-ACC be.3SG write-PTC.SG
[$_{vP}$ *Graham Greene*]]].
Graham Greene
'Graham Greene has written this book.'

In (37b), the subject is below the participle, indicating that it remains in its base generated position of Spec, *v*P. There is also evidence that the subject may occupy other positions between F and *v*. Again, the examples below are from Holmberg & Nikanne (2002):

(38) a. [$_{CP}$ *Ui-maan* [$_{FP}$ [$_{Spec,FP}$ *sitä*] *ei-vät*
Swim-INF EXPL not-3PL
[$_{TP}$ [$_{Spec,TP}$ *nämä lapset*] *ol-isi* [$_{PtcP}$ *ikinä*
these children be-COND ever
oppi-neet]]]].
learn-PTC.PL
'To swim, these children would never have learned.'

b. [$_{CP}$ *Ui-maan* [$_{FP}$ [$_{Spec,FP}$ *sitä*] *ei-vät* [$_{TP}$ *ol-isi*
Swim-INF EXPL not-3PL be-COND
[$_{PtcP}$ [$_{Spec,PtcP}$ *nämä lapset*] *ikinä oppi-neet*]]]].
these children ever learn-PTC.PL
'To swim, these children would never have learned.'

In (38a), the subject DP *nämä lapset* immediately precedes the conditional auxiliary *olisi* in T. On the basis of this, I take the subject to occupy Spec, TP. In (38b), the subject DP appears between the conditional auxiliary and participle.[13] Here, I assume that the subject occupies Spec, PtcP.

[13] I assume that *ikinä* is a Ptc adjunct.

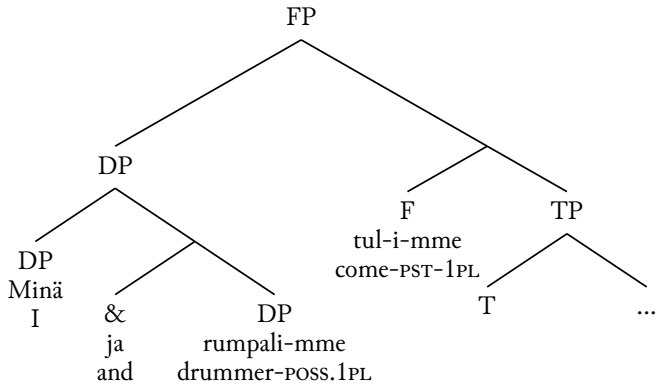
Recall that the relevant examples in §2 involved clauses containing either one or two exponents of subject-verb agreement. In the former case, the subject could appear either pre- or post-verbally. These options are illustrated in (39a) and (39b), repeated from (9a) and (11a) above.

(39) a. ***Minä*** ***ja*** ***rumpali-mme*** *Hietalan* *Antti* *tul-i-**mme***
I **and** **drummer-POSS.1PL** Hietalan Antti come-PST-**1PL**
mukaan *silloin.*
along then
'Then our drummer Hietalan Antti and I came along.'

b. *Silloin* *mukaan* *tul-i-**mme*** ***minä*** ***ja*** ***rumpali-mme***
then along come-PST-**1PL** **I** **and** **drummer-POSS.1PL**
Hietalan *Antti.*
Hietalan Antti
'Then our drummer Hietalan Antti and I came along.'

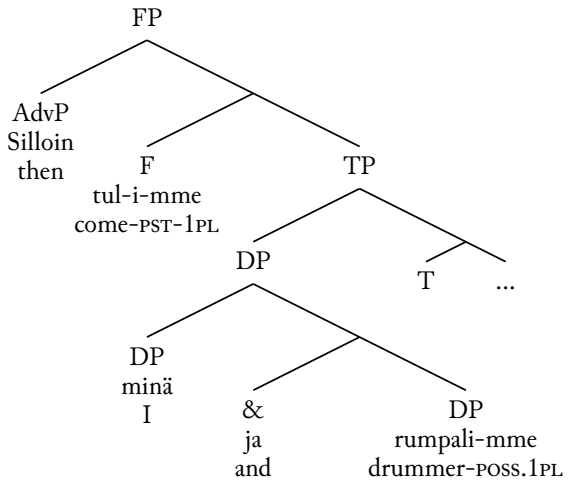
The positions of the subject in these clauses are illustrated in (40a) and (40b) below:[14]

(40) a. Pre-verbal subject



[14] Note that I assume that coordinated DPs have an asymmetric structure in which the first conjunct asymmetrically c-commands the second (Kayne 1994, Munn 1993, Zoerner 1995). The asymmetric structure of conjunction will be critical for the analyses of FCA discussed in §4, although one analysis assumes that coordinated subjects may have a different structure. I remain agnostic about the syntactic category or label assigned to the coordinated structure. That is, the coordinate structure may be assigned the label DP, BP, &P, etc., so long as the asymmetric relationship between the first and second conjuncts is maintained.

b. Post-verbal subject



Pre-verbal subjects occupy Spec, FP. In (40b), the subject is shown in Spec, TP, but this is done only for the sake of concreteness. The surface word order is compatible with the subject occupying either Spec, TP or Spec, *v*P. The choice about the exact position of the subject DP within such clauses will have no consequences for the analyses of FCA discussed in the following section.

In clauses containing both an auxiliary and a participle, the subject may appear either preceding the auxiliary, medially between the auxiliary and participle, or following the participle. These possibilities are illustrated in (41a), (41b), and (41c), repeated from (17a), (21a), and (25a).

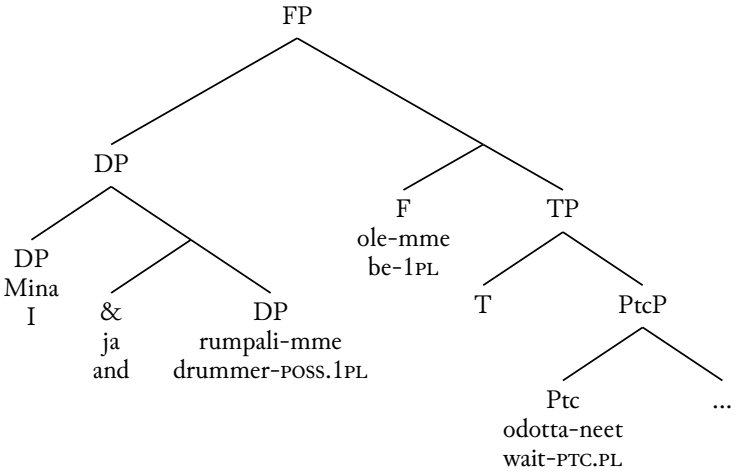
(41) a. ***Minä*** ***ja*** ***ystävä-ni*** *ole-**mme*** *odotta-**neet*** *tätä*
I **and** **friends-POSS.1SG** be-**1PL** wait-**PTC.PL** this
jo *kauan.*
already long
'My friends and I have already waited for this for a long time.'

b. *Tätä* *ole-**mme*** ***minä*** ***ja*** ***ystävä-ni*** *odotta-**neet***
This be-**1PL** **I** **and** **friends-POSS.1SG** wait-**PTC.PL**
jo *kauan.*
already long
'My friends and I have already waited for this for a long time.'

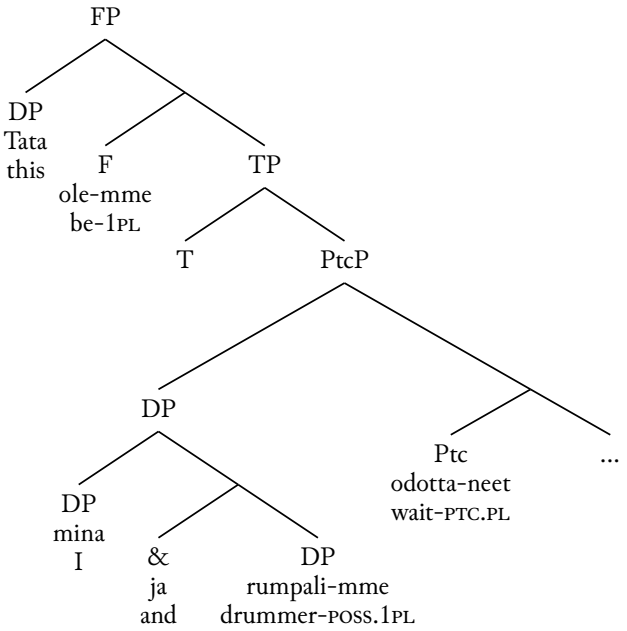
c. *Tätä* *ole-**mme*** *odotta-**neet*** ***minä*** ***ja*** ***ystävä-ni***
This be-**1PL** wait-**PTC.PL** **I** **and** **friends-POSS.1SG**
jo *kauan.*
already long
'My friends and I have already waited for this for a long time.'

The positions of the subject DP in these clauses are shown below:

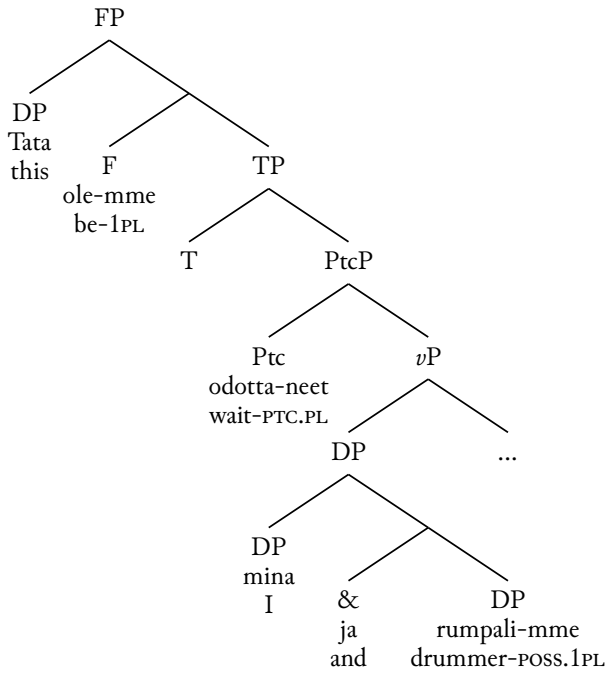
(42) a. Subject precedes both auxiliary and participle



b. Subject appears between auxiliary and participle



c. Subject follows both auxiliary and participle



When clause-initial, subject DPs occupy Spec, FP. In the clause medial position, I show the subject DP occupying Spec, PtcP. Technically, the surface word order in (41b) is consistent with the subject DP occupying either Spec, PtcP or Spec, TP. As with the assumption regarding the position of the subject DP in (40b), this choice will not have consequences for the theories discussed below. Finally, if the subject follows the participle in linear order, it occupies Spec, *v*P.

4 Analyses of Finnish First Conjunct Agreement

Recall that the basic generalization of FCA in Colloquial Finnish is that FCA is possible if a conjoined subject follows an agreement-bearing element in linear order, but not if the subject precedes such an element. The Colloquial Finnish paradigms are attested in whole or part in a number of other languages, as discussed in §2.3. This fact will be helpful in developing an analysis of Finnish FCA in two ways. First, it suggests that it may be possible to extend existing analyses of FCA in other languages to handle the Finnish data. Second, it suggests that whatever accounts for FCA in Finnish is not an idiosyncratic feature of Finnish syntax, but rather something more fundamental about the interaction between agreement, coordination, and word order.

Below, I only consider previous analyses of languages that exhibit the same agreement patterns with coordinated subjects as seen in Colloquial Finnish. That is, I only consider existing proposals for languages in which FCA is optional when a coordinated subject DP is post-verbal, full agreement is obligatory when a coordinated subject DP is pre-verbal, and LCA is never possible. This rules out consideration of proposals for languages in which both FCA and LCA are attested. It also rules out consideration of É. Kiss's (2012) discussion of FCA-like phenomena in Hungarian in which singular agreement with

a coordinated subject DP subject may be realized when the subject is either pre- or post-verbal.[15]

Before considering any particular analyses, it is worthwhile to lay out some common assumptions they share. In particular, these analyses assume the existence of an operation Agree, whose definition roughly follows Chomsky (2000, 2001):

(43) A functional head P (the "probe") Agrees with a node G (the "goal") iff:[16]

a. P has unvalued, uninterpretable ϕ features (uϕ features).

b. G has valued, interpretable ϕ features.

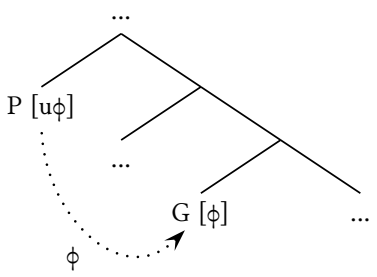
c. P c-commands G.

d. There is no node H such that P c-commands H, H asymmetrically c-commands G, and H has valued ϕ features.

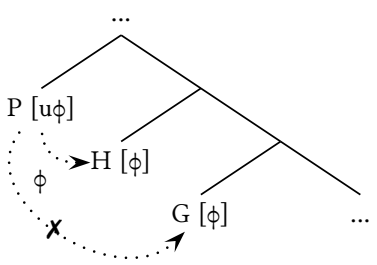
Note that ome of the analyses discussed below assume a definition of Agree that differs from that in (43). Where relevant, I highlight these differences.

An illustration of a probe Agreeing with a goal is given in (44a). In (44b), I show how an intervener H may block agreement between a probe and a potential goal.

(44) a.



b.



It is also standardly assumed that an element with uϕ-features Agrees as soon as it enters the syntactic derivation.

[15] É. Kiss (2012) argues that Hungarian lacks both FCA and LCA and that the resolved number feature of a coordinate DP consisting of two or more singular conjuncts is singular, not plural.

[16] Notably absent from this definition is the "activity condition," which requires that a potential goal for Agree has some unvalued, uninterpretable Case that is valued via Agree. I do not adopt this assumption due to the fact that I assume that there may be multiple Agree relationships within a single clause in Finnish: one with Ptc and one with F. If I further assumed the activity condition, DPs would be required to have two unvalued, uninterpretable features, one for each Agree relationship. There is no independent evidence for two such features. Rather than the activity condition, I assume that agreement in Finnish is case-discriminating in the sense of Bobaljik (2008) and Preminger (2014).

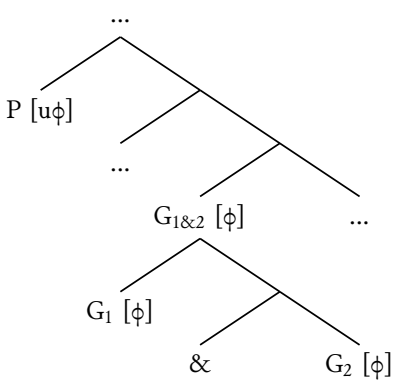
4.1 Structural Ambiguity

I begin by considering three proposals that argue that FCA and full agreement each arise as the result of a different syntactic structure of the coordinated subject DP. All three structural ambiguity approaches rely on an assumption about Agree that deviates from the definition in (43). In particular, these analyses assume that both asymmetric c-command and dominance are relevant for determining which node is most local to a ϕ-probe. Thus, condition (43d) is revised as follows:

(45) There is no node H such that P c-commands H, H asymmetrically c-commands *or dominates* G, and H has valued ϕ features.

To illustrate the implications of this change, consider a probe P whose c-command domain includes a coordinated constituent $G_{1\&2}$:

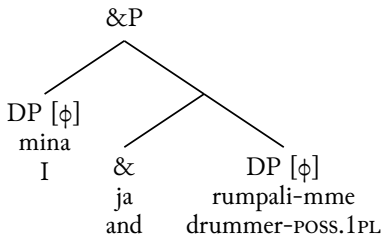
(46)



According to the definition in (43), both $G_{1\&2}$ and G_1 are potential goals for P because neither asymmetrically c-commands the other.[17] In contrast, if (45) is assumed instead of (43d), only $G_{1\&2}$ is a potential goal, since it dominates G_1. Note that G_2 is not a potential goal according to either definition, since it is asymmetrically c-commanded by G_1 and dominated by $G_{1\&2}$.

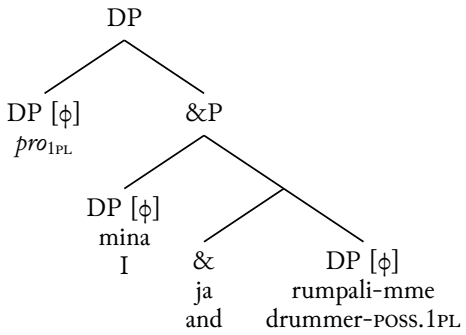
Citko (2004) offers a structural ambiguity analysis of FCA, accoring to which coordinated DPs may have one of the following syntactic structures:

(47) a. "Bare" Structure



[17] This follows on the assumption that if a node α dominates a node β, neither α nor β c-commands the other (Reinhart 1976). As noted by Barker & Pullum (1990), some definitions of c-command do not make this assumption. Nonetheless, the complementarity of c-command relations and dominance relations is preserved in most recent definitions of c-command (Barker 2012, Chomsky 2001).

b. "Plural Pronoun" Structure

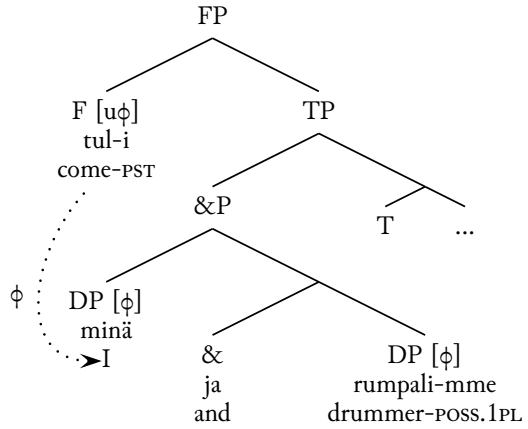


The bare structure is the asymmetric structure of coordination assumed in the previous section based on the proposals from Munn (1993), Kayne (1994), and Zoerner (1995). Note, however, that Citko (2004) assumes that the constituent formed from the coordination of two DPs is of a different syntactic category, &P, that does not possess ϕ features. That is, there is no node in the structure in (47a) that possesses first-person plural ϕ features. In contrast, the structure in (47b) contains a node containing a null *pro* with ϕ features that would be expected to arise from feature resolution of the conjuncts. With these assumptions, FCA arises via agreement with the first conjunct in the structure in (47a), whereas full agreement arises via agreement with the null *pro* in (47b).

Two recent analyses of Arabic FCA presented by Soltan (2007) and Larson (2013) share similar intuitions, but differ in the details. Each analysis assumes that some obligatory syntactic operation O may occur either early or late in the syntactic derivation, either before or after Agree. On Soltan's account, O is the operation Merge. On Larson's account, Merge is decomposed into two sub-operations: Concatenate and Label (Hornstein 2009). Although Concatenation must occur immediately in the syntactic derivation, Labelling may be delayed. Hence, Label is the relevant operation O used to account for FCA. If O occurs before Agree, the full conjunction is a potential goal for Agree. If O occurs after Agree, only the first conjunct is a goal for Agree.

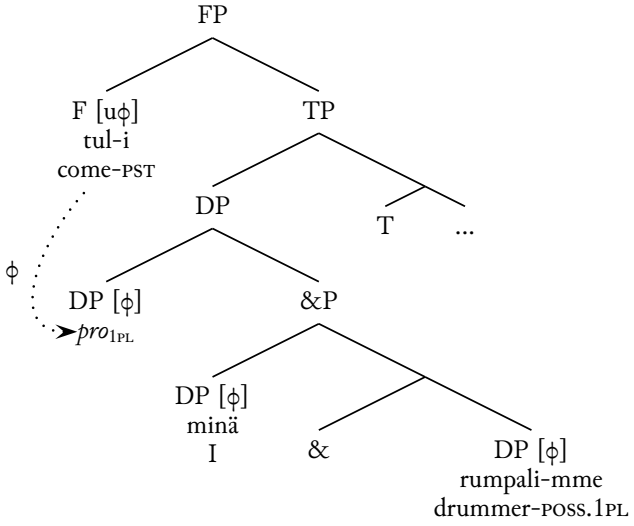
Now consider how Citko (2004), Soltan (2007), and Larson (2013) would account for a Finnish clause in which there is only a single exponent of agreement and the subject is post-verbal. In this case, the only relevant functional head for agreement is F and the subject DP is in the c-command domain of F. On Citko's (2004) analysis, if the subject DP has the bare structure, only the first conjunct is a potential goal for Agree; the &P node does not possess ϕ features, while the second conjunct is not local enough to F because it is asymmetrically c-commanded by the first conjunct (48).

(48) Agreement with bare coordinate structure



If the subject DP instead has the plural pronoun structure, the silent *pro* is the only potential goal. Now, both overt conjuncts are asymmetrically c-commanded by *pro*, and are therefore too distant from F to be targeted by Agree (49).[18]

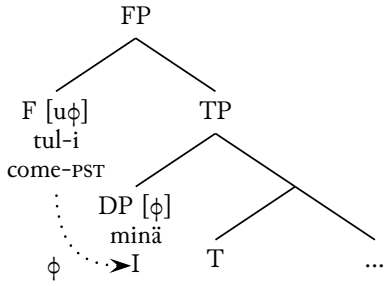
(49) Agreement with plural pronoun coordinate structure



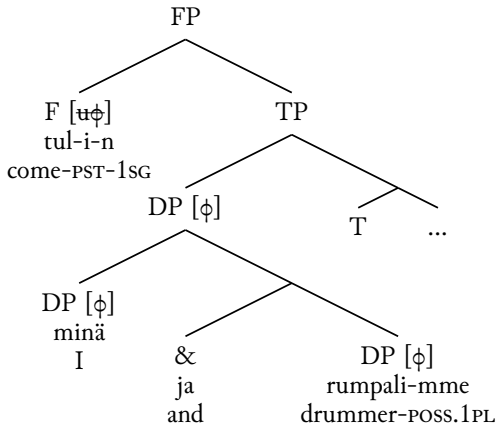
Now consider the late operations analyses. FCA arises if only the first conjunct is a potential goal for Agree (50a) due to O occurring after Agree (50b).

[18] Citko (2004) does not explicitly state whether the maximal DP dominating *pro* possesses ϕ-features or not. Below I argue that it may be necessary for Citko to assume that F Agrees with this maximal DP, in which case it would be necessary to assume that this DP possesses ϕ-features. Presumably, these features would be acquired via feature percolation from *pro*. However, Citko's prose suggests that she intends for full agreement to arise from agreement with *pro* directly, rather than the node dominating *pro*.

(50) a. Agree occurs before O

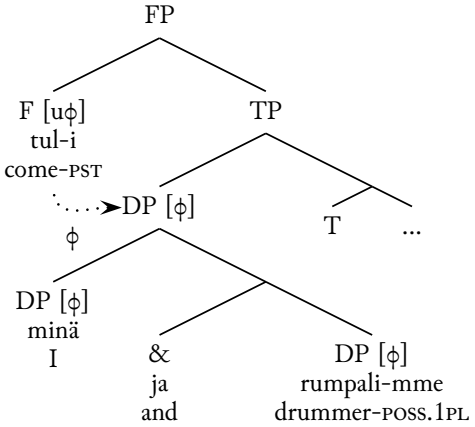


b. O occurs



If instead O occurs early, the full, conjoined DP is targeted by F for agreement (51).

(51) O occurs before Agree



Thus, on all three accounts, either FCA or full agreement may be realized if the subject DP remains below T.

These accounts must also have some way to exclude FCA when subjects are pre-verbal. Citko (2004) assumes that Agree feeds movement, an idea that will be discussed at greater length below. In the case of Finnish, this idea can be stated as a requirement that in order for a subject DP to raise to Spec, FP, there must be an Agree relation between F and the moved DP. Now, in the case of FCA, F has formed an Agree relation with only the first conjunct of the subject DP. The full subject cannot raise to Spec, FP because there is

no Agree relation between &P and F. The first conjunct cannot raise to Spec, FP either, because doing so would incur a violation of the Coordinate Structure Constraint (CSC; Ross 1967). Therefore, bare coordinate structures must remain below F and FCA is only observed with post-verbal subjects.

However, Citko (2004) offers no explanation for how to account for full agreement with pre-verbal subjects. On her analysis, full agreement does not arise from agreement with the full subject DP, but rather only the null *pro* within this DP. If F Agrees with *pro*, there is no Agree relation between the full subject DP and F. Thus, the subject is predicted to be unable to raise to Spec, FP. This problem can be resolved by assuming that *pro*'s ϕ features percolate to the maximal DP node. In this case, F can Agree with the full DP, which may then raise to Spec, FP. Note, however, that Citko (2004) does not explicitly endorse this analysis.

Soltan (2007) and Larson (2013) differ in their explanations for obligatory full agreement with pre-verbal subjects. Soltan assumes that pre-verbal "subjects" in Arabic are actually topics base generated in Spec, TP. These topics are coindexed with a null *pro* subject lower in the clause, and agreement is with this *pro*. Since *pro* is coindexed with the full, conjoined DP in Spec, TP, full agreement is obligatory. In contrast, on Larson's (2013) account, pre-verbal subjects are derivationally related to lower positions in the clause structure. However, in order for subjects to undergo movement to a higher position, O must have occurred. Since the application of O also ensures full agreement with a conjoined subject DP, pre-verbal subjects only co-occur with full agreement. In extending the late operations analysis to Finnish, it is easiest to follow Larson's (2013) suggestion, since this accords with the clause structure laid out in §3. On this view, only when F Agrees as in (51) can the subject DP undergo movement to Spec, FP. Thus, only full agreement may be realized when the subject is pre-verbal.

So far, I have only considered how these accounts handle clauses with single exponents of agreement. Below, I demonstrate that clauses with multiple exponents of agreement cause problems for all accounts based on structural ambiguities. But before considering such clauses, I note another issue that arises for Citko's (2004) proposal. The ϕ-features of the null *pro* in the plural pronoun structure must be constrained such that they are what would be expected from resolution of the ϕ features of the conjuncts within the &P. It is not obvious how this constraint operates. It cannot occur through Agree, since there is no node within &P that possesses the resolved ϕ features, e.g. there is no node within the &P in (47b) that possesses first-person plural ϕ features. It is also not possible for these features to be determined by percolation, since Citko (2004) explicitly states that &P lacks ϕ features. Thus, it remains mysterious how the ϕ features of this null *pro* are to be constrained.

Additional issues for all three structural ambiguity approaches emerge upon consideration of clauses containing multiple exponents of agreement, particularly clauses exhibiting mixed agreement (22). Recall that in these cases, the auxiliary realizes FCA and the participle realizes full agreement. For Citko's (2004) account, the problem is that coordinate subjects are assumed have either the bare structure, which triggers FCA, or the plural pronoun structure, which triggers full agreement. This predicts that in clauses with multiple exponents of agreement, either both exponents should realize FCA or both should

realize full agreement. But mixed agreement clauses show that it is possible for the same subject to trigger *both* FCA and full agreement.

This basic problem also arises for Soltan (2007) and Larson (2013), although the details are slightly different. Soltan (2007) and Larson (2013) assume that some operation O converts a structure from one that obligatorily triggers FCA to one that obligatorily triggers full agreement. These assumptions lead to the prediction that in a clause with two ϕ-probes, Ptc and F, such that F asymmetrically c-commands Ptc, the following should be possible:

(i) If O occurs before agreement with Ptc, full agreement is realized on both Ptc and F.

(ii) If O occurs after agreement with Ptc, but before agreement with F, FCA is realized on Ptc, and full agreement is realized on F.

(iii) If O occurs after agreement with F, FCA is realized on both Ptc and F.

However, these analyses predict that it should be impossible for Ptc to realize full agreement, while F realizes FCA. This follows because in order for full agreement to be realized on Ptc, O must occur before Ptc Agrees. Since functional heads Agree as soon as they enter the syntactic derivation and Ptc is Merged before F is Merged, Ptc Agrees before F. But since O must occur before Ptc Agrees, it must occur before F Agrees. Finally, because O has occurred before F Agrees, only full agreement with F should be licit. Crucially, the mixed agreement examples in (22) show what the late operations analyses predict to be impossible: full agreement on Ptc and FCA on F.

All three analyses based on accounting for FCA and full agreement via differences in the structure of the coordinated subject are flawed. Therefore, in the next section I consider an alternative account that is not based on the coordinated subject being structurally ambiguous. Rather, this approach assumes a single structure of the conjoined subject DP and attempts to explain the possibility of FCA and/or full agreement on the basis of the subject's position in the clause.

4.2 Constraints on Movement

Doron (2000), van Koppen (2012), and Crone (2015) propose analyses of FCA in Biblical Hebrew, dialectal Dutch, and non-standard dialects of Arabic, respectively, that rely on assumptions about the connection between Agree and movement to subject positions. First, these analyses assume the definition of Agree given in (43). Importantly, this definition defines locality only in terms of asymmetric c-command (43d), rather than in terms of asymmetric c-command and dominance (45). Next, these analyses assume that it is impossible to extract a single conjunct from a coordinate structure, following the CSC. Note that the CSC is active in Finnish, as shown by the following examples:

(52) a. *[*Kenet*]$_i$ *tapas-i-t* t_i *ja* *Pekka?*
who.ACC meet-PST-2SG *t* and Pekka?
'Who did you meet and Pekka?'

b. *[*Kenet*]$_i$ *tapas-i-t* *Pekka* *ja* t_i*?*
who.ACC meet-PST-2SG Pekka and *t*?
'Who did you meet Pekka and?'

c. * [*Psykologi*]$_i$ *on/o-vat* t_i *ja* *kielitieteilijä*
psychologist be.3SG/be-3PL *t* and linguist
ta-vanneet *min-ut.*
meet-PTC.PL me-ACC
'A psychologist and a linguist have met me.'

d. * [*Psykologi*]$_i$ *on/o-vat* *kielitieteilijä* *ja* t_i
psychologist be.3SG/be-3PL linguist and *t*
ta-vanneet *min-ut.*
meet-PTC.PL me-ACC
'A psychologist and a linguist have met me.'

As the above examples show, it is impossible to extract only one conjunct from a coordinated phrase in either Ā-movement or A-movement. Note that it has been argued that other languages allow for CSC violations. For example, Bošković (2009) develops an analysis of FCA and LCA in Serbo-Croatian that depends upon the violability of the CSC in Serbo-Croatian. If Finnish likewise allowed such violations, the following proposal would not be tenable.

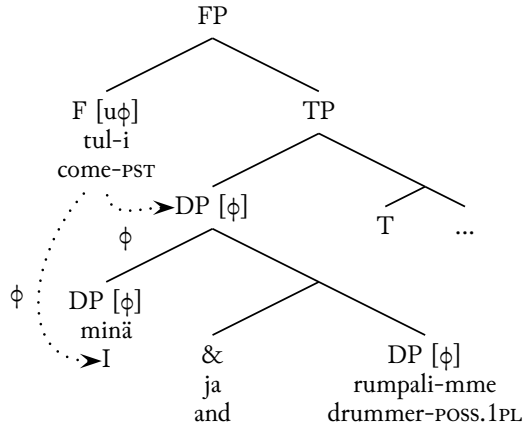
This family of analyses next makes the following assumption regarding agreement and movement:

(53) A phrase XP will move to a position Spec, YP iff:
a. Y has an EPP feature.
b. Y is in an Agree relation with XP.

Taking each of these conditions in turn, the EPP feature is a formal device used to ensure movement of the subject to the specifier position of a particular phrase. Thus, if the subject DP appears in Spec, FP, these analyses assume that F has an EPP feature; if the subject DP appears in Spec, PtcP, it is assumed that Ptc has an EPP feature. Next, the condition in (53b) encodes the idea that agreement feeds movement. This idea is present in the original definition of Agree (Chomsky 2000, 2001), and Citko (2004) also uses this assumption to rule out FCA occurring with pre-verbal subjects. More recently, Preminger (2014) has defended a more restricted version of (53b). According to Preminger, agreement between Y and XP is a prerequisite for movement to Spec, YP only if Spec, YP is a "canonical subject position" in a given language. Since I only consider movement to subject positions here, it is immaterial whether I adopt the constraint as stated in (53) or Preminger's more restricted constraint.

To illustrate how this analysis works, again consider a clause containing only one exponent of agreement and suppose the subject DP is in the c-command domain of F. As discussed above, it follows from the definition of Agree in (43) that either the first conjunct or full conjunction is a potential goal for Agree, since neither asymmetrically c-commands the other. Because both are potential goals, F optionally Agrees with either (54).

(54) F targets either the first conjunct or full conjunction for agreement



If the subject remains in this position within the c-command domain of F, the element in F may realize either FCA or full agreement.

Now suppose F has an EPP feature, requiring movement of a DP to Spec, FP. Following the constraint in (53), the DP that raises to Spec, FP must be in an Agree relationship with F. Using the same reasoning that underlies Citko's (2004) proposal for why FCA can never occur with pre-verbal subjects, it follows that if F has Agreed with the first conjunct of a coordinated subject DP, one of our assumptions must be violated:

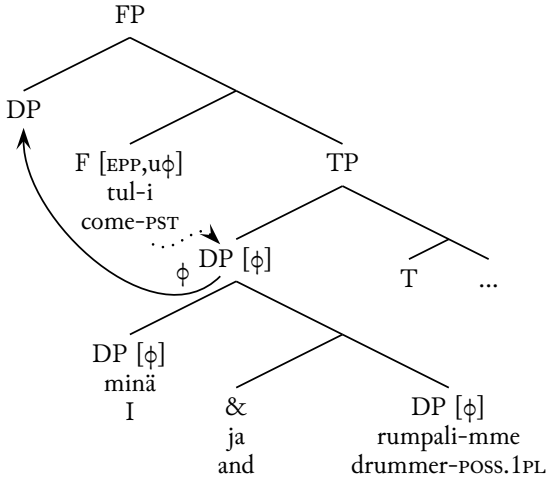
(i) If the first conjunct alone is moved to Spec, FP, the CSC is violated.

(ii) If the first conjunct is not moved to Spec, FP and nothing else is moved to Spec, FP, (53a) is violated.

(iii) If the full conjunction is moved to Spec, FP, (53b) is violated.

Assuming that a successful derivation cannot violate either the CSC or the constraints in (53), there is no derivation in which F possesses an EPP feature and Agrees with the first conjunct of a coordinated subject DP. In contrast, if F possesses an EPP feature and Agrees with the full conjunction, nothing prevents movement of the full conjunction to Spec, FP.

(55) F targets the full conjunction for agreement, and the full conjunction moves to Spec, FP



Thus, this analysis ensures that pre-verbal subjects in Spec, FP only co-occur with full agreement on F.

The same basic account can be applied to cases involving multiple exponents of agreement. In particular, the account succeeds in explaining the mixed agreement data that proved problematic for the late operations approaches. Recall that in these cases, the subject DP appears in a clause-medial position between F and Ptc. Suppose Ptc possesses an EPP feature. Then, using the same reasoning as above, Ptc can only Agree with the full conjunction and the full conjunction raises to Spec, PtcP.[19] Next, F probes its c-command domain to Agree. If F does not possess an EPP feature, then it may target either the first conjunct or full conjunction. If it targets the first conjunct, FCA will be realized on the auxiliary in F, while full agreement will be realized on the participle in Ptc (22).

Despite its success in explaining mixed agreement cases, this account suffers from other issues. First, there is a theoretical concern to the effect that the condition in (53) is insufficient to block FCA with F followed by movement of the full coordinated DP to Spec, FP. The worry is that if some constituent X is targeted for movement, but that movement of X is blocked for some reason, a general pied-piping mechanism will identify the minimal constituent Y such that Y contains X and Y may undergo movement. This constituent Y will then undergo movement. Suppose F Agrees with the first conjunct DP and targets this DP for movement. Due to the CSC, this DP cannot undergo movement. The pied-piping mechanism will then identify the entire coordinated structure as the minimal constituent that can undergo movement. The full DP will then raise to Spec, FP despite F's Agree relation with only the first conjunct.[20]

Whether this argument proves fatal for the theory outlined here will ultimately depend upon particular details of the theory of pied-piping that is adopted. But there is independent, empirical evidence in Finnish that casts doubt on an account of FCA via constraints on movement. First, there is independent evidence that agreement does not feed movement to specifier positions in Finnish. Recall example (37b), repeated in (56) below.

(56) [$_{FP}$ [$_{Spec,FP}$ *Tämä-n* *kirja-n*] *on* [$_{PtcP}$ *kirjoitta-nut*
This-ACC book-ACC be.3SG write-PTC.SG
[$_{vP}$ *Graham* *Greene*]]].
Graham Greene
'Graham Greene has written this book.'

In (56), the specifier of FP is occupied by an accustaive DP with which F does not Agree. It is also possible to find clauses in which even the movement of a nominative subject DP to a specifier position Spec, XP does not co-occur with agreement between the DP in question and X. Recall (38a), repeated below as (57).

[19] This assumes that the Ptc head in the clause is a ϕ-probe, as opposed to the non-agreeing Ptc head.
[20] Thanks to Boris Harizanov (p.c.) for bringing this issue to my attention.

(57) [CP *Ui-maan* [FP [Spec,FP *sitä*] *ei-vät* [TP [Spec,TP *nämä*
Swim-INF EXPL not-3PL these
lapset] *ol-isi* [PtcP *ikinä* *oppi-neet*]]]].
children be-COND ever learn-PTC.PL
'To swim, these children would never have learned.'

In (57), the subject DP occupies Spec, TP and T is occupied by the conditional form of the auxiliary *olisi*. Notably, *olisi* does not realize any ϕ-agreement, as can be seen by comparing (57) to (58).

(58) [CP *Ui-maan* [FP [Spec,FP *sitä*] *ei* [TP [Spec,TP *tämä* *lapsi*]
Swim-INF EXPL not this child
ol-isi [PtcP *ikinä* *oppi-nut*]]]].
be-COND ever learn-PTC.SG
'To swim, this child would never have learned.'

Although the agreement morphology on both the negation particle and participle differ between (57) and (58), the conditional *olisi* is unchanged. The failure of *olisi* to realize agreement cannot be explained by taking *olla* ('be') to have no morphological form that realizes both conditional mood and ϕ-agreement, since such a form can be realized in a clause in which the auxiliary, rather than *ei*, occupies F.

(59) [CP *Ui-maan* [FP [Spec,FP *sitä*] *ol-isi-vat*
Swim-INF EXPL be-COND-3PL
[TP [Spec,TP *nämä* *lapset*] [PtcP *oppi-neet*]]]].
these children learn-PTC.PL
'To swim, these children would have learned.'

Therefore, it is possible to conclude that although the subject DP occupies Spec, TP in examples (57) and (58), there is no realization of agreement with T.

A final problem for the analysis of FCA based on constraints on movement involves examples such as (20a) and (20b), repeated below as (60a) and (60b).

(60) a. [CP [Spec,CP ***Minä*** ***ja*** ***sinä-kin***] [FP [Spec,FP *sitä*]
I **and** **you-too** EXPL
*ole-**mme*** [PtcP *käy-**neet*** *Pariisi-ssa*]]].
be-**1PL** visit-**PTC.PL** Paris-INE
'You and I have visited Paris.'

b. *[CP [Spec,CP ***Minä*** ***ja*** ***sinä-kin***] [FP [Spec,FP *sitä*]
I **and** **you-too** EXPL
*ole-**n*** [PtcP *käy-**neet*** *Pariisi-ssa*]]].
be-**1SG** visit-**PTC.PL** Paris-INE
'You and I have visited Paris.'

Following Holmberg & Nikanne (2002), I assume that the expletive *sitä* occupies the Spec, FP position. The pre-verbal subject DP therefore occupies a higher position, which

Holmberg and Nikanne identify as Spec, CP. Crucially, these data show that full agreement with a pre-verbal subject is obligatory even when the pre-verbal subject does not occupy Spec, FP.[21] The following examples similarly show that when a non-subject occupies Spec, FP and the subject occupies a higher position, only full agreement is possible.[22]

(61) a. [$_{CP}$ [$_{Spec,CP}$ ***Sinä*** ***ja*** ***psykologi****-ko*] [$_{FP}$ [$_{Spec,FP}$ *tämä-n*
You **and** **psychologist**-Q this-ACC
kirja-n] *kirjo-**ititte***]]?
book-ACC write-**PST.2PL**
'Was it you and a psychologist who wrote this book?'

b. * [$_{CP}$ [$_{Spec,CP}$ ***Sinä*** ***ja*** ***psykologi****-ko*]
You **and** **psychologist**-Q
[$_{FP}$ [$_{Spec,FP}$ *tämä-n* *kirja-n*] *kirjo-**itit***]]?
this-ACC book-ACC write-**PST.2SG**
'Was it you and a psychologist who wrote this book?'

The problem that these cases pose for analyzing FCA via constraints on movement is that such an analysis enforces obligatory full agreement with pre-verbal subject DPs on the assumption that such DPs occupy Spec, FP. But if preverbal subject DPs do not occupy Spec, FP, this analysis cannot predict that they will obligatorily trigger full agreement. Put differently, the analysis based on constraints on movement predicts the possibility of the following derivation. F Agrees with the first conjunct of a coordinated subject DP. Then, some element (*sitä*, an object DP, etc.) moves to occupy Spec, FP. Next, the subject DP raises to Spec, CP. The result would be a clause in which the subject is pre-verbal, but the verb realizes FCA. Examples (60) and (61) show that this outcome is impossible.

I take these arguments to be sufficient for abandoning the analysis of FCA based on constraints on movement. In the next section, I propose a new analysis which is able to avoid the shortcomings of both this analysis as well as the structural ambiguity approaches.

4.3 Bidirectional Agree

Note that all of the empirical issues raised with the previous analysis based on constraints on movement were related to its account of how to ensure full agreement with pre-verbal subjects. I raised no objections to the analysis of FCA with post-verbal subjects. Therefore, the final approach maintains the previous analysis's explanation of post-verbal FCA. Only the account of agreement with pre-verbal subjects will be modified.

[21] I take the presence of the expletive in Spec, FP to also rule out the possibility that the subject DP occupied Spec, FP at some point in the syntactic derivation. On the assumption that FP possesses multiple specifiers, it would be possible to allow both *sitä* and the subject DP to occupy different specifiers of FP in the derivation. But even then, movement of the subject DP to Spec, FP would be unmotivated. Holmberg & Nikanne (2002) argue convincingly that *sitä* can satisfy the general requirement in Finnish that Spec, FP be occupied. Since *sitä* satisfies this requirement, there is no motivation for moving the subject DP to a specifier of FP.

[22] In the examples in (61), I assume that the object DP *tämän kirjan* occupies Spec, FP. An alternative analysis, following Holmberg (2000), would take the entire VP *tämän kirjan kirjoititte* to occupy Spec, FP. In either case, this position is not occupied by the subject DP during the syntactic derivation.

In some ways, the final account is simpler than the previous two. It requires no assumptions about late operations or about connections between agreement and movement. Rather, it relies redefining Agree as follows (changes from (43) are italicized):

(62) A functional head P (the "probe") Agrees with a node G (the "goal") iff:[23]

a. P has unvalued, uninterpretable ϕ features (uϕ features).

b. G has valued, interpretable ϕ features.

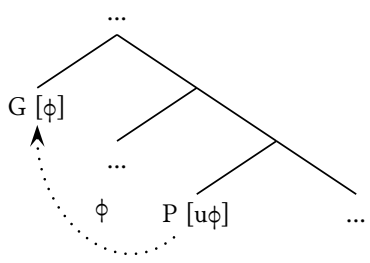
c. P c-commands G *or G c-commands P.*

d. If P c-commands G, there is no node H such that P c-commands H, H asymmetrically c-commands G, and H has valued ϕ features. *If G c-commands P, there is no node H such that H c-commands P, G asymmetrically c-commands H, and H has valued ϕ features.*

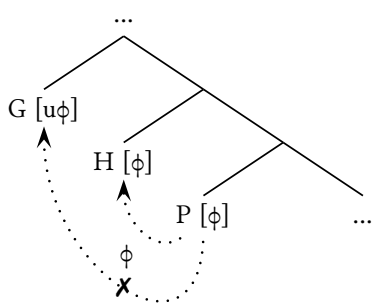
This definition is based on the proposal for Agree advanced in Baker (2008). The revised definition amounts to assuming that a probe can Agree either downward, i.e. with a goal that it c-commands, or upward, i.e. with a goal that c-commands it.

Condition (d) in the earlier definition of Agree (43) ensured that a probe had to Agree with the closest potential goal. The new condition (d) in (62) embodies the same assumption, although it is now necessary to have separate definitions for what counts as the closest potential goal depending on the direction of the Agree relation. In (63a), I illustrate how upward Agree operates. In (63b), I show how a node might intervene in a potential upward Agree relationship.

(63) a.



b.



Although the definition in (62) is based on that presented by Baker (2008), a number of other authors have proposed a bidirectional version of Agree in recent years (Adger

[23] As before, I assume that Agree is case-discriminating.

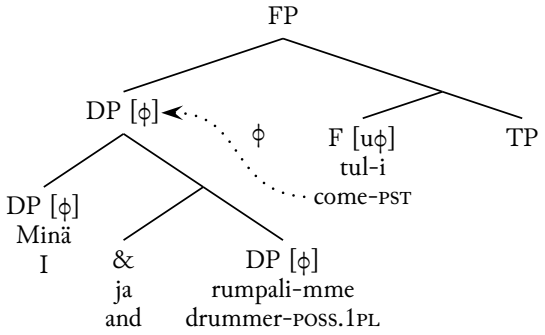
2003, Bjorkman & Zeijlstra 2014, Carstens 2016, Merchant 2006, Puškar & Murphy 2015). Many of these authors make an assumption that either downward or upward Agree is preferred, with agreement in the other direction being a last resort option. I remain agnostic on this issue here.

In order to allow for upward Agree to occur, I must assume that Agree does not occur immediately after a functional head with uϕ-features enters the derivation. Baker (2008) notes this consequence of his definition of Agree and suggests that a ϕ-probe must Agree by the time that the phase containing the probe is complete, but that probes need not Agree sooner. In §5, I offer more considerations on the timing of Agree. For now, I simply assume that Agree occurs after all movement operations have taken place. Given the assumption that Agree operates after movement, it is not possible to maintain the assumption that agreement feeds movement in the way described in (53). As shown in the previous section, Finnish exhibits many cases in which agreement and movement to specifier positions are dissociated. Thus, abandoning this constraint appears to be necessary in order to account for the Finnish data irrespective of the FCA data.

With the definition of Agree in (62) established, the analysis of FCA is straightforward. Consider a clause with a single exponent of agreement. If the coordinated subject DP is in the c-command domain of F, either the first conjunct or full conjunction is a potential goal. As discussed in the previous section, F may optionally Agree with either the full conjunction or the first conjunct (54). The account correctly predicts that if the subject is post-verbal, the element in F will realize either FCA or full agreement.

Now consider a case in which the subject DP has already raised to a position above F, e.g. in Spec, FP or Spec, CP. This is illustrated below in (64), where the subject DP is shown in Spec, FP.[24]

(64) Only the full conjunction c-commands F, so it is the only potential goal for Agree



The full conjunction c-commands F, so it is a potential goal for Agree. However, the first conjunct is too deeply embedded within the coordinate structure to c-command F; as a result, it is not a potential goal for Agree.

The reasoning is similar for clauses in which there are multiple exponents of agreement. I will not discuss each of these cases in detail, but I do wish to highlight a few points. First, as discussed above, I assume that there are two forms of the Ptc head: one of which is a ϕ-probe and one of which is not. The former enters the syntactic derivation with uϕ

[24] I do not offer an account of how the subject DP raises to Spec, FP in (64). One possibility is to assume that this movement is driven by an EPP feature on F, but that there is no connection between the EPP and agreement.

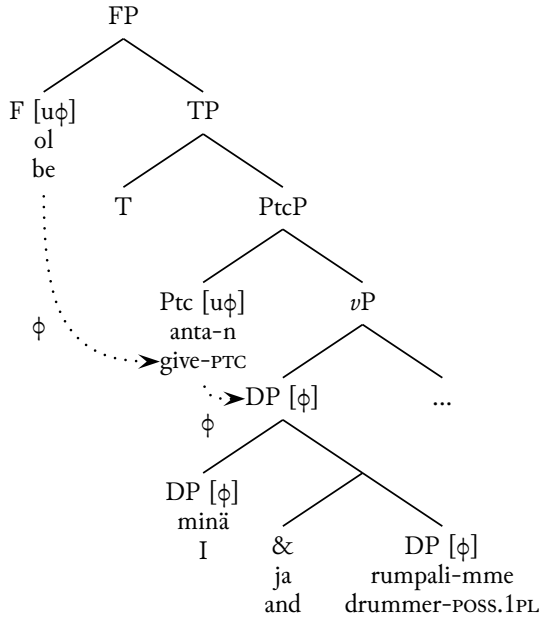
features and must Agree, while the latter does not. In clauses in which a coordinated subject DP precedes the participle in linear order and the participle appears to realize singular agreement, the Ptc head in the clause is the default, non-agreeing form. In contrast, if a coordinated subject DP follows the participle in linear order and the participle appears to realize singular agreement, this may be "true" singular agreement that resulted via FCA or the Ptc head may be the non-agreeing form.

Next, how does this approach account for cases of mixed agreement when the subject appears in a medial position? Recall that these examples were successfully handled by the previous approach based on constraints on movement, but posed a problem for the structural ambiguity analyses. In these cases, the subject DP occupies a position that c-commands Ptc, but is c-commanded by F. On the bidirectional Agree account, if Ptc is a ϕ-probe, it must realize full agreement since only the full conjunction c-commands Ptc. On the other hand, either full agreement or FCA may be realized on the auxiliary in F, since F c-commands both the full conjunction and the first conjunct. This is indeed what is shown in examples (21) and (22).

Finally, how does this analysis account for the fact that when the subject DP remains in Spec, *v*P, it is impossible for the participle to realize plural agreement and the auxiliary to realize FCA? In these cases, the Ptc head must be a ϕ-probe. Otherwise, the participle could not realize full agreement. But what ensures that once Ptc has Agreed with the full, conjoined subject, F must do so as well? I propose the following. Ptc first Agrees with the full conjunction. Next, F does not Agree directly with either the full conjunction or first conjunct DP, but rather Agrees with the Ptc head. In fact, assuming that functional heads, in addition to DPs, may be targeted by Agree, the definition of Agree in (62) predicts that F *must* Agree with Ptc and that the subject DP will not be a potential goal. Ptc has valued ϕ-features as a result of its Agree relationship with either the full conjunction or first conjunct. It is also the case that Ptc asymmetrically c-commands the coordinate subject DP, thus counting as the closest node with valued ϕ-features. If F Agrees with Ptc, rather than the subject DP, both F and Ptc will realize the same agreement pattern. This process is illustrated in (65).[25]

[25] An anonymous reviewer points that on the assumption that Ptc enters the syntactic derivation with uninterpretable ϕ-features, this proposal may violate the standard assumption that the goal in an Agree relation must have interpretable ϕ-features. One way to resolve this issue is to assume that for the establishment of at least some Agree relations, the goal's ϕ-features must be valued, whether or not they are interpretable.

(65) Ptc first Agrees with the full conjunction of the subject DP. F then Agrees with Ptc.



Note that in order to pursue this analysis, it is necessary to make the additional assumption that if a clause contains multiple ϕ-probes, these probes establish Agree relations in a bottom-up manner. That is, functional heads lower in the clause structure Agree before heads higher in the clause structure.[26]

Briefly, I review the problems that arose for the previous analysis, according to which FCA was explained via various constraints on movement. First, there was a theoretical concern that a pied-piping mechanism could allow the full, conjoined DP to raise to Spec, FP even if F had only Agreed with the first conjunct DP. On the present analysis, this is no longer an issue due to the assumption that Agree occurs post-movement. Thus, there is no possibility that F will Agree with the first conjunct and that the full, conjoined subject will subsequently raise to Spec, FP. Second, it was noted that agreement does not appear to feed movement to specifier positions in Finnish. Since the present analysis abandons this assumption, this objection is no longer relevant. Finally, pre-verbal subjects trigger full agreement even when they do not occupy Spec, FP. On the current proposal, full agreement is predicted so long as the coordinated subject DP c-commands the ϕ-probe, regardless of the identity of the structural position it occupies. Thus, the present analysis based on bidirectional Agree is able to fully capture the Finnish FCA data while avoiding the issues that arose for the other candidate proposals considered here.

[26] Alternatively, it is possible to make no assumption about which head Agrees first and instead assume that upward Agree is preferred over downward Agree. Then, even if F Agreed before Ptc, F would first probe upward and locate no potential goal. It would then probe downward, Agreeing with either the first conjunct or full conjunction. Next, Ptc would probe upward and Agree directly with F. This reverses the dependency between F and Ptc shown in (65), but still derives the desired outcome.

5 Conclusion

Pre-existing analyses of FCA in other language cannot be extended to Finnish due to various theoretical and empirical shortcomings. These issues are avoided by a novel proposal based on a bidirectional version of Agree. Although this proposal handles the data related to Finnish FCA, there are a number of outstanding issues. In this section, I consider several consequences of the final analysis for our understanding of the role of agreement in syntax and our understanding of languages that do not exhibit FCA.

One of the most significant consequences of assuming that Agree operates bidirectionally is that it is not possible to maintain that agreement between X and Y feeds movement of Y to Spec, XP. In contrast, Preminger (2014) has argued that agreement must feed movement in order to explain certain dative intervention effects. A full discussion of the data is beyond the scope of this paper, but it is possible to illustrate the basic point with the following French examples that Preminger cites from McGinnis (1998):

(66) a. *Il semble à Marie que Jean a du talent.* (French)
It seems to Marie that Jean has of talent
'It seems to Marie that Jean has talent.'

b. **?Jean semble à Marie avoir du talent.* (French)
Jean seems to Marie have.INF of talent
'Jean seems to Marie to have talent.'

Assume that the presence of the dative *à Marie* in (66a) blocks agreement with *Jean*. Then, Preminger argues that the ungrammaticality of (66b) is due to the fact that *Jean* has raised to the specifier position of a phrase (Spec, TP) without agreeing with the head of that phrase (T). That is, the ungrammaticality of (66b) is explained by assuming that agreement must feed movement. By giving up on the idea that agreement feeds movement, it is necessary to find some other explanation for the ungrammaticality of (66b). One option is to follow Bruening (2014), who argues that dative intervention effects such as those shown in (66) can be explained without assuming that agreement feeds movement. According to Bruening's account, the dative *à Marie* is an adjunct and the movement of *Jean* to Spec, TP in (66b) is blocked due to a prohibition against movement across adjunct phrases.

A related consequence of the bidirectional Agree proposal is that Agree must occur relatively late in the syntactic derivation. At the very least, Agree must occur after all movement has taken place. This proposal is not without precedent. As mentioned above, Baker (2008) acknowledges that his bidirectional Agree proposal requires Agree to occur relatively late. In particular, Baker (2008) proposes that Agree occurs at the end of each phase in the syntactic derivation. I see no barrier to adopting this proposal for Finnish, so long as it is assumed that movement triggered by features on a phase head precedes Agree. For example, assuming that C is a phase head, it is necessary that any movement to Spec, CP occurs before Agree in order to account for the data in (60) and (61).

Several authors have argued for a more radical view, according to which agreement is an entirely post-syntactic phenomenon. Arguments to this effect rest upon claims that agreement is dependent upon other, usually morphological, processes that are taken to be

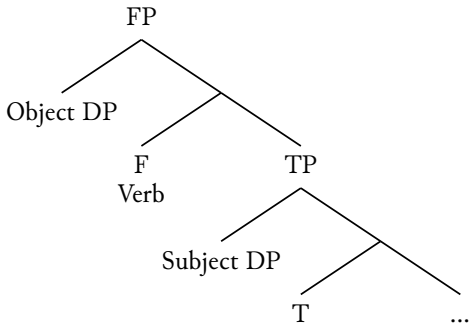
post-syntactic (Bobaljik 2008, Chung 2014, Sigurðsson 2006, 2009) and claims that ϕ-features valued through agreement are invisible at LF (Heim 2008). Landau (2016) has recently argued that agreement may be a post-syntactic phenomenon due to data on partial control in which semantic interpretation diverges from morphological ϕ-features. The proposal offered in §4.3 may appear to rule out a completely post-syntactic perspective on agreement, since hierarchical information is needed to determine c-command relationships. However, the bidirectional Agree analysis is technically compatible with a post-syntactic analysis of agreement, so long as hierarchical information is still available post-syntactically. The possibility of post-syntactic operations that nonetheless rely on hierarchical structure is familiar in Distributed Morphology (DM, Halle & Marantz 1993), where lowering is assumed to be an operation that takes place post-syntactically but makes reference to the hierarchical output of syntax (Embick & Noyer 2001).

As noted above, not all Finnish speakers accept sentences with FCA, and although FCA is attested in a number of unrelated languages, it is by no means a universal. The analysis offered in §4.3 would seem to predict otherwise. That is, this analysis faces an undergeneration problem, since it cannot predict the existence of languages that do not exhibit FCA. I first note that the undergeneration problem is not unique to my proposal. As far as I know, every contemporary account of FCA, including those discussed in §4.1 and §4.2, attempts to explain FCA in terms of general syntactic principles. None of these theories explains how to rule out FCA in languages in which it is not attested. Moreover, as discussed above, the standard definition of Agree (43) predicts the possibility of FCA. Thus, the undergeneration problem follows from standard assumptions of agreement that were not specifically tailored to account for FCA.

Second, I note that the theory offered in §4.3 only predicts FCA to be possible when a conjoined subject DP remains within the c-command domain of a ϕ-probe. If the subject DP raises to a position from which it c-commands the ϕ-probe, only full agreement is predicted. Thus, in a language such as English, which relatively strictly maintains S V order in non-interrogative clauses, the current proposal predicts that FCA will not be realized. Moreover, in cases where subject DPs do remain below T in English, such as existential *there* clauses, FCA is attested (Munn 1999, Sobin 2014).

Still, there are languages that allow VS word order in which FCA is not attested, including those dialects of Finnish that do not allow FCA. There are at least two options for ruling out FCA in VS clauses in such languages. The first option states that in VS clauses where FCA is not possible, the subject DP actually does occupy a structural position higher than the functional head that enters an Agree relationship with the subject. However, the verb has raised to a position even higher in the clause. This is essential Doron's (2000) proposal for ruling out FCA in VS clauses in Modern Hebrew. Consider (67).

(67)



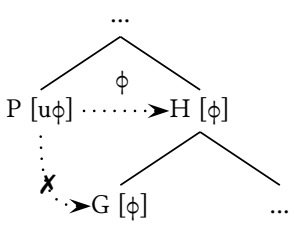
According to Doron, OVS clauses in Modern Hebrew have the structure shown in (67). T is the relevant ϕ-probe in this structure, and the subject DP c-commands T. On the proposal presented in §4.3, only full agreement is predicted to be possible, but since the verb has raised to a position above TP, the surface word order is VS. Extending this proposal to Finnish would amount to claiming that speakers who accept FCA and those who do not assume different clause structures for VS clauses.

Alternatively, it is possible to adopt a proposal mentioned in the discussion of late operations approaches to FCA. According to this proposal, the notion of locality that is relevant for Agree may be subject to parametric variation such that some languages make use of the definition of Agree given in (62), which others replace the locality condition for downward Agree in (d) with the following:

(68) If P c-commands G, there is no node H such that P c-commands H, H asymmetrically c-commands G *or H dominates G*, and H has valued ϕ features.

Using the locality constraint in (68), the following type of agreement intervention would be possible:

(69)



This would be sufficient to block agreement with a first conjunct DP even when the probe c-commands the coordinate structure. I remain agnostic as to which of these two approaches, if either, is best suited for accounting for Finnish dialects in which FCA is not attested. However, adopting an approach such as that illustrated in (67) would require abandoning the assumptions about Finnish clause structure laid out in §3.

Despite these outstanding questions, an analysis of Finnish FCA based on a bidirectional version of Agree has greater empirical coverage than previous analyses of FCA. Given the strong similarities between Finnish FCA and FCA in other languages, the arguments presented here show that this analysis is a promising candidate for explanations of FCA cross-linguistically. Moreover, in so far as the bidirectional Agree analysis remains preferable to alternatives, the Finnish FCA data provide crucial insights into the basic workings of agreement.

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